

Measurement Protocol

Measurement Object	23T04Z80629 VoLTE EVS	23T04Z80629 VoLTE AMR
Description	FCC Volume control	FCC Volume control
Model Name	B160V	b160v
Sample Number	UT78a	UT78a
IMEI	356197680005216	356197680005216
Test Band	VoLTE Band2	VoLTE Band2
Test Date	20231213-20231217	20231213-20231217
Tester	Zhu Hongye	Zhu Hongye
Test System (ACQUA System)	ACQUA V5.1.200,CMW500 (SN:170430),Labcore (SN:77000136)	ACQUA V5.1.200,CMW500 (SN:170430),Labcore (SN:77000136)
HATS Type	HEAD HATS (HMS II.3, SN: 12306194(torso13740182))(0,0,5)	HEAD HATS (HMS II.3, SN: 12306194(torso13740182))(0,0,5)
Environment	Temp.15~35 'C, 20~75%RH, Acoustic Chamber	Temp.15~35 'C, 20~75%RH, Acoustic Chamber
Location	The NO.52 of Huayuan North Road	The NO.52 of Huayuan North Road

Project	TIA 5050 v1
Report Generation Date	2023/12/17 14:08
Responsible Person	STA

Status Overview

SMD	Status	Single Value Description	Single Value	Object
5.1 Receive Volume Control Performance 8N Band 4;Table-3	Done	Speech Level [dB[SPL]]	84.60	23T04Z80629 VoLTE EVS
5.1 Receive Volume Control Performance 8N Band 5;Table-3	Done	Speech Level [dB[SPL]]	84.42	23T04Z80629 VoLTE EVS
5.1 Receive Volume Control Performance 8N Band 12;Table-3	Done	Speech Level [dB[SPL]]	84.37	23T04Z80629 VoLTE EVS
5.1 Receive Volume Control Performance 8N Band 13;Table-3	Done	Speech Level [dB[SPL]]	84.47	23T04Z80629 VoLTE EVS
5.1 Receive Volume Control Performance 8N Band 66;Table-3	Done	Speech Level [dB[SPL]]	84.30	23T04Z80629 VoLTE EVS
5.1.1 -1 Conversation Gain 8N Band 4;Table-3	Ok	Calculated Value [dB]	14.60	23T04Z80629 VoLTE EVS
5.1.1 -1 Conversation Gain 8N Band 5;Table-3	Ok	Calculated Value [dB]	14.42	23T04Z80629 VoLTE EVS
5.1.1 -1 Conversation Gain 8N Band 12;Table-3	Ok	Calculated Value [dB]	14.37	23T04Z80629 VoLTE EVS
5.1.1 -1 Conversation Gain 8N Band 13;Table-3	Ok	Calculated Value [dB]	14.47	23T04Z80629 VoLTE EVS
5.1.1 -1 Conversation Gain 8N Band 66;Table-3	Ok	Calculated Value [dB]	14.30	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 400Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	27.09	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 400Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	26.12	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 400Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	27.71	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 400Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	27.70	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 400Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	28.24	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 500Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	25.24	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 500Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	27.90	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 500Hz WB&NB	Done	Distortion (Noise) [dB], 0.0 dB	27.11	23T04Z80629 VoLTE EVS

Band 12;Table-3				
Receive path - distortion and noise 500Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	26.82	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 500Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	24.61	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 630Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	25.05	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 630Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	26.42	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 630Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	25.13	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 630Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	25.72	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 630Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	25.66	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 800Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	24.92	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 800Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	23.54	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 800Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	22.95	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 800Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	24.76	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 800Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	23.73	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1000Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	31.06	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1000Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	28.43	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1000Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.61	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1000Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.81	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1000Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.71	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1250Hz WB&NB	Done	Distortion (Noise) [dB], 0.0 dB	30.07	23T04Z80629 VoLTE EVS

Band 4;Table-3				
Receive path - distortion and noise 1250Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.01	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1250Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.99	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1250Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.74	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1250Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.57	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1600Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	34.53	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1600Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	33.27	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1600Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.01	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1600Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	34.74	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 1600Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.17	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2000Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	34.89	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2000Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.34	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2000Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.09	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2000Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.20	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2000Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	35.28	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2500Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.79	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2500Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	31.69	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2500Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.43	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 2500Hz WB&NB	Done	Distortion (Noise) [dB], 0.0 dB	31.34	23T04Z80629 VoLTE EVS

Band 13;Table-3				
Receive path - distortion and noise 2500Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	32.03	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 3150Hz WB&NB Band 4;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.07	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 3150Hz WB&NB Band 5;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	28.17	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 3150Hz WB&NB Band 12;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	29.92	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 3150Hz WB&NB Band 13;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	29.04	23T04Z80629 VoLTE EVS
Receive path - distortion and noise 3150Hz WB&NB Band 66;Table-3	Done	Distortion (Noise) [dB], 0.0 dB	30.29	23T04Z80629 VoLTE EVS
5.2 Receive path – distortion and noise Band 4;Table-3	Ok			23T04Z80629 VoLTE EVS
5.2 Receive path – distortion and noise Band 5;Table-3	Ok			23T04Z80629 VoLTE EVS
5.2 Receive path – distortion and noise Band 12;Table-3	Ok			23T04Z80629 VoLTE EVS
5.2 Receive path – distortion and noise Band 13;Table-3	Ok			23T04Z80629 VoLTE EVS
5.2 Receive path – distortion and noise Band 66;Table-3	Ok			23T04Z80629 VoLTE EVS
5.3 Receive Acoustic Frequency response Performance Band 4;Table-3	Ok	Min. dist. to tolerance scheme [dB], 305.9 Hz	2.62	23T04Z80629 VoLTE EVS
5.3 Receive Acoustic Frequency response Performance Band 5;Table-3	Ok	Min. dist. to tolerance scheme [dB], 305.9 Hz	2.57	23T04Z80629 VoLTE EVS
5.3 Receive Acoustic Frequency response Performance Band 12;Table-3	Ok	Min. dist. to tolerance scheme [dB], 305.9 Hz	2.88	23T04Z80629 VoLTE EVS
5.3 Receive Acoustic Frequency response Performance Band 13;Table-3	Ok	Min. dist. to tolerance scheme [dB], 305.9 Hz	3.12	23T04Z80629 VoLTE EVS
5.3 Receive Acoustic Frequency response Performance Band 66;Table-3	Ok	Min. dist. to tolerance scheme [dB], 305.9 Hz	3.05	23T04Z80629 VoLTE EVS
5.1 Receive Volume Control Performance 2N Band 4;Table-3	Done	Speech Level [dB[SPL]]	80.56	23T04Z80629 VoLTE AMR
5.1 Receive Volume Control Performance 2N	Done	Speech Level [dB[SPL]]	80.50	23T04Z80629 VoLTE AMR

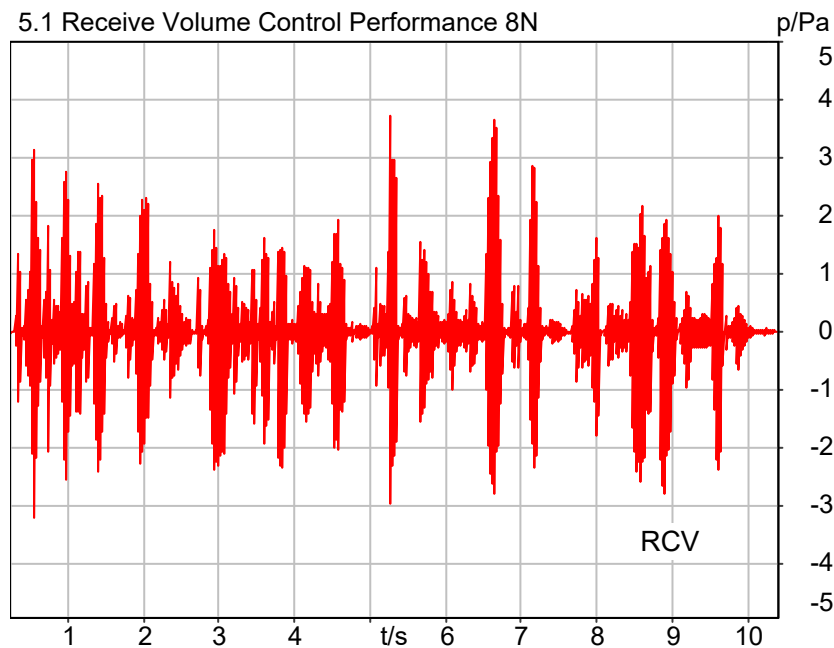
Band 5;Table-3				
5.1 Receive Volume Control Performance 2N Band 12;Table-3	Done	Speech Level [dB[SPL]]	80.53	23T04Z80629 VoLTE AMR
5.1 Receive Volume Control Performance 2N Band 13;Table-3	Done	Speech Level [dB[SPL]]	80.52	23T04Z80629 VoLTE AMR
5.1 Receive Volume Control Performance 2N Band 66;Table-3	Done	Speech Level [dB[SPL]]	80.42	23T04Z80629 VoLTE AMR
5.1.1 -1 Conversation Gain 2N Band 4;Table-3	Ok	Calculated Value [dB]	10.56	23T04Z80629 VoLTE AMR
5.1.1 -1 Conversation Gain 2N Band 5;Table-3	Ok	Calculated Value [dB]	10.50	23T04Z80629 VoLTE AMR
5.1.1 -1 Conversation Gain 2N Band 12;Table-3	Ok	Calculated Value [dB]	10.53	23T04Z80629 VoLTE AMR
5.1.1 -1 Conversation Gain 2N Band 13;Table-3	Ok	Calculated Value [dB]	10.52	23T04Z80629 VoLTE AMR
5.1.1 -1 Conversation Gain 2N Band 66;Table-3	Ok	Calculated Value [dB]	10.42	23T04Z80629 VoLTE AMR

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5.1 Receive Volume Control Performance 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 4;Table-3



Speech Level RCV: 84.60 dB[SPL], Act.: 93.39%

2023/12/17 12:09 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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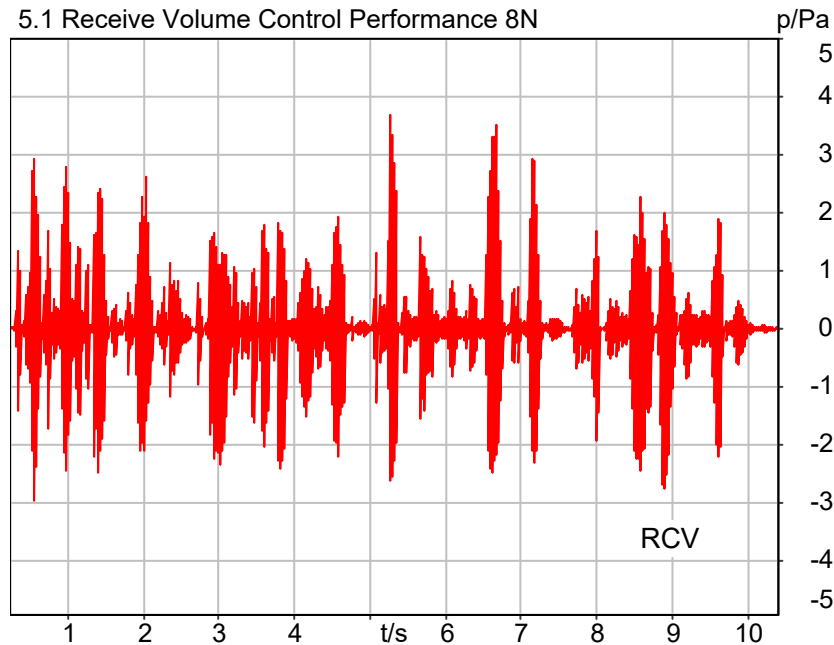
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 5;Table-3



Speech Level RCV: 84.42 dB[SPL], Act.: 93.53%

2023/12/17 12:15 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)

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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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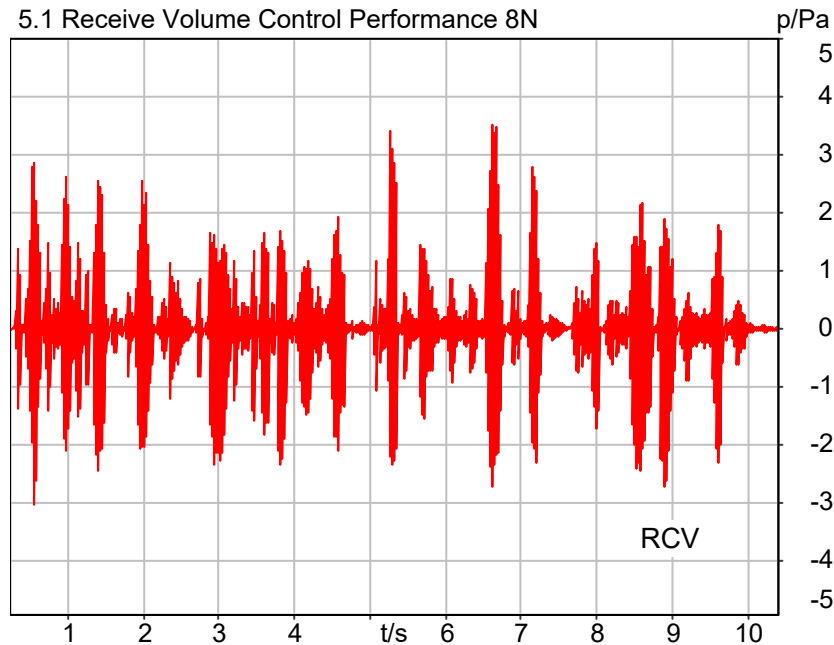
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 12;Table-3



Speech Level RCV: 84.37 dB[SPL], Act.: 93.43%

2023/12/17 12:21 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)

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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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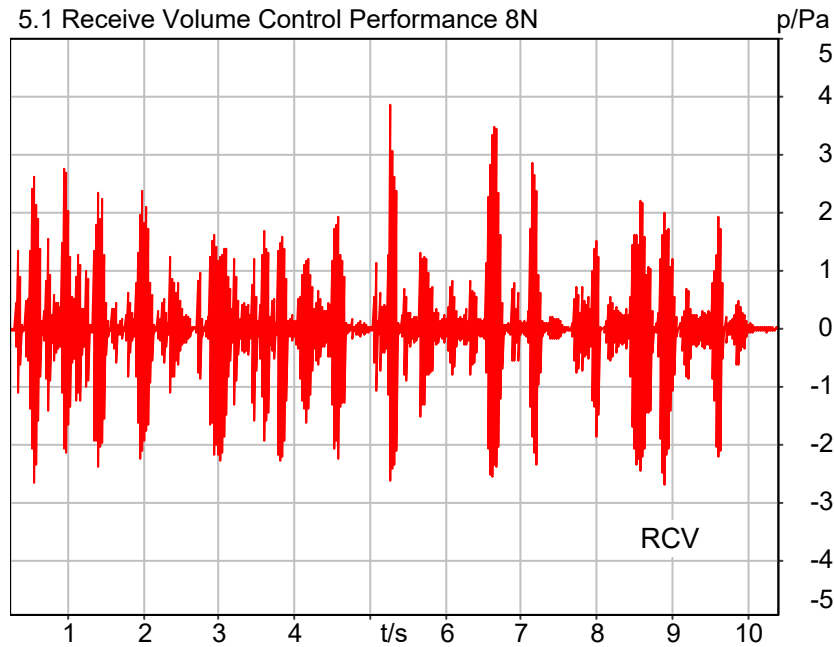
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 13;Table-3



Speech Level RCV: 84.47 dB[SPL], Act.: 93.47%

2023/12/17 12:27 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)

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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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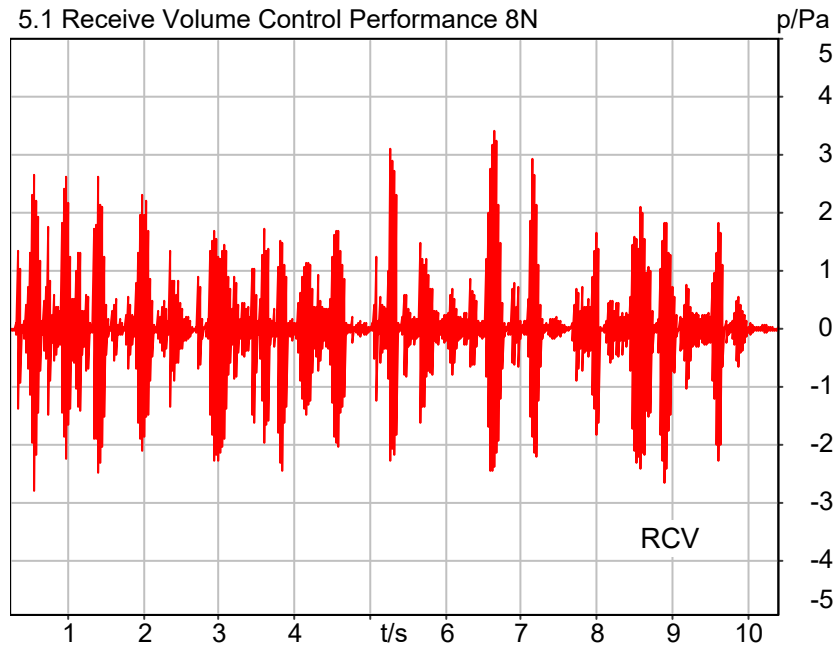
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 66;Table-3



Speech Level RCV: 84.30 dB[SPL], Act.: 93.40%

2023/12/17 12:32 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)

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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1.1 -1 Conversation Gain 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 4;Table-3

Correction

rcv_vol_nb	84.600 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 8N
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rcv_vol_nb-70

Calculated Value: 14.60 dB Ok

Ok

2023/12/17 12:09 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 5;Table-3

Correction

rcv_vol_nb	84.420 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 8N
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rcv_vol_nb-70

Calculated Value: 14.42 dB Ok

Ok

2023/12/17 12:15 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 12;Table-3

Correction

rcv_vol_nb	84.370 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 8N
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rcv_vol_nb-70

Calculated Value: 14.37 dB Ok

Ok2023/12/17 12:21 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 13;Table-3

Correction

rcv_vol_nb	84.470 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 8N
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rcv_vol_nb-70

Calculated Value: 14.47 dB Ok

Ok2023/12/17 12:27 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 8N (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB

Band 66;Table-3

Correction

rcv_vol_nb	84.300 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 8N
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rcv_vol_nb-70

Calculated Value: 14.30 dB Ok

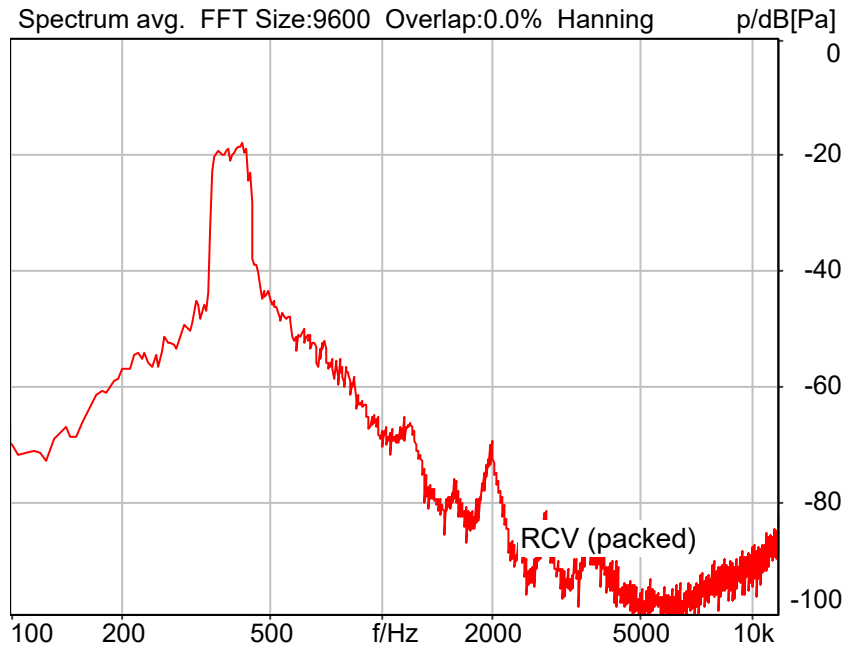
Ok2023/12/17 12:33 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

Receive path - distortion and noise 400Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 27.09 dB (4.42%)

2023/12/17 12:10 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	320.0 Hz
Stimulus min.	320.0 Hz	Stimulus max.	480.0 Hz

Analysis min.	100.0 Hz	Analysis max.	315.0 Hz
Analysis (2) min.	485.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO26_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

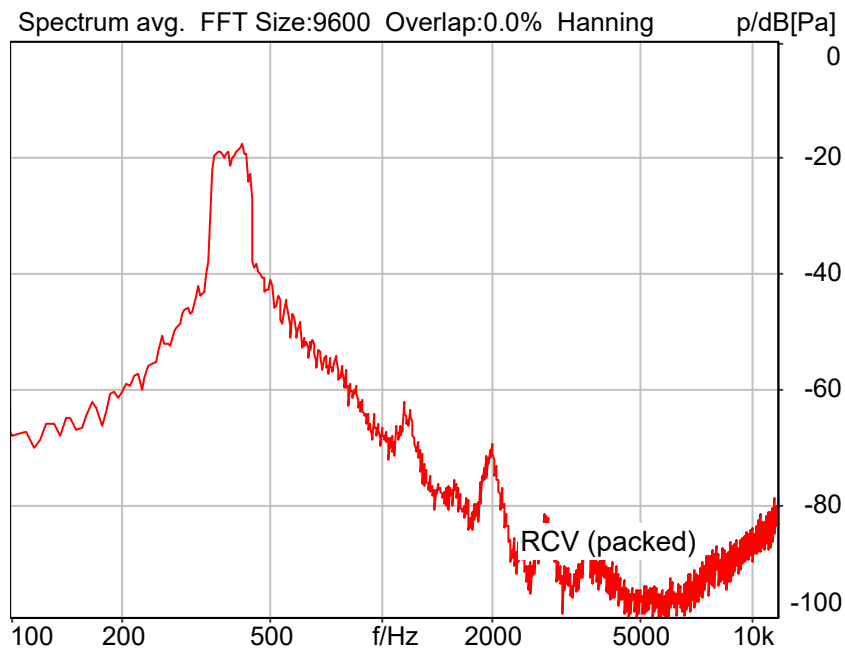
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 400Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



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

2023/12/17 12:16 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	320.0 Hz
Stimulus min.	320.0 Hz	Stimulus max.	480.0 Hz

Analysis min.	100.0 Hz	Analysis max.	315.0 Hz
Analysis (2) min.	485.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO26_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

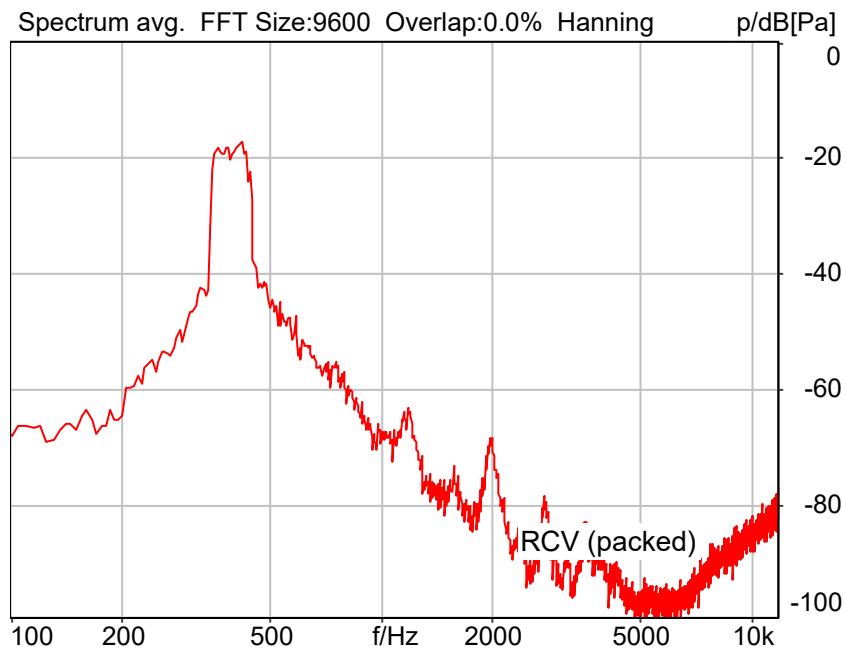
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 400Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 27.71 dB (4.12%)

2023/12/17 12:21 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat
Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))
Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	315.0 Hz
Analysis (2) min.	485.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO26_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

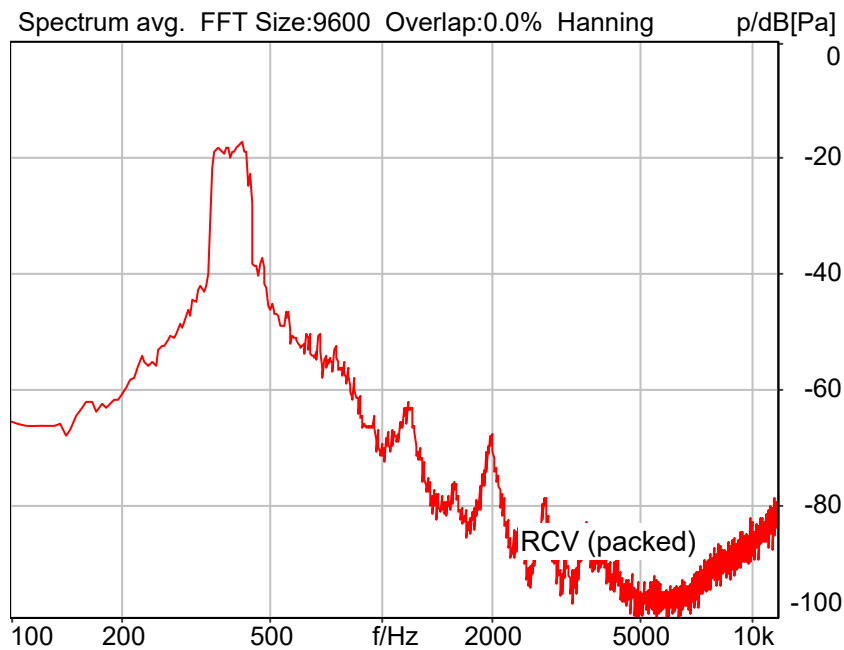
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 400Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 27.70 dB (4.12%)

2023/12/17 12:28 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	320.0 Hz
Stimulus min.	320.0 Hz	Stimulus max.	480.0 Hz

Analysis min.	100.0 Hz	Analysis max.	315.0 Hz
Analysis (2) min.	485.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO26_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

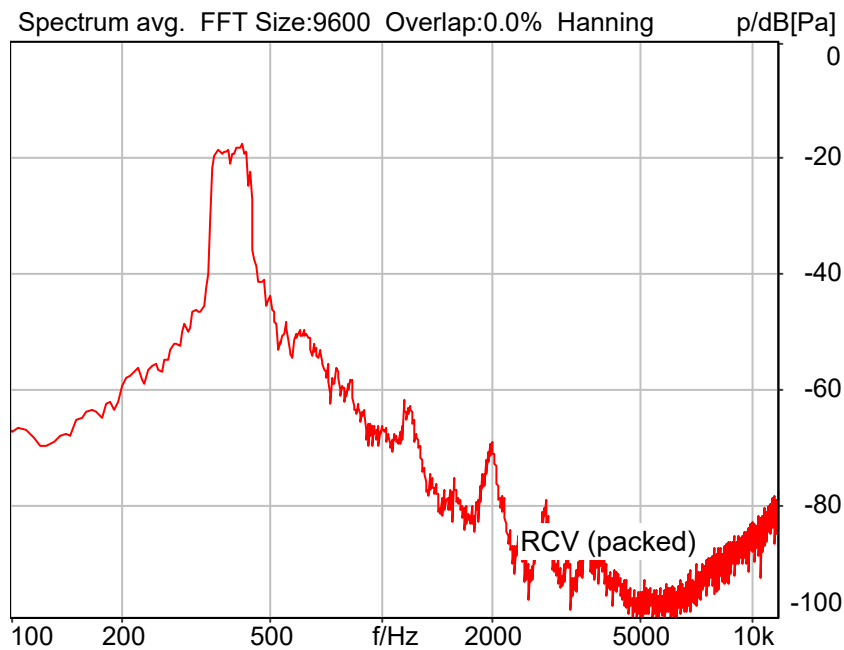
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 400Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 28.24 dB (3.87%)

2023/12/17 12:33 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_400hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	320.0 Hz
Stimulus min.	320.0 Hz	Stimulus max.	480.0 Hz

Analysis min.	100.0 Hz	Analysis max.	315.0 Hz
Analysis (2) min.	485.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO26_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

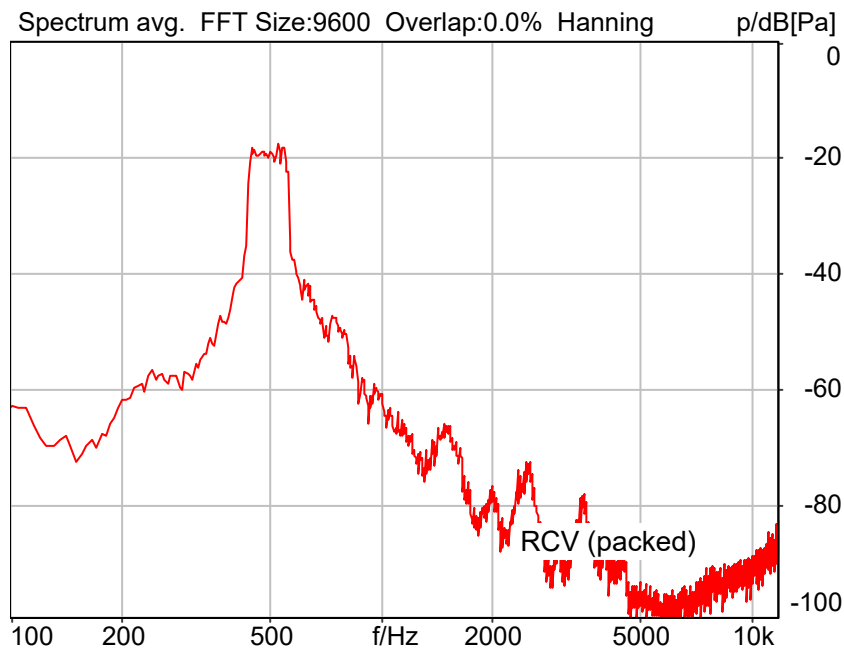
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 25.24 dB (5.47%)

2023/12/17 12:10 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	410.0 Hz
Stimulus min.	410.0 Hz	Stimulus max.	595.0 Hz

Analysis min.	100.0 Hz	Analysis max.	405.0 Hz
Analysis (2) min.	600.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO27_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

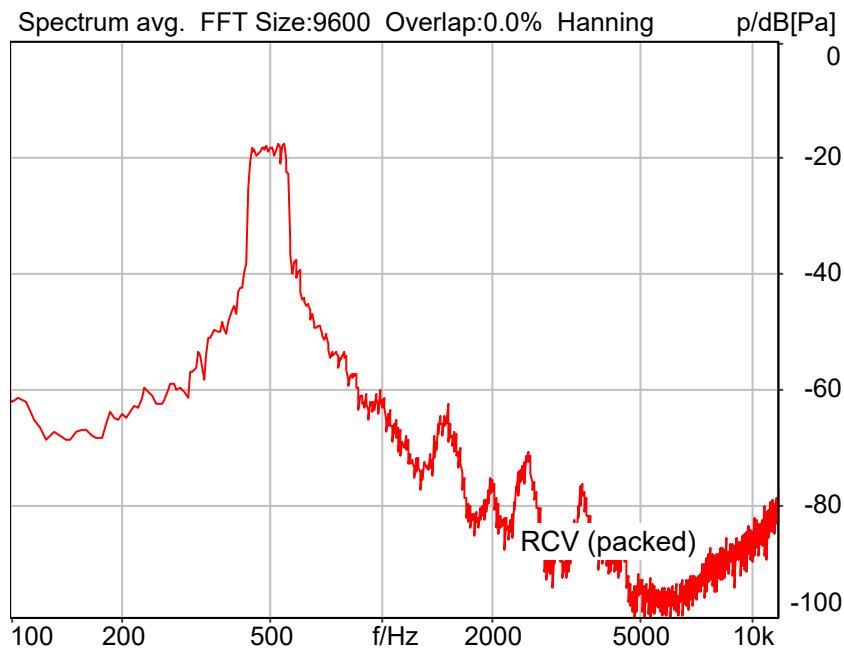
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 27.90 dB (4.03%)

2023/12/17 12:16 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	410.0 Hz
Stimulus min.	410.0 Hz	Stimulus max.	595.0 Hz

Analysis min.	100.0 Hz	Analysis max.	405.0 Hz
Analysis (2) min.	600.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO27_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

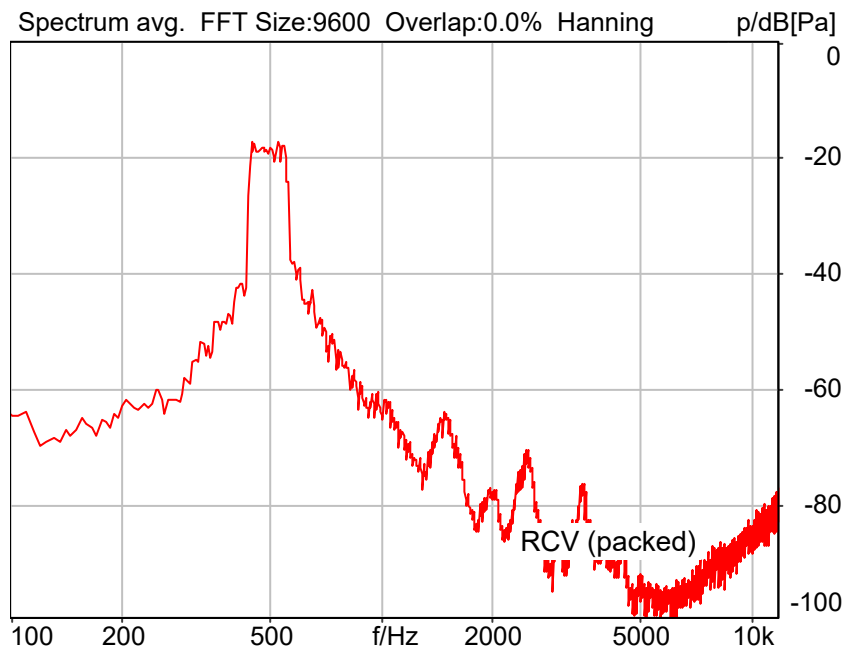
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 27.11 dB (4.41%)

2023/12/17 12:21 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	405.0 Hz
Analysis (2) min.	600.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO27_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

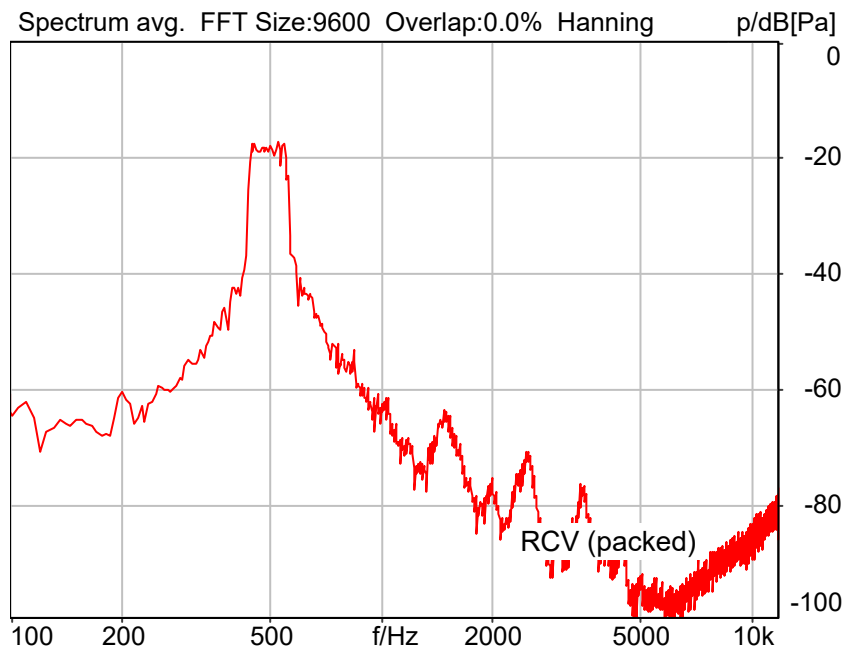
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 26.82 dB (4.56%)

2023/12/17 12:28 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	410.0 Hz
Stimulus min.	410.0 Hz	Stimulus max.	595.0 Hz

Analysis min.	100.0 Hz	Analysis max.	405.0 Hz
Analysis (2) min.	600.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO27_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

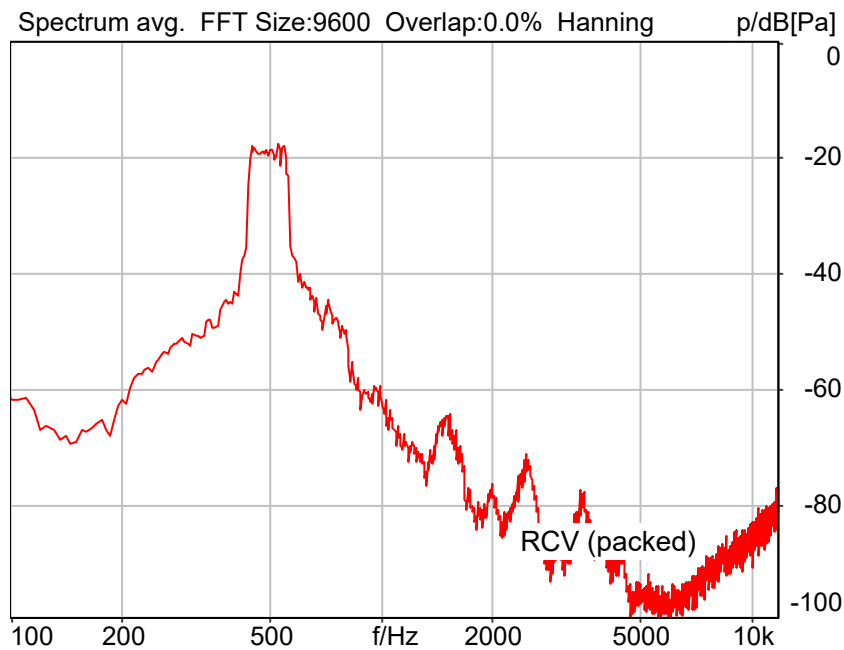
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 24.61 dB (5.88%)

2023/12/17 12:33 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	405.0 Hz
Analysis (2) min.	600.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
Store to variable ISO27_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

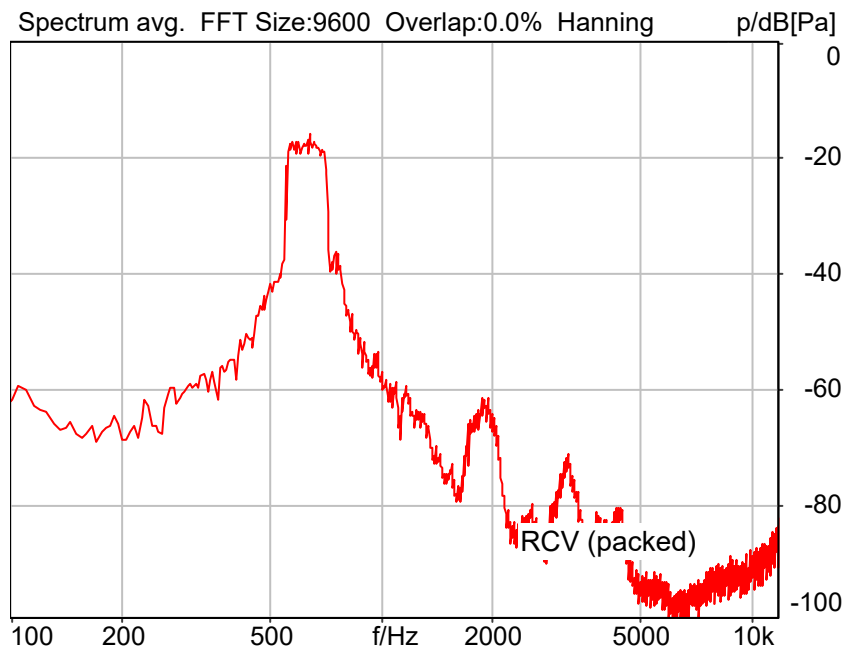
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 630Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 25.05 dB (5.59%)

2023/12/17 12:11 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	525.0 Hz	Stimulus max.	745.0 Hz

Analysis min.	100.0 Hz	Analysis max.	520.0 Hz
Analysis (2) min.	750.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO28_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

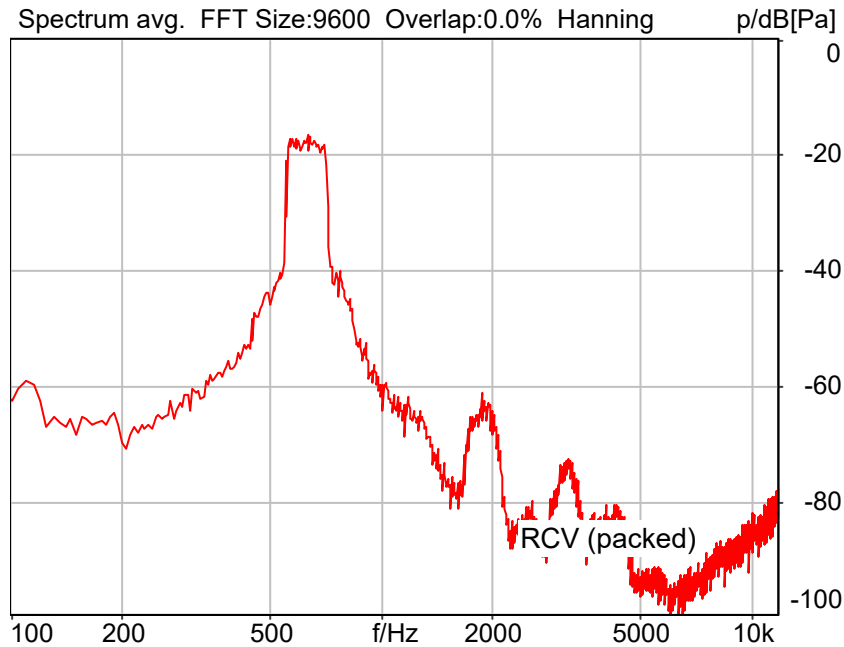
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 630Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 26.42 dB (4.78%)

2023/12/17 12:16 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	525.0 Hz	Stimulus max.	745.0 Hz

Analysis min.	100.0 Hz	Analysis max.	520.0 Hz
Analysis (2) min.	750.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO28_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

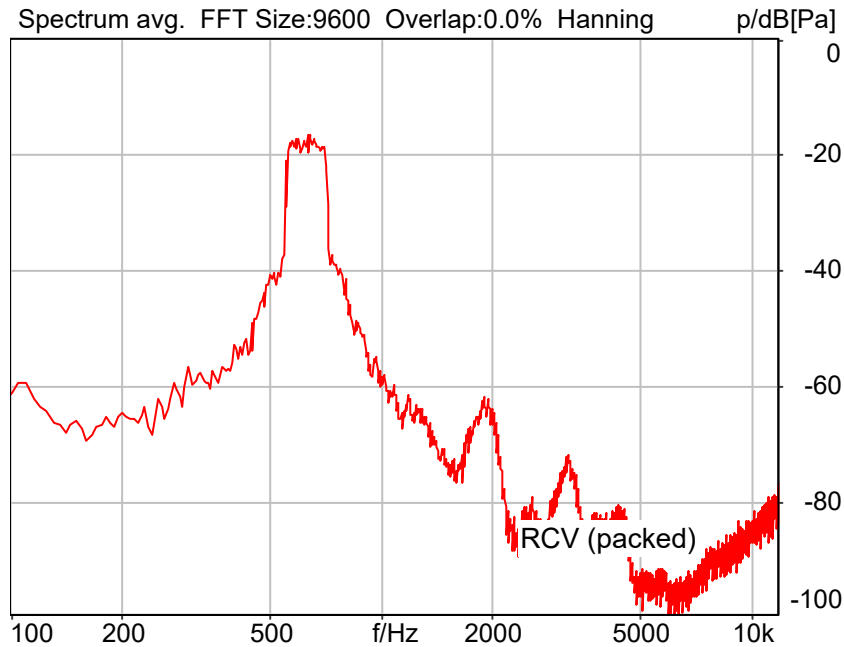
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 630Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 25.13 dB (5.54%)

2023/12/17 12:22 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	525.0 Hz
Stimulus min.	525.0 Hz	Stimulus max.	745.0 Hz

Analysis min.	100.0 Hz	Analysis max.	520.0 Hz
Analysis (2) min.	750.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO28_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

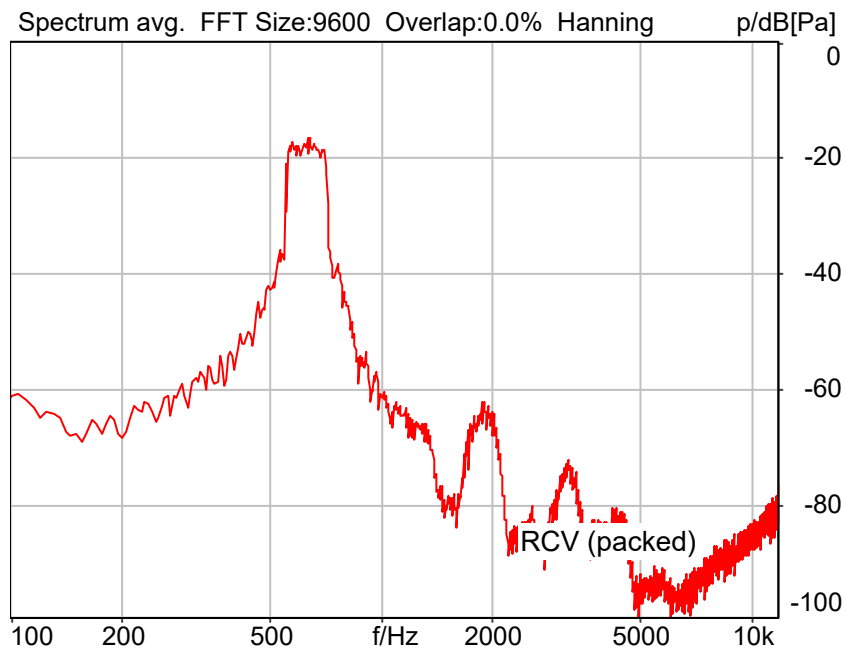
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 630Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 25.72 dB (5.17%)

2023/12/17 12:28 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	525.0 Hz
Stimulus min.	525.0 Hz	Stimulus max.	745.0 Hz

Analysis min.	100.0 Hz	Analysis max.	520.0 Hz
Analysis (2) min.	750.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
Store to variable ISO28_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

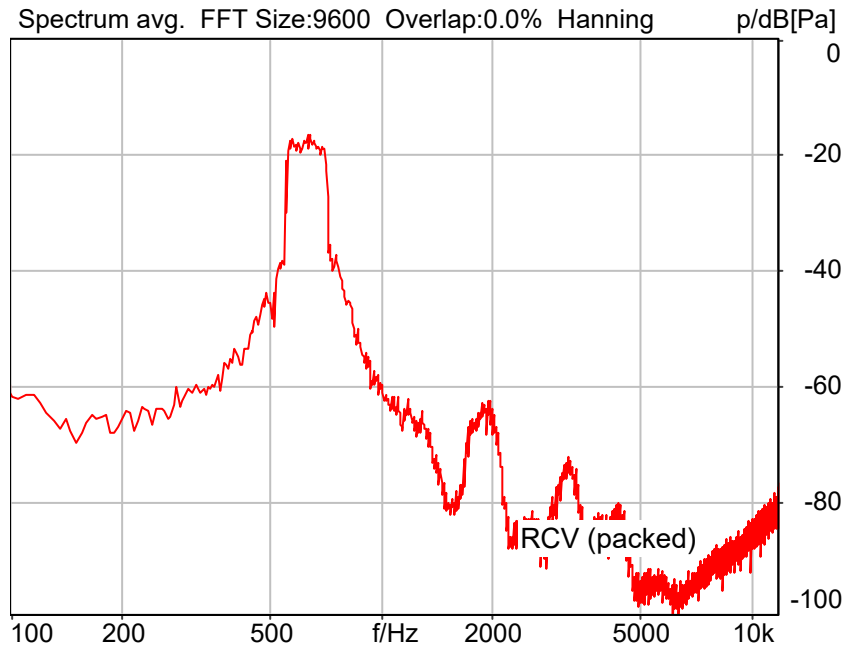
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 630Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 25.66 dB (5.21%)

2023/12/17 12:34 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_630hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	525.0 Hz
Stimulus min.	525.0 Hz	Stimulus max.	745.0 Hz

Analysis min.	100.0 Hz	Analysis max.	520.0 Hz
Analysis (2) min.	750.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO28_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

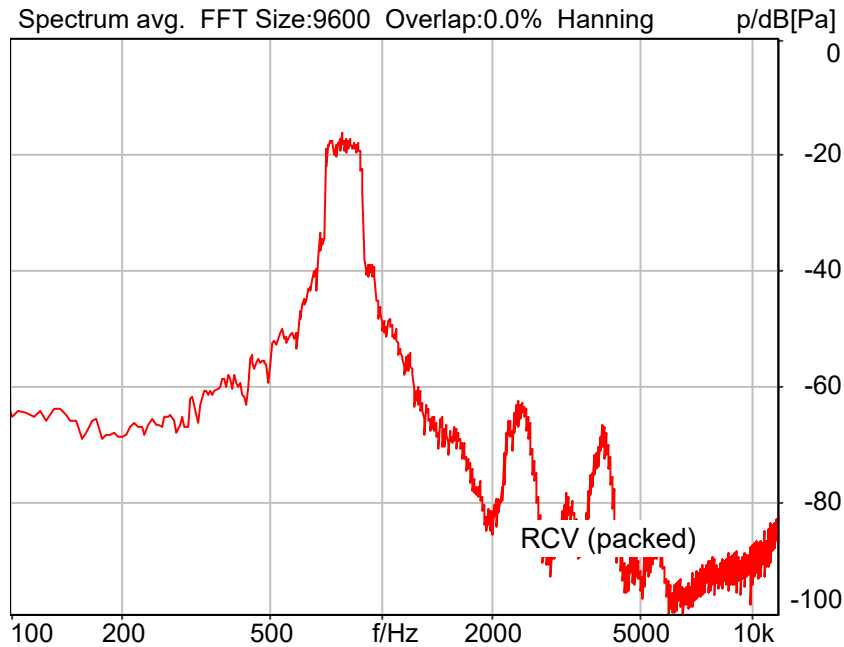
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 800Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



2023/12/17 12:11 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	675.0 Hz
Stimulus min.	675.0 Hz	Stimulus max.	925.0 Hz

Analysis min.	100.0 Hz	Analysis max.	670.0 Hz
Analysis (2) min.	930.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO29_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

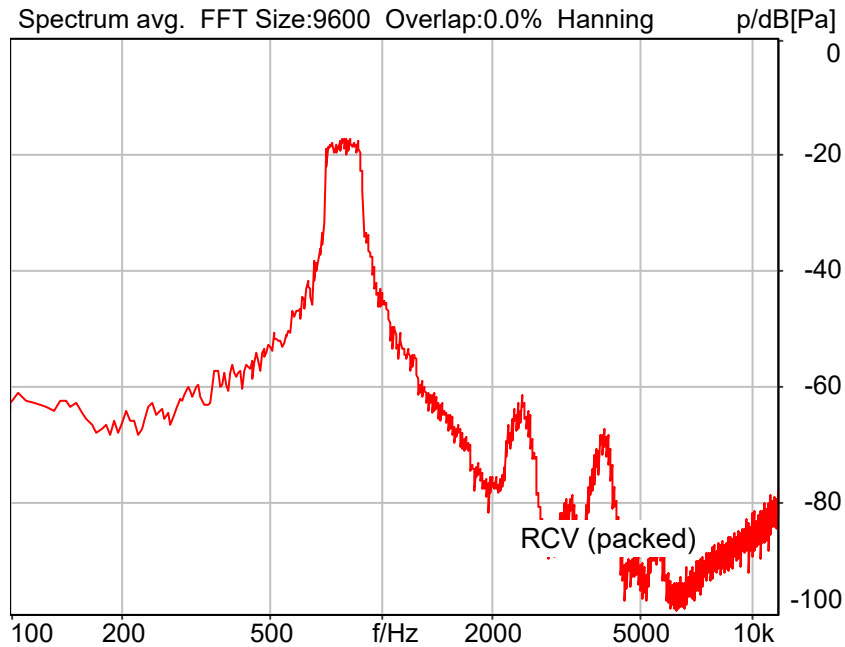
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 800Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 23.54 dB (6.65%)

2023/12/17 12:17 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	675.0 Hz
Stimulus min.	675.0 Hz	Stimulus max.	925.0 Hz

Analysis min.	100.0 Hz	Analysis max.	670.0 Hz
Analysis (2) min.	930.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO29_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

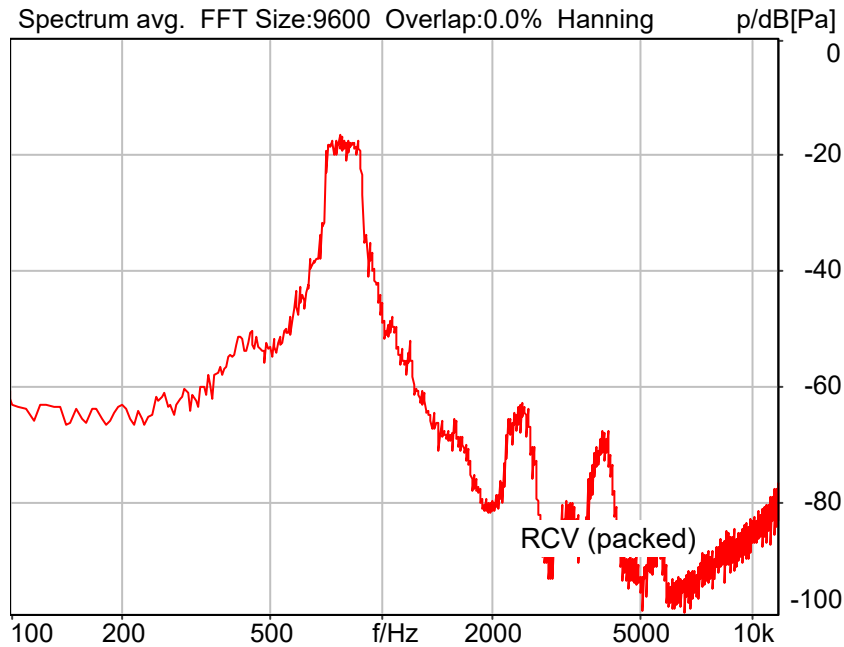
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 800Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 22.95 dB (7.12%)

2023/12/17 12:22 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	675.0 Hz
Stimulus min.	675.0 Hz	Stimulus max.	925.0 Hz

Analysis min.	100.0 Hz	Analysis max.	670.0 Hz
Analysis (2) min.	930.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO29_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

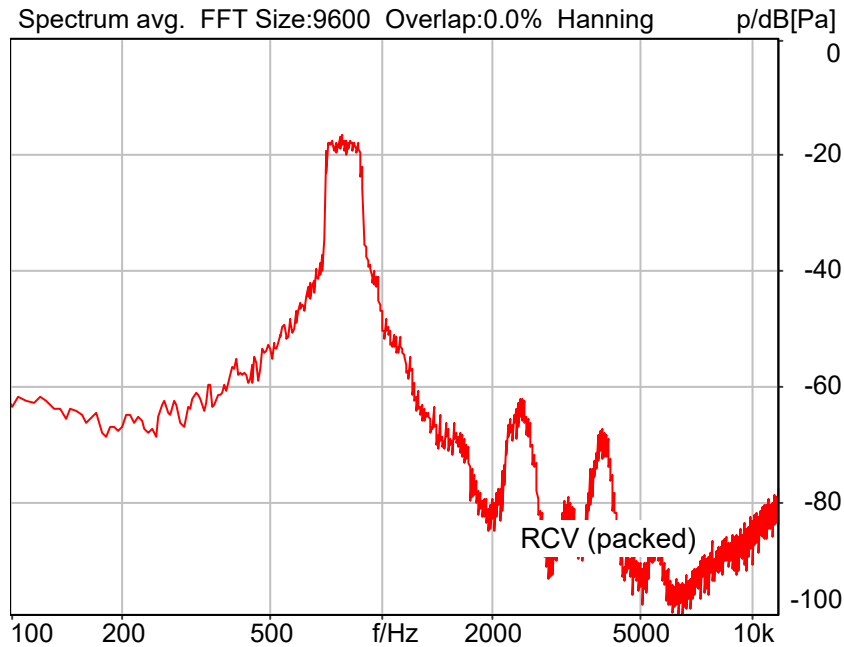
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 800Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 24.76 dB (5.78%)

2023/12/17 12:29 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	670.0 Hz
Analysis (2) min.	930.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO29_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

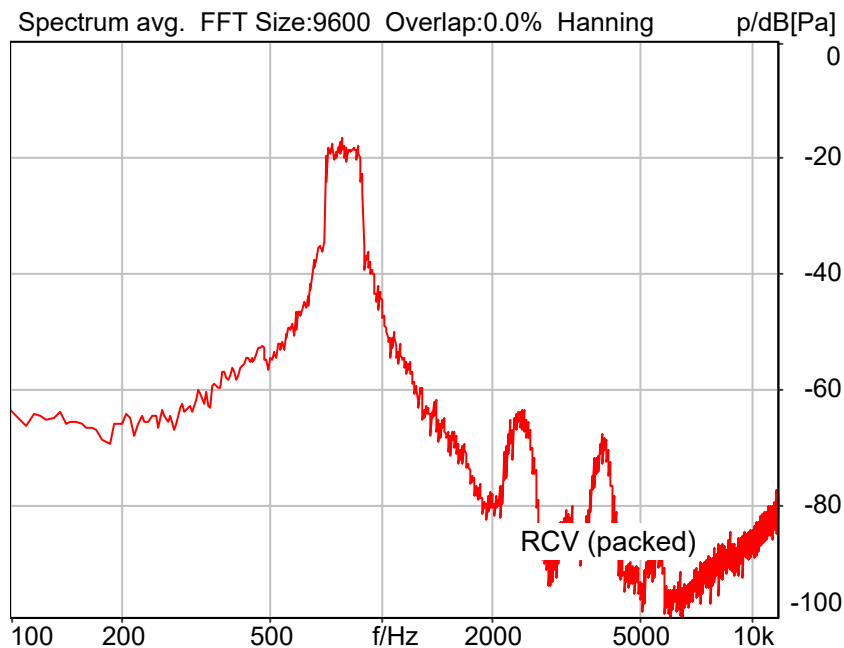
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 800Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 23.73 dB (6.51%)

2023/12/17 12:34 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_800hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	675.0 Hz
Stimulus min.	675.0 Hz	Stimulus max.	925.0 Hz

Analysis min.	100.0 Hz	Analysis max.	670.0 Hz
Analysis (2) min.	930.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
Store to variable ISO29_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

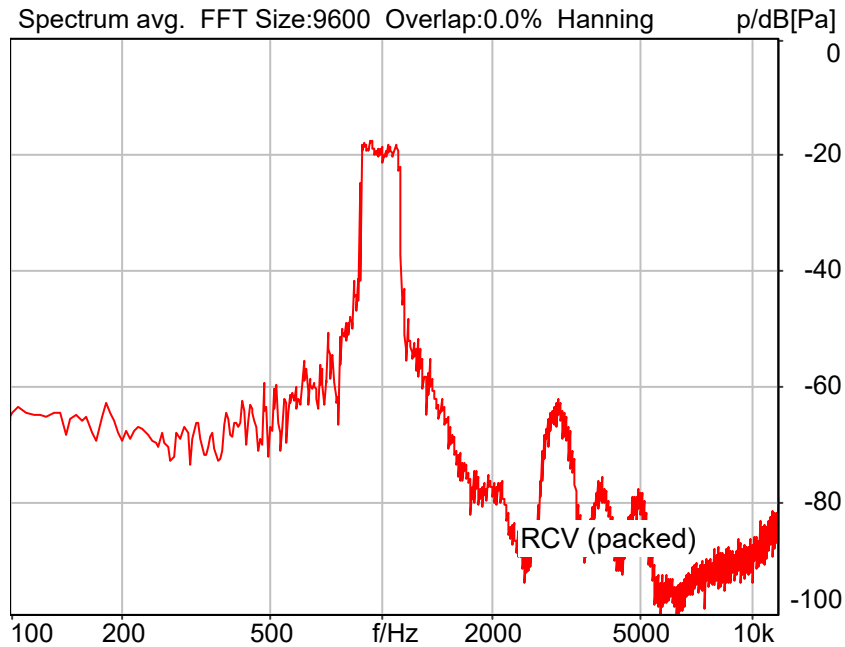
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 31.06 dB (2.80%)

2023/12/17 12:11 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	855.0 Hz
Stimulus min.	855.0 Hz	Stimulus max.	1155.0 Hz

Analysis min.	100.0 Hz	Analysis max.	850.0 Hz
Analysis (2) min.	1160.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO30_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

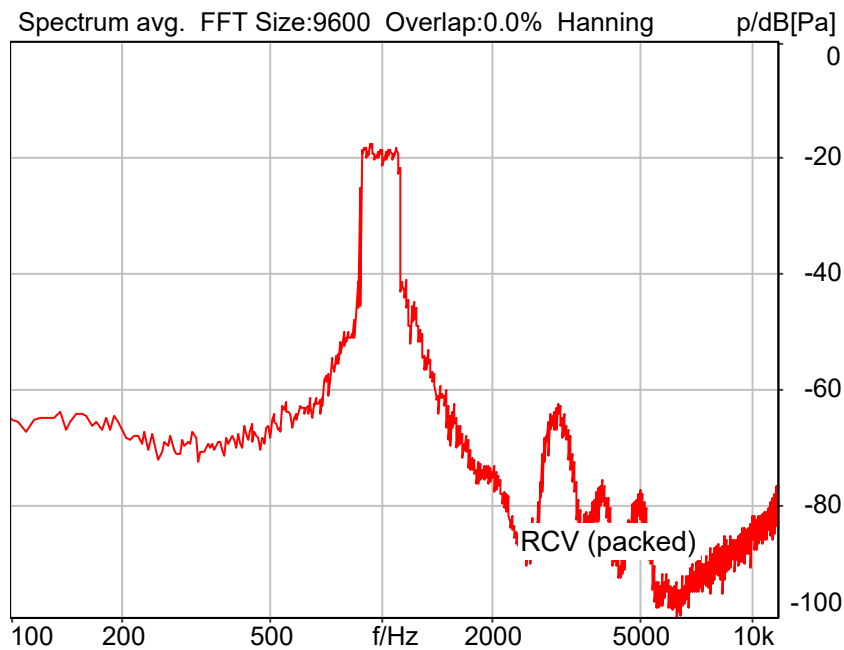
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 28.43 dB (3.79%)

2023/12/17 12:17 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	855.0 Hz
Stimulus min.	855.0 Hz	Stimulus max.	1155.0 Hz

Analysis min.	100.0 Hz	Analysis max.	850.0 Hz
Analysis (2) min.	1160.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO30_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

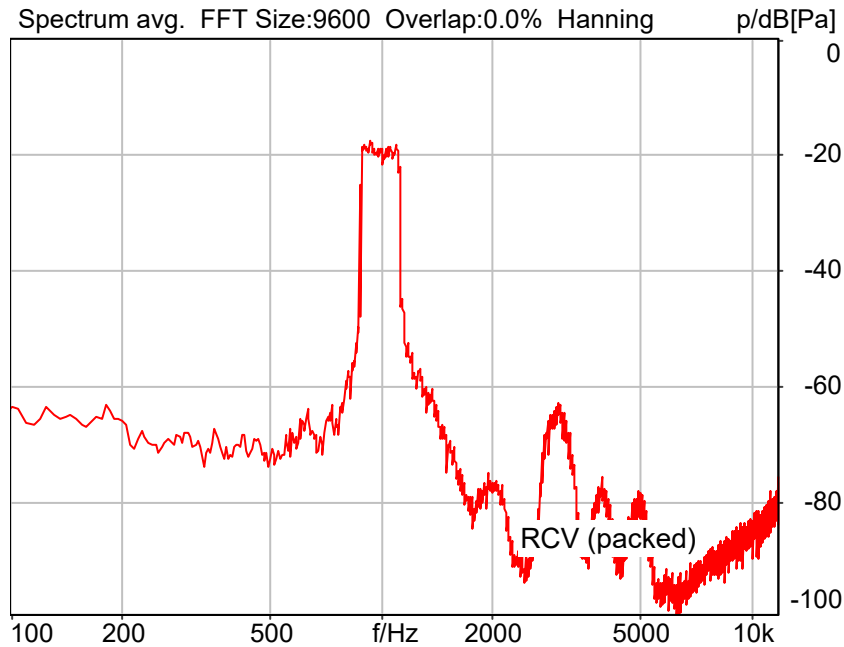
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 35.61 dB (1.66%)

2023/12/17 12:22 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	855.0 Hz
Stimulus min.	855.0 Hz	Stimulus max.	1155.0 Hz

Analysis min.	100.0 Hz	Analysis max.	850.0 Hz
Analysis (2) min.	1160.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO30_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

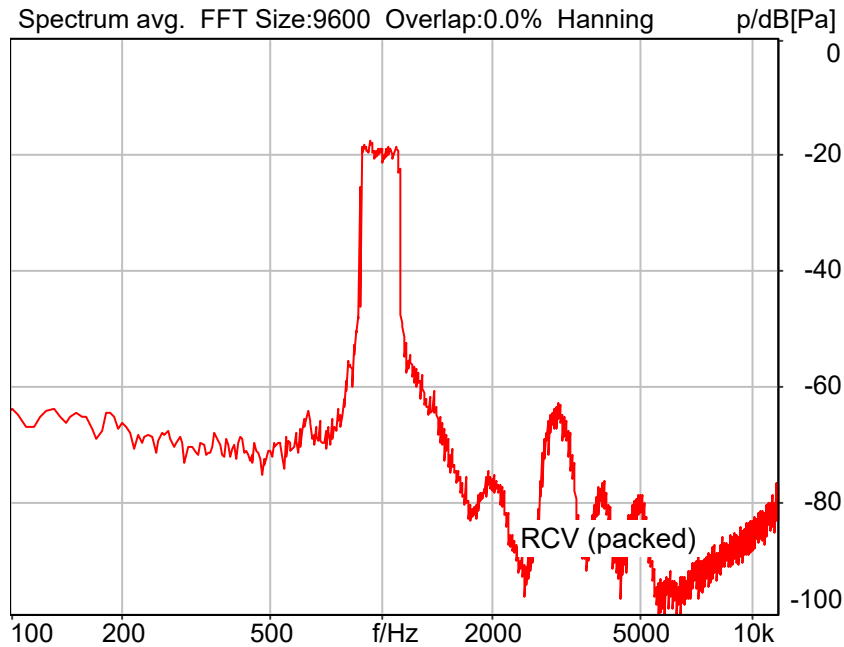
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 35.81 dB (1.62%)

2023/12/17 12:29 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	850.0 Hz
Analysis (2) min.	1160.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO30_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

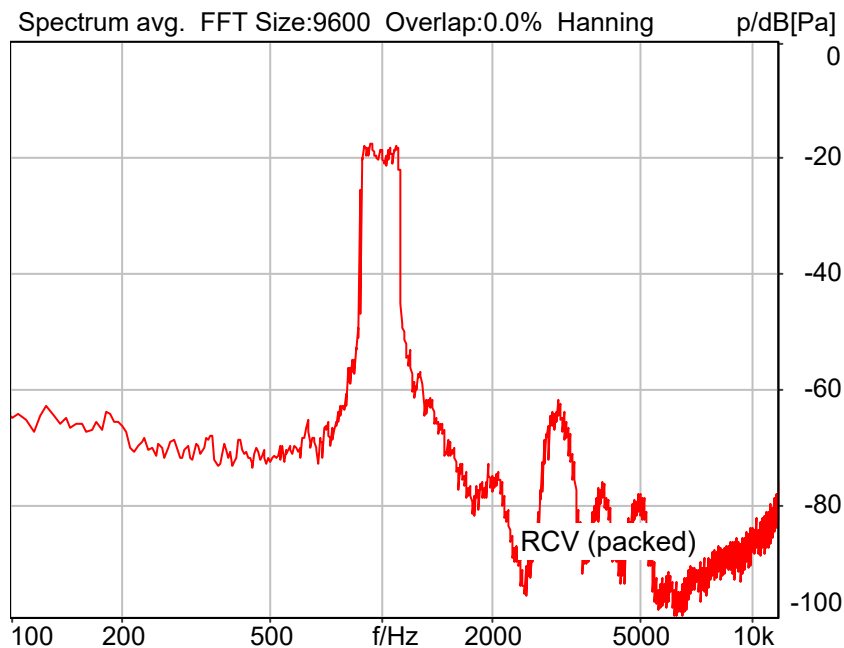
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 35.71 dB (1.64%)

2023/12/17 12:34 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	855.0 Hz
Stimulus min.	855.0 Hz	Stimulus max.	1155.0 Hz

Analysis min.	100.0 Hz	Analysis max.	850.0 Hz
Analysis (2) min.	1160.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO30_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

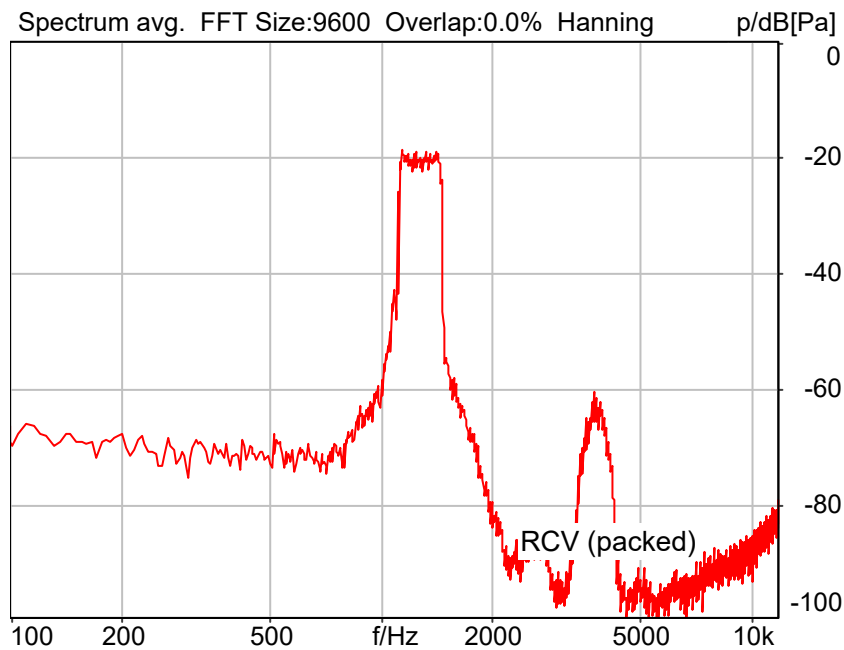
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1250Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 30.07 dB (3.14%)

2023/12/17 12:12 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	1085.0 Hz
Stimulus min.	1085.0 Hz	Stimulus max.	1450.0 Hz

Analysis min.	100.0 Hz	Analysis max.	1080.0 Hz
Analysis (2) min.	1455.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO31_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

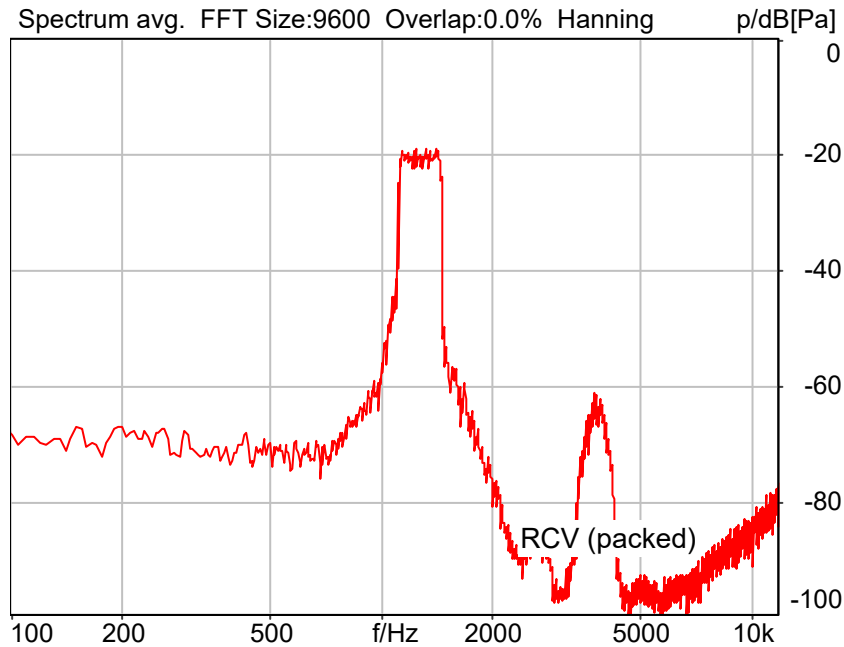
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1250Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 30.01 dB (3.16%)

2023/12/17 12:17 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	1085.0 Hz
Stimulus min.	1085.0 Hz	Stimulus max.	1450.0 Hz

Analysis min.	100.0 Hz	Analysis max.	1080.0 Hz
Analysis (2) min.	1455.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO31_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

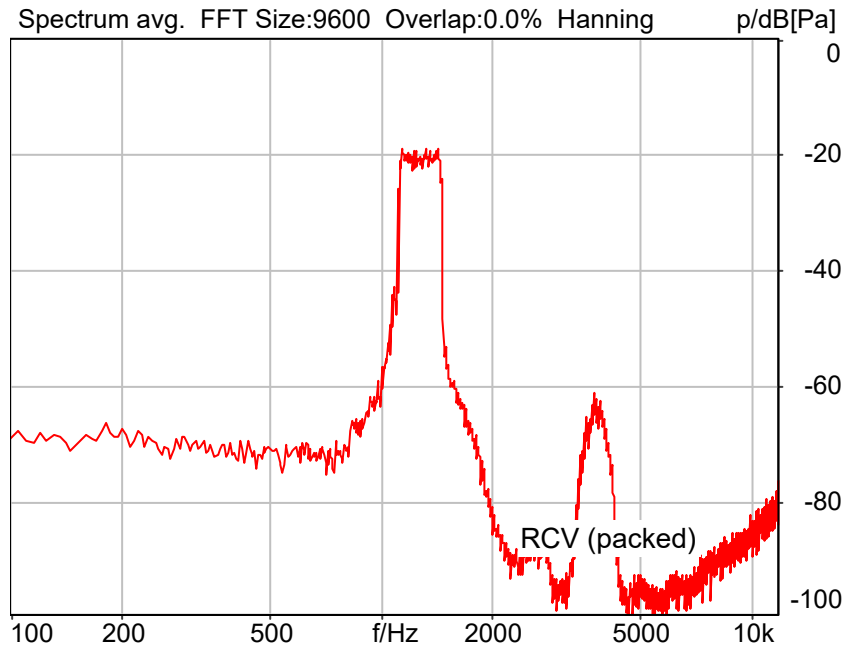
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1250Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 30.99 dB (2.82%)

2023/12/17 12:23 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	1085.0 Hz
Stimulus min.	1085.0 Hz	Stimulus max.	1450.0 Hz

Analysis min.	100.0 Hz	Analysis max.	1080.0 Hz
Analysis (2) min.	1455.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO31_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

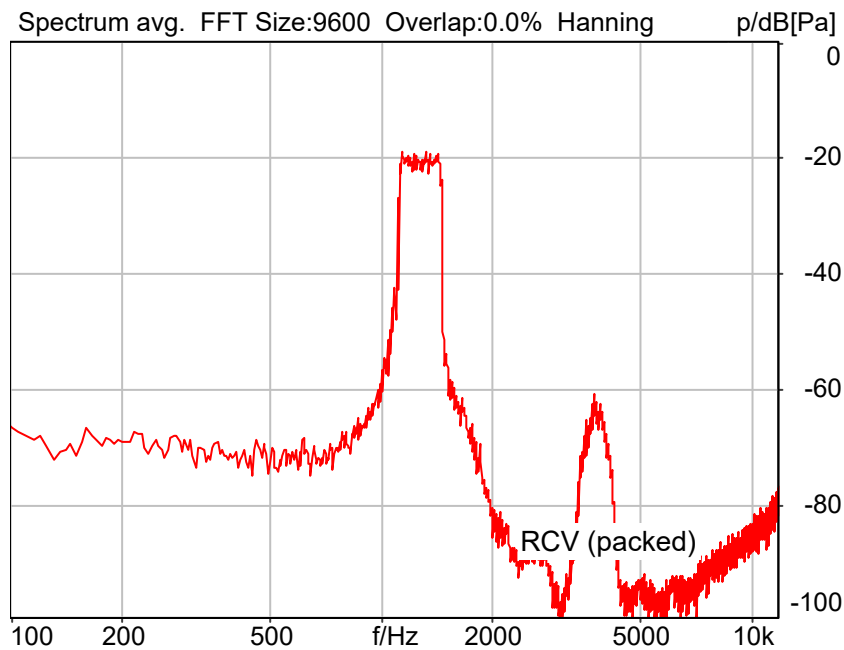
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1250Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 30.74 dB (2.90%)

2023/12/17 12:29 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	1085.0 Hz
Stimulus min.	1085.0 Hz	Stimulus max.	1450.0 Hz

Analysis min.	100.0 Hz	Analysis max.	1080.0 Hz
Analysis (2) min.	1455.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO31_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

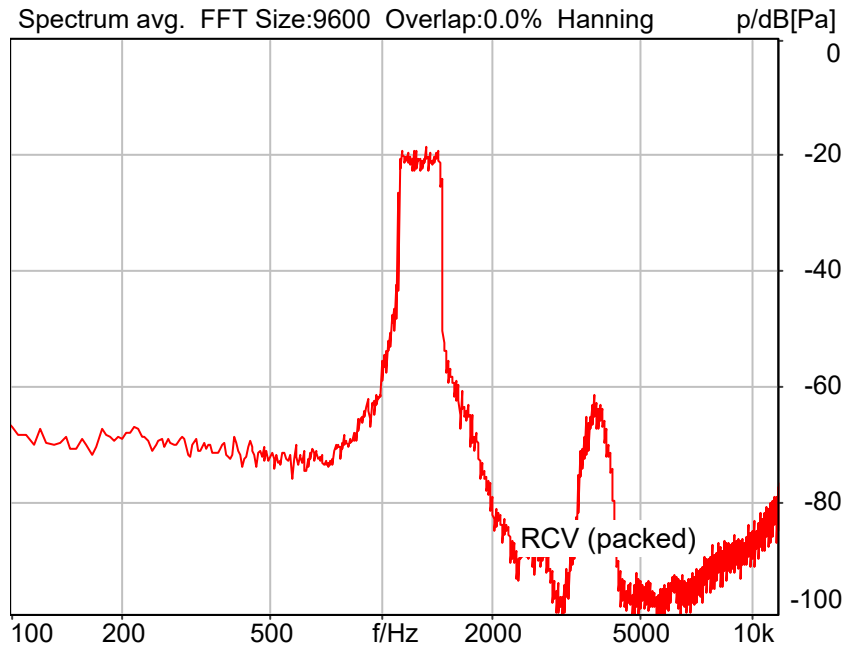
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1250Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 30.57 dB (2.96%)

2023/12/17 12:35 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1250hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	1085.0 Hz
Stimulus min.	1085.0 Hz	Stimulus max.	1450.0 Hz

Analysis min.	100.0 Hz	Analysis max.	1080.0 Hz
Analysis (2) min.	1455.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO31_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

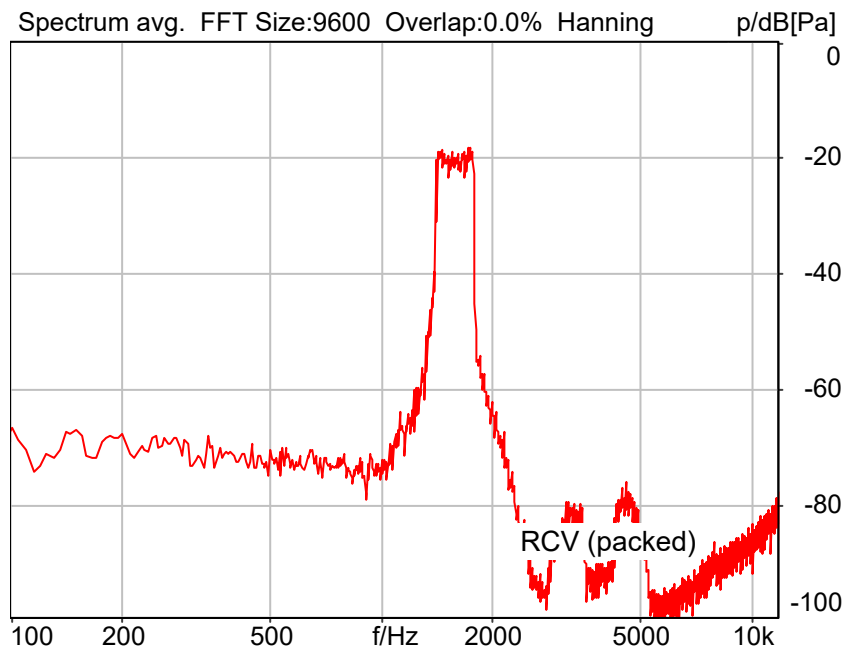
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1600Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 34.53 dB (1.88%)

2023/12/17 12:12 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	1370.0 Hz
Analysis (2) min.	1820.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO32_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

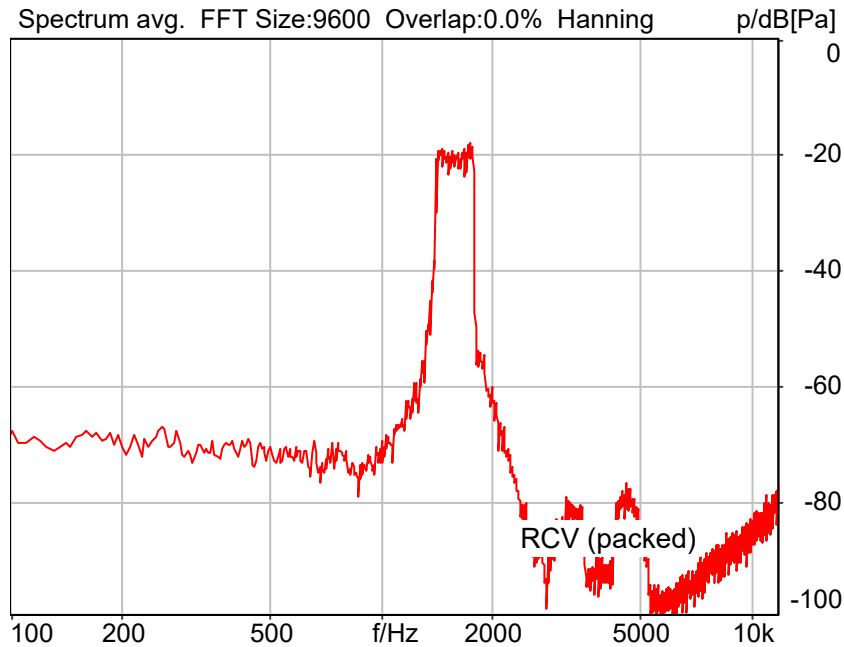
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1600Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 33.27 dB (2.17%)

2023/12/17 12:18 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	1370.0 Hz
Analysis (2) min.	1820.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO32_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

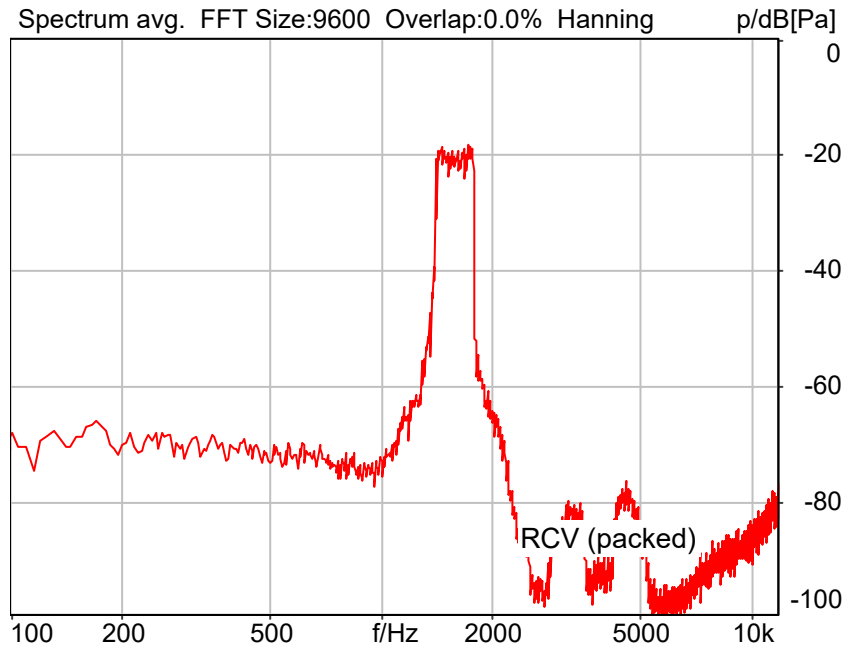
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1600Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 35.01 dB (1.78%)

2023/12/17 12:23 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	1370.0 Hz
Analysis (2) min.	1820.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO32_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

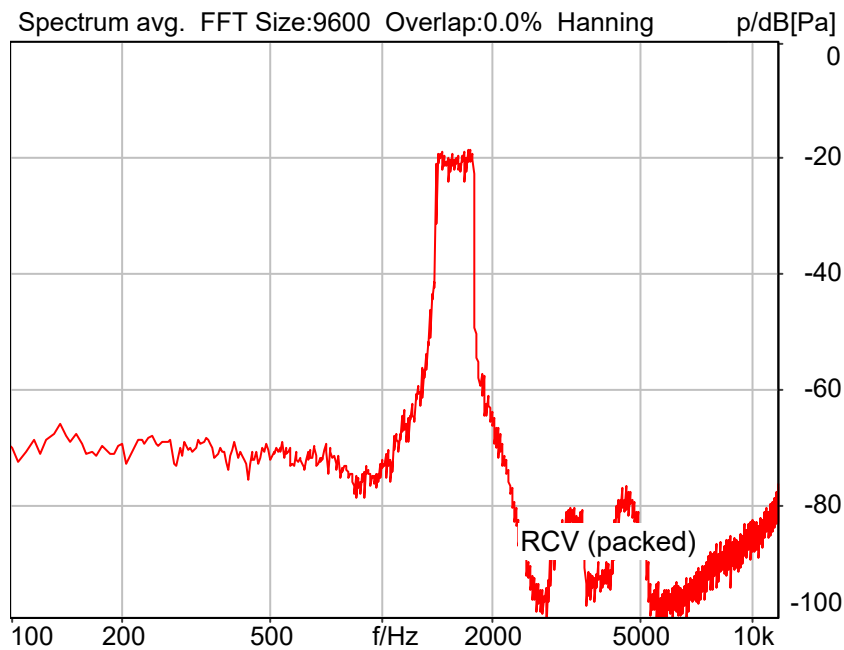
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1600Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 34.74 dB (1.83%)

2023/12/17 12:30 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	1370.0 Hz
Analysis (2) min.	1820.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO32_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

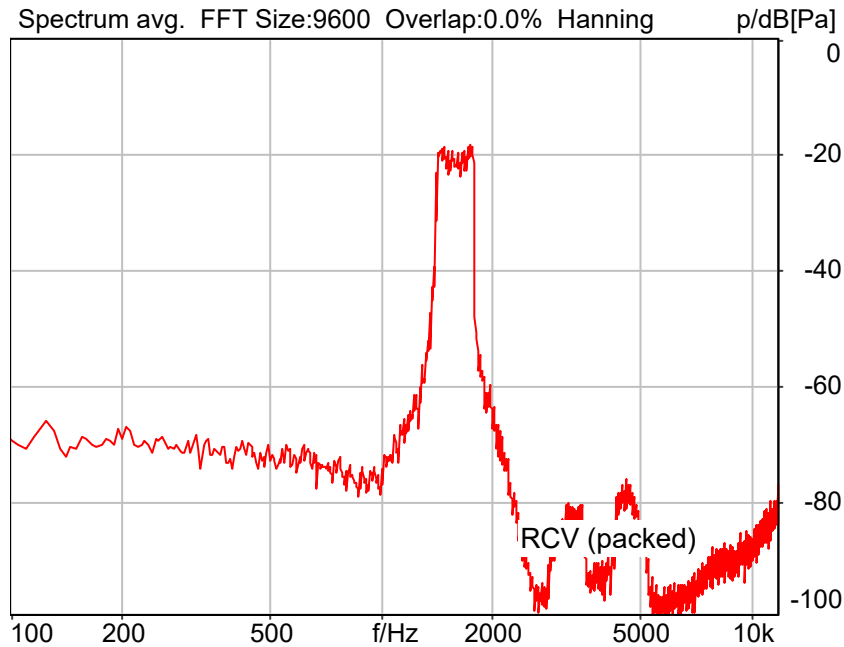
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 1600Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 35.17 dB (1.74%)

2023/12/17 12:35 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_1600hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	1370.0 Hz
Analysis (2) min.	1820.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO32_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

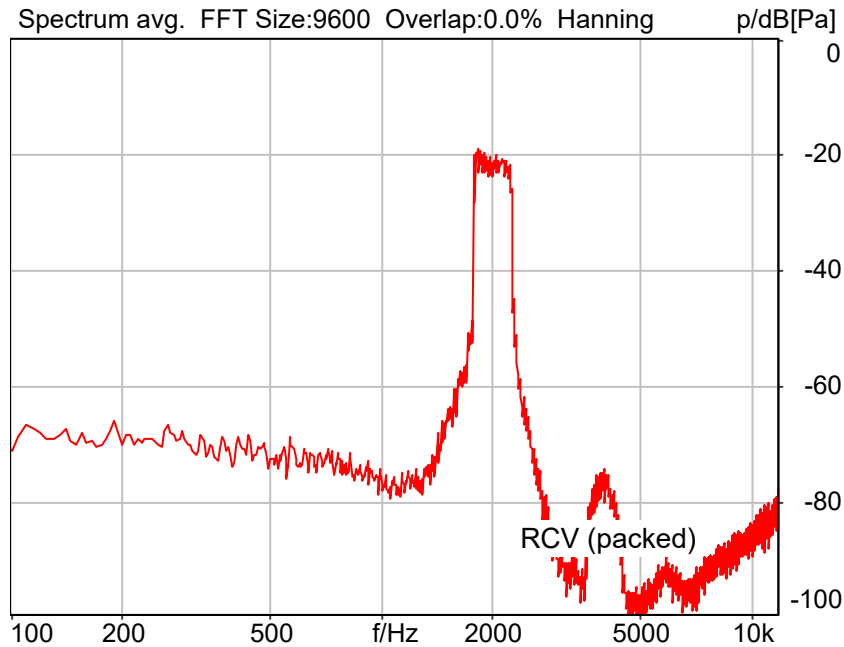
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 34.89 dB (1.80%)

2023/12/17 12:12 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	1740.0 Hz
Analysis (2) min.	2280.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
Store to variable ISO33_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

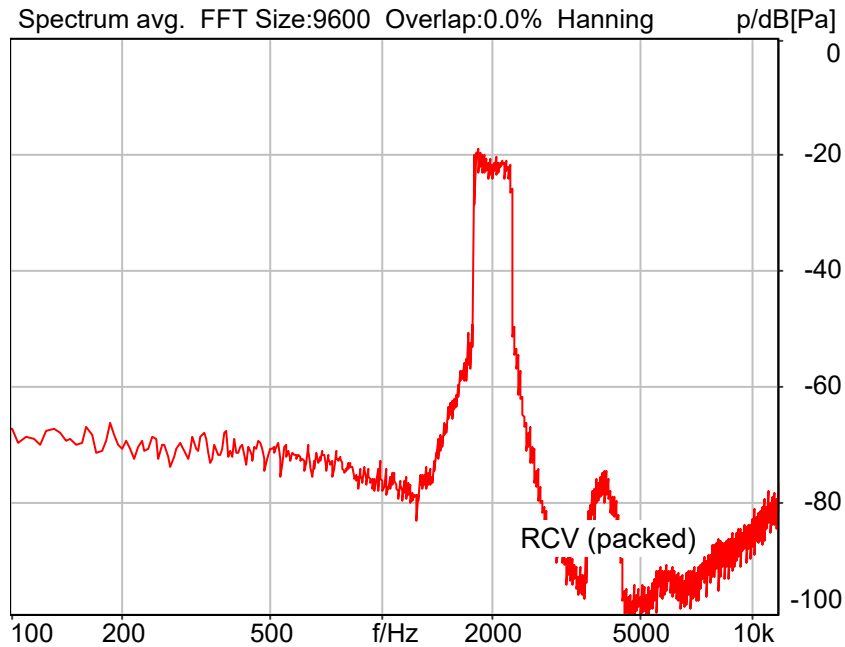
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



2023/12/17 12:18 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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	Stimulus min.	1745.0 Hz
Frequency base	Transformation	Stimulus max.	2275.0 Hz
FFT size	9600	Overlap	0 %
Window function.	Hanning	Smooth	Off
dB weighting	A Weighting		

Analysis min.	100.0 Hz	Analysis max.	1740.0 Hz
Analysis (2) min.	2280.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO33_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

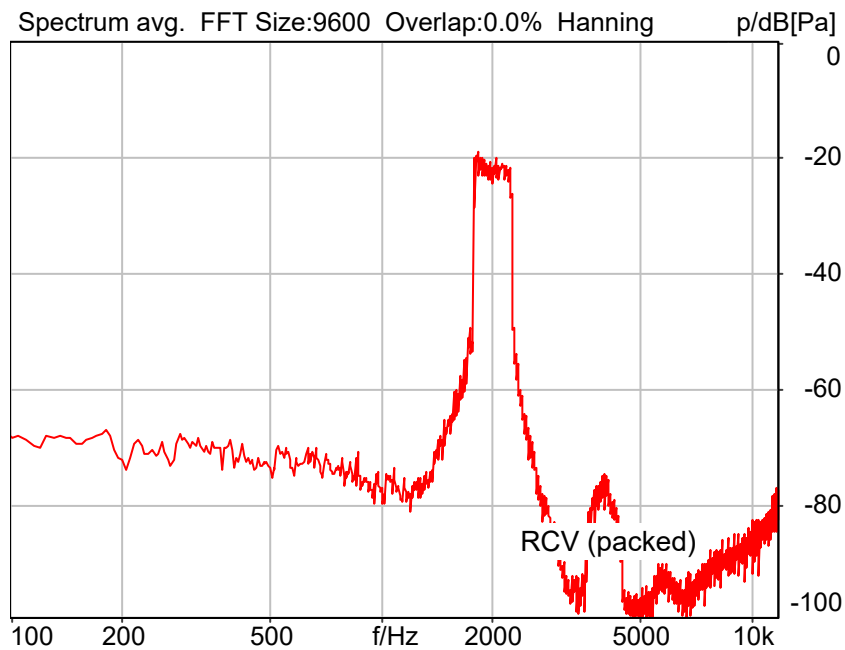
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 35.09 dB (1.76%)

2023/12/17 12:23 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	1745.0 Hz
Stimulus min.	1745.0 Hz	Stimulus max.	2275.0 Hz

Analysis min.	100.0 Hz	Analysis max.	1740.0 Hz
Analysis (2) min.	2280.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO33_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

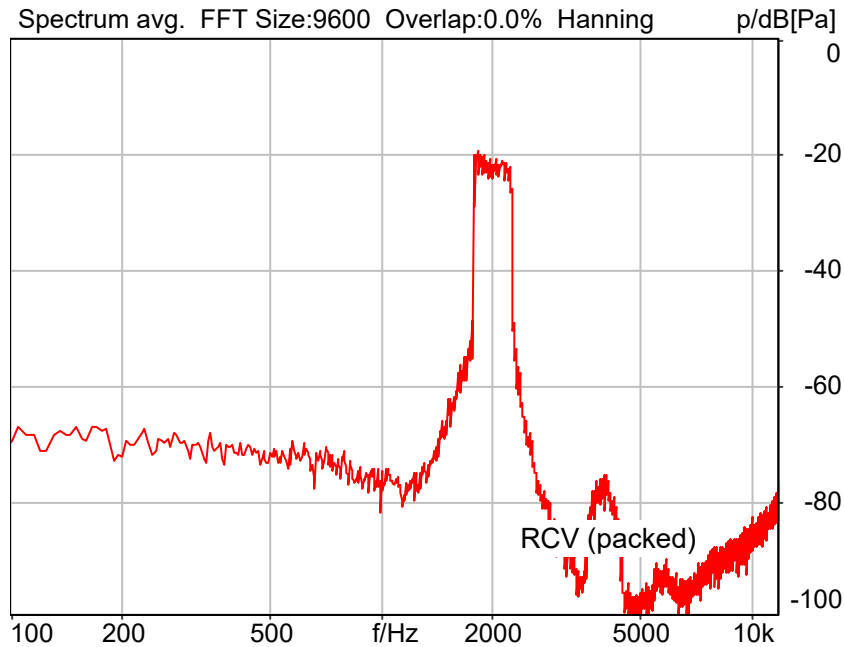
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 35.20 dB (1.74%)

2023/12/17 12:30 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	1740.0 Hz
Analysis (2) min.	2280.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO33_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

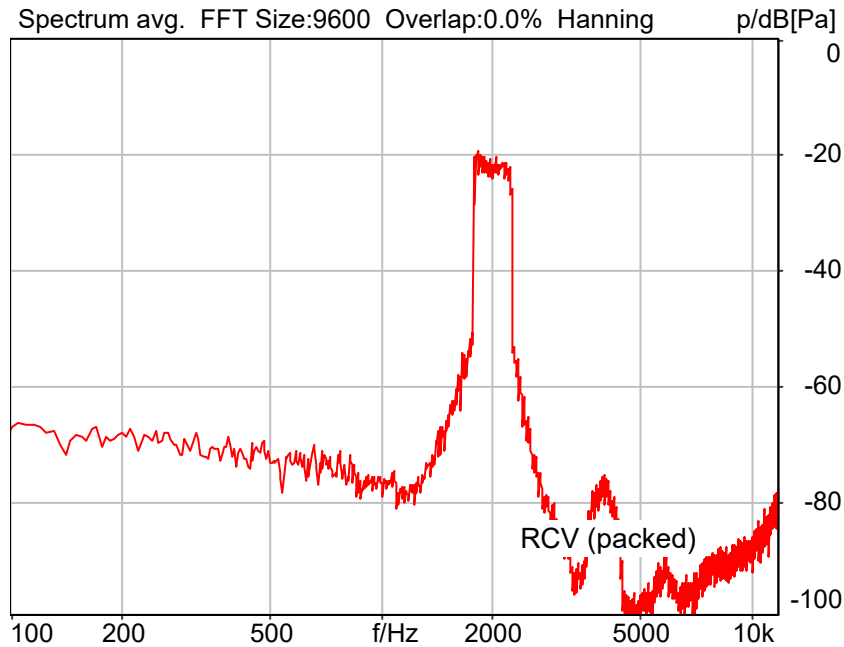
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2000Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 35.28 dB (1.72%)

2023/12/17 12:35 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2000hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	1745.0 Hz
Stimulus min.	1745.0 Hz	Stimulus max.	2275.0 Hz

Analysis min.	100.0 Hz	Analysis max.	1740.0 Hz
Analysis (2) min.	2280.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO33_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

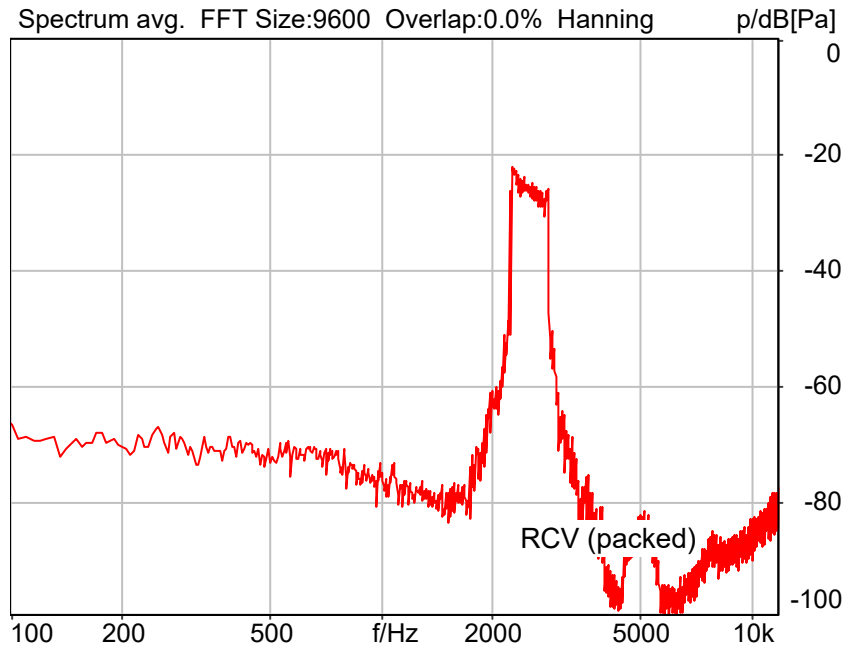
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 30.79 dB (2.89%)

2023/12/17 12:13 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2200.0 Hz
Analysis (2) min.	2860.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO34_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

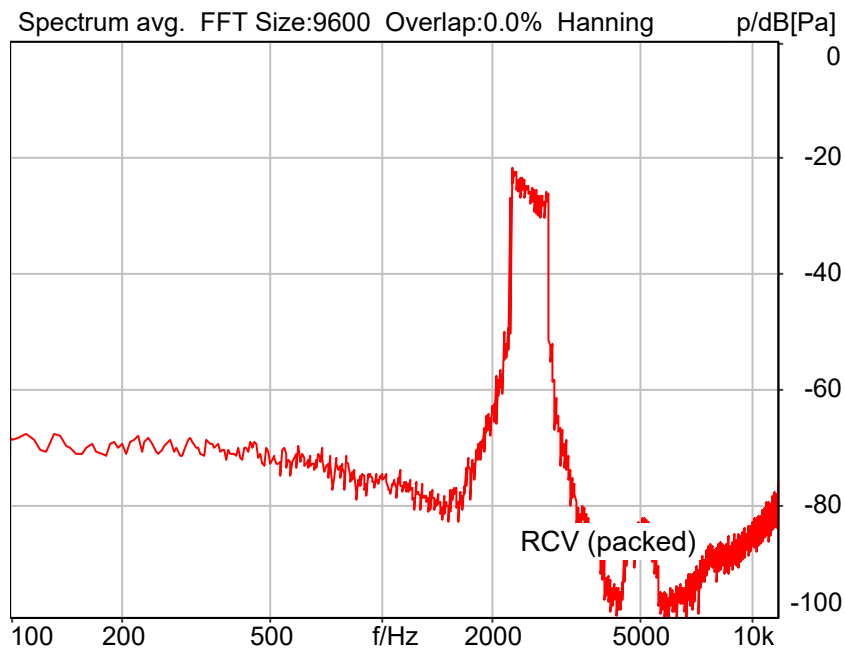
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 31.69 dB (2.60%)

2023/12/17 12:18 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2200.0 Hz
Analysis (2) min.	2860.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO34_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

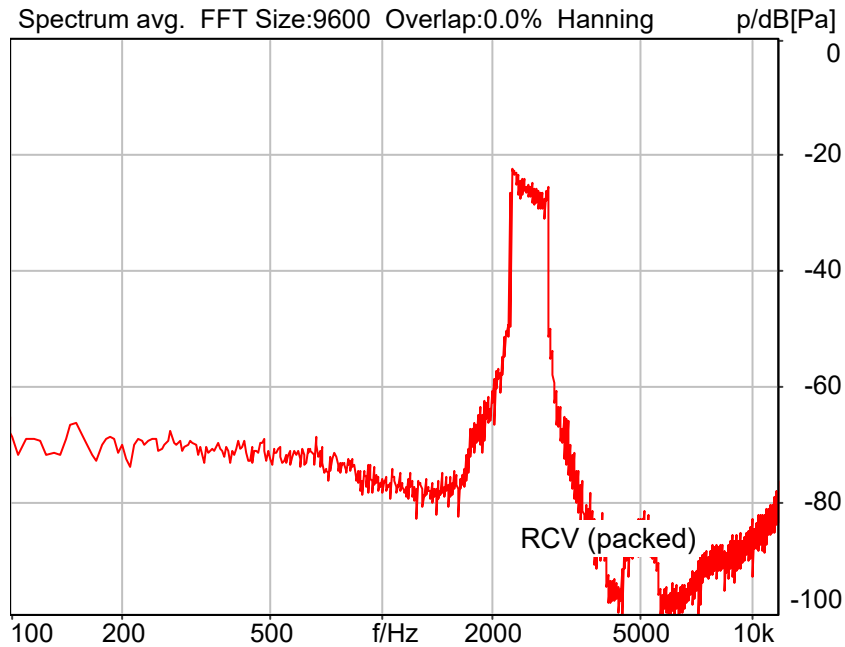
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 30.43 dB (3.01%)

2023/12/17 12:24 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2200.0 Hz
Analysis (2) min.	2860.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO34_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

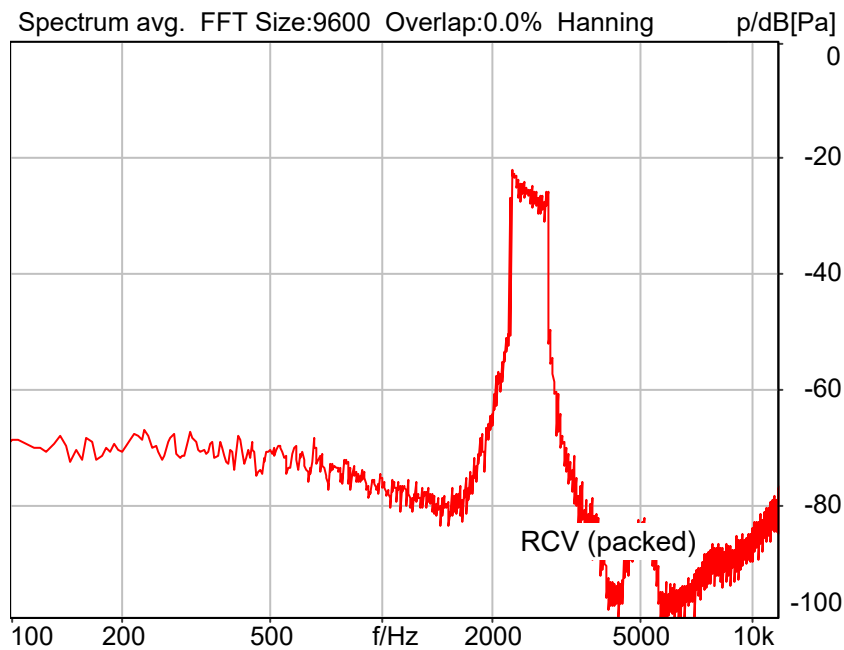
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 31.34 dB (2.71%)

2023/12/17 12:31 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2200.0 Hz
Analysis (2) min.	2860.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO34_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

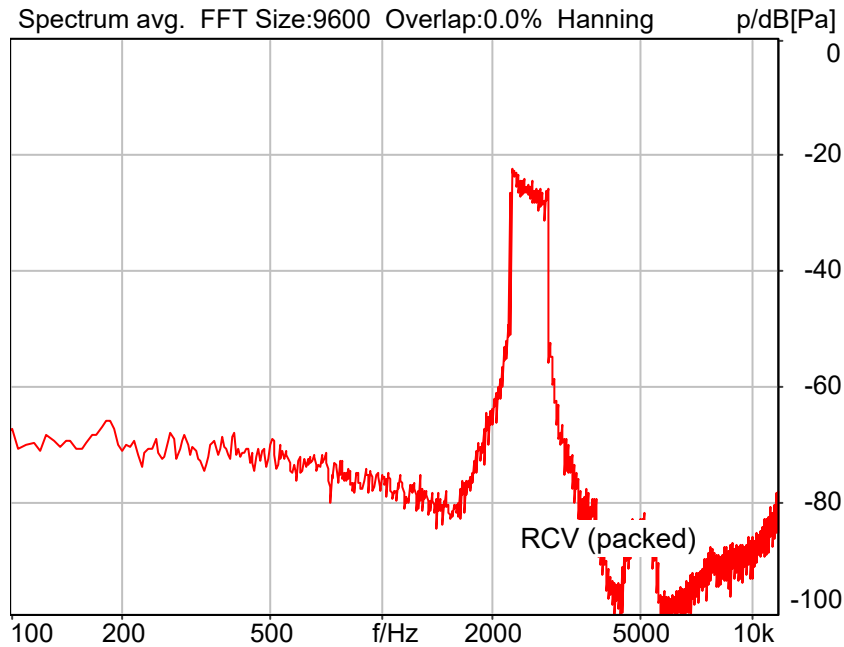
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 2500Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 32.03 dB (2.50%)

2023/12/17 12:36 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_2500hz_sr20dbm0_v02.dat
Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))
Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2200.0 Hz
Analysis (2) min.	2860.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO34_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

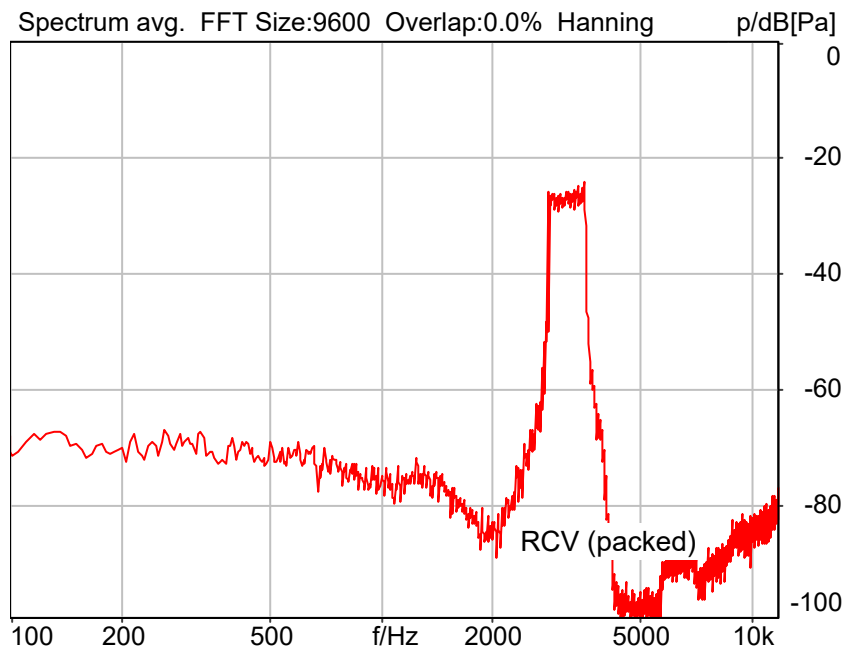
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 3150Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 4;Table-3



Distortion (Noise) RCV (packed): 30.07 dB (3.14%)

2023/12/17 12:13 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2780.0 Hz
Analysis (2) min.	3590.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO35_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

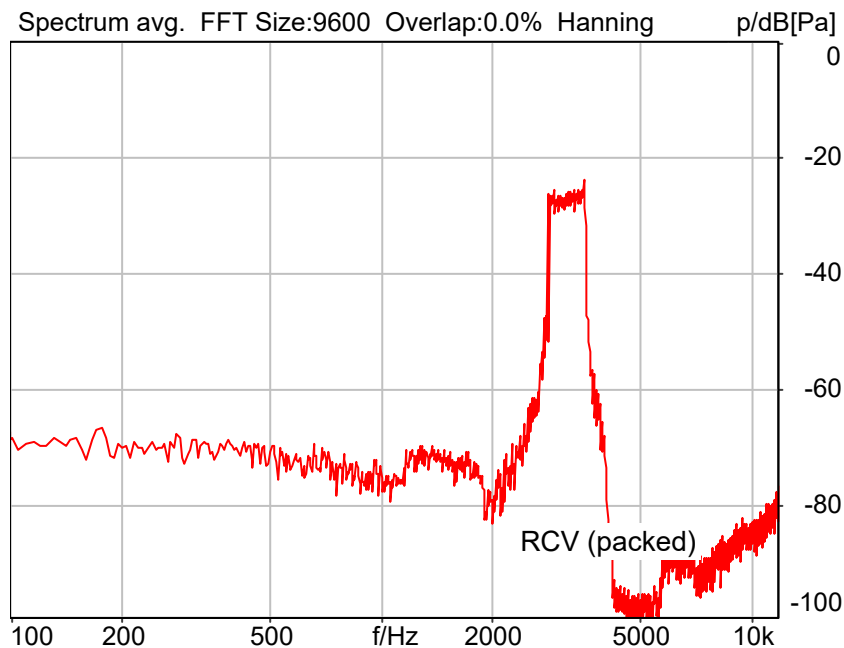
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 3150Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 5;Table-3



Distortion (Noise) RCV (packed): 28.17 dB (3.91%)

2023/12/17 12:19 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2780.0 Hz
Analysis (2) min.	3590.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO35_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

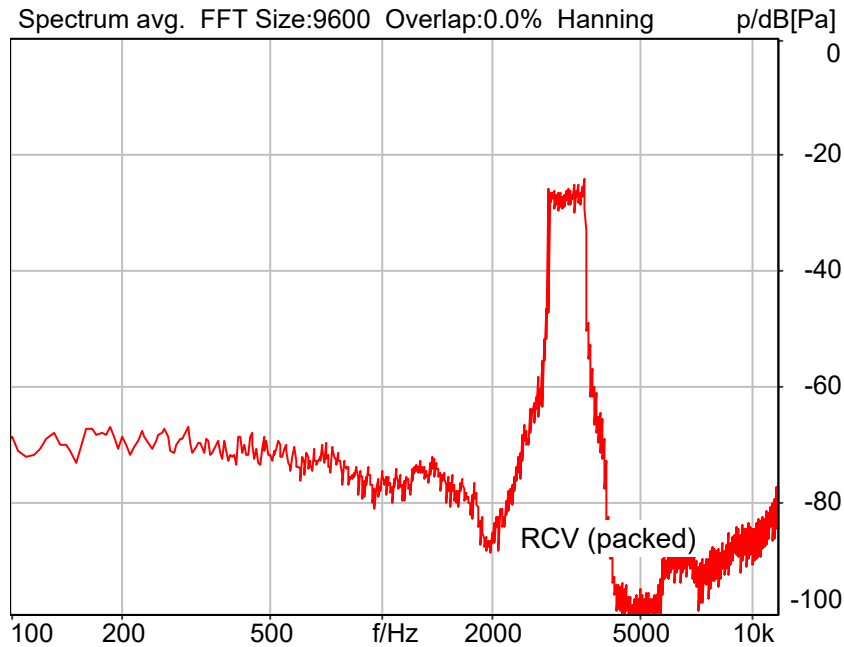
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 3150Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 12;Table-3



Distortion (Noise) RCV (packed): 29.92 dB (3.19%)

2023/12/17 12:24 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2780.0 Hz
Analysis (2) min.	3590.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
 Store to variable ISO35_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
 Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
 In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
 In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

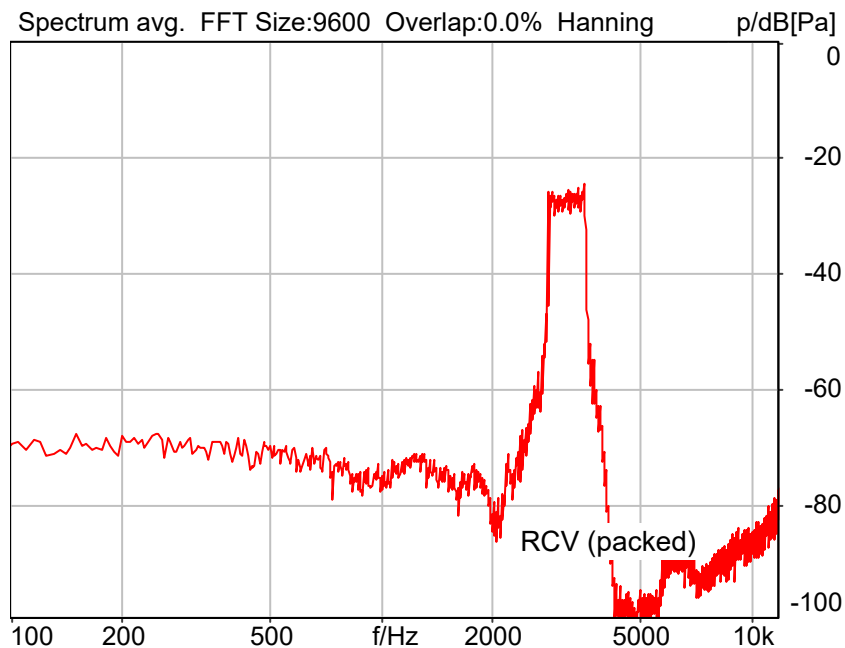
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 3150Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 13;Table-3



Distortion (Noise) RCV (packed): 29.04 dB (3.53%)

2023/12/17 12:31 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	2785.0 Hz
Stimulus min.	2785.0 Hz	Stimulus max.	3585.0 Hz

Analysis min.	100.0 Hz	Analysis max.	2780.0 Hz
Analysis (2) min.	3590.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
Store to variable ISO35_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

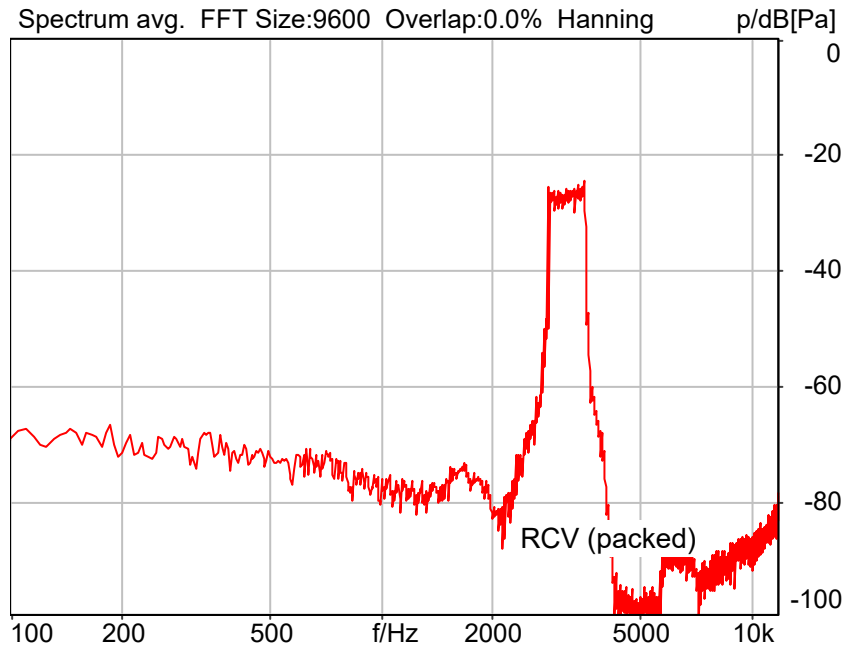
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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Receive path - distortion and noise 3150Hz WB&NB (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise
Band 66;Table-3



Distortion (Noise) RCV (packed): 30.29 dB (3.06%)

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Meas. Setting STD:DRP/ERP OFF

Source: act_rpn_b250ms_3150hz_sr20dbm0_v02.dat

Level adj. Ch1 -90.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

Mouth Eq. Ch.1: HATS 3 (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.	100.0 Hz	Analysis max.	2780.0 Hz
Analysis (2) min.	3590.0 Hz	Analysis (2) max.	8000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
Store to variable ISO35_16_SDNR

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.2 Receive path – distortion and noise (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise

Band 4;Table-3

ID	Variable Name	Distortion Value	LowerLimit	Frequency Range	Pass/Fail
3	iso26_16_SDNR	27.09	20	320...480 Hz	Pass
4	iso27_16_SDNR	25.24	20	410...595 Hz	Pass
5	iso28_16_SDNR	25.05	20	525...745 Hz	Pass
6	iso29_16_SDNR	24.92	20	675...925 Hz	Pass
7	iso30_16_SDNR	31.06	20	855...1155 Hz	Pass
8	iso31_16_SDNR	30.07	20	1085...1450 Hz	Pass
9	iso32_16_SDNR	34.53	20	1375...1815 Hz	Pass
10	iso33_16_SDNR	34.89	20	1745...2275 Hz	Pass
11	iso34_16_SDNR	30.79	20	2205...2855 Hz	Pass
12	iso35_16_SDNR	30.07	20	2785...3585 Hz	Pass

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5.2 Receive path – distortion and noise (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise

Band 5;Table-3

ID	Variable Name	Distortion Value	LowerLimit	Frequency Range	Pass/Fail
3	iso26_16_SDNR	26.12	20	320...480 Hz	Pass
4	iso27_16_SDNR	27.9	20	410...595 Hz	Pass
5	iso28_16_SDNR	26.42	20	525...745 Hz	Pass
6	iso29_16_SDNR	23.54	20	675...925 Hz	Pass
7	iso30_16_SDNR	28.43	20	855...1155 Hz	Pass
8	iso31_16_SDNR	30.01	20	1085...1450 Hz	Pass
9	iso32_16_SDNR	33.27	20	1375...1815 Hz	Pass
10	iso33_16_SDNR	35.34	20	1745...2275 Hz	Pass
11	iso34_16_SDNR	31.69	20	2205...2855 Hz	Pass
12	iso35_16_SDNR	28.17	20	2785...3585 Hz	Pass

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5.2 Receive path – distortion and noise (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise

Band 12;Table-3

ID	Variable Name	Distortion Value	LowerLimit	Frequency Range	Pass/Fail
3	iso26_16_SDNR	27.71	20	320...480 Hz	Pass
4	iso27_16_SDNR	27.11	20	410...595 Hz	Pass
5	iso28_16_SDNR	25.13	20	525...745 Hz	Pass
6	iso29_16_SDNR	22.95	20	675...925 Hz	Pass
7	iso30_16_SDNR	35.61	20	855...1155 Hz	Pass
8	iso31_16_SDNR	30.99	20	1085...1450 Hz	Pass
9	iso32_16_SDNR	35.01	20	1375...1815 Hz	Pass
10	iso33_16_SDNR	35.09	20	1745...2275 Hz	Pass
11	iso34_16_SDNR	30.43	20	2205...2855 Hz	Pass
12	iso35_16_SDNR	29.92	20	2785...3585 Hz	Pass

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5.2 Receive path – distortion and noise (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise

Band 13;Table-3

ID	Variable Name	Distortion Value	LowerLimit	Frequency Range	Pass/Fail
3	iso26_16_SDNR	27.7	20	320...480 Hz	Pass
4	iso27_16_SDNR	26.82	20	410...595 Hz	Pass
5	iso28_16_SDNR	25.72	20	525...745 Hz	Pass
6	iso29_16_SDNR	24.76	20	675...925 Hz	Pass
7	iso30_16_SDNR	35.81	20	855...1155 Hz	Pass
8	iso31_16_SDNR	30.74	20	1085...1450 Hz	Pass
9	iso32_16_SDNR	34.74	20	1375...1815 Hz	Pass
10	iso33_16_SDNR	35.2	20	1745...2275 Hz	Pass
11	iso34_16_SDNR	31.34	20	2205...2855 Hz	Pass
12	iso35_16_SDNR	29.04	20	2785...3585 Hz	Pass

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5.2 Receive path – distortion and noise (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB \ 5.2 Receive path – distortion and noise

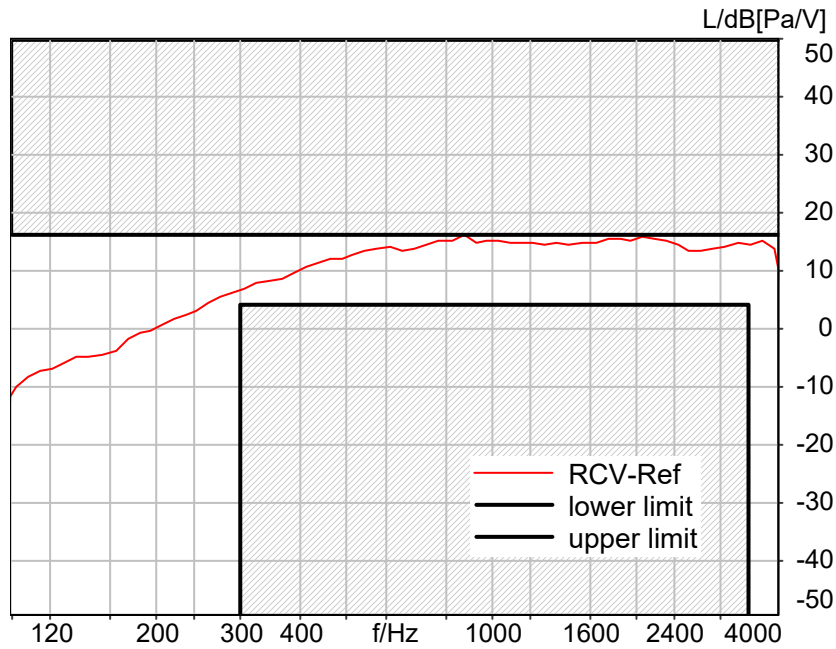
Band 66;Table-3

ID	Variable Name	Distortion Value	LowerLimit	Frequency Range	Pass/Fail
3	iso26_16_SDNR	28.24	20	320...480 Hz	Pass
4	iso27_16_SDNR	24.61	20	410...595 Hz	Pass
5	iso28_16_SDNR	25.66	20	525...745 Hz	Pass
6	iso29_16_SDNR	23.73	20	675...925 Hz	Pass
7	iso30_16_SDNR	35.71	20	855...1155 Hz	Pass
8	iso31_16_SDNR	30.57	20	1085...1450 Hz	Pass
9	iso32_16_SDNR	35.17	20	1375...1815 Hz	Pass
10	iso33_16_SDNR	35.28	20	1745...2275 Hz	Pass
11	iso34_16_SDNR	32.03	20	2205...2855 Hz	Pass
12	iso35_16_SDNR	30.29	20	2785...3585 Hz	Pass

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5.3 Receive Acoustic Frequency response Performance (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB
Band 4;Table-3



Absolute minimal distance
2.62 dB at 305.9 Hz Ok

Ok

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Limits

	lower
Run 1	Fit into tolerance

Meas. Setting STD:DRP/ERP OFF

Source: **ieee_male_dual_nb.dat**

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms Range length 10200.00 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	16384	Overlap	75 %
Window function.	Hanning		
Reference file	rcv_nb_ref1.fft		
Tol. scheme file	nb_fr_tol.tol	Min. freq. for tol.	100.0 Hz
Auto adjust	To upper scheme	Max. freq. for tol.	4000.0 Hz

Special Features

Compensate delay 142.8000 ms (D_RCV_NB, Delay (Cross))
Store to file rcv_fr

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

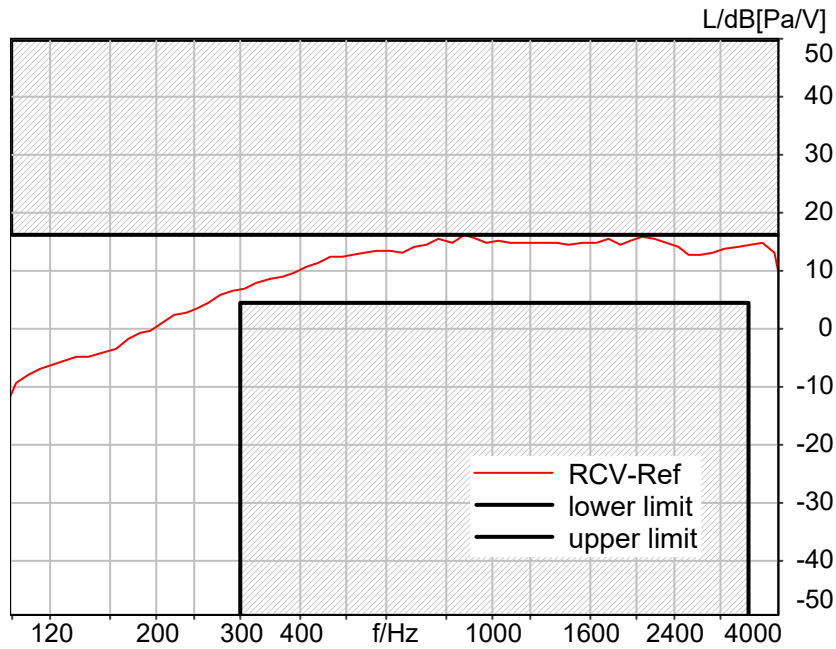
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.3 Receive Acoustic Frequency response Performance (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB
Band 5;Table-3



Absolute minimal distance
2.57 dB at 305.9 Hz Ok

Ok

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Limits

	lower
Run 1	Fit into tolerance

Meas. Setting STD:DRP/ERP OFF

Source: **ieee_male_dual_nb.dat**

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms Range length 10200.00 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	16384	Overlap	75 %
Window function.	Hanning		
Reference file	rcv_nb_ref1.fft		
Tol. scheme file	nb_fr_tol.tol	Min. freq. for tol.	100.0 Hz
Auto adjust	To upper scheme	Max. freq. for tol.	4000.0 Hz

Special Features

Compensate delay 142.4000 ms (D_RCV_NB, Delay (Cross))
Store to file rcv_fr

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

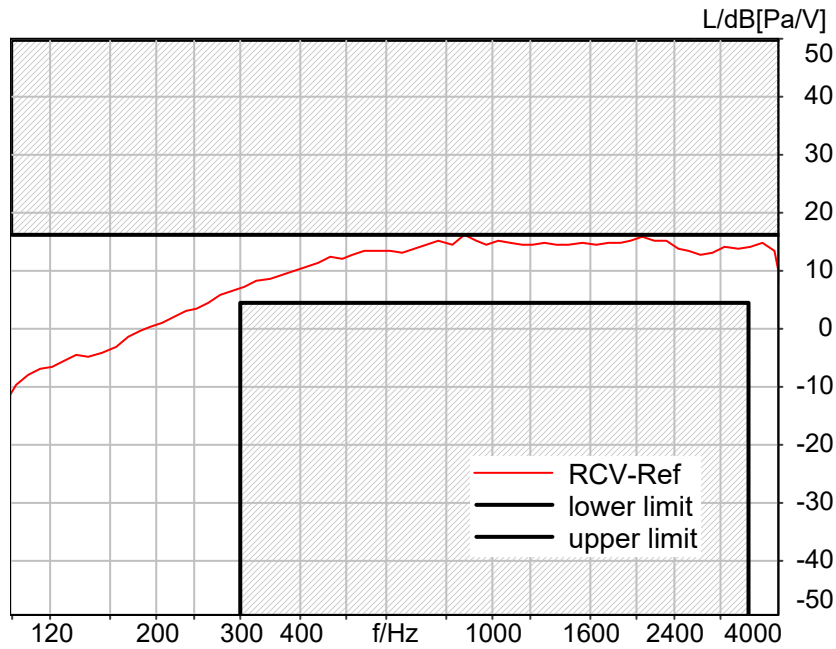
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.3 Receive Acoustic Frequency response Performance (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB
Band 12;Table-3



Absolute minimal distance
2.88 dB at 305.9 Hz Ok

Ok

2023/12/17 12:24 ACQUA 5.1.200

Limits

	lower
Run 1	Fit into tolerance

Meas. Setting STD:DRP/ERP OFF

Source: **ieee_male_dual_nb.dat**

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms Range length 10200.00 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	16384	Overlap	75 %
Window function.	Hanning		
Reference file	rcv_nb_ref1.fft		
Tol. scheme file	nb_fr_tol.tol	Min. freq. for tol.	100.0 Hz
Auto adjust	To upper scheme	Max. freq. for tol.	4000.0 Hz

Special Features

Compensate delay 142.5000 ms (D_RCV_NB, Delay (Cross))
Store to file rcv_fr

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

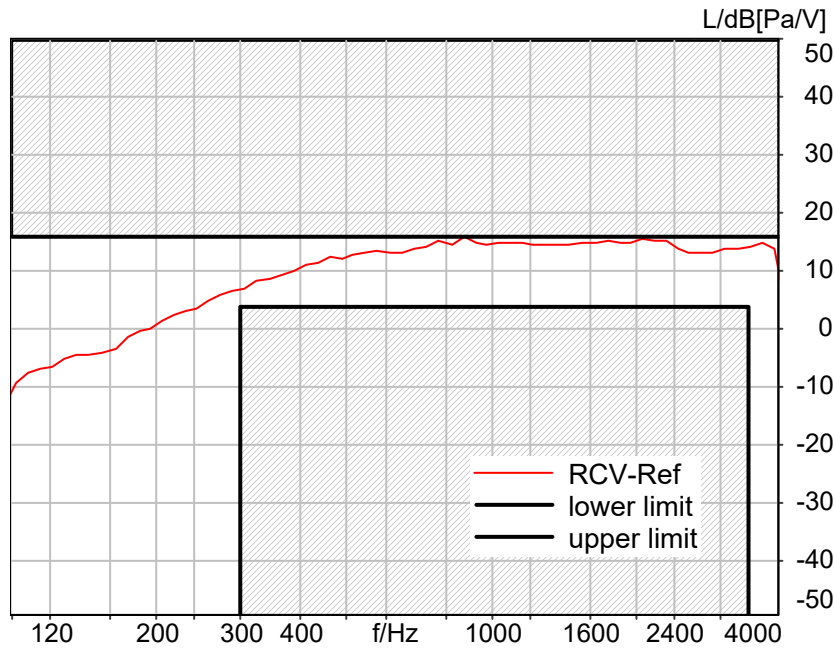
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
----------	----------	------------	----------

5.3 Receive Acoustic Frequency response Performance (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB
Band 13;Table-3



Absolute minimal distance
3.12 dB at 305.9 Hz Ok

Ok

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Limits

	lower
Run 1	Fit into tolerance

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms Range length 10200.00 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	16384	Overlap	75 %
Window function.	Hanning		
Reference file	rcv_nb_ref1.fft		
Tol. scheme file	nb_fr_tol.tol	Min. freq. for tol.	100.0 Hz
Auto adjust	To upper scheme	Max. freq. for tol.	4000.0 Hz

Special Features

Compensate delay 143.0000 ms (D_RCV_NB, Delay (Cross))
Store to file rcv_fr

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

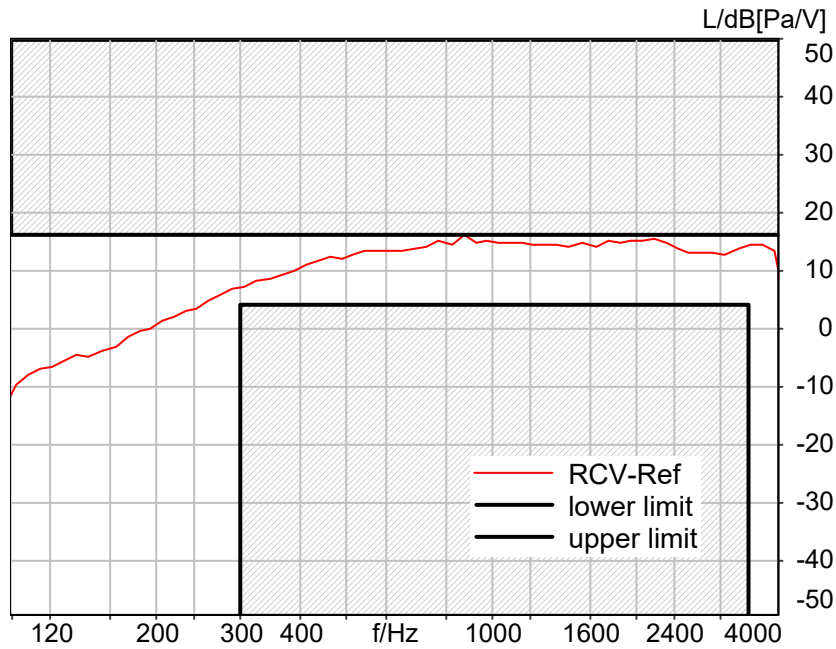
Block mode Bypass

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

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.3 Receive Acoustic Frequency response Performance (23T04Z80629 VoLTE EVS)

ANSI/TIA 5050-2018 \ 8N HAC OFF \ NB
Band 66;Table-3



Absolute minimal distance
3.05 dB at 305.9 Hz Ok

Ok

2023/12/17 12:36 ACQUA 5.1.200

Limits

	lower
Run 1	Fit into tolerance

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms Range length 10200.00 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	16384	Overlap	75 %
Window function.	Hanning		
Reference file	rcv_nb_ref1.fft		
Tol. scheme file	nb_fr_tol.tol	Min. freq. for tol.	100.0 Hz
Auto adjust	To upper scheme	Max. freq. for tol.	4000.0 Hz

Special Features

Compensate delay 143.4000 ms (D_RCV_NB, Delay (Cross))
Store to file rcv_fr

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 -> Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 -> Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <- BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <- BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode Bypass

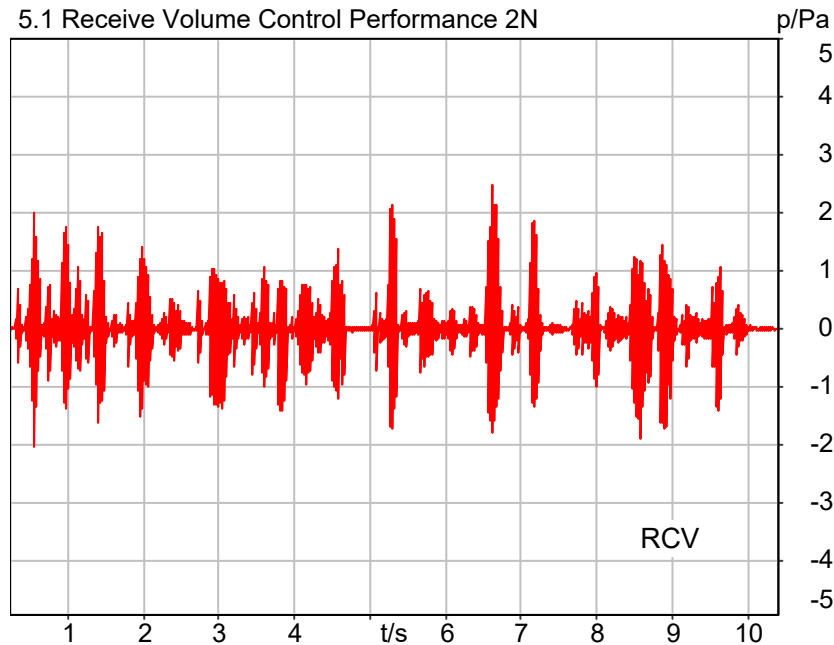
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 4;Table-3



Speech Level RCV: 80.56 dB[SPL], Act.: 93.40%

2023/12/17 14:00 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 134.9000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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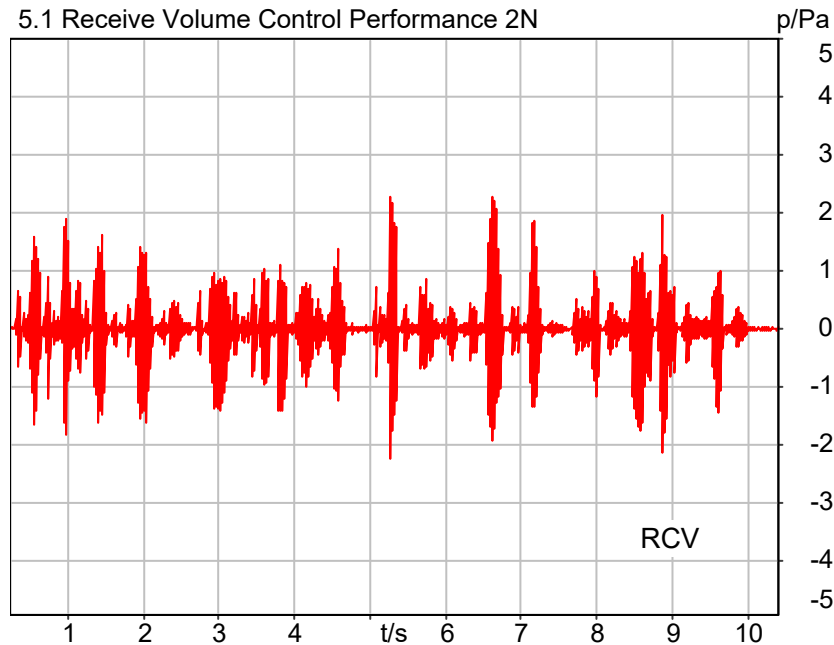
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 5;Table-3



Speech Level RCV: 80.50 dB[SPL], Act.: 93.20%

2023/12/17 14:01 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 128.2000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

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

Microphone Settings (Mic Amp. 1..4)

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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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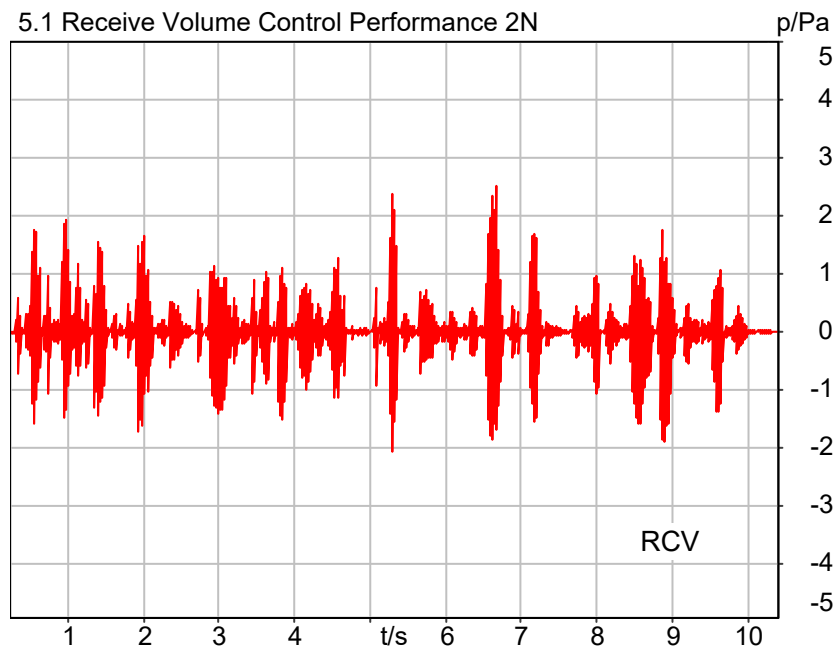
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 12;Table-3



Speech Level RCV: 80.53 dB[SPL], Act.: 93.32%

2023/12/17 14:03 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 130.3000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)

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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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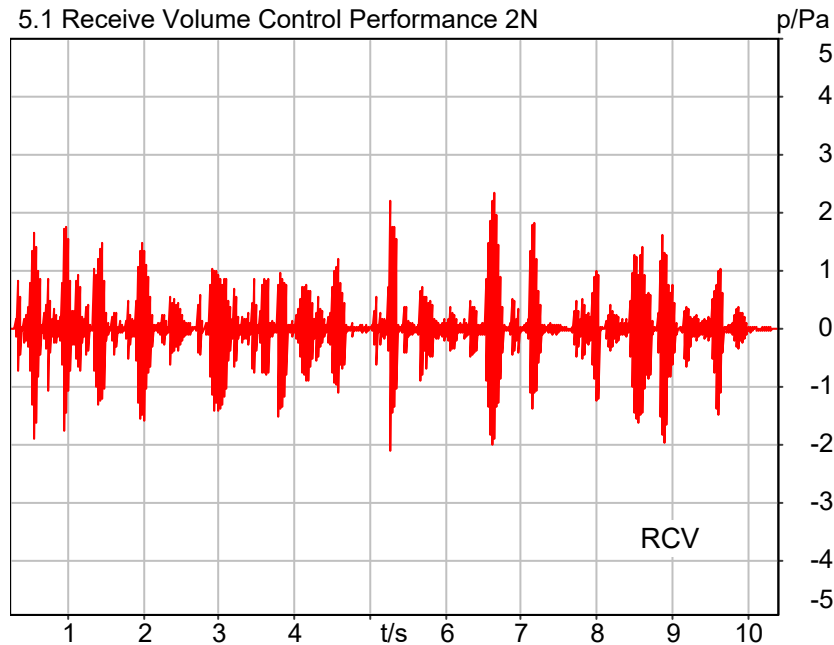
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 13;Table-3



Speech Level RCV: 80.52 dB[SPL], Act.: 93.28%

2023/12/17 14:04 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 137.7000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)

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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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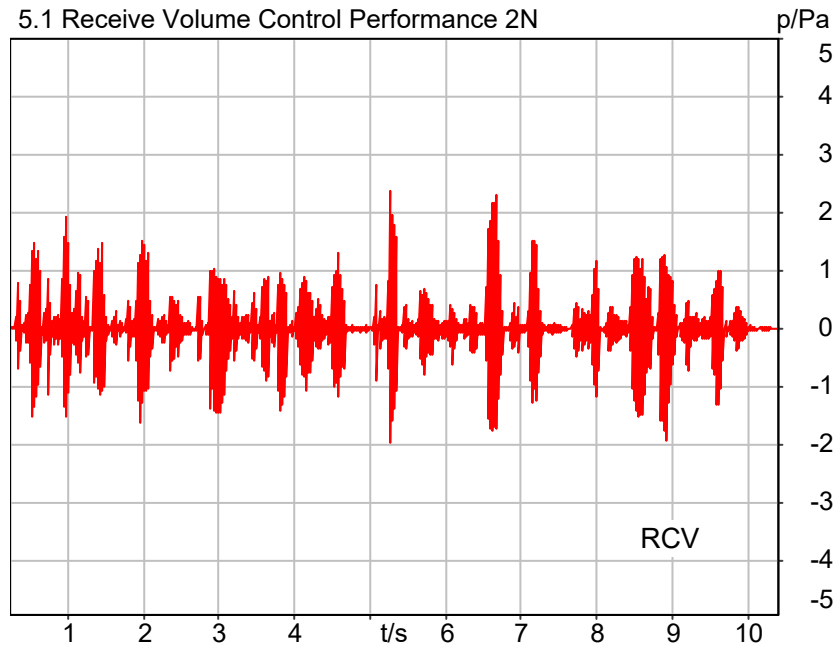
Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1 Receive Volume Control Performance 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 66;Table-3



Speech Level RCV: 80.42 dB[SPL], Act.: 93.39%

2023/12/17 14:05 ACQUA 5.1.200

Meas. Setting STD:DRP/ERP OFF

Source: ieee_male_dual_nb.dat

Level adj. Ch1 -90.0 dB

Level adj. Ch2 -4.0 dB

Calibration

Input ch.2: 1.37 dB 2023/11/29 (HATS 3 (HMS II.3))

Output ch.2: 0.00 dB (Radio Tester 1 (CMW500))

Output Equalization/Filter

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

Analysis

Direction Out 2 -> In 2

Range start 250.00 ms

Range length 10200.00 ms

Bandpass filter Narrow Band

Margin (15.9dB nom) 15.90 dB

Special Features

Compensate delay 135.4000 ms (D_RCV_NB, Delay (Cross))

Store to variable rcv_vol_nb

Hardware Config Settings

Used Setting STD:Mobile test both channels

labCORE Settings

labCORE Serial	77000136	Nickname	
Firmware	3.2.46	Sync Source	Internal
Clock Pitch	0.00 ppm		

labCORE Routing

Out Channel 1 ->	Power Amp. 1/2 1 -> HATS 3 (HMS II.3) Speaker
Out Channel 2 ->	Analog Out 1/2 1 -> Radio Tester 1 (CMW500) In
In Channel 1 <-	BEQ Filter 1 L <- Mic Amp. 1..4 In 1 <- HATS 3 (HMS II.3) Mic. Left
In Channel 2 <-	BEQ Filter 1 R <- Mic Amp. 1..4 In 2 <- HATS 3 (HMS II.3) Mic. Right

Analog In Mainboard Settings (Analog In 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Analog Out Mainboard Settings (Analog Out 1/2)

Range Ch. 1	0.00 dB	Range Ch. 2	0.00 dB
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Microphone Settings (Mic Amp. 1..4)**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	20Hz
Polarisation Voltage	Off	Supply Voltage	±60V

Channel In 4 Settings

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

BEQ Settings (BEQ Filter 1)

Block mode	Bypass
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Artificial Head Settings (HATS 3 (HMS II.3))

Ser. Nr.	12306194	Pinna Type	Type 3.3
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5.1.1 -1 Conversation Gain 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 4;Table-3

Correction

rcv_vol_nb	80.560 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 2N
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rcv_vol_nb-70

Calculated Value: 10.56 dB Ok

Ok2023/12/17 14:00 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 5;Table-3

Correction

rcv_vol_nb	80.500 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 2N
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rcv_vol_nb-70

Calculated Value: 10.50 dB Ok

Ok2023/12/17 14:02 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 12;Table-3

Correction

rcv_vol_nb	80.530 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 2N
------------	----------------	------------	----------	--

rcv_vol_nb-70

Calculated Value: 10.53 dB Ok

Ok2023/12/17 14:03 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 13;Table-3

Correction

rcv_vol_nb	80.520 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 2N
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rcv_vol_nb-70

Calculated Value: 10.52 dB Ok

Ok

2023/12/17 14:04 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB

5.1.1 -1 Conversation Gain 2N (23T04Z80629 VoLTE AMR)

ANSI/TIA 5050-2018 \ 2N HAC ON \ NB

Band 66;Table-3

Correction

rcv_vol_nb	80.420 dB[SPL]	2023/12/17	Measured	5.1 Receive Volume Control Performance 2N
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rcv_vol_nb-70

Calculated Value: 10.42 dB Ok

Ok2023/12/17 14:05 ACQUA 5.1.200

Limits

	lower
Run 1	6.00 dB