

Measurement Protocol

| | |
|--------------------|--|
| Measurement Object | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| Project | HMD_2322#N159V |

| | |
|------------------------|--------------------|
| Project | TIA-5050 (2018-01) |
| Report Generation Date | 2024/2/2 11:08 |
| Responsible Person | audio |

Status Overview

| SMD | Status | Single Value Description | Single Value | Object |
|---|--------|----------------------------------|--------------|--|
| Overall Receive Delay WB | Done | Delay (Cross) [ms] | 159.8 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.1a Receive Volume Control Performance 8N WB | Not Ok | Corrected Speech Level [dB[SPL]] | 17.16 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.1b Receive Volume Control Performance 2N WB | Ok | Corrected Speech Level [dB[SPL]] | 11.40 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.01 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.16 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.79 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 30.06 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.71 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.93 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.58 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 26.12 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.33 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.85 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 26.31 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.93 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.83 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and | Ok | Distortion (Noise) | 21.96 | LTE Band |

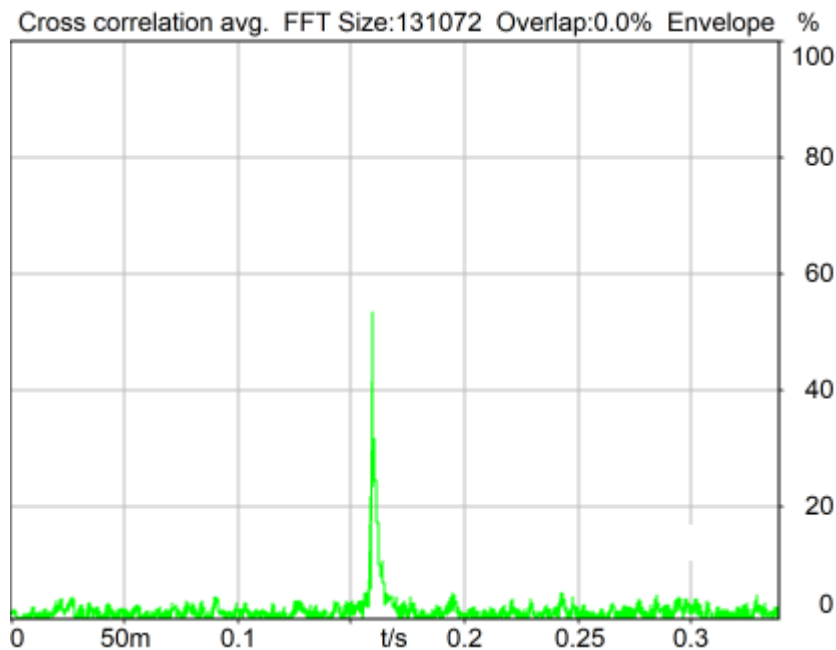
| | | | | |
|---|----|--|-------|--|
| Noise - 5000 Hz WB | | [dB], 0.0 dB | | 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 5000Hz) | 21.96 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.66 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.07 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.56 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 30.09 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 31.80 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.22 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.90 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.19 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.38 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.06 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.63 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 30.83 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.83 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 22.28 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 5000Hz) | 22.28 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.3 Frequency Response 8N FF | Ok | Min. dist. to tolerance scheme [dB], 1285.9 Hz | 0.22 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.3 Frequency Response 8N | Ok | Min. dist. to tolerance | 0.04 | LTE Band |

| | | | | |
|---------------------------------|----|--|------|--|
| DF | | scheme [dB], 4870.0 Hz | | 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |
| 5.3 Frequency Response 2N FF | Ok | Min. dist. to tolerance scheme [dB], 1216.1 Hz | 0.45 | LTE Band 66_20QPSK_100RB_0_AMR WB 23.85kbps_CH132322 |

| | |
|---|-----|
| Overall Receive Delay WB | 7 |
| 5.1a Receive Volume Control Performance 8N WB | 10 |
| 5.1b Receive Volume Control Performance 2N WB | 12 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | 14 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | 17 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | 20 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | 23 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | 26 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | 29 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | 32 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | 35 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | 38 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | 41 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | 44 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | 47 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | 50 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | 53 |
| Report - Receive Distortion and Noise (Conversational Gain) | 56 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | 57 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | 60 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | 63 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | 66 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | 69 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | 72 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | 75 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | 78 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | 81 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | 84 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | 87 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | 90 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | 93 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | 96 |
| Report - Receive Distortion and Noise (Conversational Gain) | 99 |
| 5.3 Frequency Response 8N FF | 100 |
| 5.3 Frequency Response 8N DF | 103 |
| 5.3 Frequency Response 2N FF | 106 |

Overall Receive Delay WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ Preparation - Delay measurement



Delay (Cross): 159.8 ms

2024/1/19 12:41 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: csswb1b_r1s.dat

WIDEBAND Composite Source Signal RCV P.501 (1 bursts) at Channel 2

Pause 0.5 s +
voiced signal + 8000 Hz band limited random noise 1.0 s +
Pause till end of file

Signal level (ch2): -14.7 dBm0 (corresponds to approx. -16.0 dBm0 for a 350 ms CSS considering 101 ms Pause) from 0.5s to 1.544s for 4-k FFT, Hanning window,
75 % overlap in frequency range of 100 to 8000 Hz

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.1: 0.00 dB
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| | | Delta A | 0.0 ° |

| | | | |
|----------|---------|--------------------------|-------|
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-----------------|------------|
| Range start | 550.00 ms | Range length | 1950.00 ms |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | Overlap | 0 % |
| FFT size | 131072 | Smooth | Off |
| Window function. | Hanning | | |
| Delayed channel | None | | |
| Valid range start | -1228.79 ms | Valid range end | 1228.81 ms |

Special Features

Show source signal Source ch.2 Store to variable D_RCV_WB

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

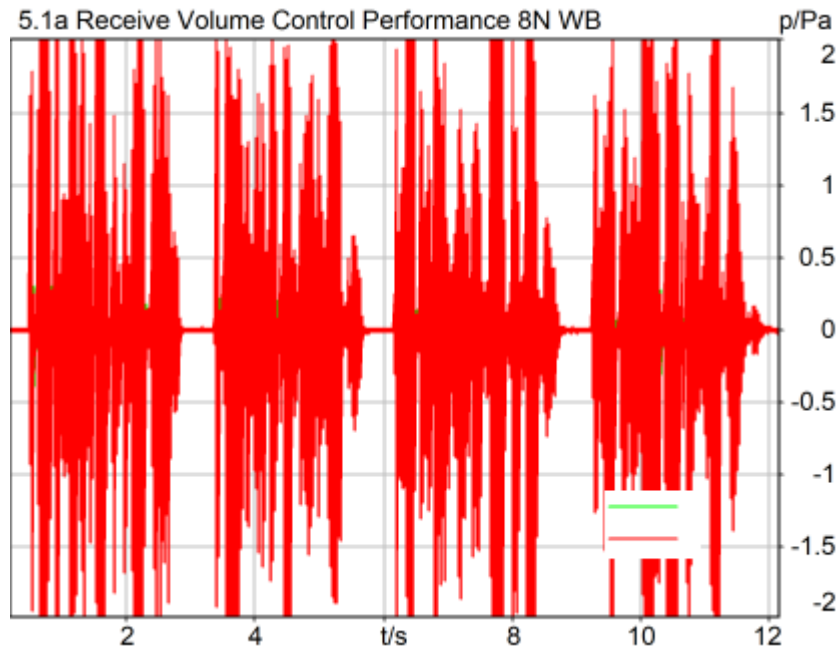
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.1a Receive Volume Control Performance 8N WB

TIA-5050 (2018-01) \ Measurements \ Wideband



Correction

X - 70

Speech Level RCV: 87.16 dB[SPL], Act.: 86.11%

Corrected Speech Level: 17.16 dB[SPL] Not Ok

Not Ok

2024/1/22 21:20 ACQUA 5.1.200

Limits

| | lower |
|-------|---------------|
| Run 1 | 18.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|----------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Super Wideband | | |

15.90 dB

Special Features

Show source signal Source ch.2
Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

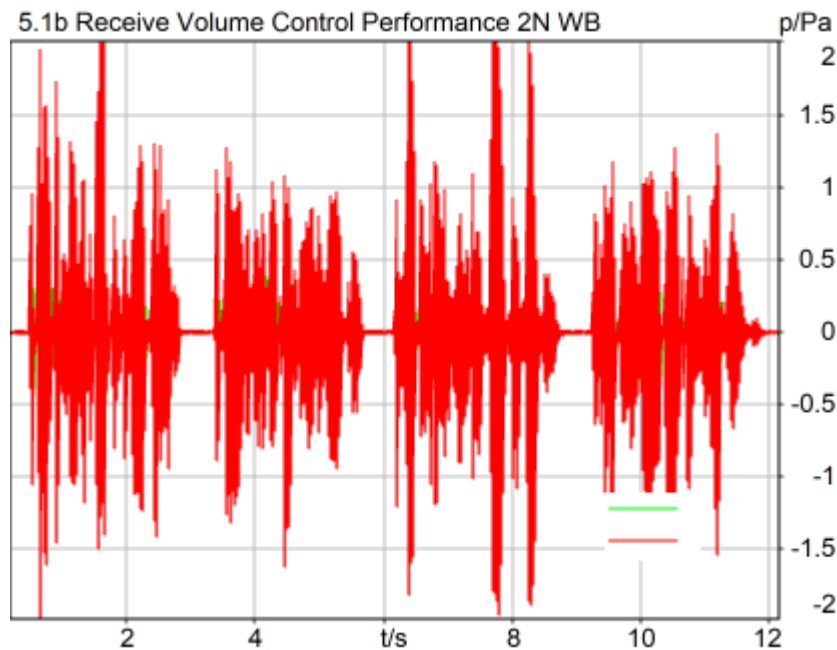
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.1b Receive Volume Control Performance 2N WB

TIA-5050 (2018-01) \ Measurements \ Wideband



Correction

X - 70

Speech Level RCV: 81.40 dB[SPL], Act.: 85.79%

Corrected Speech Level: 11.40 dB[SPL] Ok

Ok

2024/1/22 21:12 ACQUA 5.1.200

Limits

| | lower |
|-------|--------------|
| Run 1 | 6.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|----------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Super Wideband | | |

15.90 dB

Special Features

Show source signal Source ch.2
Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

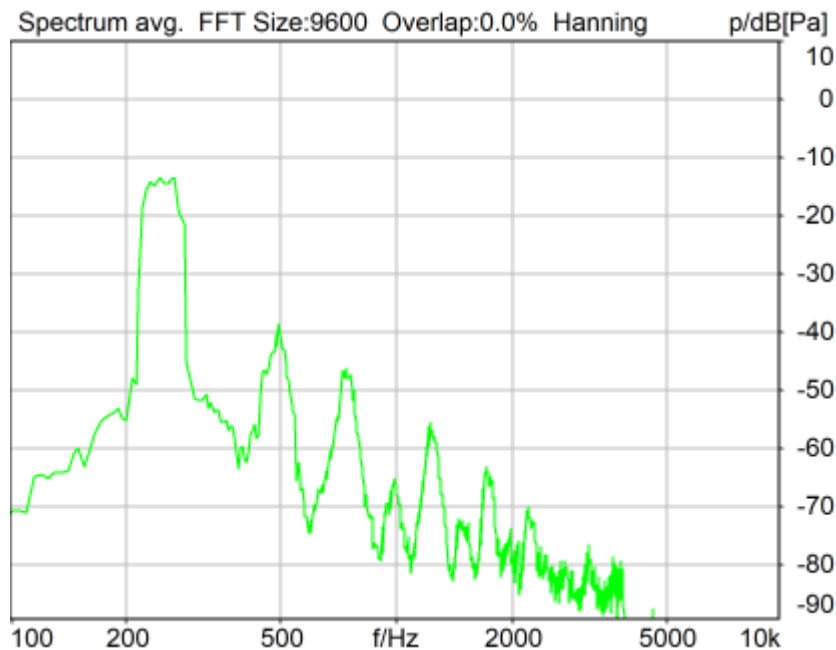
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.01 dB (3.98%) Ok

Ok

2024/1/19 12:42 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_250hz_sr20dbm0_v02.dat.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 315.0 Hz |
| Stimulus min. | 190.0 Hz | Analysis max. | 185.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 320.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

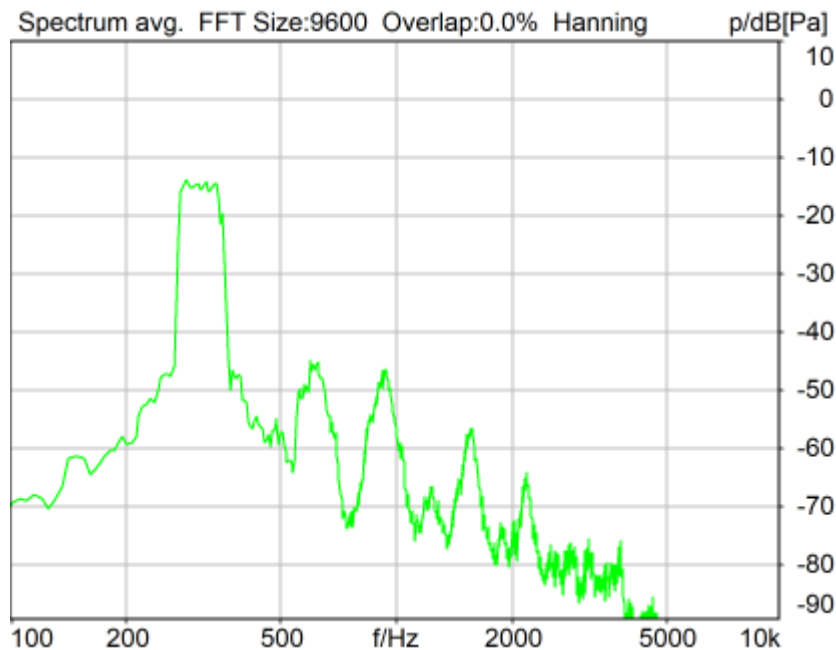
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 315 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.16 dB (3.48%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_315hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 390.0 Hz |
| Stimulus min. | 245.0 Hz | Analysis max. | 240.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 395.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_315Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

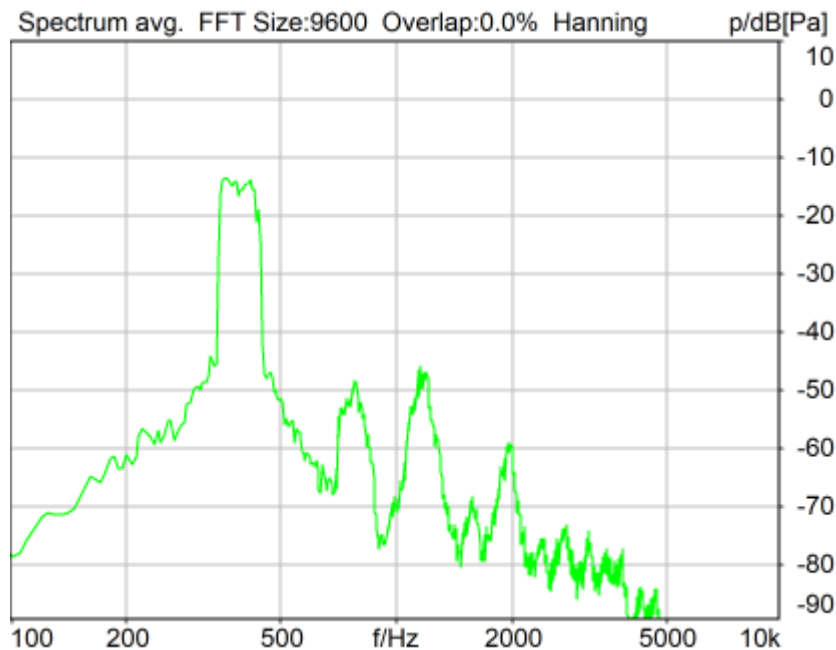
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 400 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.79 dB (3.24%) Ok

Ok

2024/1/19 12:43 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

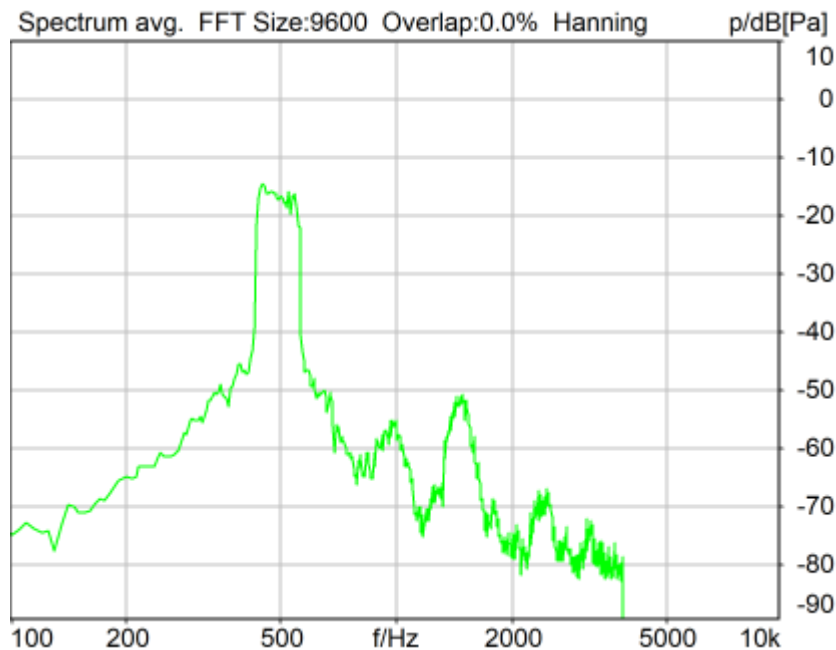
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz WB

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Distortion (Noise) RCV (packed): 30.06 dB (3.14%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

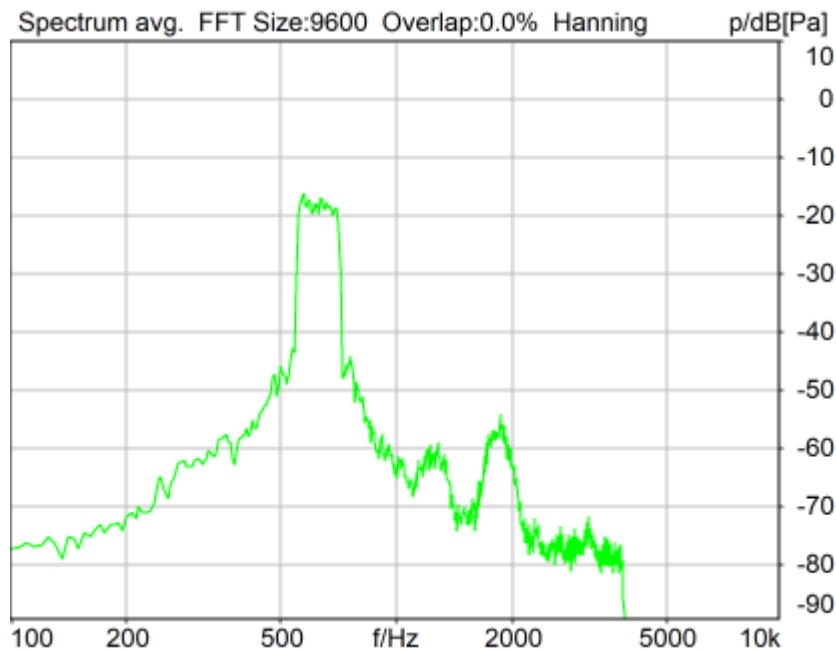
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz WB

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Distortion (Noise) RCV (packed): 29.71 dB (3.27%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

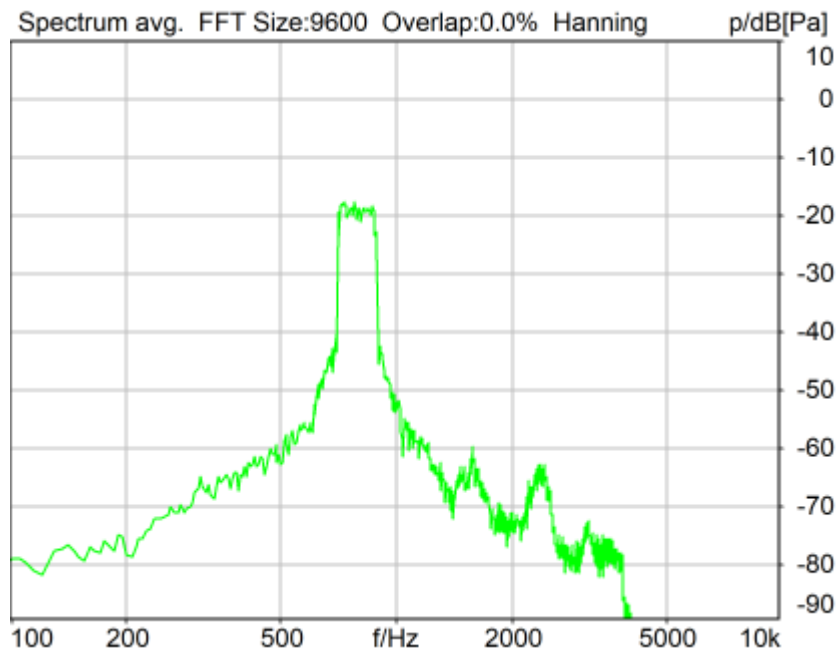
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz WB

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Distortion (Noise) RCV (packed): 29.93 dB (3.19%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

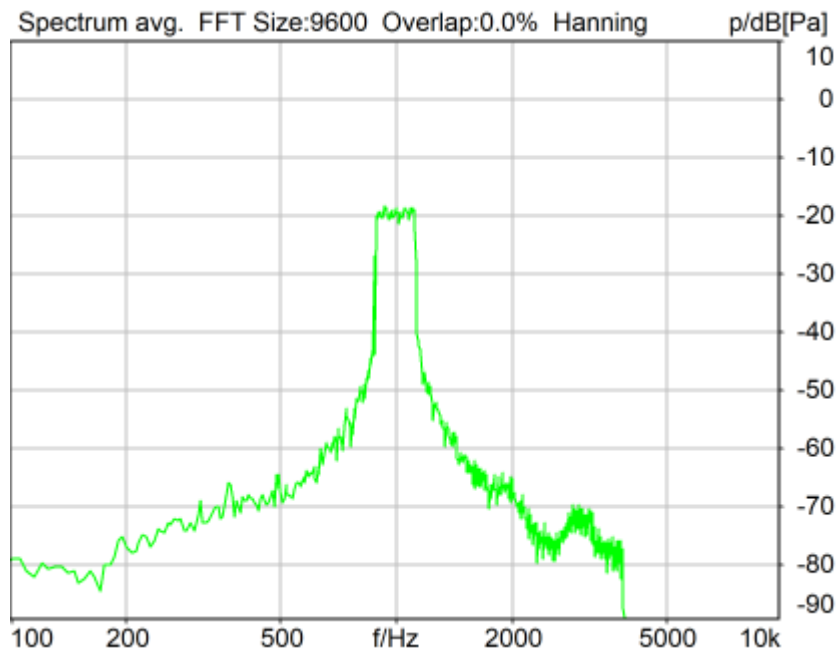
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz WB

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Distortion (Noise) RCV (packed): 29.58 dB (3.32%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1155.0 Hz |
| Stimulus min. | 855.0 Hz | Analysis max. | 850.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1160.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

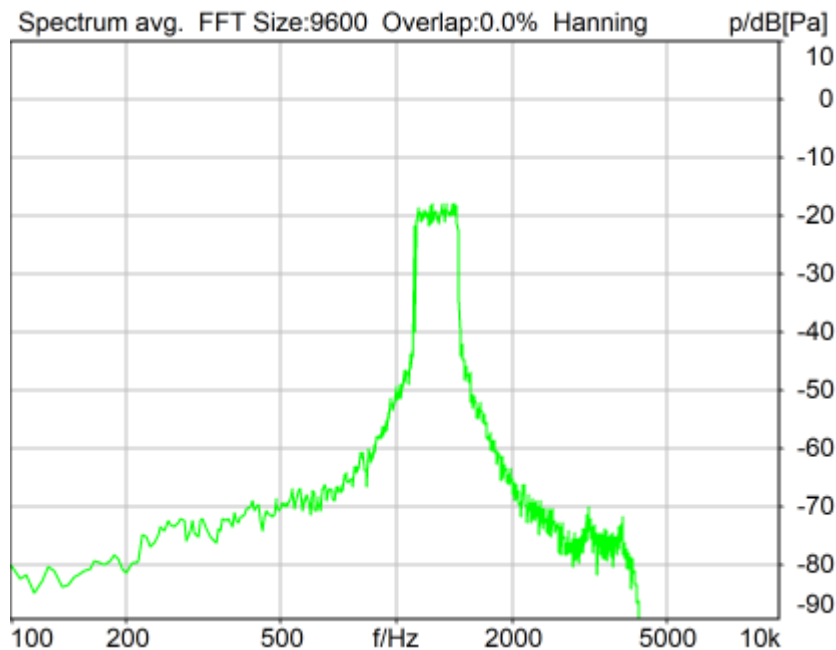
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz WB

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Distortion (Noise) RCV (packed): 26.12 dB (4.94%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1450.0 Hz |
| Stimulus min. | 1085.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1455.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

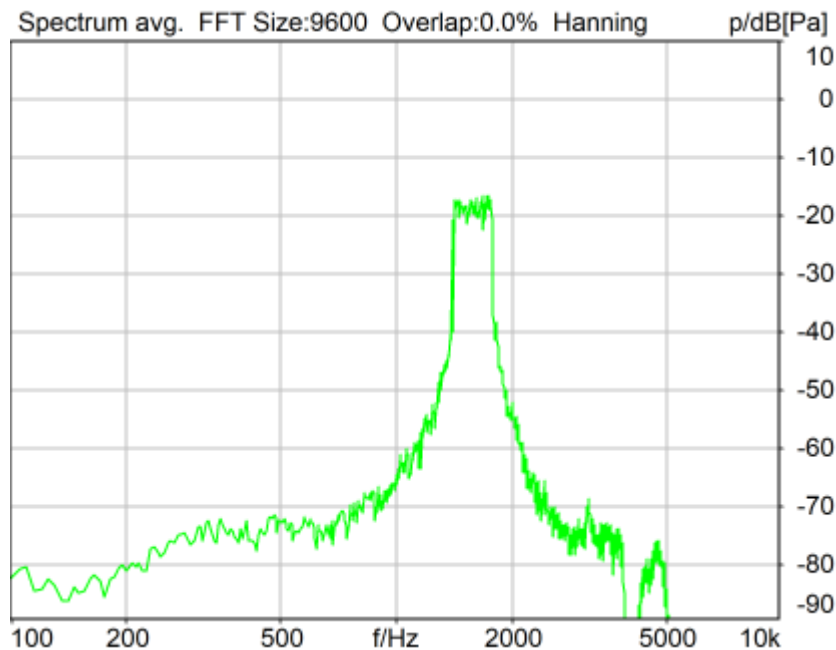
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.33 dB (3.83%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1375.0 Hz | Stimulus max. | 1815.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis (2) min. | 1820.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

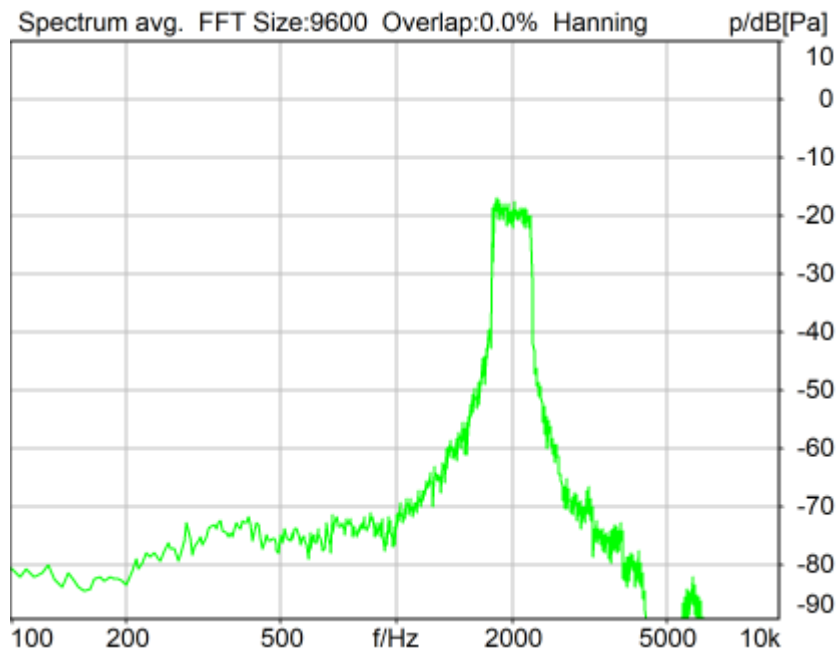
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz WB

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Distortion (Noise) RCV (packed): 27.85 dB (4.05%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1745.0 Hz | Stimulus max. | 2275.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis (2) min. | 2280.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

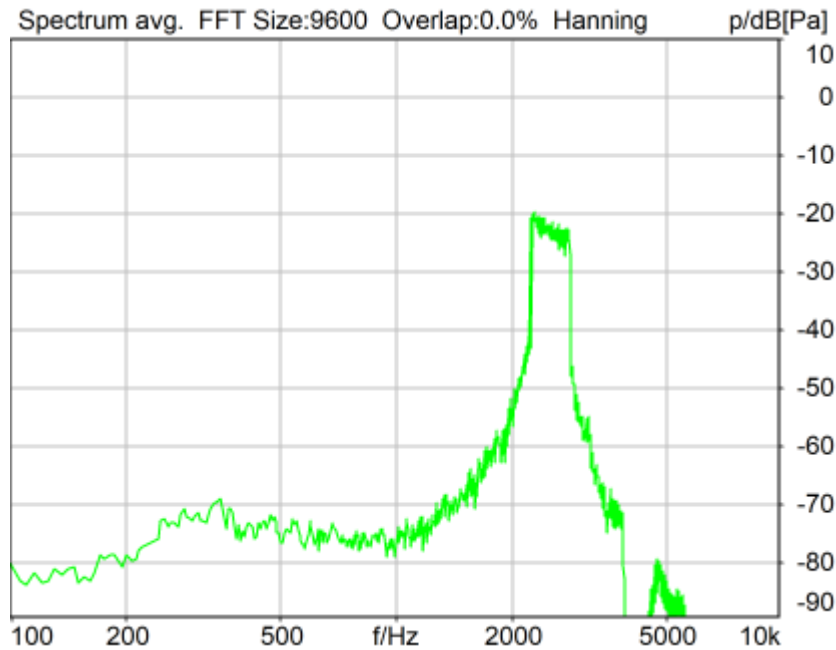
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz WB

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Distortion (Noise) RCV (packed): 26.31 dB (4.84%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2855.0 Hz |
| Stimulus min. | 2205.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2860.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

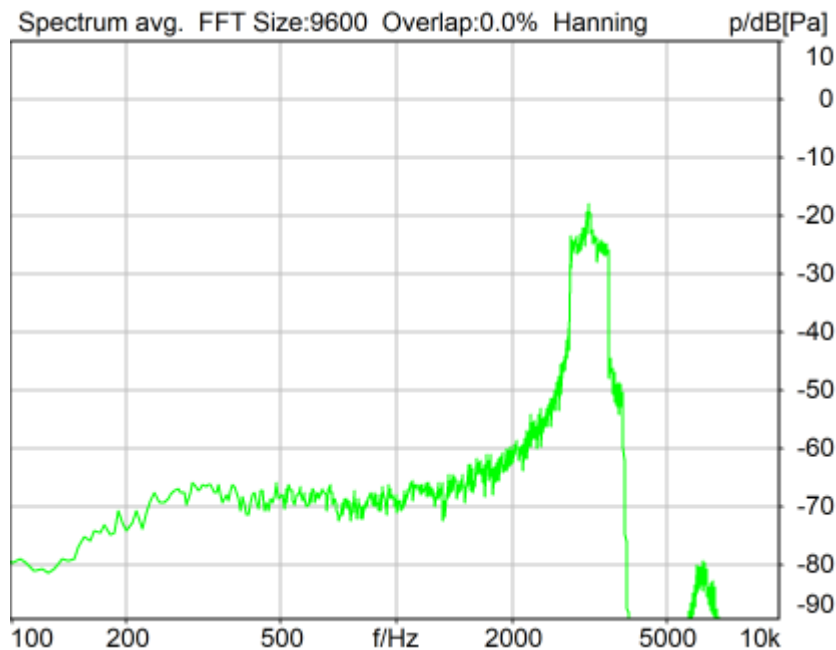
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 23.93 dB (6.36%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 3585.0 Hz |
| Stimulus min. | 2785.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 3590.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

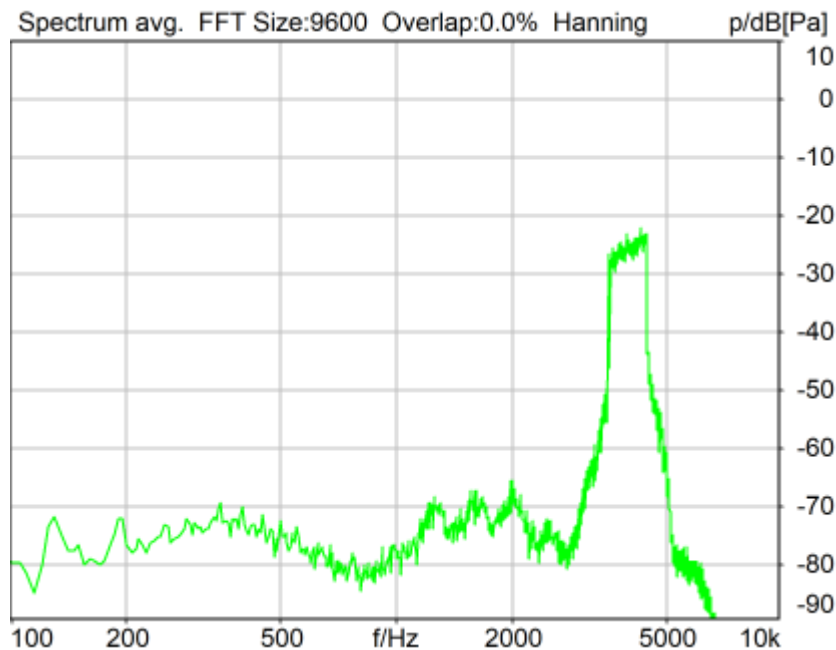
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 4000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 27.83 dB (4.06%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_4000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 4500.0 Hz |
| Stimulus min. | 3515.0 Hz | Analysis max. | 3510.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 4505.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_4000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

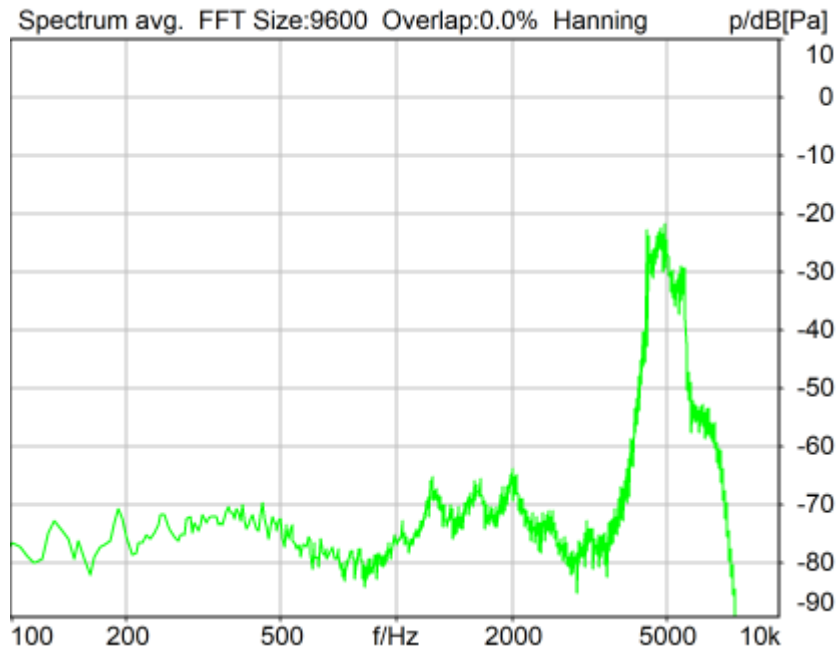
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 5000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 21.96 dB (7.98%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_5000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 4430.0 Hz | Stimulus max. | 5660.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 4425.0 Hz |
| Analysis (2) min. | 5665.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_5000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 250Hz | 28.01 dB |
| 2 | 315Hz | 29.16 dB |
| 3 | 400Hz | 29.79 dB |
| 4 | 500Hz | 30.06 dB |
| 5 | 630Hz | 29.71 dB |
| 6 | 800Hz | 29.93 dB |
| 7 | 1000Hz | 29.58 dB |
| 8 | 1250Hz | 26.12 dB |
| 9 | 1600Hz | 28.33 dB |
| 10 | 2000Hz | 27.85 dB |
| 11 | 2500Hz | 26.31 dB |
| 12 | 3150Hz | 23.93 dB |
| 13 | 5000Hz | 21.96 dB |
| 14 | 4000Hz | 27.83 dB |

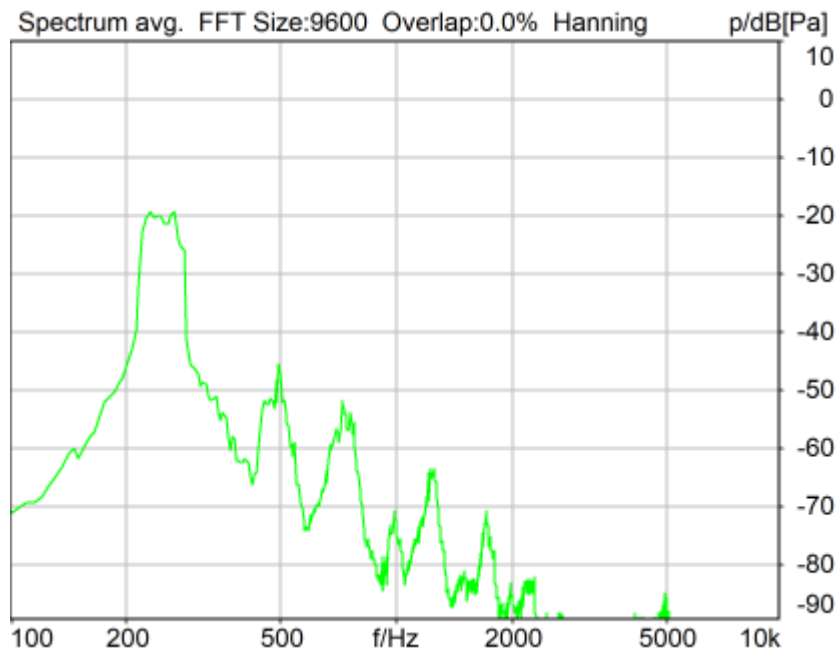
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 21.96dB at 5000Hz.

2024/1/19 12:53 ACQUA

5.2 RCV Distortion and Noise - 250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 28.66 dB (3.69%) Ok

Ok

2024/1/19 14:32 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_250hz_sr20dbm0_v02.dat.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 315.0 Hz |
| Stimulus min. | 190.0 Hz | Analysis max. | 185.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 320.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

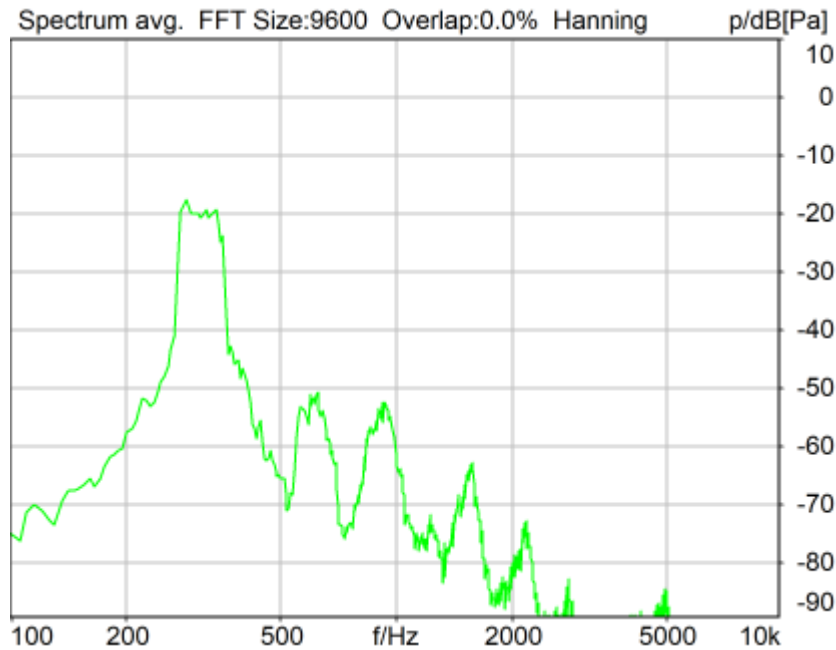
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 315 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 29.07 dB (3.52%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_315hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 390.0 Hz |
| Stimulus min. | 245.0 Hz | Analysis max. | 240.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 395.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_315Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

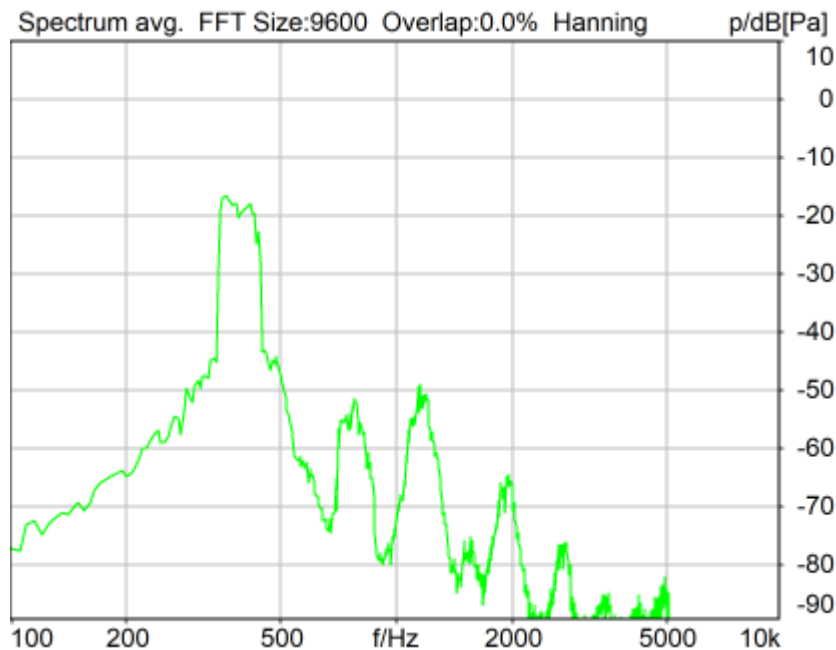
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 400 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 28.56 dB (3.73%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

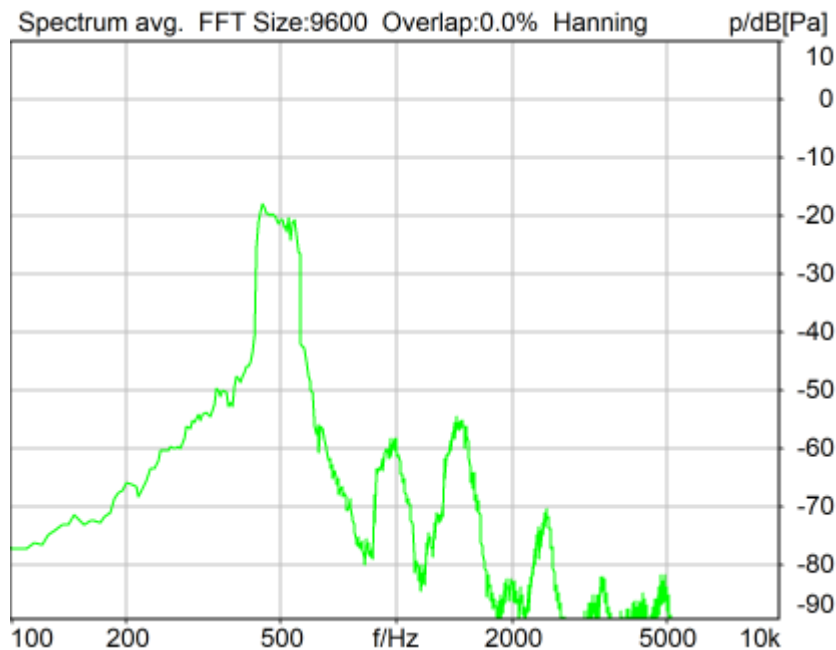
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 30.09 dB (3.13%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

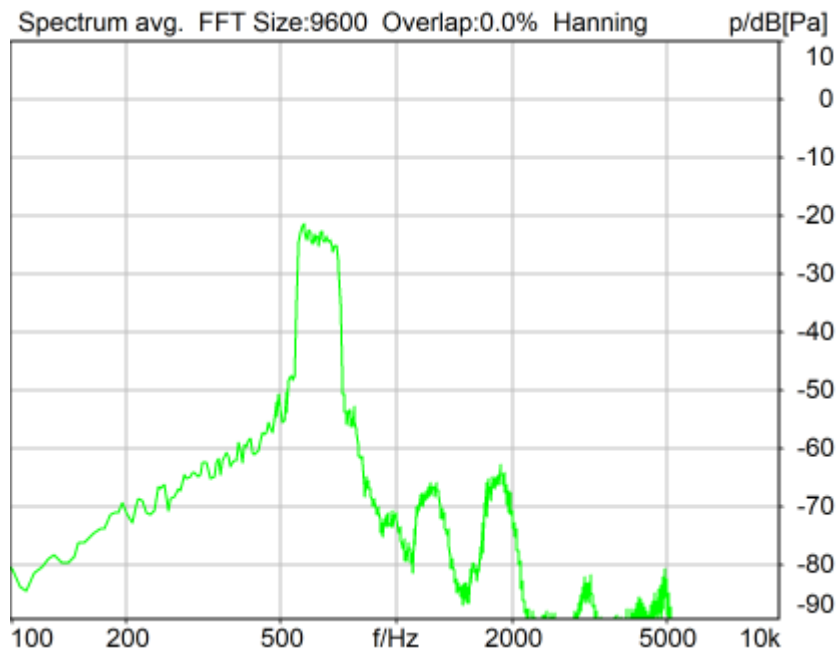
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 31.80 dB (2.57%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

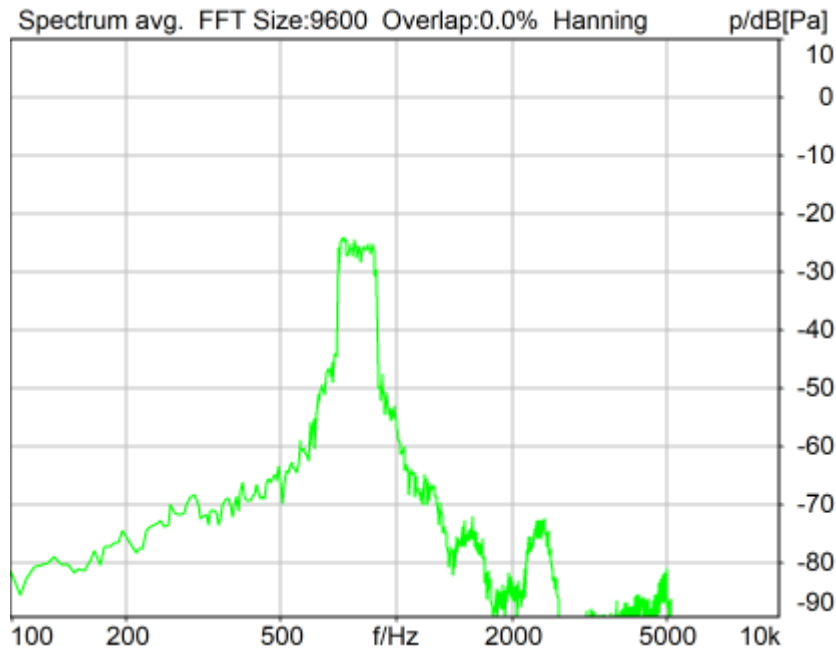
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 27.22 dB (4.35%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

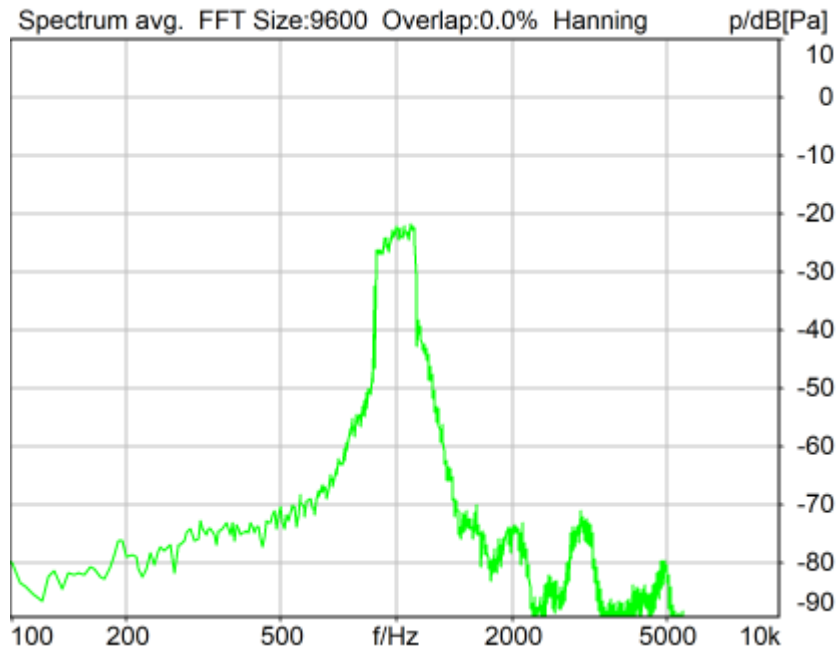
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 23.90 dB (6.39%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1155.0 Hz |
| Stimulus min. | 855.0 Hz | Analysis max. | 850.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1160.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

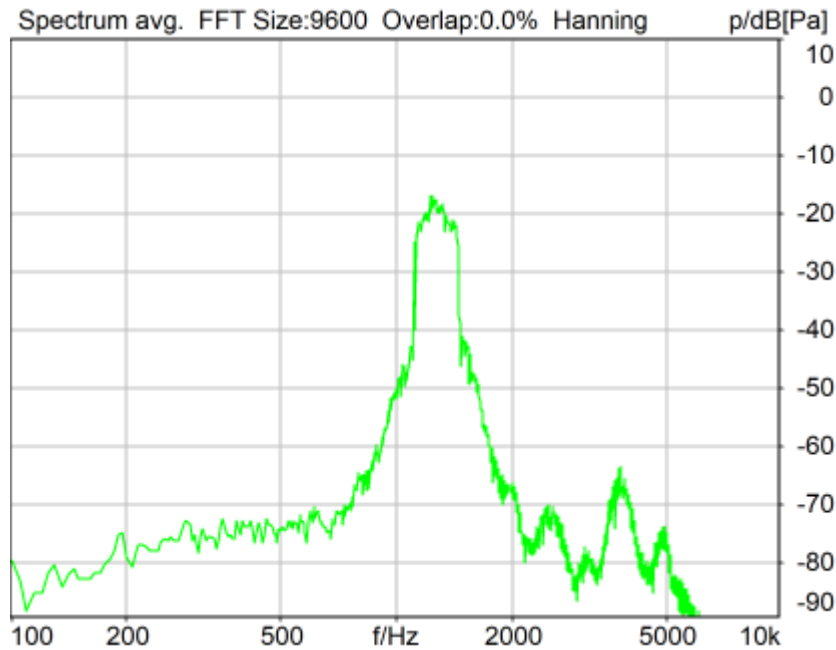
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 24.19 dB (6.17%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1450.0 Hz |
| Stimulus min. | 1085.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1455.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

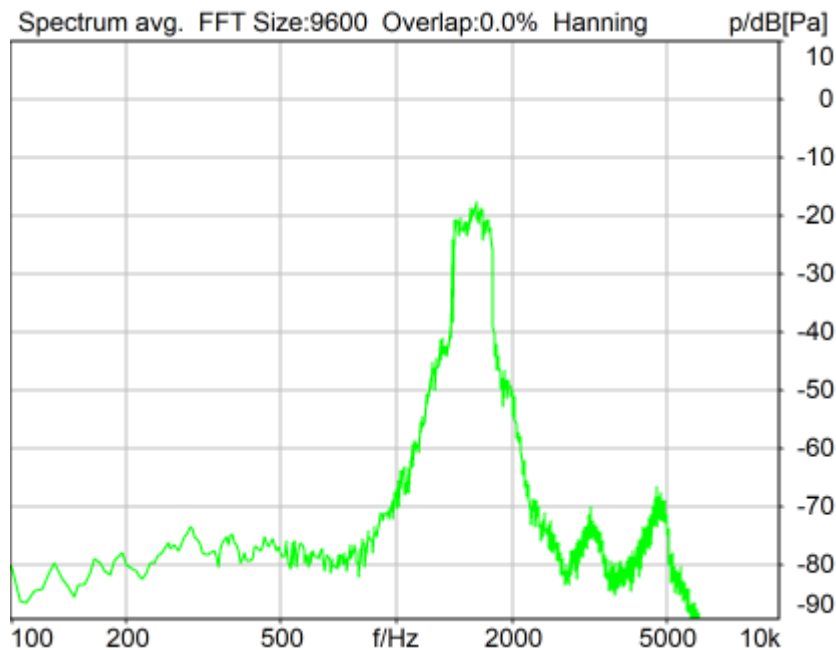
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 24.38 dB (6.04%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1815.0 Hz |
| Stimulus min. | 1375.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1820.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

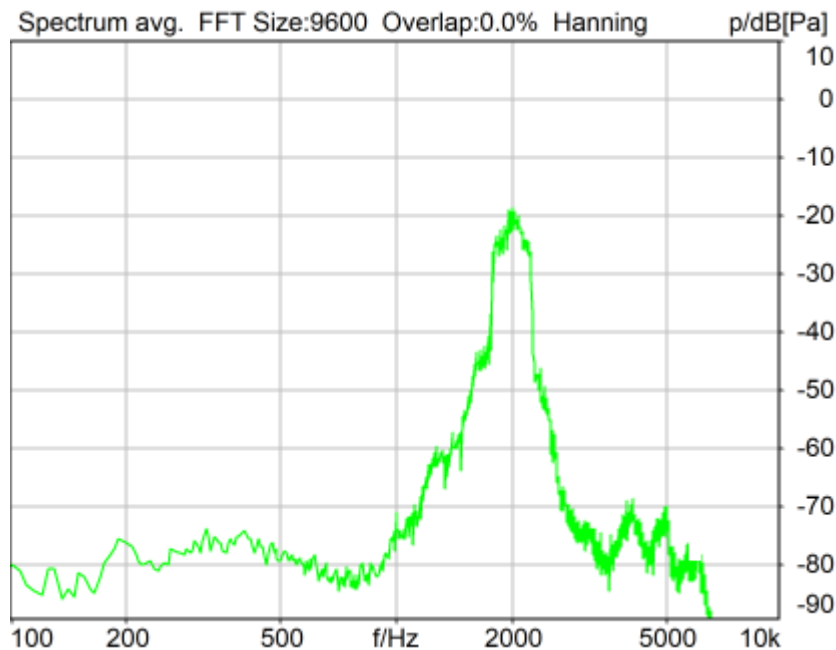
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 23.06 dB (7.03%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2275.0 Hz |
| Stimulus min. | 1745.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2280.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

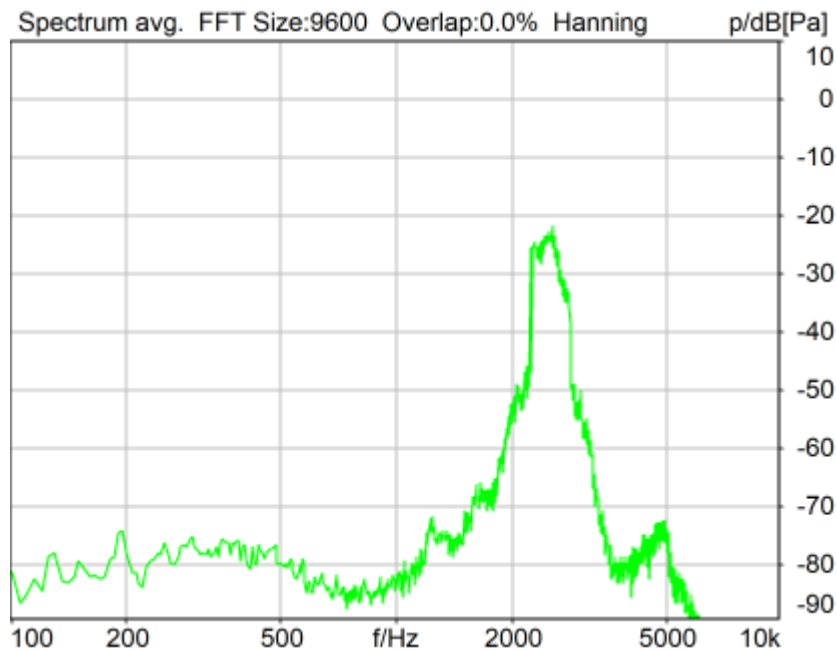
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 24.63 dB (5.87%) Ok

Ok

2024/1/19 14:37 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2855.0 Hz |
| Stimulus min. | 2205.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2860.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

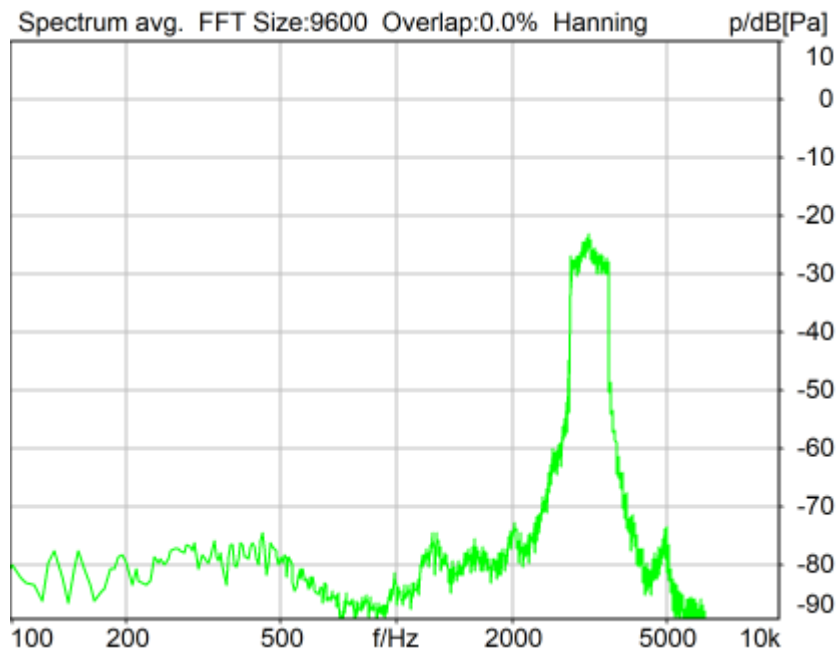
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 30.83 dB (2.87%) Ok

Ok

2024/1/19 14:37 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 3585.0 Hz |
| Stimulus min. | 2785.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 3590.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

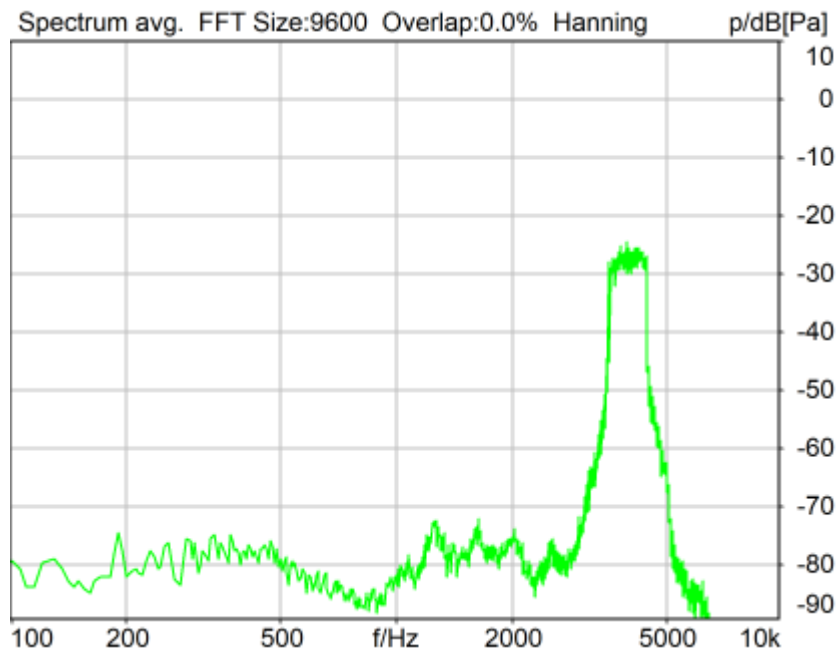
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 4000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 27.83 dB (4.06%) Ok

Ok

2024/1/19 14:38 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_4000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 4500.0 Hz |
| Stimulus min. | 3515.0 Hz | Analysis max. | 3510.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 4505.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_4000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

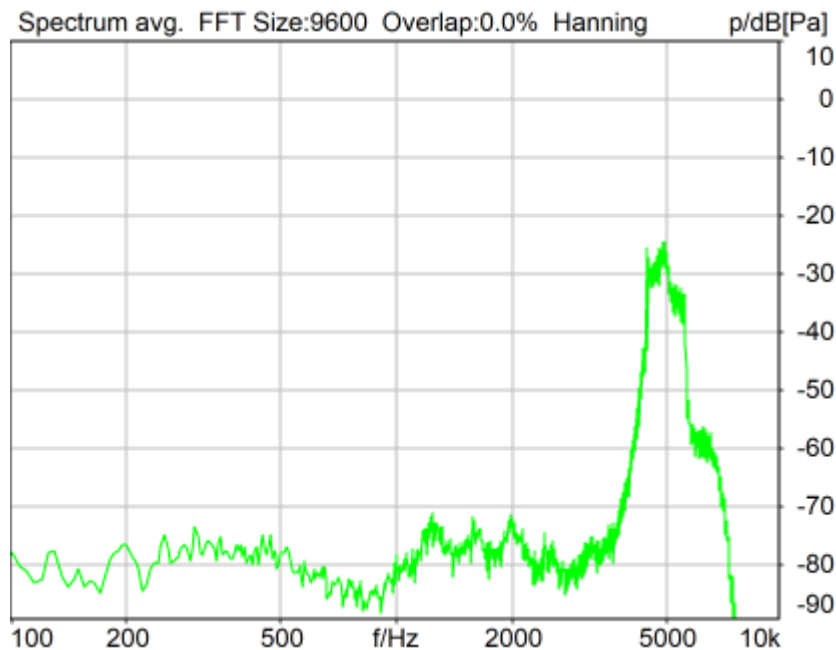
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 5000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 22.28 dB (7.69%) Ok

Ok

2024/1/19 14:38 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_5000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 5660.0 Hz |
| Stimulus min. | 4430.0 Hz | Analysis max. | 4425.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 5665.0 Hz | | |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_5000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 250Hz | 28.66 dB |
| 2 | 315Hz | 29.07 dB |
| 3 | 400Hz | 28.56 dB |
| 4 | 500Hz | 30.09 dB |
| 5 | 630Hz | 31.80 dB |
| 6 | 800Hz | 27.22 dB |
| 7 | 1000Hz | 23.90 dB |
| 8 | 1250Hz | 24.19 dB |
| 9 | 1600Hz | 24.38 dB |
| 10 | 2000Hz | 23.06 dB |
| 11 | 2500Hz | 24.63 dB |
| 12 | 3150Hz | 30.83 dB |
| 13 | 4000Hz | 27.83 dB |
| 14 | 5000Hz | 22.28 dB |

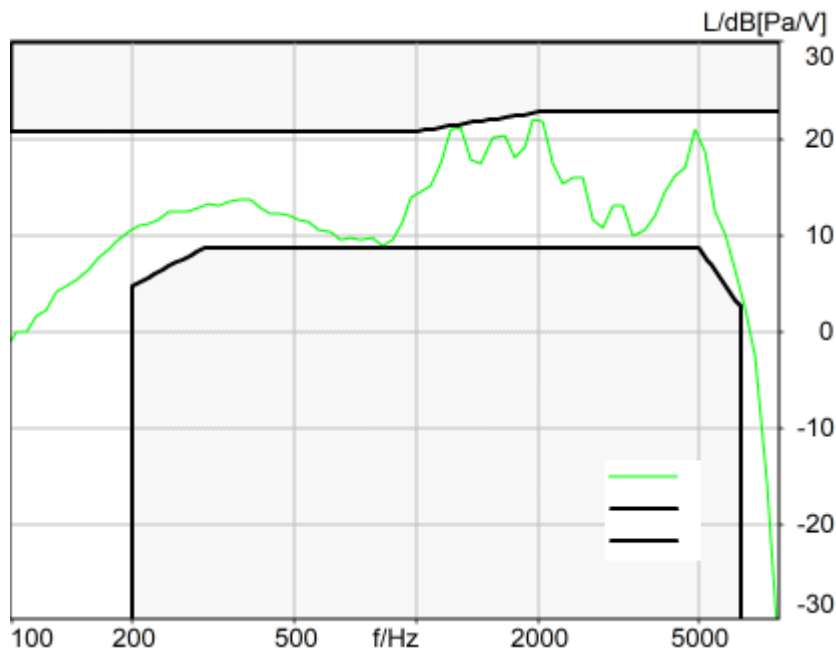
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 22.28dB at 5000Hz.

2024/1/19 14:38 ACQUA

5.3 Frequency Response 8N FF

TIA-5050 (2018-01) \ Measurements \ Wideband



Absolute minimal distance
0.22 dB at 1285.9 Hz Ok

Ok

2024/1/19 12:50 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_wb_r20_v01.dat

Level adj. Ch1 -90.0 dB
WIDEBAND IEEE-269-2010 Real Speech Signal at Channel 2
Pause 0.5 s +
Real Speech (english, male speaker) 11.5 s, Active Speech Level: -22,2 dBV, margin 15.9 dB +
Pause till end of file
Signal level (ch2): -22,2 dBV Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"
Alteration:
0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the and of the file.
filtered with 8.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|--------------------------|-------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hawb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hawb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 8000.0 Hz |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |

| | | | |
|-----------------------|--------------------------|----------------|------|
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

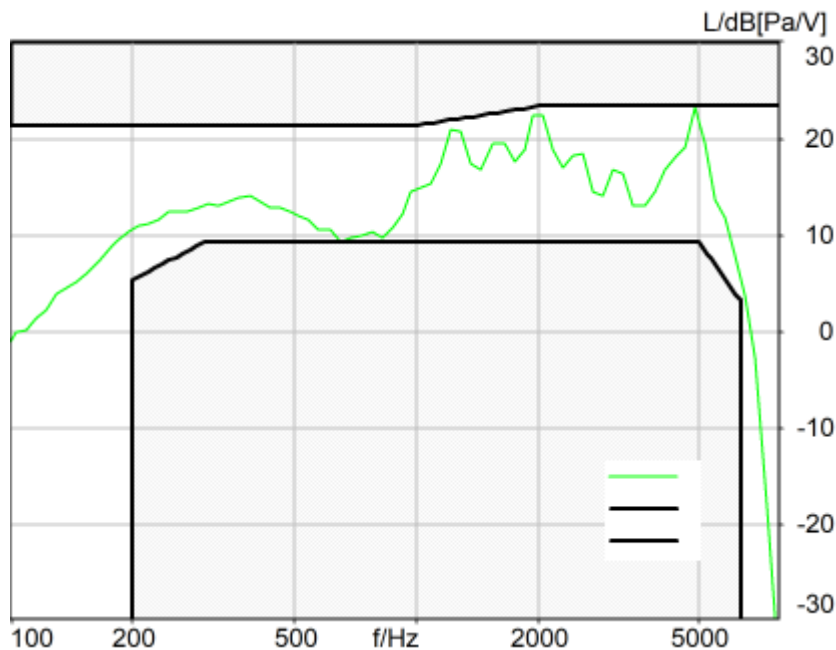
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.3 Frequency Response 8N DF

TIA-5050 (2018-01) \ Measurements \ Wideband



Absolute minimal distance
0.04 dB at 4870.0 Hz Ok

Ok

2024/1/19 12:51 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_wb_r20_v01.dat

Level adj. Ch1 -90.0 dB
WIDEBAND IEEE-269-2010 Real Speech Signal at Channel 2
Pause 0.5 s +
Real Speech (english, male speaker) 11.5 s, Active Speech Level: -22,2 dBV, margin 15.9 dB +
Pause till end of file
Signal level (ch2): -22,2 dBV Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"
Alteration:
0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
filtered with 8.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|--------------------------|-------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2df_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hawb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hawb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 8000.0 Hz |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |

| | | | |
|-----------------------|--------------------------|----------------|------|
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

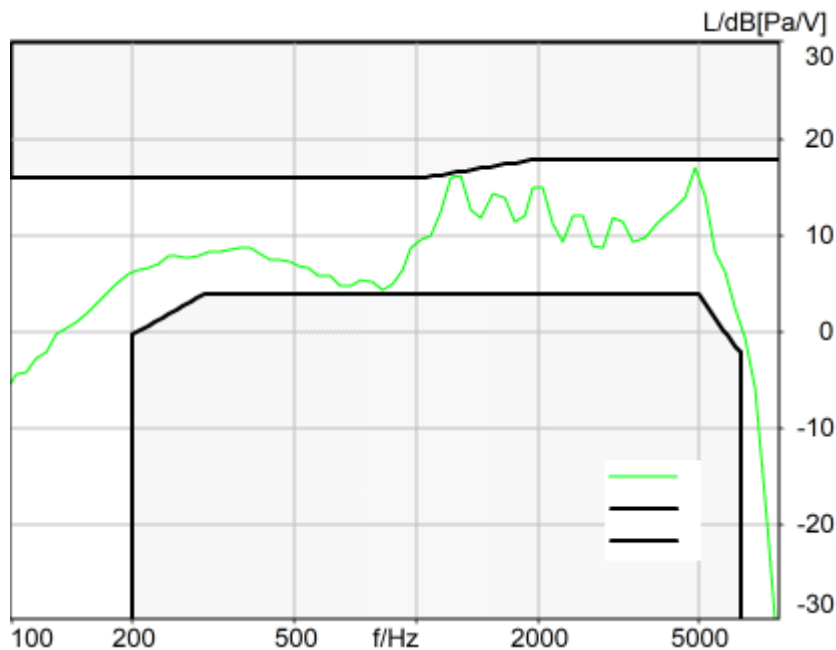
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.3 Frequency Response 2N FF

TIA-5050 (2018-01) \ Measurements \ Wideband



Absolute minimal distance
0.45 dB at 1216.1 Hz Ok

Ok

2024/1/19 14:39 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_wb_r20_v01.dat

Level adj. Ch1 -90.0 dB
WIDEBAND IEEE-269-2010 Real Speech Signal at Channel 2
Pause 0.5 s +
Real Speech (english, male speaker) 11.5 s, Active Speech Level: -22,2 dBV, margin 15.9 dB +
Pause till end of file
Signal level (ch2): -22,2 dBV Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"
Alteration:
0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
filtered with 8.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-----------------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| Delta Ze | 0.0 mm | Delta C | 0.0 ° |
| Ym | 0.1 mm | Delta B | 0.0 ° |
| | | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|--------------------------|---------------------|-------------------------------|
| Direction | Out 2 -> In 2 | Range length | 11500.00 ms |
| Range start | 500.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | DIN Row | Row A |
| Frequency base | 12th octave | Overlap | 75 % |
| Method | FFT | Window function. | Hanning |
| FFT size | 4096 | Reference file | r521_rcv_frq_spee269_hawb.fft |
| Tol. scheme file | 521_rcv_frq_man_hawb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 8000.0 Hz |

Special Features

Compensate delay 159.8000 ms (D_RCV_WB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |

| | | | |
|-----------------------|--------------------------|----------------|------|
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Measurement Protocol

| | |
|--------------------|---|
| Measurement Object | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| Project | HMD_2322#N159V |

| | |
|------------------------|--------------------|
| Project | TIA-5050 (2018-01) |
| Report Generation Date | 2024/2/2 11:10 |
| Responsible Person | audio |

Status Overview

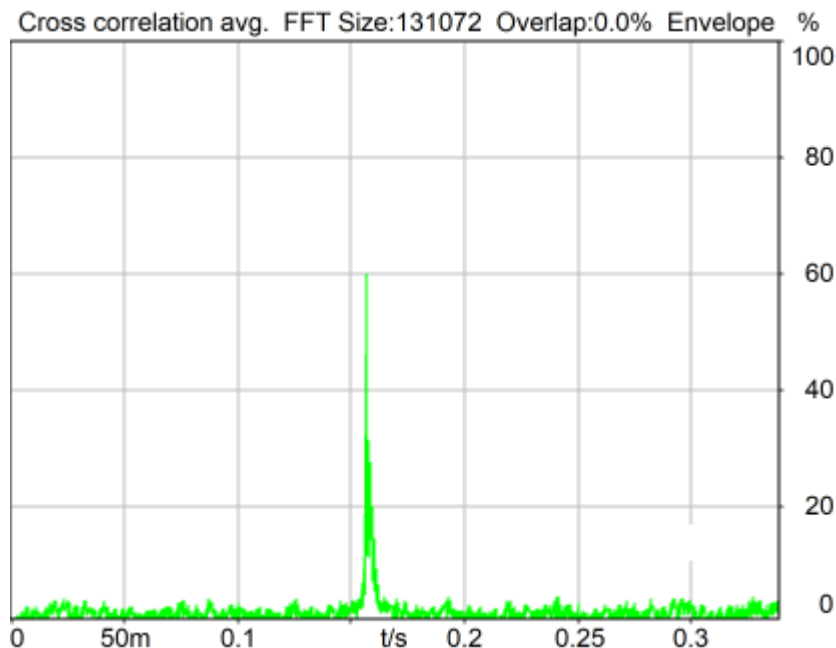
| SMD | Status | Single Value Description | Single Value | Object |
|---|--------|--|--------------|---|
| Overall Receive Delay NB | Done | Delay (Cross) [ms] | 157.5 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.1a Receive Volume Control Performance 8N NB | Not Ok | Corrected Speech Level [dB[SPL]] | 17.36 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.1b Receive Volume Control Performance 2N NB | Ok | Corrected Speech Level [dB[SPL]] | 11.50 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 400 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.61 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.58 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 630 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 31.24 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 800 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.72 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 22.40 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1250 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.85 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1600 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.78 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.83 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.98 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 3150 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.62 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 1000Hz) | 22.40 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 400 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 32.19 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.60 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and | Ok | Distortion (Noise) | 33.73 | LTE Band |

| | | | | |
|---|----|--|-------|---|
| Noise - 630 Hz NB | | [dB], 0.0 dB | | 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 800 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 36.96 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 31.23 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1250 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.07 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1600 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.15 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 42.20 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 44.60 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 3150 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 39.95 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 1250Hz) | 24.07 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.3 Frequency Response 8N FF HANB | Ok | Min. dist. to tolerance scheme [dB], 1747.8 Hz | 1.47 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |
| 5.3 Frequency Response 2N FF HANB | Ok | Min. dist. to tolerance scheme [dB], 1285.9 Hz | 0.35 | LTE Band 66_20QPSK_100RB_0_EVS NB 24.4kbps_CH132322 |

| | |
|---|----|
| Overall Receive Delay NB | 6 |
| 5.1a Receive Volume Control Performance 8N NB | 9 |
| 5.1b Receive Volume Control Performance 2N NB | 11 |
| 5.2 RCV Distortion and Noise - 400 Hz NB | 13 |
| 5.2 RCV Distortion and Noise - 500 Hz NB | 16 |
| 5.2 RCV Distortion and Noise - 630 Hz NB | 19 |
| 5.2 RCV Distortion and Noise - 800 Hz NB | 22 |
| 5.2 RCV Distortion and Noise - 1000 Hz NB | 25 |
| 5.2 RCV Distortion and Noise - 1250 Hz NB | 28 |
| 5.2 RCV Distortion and Noise - 1600 Hz NB | 31 |
| 5.2 RCV Distortion and Noise - 2000 Hz NB | 34 |
| 5.2 RCV Distortion and Noise - 2500 Hz NB | 37 |
| 5.2 RCV Distortion and Noise - 3150 Hz NB | 40 |
| Report - Receive Distortion and Noise (Conversational Gain) | 43 |
| 5.2 RCV Distortion and Noise - 400 Hz NB | 44 |
| 5.2 RCV Distortion and Noise - 500 Hz NB | 47 |
| 5.2 RCV Distortion and Noise - 630 Hz NB | 50 |
| 5.2 RCV Distortion and Noise - 800 Hz NB | 53 |
| 5.2 RCV Distortion and Noise - 1000 Hz NB | 56 |
| 5.2 RCV Distortion and Noise - 1250 Hz NB | 59 |
| 5.2 RCV Distortion and Noise - 1600 Hz NB | 62 |
| 5.2 RCV Distortion and Noise - 2000 Hz NB | 65 |
| 5.2 RCV Distortion and Noise - 2500 Hz NB | 68 |
| 5.2 RCV Distortion and Noise - 3150 Hz NB | 71 |
| Report - Receive Distortion and Noise (Conversational Gain) | 74 |
| 5.3 Frequency Response 8N FF HANB | 75 |
| 5.3 Frequency Response 2N FF HANB | 78 |

Overall Receive Delay NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ Preparation - Delay measurement



Delay (Cross): 157.5 ms

2024/1/19 12:55 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: cssnb1b_r1s.dat

Level adj. Ch1 -90.0 dB

CSSnb1b_R1s.dat - CS-signal with special 1s random noise

NARROWBAND Composite Source Signal RCV P.501 (1 burst) at Channel 2

Pause 0.5 s +

voiced signal + 4000 Hz band limited random noise 1.0 s +

Pause till end of file

Signal level (ch2): -14.7 dBm0 (corresponds to approx. -16.0 dBm0 for a 350 ms CSS considering 101 ms Pause) from 0.5s to 1.544s for 4-k FFT, Hanning window,

75 % overlap in frequency range of 100 to 4000 Hz

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.1: 0.00 dB

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

MECRP Delta Ye 0.0 mm Rotation Delta A 0.0 °
Rotation Delta C 0.0 °

| | | | |
|----------------|---------|--------------------------|-------|
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-----------------|------------|
| Range start | 550.00 ms | Range length | 1950.00 ms |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 131072 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| Delayed channel | None | | |
| Valid range start | -1228.79 ms | Valid range end | 1228.81 ms |

Special Features

Show source signal Source ch.2 Store to variable D_RCV_NB

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

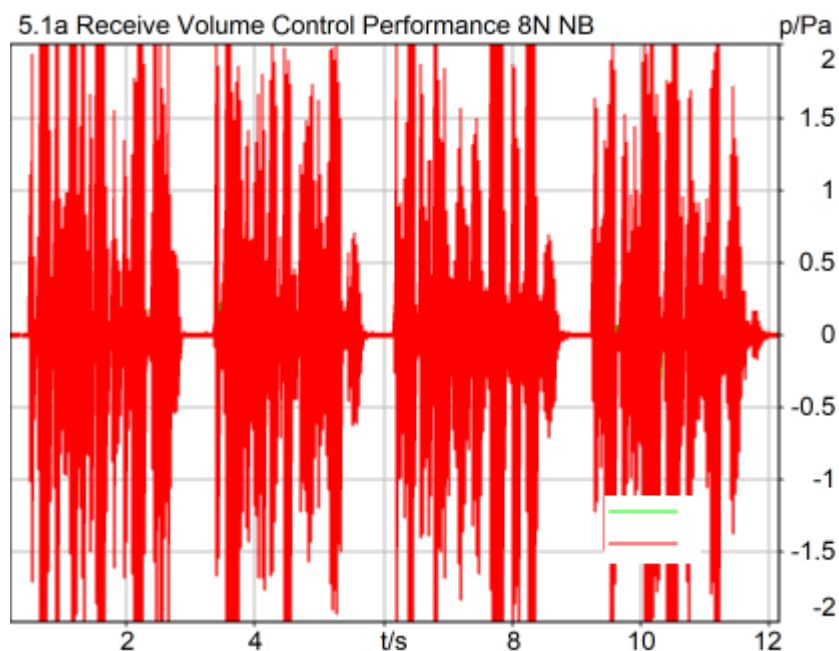
| | | | |
|------------|--------------------|------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |

Gain in 1 0.00 dB
Mic 1 Power Supply Off

Gain in 2 0.00 dB
Mic 2 Power Supply Off

5.1a Receive Volume Control Performance 8N NB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Correction

X - 70

Speech Level RCV: 87.36 dB[SPL], Act.: 85.73%
 Corrected Speech Level: 17.36 dB[SPL] Not Ok

Not Ok

2024/1/22 21:19 ACQUA 5.1.200

Limits

| | lower |
|-------|---------------|
| Run 1 | 18.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
 Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
 Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|---------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Narrow Band | | |
| 15.90 dB | | | |

Special Features

Show source signal Source ch.2
Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

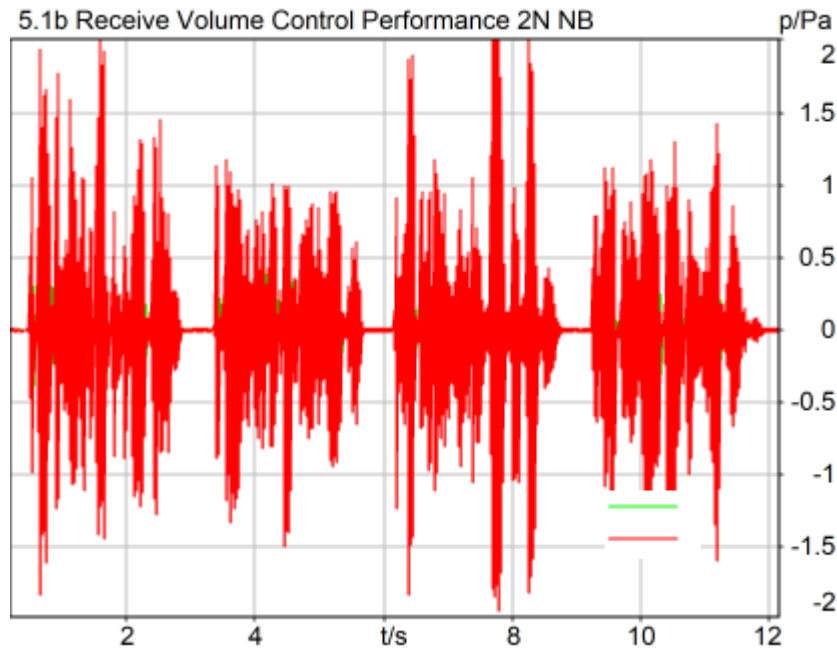
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.1b Receive Volume Control Performance 2N NB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Correction

X - 70

Speech Level RCV: 81.50 dB[SPL], Act.: 85.83%

Corrected Speech Level: 11.50 dB[SPL] Ok

Ok

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Limits

| | lower |
|-------|--------------|
| Run 1 | 6.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|---------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Narrow Band | | |
| 15.90 dB | | | |

Special Features

Show source signal Source ch.2
Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

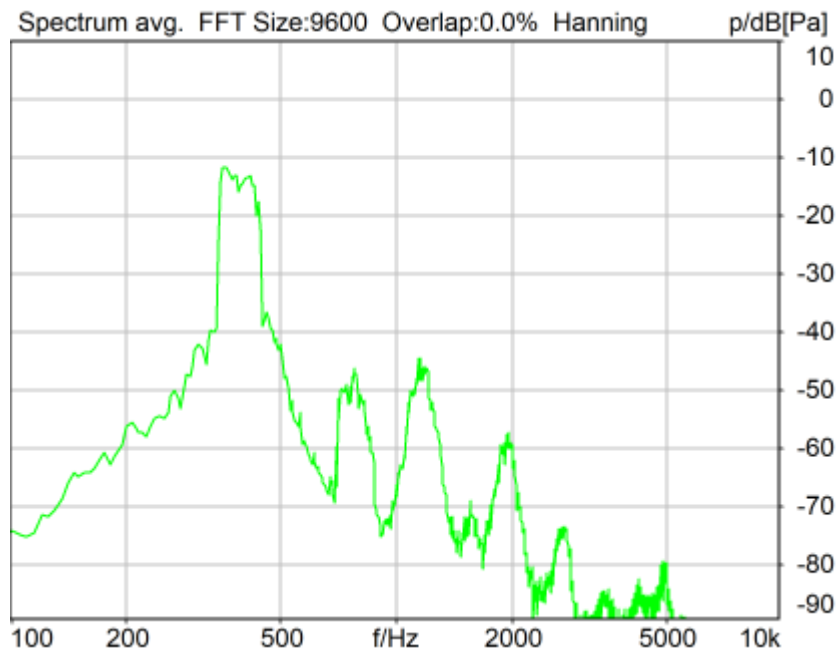
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 400 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.61 dB (3.71%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

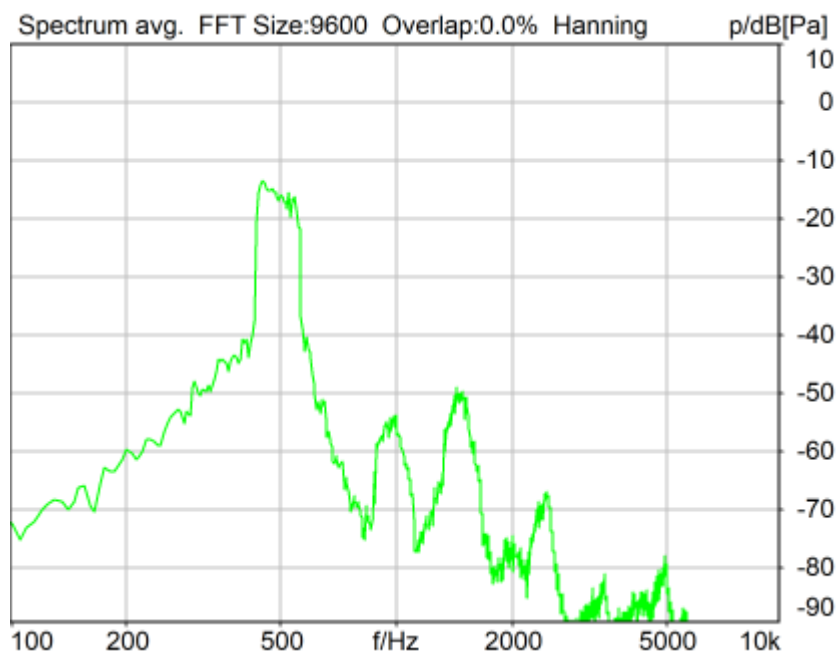
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.58 dB (3.32%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

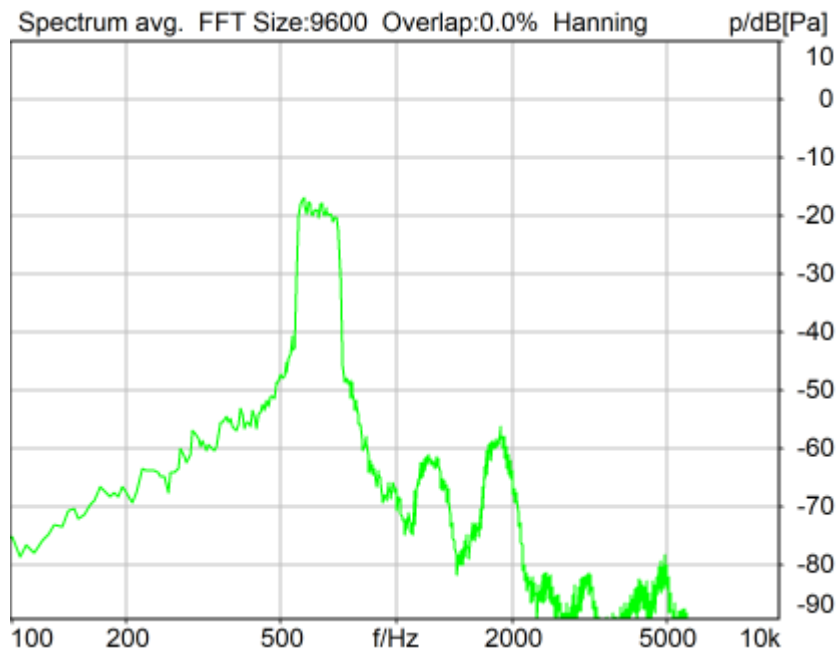
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 31.24 dB (2.74%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

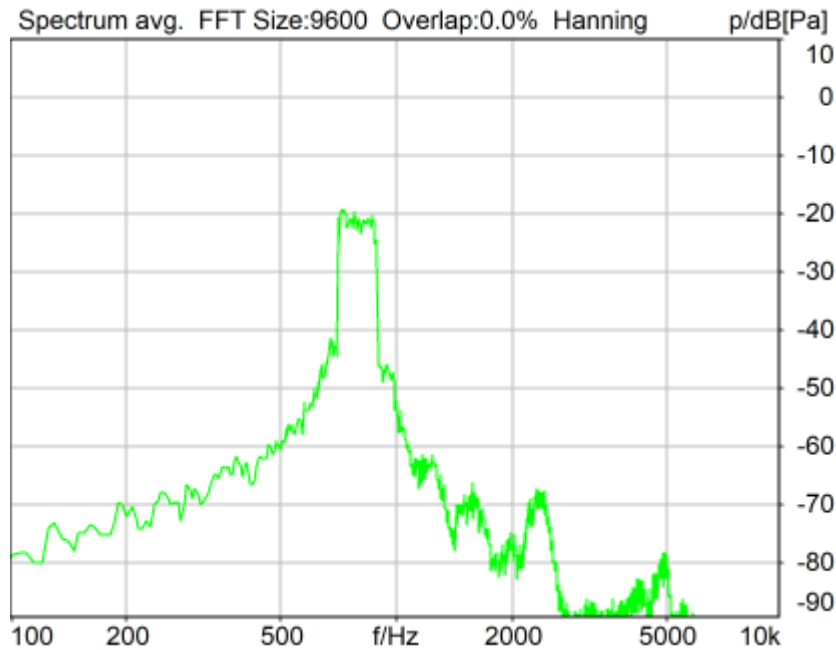
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz NB

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Distortion (Noise) RCV (packed): 27.72 dB (4.11%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

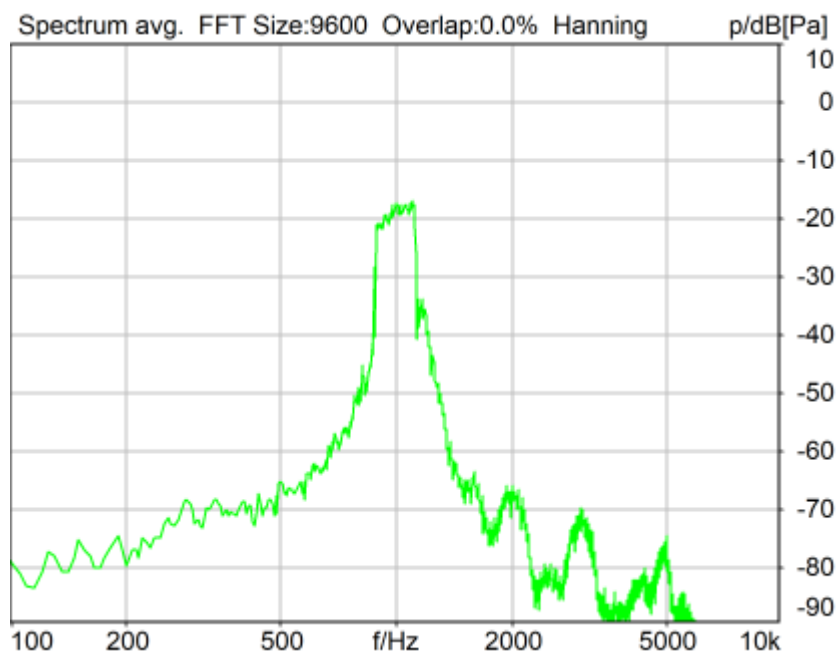
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz NB

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Distortion (Noise) RCV (packed): 22.40 dB (7.59%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 855.0 Hz | Stimulus max. | 1155.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 850.0 Hz |
| Analysis (2) min. | 1160.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

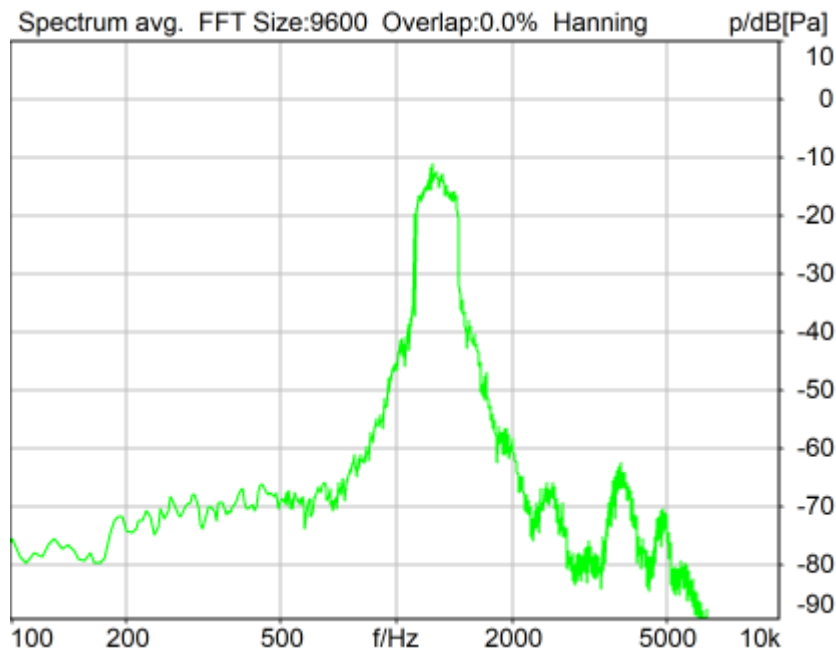
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 23.85 dB (6.42%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1450.0 Hz |
| Stimulus min. | 1085.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1455.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

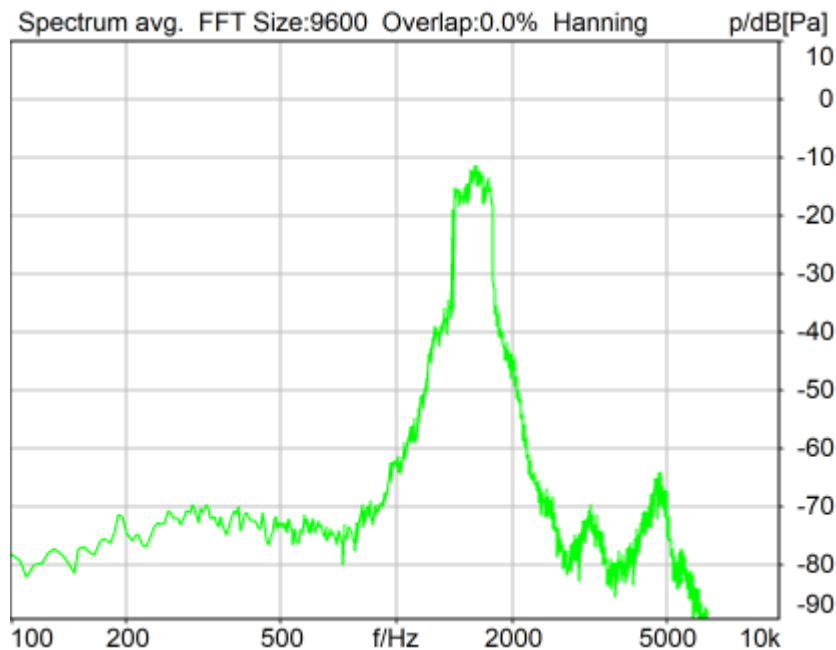
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz NB

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Distortion (Noise) RCV (packed): 24.78 dB (5.76%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1375.0 Hz | Stimulus max. | 1815.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis (2) min. | 1820.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

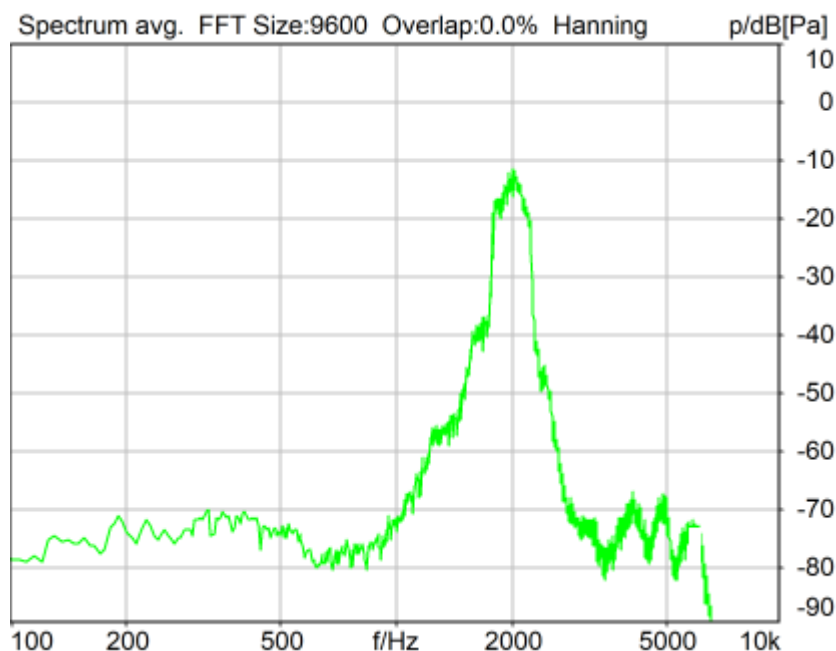
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 24.83 dB (5.73%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2275.0 Hz |
| Stimulus min. | 1745.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2280.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

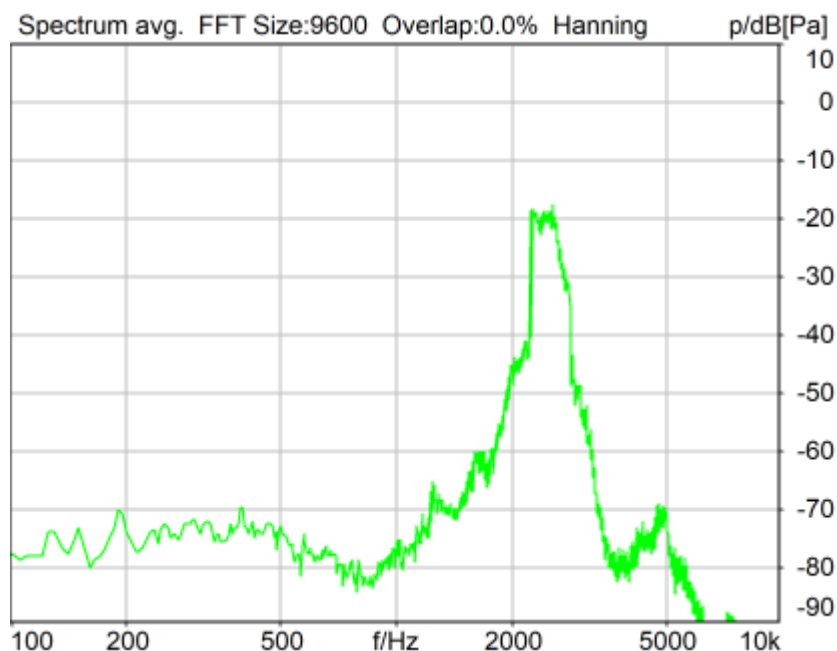
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz NB

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Distortion (Noise) RCV (packed): 23.98 dB (6.33%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2855.0 Hz |
| Stimulus min. | 2205.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2860.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

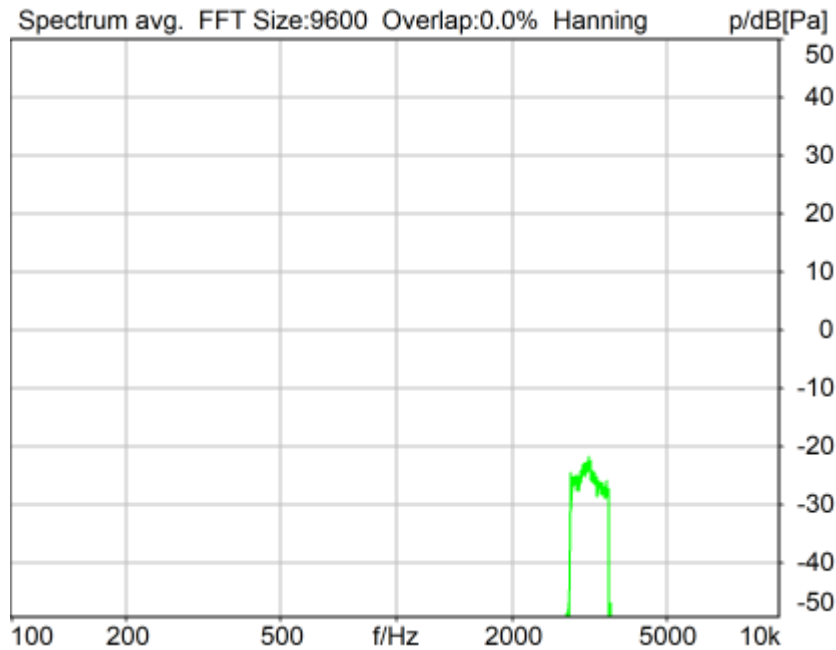
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.62 dB (3.30%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 3585.0 Hz |
| Stimulus min. | 2785.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 3590.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 400Hz | 28.61 dB |
| 2 | 500Hz | 29.58 dB |
| 3 | 630Hz | 31.24 dB |
| 4 | 800Hz | 27.72 dB |
| 5 | 1000Hz | 22.40 dB |
| 6 | 1250Hz | 23.85 dB |
| 7 | 1600Hz | 24.78 dB |
| 8 | 2000Hz | 24.83 dB |
| 9 | 2500Hz | 23.98 dB |
| 10 | 3150Hz | 29.62 dB |

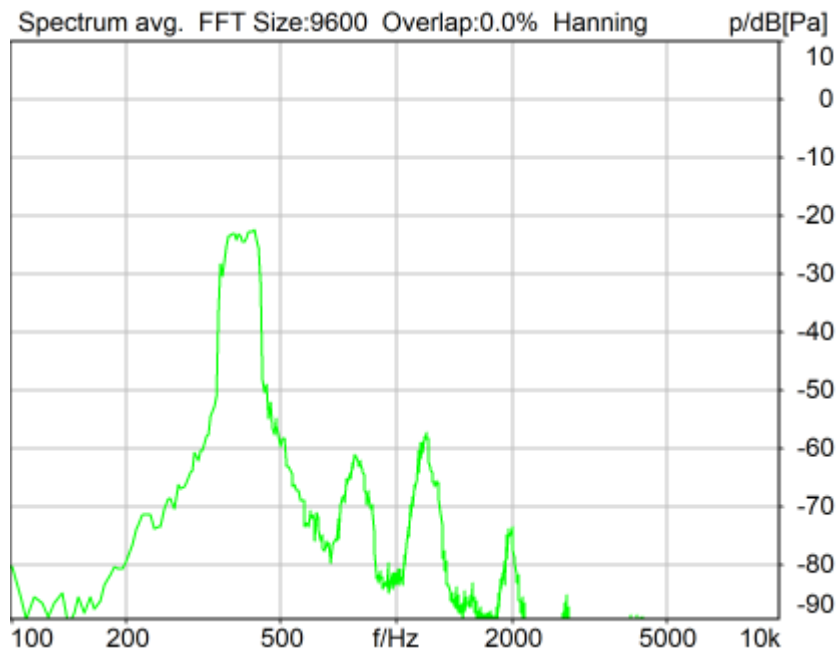
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 22.40dB at 1000Hz.

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5.2 RCV Distortion and Noise - 400 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 32.19 dB (2.46%) Ok

Ok

2024/1/19 14:22 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

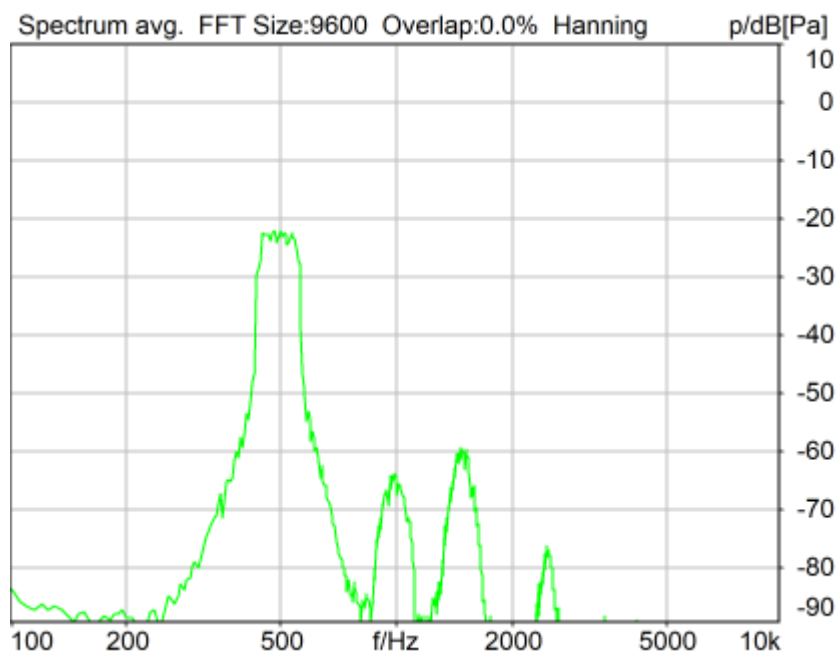
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.60 dB (2.09%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

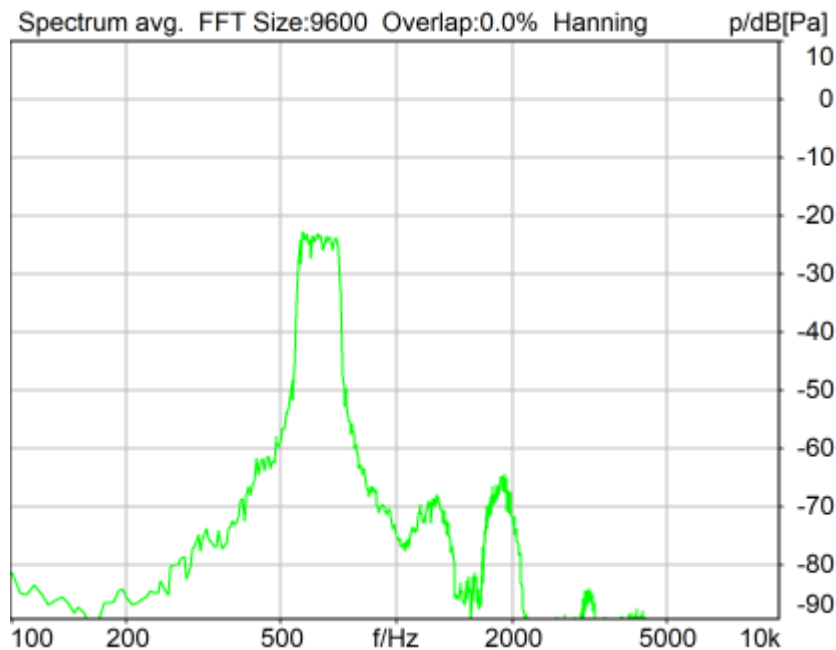
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.73 dB (2.06%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

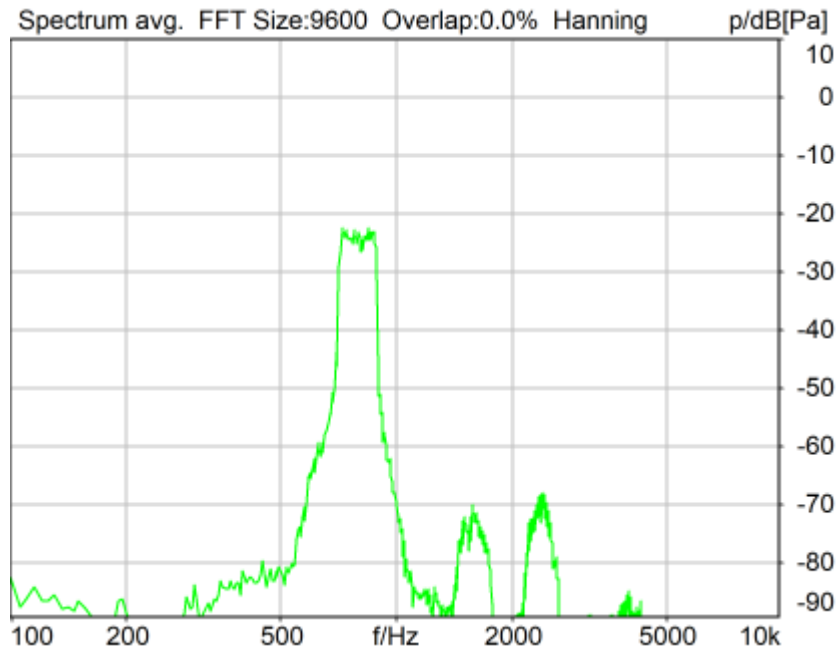
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 36.96 dB (1.42%) Ok

Ok

2024/1/19 14:23 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

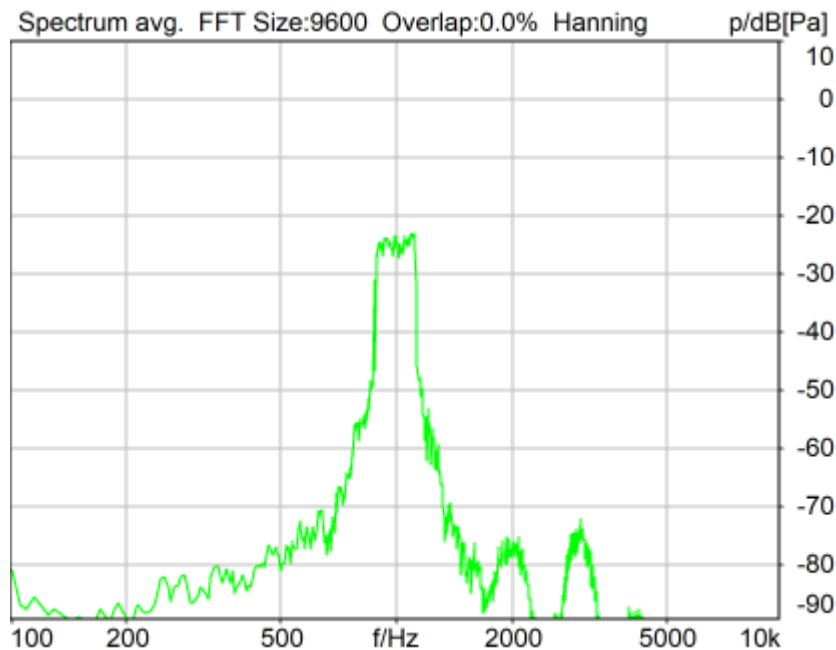
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 31.23 dB (2.75%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1155.0 Hz |
| Stimulus min. | 855.0 Hz | Analysis max. | 850.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1160.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

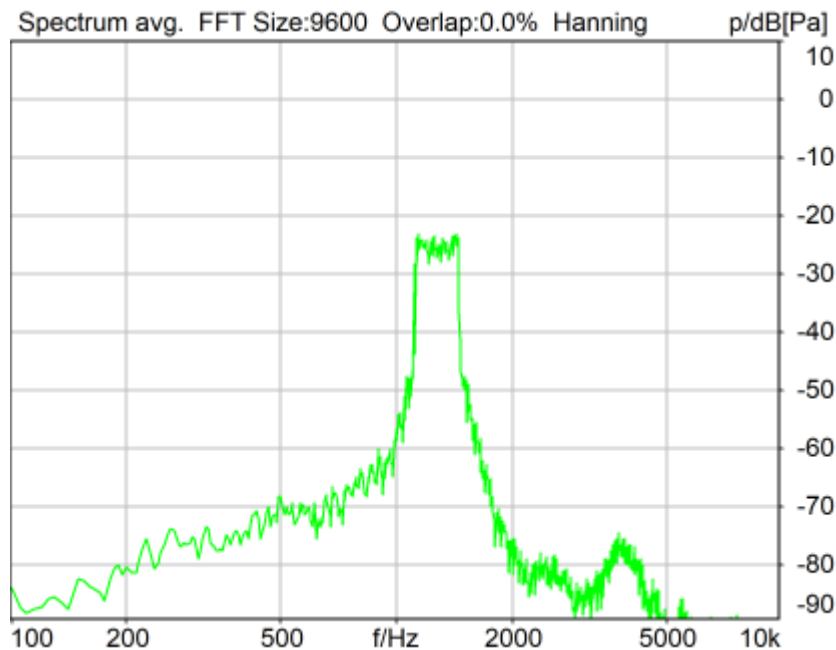
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 24.07 dB (6.26%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1085.0 Hz | Stimulus max. | 1450.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis (2) min. | 1455.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

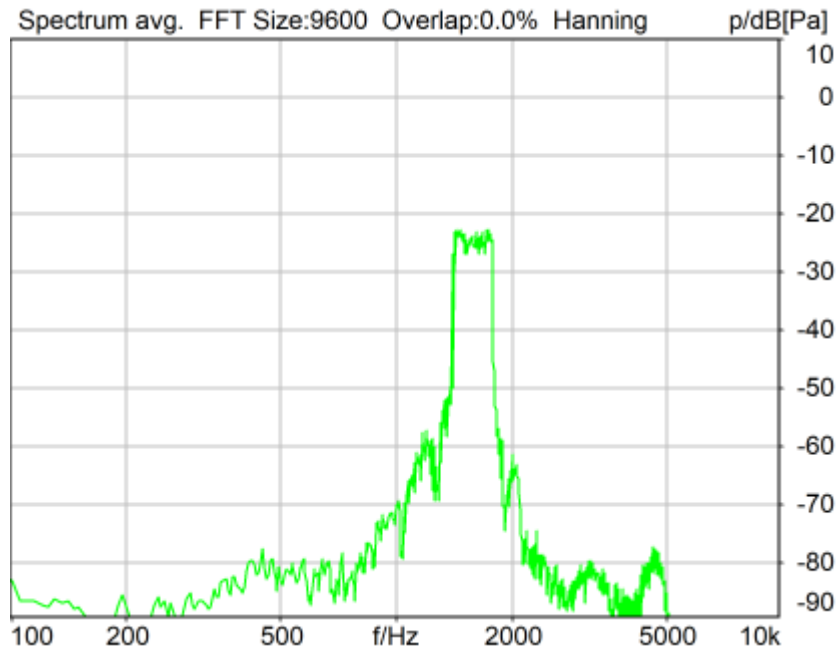
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.15 dB (2.20%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1815.0 Hz |
| Stimulus min. | 1375.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1820.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

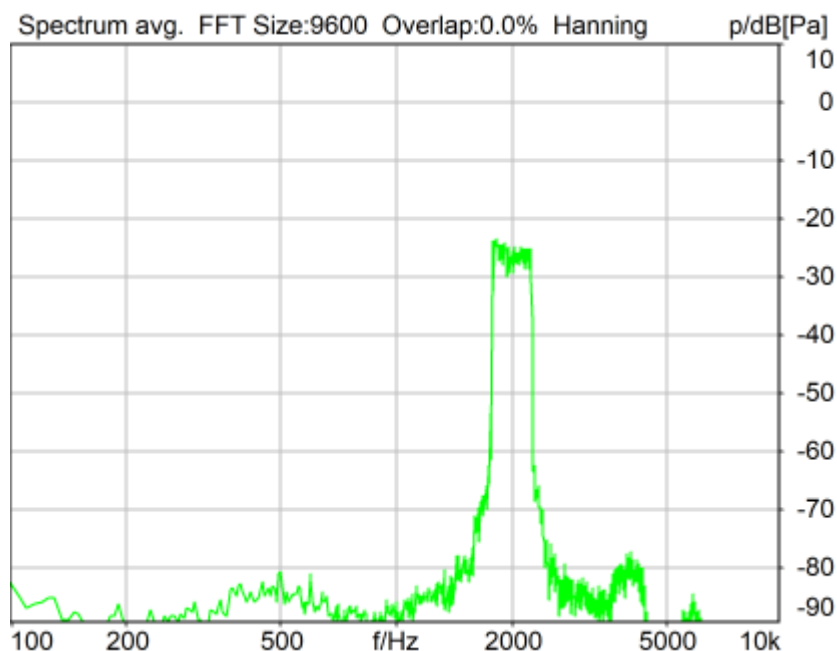
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 42.20 dB (0.78%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2275.0 Hz |
| Stimulus min. | 1745.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2280.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

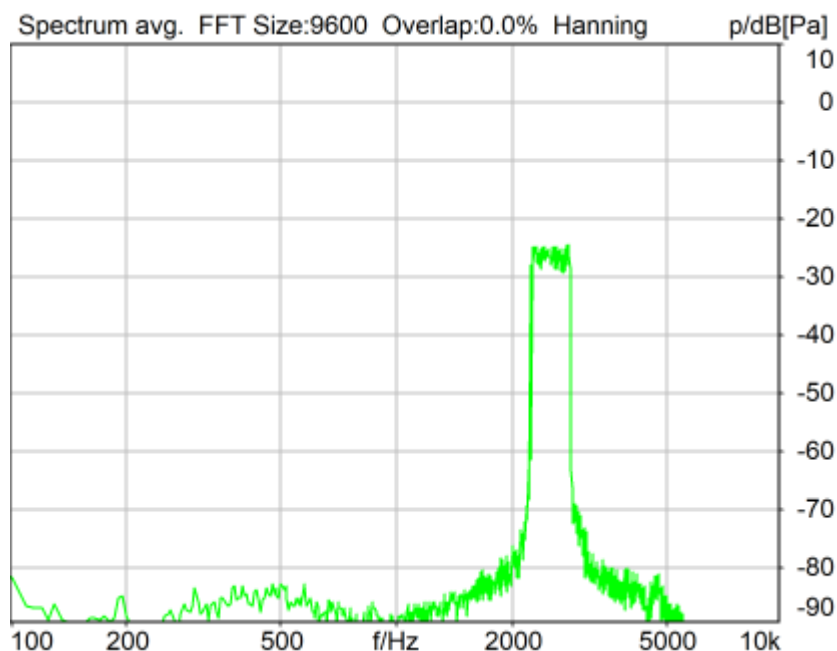
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 44.60 dB (0.59%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2855.0 Hz |
| Stimulus min. | 2205.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2860.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

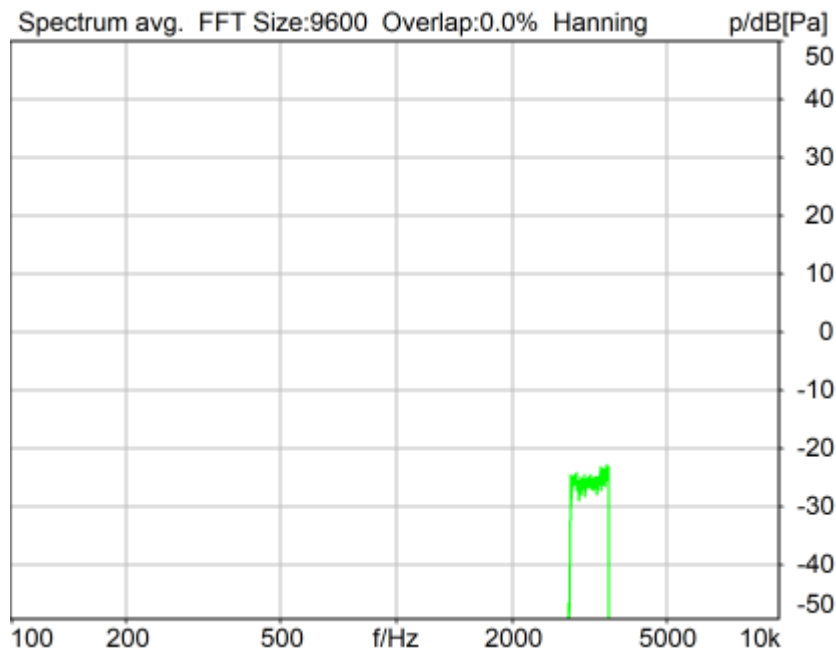
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 39.95 dB (1.01%) Ok

Ok

2024/1/19 14:28 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 3585.0 Hz |
| Stimulus min. | 2785.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 3590.0 Hz | | |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 400Hz | 32.19 dB |
| 2 | 500Hz | 33.60 dB |
| 3 | 630Hz | 33.73 dB |
| 4 | 800Hz | 36.96 dB |
| 5 | 1000Hz | 31.23 dB |
| 6 | 1250Hz | 24.07 dB |
| 7 | 1600Hz | 33.15 dB |
| 8 | 2000Hz | 42.20 dB |
| 9 | 2500Hz | 44.60 dB |
| 10 | 3150Hz | 39.95 dB |

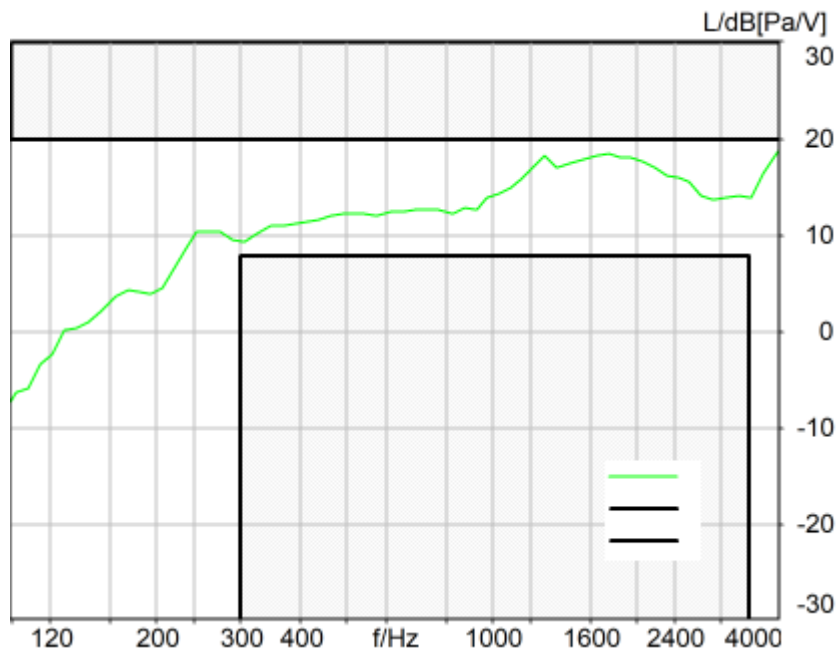
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 24.07dB at 1250Hz.

2024/1/19 14:28 ACQUA

5.3 Frequency Response 8N FF HANB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Absolute minimal distance
1.47 dB at 1747.8 Hz Ok

Ok

2024/1/19 14:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_nb_r16.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

NARROWBAND IEEE-269-2010 Real Speech Signal at Channel 2

Pause 0.5 s +

Real Speech (english, male speaker) 11.5 s, Active Speech Level: -16 dBm0, margin 15.9 dB +

Pause till end of file

Signal level (ch1): -16 dBm0 Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"

Alteration:

0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the and of the file.
filtered with 4.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|--------------------------|-------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hanb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hanb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 4000.0 Hz |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |

| | | | |
|-----------------------|--------------------------|----------------|------|
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

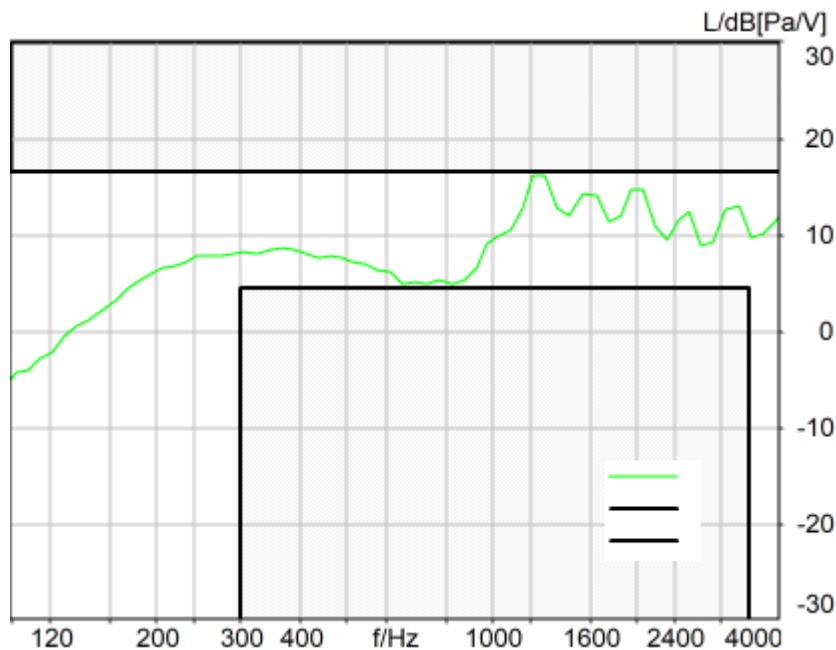
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.3 Frequency Response 2N FF HANB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Absolute minimal distance
0.35 dB at 1285.9 Hz Ok

Ok

2024/1/19 14:29 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_nb_r16.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

NARROWBAND IEEE-269-2010 Real Speech Signal at Channel 2

Pause 0.5 s +

Real Speech (english, male speaker) 11.5 s, Active Speech Level: -16 dBm0, margin 15.9 dB +

Pause till end of file

Signal level (ch1): -16 dBm0 Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"

Alteration:

0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the and of the file.
filtered with 4.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-----------------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hanb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hanb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 4000.0 Hz |

Special Features

Compensate delay 157.5000 ms (D_RCV_NB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |

| | | | |
|-----------------------|--------------------------|----------------|------|
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Measurement Protocol

| | |
|--------------------|--|
| Measurement Object | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| Project | HMD_2322#N159V |

| | |
|------------------------|--------------------|
| Project | TIA-5050 (2018-01) |
| Report Generation Date | 2024/2/2 11:11 |
| Responsible Person | audio |

Status Overview

| SMD | Status | Single Value Description | Single Value | Object |
|---|--------|----------------------------------|--------------|--|
| Overall Receive Delay WB | Done | Delay (Cross) [ms] | 159.2 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.1a Receive Volume Control Performance 8N WB | Not Ok | Corrected Speech Level [dB[SPL]] | 17.32 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.1b Receive Volume Control Performance 2N WB | Ok | Corrected Speech Level [dB[SPL]] | 11.41 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 32.07 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 32.78 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 32.39 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.23 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.58 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.90 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 37.10 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.45 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.44 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 38.27 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 40.60 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.99 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 36.22 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and | Ok | Distortion (Noise) | 30.90 | LTE Band |

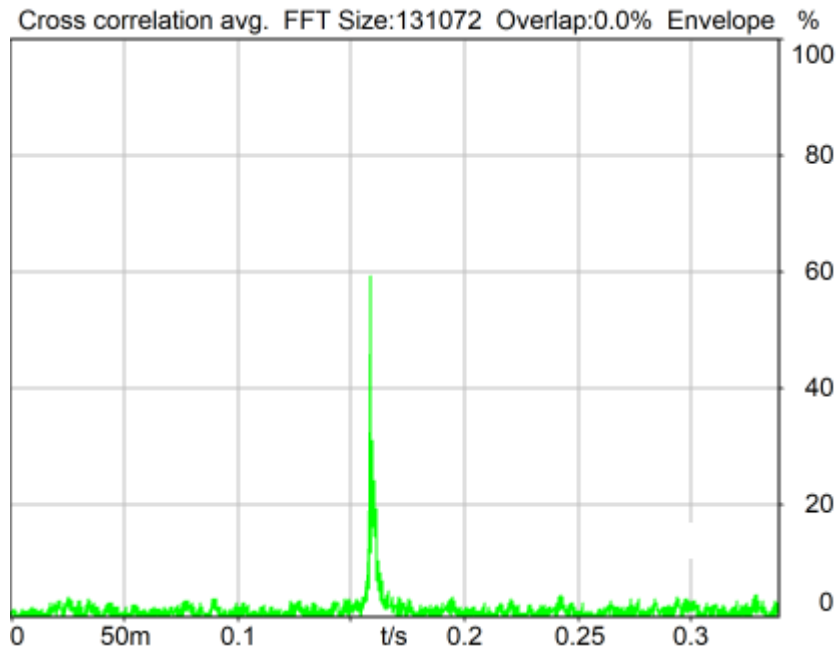
| | | | | |
|---|----|--|-------|--|
| Noise - 5000 Hz WB | | [dB], 0.0 dB | | 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 1600Hz) | 28.44 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 32.19 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.04 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 32.24 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.03 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 35.27 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 36.08 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.60 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.84 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.67 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 26.50 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 40.24 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.09 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 38.50 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 33.73 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 2000Hz) | 26.50 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.3 Frequency Response 8N FF | Ok | Min. dist. to tolerance scheme [dB], 4870.0 Hz | 0.84 | LTE Band 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
| 5.3 Frequency Response 2N | Ok | Min. dist. to tolerance | 0.15 | LTE Band |

| | | |
|----|---------------------------|--|
| FF | scheme [dB], 4870.0 Hz | 66_20QPSK_100RB_0_EVS WB 128kbps_CH132322 |
|----|---------------------------|--|

| | |
|---|-----|
| Overall Receive Delay WB | 7 |
| 5.1a Receive Volume Control Performance 8N WB | 10 |
| 5.1b Receive Volume Control Performance 2N WB | 12 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | 14 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | 17 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | 20 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | 23 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | 26 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | 29 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | 32 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | 35 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | 38 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | 41 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | 44 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | 47 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | 50 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | 53 |
| Report - Receive Distortion and Noise (Conversational Gain) | 56 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | 57 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | 60 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | 63 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | 66 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | 69 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | 72 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | 75 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | 78 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | 81 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | 84 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | 87 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | 90 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | 93 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | 96 |
| Report - Receive Distortion and Noise (Conversational Gain) | 99 |
| 5.3 Frequency Response 8N FF | 100 |
| 5.3 Frequency Response 2N FF | 103 |

Overall Receive Delay WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ Preparation - Delay measurement



Delay (Cross): 159.2 ms

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Unmodified HEAD acoustics Measurement Descriptor

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: csswb1b_r1s.dat

WIDEBAND Composite Source Signal RCV P.501 (1 bursts) at Channel 2

Pause 0.5 s +
voiced signal + 8000 Hz band limited random noise 1.0 s +
Pause till end of file

Signal level (ch2): -14.7 dBm0 (corresponds to approx. -16.0 dBm0 for a 350 ms CSS considering 101 ms Pause) from 0.5s to 1.544s for 4-k FFT, Hanning window,
75 % overlap in frequency range of 100 to 8000 Hz

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.1: 0.00 dB
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| | | Delta A | 0.0 ° |

| | | | |
|----------|---------|--------------------------|-------|
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -3.2 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-----------------|------------|
| Range start | 550.00 ms | Range length | 1950.00 ms |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | Overlap | 0 % |
| FFT size | 131072 | Smooth | Off |
| Window function. | Hanning | | |
| Delayed channel | None | | |
| Valid range start | -1228.79 ms | Valid range end | 1228.81 ms |

Special Features

Show source signal Source ch.2 Store to variable D_RCV_WB

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

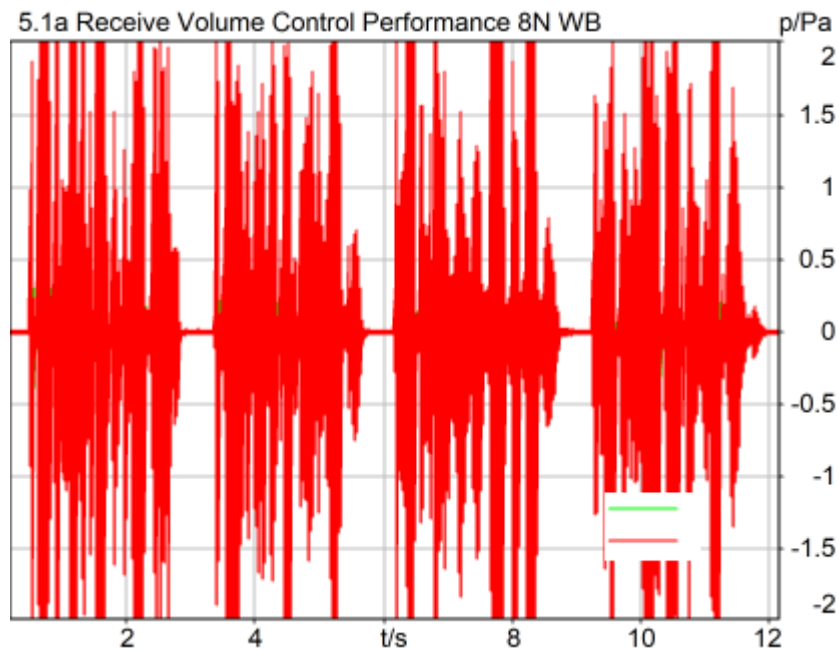
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.1a Receive Volume Control Performance 8N WB

TIA-5050 (2018-01) \ Measurements \ Wideband



Correction

X - 70

Speech Level RCV: 87.32 dB[SPL], Act.: 86.06%
Corrected Speech Level: 17.32 dB[SPL] Not Ok

Not Ok

2024/1/22 21:17 ACQUA 5.1.200

Limits

| | lower |
|-------|---------------|
| Run 1 | 18.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|----------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Super Wideband | | |

15.90 dB

Special Features

Show source signal Source ch.2
Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

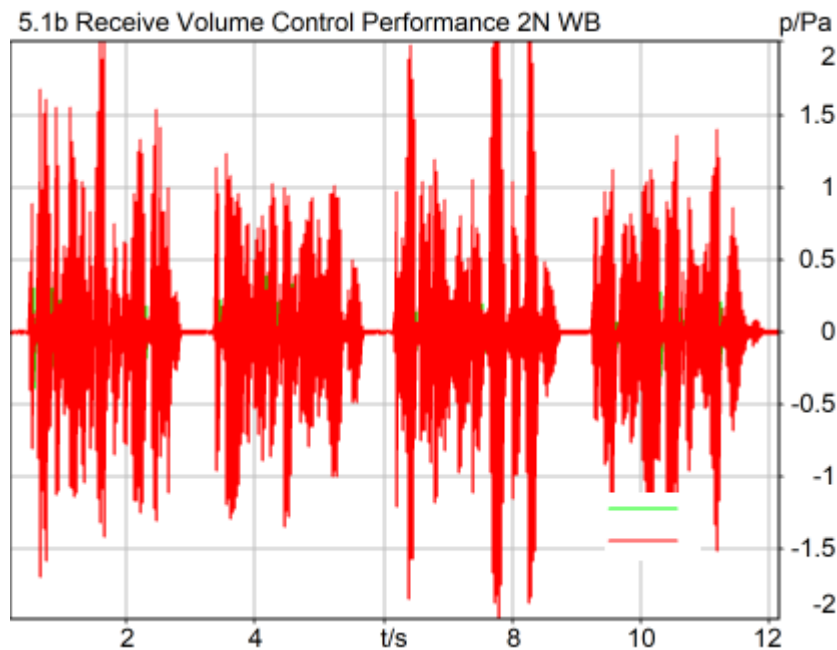
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.1b Receive Volume Control Performance 2N WB

TIA-5050 (2018-01) \ Measurements \ Wideband



Correction

X - 70

Speech Level RCV: 81.41 dB[SPL], Act.: 85.82%

Corrected Speech Level: 11.41 dB[SPL] Ok

Ok

2024/1/22 21:15 ACQUA 5.1.200

Limits

| | lower |
|-------|--------------|
| Run 1 | 6.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|----------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Super Wideband | | |

15.90 dB

Special Features

Show source signal Source ch.2
Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

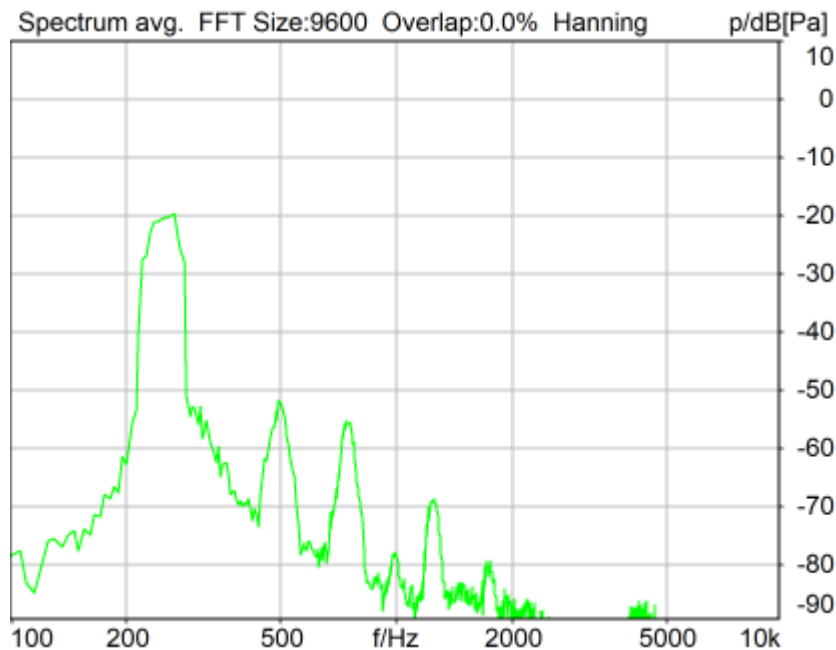
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 32.07 dB (2.49%) Ok

Ok

2024/1/19 14:09 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_250hz_sr20dbm0_v02.dat.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 315.0 Hz |
| Stimulus min. | 190.0 Hz | Analysis max. | 185.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 320.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

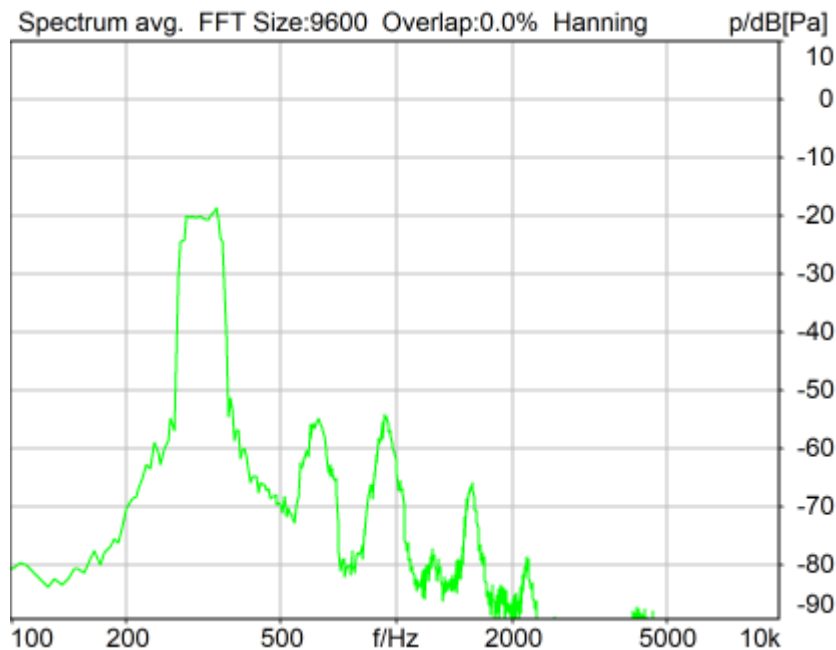
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 315 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 32.78 dB (2.30%) Ok

Ok

2024/1/19 14:09 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_315hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 390.0 Hz |
| Stimulus min. | 245.0 Hz | Analysis max. | 240.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 395.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_315Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

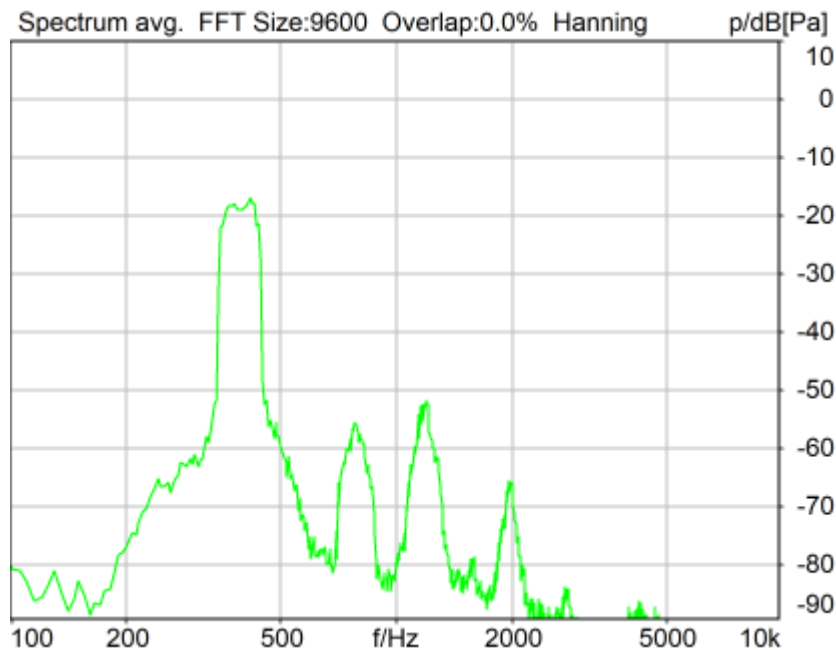
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 400 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 32.39 dB (2.40%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

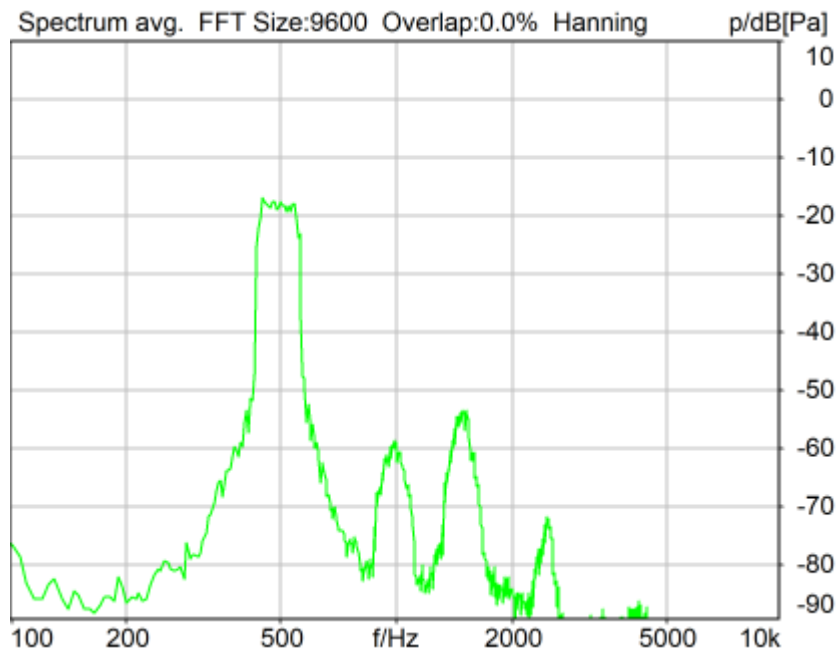
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz WB

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Distortion (Noise) RCV (packed): 33.23 dB (2.18%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

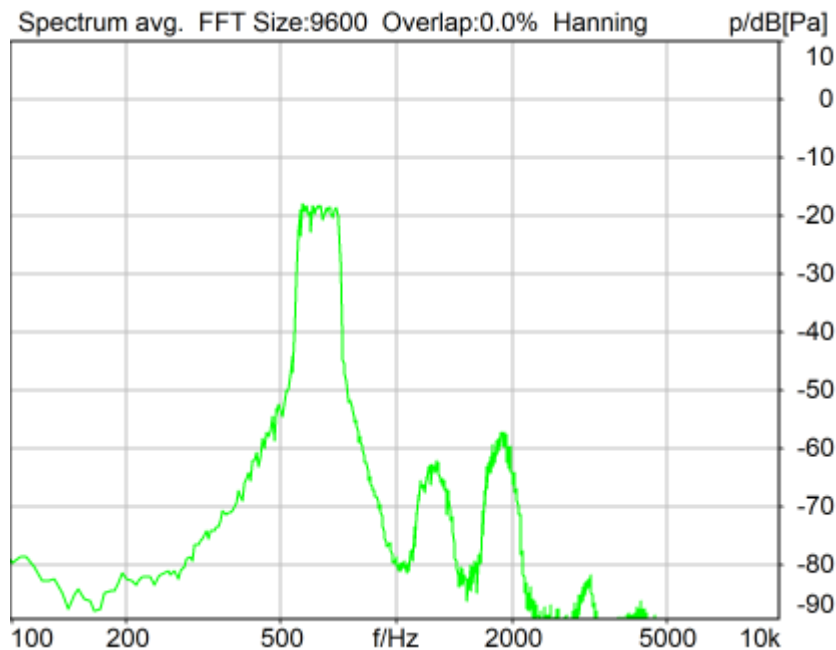
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz WB

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Distortion (Noise) RCV (packed): 33.58 dB (2.09%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

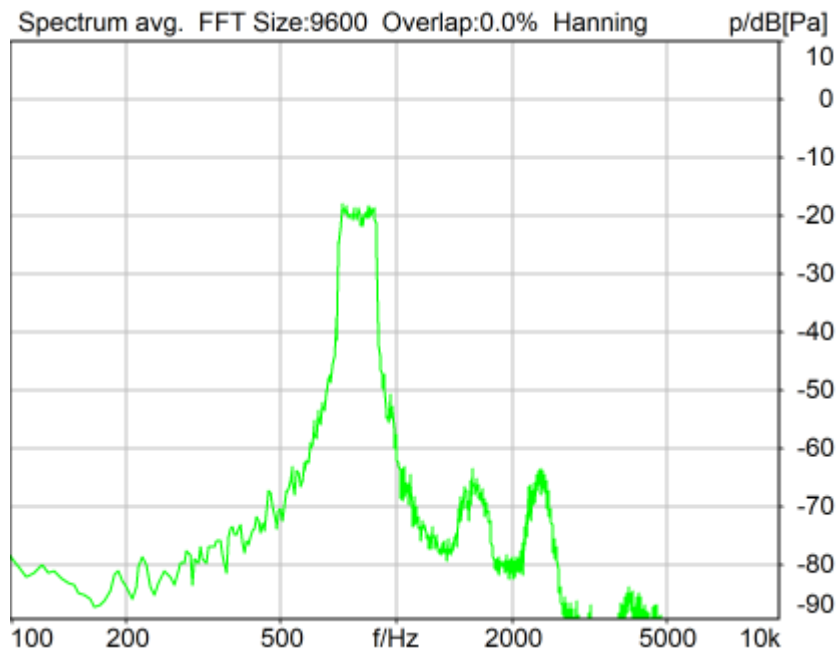
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz WB

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Distortion (Noise) RCV (packed): 33.90 dB (2.02%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

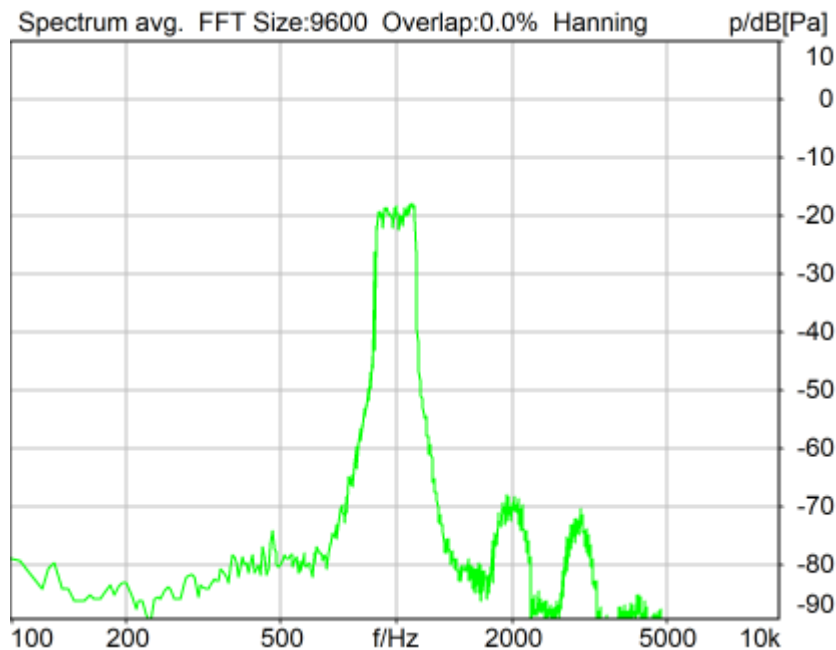
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz WB

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Distortion (Noise) RCV (packed): 37.10 dB (1.40%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1155.0 Hz |
| Stimulus min. | 855.0 Hz | Analysis max. | 850.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1160.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

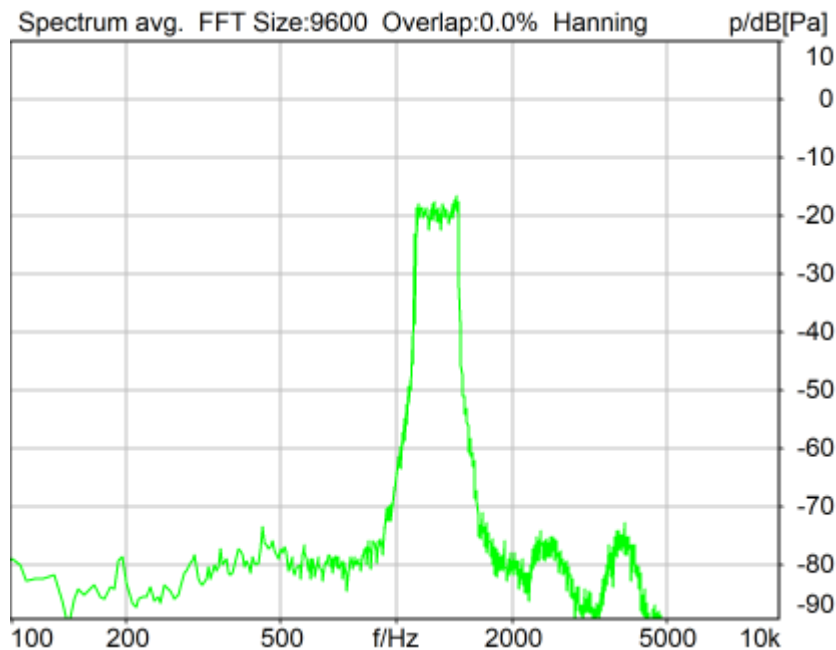
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.45 dB (3.78%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1085.0 Hz | Stimulus max. | 1450.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis (2) min. | 1455.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

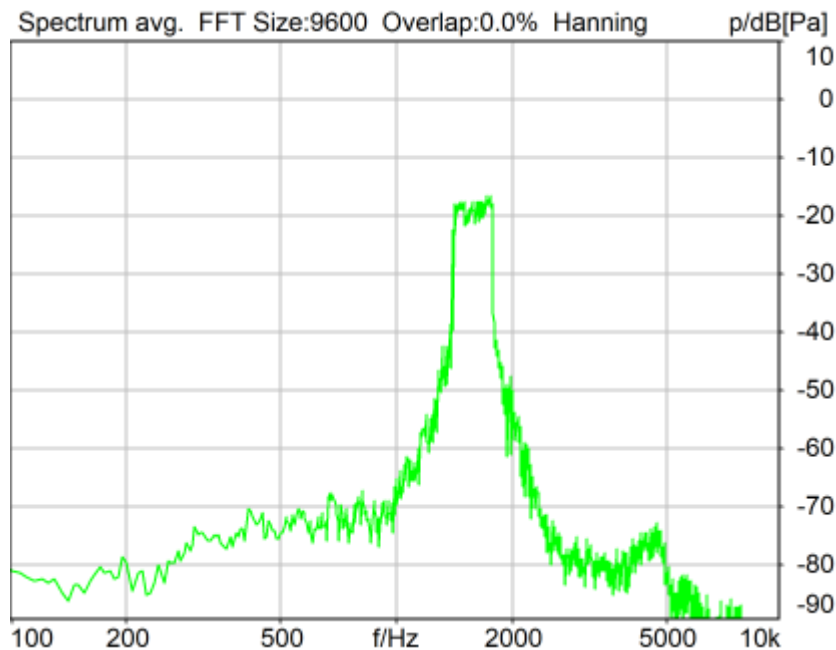
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.44 dB (3.79%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1375.0 Hz | Stimulus max. | 1815.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis (2) min. | 1820.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

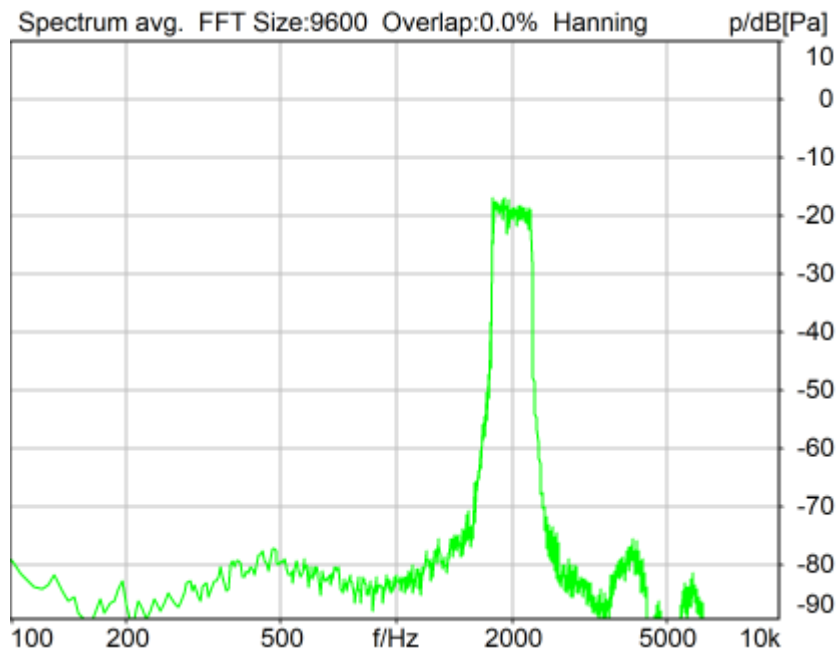
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 38.27 dB (1.22%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2275.0 Hz |
| Stimulus min. | 1745.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2280.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

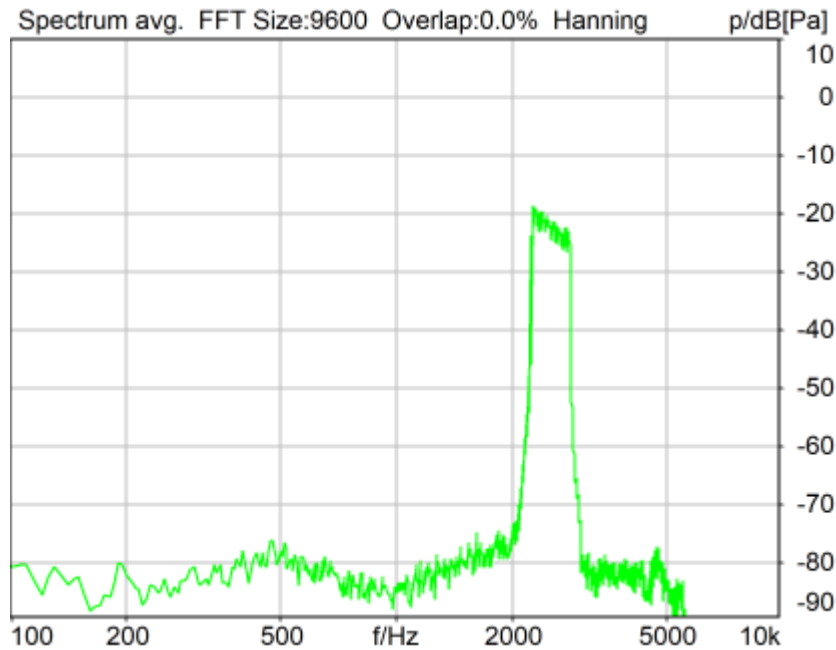
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 40.60 dB (0.93%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2855.0 Hz |
| Stimulus min. | 2205.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2860.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

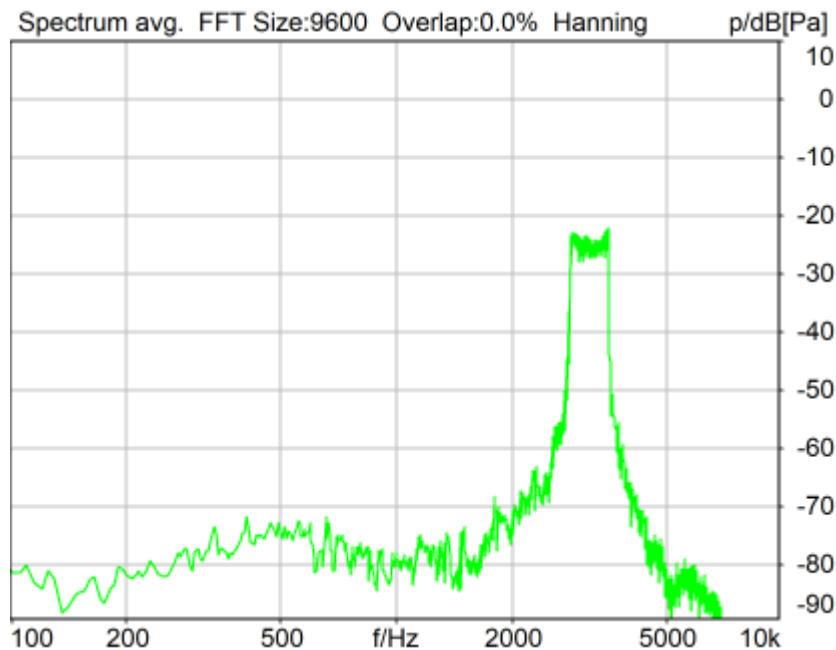
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz WB

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Distortion (Noise) RCV (packed): 29.99 dB (3.17%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 3585.0 Hz |
| Stimulus min. | 2785.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 3590.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

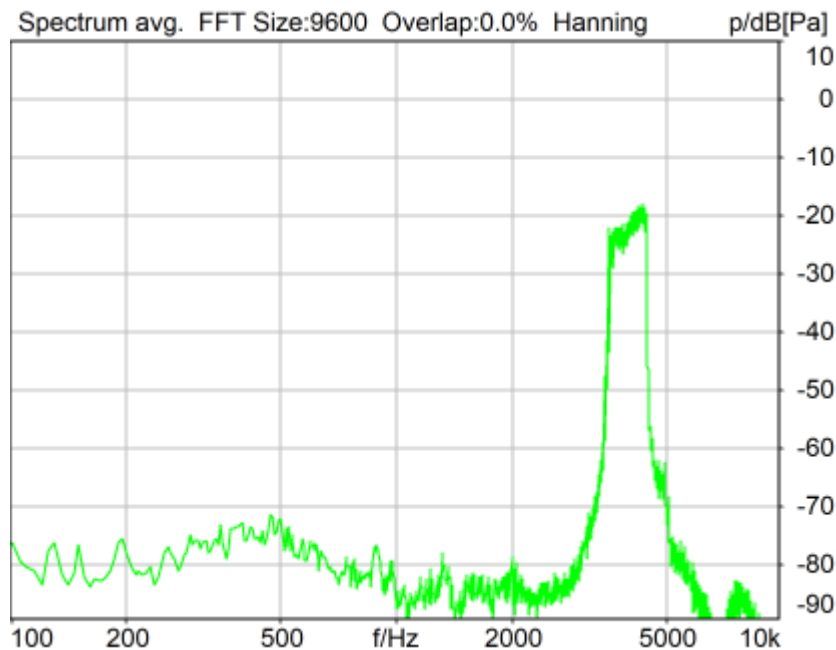
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 4000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 36.22 dB (1.54%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_4000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 4500.0 Hz |
| Stimulus min. | 3515.0 Hz | Analysis max. | 3510.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 4505.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_4000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

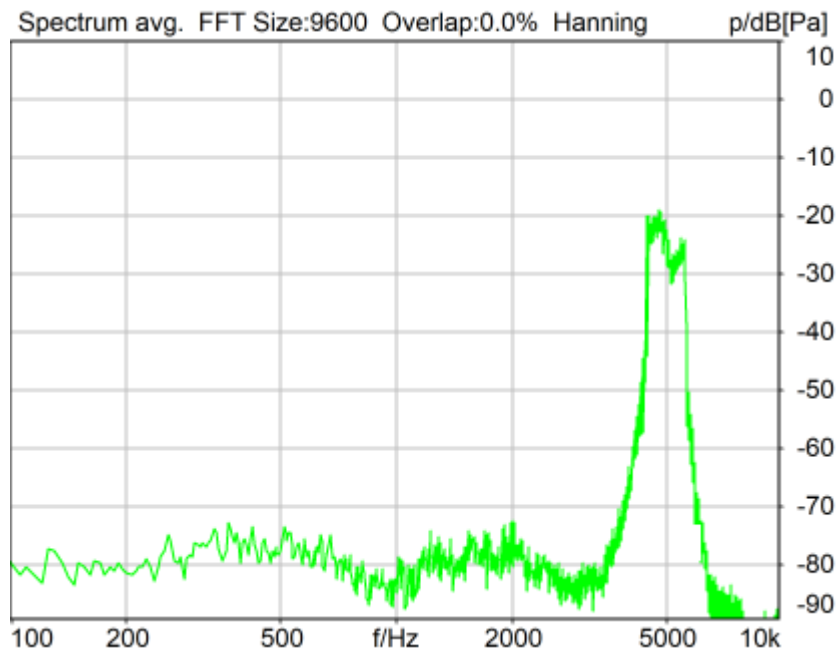
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 5000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 30.90 dB (2.85%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_5000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 5660.0 Hz |
| Stimulus min. | 4430.0 Hz | Analysis max. | 4425.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 5665.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_5000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 250Hz | 32.07 dB |
| 2 | 315Hz | 32.78 dB |
| 3 | 400Hz | 32.39 dB |
| 4 | 500Hz | 33.23 dB |
| 5 | 630Hz | 33.58 dB |
| 6 | 800Hz | 33.90 dB |
| 7 | 1000Hz | 37.10 dB |
| 8 | 1250Hz | 28.45 dB |
| 9 | 1600Hz | 28.44 dB |
| 10 | 2000Hz | 38.27 dB |
| 11 | 2500Hz | 40.60 dB |
| 12 | 3150Hz | 29.99 dB |
| 13 | 4000Hz | 36.22 dB |
| 14 | 5000Hz | 30.90 dB |

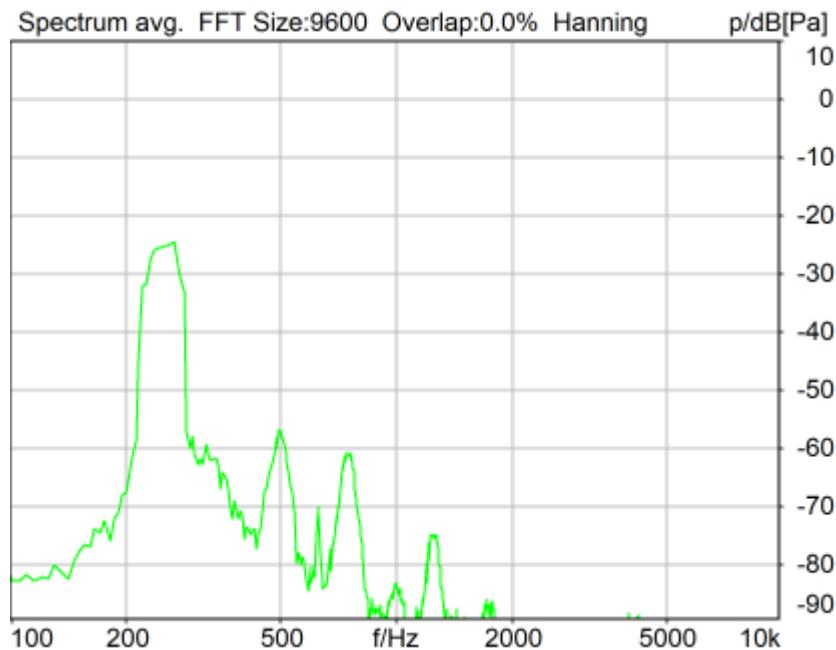
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 28.44dB at 1600Hz.

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5.2 RCV Distortion and Noise - 250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 32.19 dB (2.46%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_250hz_sr20dbm0_v02.dat.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 315.0 Hz |
| Stimulus min. | 190.0 Hz | Analysis max. | 185.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 320.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

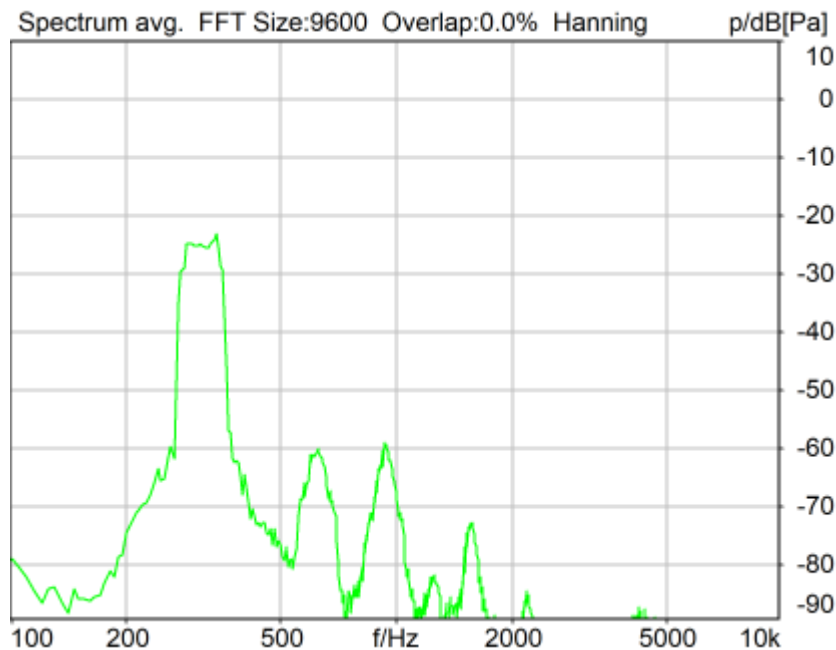
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 315 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.04 dB (2.23%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_315hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 390.0 Hz |
| Stimulus min. | 245.0 Hz | Analysis max. | 240.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 395.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_315Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

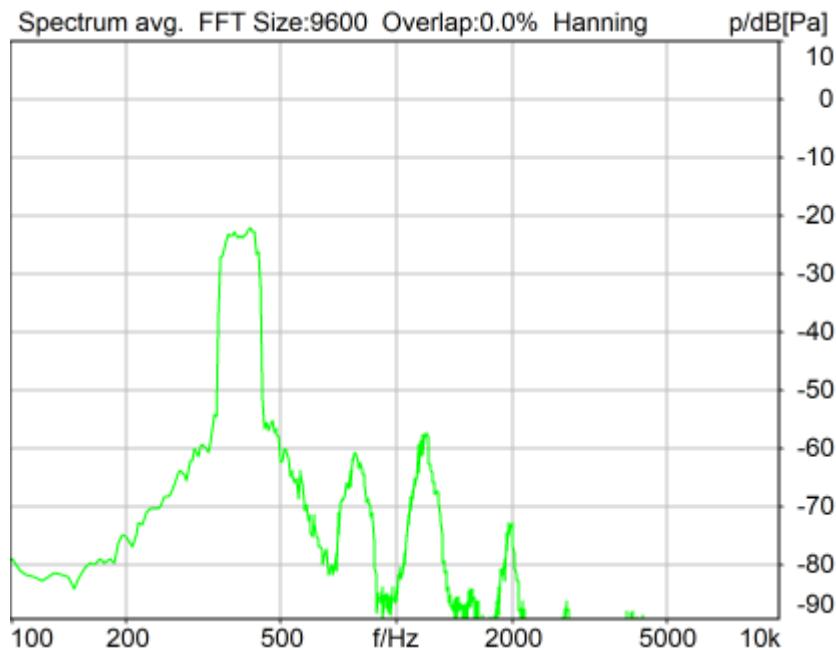
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 400 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 32.24 dB (2.44%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

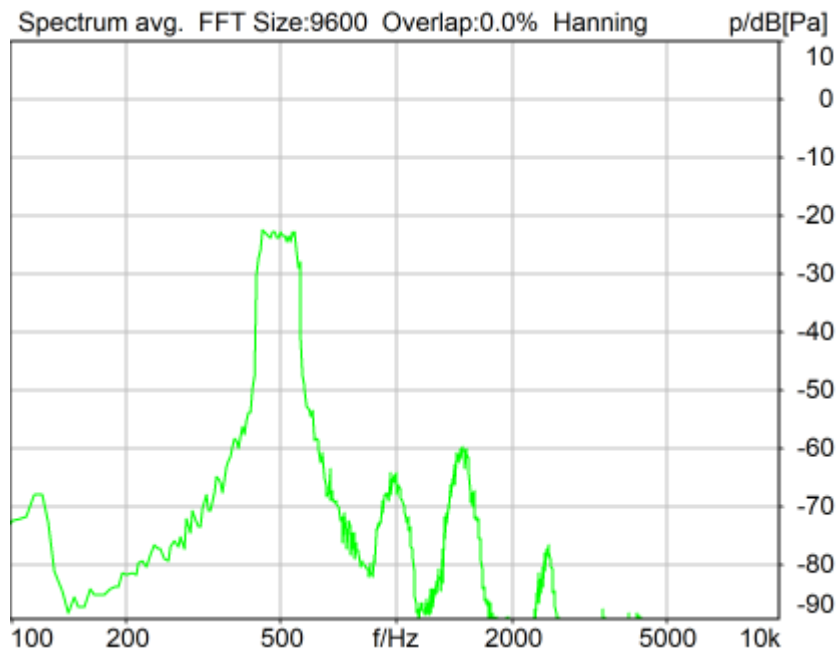
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.03 dB (2.23%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

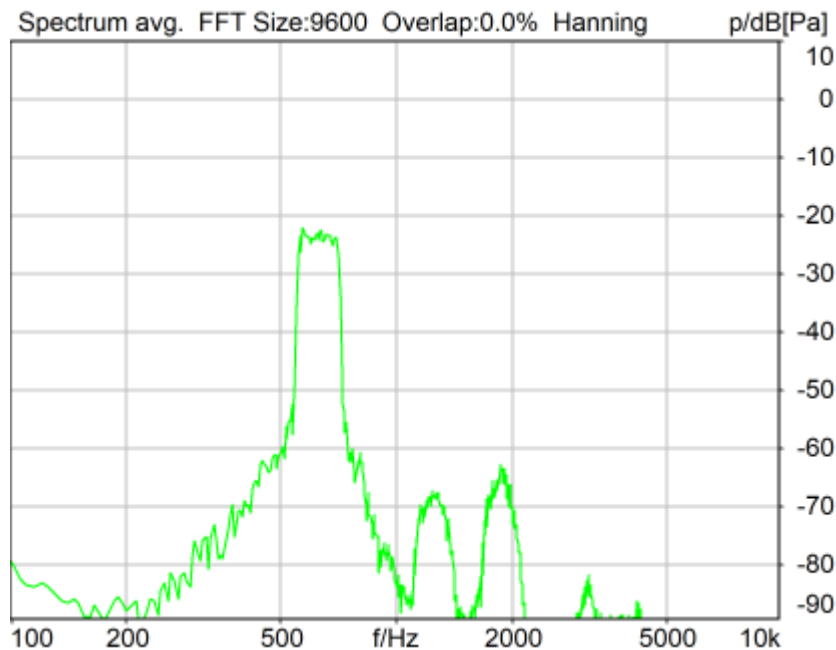
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 35.27 dB (1.72%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

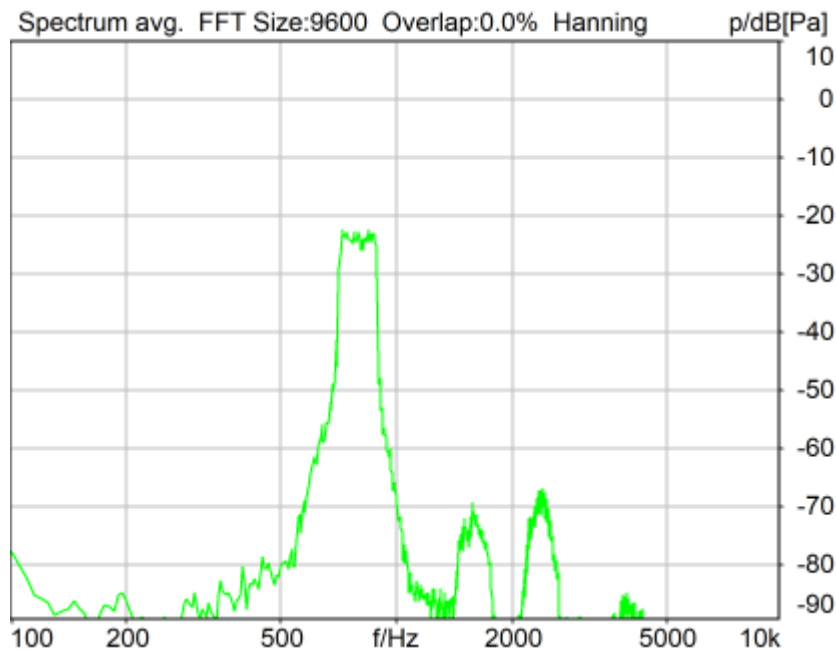
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 36.08 dB (1.57%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

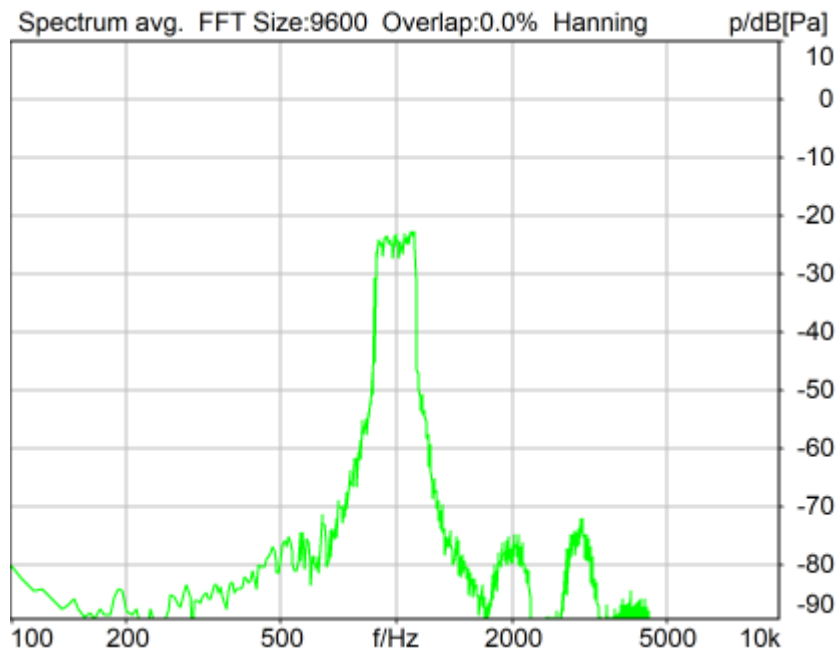
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.60 dB (2.09%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1155.0 Hz |
| Stimulus min. | 855.0 Hz | Analysis max. | 850.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1160.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

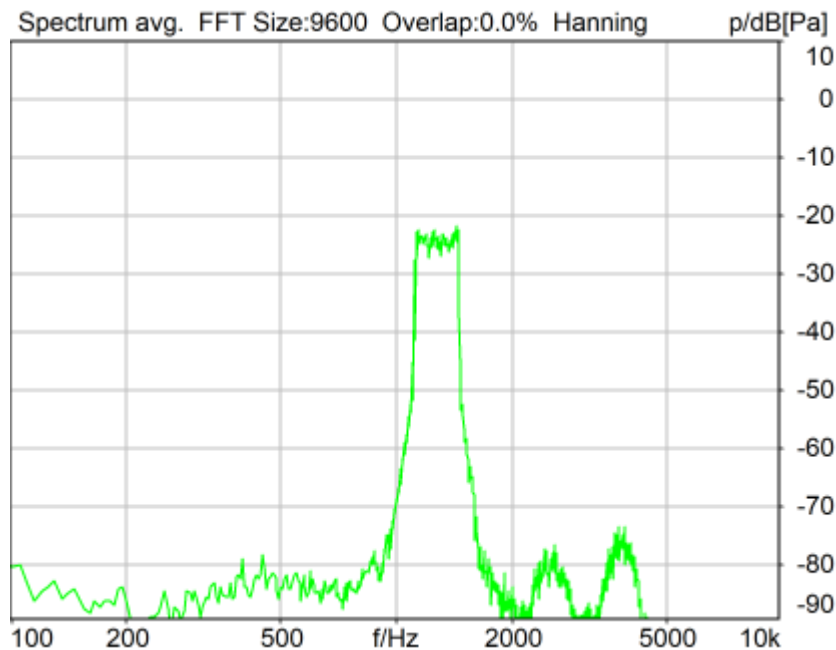
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz WB

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Distortion (Noise) RCV (packed): 28.84 dB (3.61%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1085.0 Hz | Stimulus max. | 1450.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis (2) min. | 1455.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

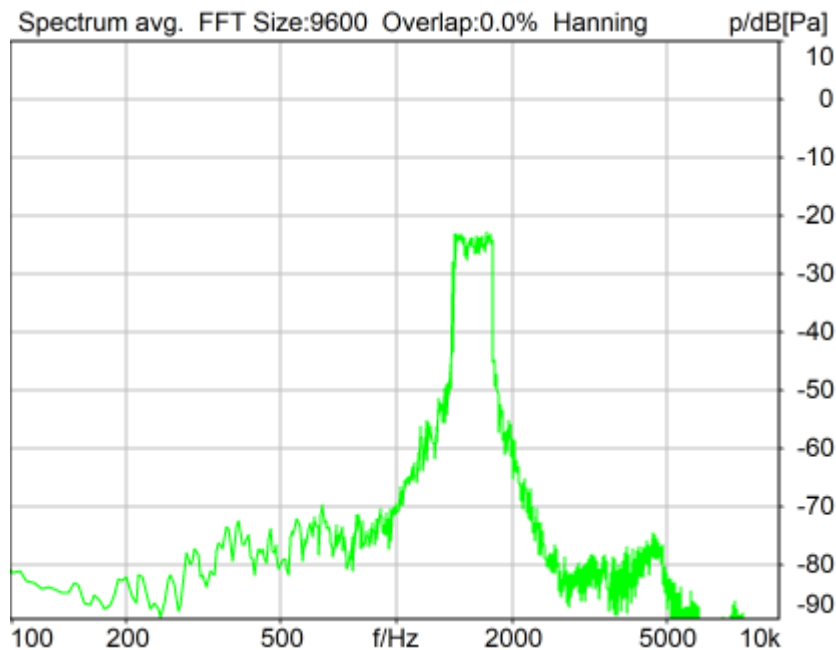
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 28.67 dB (3.69%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1815.0 Hz |
| Stimulus min. | 1375.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1820.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

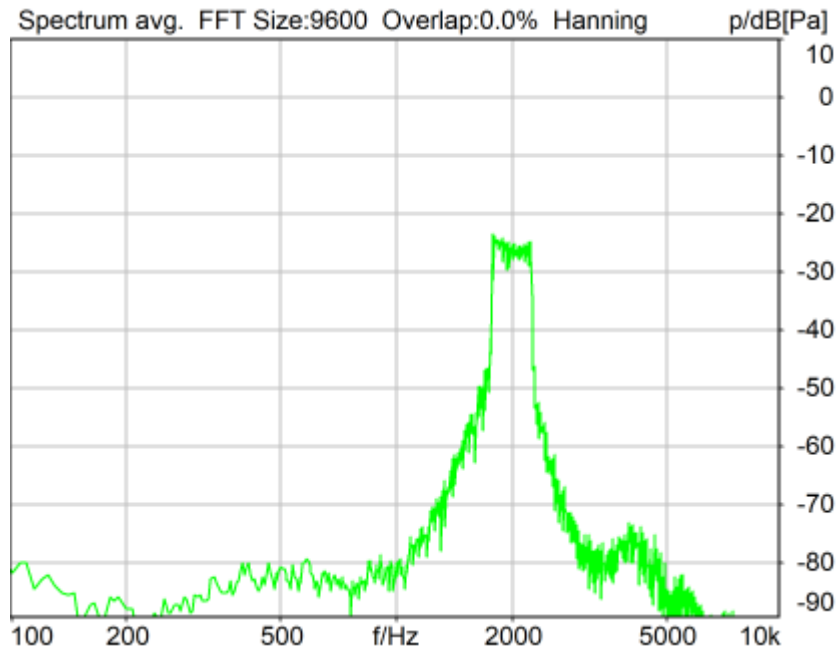
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 26.50 dB (4.73%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1745.0 Hz | Stimulus max. | 2275.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis (2) min. | 2280.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

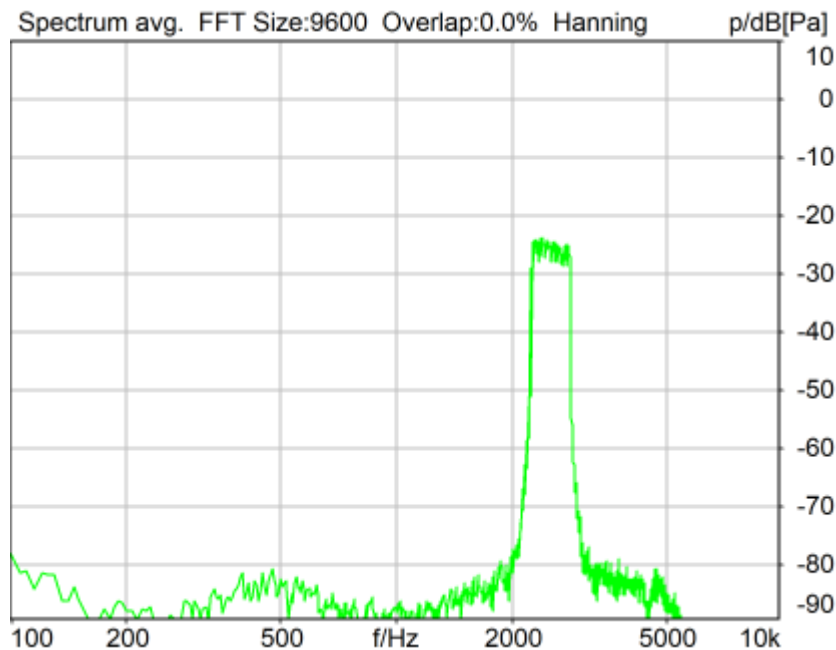
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 40.24 dB (0.97%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 2855.0 Hz |
| Stimulus min. | 2205.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 2860.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

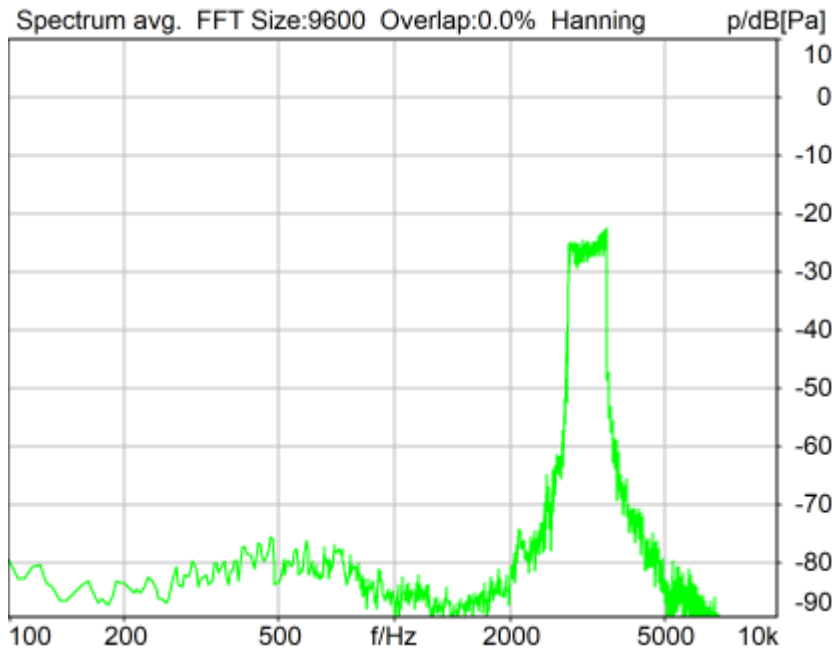
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.09 dB (2.22%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 3585.0 Hz |
| Stimulus min. | 2785.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 3590.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

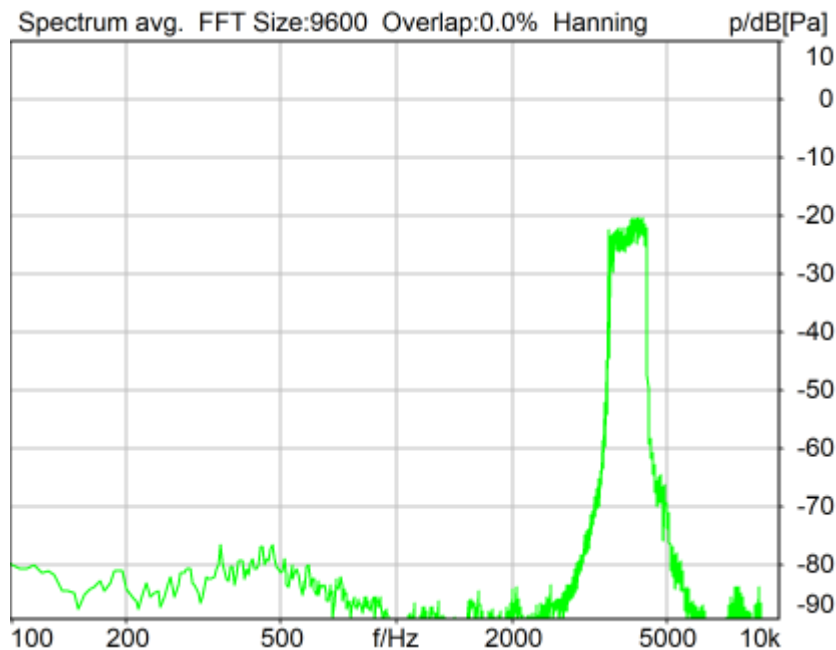
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 4000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 38.50 dB (1.19%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_4000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 4500.0 Hz |
| Stimulus min. | 3515.0 Hz | Analysis max. | 3510.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 4505.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_4000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

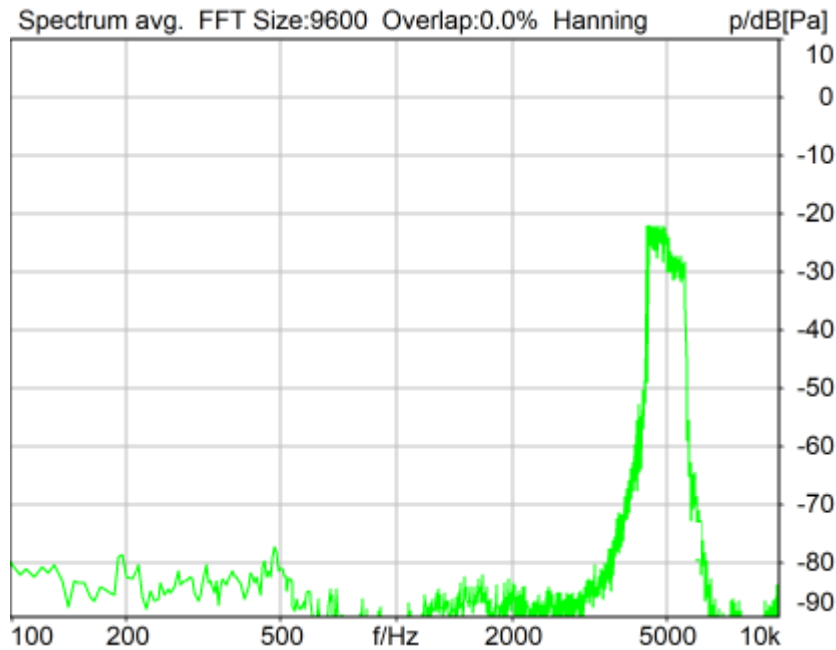
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 5000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 33.73 dB (2.06%) Ok

Ok

2024/1/19 14:01 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_5000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 5660.0 Hz |
| Stimulus min. | 4430.0 Hz | Analysis max. | 4425.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 5665.0 Hz | | |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_5000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 250Hz | 32.19 dB |
| 2 | 315Hz | 33.04 dB |
| 3 | 400Hz | 32.24 dB |
| 4 | 500Hz | 33.03 dB |
| 5 | 630Hz | 35.27 dB |
| 6 | 800Hz | 36.08 dB |
| 7 | 1000Hz | 33.60 dB |
| 8 | 1250Hz | 28.84 dB |
| 9 | 1600Hz | 28.67 dB |
| 10 | 2000Hz | 26.50 dB |
| 11 | 2500Hz | 40.24 dB |
| 12 | 3150Hz | 33.09 dB |
| 13 | 4000Hz | 38.50 dB |
| 14 | 5000Hz | 33.73 dB |

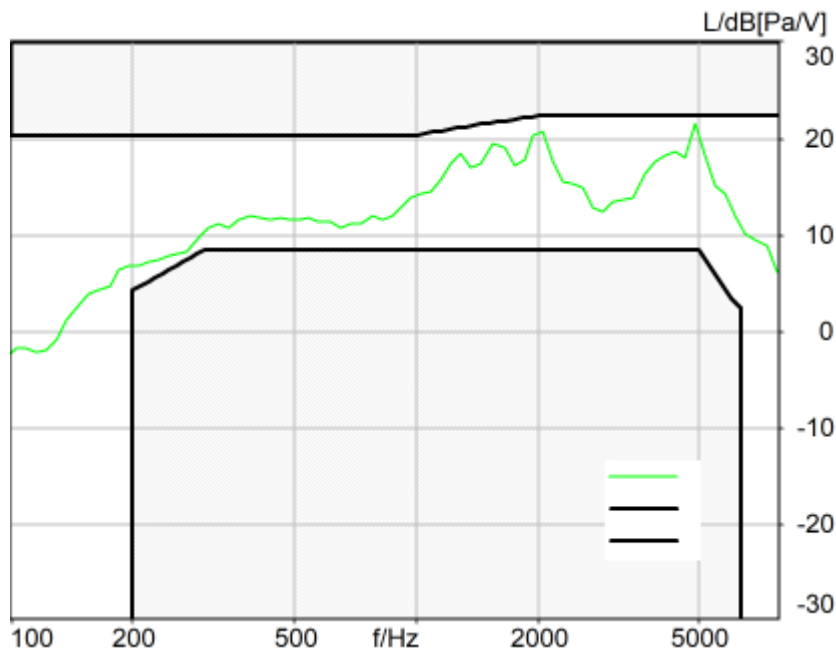
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 26.50dB at 2000Hz.

2024/1/19 14:01 ACQUA

5.3 Frequency Response 8N FF

TIA-5050 (2018-01) \ Measurements \ Wideband



Absolute minimal distance
0.84 dB at 4870.0 Hz Ok

Ok

2024/1/19 14:16 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_wb_r20_v01.dat

Level adj. Ch1 -90.0 dB
WIDEBAND IEEE-269-2010 Real Speech Signal at Channel 2
Pause 0.5 s +
Real Speech (english, male speaker) 11.5 s, Active Speech Level: -22,2 dBV, margin 15.9 dB +
Pause till end of file
Signal level (ch2): -22,2 dBV Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"
Alteration:
0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the and of the file.
filtered with 8.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|--------------------------|-------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hawb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hawb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 8000.0 Hz |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |

| | | | |
|-----------------------|--------------------------|----------------|------|
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

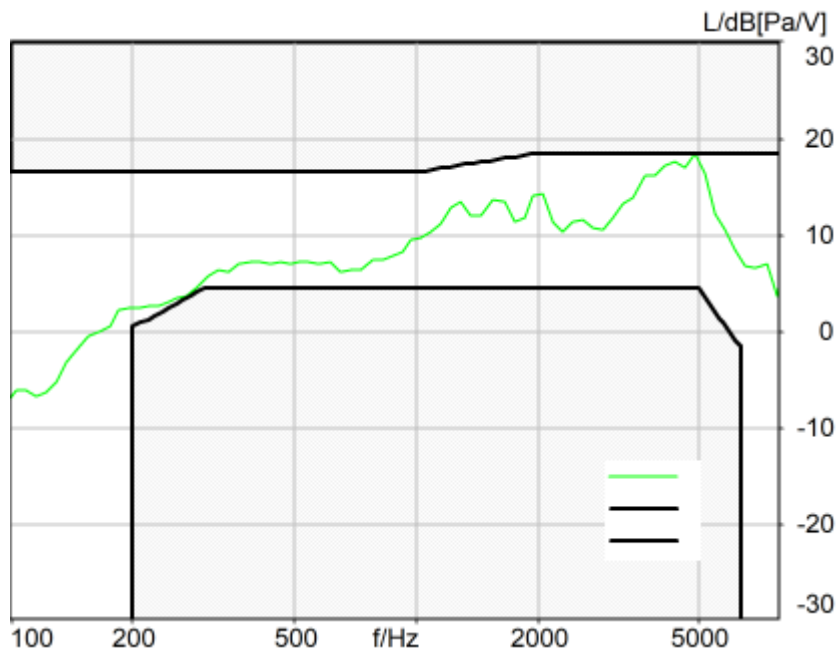
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.3 Frequency Response 2N FF

TIA-5050 (2018-01) \ Measurements \ Wideband



Absolute minimal distance
0.15 dB at 4870.0 Hz Ok

Ok

2024/1/19 14:02 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_wb_r20_v01.dat

Level adj. Ch1 -90.0 dB
WIDEBAND IEEE-269-2010 Real Speech Signal at Channel 2
Pause 0.5 s +
Real Speech (english, male speaker) 11.5 s, Active Speech Level: -22,2 dBV, margin 15.9 dB +
Pause till end of file
Signal level (ch2): -22,2 dBV Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"
Alteration:
0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
filtered with 8.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-----------------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hawb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hawb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 8000.0 Hz |

Special Features

Compensate delay 159.2000 ms (D_RCV_WB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|------------------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |

| | | | |
|-----------------------|--------------------------|----------------|------|
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Measurement Protocol

| | |
|--------------------|---|
| Measurement Object | LTE Band2_20QPSK_100RB_0_AMRNB_12.2kbps_CH18900 |
| Project | HMD_2322#N159V |

| | |
|------------------------|--------------------|
| Project | TIA-5050 (2018-01) |
| Report Generation Date | 2024/2/2 10:42 |
| Responsible Person | audio |

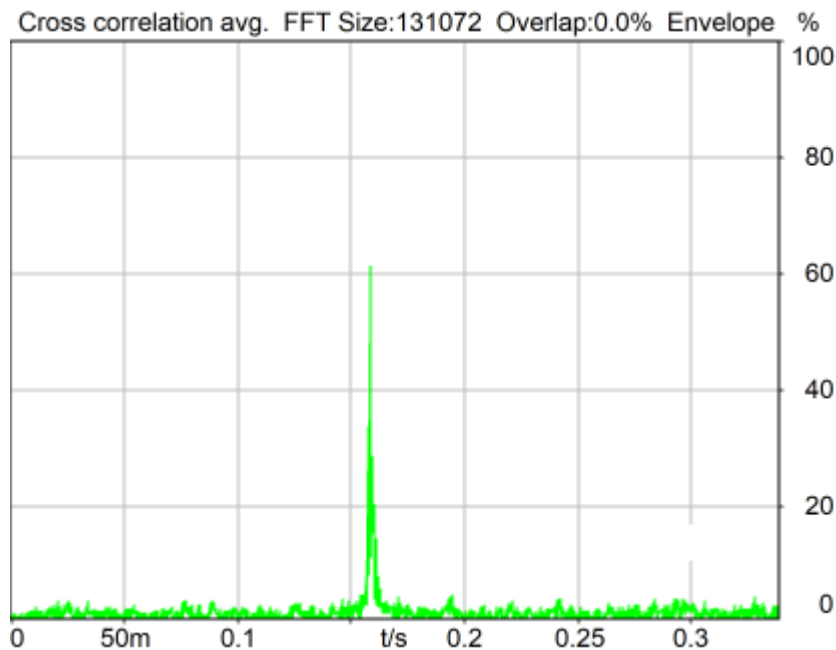
Status Overview

| SMD | Status | Single Value Description | Single Value | Object |
|---|--------|---|--------------|--|
| Overall Receive Delay NB | Done | Delay (Cross) [ms] | 158.8 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.1a Receive Volume Control Performance 8N NB | Not Ok | Corrected Speech Level [dB[SPL]] | 17.10 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.1b Receive Volume Control Performance 2N NB | Ok | Corrected Speech Level [dB[SPL]] | 11.71 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 400 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.22 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.51 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 630 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.85 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 800 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.19 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.77 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1250 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 25.52 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1600 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.19 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.34 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 26.33 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 3150 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.62 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 3150Hz) | 23.62 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 400 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.60 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.84 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise | Ok | Distortion (Noise) [dB], | 29.57 | LTE |

| | | | | |
|---|----|--|-------|--|
| - 630 Hz NB | | 0.0 dB | | Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 800 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.47 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.92 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1250 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.78 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1600 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.32 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2000 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.55 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2500 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.07 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 3150 Hz NB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.73 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 3150Hz) | 24.73 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.3 Frequency Response 8N FF HANB | Ok | Min. dist. to tolerance scheme [dB], 1747.8 Hz | 3.51 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.3 Frequency Response 8N DF HANB | Ok | Min. dist. to tolerance scheme [dB], 3245.6 Hz | 2.90 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.3 Frequency Response 2N FF HANB | Ok | Min. dist. to tolerance scheme [dB], 3245.6 Hz | 3.09 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |
| 5.3 Frequency Response 2N DF HANB | Ok | Min. dist. to tolerance scheme [dB], 3245.6 Hz | 1.29 | LTE Band2_20QPSK_100RB_0_A MRNB 12.2kbps_CH18900 |

Overall Receive Delay NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ Preparation - Delay measurement



Delay (Cross): 158.8 ms

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Unmodified HEAD acoustics Measurement Descriptor

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: cssnb1b_r1s.dat

Level adj. Ch1 -90.0 dB

CSSnb1b_R1s.dat - CS-signal with special 1s random noise

NARROWBAND Composite Source Signal RCV P.501 (1 burst) at Channel 2

Pause 0.5 s +

voiced signal + 4000 Hz band limited random noise 1.0 s +

Pause till end of file

Signal level (ch2): -14.7 dBm0 (corresponds to approx. -16.0 dBm0 for a 350 ms CSS considering 101 ms Pause) from 0.5s to 1.544s for 4-k FFT, Hanning window,

75 % overlap in frequency range of 100 to 4000 Hz

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.1: 0.00 dB

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-----------------|------------|
| Range start | 550.00 ms | Range length | 1950.00 ms |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 131072 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| Delayed channel | None | | |
| Valid range start | -1228.79 ms | Valid range end | 1228.81 ms |

Special Features

| | | | |
|--------------------|-------------|-------------------|----------|
| Show source signal | Source ch.2 | Store to variable | D_RCV_NB |
|--------------------|-------------|-------------------|----------|

Hardware Config Settings

| | |
|--------------|--------------------------|
| Used Setting | HEAD 2G3G labCORE NetSim |
|--------------|--------------------------|

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

| | |
|------------------|--|
| Out Channel 1 -> | Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker |
| Out Channel 2 -> | Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In |
| In Channel 1 <- | Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out |
| In Channel 2 <- | BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right |

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

| | |
|------------|--------|
| Block mode | Bypass |
|------------|--------|

Artificial Head Settings (HATS 1 (HMS II.3))

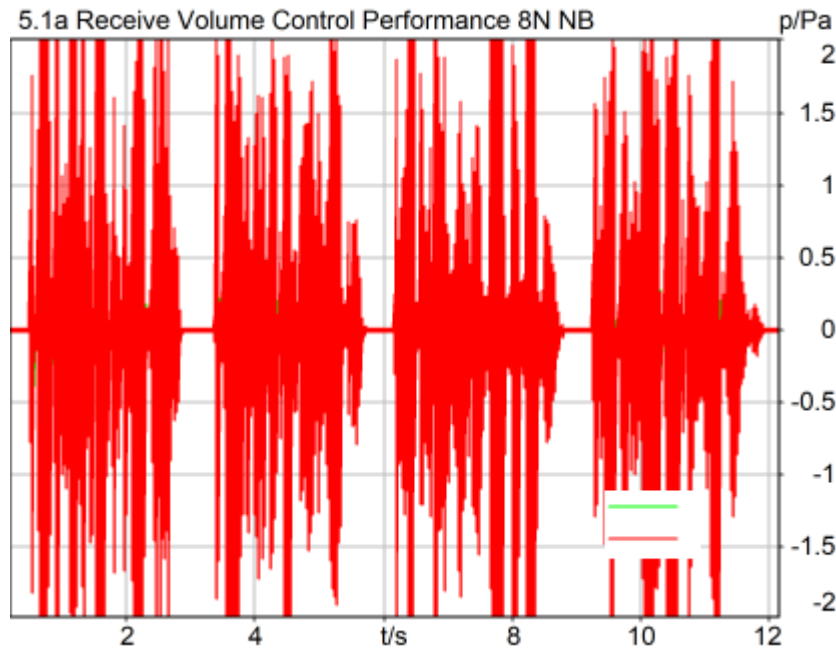
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.1a Receive Volume Control Performance 8N NB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Correction

X - 70

Speech Level RCV: 87.10 dB[SPL], Act.: 86.06%

Corrected Speech Level: 17.10 dB[SPL] Not Ok

Not Ok

2024/1/22 19:28 ACQUA 5.1.200

Limits

| | lower |
|-------|---------------|
| Run 1 | 18.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|---------------|---------------------|------------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieeee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Narrow Band | | |
| 15.90 dB | | | |

Special Features

Show source signal Source ch.2
 Compensate delay 158.8000 ms (D_RCV_NB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

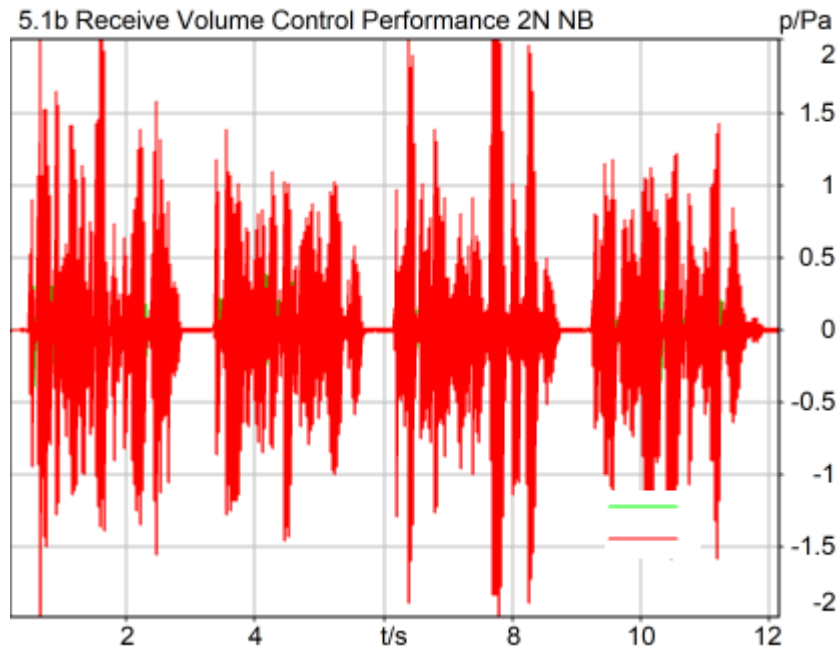
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|------------------------|--------------------|------------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply Off | | Mic 2 Power Supply Off | |

5.1b Receive Volume Control Performance 2N NB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Correction

X - 70

Speech Level RCV: 81.71 dB[SPL], Act.: 85.87%

Corrected Speech Level: 11.71 dB[SPL] Ok

Ok

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Limits

| | lower |
|-------|--------------|
| Run 1 | 6.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|---------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Narrow Band | | |
| 15.90 dB | | | |

Special Features

Show source signal Source ch.2
 Compensate delay 158.8000 ms (D_RCV_NB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

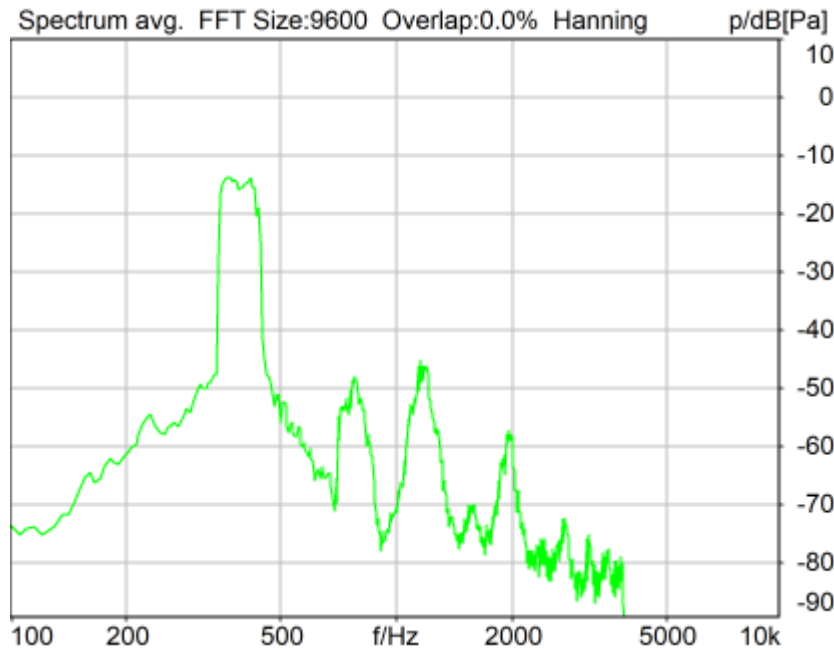
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|------------------------|--------------------|------------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply Off | | Mic 2 Power Supply Off | |

5.2 RCV Distortion and Noise - 400 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.22 dB (3.46%) Ok

Ok

2024/1/15 16:09 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

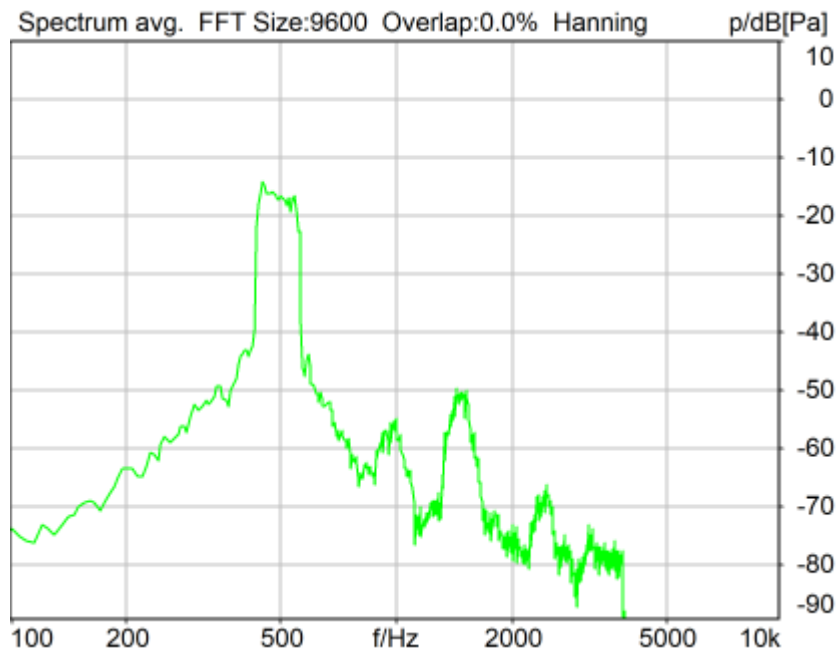
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.51 dB (3.35%) Ok

Ok

2024/1/15 16:10 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| Frequency base | Transformation | FFT size | 9600 |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

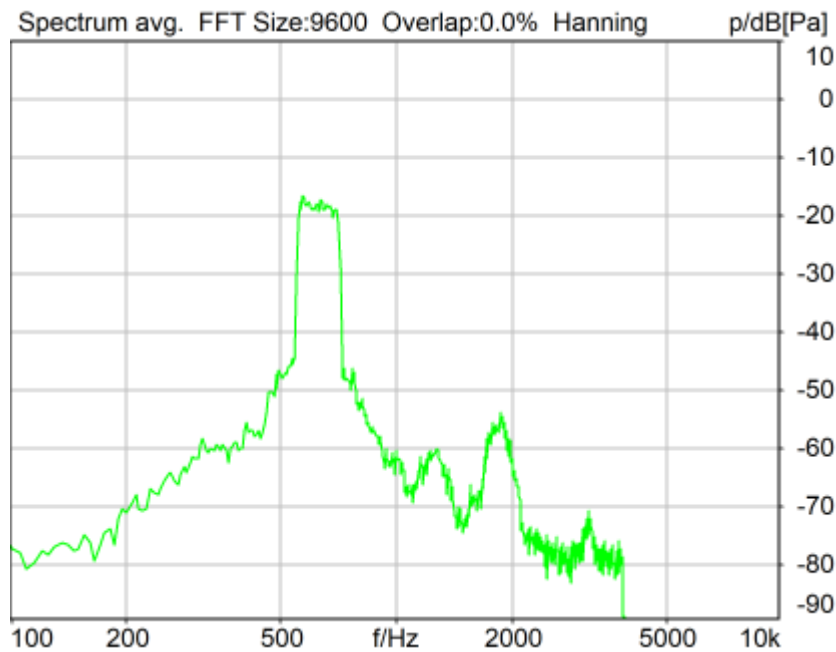
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.85 dB (3.22%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

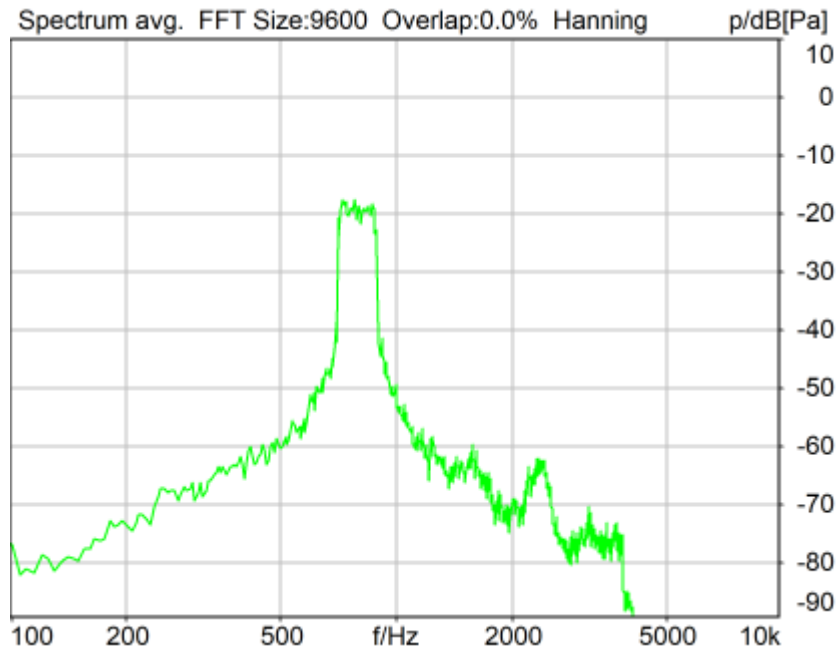
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.19 dB (3.47%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

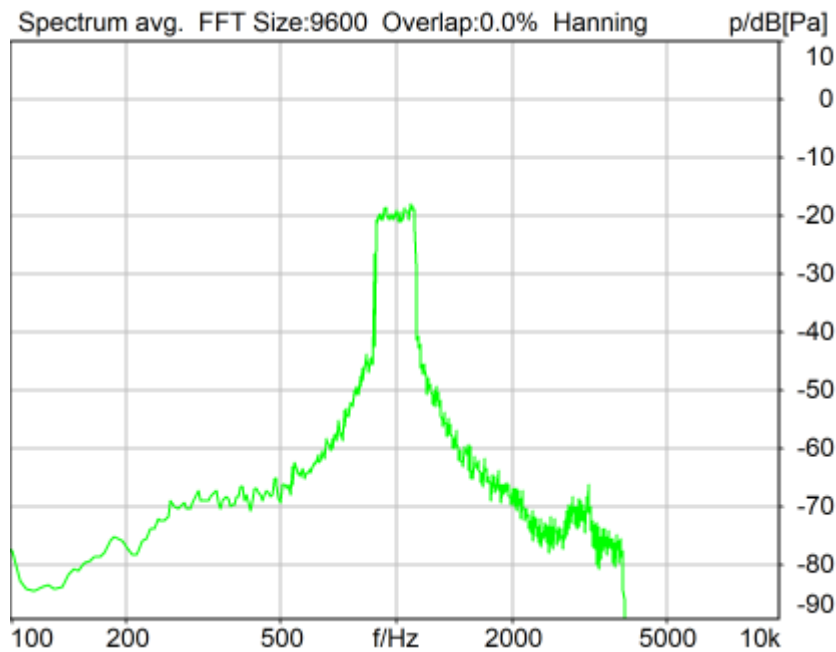
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 27.77 dB (4.09%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1155.0 Hz |
| Stimulus min. | 855.0 Hz | Analysis max. | 850.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1160.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

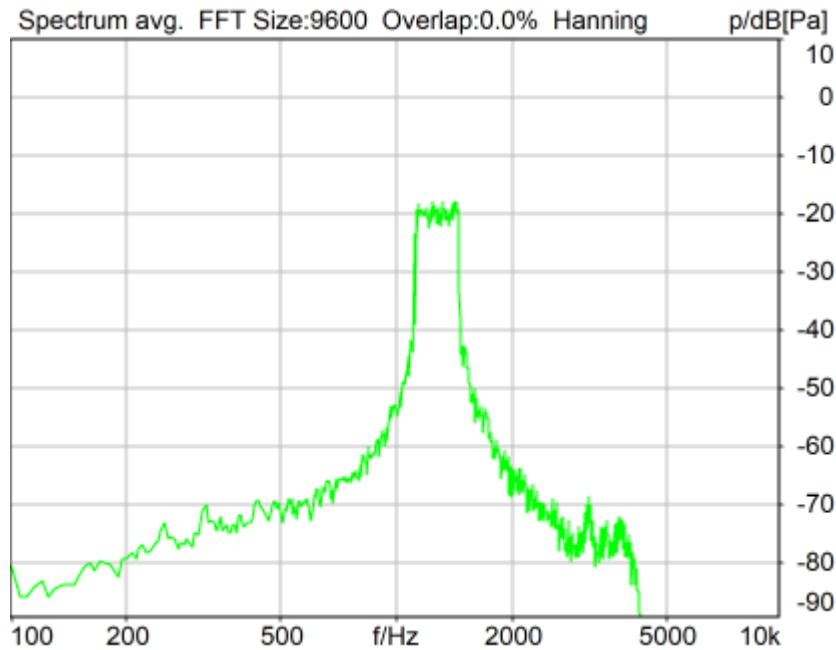
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 25.52 dB (5.30%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| Frequency base | Transformation | FFT size | 9600 |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 1085.0 Hz |
| Stimulus min. | 1085.0 Hz | Stimulus max. | 1450.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis (2) min. | 1455.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

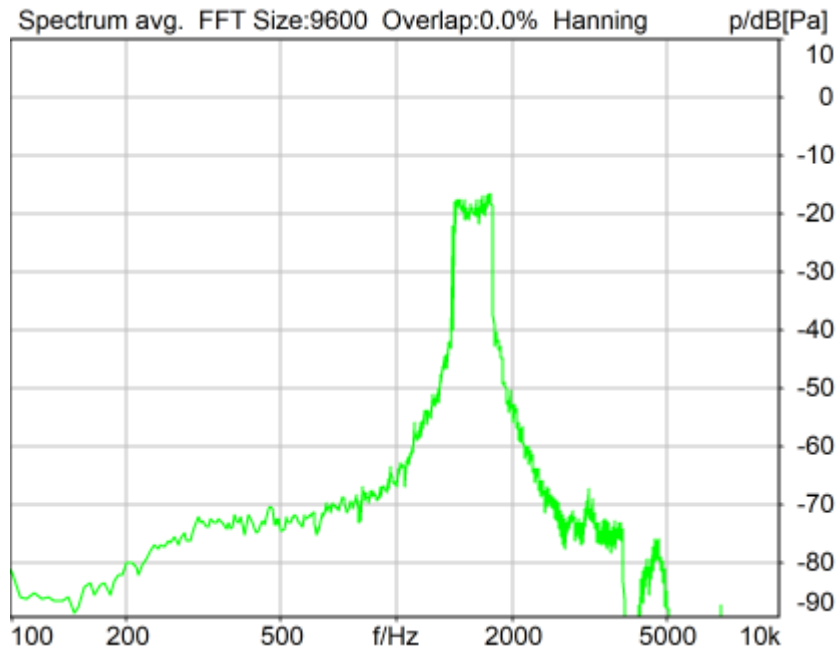
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 27.19 dB (4.37%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 1375.0 Hz |
| Stimulus min. | 1375.0 Hz | Stimulus max. | 1815.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis (2) min. | 1820.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

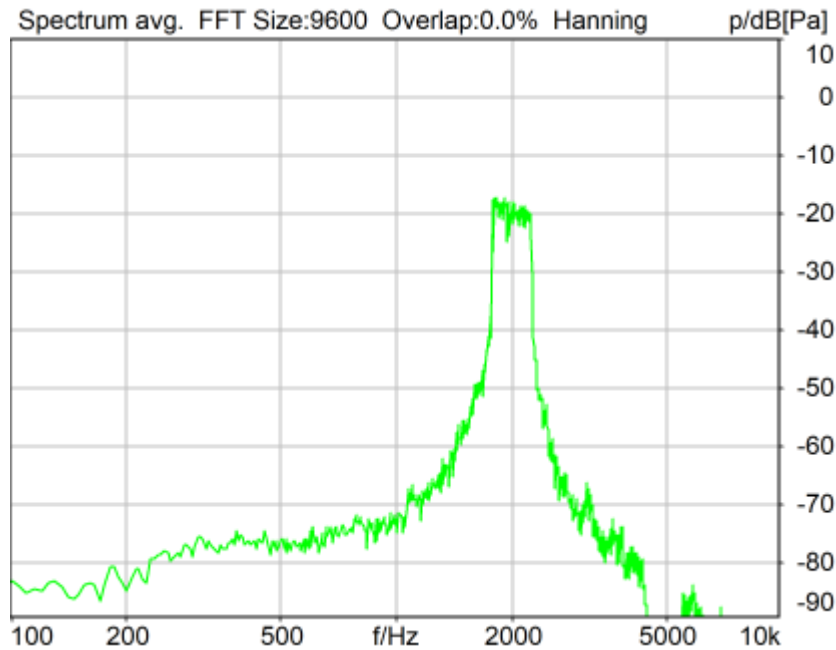
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.34 dB (3.83%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| Frequency base | Transformation | FFT size | 9600 |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 1745.0 Hz |
| Stimulus min. | 1745.0 Hz | Stimulus max. | 2275.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis (2) min. | 2280.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

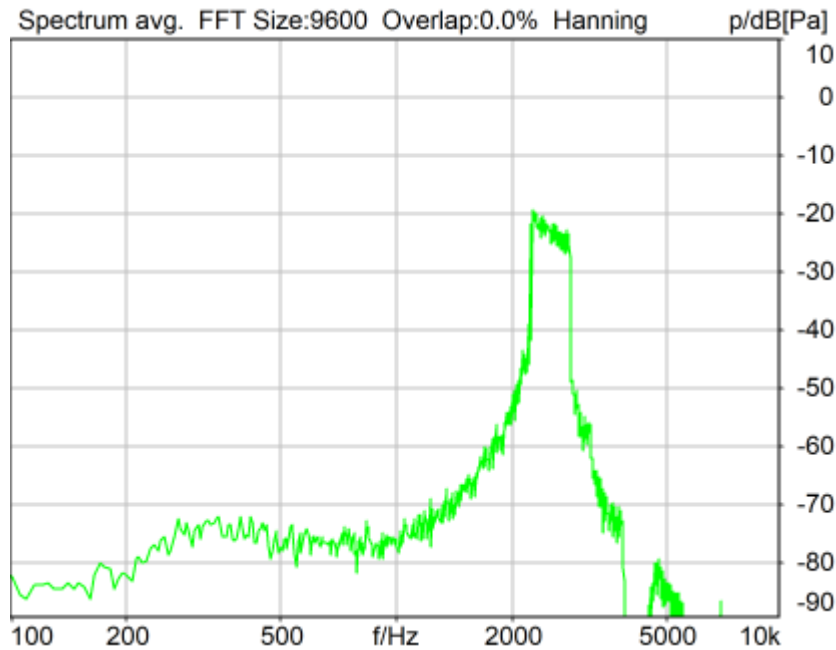
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 26.33 dB (4.83%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| Frequency base | Transformation | FFT size | 9600 |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 2205.0 Hz |
| Stimulus min. | 2205.0 Hz | Stimulus max. | 2855.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis (2) min. | 2860.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

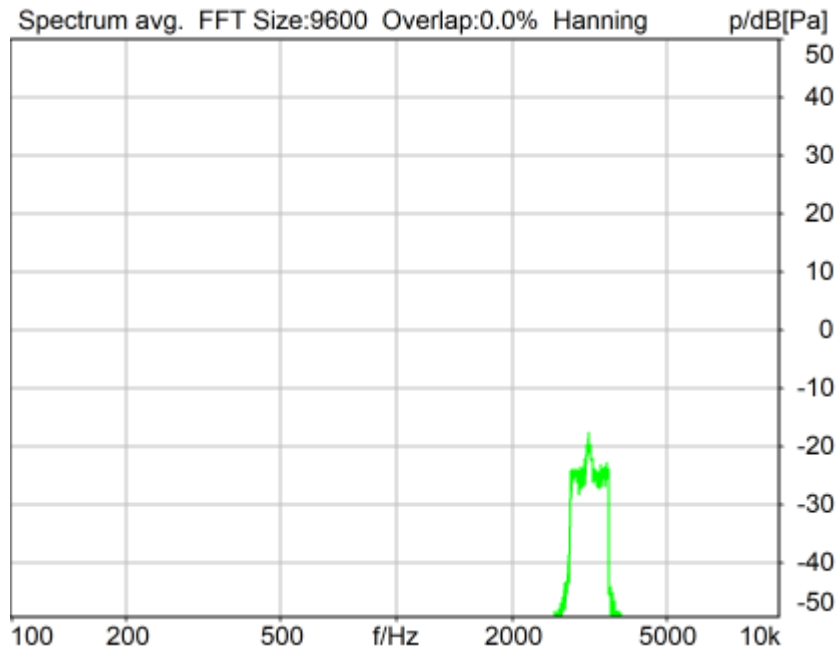
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 23.62 dB (6.59%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 7.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 3585.0 Hz |
| Stimulus min. | 2785.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 3590.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

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| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 400Hz | 29.22 dB |
| 2 | 500Hz | 29.51 dB |
| 3 | 630Hz | 29.85 dB |
| 4 | 800Hz | 29.19 dB |
| 5 | 1000Hz | 27.77 dB |
| 6 | 1250Hz | 25.52 dB |
| 7 | 1600Hz | 27.19 dB |
| 8 | 2000Hz | 28.34 dB |
| 9 | 2500Hz | 26.33 dB |
| 10 | 3150Hz | 23.62 dB |

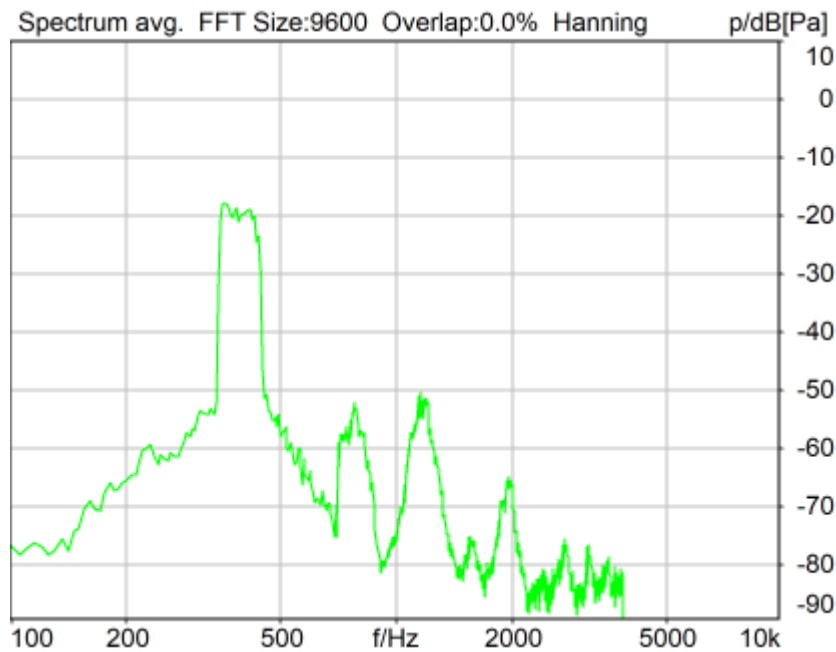
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 23.62dB at 3150Hz.

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5.2 RCV Distortion and Noise - 400 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 29.60 dB (3.31%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

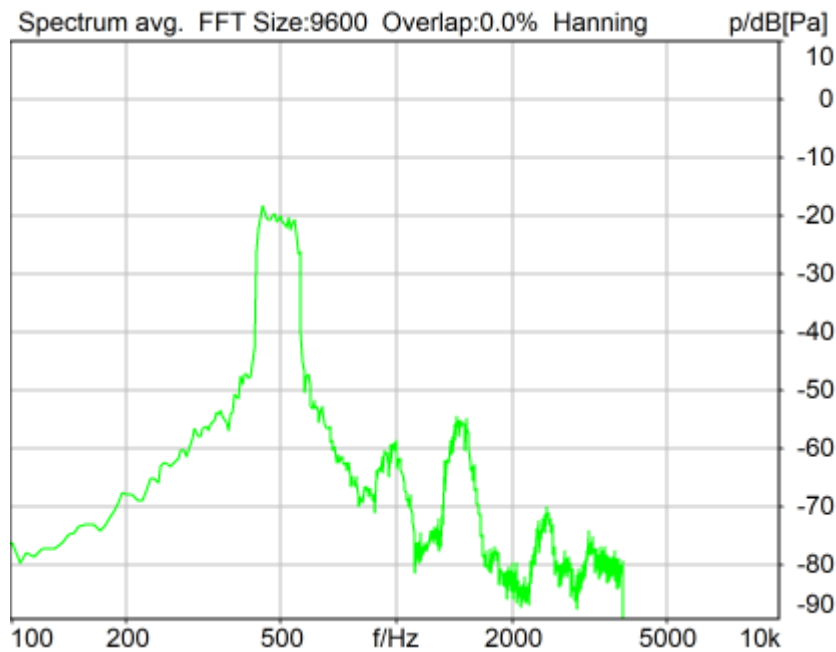
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz NB

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Distortion (Noise) RCV (packed): 29.84 dB (3.22%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 595.0 Hz |
| Stimulus min. | 410.0 Hz | Analysis max. | 405.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 600.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

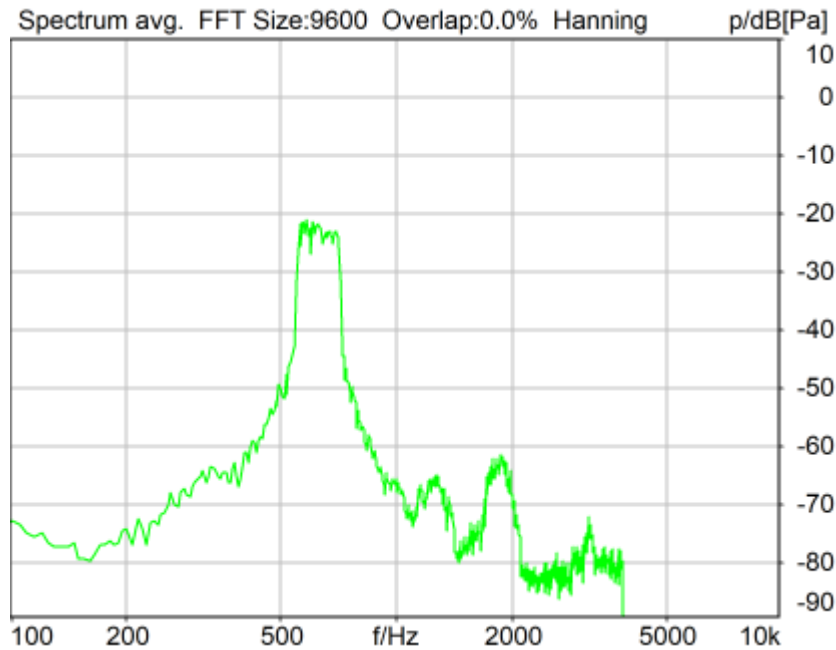
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz NB

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Distortion (Noise) RCV (packed): 29.57 dB (3.32%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

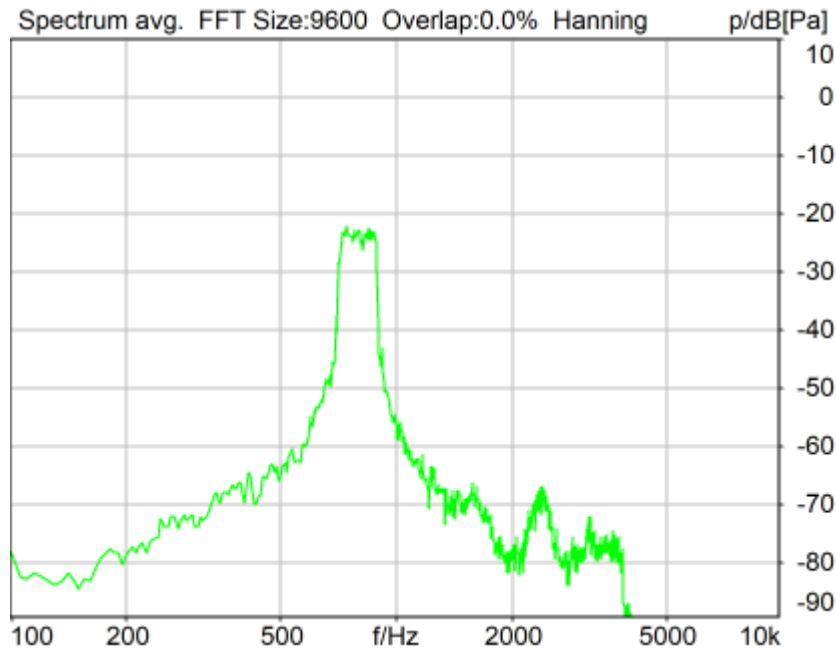
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz NB

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Distortion (Noise) RCV (packed): 28.47 dB (3.77%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| Frequency base | Transformation | FFT size | 9600 |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 675.0 Hz |
| Stimulus min. | 675.0 Hz | Stimulus max. | 925.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 670.0 Hz |
| Analysis (2) min. | 930.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

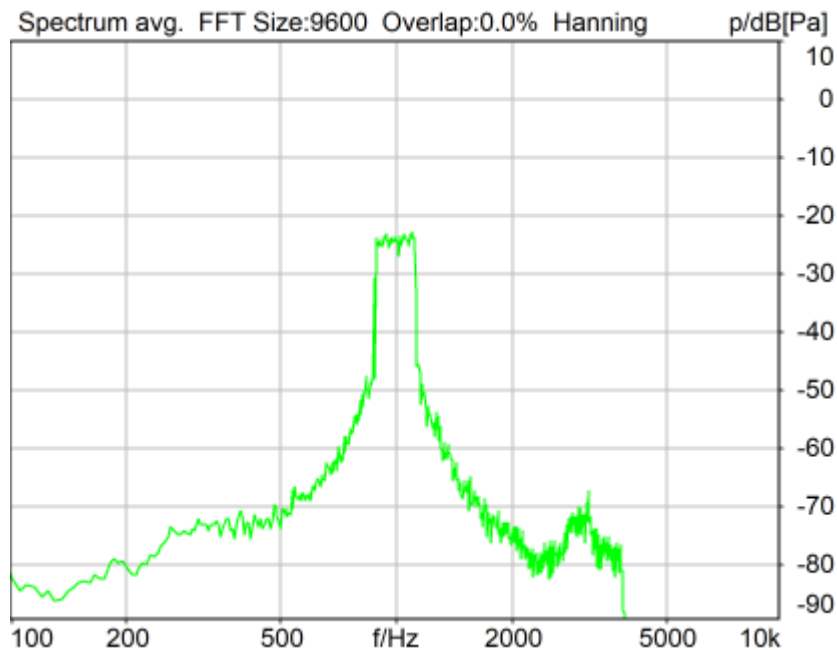
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz NB

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Distortion (Noise) RCV (packed): 27.92 dB (4.02%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1155.0 Hz |
| Stimulus min. | 855.0 Hz | Analysis max. | 850.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1160.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

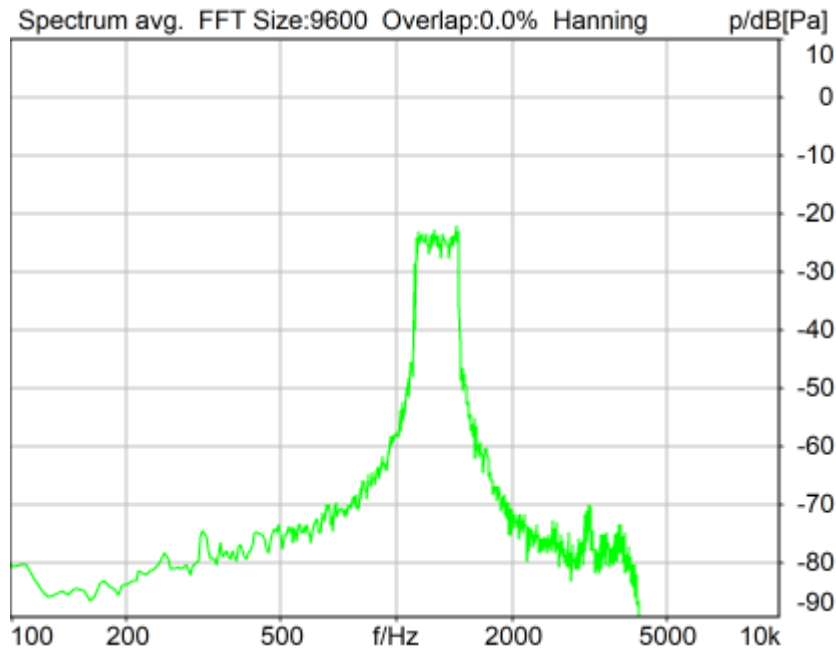
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz NB

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Distortion (Noise) RCV (packed): 24.78 dB (5.77%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------|
| | lower |
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 1450.0 Hz |
| Stimulus min. | 1085.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 1455.0 Hz | | |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

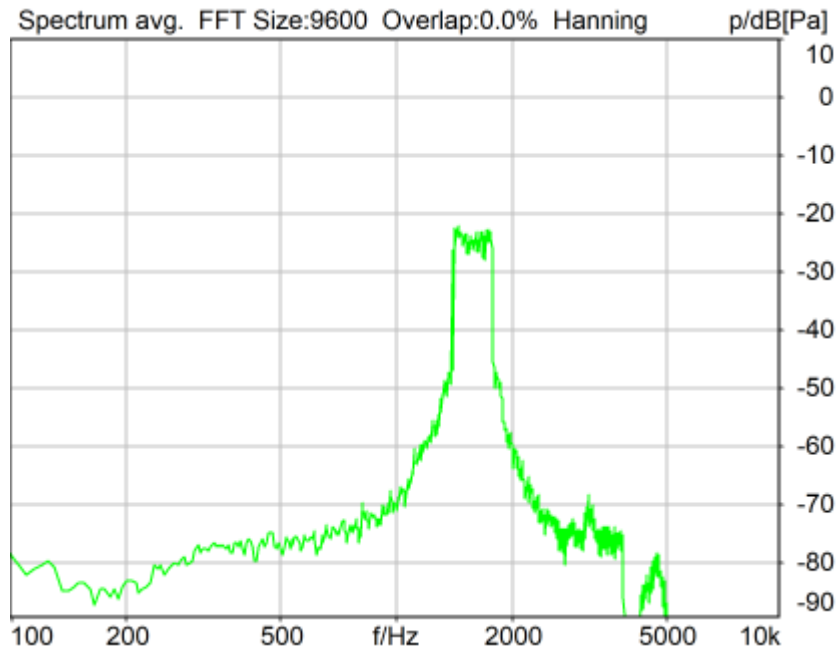
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 27.32 dB (4.31%) Ok

Ok

2024/1/15 15:58 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 1375.0 Hz |
| Stimulus min. | 1375.0 Hz | Stimulus max. | 1815.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis (2) min. | 1820.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

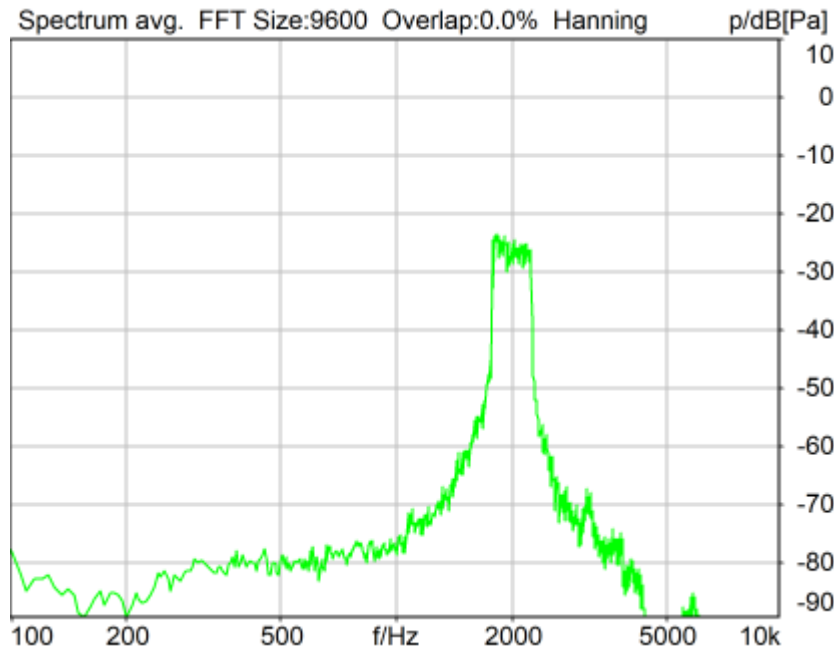
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 27.55 dB (4.19%) Ok

Ok

2024/1/15 15:59 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
 Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat
 Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
 Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1745.0 Hz | Stimulus max. | 2275.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis (2) min. | 2280.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

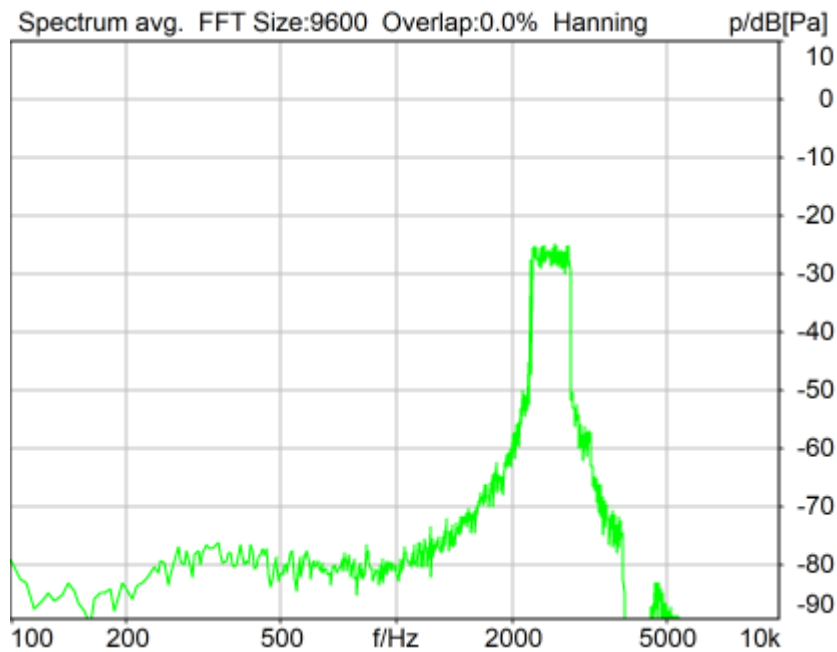
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 27.07 dB (4.43%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 2205.0 Hz |
| Stimulus min. | 2205.0 Hz | Stimulus max. | 2855.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis (2) min. | 2860.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |
| Impairment Mode | Off | | |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

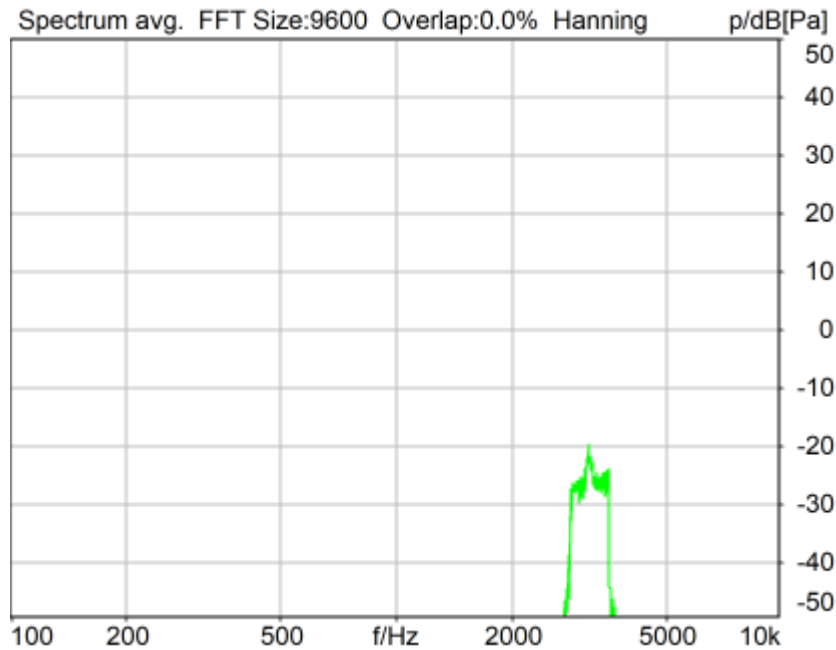
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz NB

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 24.73 dB (5.80%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -0.9 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| Frequency base | Transformation | FFT size | 9600 |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus min. | 2785.0 Hz |
| Stimulus min. | 2785.0 Hz | Stimulus max. | 3585.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis (2) min. | 3590.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))
Store to variable RCVNB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))**Channel In 1 Settings**

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR/8000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=7;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Narrowband \ 5.2 Receive Distortion and Noise 2N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 400Hz | 29.60 dB |
| 2 | 500Hz | 29.84 dB |
| 3 | 630Hz | 29.57 dB |
| 4 | 800Hz | 28.47 dB |
| 5 | 1000Hz | 27.92 dB |
| 6 | 1250Hz | 24.78 dB |
| 7 | 1600Hz | 27.32 dB |
| 8 | 2000Hz | 27.55 dB |
| 9 | 2500Hz | 27.07 dB |
| 10 | 3150Hz | 24.73 dB |

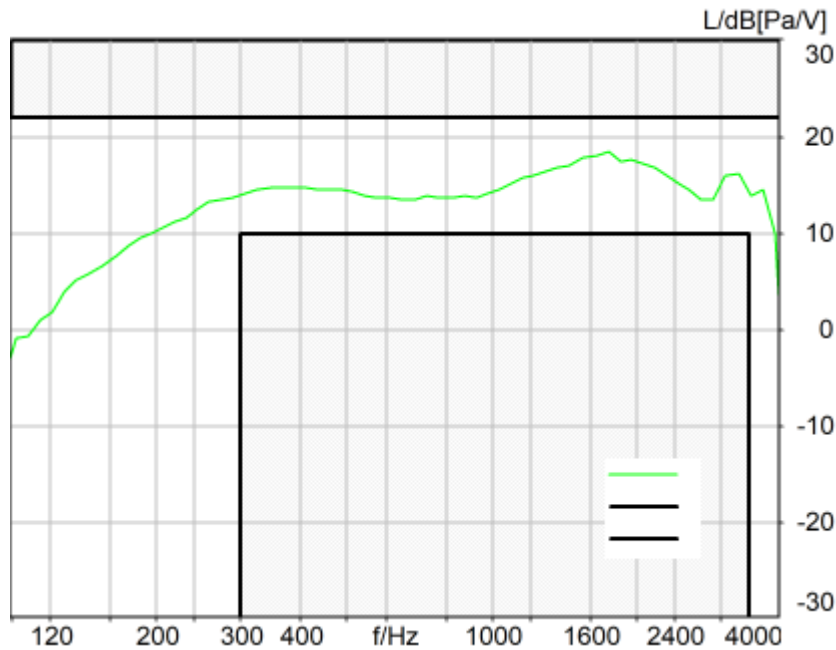
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 24.73dB at 3150Hz.

2024/1/15 16:00 ACQUA

5.3 Frequency Response 8N FF HANB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Absolute minimal distance
 3.51 dB at 1747.8 Hz Ok

Ok

2024/1/15 16:14 ACQUA 5.1.200
 Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
 Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_nb_r16.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

NARROWBAND IEEE-269-2010 Real Speech Signal at Channel 2

Pause 0.5 s +

Real Speech (english, male speaker) 11.5 s, Active Speech Level: -16 dBm0, margin 15.9 dB +

Pause till end of file

Signal level (ch1): -16 dBm0 Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"

Alteration:

0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
 filtered with 4.0 kHz low-pass filter
 signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
 Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|------------------|-----------------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| Delta Ze | 0.0 mm | Delta C | 0.0 ° |
| Ym | -2.8 mm | Delta B | 0.0 ° |
| | | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
 Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 11500.00 ms |
| Range start | 500.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | DIN Row | Row A |
| Frequency base | 12th octave | Overlap | 75 % |
| Method | FFT | | |
| FFT size | 4096 | | |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hanb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hanb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 4000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
 In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

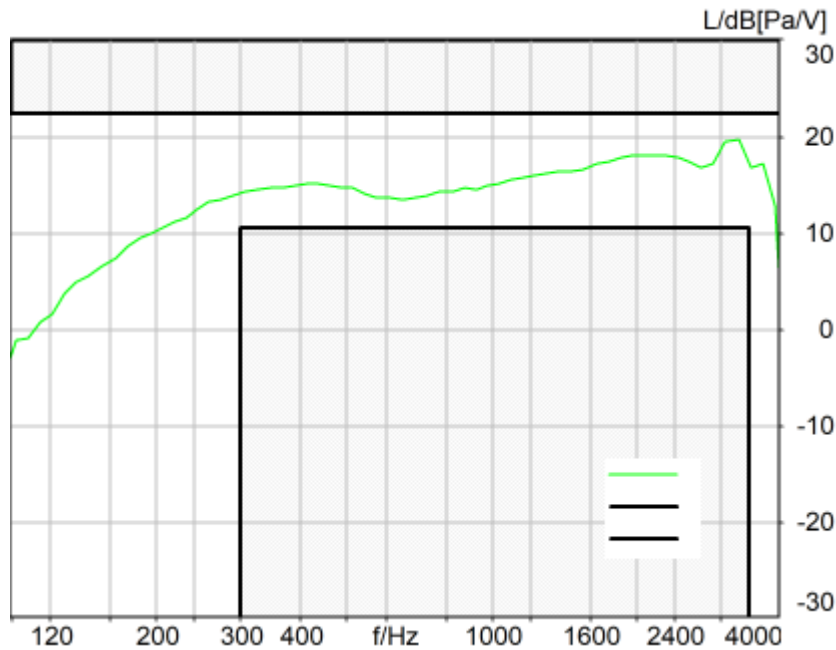
| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|----------------|-----------|----------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
|----------------|-----------|----------------|-------------|

5.3 Frequency Response 8N DF HANB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Absolute minimal distance
2.90 dB at 3245.6 Hz Ok

Ok

2024/1/15 16:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_nb_r16.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

NARROWBAND IEEE-269-2010 Real Speech Signal at Channel 2

Pause 0.5 s +

Real Speech (english, male speaker) 11.5 s, Active Speech Level: -16 dBm0, margin 15.9 dB +

Pause till end of file

Signal level (ch1): -16 dBm0 Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"

Alteration:

0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
 filtered with 4.0 kHz low-pass filter
 signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
 Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|------------------|-----------------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| Delta Ze | 0.0 mm | Delta C | 0.0 ° |
| Ym | -2.8 mm | Delta B | 0.0 ° |
| | | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
 Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 11500.00 ms |
| Range start | 500.00 ms | FIR filter | drp2df_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | DIN Row | Row A |
| Frequency base | 12th octave | Overlap | 75 % |
| Method | FFT | | |
| FFT size | 4096 | | |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hanb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hanb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 4000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
 In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

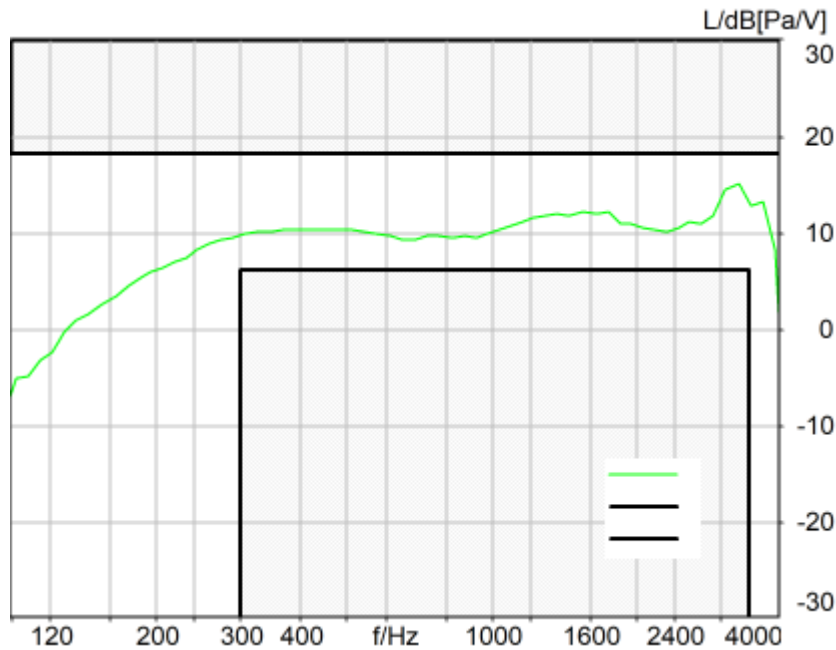
| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|----------------|-----------|----------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
|----------------|-----------|----------------|-------------|

5.3 Frequency Response 2N FF HANB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Absolute minimal distance
 3.09 dB at 3245.6 Hz Ok

Ok

2024/1/15 16:00 ACQUA 5.1.200
 Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
 Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_nb_r16.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

NARROWBAND IEEE-269-2010 Real Speech Signal at Channel 2

Pause 0.5 s +

Real Speech (english, male speaker) 11.5 s, Active Speech Level: -16 dBm0, margin 15.9 dB +

Pause till end of file

Signal level (ch1): -16 dBm0 Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"

Alteration:

0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
 filtered with 4.0 kHz low-pass filter
 signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
 Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|------------------|-----------------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| Delta Ze | 0.0 mm | Delta C | 0.0 ° |
| Ym | -0.9 mm | Delta B | 0.0 ° |
| | | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
 Force to apply: 2.0 N, Force reached: 2.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|--------------------------|---------------------|-------------------------------|
| Direction | Out 2 -> In 2 | Range length | 11500.00 ms |
| Range start | 500.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | DIN Row | Row A |
| Frequency base | 12th octave | Overlap | 75 % |
| Method | FFT | Window function. | Hanning |
| FFT size | 4096 | Reference file | r521_rcv_frq_spee269_hanb.fft |
| Tol. scheme file | 521_rcv_frq_man_hanb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 4000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
 In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

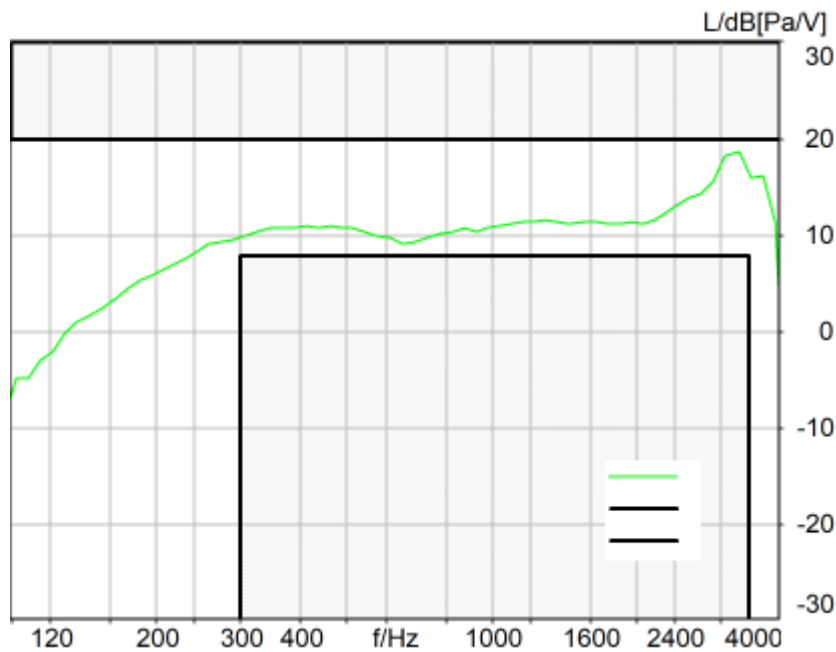
| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|----------------|-----------|----------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
|----------------|-----------|----------------|-------------|

5.3 Frequency Response 2N DF HANB

TIA-5050 (2018-01) \ Measurements \ Narrowband



Absolute minimal distance
 1.29 dB at 3245.6 Hz Ok

Ok

2024/1/15 16:00 ACQUA 5.1.200
 Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
 Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_nb_r16.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

NARROWBAND IEEE-269-2010 Real Speech Signal at Channel 2

Pause 0.5 s +

Real Speech (english, male speaker) 11.5 s, Active Speech Level: -16 dBm0, margin 15.9 dB +

Pause till end of file

Signal level (ch1): -16 dBm0 Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"

Alteration:

0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
 filtered with 4.0 kHz low-pass filter
 signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
 Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|------------------|-----------------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| Delta Ze | 0.0 mm | Delta C | 0.0 ° |
| Ym | -0.9 mm | Delta B | 0.0 ° |
| | | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
 Force to apply: 2.0 N, Force reached: 2.1 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 11500.00 ms |
| Range start | 500.00 ms | FIR filter | drp2df_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | DIN Row | Row A |
| Frequency base | 12th octave | Overlap | 75 % |
| Method | FFT | | |
| FFT size | 4096 | | |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hanb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hanb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 4000.0 Hz |

Special Features

Compensate delay 205.1000 ms (D_RCV_NB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
 In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|----------------|-----------|----------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
|----------------|-----------|----------------|-------------|

Measurement Protocol

| | |
|--------------------|--|
| Measurement Object | LTE Band2_20QPSK_100RB_0_AMRWB 23.85kbps_CH18900 |
| Project | HMD_2322#N159V |

| | |
|------------------------|--------------------|
| Project | TIA-5050 (2018-01) |
| Report Generation Date | 2024/2/2 10:44 |
| Responsible Person | audio |

Status Overview

| SMD | Status | Single Value Description | Single Value | Object |
|---|--------|----------------------------------|--------------|---|
| Overall Receive Delay WB | Done | Delay (Cross) [ms] | 192.4 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.1a Receive Volume Control Performance 8N WB | Not Ok | Corrected Speech Level [dB[SPL]] | 17.20 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.1b Receive Volume Control Performance 2N WB | Ok | Corrected Speech Level [dB[SPL]] | 11.37 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.13 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.60 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.12 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.77 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.61 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.01 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 22.32 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.90 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.42 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.98 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.13 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.42 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.72 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise | Ok | Distortion (Noise) | 23.01 | LTE |

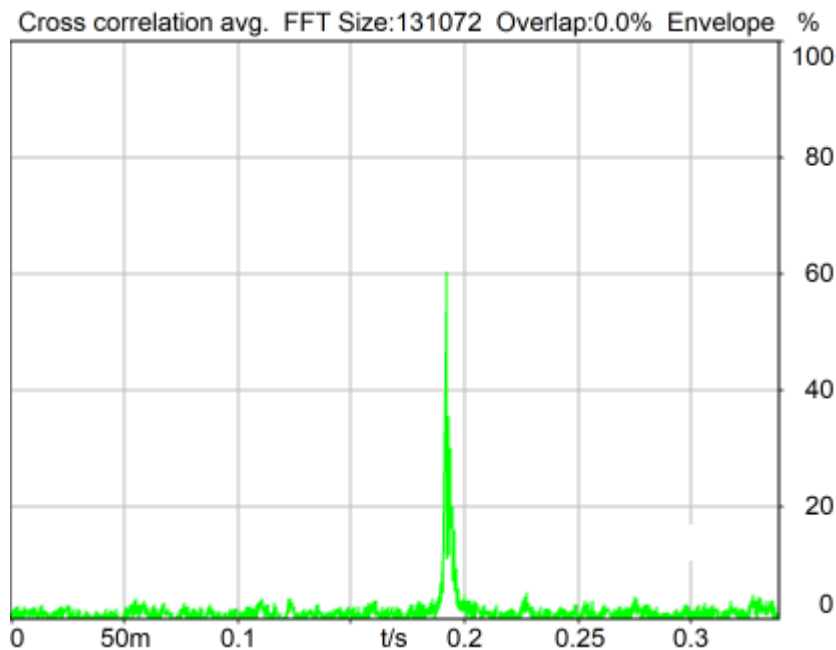
| | | | | |
|---|----|--|-------|---|
| - 5000 Hz WB | | [dB], 0.0 dB | | Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 1000Hz) | 22.32 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.47 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.08 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 27.93 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 29.36 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 30.50 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.04 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 22.42 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.88 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 24.13 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 23.06 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 25.02 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 30.15 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 28.01 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | Ok | Distortion (Noise) [dB], 0.0 dB | 22.96 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| Report - Receive Distortion and Noise (Conversational Gain) | Ok | Minimum SDNR [dB], (occured at 1000Hz) | 22.42 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.3 Frequency Response 8N FF | Ok | Min. dist. to tolerance scheme [dB], 1285.9 Hz | 0.34 | LTE Band2_20QPSK_100RB_0_A MRWB 23.85kbps_CH18900 |
| 5.3 Frequency Response 2N | Ok | Min. dist. to tolerance | 0.20 | LTE |

| | | |
|----|---------------------------|--|
| FF | scheme [dB], 4870.0 Hz | Band2_20QPSK_100RB_0_A MRWB 23.85kbps CH18900 |
|----|---------------------------|--|

| | |
|---|-----|
| Overall Receive Delay WB | 7 |
| 5.1a Receive Volume Control Performance 8N WB | 10 |
| 5.1b Receive Volume Control Performance 2N WB | 12 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | 14 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | 17 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | 20 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | 23 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | 26 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | 29 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | 32 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | 35 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | 38 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | 41 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | 44 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | 47 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | 50 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | 53 |
| Report - Receive Distortion and Noise (Conversational Gain) | 56 |
| 5.2 RCV Distortion and Noise - 250 Hz WB | 57 |
| 5.2 RCV Distortion and Noise - 315 Hz WB | 60 |
| 5.2 RCV Distortion and Noise - 400 Hz WB | 63 |
| 5.2 RCV Distortion and Noise - 500 Hz WB | 66 |
| 5.2 RCV Distortion and Noise - 630 Hz WB | 69 |
| 5.2 RCV Distortion and Noise - 800 Hz WB | 72 |
| 5.2 RCV Distortion and Noise - 1000 Hz WB | 75 |
| 5.2 RCV Distortion and Noise - 1250 Hz WB | 78 |
| 5.2 RCV Distortion and Noise - 1600 Hz WB | 81 |
| 5.2 RCV Distortion and Noise - 2000 Hz WB | 84 |
| 5.2 RCV Distortion and Noise - 2500 Hz WB | 87 |
| 5.2 RCV Distortion and Noise - 3150 Hz WB | 90 |
| 5.2 RCV Distortion and Noise - 4000 Hz WB | 93 |
| 5.2 RCV Distortion and Noise - 5000 Hz WB | 96 |
| Report - Receive Distortion and Noise (Conversational Gain) | 99 |
| 5.3 Frequency Response 8N FF | 100 |
| 5.3 Frequency Response 2N FF | 103 |

Overall Receive Delay WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ Preparation - Delay measurement



Delay (Cross): 192.4 ms

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Unmodified HEAD acoustics Measurement Descriptor

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: csswb1b_r1s.dat

WIDEBAND Composite Source Signal RCV P.501 (1 bursts) at Channel 2

Pause 0.5 s +
voiced signal + 8000 Hz band limited random noise 1.0 s +
Pause till end of file

Signal level (ch2): -14.7 dBm0 (corresponds to approx. -16.0 dBm0 for a 350 ms CSS considering 101 ms Pause) from 0.5s to 1.544s for 4-k FFT, Hanning window,
75 % overlap in frequency range of 100 to 8000 Hz

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.1: 0.00 dB
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| | | Delta A | 0.0 ° |

| | | | |
|----------|---------|--------------------------|-------|
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type 3.3 Coordinates | |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-----------------|------------|
| Range start | 550.00 ms | Range length | 1950.00 ms |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | Overlap | 0 % |
| FFT size | 131072 | Smooth | Off |
| Window function. | Hanning | | |
| Delayed channel | None | | |
| Valid range start | -1228.79 ms | Valid range end | 1228.81 ms |

Special Features

Show source signal Source ch.2 Store to variable D_RCV_WB

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
 In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
 Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
 Polarisation Voltage200V Supply Voltage ±60V
 Channel In 2 Settings
 Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
 Polarisation Voltage200V Supply Voltage ±60V
 Channel In 3 Settings
 Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
 Polarisation Voltage200V Supply Voltage ±60V
 Channel In 4 Settings
 Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
 Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

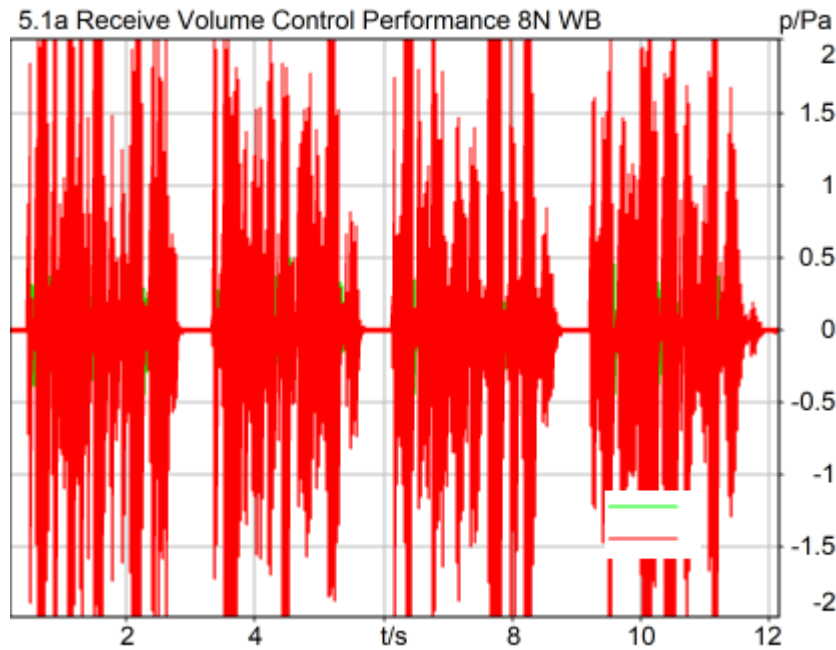
| | | | |
|------------|--------------------|------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |

Gain in 1 0.00 dB
Mic 1 Power Supply Off

Gain in 2 0.00 dB
Mic 2 Power Supply Off

5.1a Receive Volume Control Performance 8N WB

TIA-5050 (2018-01) \ Measurements \ Wideband



Correction

X - 70

Speech Level RCV: 87.20 dB[SPL], Act.: 86.09%

Corrected Speech Level: 17.20 dB[SPL] Not Ok

Not Ok

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Limits

| | lower |
|-------|---------------|
| Run 1 | 18.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|----------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Super Wideband | | |

15.90 dB

Special Features

Show source signal Source ch.2
Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

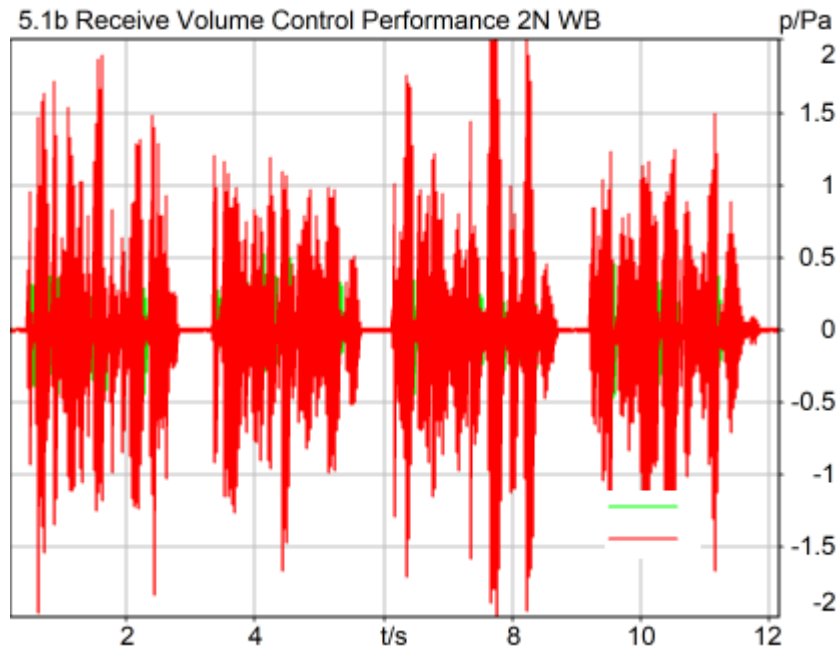
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.1b Receive Volume Control Performance 2N WB

TIA-5050 (2018-01) \ Measurements \ Wideband



Correction

X - 70

Speech Level RCV: 81.37 dB[SPL], Act.: 85.85%

Corrected Speech Level: 11.37 dB[SPL] Ok

Ok

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Limits

| | lower |
|-------|--------------|
| Run 1 | 6.00 dB20uPa |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-----------------|----------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 12000.00 ms |
| Range start | 200.00 ms | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | Margin (15.9dB nom) | |
| Bandpass filter | Super Wideband | | |

15.90 dB

Special Features

Show source signal Source ch.2
Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))

Hardware Config Settings

Used Setting HEAD 2G3G labCORE NetSim

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 2 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- Analog In 1/2 In 1 <- Radio Tester 1 (CMW500) Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

| | | | |
|-------------|---------|-------------|----|
| Range Ch. 1 | 0.00 dB | Ch. 0 Float | On |
| Range Ch. 2 | 0.00 dB | Ch. 1 Float | On |

Analog Out Mainboard Settings (Analog Out 1/2)

| | | | |
|-------------|---------|-------------|---------|
| Range Ch. 1 | 0.00 dB | Range Ch. 2 | 0.00 dB |
|-------------|---------|-------------|---------|

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

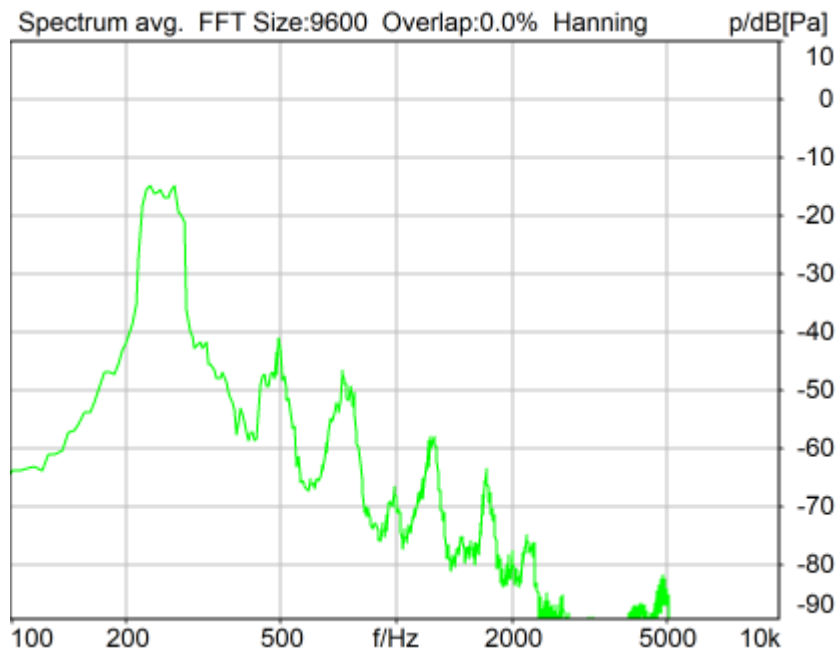
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.13 dB (3.92%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_250hz_sr20dbm0_v02.dat.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 190.0 Hz | Stimulus max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 185.0 Hz |
| Analysis (2) min. | 320.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

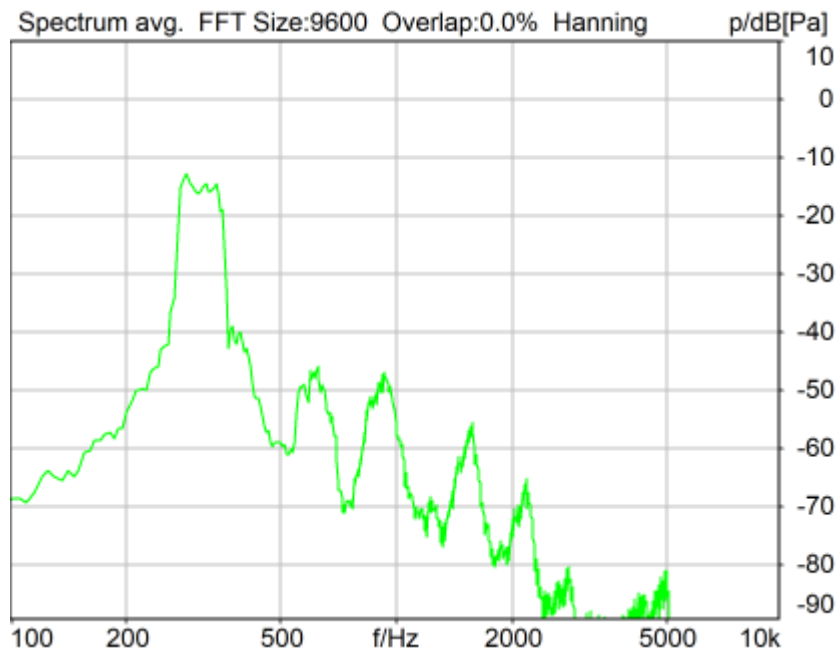
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 315 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.60 dB (3.72%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_315hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 390.0 Hz |
| Stimulus min. | 245.0 Hz | Analysis max. | 240.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 395.0 Hz | | |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_315Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

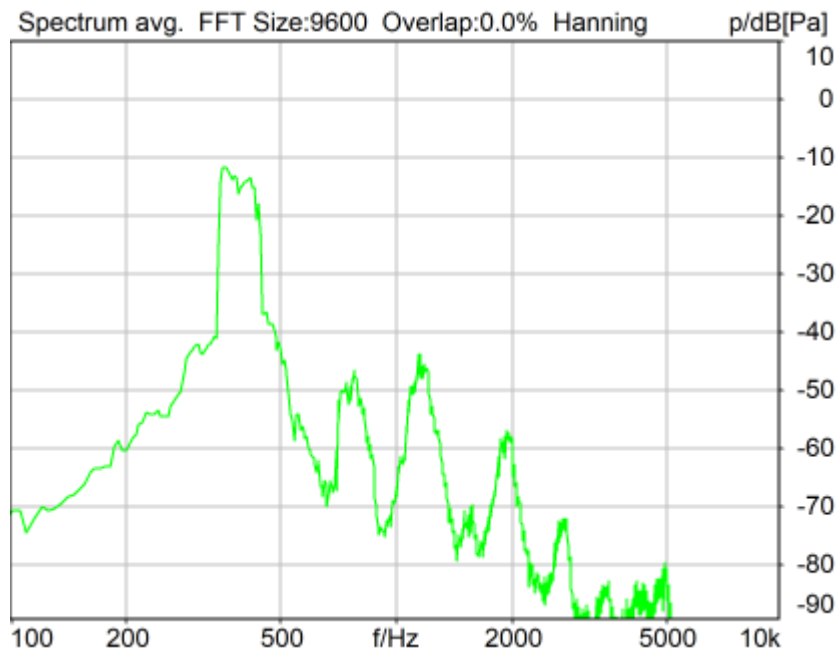
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 400 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.12 dB (3.93%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 480.0 Hz |
| Stimulus min. | 320.0 Hz | Analysis max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 485.0 Hz | | |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

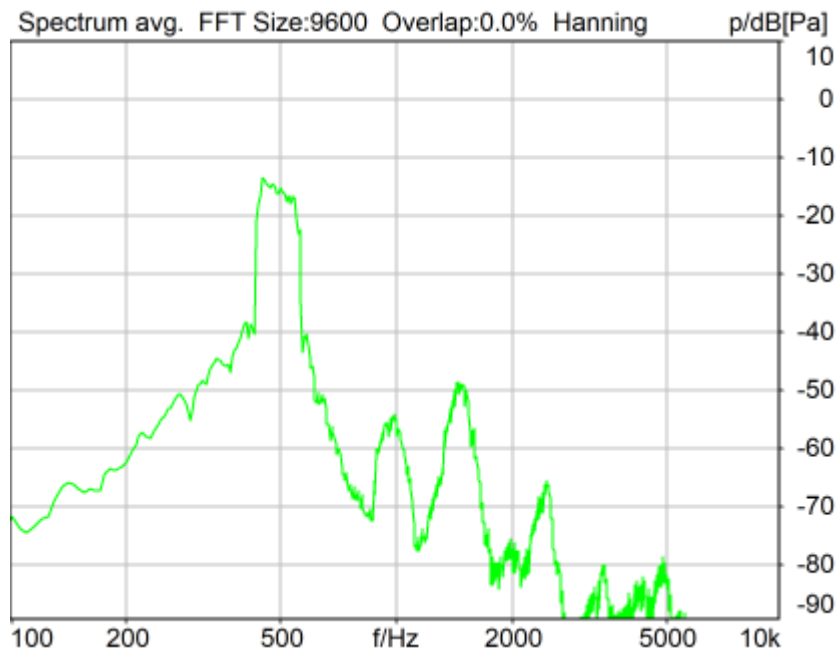
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz WB

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Distortion (Noise) RCV (packed): 28.77 dB (3.64%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 410.0 Hz | Stimulus max. | 595.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 405.0 Hz |
| Analysis (2) min. | 600.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

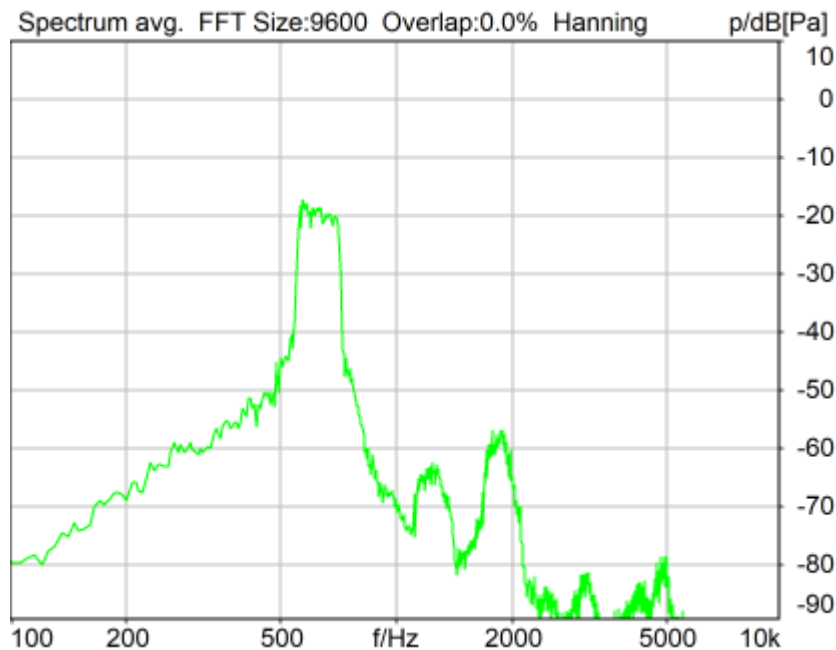
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz WB

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Distortion (Noise) RCV (packed): 29.61 dB (3.31%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

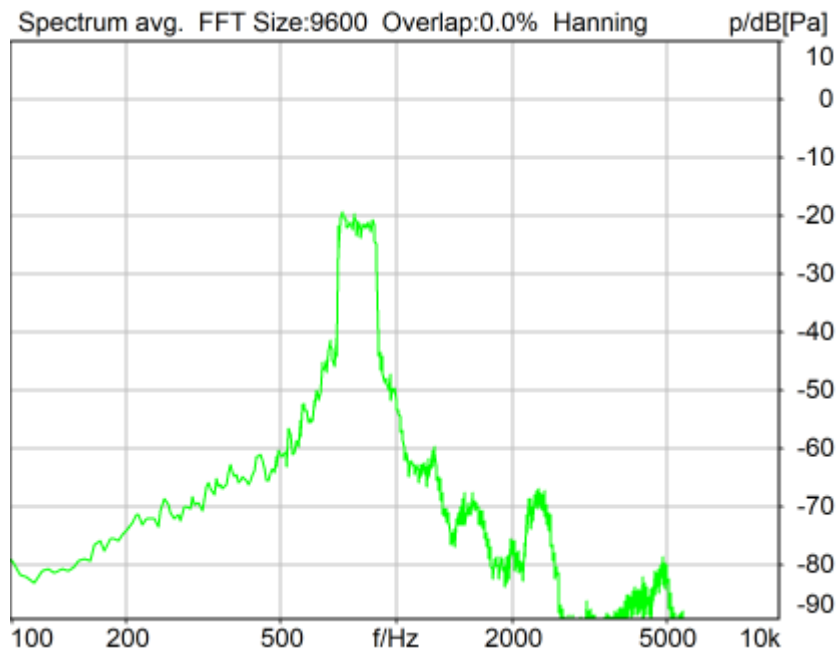
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 28.01 dB (3.98%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 925.0 Hz |
| Stimulus min. | 675.0 Hz | Analysis max. | 670.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 930.0 Hz | | |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

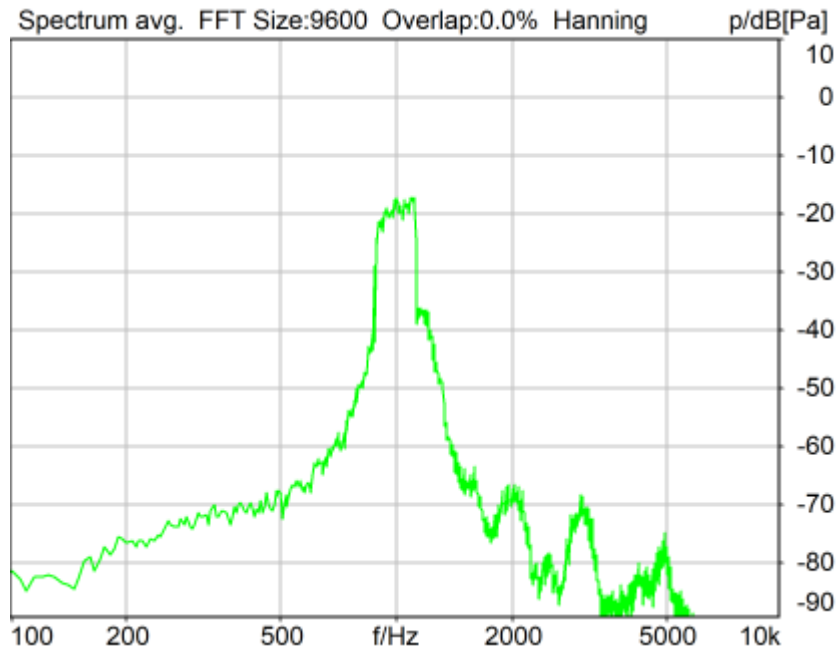
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz WB

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Distortion (Noise) RCV (packed): 22.32 dB (7.66%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 855.0 Hz | Stimulus max. | 1155.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 850.0 Hz |
| Analysis (2) min. | 1160.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

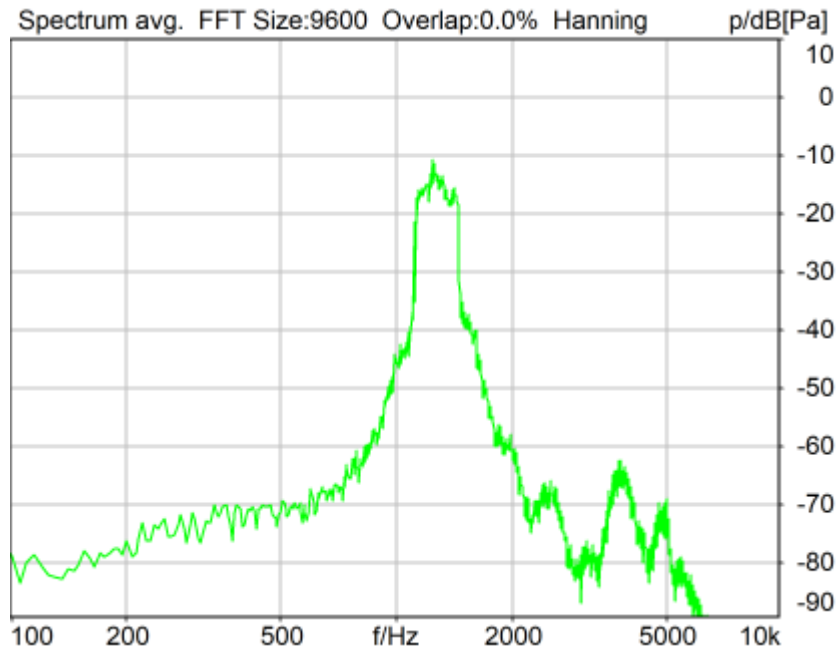
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz WB

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Distortion (Noise) RCV (packed): 23.90 dB (6.38%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1085.0 Hz | Stimulus max. | 1450.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis (2) min. | 1455.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

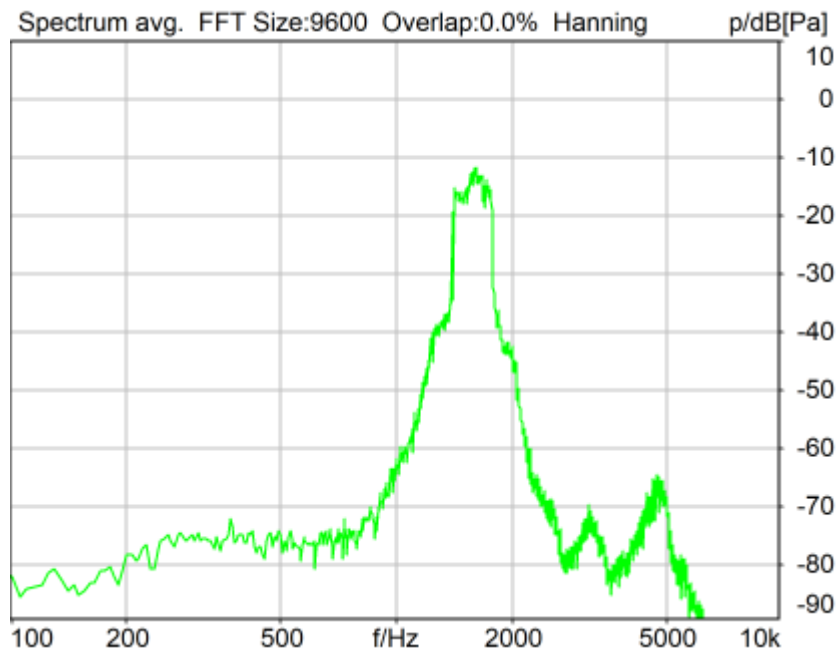
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 24.42 dB (6.01%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1375.0 Hz | Stimulus max. | 1815.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis (2) min. | 1820.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

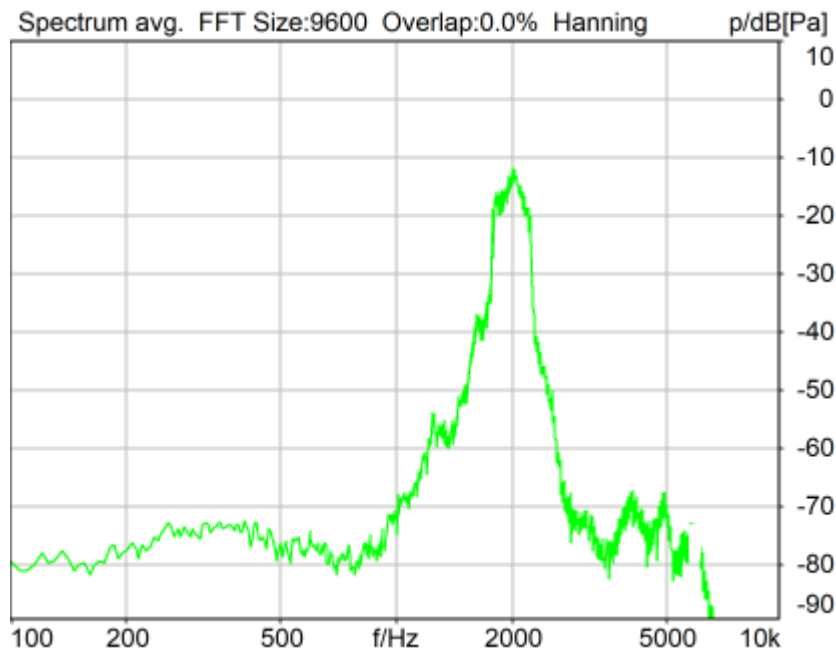
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 23.98 dB (6.32%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1745.0 Hz | Stimulus max. | 2275.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis (2) min. | 2280.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

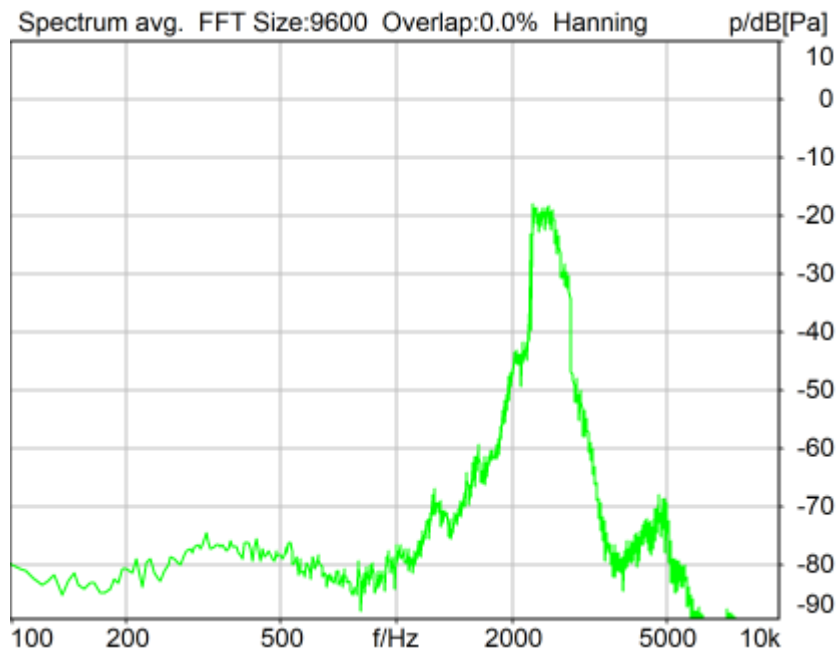
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 24.13 dB (6.22%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 2205.0 Hz | Stimulus max. | 2855.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis (2) min. | 2860.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

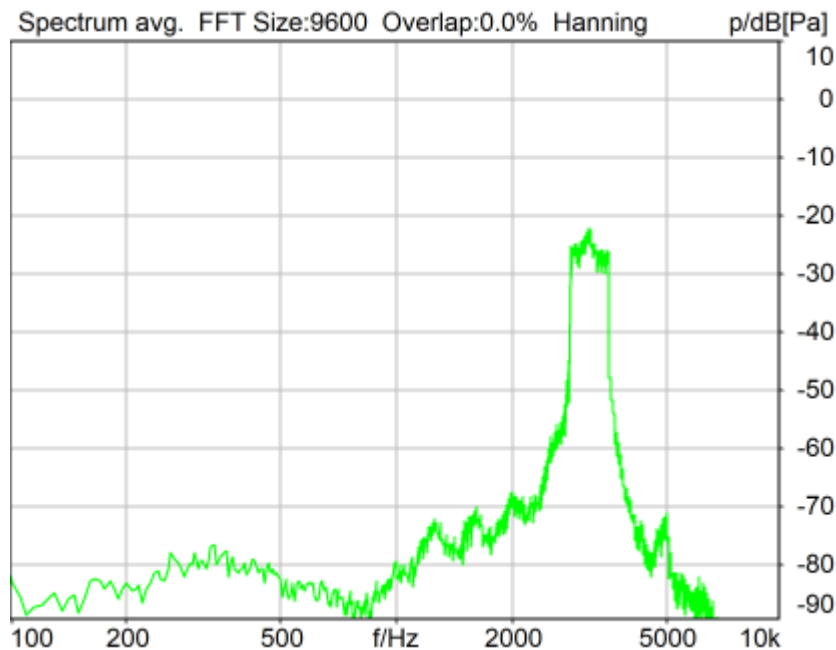
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 29.42 dB (3.38%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 2785.0 Hz | Stimulus max. | 3585.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis (2) min. | 3590.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

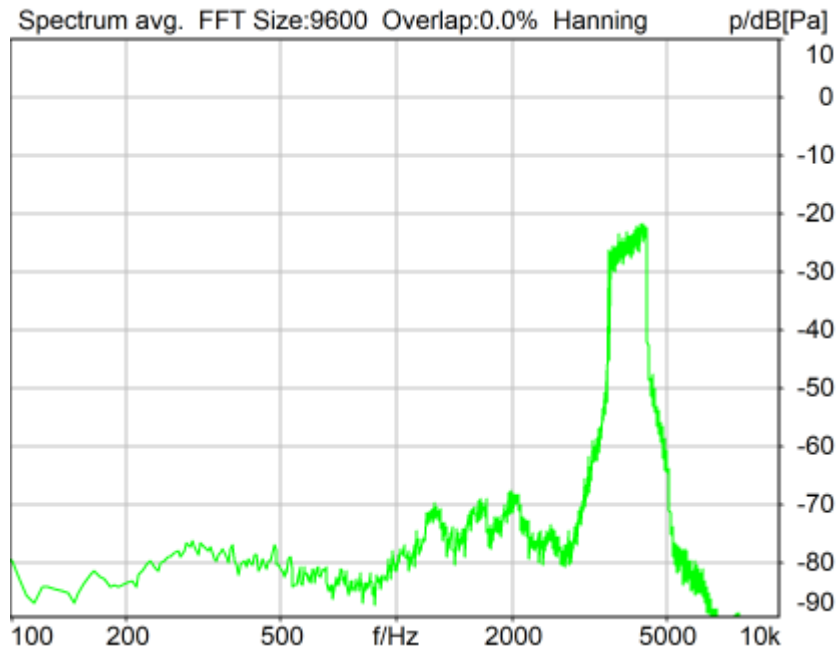
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 4000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 27.72 dB (4.11%) Ok

Ok

2024/1/15 16:23 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_4000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 3515.0 Hz | Stimulus max. | 4500.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 3510.0 Hz |
| Analysis (2) min. | 4505.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_4000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

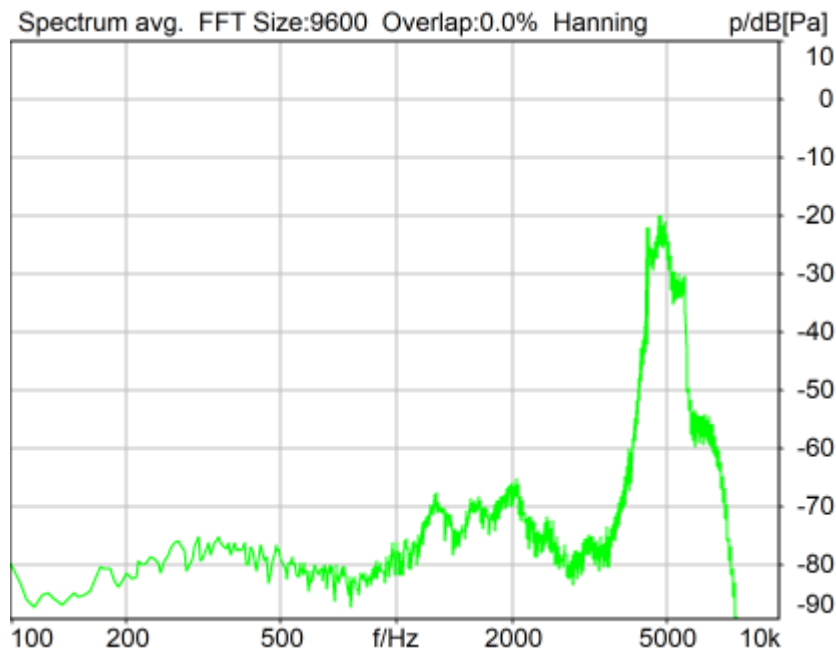
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 5000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N



Distortion (Noise) RCV (packed): 23.01 dB (7.07%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_5000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|---------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 4430.0 Hz | Stimulus max. | 5660.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 4425.0 Hz |
| Analysis (2) min. | 5665.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_5000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 8N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 250Hz | 28.13 dB |
| 2 | 315Hz | 28.60 dB |
| 3 | 400Hz | 28.12 dB |
| 4 | 500Hz | 28.77 dB |
| 5 | 630Hz | 29.61 dB |
| 6 | 800Hz | 28.01 dB |
| 7 | 1250Hz | 23.90 dB |
| 8 | 1600Hz | 24.42 dB |
| 9 | 2000Hz | 23.98 dB |
| 10 | 2500Hz | 24.13 dB |
| 11 | 3150Hz | 29.42 dB |
| 12 | 4000Hz | 27.72 dB |
| 13 | 5000Hz | 23.01 dB |
| 14 | 1000Hz | 22.32 dB |

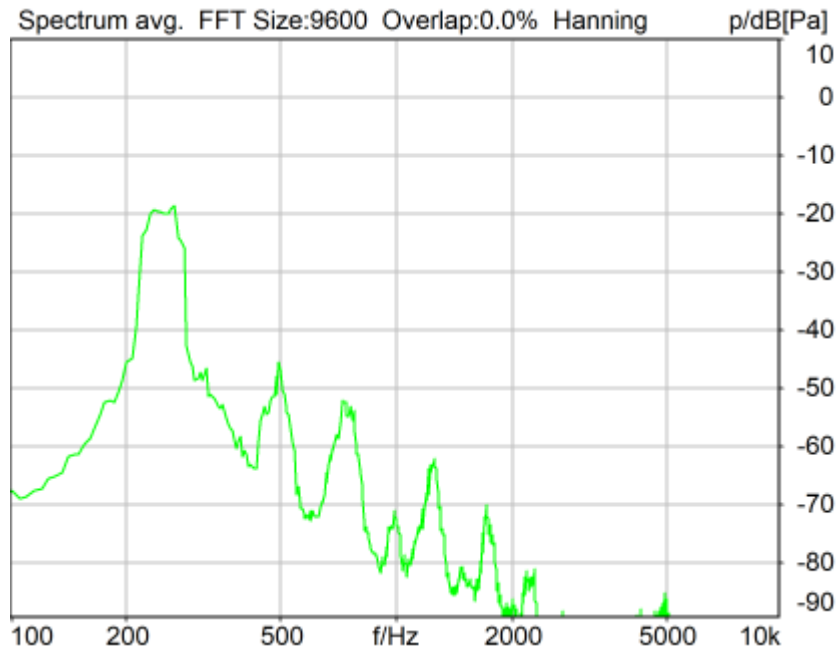
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 22.32dB at 1000Hz.

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5.2 RCV Distortion and Noise - 250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 28.47 dB (3.77%) Ok

Ok

2024/1/15 16:47 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_250hz_sr20dbm0_v02.dat.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 190.0 Hz | Stimulus max. | 315.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 185.0 Hz |
| Analysis (2) min. | 320.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

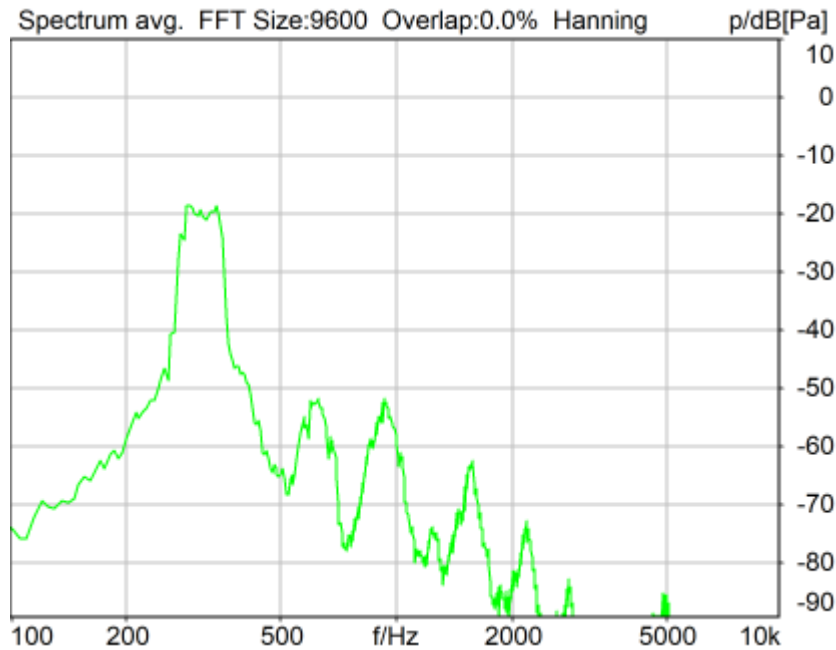
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 315 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 29.08 dB (3.51%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_315hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 1.9 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 390.0 Hz |
| Stimulus min. | 245.0 Hz | Analysis max. | 240.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 395.0 Hz | | |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_315Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

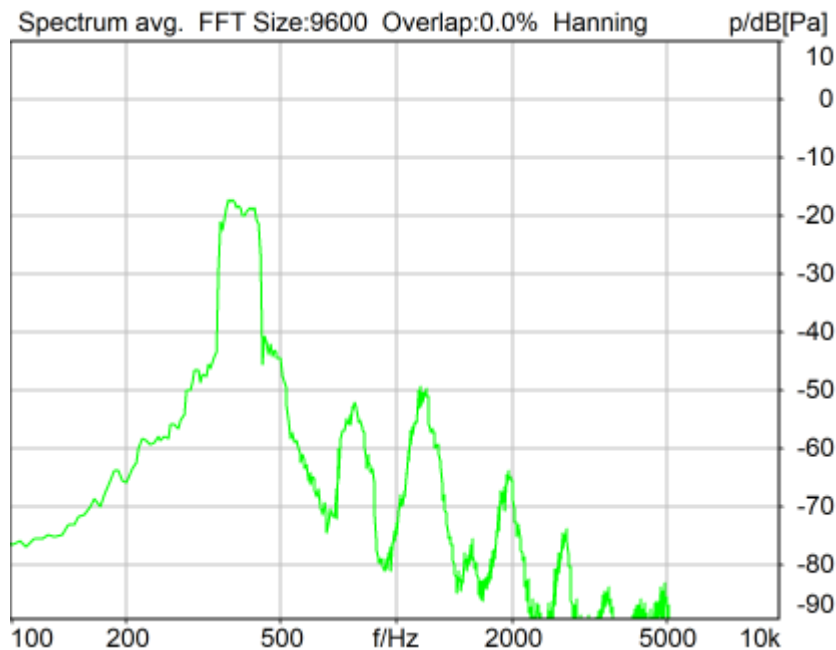
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 400 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 27.93 dB (4.01%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 320.0 Hz | Stimulus max. | 480.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 315.0 Hz |
| Analysis (2) min. | 485.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_400Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

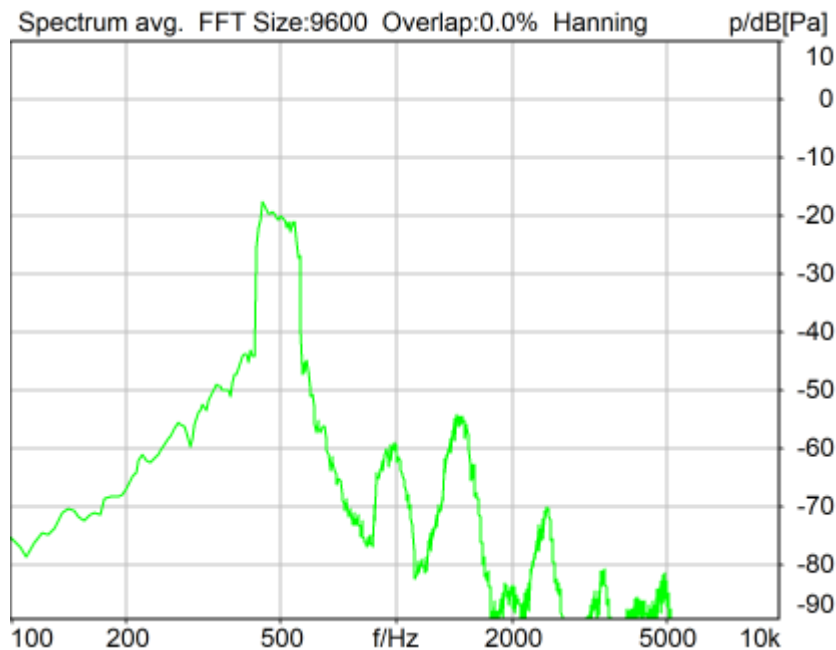
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 29.36 dB (3.41%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 410.0 Hz | Stimulus max. | 595.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 405.0 Hz |
| Analysis (2) min. | 600.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

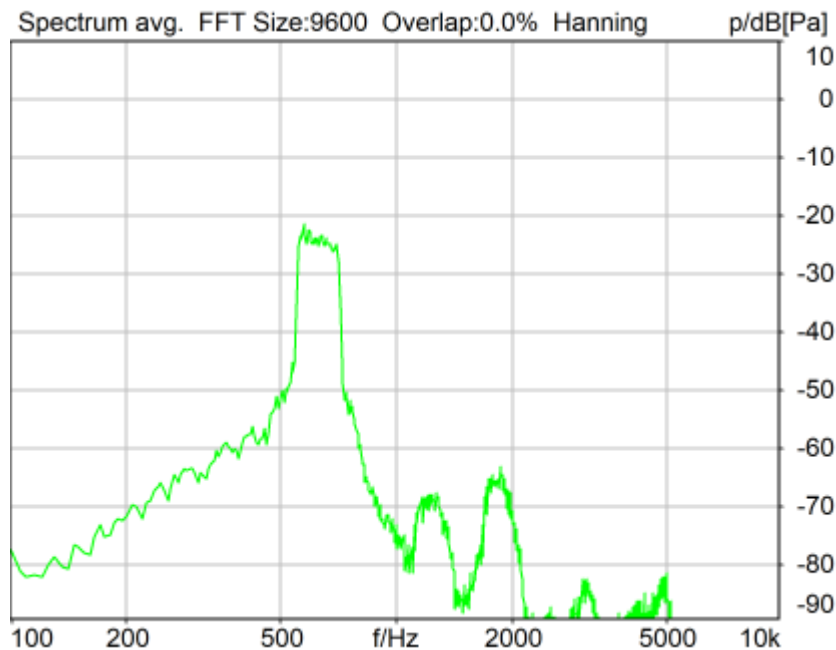
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 630 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 30.50 dB (2.99%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|---------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | Range length | 200.00 ms |
| Range start | 13550.00 ms | Sequence length | 400.00 ms |
| Number of seq. | 10 | FIR filter | drp2ff_ieee1652 |
| Use FIR Filter | Ch2 | DRP/ERP Ch.2: | Off |
| DRP/ERP Ch.1: | Off | Frequency base | Transformation |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | Stimulus max. | 745.0 Hz |
| Stimulus min. | 525.0 Hz | Analysis max. | 520.0 Hz |
| Analysis min. | 20.0 Hz | Analysis (2) max. | 20000.0 Hz |
| Analysis (2) min. | 750.0 Hz | | |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_630Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

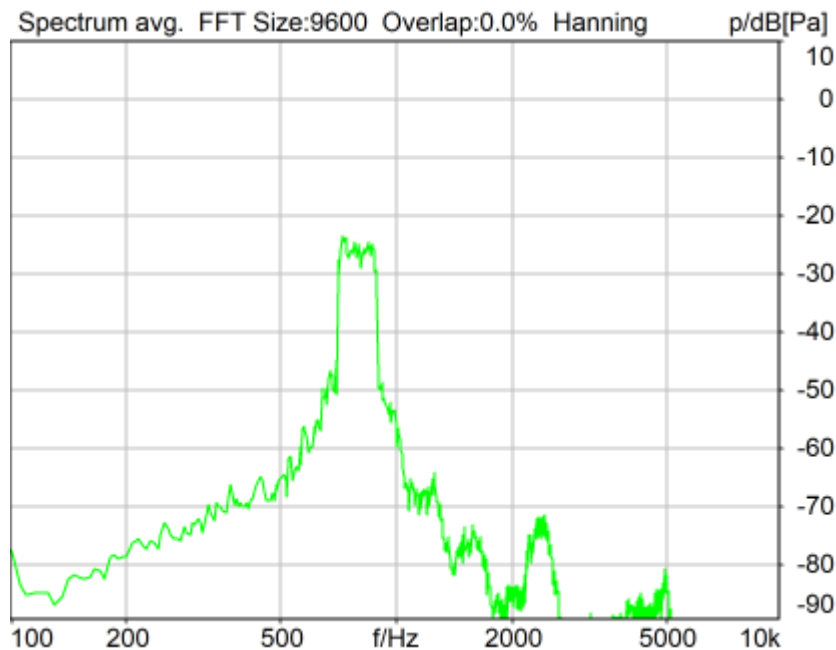
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 800 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 28.04 dB (3.96%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 675.0 Hz | Stimulus max. | 925.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 670.0 Hz |
| Analysis (2) min. | 930.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_800Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

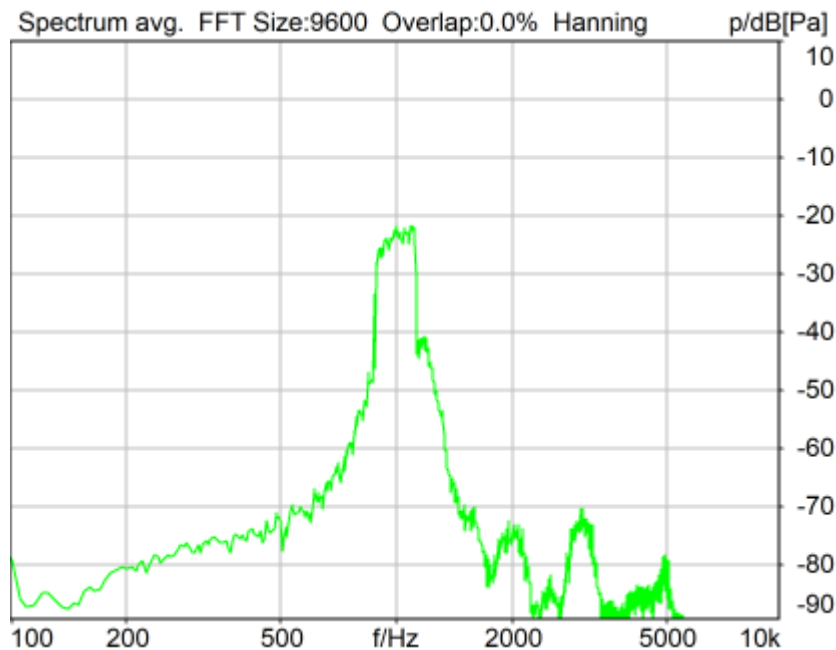
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 22.42 dB (7.57%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 855.0 Hz | Stimulus max. | 1155.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 850.0 Hz |
| Analysis (2) min. | 1160.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

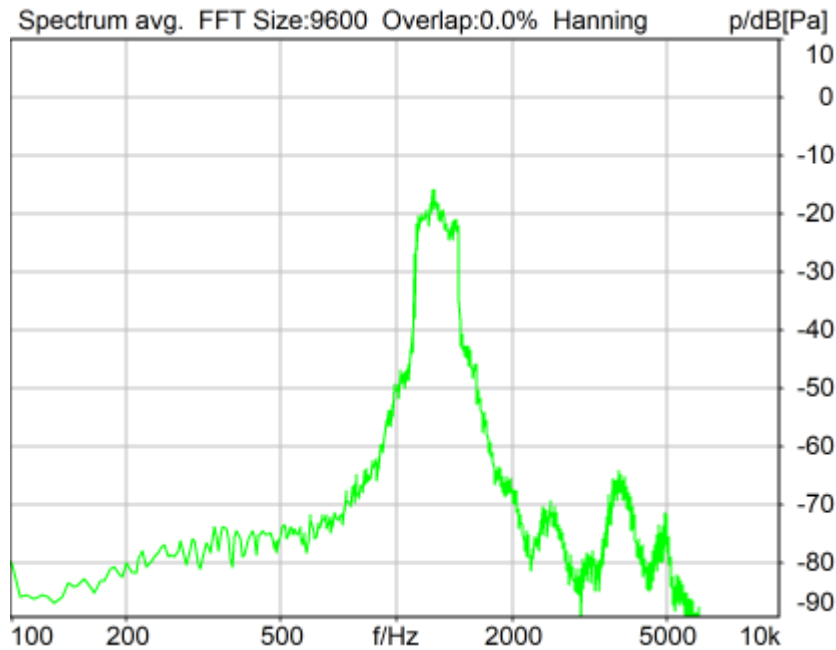
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1250 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 23.88 dB (6.39%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1085.0 Hz | Stimulus max. | 1450.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1080.0 Hz |
| Analysis (2) min. | 1455.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1250Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

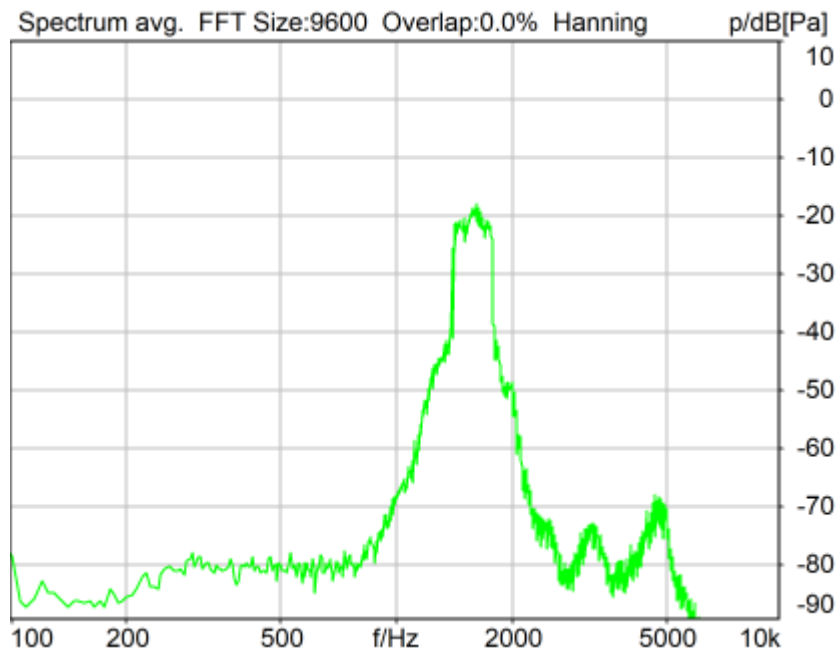
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 1600 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 24.13 dB (6.21%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1375.0 Hz | Stimulus max. | 1815.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1370.0 Hz |
| Analysis (2) min. | 1820.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_1600Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

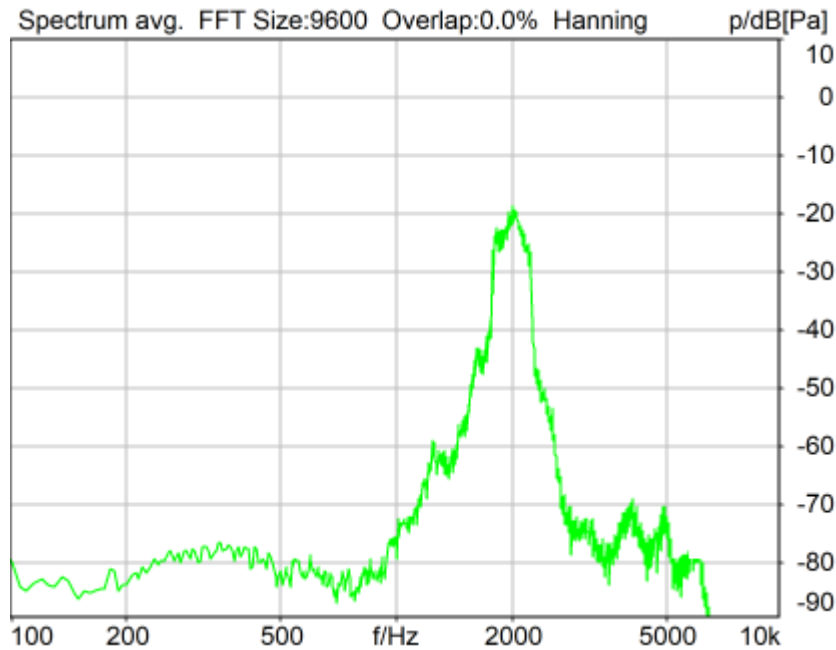
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 23.06 dB (7.03%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 1745.0 Hz | Stimulus max. | 2275.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 1740.0 Hz |
| Analysis (2) min. | 2280.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

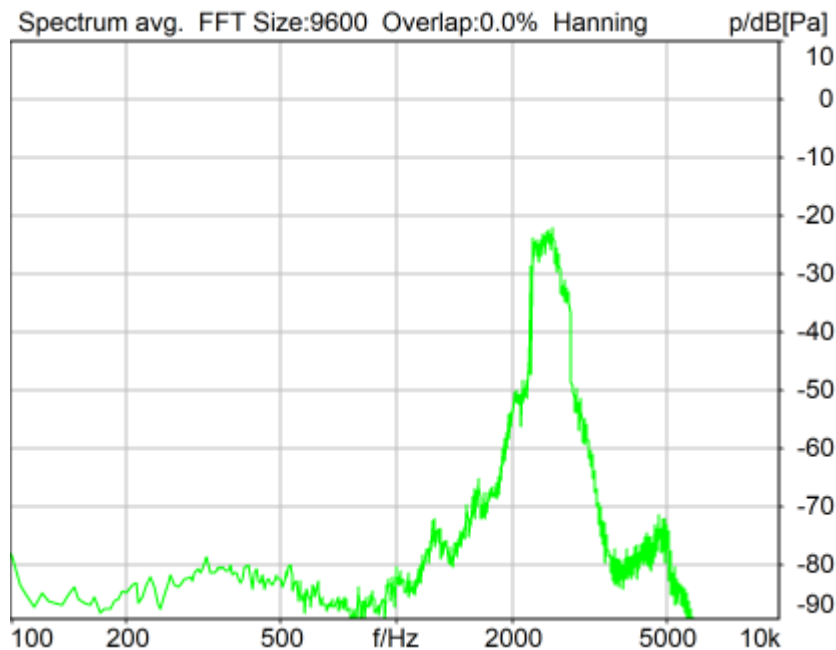
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 2500 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 25.02 dB (5.61%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 2205.0 Hz | Stimulus max. | 2855.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 2200.0 Hz |
| Analysis (2) min. | 2860.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_2500Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

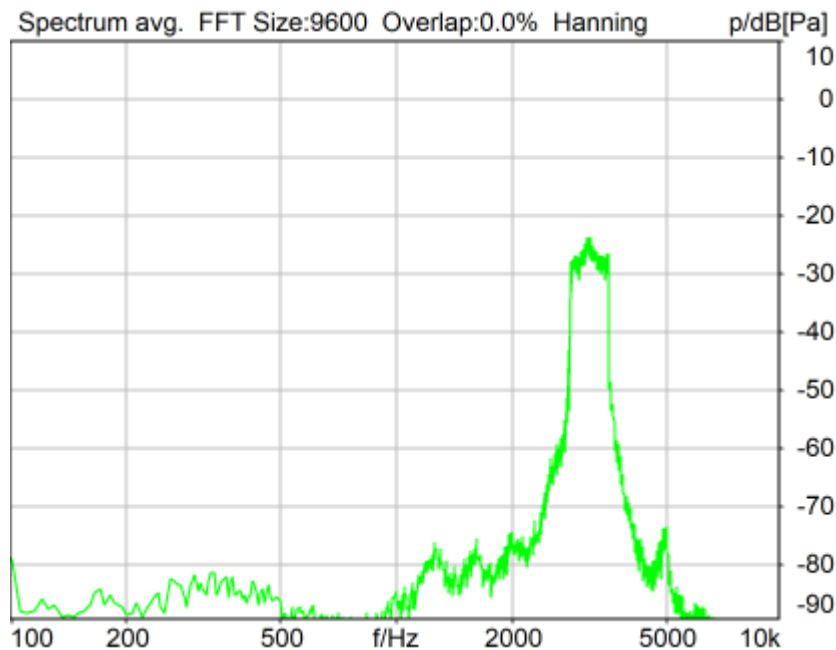
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 3150 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 30.15 dB (3.11%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 2785.0 Hz | Stimulus max. | 3585.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 2780.0 Hz |
| Analysis (2) min. | 3590.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_3150Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

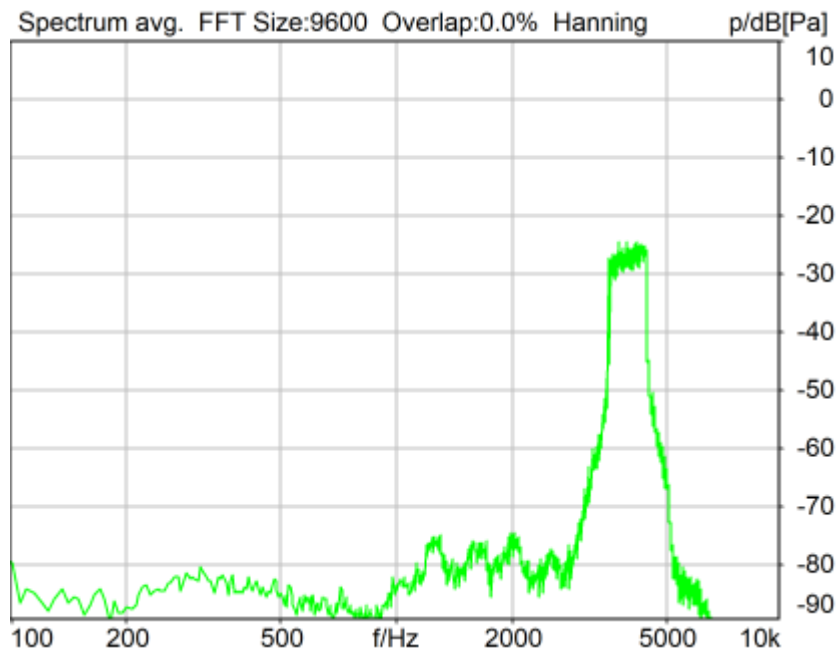
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 4000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 28.01 dB (3.98%) Ok

Ok

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Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_4000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 3515.0 Hz | Stimulus max. | 4500.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 3510.0 Hz |
| Analysis (2) min. | 4505.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_4000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 2 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 3 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

Channel In 4 Settings

| | | | |
|----------------------|--------------------------|----------------|------|
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

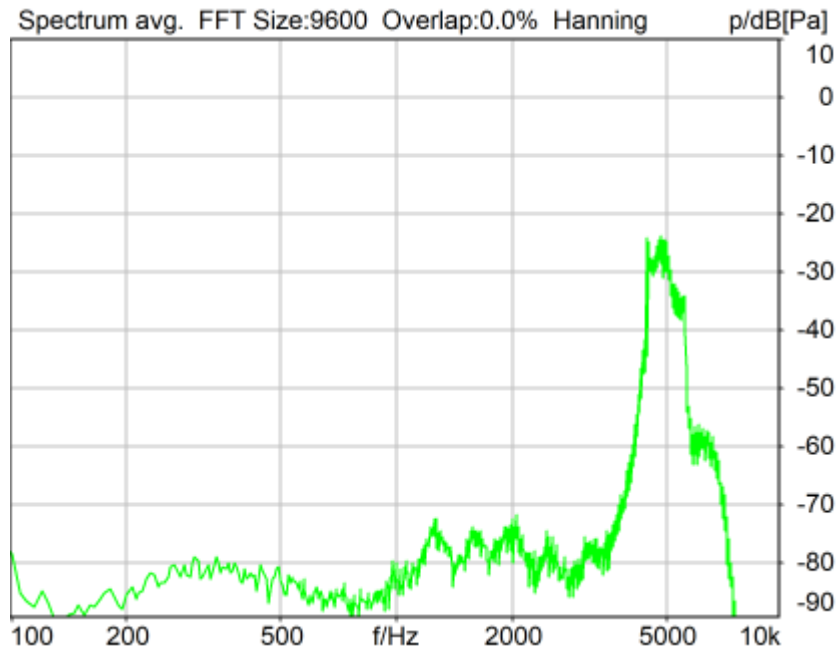
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.2 RCV Distortion and Noise - 5000 Hz WB

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N



Distortion (Noise) RCV (packed): 22.96 dB (7.12%) Ok

Ok

2024/1/15 16:52 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

Limits

| | lower |
|-------|----------|
| Run 1 | 20.00 dB |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)

Database Version: 40_HAC_Suite_Rev03

Source: act_rpn_b250ms_5000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))

Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-------|
| MECRP Delta Ye | 0.0 mm | Rotation Delta A | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta C | 0.0 ° |
| Delta Xe | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Ye | 0.0 mm | Delta A | 0.0 ° |
| | | Delta C | 0.0 ° |

| | | | |
|----------|--------|----------|-----------------|
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|-------------------|----------------|-------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 13550.00 ms | Range length | 200.00 ms |
| Number of seq. | 10 | Sequence length | 400.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | Transformation | | |
| FFT size | 9600 | Overlap | 0 % |
| Window function. | Hanning | Smooth | Off |
| dB weighting | A Weighting | | |
| Stimulus min. | 4430.0 Hz | Stimulus max. | 5660.0 Hz |
| Analysis min. | 20.0 Hz | Analysis max. | 4425.0 Hz |
| Analysis (2) min. | 5665.0 Hz | Analysis (2) max. | 20000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))
Store to variable RCVWB10_5000Hz

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

Channel In 1 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 2 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass 20Hz
Polarisation Voltage200V Supply Voltage ±60V
Channel In 3 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V
Channel In 4 Settings
Range 114 dB[SPL] @ 12.5 mV/Pa Highpass Off
Polarisation Voltage200V Supply Voltage ±60V

VoIP Settings (VoIP)

| | | | |
|--|------------------------------|---------------------|----------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTMP Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

Report - Receive Distortion and Noise (Conversational Gain)

TIA-5050 (2018-01) \ Measurements \ Wideband \ 5.2 Receive Distortion and Noise 2N

| Region | Frequency | SDNR |
|---------------|------------------|-------------|
| 1 | 250Hz | 28.47 dB |
| 2 | 315Hz | 29.08 dB |
| 3 | 400Hz | 27.93 dB |
| 4 | 500Hz | 29.36 dB |
| 5 | 630Hz | 30.50 dB |
| 6 | 800Hz | 28.04 dB |
| 7 | 1000Hz | 22.42 dB |
| 8 | 1250Hz | 23.88 dB |
| 9 | 1600Hz | 24.13 dB |
| 10 | 2000Hz | 23.06 dB |
| 11 | 2500Hz | 25.02 dB |
| 12 | 3150Hz | 30.15 dB |
| 13 | 4000Hz | 28.01 dB |
| 14 | 5000Hz | 22.96 dB |

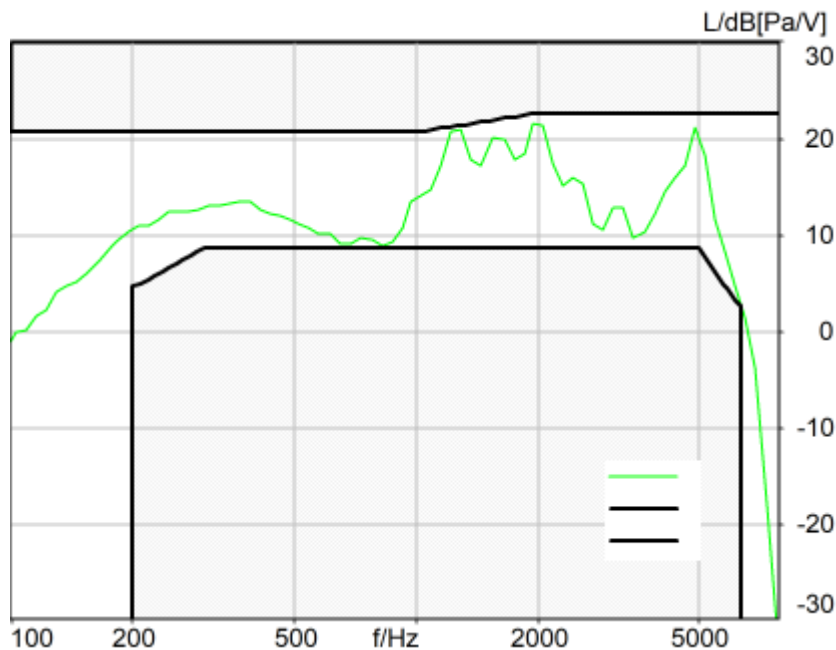
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 22.42dB at 1000Hz.

2024/1/15 16:52 ACQUA

5.3 Frequency Response 8N FF

TIA-5050 (2018-01) \ Measurements \ Wideband



Absolute minimal distance
0.34 dB at 1285.9 Hz Ok

Ok

2024/1/15 16:35 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_wb_r20_v01.dat

Level adj. Ch1 -90.0 dB
WIDEBAND IEEE-269-2010 Real Speech Signal at Channel 2
Pause 0.5 s +
Real Speech (english, male speaker) 11.5 s, Active Speech Level: -22,2 dBV, margin 15.9 dB +
Pause till end of file
Signal level (ch2): -22,2 dBV Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"
Alteration:
0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the end of the file.
filtered with 8.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|---------|------------------|-----------------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | -2.8 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 8.0 N, Force reached: 8.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hawb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hawb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 8000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
 In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|----------------|-----------|----------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
|----------------|-----------|----------------|-------------|

| | | | |
|--|------------------------------|---------------------|----------------|
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTF Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

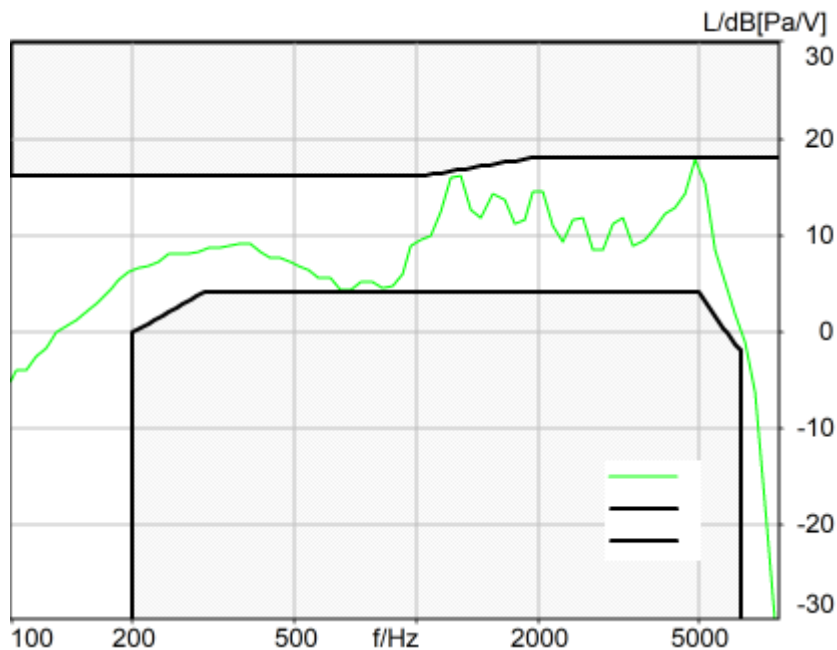
| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |

5.3 Frequency Response 2N FF

TIA-5050 (2018-01) \ Measurements \ Wideband



Absolute minimal distance
0.20 dB at 4870.0 Hz Ok

Ok

2024/1/15 16:53 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Limits

| | |
|-------|--------------------|
| | lower |
| Run 1 | Fit into tolerance |

Meas. Setting off

Underlying Standard: TIA-5050 (2018-01)
Database Version: 40_HAC_Suite_Rev03

Source: respmaleieeee269_wb_r20_v01.dat

Level adj. Ch1 -90.0 dB
WIDEBAND IEEE-269-2010 Real Speech Signal at Channel 2
Pause 0.5 s +
Real Speech (english, male speaker) 11.5 s, Active Speech Level: -22,2 dBV, margin 15.9 dB +
Pause till end of file
Signal level (ch2): -22,2 dBV Active Speech Level, margin 15.9 dB

Signal taken from "IEEE_269-2010_Male_mono_48_kHz.wav"
Alteration:
0.2 s Pause added at the beginning of the file.

0.8 s Pause added at the and of the file.
filtered with 8.0 kHz low-pass filter
signal level changed

Calibration

Input ch.2: 0.49 dB 2023/11/1 (HATS 1 (HMS II.3))
Output ch.2: 0.00 dB 2023/6/27 (Radio Tester 1 (CMW500))

HHP IV Settings (Setting: STD:(0,0,0) rel AHP)

| | | | |
|----------------|--------|------------------|-----------------|
| | | Rotation Delta A | 0.0 ° |
| MECRP Delta Ye | 0.0 mm | Rotation Delta C | 0.0 ° |
| MECRP Delta Ze | 0.0 mm | Rotation Delta B | 5.0 ° |
| Delta Xe | 0.0 mm | Delta A | 0.0 ° |
| Delta Ye | 0.0 mm | Delta C | 0.0 ° |
| Delta Ze | 0.0 mm | Delta B | 0.0 ° |
| Ym | 0.1 mm | Ear Type | 3.3 Coordinates |

Mounting: Right Ear
Force to apply: 2.0 N, Force reached: 2.0 N

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 1 (HMS II.3)

Analysis

| | | | |
|------------------|-------------------------------|---------------------|-----------------|
| Direction | Out 2 -> In 2 | | |
| Range start | 500.00 ms | Range length | 11500.00 ms |
| Use FIR Filter | Ch2 | FIR filter | drp2ff_ieee1652 |
| DRP/ERP Ch.1: | Off | DRP/ERP Ch.2: | Off |
| Frequency base | 12th octave | DIN Row | Row A |
| Method | FFT | | |
| FFT size | 4096 | Overlap | 75 % |
| Window function. | Hanning | | |
| Reference file | r521_rcv_frq_spee269_hawb.fft | | |
| Tol. scheme file | 521_rcv_frq_man_hawb.tol | Min. freq. for tol. | 100.0 Hz |
| Auto adjust | Centrate | Max. freq. for tol. | 8000.0 Hz |

Special Features

Compensate delay 192.4000 ms (D_RCV_WB, Delay (Cross))

labCORE Settings

| | | | |
|----------------|----------|-------------|----------|
| labCORE Serial | 77000207 | Nickname | |
| Firmware | 3.4.17 | Sync Source | Internal |
| Clock Pitch | 0.00 ppm | | |

labCORE Routing

Out Channel 1 -> Power Amp. (Slot 10) 1 -> HATS 1 (HMS II.3) Speaker
 Out Channel 2 -> VoIP 1 -> Radio Tester 1 (CMW500) RF In/Out
 In Channel 1 <- VoIP In/Out 1 <- Radio Tester 1 (CMW500) RF In/Out
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. (Slot 6) In 2 <- HATS 1 (HMS II.3) Mic. Right

Microphone Settings (Mic Amp. (Slot 6))

| | | | |
|-----------------------|--------------------------|----------------|------|
| Channel In 1 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 2 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | 20Hz |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 3 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |
| Channel In 4 Settings | | | |
| Range | 114 dB[SPL] @ 12.5 mV/Pa | Highpass | Off |
| Polarisation Voltage | 200V | Supply Voltage | ±60V |

VoIP Settings (VoIP)

| | | | |
|----------------|-----------|----------------|-------------|
| RTP Connection | Streaming | SIP Connection | Unavailable |
|----------------|-----------|----------------|-------------|

| | | | |
|--|------------------------------|---------------------|----------------|
| SIP Reg. State | Unregistered | Jitterbuffer Length | 140 |
| Jitter Buffer Reset | On Playback | Enabled Codec | AMR-WB/16000/1 |
| Packet Length | 20 | Encoder Parameter | |
| ;;octet-align=0;default-local-mode=8;request-remote-mode=off | | | |
| FMTF Parameter | octet-align=1;;octet-align=0 | | |
| Impairment Mode | Off | Impairment Type | Off |

BEQ Settings (BEQ Filter 1)

Block mode Bypass

Artificial Head Settings (HATS 1 (HMS II.3))

| | | | |
|----------|----------|------------|----------|
| Ser. Nr. | 12306613 | Pinna Type | Type 3.3 |
|----------|----------|------------|----------|

HIB Settings

| | | | |
|--------------------|--------------------|--------------------|----------|
| HIB Name | 60020095 | Serial | 60020095 |
| HIB Mode | Mobile Measurement | Impedance | 32 Ohm |
| Gain out 1 | -40.00 dB | Gain out 2 | 0.00 dB |
| Gain in 1 | 0.00 dB | Gain in 2 | 0.00 dB |
| Mic 1 Power Supply | Off | Mic 2 Power Supply | Off |