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## **Measurement Protocol**

Measurement Object	LTE Band25_ENDC_20M_QPSK_1RB_0Offset_EVS NB 24.4kbps_Ch26340_8N
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Project	3D0836
Report Generation Date	23/1/2024 3:49
Responsible Person	AC01-KS

## Status Overview

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay NB	Done	Delay (Cross) [ms]	173.0	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	97.86	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 400 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	29.22	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 500 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.20	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 630 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	31.18	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 800 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	32.57	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 1000 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.21	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 1250 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.16	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 1600 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	37.54	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 2000 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	23.80	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 2500 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	21.42	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.2 RCV Distortion and Noise - 3150 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.64	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
Report - Receive Distortion and Noise (Conversational)	Ok	Minimum SDNR [dB], (occured at	21.42	LTE Band25_ENDC_20M_QPSK_1RB_0

Gain)		2500Hz)		Offset_EVS NB 24. 4kbps_Ch26340_8N
5.3 Frequency Response 8N FF HANB	Ok	Min. dist. to tolerance scheme [dB], 305.9 Hz	2.30	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N
5.3 Frequency Response 8N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 305.9 Hz	2.12	LTE Band25_ENDC_20M_QPSK_1RB_0 Offset_EVS NB 24. 4kbps_Ch26340_8N

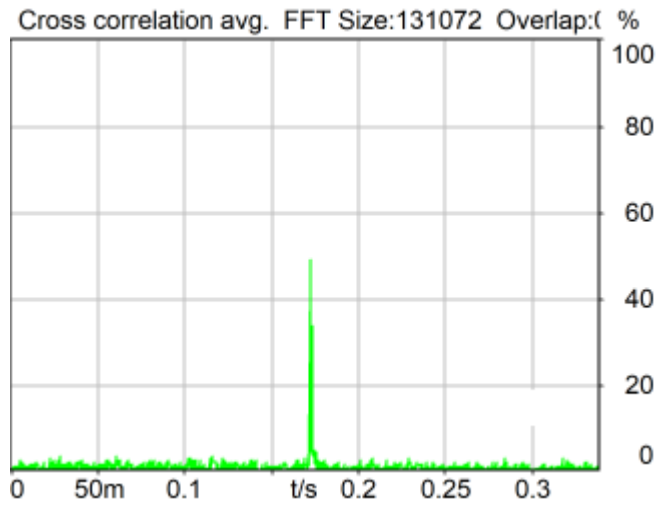
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Overall Receive Delay NB	6
5.1a Receive Volume Control Performance 8N NB	7
5.2 RCV Distortion and Noise - 400 Hz NB	8
5.2 RCV Distortion and Noise - 500 Hz NB	9
5.2 RCV Distortion and Noise - 630 Hz NB	10
5.2 RCV Distortion and Noise - 800 Hz NB	11
5.2 RCV Distortion and Noise - 1000 Hz NB	12
5.2 RCV Distortion and Noise - 1250 Hz NB	13
5.2 RCV Distortion and Noise - 1600 Hz NB	14
5.2 RCV Distortion and Noise - 2000 Hz NB	15
5.2 RCV Distortion and Noise - 2500 Hz NB	16
5.2 RCV Distortion and Noise - 3150 Hz NB	17
Report - Receive Distortion and Noise (Conversational Gain)	18
5.3 Frequency Response 8N FF HANB	19
5.3 Frequency Response 8N DF HANB	20



## Overall Receive Delay NB

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

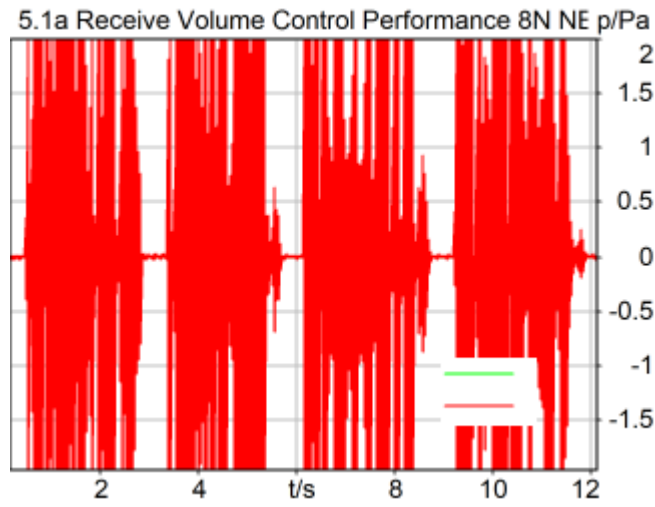


Delay (Cross): 173.0 ms

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## 5.1a Receive Volume Control Performance 8N NB

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



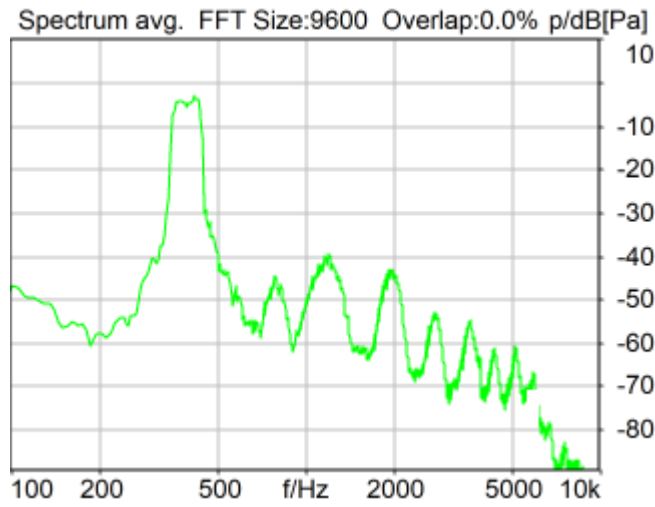
Speech Level RCV: 97.86 dB[SPL], Act.: 80.47% Ok

Ok

23/1/2024 3:37 ACQUA 5.1.200

## 5.2 RCV Distortion and Noise - 400 Hz NB

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



Distortion (Noise) RCV (packed): 29.22 dB (3.46%) Ok

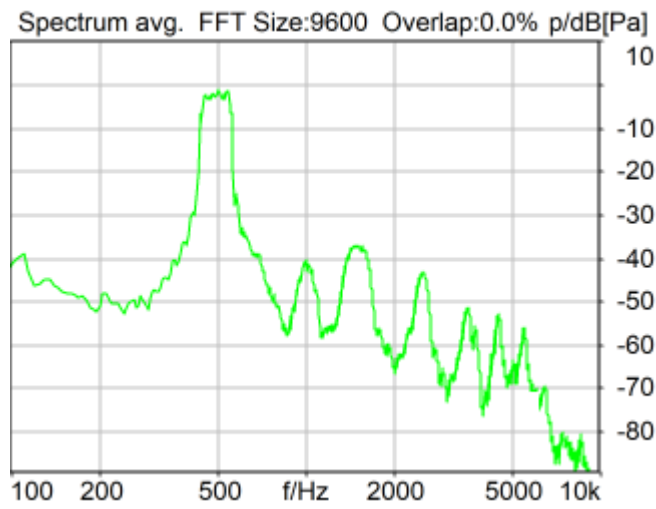
Ok

23/1/2024 3:37 ACQUA 5.1.200



## 5.2 RCV Distortion and Noise - 500 Hz NB

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



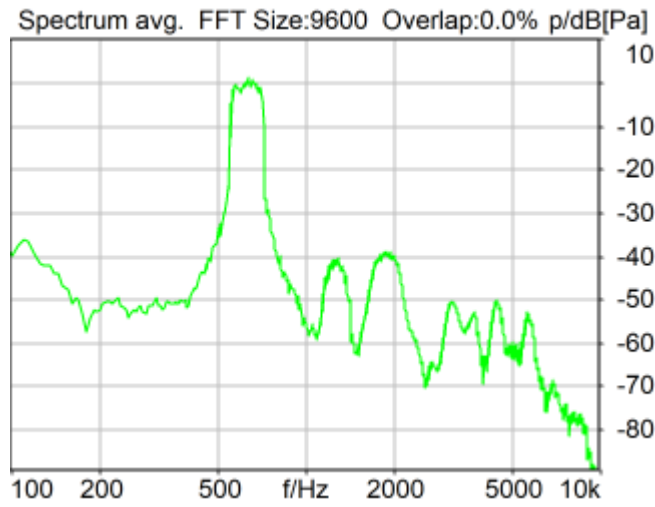
Distortion (Noise) RCV (packed): 28.20 dB (3.89%) Ok

Ok

23/1/2024 3:37 ACQUA 5.1.200

## 5.2 RCV Distortion and Noise - 630 Hz NB

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



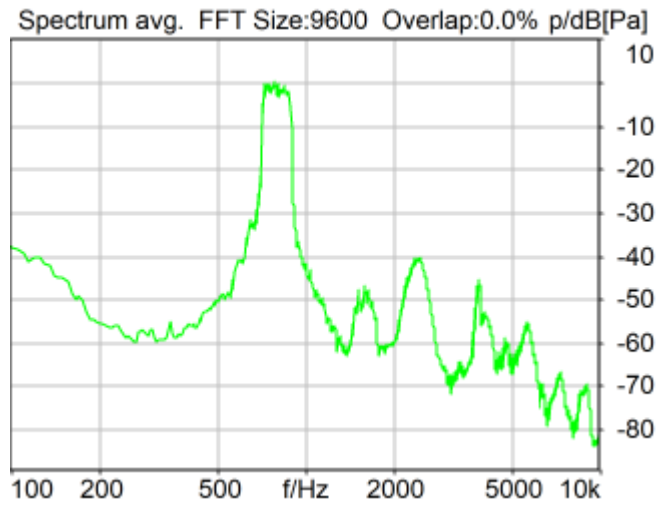
Distortion (Noise) RCV (packed): 31.18 dB (2.76%) Ok

Ok

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## 5.2 RCV Distortion and Noise - 800 Hz NB

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



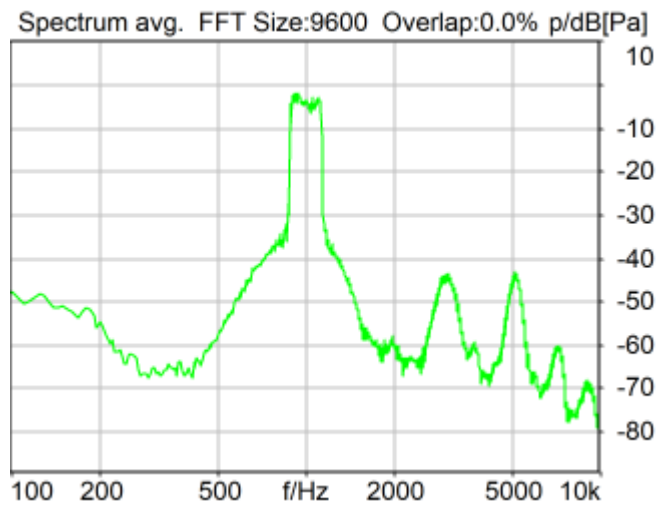
Distortion (Noise) RCV (packed): 32.57 dB (2.35%) Ok

Ok

23/1/2024 3:38 ACQUA 5.1.200

## **5.2 RCV Distortion and Noise - 1000 Hz NB**

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



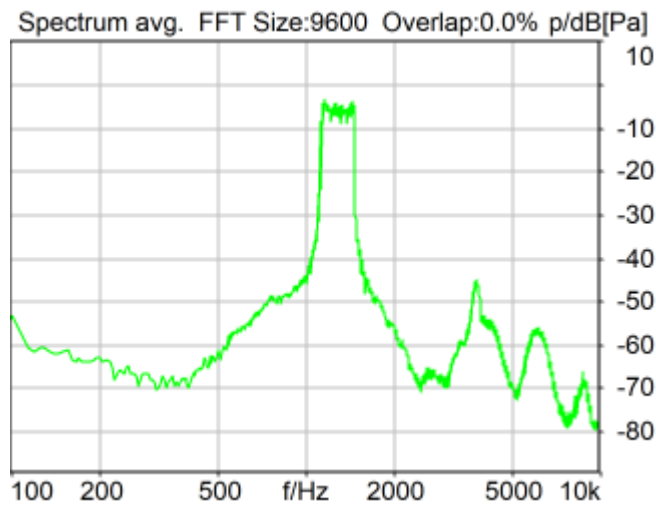
Distortion (Noise) RCV (packed): 30.21 dB (3.09%) Ok

**Ok**

23/1/2024 3:39 ACQUA 5.1.200

## **5.2 RCV Distortion and Noise - 1250 Hz NB**

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



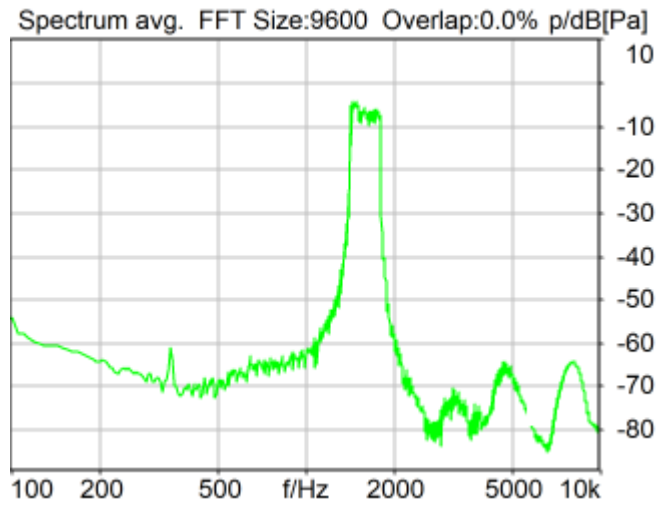
Distortion (Noise) RCV (packed): 28.16 dB (3.91%) Ok

**Ok**

23/1/2024 3:39 ACQUA 5.1.200

## **5.2 RCV Distortion and Noise - 1600 Hz NB**

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



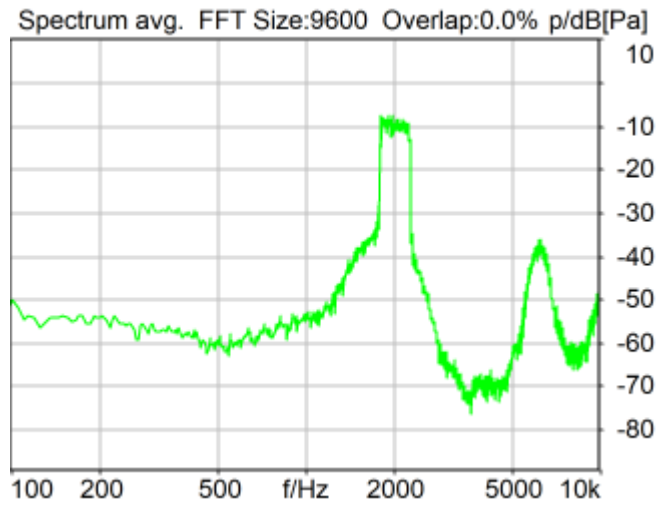
Distortion (Noise) RCV (packed): 37.54 dB (1.33%) Ok

**Ok**

23/1/2024 3:39 ACQUA 5.1.200

## 5.2 RCV Distortion and Noise - 2000 Hz NB

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



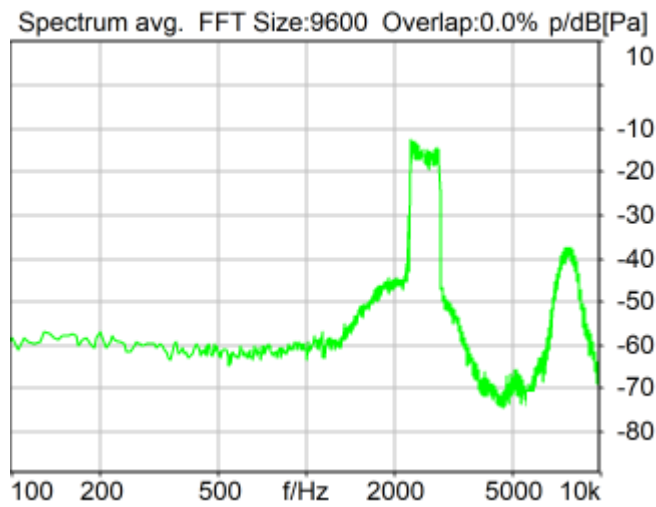
Distortion (Noise) RCV (packed): 23.80 dB (6.46%) Ok

Ok

23/1/2024 3:40 ACQUA 5.1.200

## 5.2 RCV Distortion and Noise - 2500 Hz NB

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



Distortion (Noise) RCV (packed): 21.42 dB (8.49%) Ok

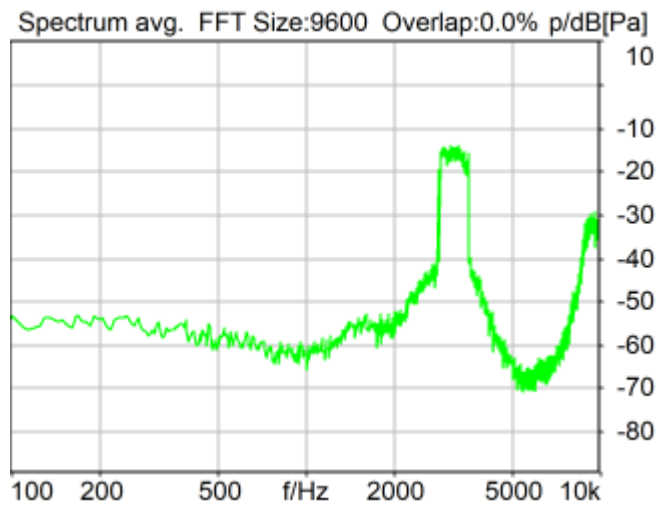
Ok

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## 5.2 RCV Distortion and Noise - 3150 Hz NB

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



Distortion (Noise) RCV (packed): 25.64 dB (5.23%) Ok

Ok

23/1/2024 3:48 ACQUA 5.1.200

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## **Report - Receive Distortion and Noise (Conversational Gain)**

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

<b>Region</b>	<b>Frequency</b>	<b>SDNR</b>
1	400Hz	29.22 dB
2	500Hz	28.20 dB
3	630Hz	31.18 dB
4	800Hz	32.57 dB
5	1000Hz	30.21 dB
6	1250Hz	28.16 dB
7	1600Hz	37.54 dB
8	2000Hz	23.80 dB
9	2500Hz	21.42 dB
10	3150Hz	25.64 dB

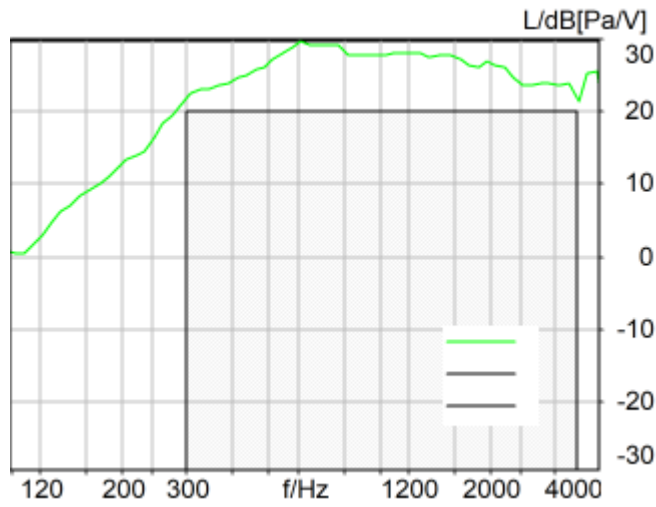
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 21.42dB at 2500Hz.

23/1/2024 3:48 ACQUA

### 5.3 Frequency Response 8N FF HANB

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



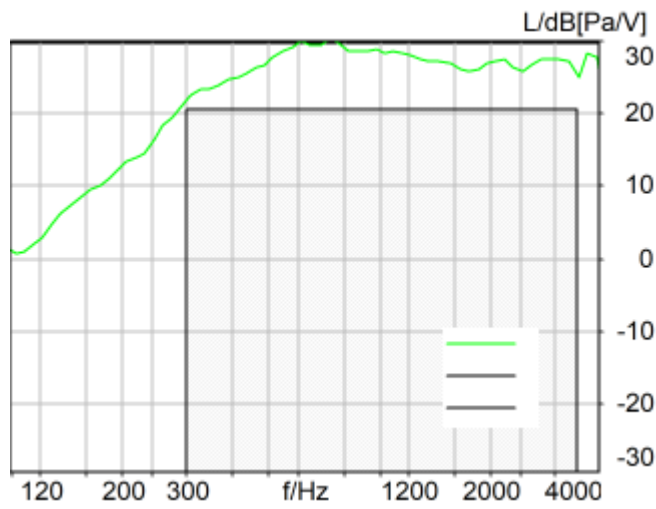
Absolute minimal distance  
2.30 dB at 305.9 Hz Ok

Ok

23/1/2024 3:43 ACQUA 5.1.200

### 5.3 Frequency Response 8N DF HANB

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



Absolute minimal distance  
2.12 dB at 305.9 Hz Ok

Ok

23/1/2024 3:43 ACQUA 5.1.200

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## **Measurement Protocol**

Measurement Object	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2N
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Project	3D0836
Report Generation Date	2024/1/8 21:10
Responsible Person	AC

## Status Overview

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay WB	Done	Delay (Cross) [ms]	293.0	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.1b Receive Volume Control Performance 2N WB	Ok	Speech Level [dB[SPL]]	83.67	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 250 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	22.84	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 315 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	23.45	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 400 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	31.26	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 500 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	28.17	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 630 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	35.85	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 800 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	29.06	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 1000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	34.55	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 1250 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	31.24	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 1600 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	36.93	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 2000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	34.85	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 2500 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	41.40	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 3150 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	42.82	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 4000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	44.16	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 5000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	46.16	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
Report - Receive Distortion	Ok	Minimum SDNR	22.84	FR1 n77

and Noise (Conversational Gain)		[dB], (occured at 250Hz)		270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.3 Frequency Response 2N FF	Ok	Min. dist. to tolerance scheme [dB], 1151.2 Hz	0.09	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.3 Frequency Response 2N DF	Not Ok	Min. dist. to tolerance scheme [dB], 3882.4 Hz	-1.22	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N

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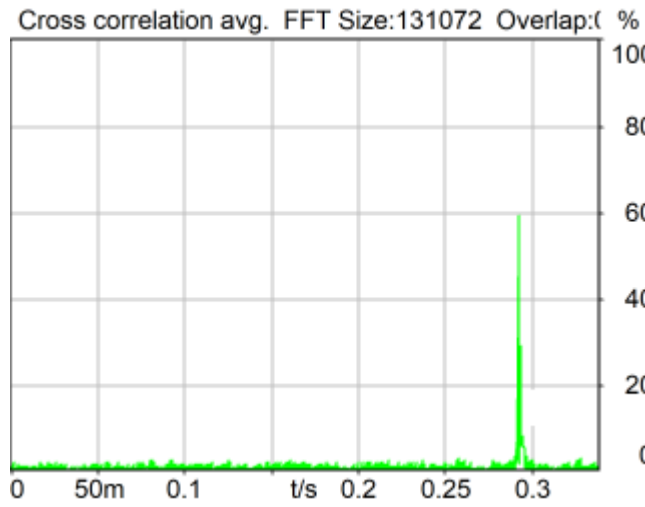
Overall Receive Delay WB	6
5.1b Receive Volume Control Performance 2N WB	7
5.2 RCV Distortion and Noise - 250 Hz WB	8
5.2 RCV Distortion and Noise - 315 Hz WB	9
5.2 RCV Distortion and Noise - 400 Hz WB	10
5.2 RCV Distortion and Noise - 500 Hz WB	11
5.2 RCV Distortion and Noise - 630 Hz WB	12
5.2 RCV Distortion and Noise - 800 Hz WB	13
5.2 RCV Distortion and Noise - 1000 Hz WB	14
5.2 RCV Distortion and Noise - 1250 Hz WB	15
5.2 RCV Distortion and Noise - 1600 Hz WB	16
5.2 RCV Distortion and Noise - 2000 Hz WB	17
5.2 RCV Distortion and Noise - 2500 Hz WB	18
5.2 RCV Distortion and Noise - 3150 Hz WB	19
5.2 RCV Distortion and Noise - 4000 Hz WB	20
5.2 RCV Distortion and Noise - 5000 Hz WB	21
Report - Receive Distortion and Noise (Conversational Gain)	22
5.3 Frequency Response 2N FF	23
5.3 Frequency Response 2N DF	24





## Overall Receive Delay WB

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

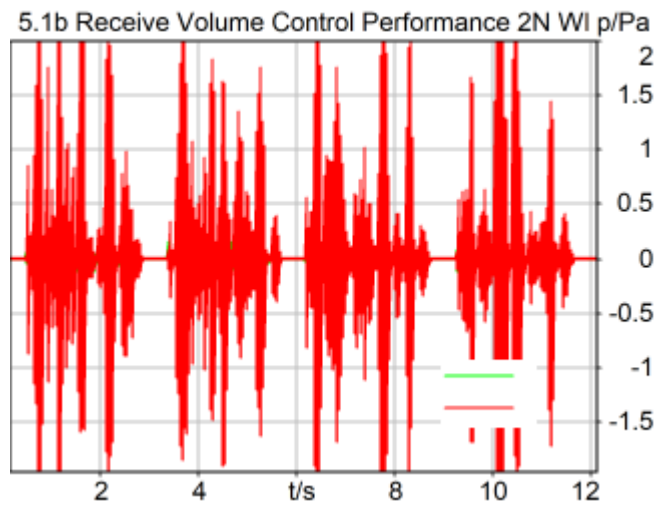


Delay (Cross): 293.0 ms

2024/1/8 21:00 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## 5.1b Receive Volume Control Performance 2N WB

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



Speech Level RCV: 83.67 dB[SPL], Act.: 81.42% Ok

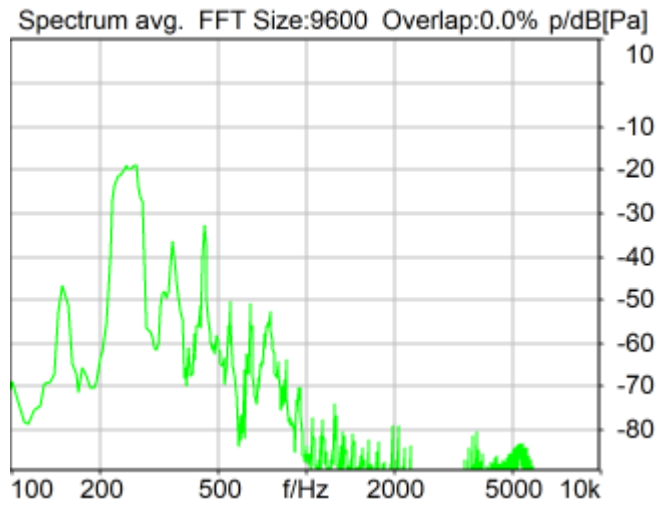
**Ok**

2024/1/8 21:00 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 250 Hz WB**

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



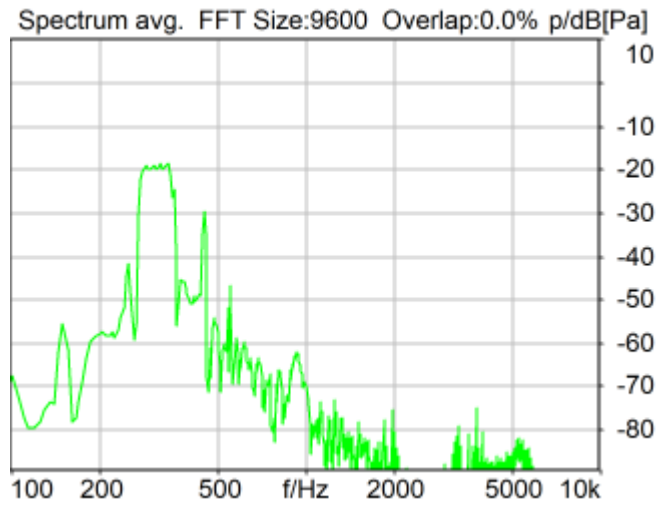
Distortion (Noise) RCV (packed): 22.84 dB (7.21%) Ok

**Ok**

2024/1/8 21:01 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 315 Hz WB**

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



Distortion (Noise) RCV (packed): 23.45 dB (6.72%) Ok

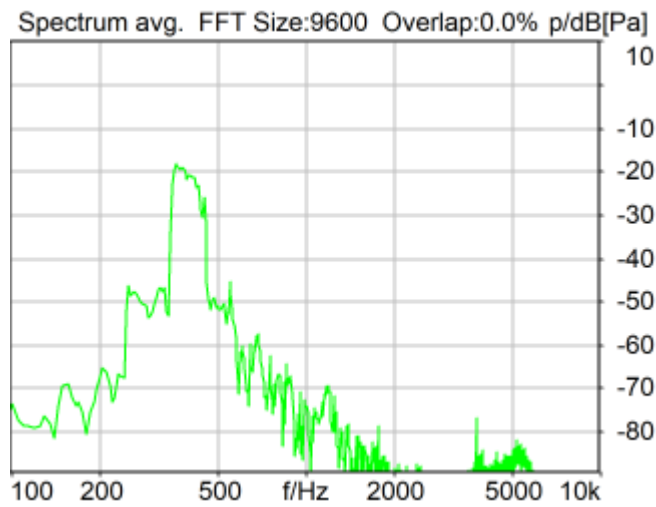
**Ok**

2024/1/8 21:01 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 400 Hz WB**

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



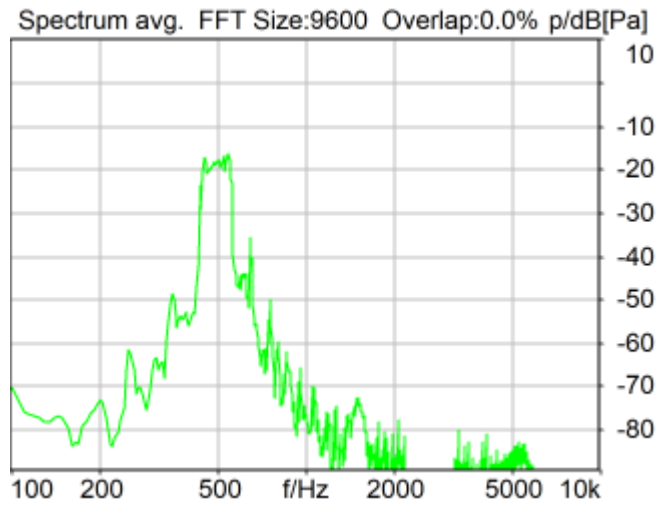
Distortion (Noise) RCV (packed): 31.26 dB (2.73%) Ok

**Ok**

2024/1/8 21:01 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 500 Hz WB**

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



Distortion (Noise) RCV (packed): 28.17 dB (3.90%) Ok

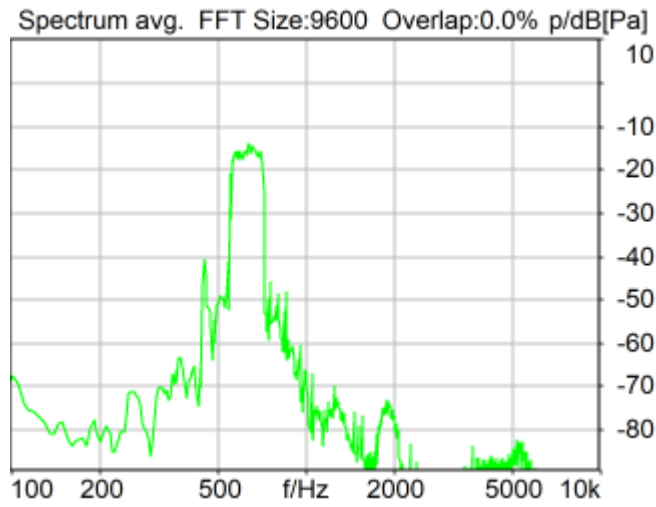
**Ok**

2024/1/8 21:02 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 630 Hz WB**

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



Distortion (Noise) RCV (packed): 35.85 dB (1.61%) Ok

**Ok**

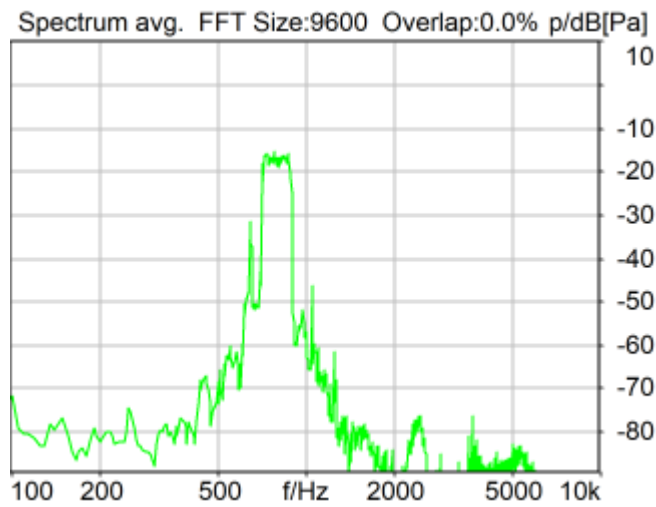
2024/1/8 21:02 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor



## **5.2 RCV Distortion and Noise - 800 Hz WB**

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



Distortion (Noise) RCV (packed): 29.06 dB (3.52%) Ok

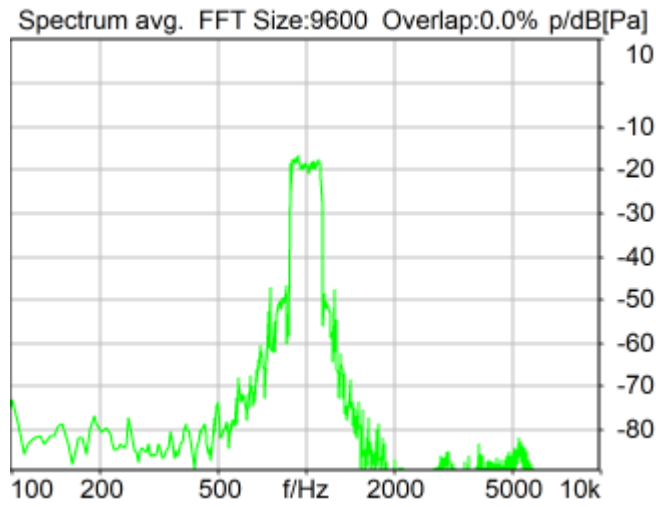
**Ok**

2024/1/8 21:03 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 1000 Hz WB

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



Distortion (Noise) RCV (packed): 34.55 dB (1.87%) Ok

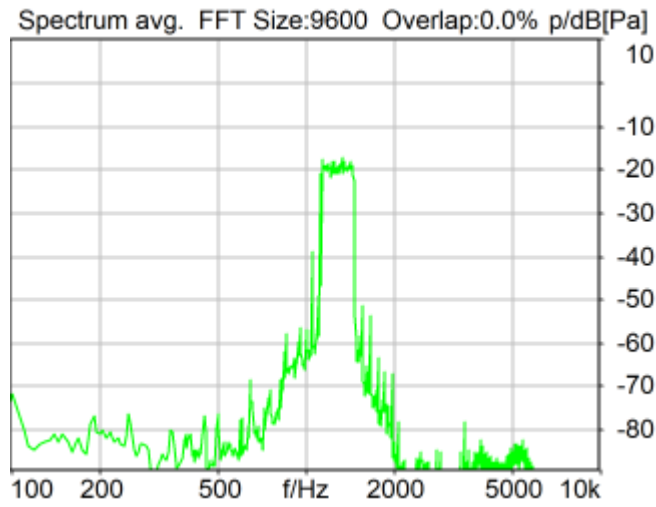
Ok

2024/1/8 21:03 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1250 Hz WB**

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



Distortion (Noise) RCV (packed): 31.24 dB (2.74%) Ok

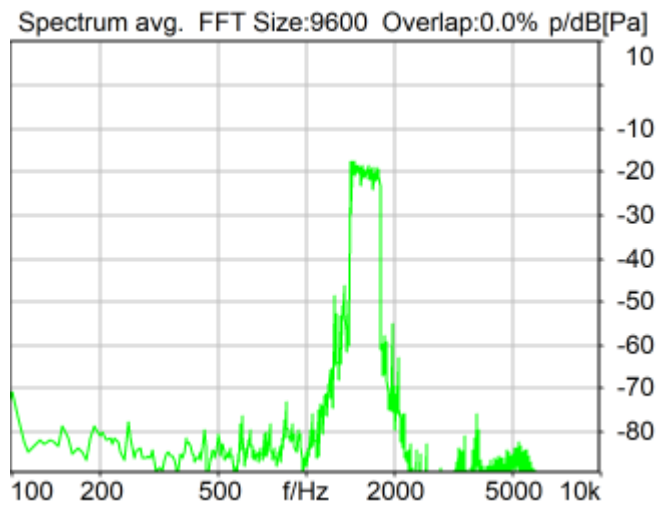
**Ok**

2024/1/8 21:03 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 1600 Hz WB

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



Distortion (Noise) RCV (packed): 36.93 dB (1.42%) Ok

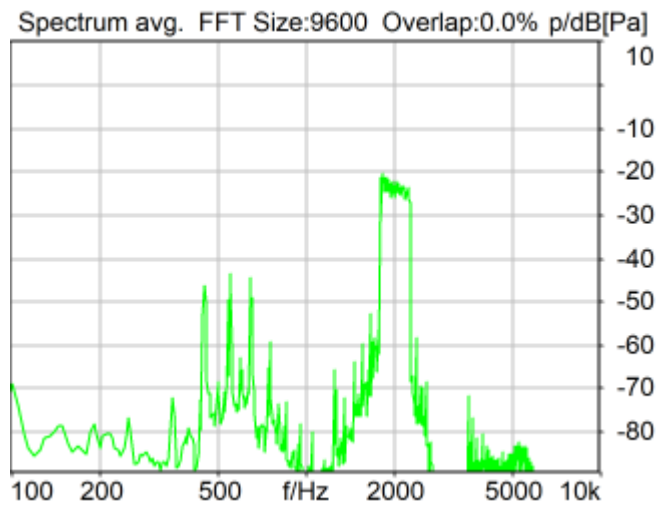
**Ok**

2024/1/8 21:04 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2000 Hz WB**

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



Distortion (Noise) RCV (packed): 34.85 dB (1.81%) Ok

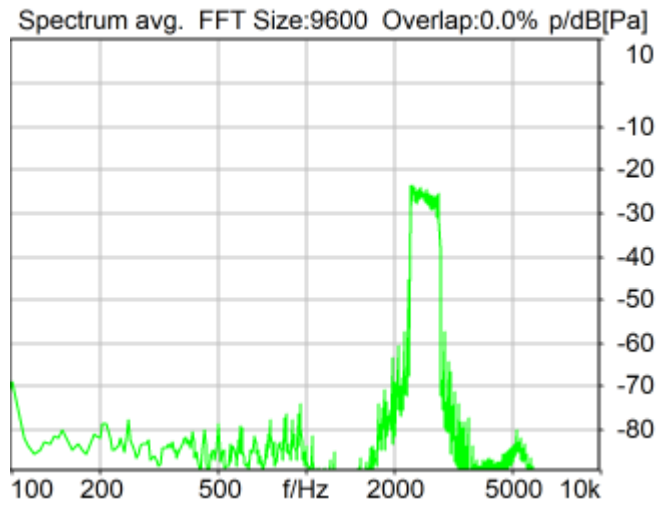
**Ok**

2024/1/8 21:04 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2500 Hz WB**

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



Distortion (Noise) RCV (packed): 41.40 dB (0.85%) Ok

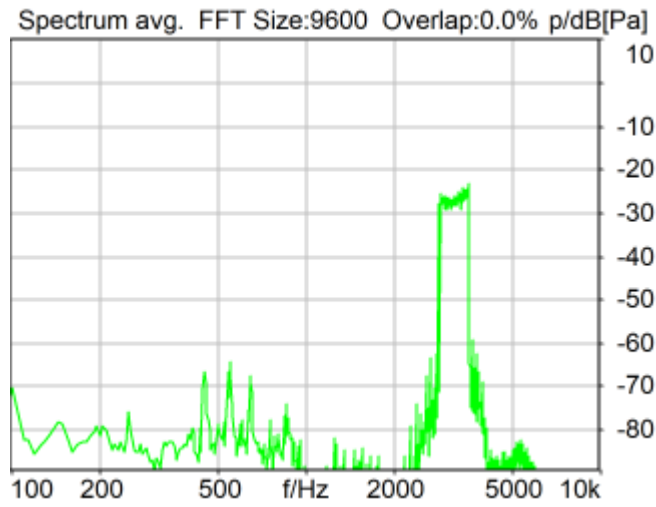
**Ok**

2024/1/8 21:05 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 3150 Hz WB

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



Distortion (Noise) RCV (packed): 42.82 dB (0.72%) Ok

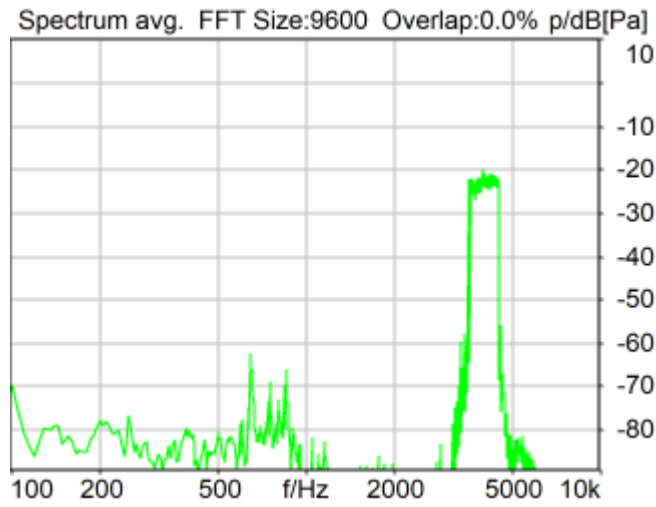
Ok

2024/1/8 21:05 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 4000 Hz WB**

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



Distortion (Noise) RCV (packed): 44.16 dB (0.62%) Ok

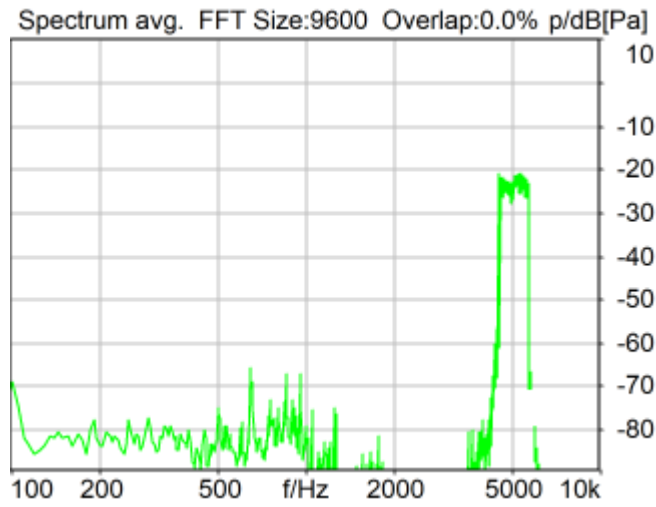
**Ok**

2024/1/8 21:05 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor



## **5.2 RCV Distortion and Noise - 5000 Hz WB**

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



Distortion (Noise) RCV (packed): 46.16 dB (0.49%) Ok

**Ok**

2024/1/8 21:06 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **Report - Receive Distortion and Noise (Conversational Gain)**

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

<b>Region</b>	<b>Frequency</b>	<b>SDNR</b>
1	250Hz	22.84 dB
2	315Hz	23.45 dB
3	400Hz	31.26 dB
4	500Hz	28.17 dB
5	630Hz	35.85 dB
6	800Hz	29.06 dB
7	1000Hz	34.55 dB
8	1250Hz	31.24 dB
9	1600Hz	36.93 dB
10	2000Hz	34.85 dB
11	2500Hz	41.40 dB
12	3150Hz	42.82 dB
13	4000Hz	44.16 dB
14	5000Hz	46.16 dB

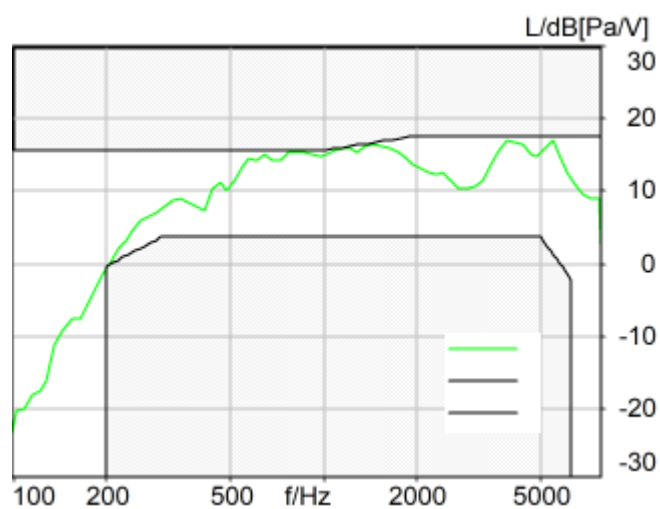
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 22.84dB at 250Hz.

2024/1/8 21:06 ACQUA

### 5.3 Frequency Response 2N FF

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



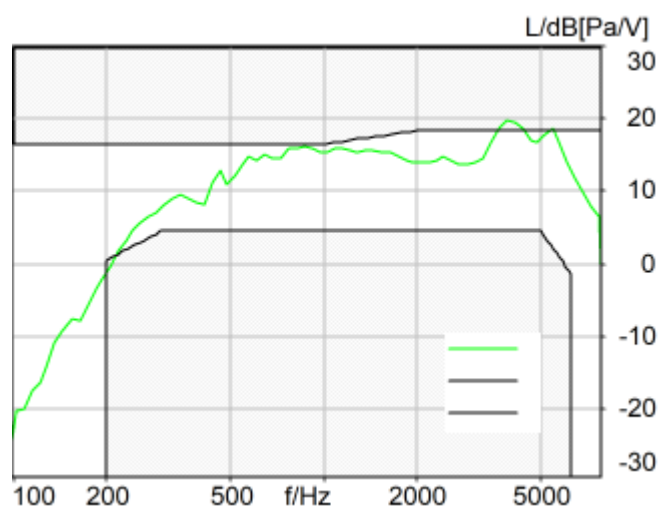
Absolute minimal distance  
0.09 dB at 1151.2 Hz Ok

Ok

2024/1/8 21:08 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## 5.3 Frequency Response 2N DF

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



Absolute minimal distance  
-1.22 dB at 3882.4 Hz Not Ok

### Not Ok

2024/1/8 21:09 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **Measurement Protocol**

Measurement Object	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
--------------------	---

Project	3D0836
Report Generation Date	2024/1/15 7:22
Responsible Person	AC

## Status Overview

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay NB	Done	Delay (Cross) [ms]	214.8	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	93.04	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 400 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.34	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 500 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	27.05	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 630 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.81	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 800 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.73	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 1000 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.57	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 1250 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.66	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 1600 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	32.00	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 2000 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.92	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 2500 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.27	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.2 RCV Distortion and Noise - 3150 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	20.08	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
Report - Receive Distortion and Noise (Conversational Gain)	Ok	Minimum SDNR [dB], (occured at 3150Hz)	20.08	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.3 Frequency Response 2N FF HANB	Ok	Min. dist. to tolerance scheme [dB], 689.1 Hz	1.70	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N
5.3 Frequency Response 2N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 3657.5 Hz	0.32	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_2N

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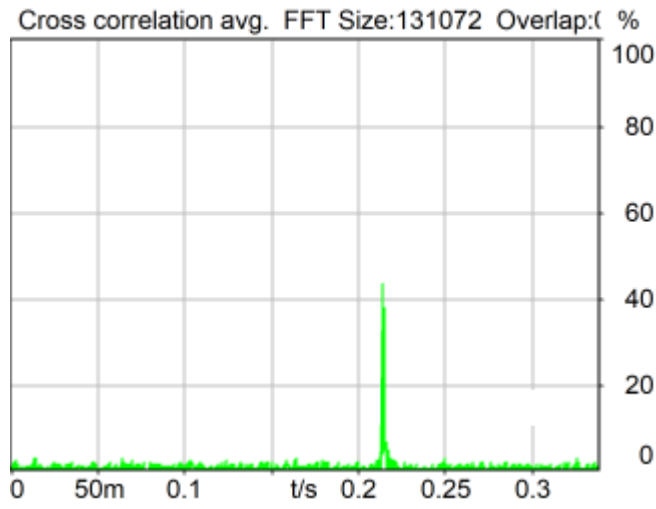
Overall Receive Delay NB	5
5.1b Receive Volume Control Performance 2N NB	6
5.2 RCV Distortion and Noise - 400 Hz NB	7
5.2 RCV Distortion and Noise - 500 Hz NB	8
5.2 RCV Distortion and Noise - 630 Hz NB	9
5.2 RCV Distortion and Noise - 800 Hz NB	10
5.2 RCV Distortion and Noise - 1000 Hz NB	11
5.2 RCV Distortion and Noise - 1250 Hz NB	12
5.2 RCV Distortion and Noise - 1600 Hz NB	13
5.2 RCV Distortion and Noise - 2000 Hz NB	14
5.2 RCV Distortion and Noise - 2500 Hz NB	15
5.2 RCV Distortion and Noise - 3150 Hz NB	16
Report - Receive Distortion and Noise (Conversational Gain)	17
5.3 Frequency Response 2N FF HANB	18
5.3 Frequency Response 2N DF HANB	19





## Overall Receive Delay NB

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



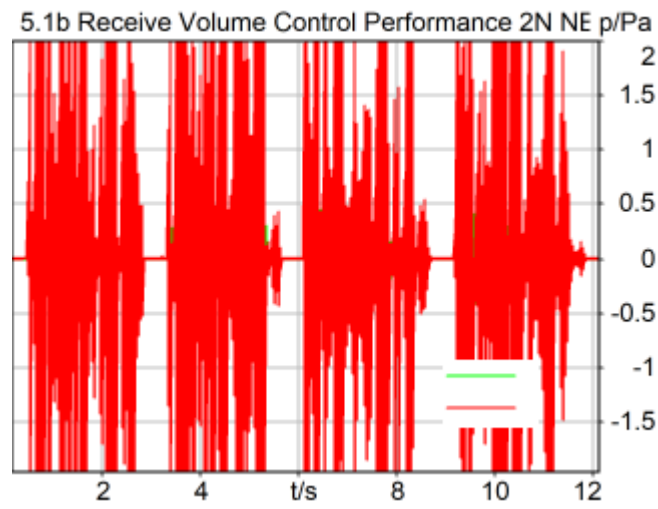
Delay (Cross): 214.8 ms

2024/1/15 7:15 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.1b Receive Volume Control Performance 2N NB

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



Speech Level RCV: 93.04 dB[SPL], Act.: 80.46% Ok

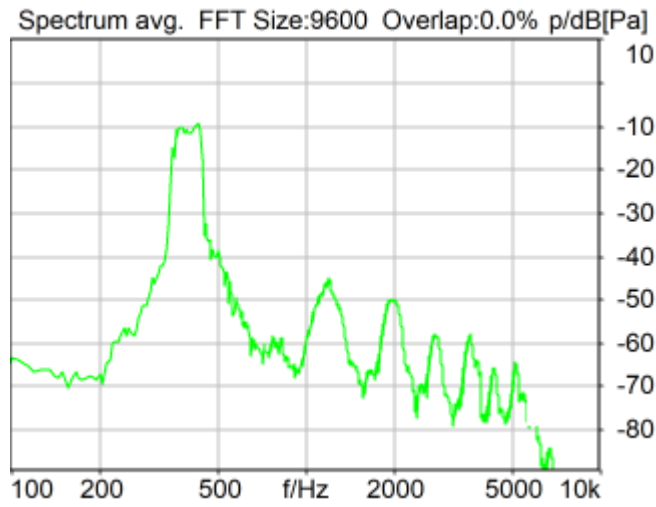
**Ok**

2024/1/15 7:15 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 400 Hz NB

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



Distortion (Noise) RCV (packed): 28.34 dB (3.83%) Ok

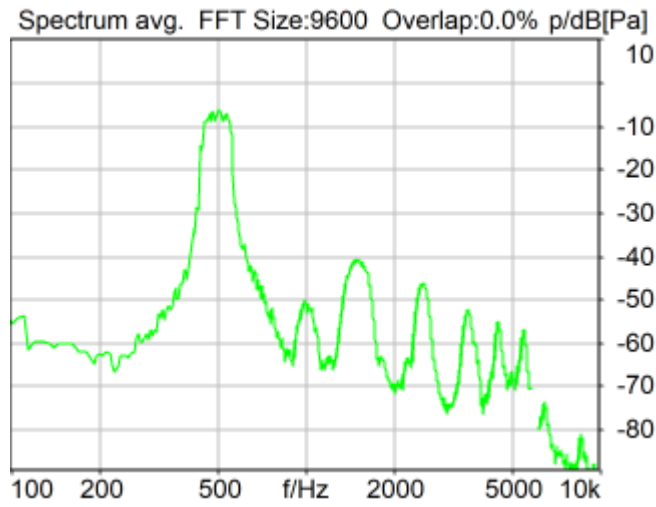
Ok

2024/1/15 7:15 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 500 Hz NB

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



Distortion (Noise) RCV (packed): 27.05 dB (4.44%) Ok

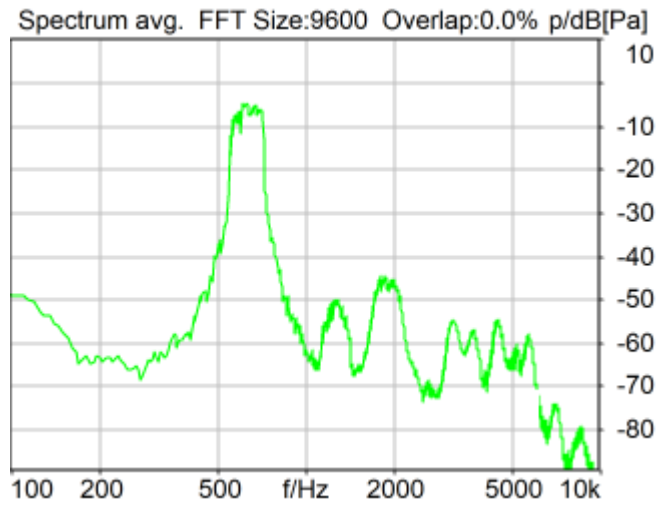
Ok

2024/1/15 7:16 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 630 Hz NB

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



Distortion (Noise) RCV (packed): 30.81 dB (2.88%) Ok

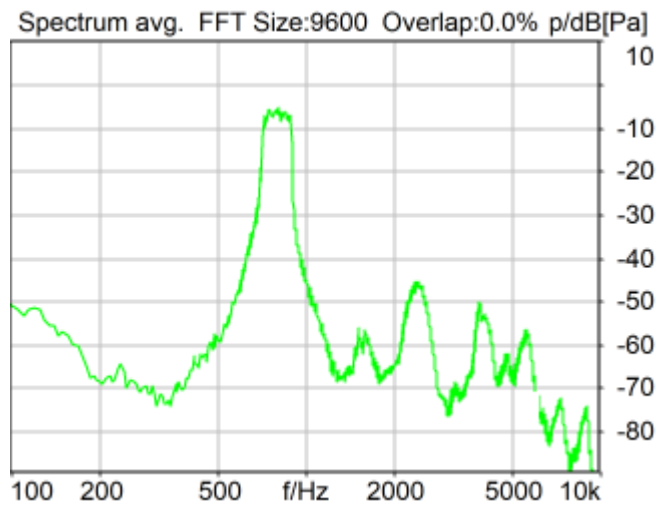
Ok

2024/1/15 7:16 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 800 Hz NB

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



Distortion (Noise) RCV (packed): 30.73 dB (2.91%) Ok

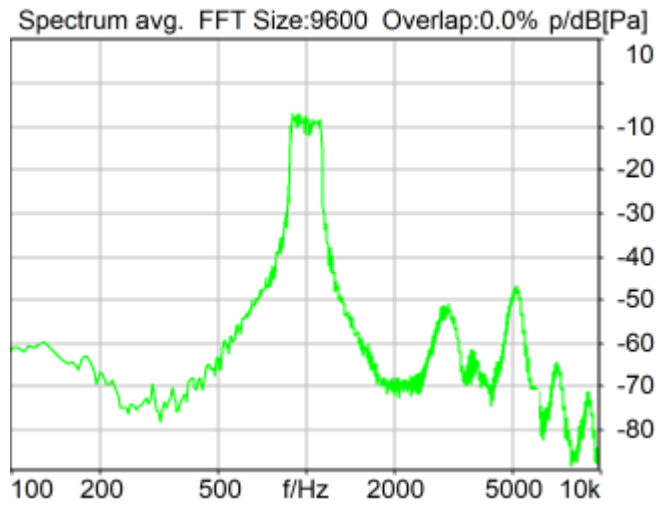
Ok

2024/1/15 7:17 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1000 Hz NB**

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



Distortion (Noise) RCV (packed): 28.57 dB (3.73%) Ok

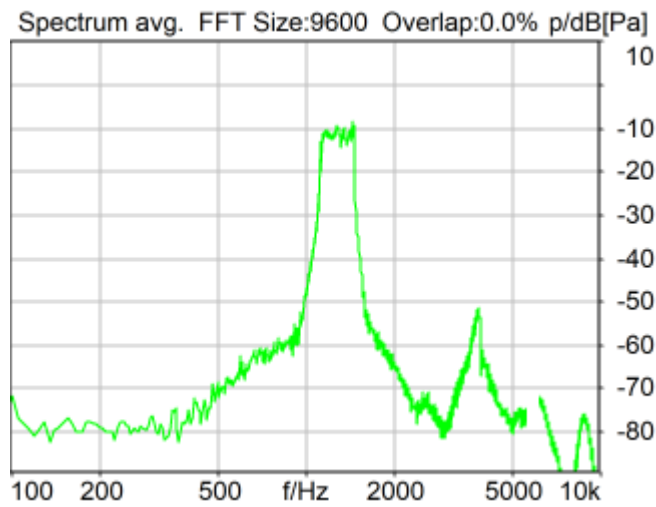
**Ok**

2024/1/15 7:17 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1250 Hz NB**

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



Distortion (Noise) RCV (packed): 22.66 dB (7.36%) Ok

**Ok**

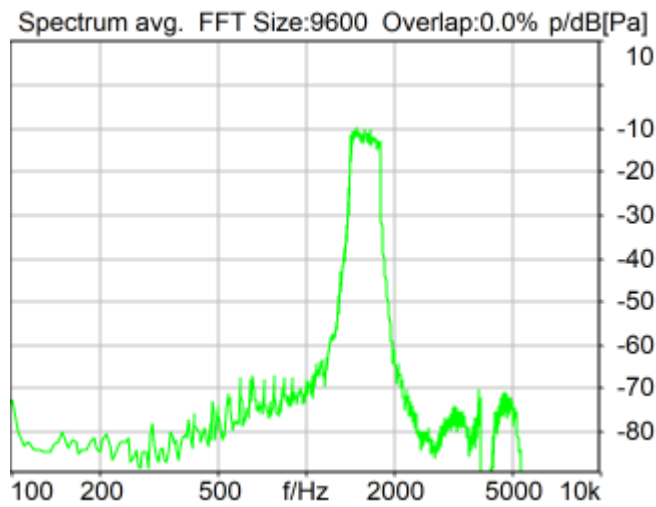
2024/1/15 7:17 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor



## **5.2 RCV Distortion and Noise - 1600 Hz NB**

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



Distortion (Noise) RCV (packed): 32.00 dB (2.51%) Ok

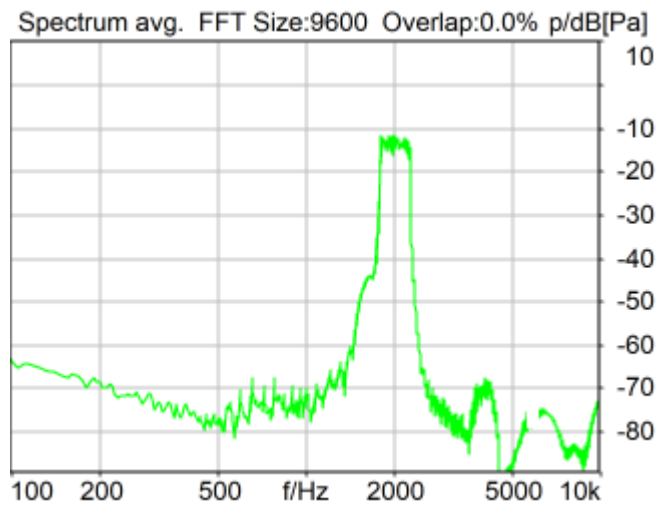
**Ok**

2024/1/15 7:18 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2000 Hz NB**

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



Distortion (Noise) RCV (packed): 30.92 dB (2.84%) Ok

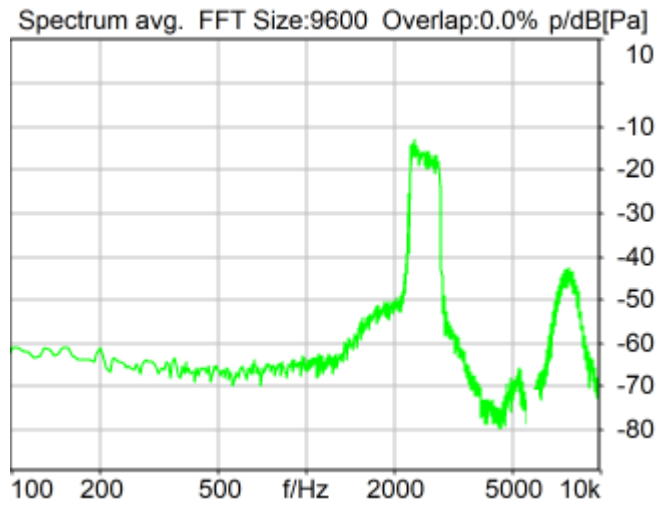
**Ok**

2024/1/15 7:19 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2500 Hz NB**

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



Distortion (Noise) RCV (packed): 24.27 dB (6.12%) Ok

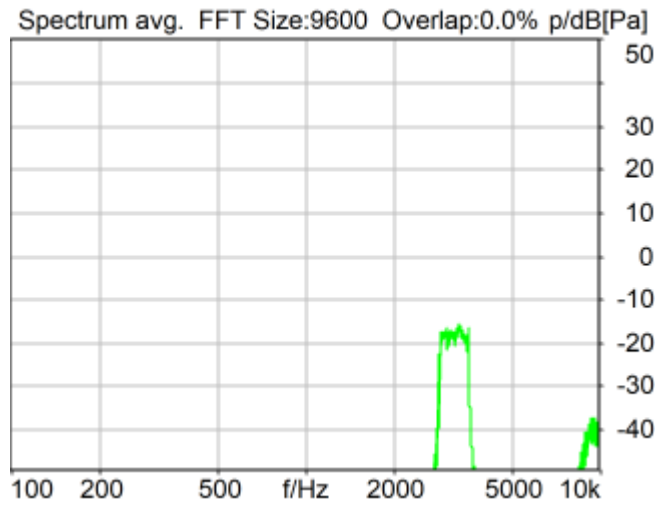
**Ok**

2024/1/15 7:19 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 3150 Hz NB**

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



Distortion (Noise) RCV (packed): 20.08 dB (9.91%) Ok

**Ok**

2024/1/15 7:21 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

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## **Report - Receive Distortion and Noise (Conversational Gain)**

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

<b>Region</b>	<b>Frequency</b>	<b>SDNR</b>
1	400Hz	28.34 dB
2	500Hz	27.05 dB
3	630Hz	30.81 dB
4	800Hz	30.73 dB
5	1000Hz	28.57 dB
6	1250Hz	22.66 dB
7	1600Hz	32.00 dB
8	2000Hz	30.92 dB
9	2500Hz	24.27 dB
10	3150Hz	20.08 dB

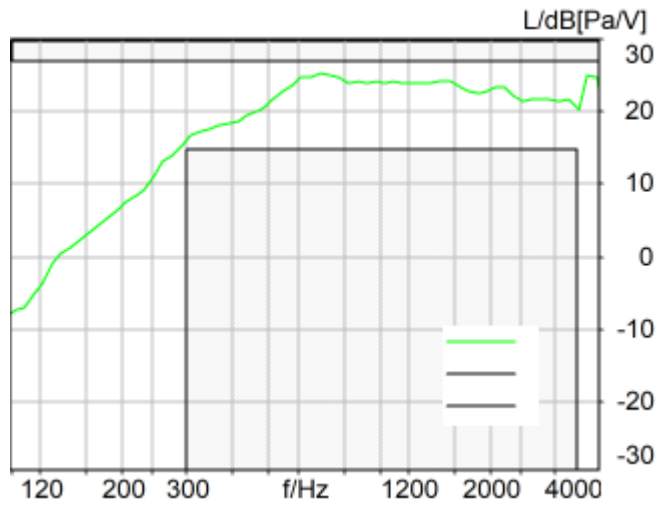
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 20.08dB at 3150Hz.

2024/1/15 7:21 ACQUA

### 5.3 Frequency Response 2N FF HANB

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



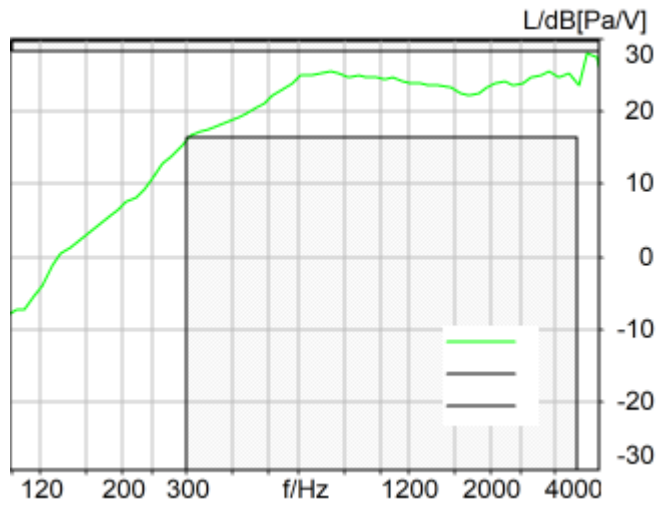
Absolute minimal distance  
1.70 dB at 689.1 Hz Ok

**Ok**

2024/1/15 7:21 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

### 5.3 Frequency Response 2N DF HANB

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



Absolute minimal distance  
0.32 dB at 3657.5 Hz Ok

**Ok**

2024/1/15 7:21 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **Measurement Protocol**

Measurement Object	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
--------------------	---

Project	#R2340252
Report Generation Date	2024/1/15 7:34
Responsible Person	AC



## Status Overview

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay NB	Done	Delay (Cross) [ms]	136.1	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	95.80	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 400 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	29.29	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 500 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	27.19	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 630 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.88	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 800 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	33.29	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 1000 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.06	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 1250 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.76	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 1600 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	36.13	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 2000 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.85	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 2500 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	20.79	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.2 RCV Distortion and Noise - 3150 Hz NB	Ok	Distortion (Noise) [dB], 0.0 dB	23.10	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
Report - Receive Distortion and Noise (Conversational Gain)	Ok	Minimum SDNR [dB], (occured at 2500Hz)	20.79	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.3 Frequency Response 8N FF HANB	Ok	Min. dist. to tolerance scheme [dB], 731.5 Hz	1.45	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N
5.3 Frequency Response 8N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 3882.4 Hz	1.07	WLAN5GHz_802.11a 6Mbps_EVS NB 24.4kbps_Ch157_8N

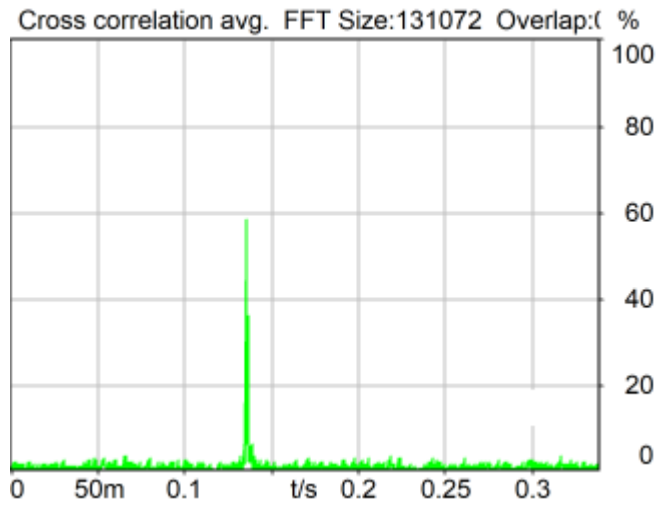
---

Overall Receive Delay NB	5
5.1a Receive Volume Control Performance 8N NB	6
5.2 RCV Distortion and Noise - 400 Hz NB	7
5.2 RCV Distortion and Noise - 500 Hz NB	8
5.2 RCV Distortion and Noise - 630 Hz NB	9
5.2 RCV Distortion and Noise - 800 Hz NB	10
5.2 RCV Distortion and Noise - 1000 Hz NB	11
5.2 RCV Distortion and Noise - 1250 Hz NB	12
5.2 RCV Distortion and Noise - 1600 Hz NB	13
5.2 RCV Distortion and Noise - 2000 Hz NB	14
5.2 RCV Distortion and Noise - 2500 Hz NB	15
5.2 RCV Distortion and Noise - 3150 Hz NB	16
Report - Receive Distortion and Noise (Conversational Gain)	17
5.3 Frequency Response 8N FF HANB	18
5.3 Frequency Response 8N DF HANB	19



## Overall Receive Delay NB

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



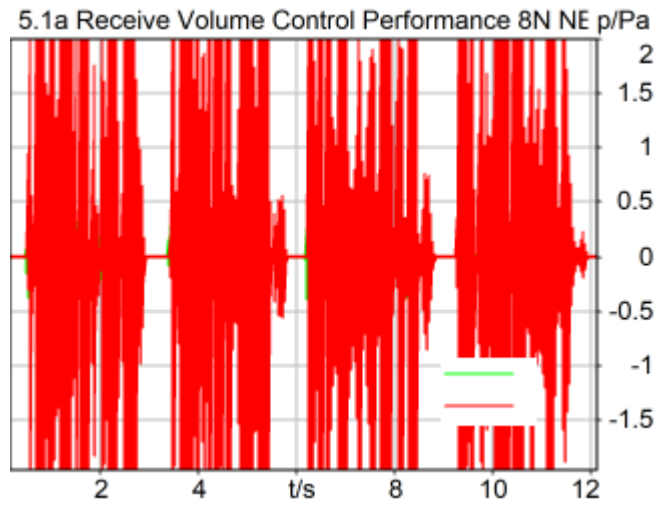
Delay (Cross): 136.1 ms

2024/1/15 7:24 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.1a Receive Volume Control Performance 8N NB

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



Speech Level RCV: 95.80 dB[SPL], Act.: 81.04% Ok

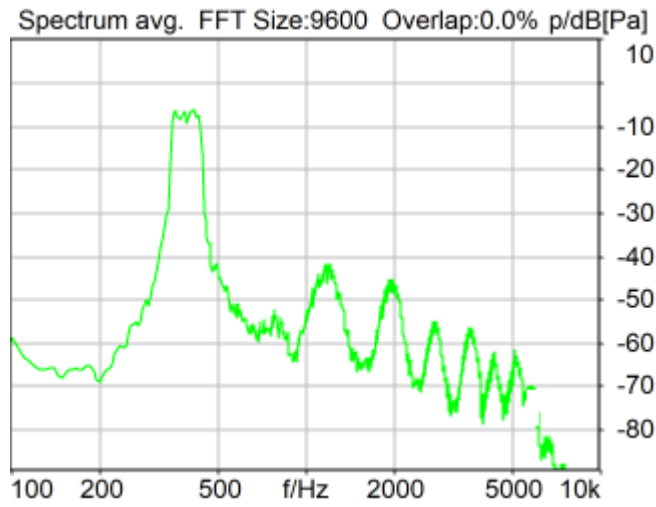
**Ok**

2024/1/15 7:24 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 400 Hz NB

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



Distortion (Noise) RCV (packed): 29.29 dB (3.43%) Ok

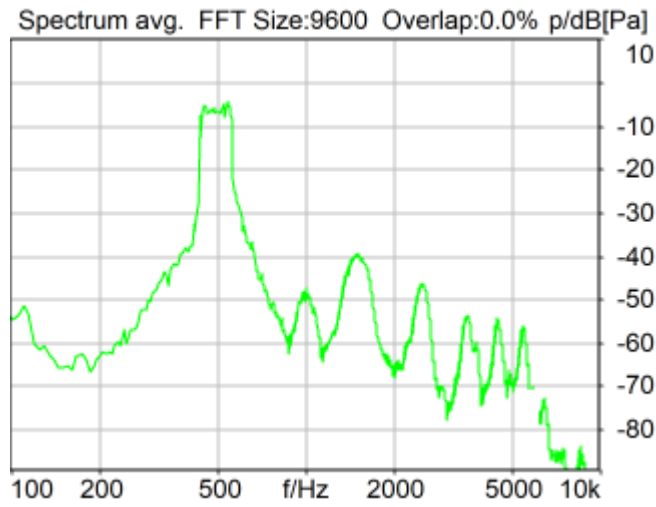
Ok

2024/1/15 7:25 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 500 Hz NB

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



Distortion (Noise) RCV (packed): 27.19 dB (4.37%) Ok

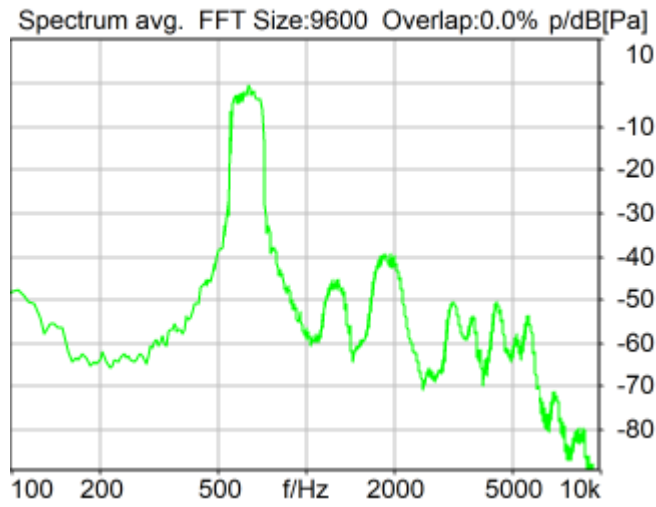
Ok

2024/1/15 7:25 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 630 Hz NB

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



Distortion (Noise) RCV (packed): 30.88 dB (2.86%) Ok

Ok

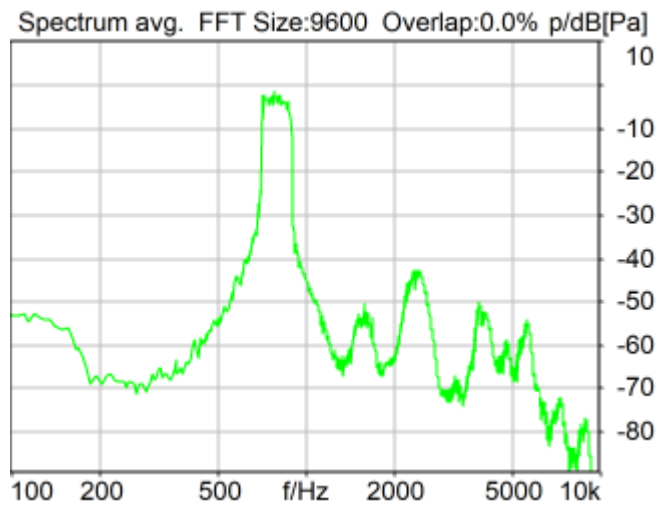
2024/1/15 7:25 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor



## 5.2 RCV Distortion and Noise - 800 Hz NB

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



Distortion (Noise) RCV (packed): 33.29 dB (2.16%) Ok

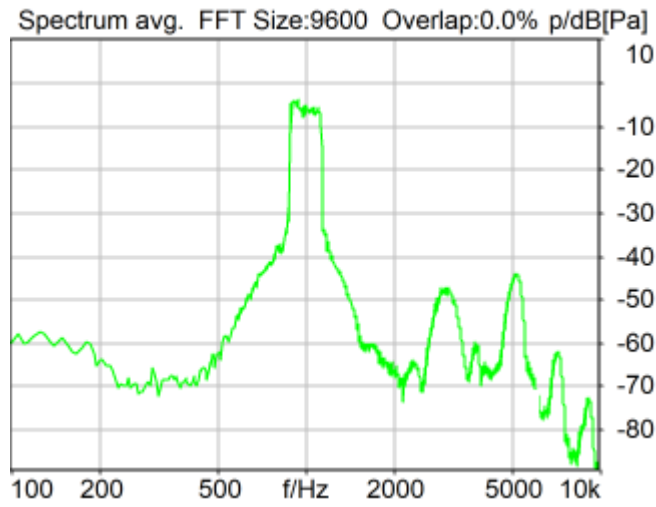
Ok

2024/1/15 7:26 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1000 Hz NB**

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



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

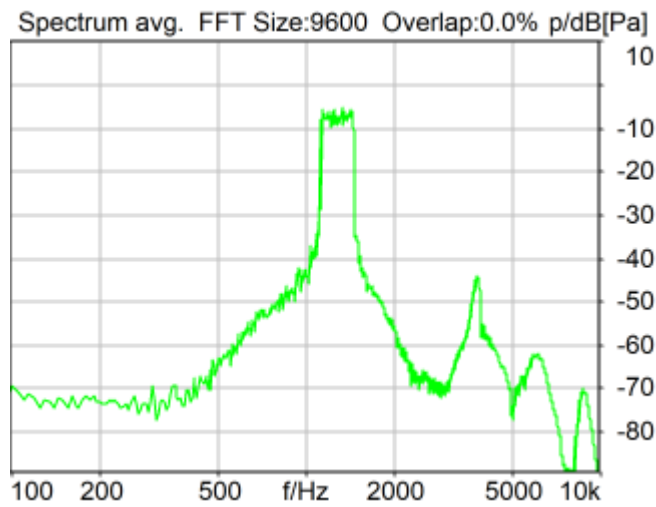
**Ok**

2024/1/15 7:26 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1250 Hz NB**

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



Distortion (Noise) RCV (packed): 28.76 dB (3.65%) Ok

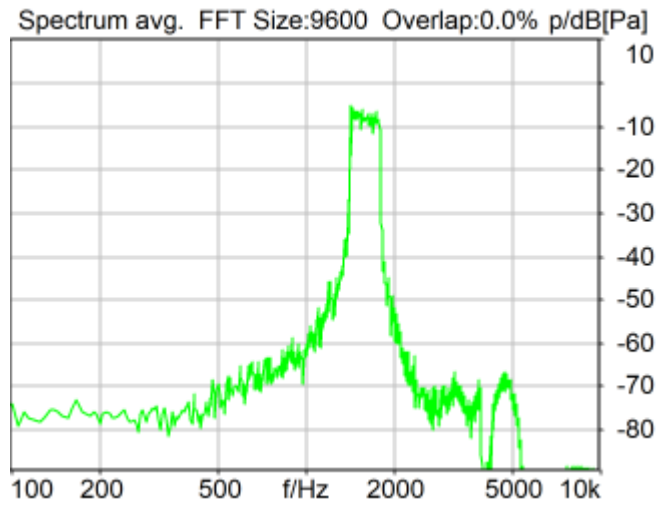
**Ok**

2024/1/15 7:27 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1600 Hz NB**

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



Distortion (Noise) RCV (packed): 36.13 dB (1.56%) Ok

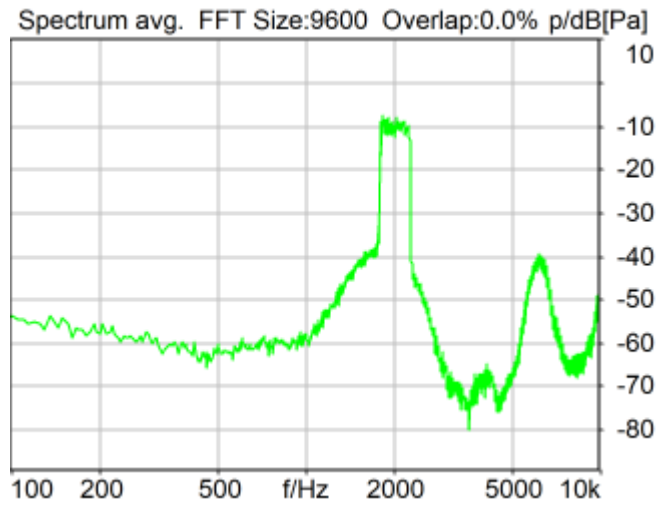
**Ok**

2024/1/15 7:27 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2000 Hz NB**

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



Distortion (Noise) RCV (packed): 25.85 dB (5.10%) Ok

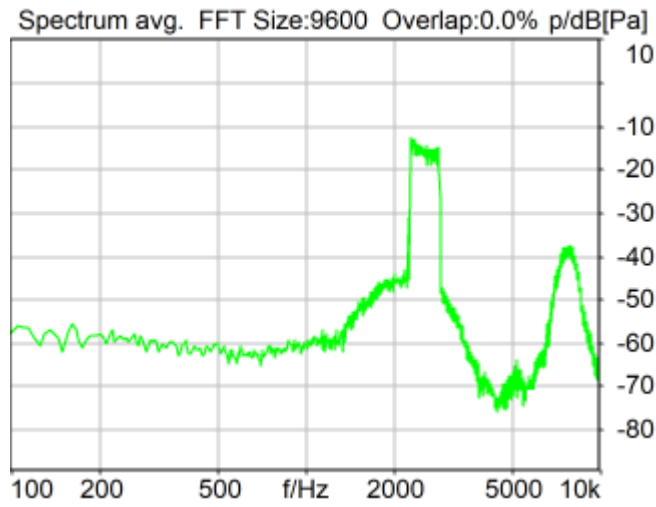
**Ok**

2024/1/15 7:27 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2500 Hz NB**

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



Distortion (Noise) RCV (packed): 20.79 dB (9.13%) Ok

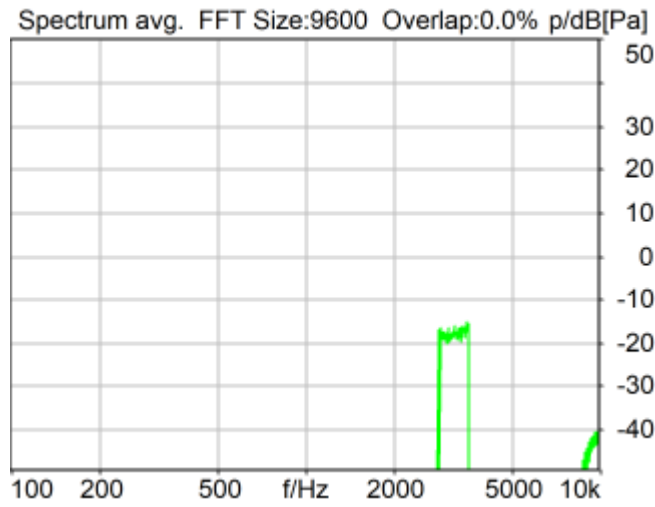
**Ok**

2024/1/15 7:30 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 3150 Hz NB

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



Distortion (Noise) RCV (packed): 23.10 dB (7.00%) Ok

Ok

2024/1/15 7:33 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

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## **Report - Receive Distortion and Noise (Conversational Gain)**

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

Region	Frequency	SDNR
1	400Hz	29.29 dB
2	500Hz	27.19 dB
3	630Hz	30.88 dB
4	800Hz	33.29 dB
5	1000Hz	30.06 dB
6	1250Hz	28.76 dB
7	1600Hz	36.13 dB
8	2000Hz	25.85 dB
9	2500Hz	20.79 dB
10	3150Hz	23.10 dB

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

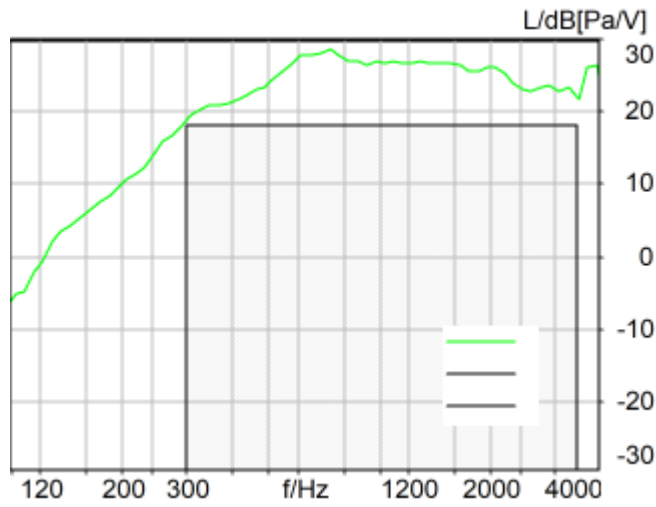
Smallest SDNR was 20.79dB at 2500Hz.

2024/1/15 7:33 ACQUA



### 5.3 Frequency Response 8N FF HANB

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



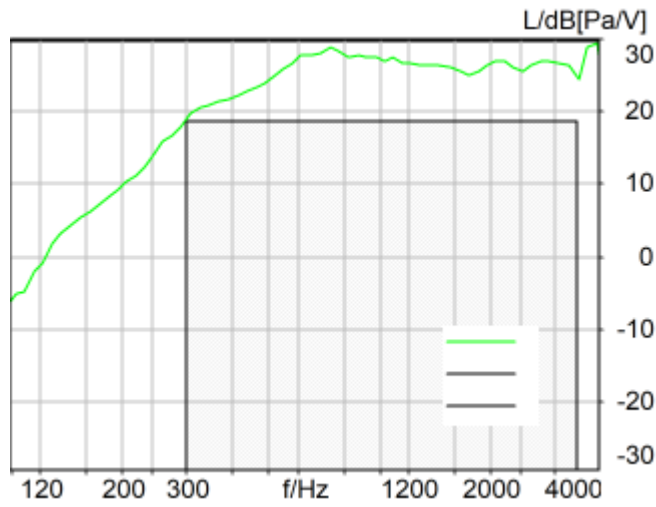
Absolute minimal distance  
1.45 dB at 731.5 Hz Ok

**Ok**

2024/1/15 7:29 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

### 5.3 Frequency Response 8N DF HANB

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



Absolute minimal distance  
1.07 dB at 3882.4 Hz Ok

**Ok**

2024/1/15 7:29 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **Measurement Protocol**

Measurement Object	GSM850_GSM Voice_AMR WB 6.60kbps_Ch189_2N
--------------------	---

Project	3D0836
Report Generation Date	2024/1/4 14:30
Responsible Person	AC

---

## **Status Overview**

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay WB	Done	Delay (Cross) [ms]	216.3	GSM850_GSM Voice_AMR WB 6.60kbps_Ch189_2N
5.1b Receive Volume Control Performance 2N WB	Ok	Speech Level [dB[SPL]]	88.44	GSM850_GSM Voice_AMR WB 6.60kbps_Ch189_2N

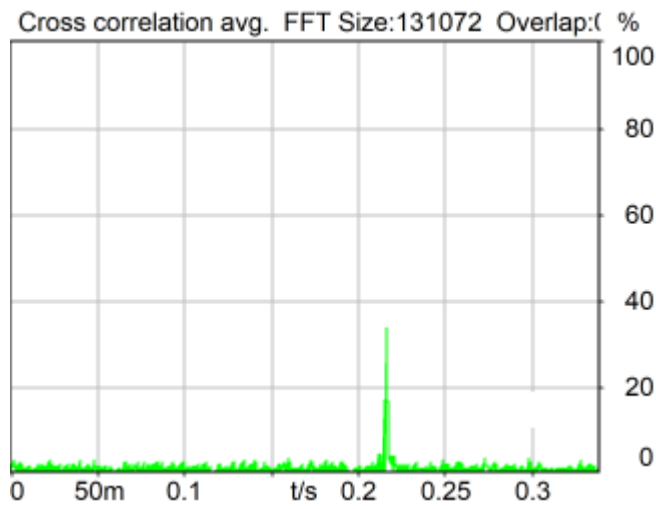
---

Overall Receive Delay WB	5
5.1b Receive Volume Control Performance 2N WB	6



## Overall Receive Delay WB

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



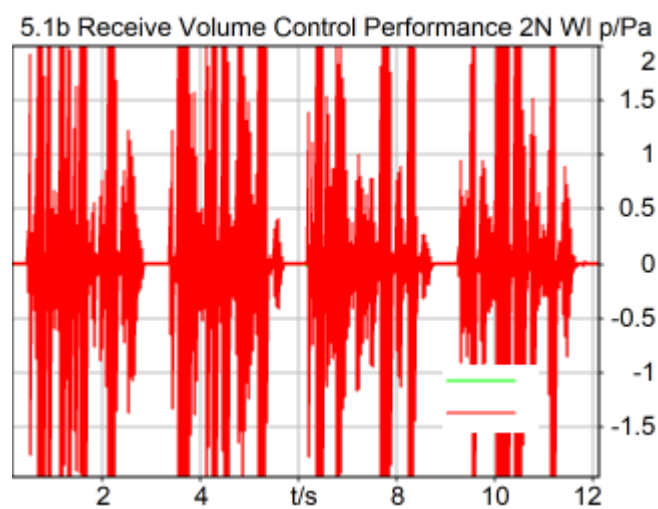
Delay (Cross): 216.3 ms

2024/1/4 14:29 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.1b Receive Volume Control Performance 2N WB**

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



Speech Level RCV: 88.44 dB[SPL], Act.: 81.43% Ok

**Ok**

2024/1/4 14:30 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor



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## **Measurement Protocol**

Measurement Object	WCDMA II_Voice_AMR WB 6.6kbps_Ch9400_2N
--------------------	---

Project	3D0836
Report Generation Date	2024/1/15 14:47
Responsible Person	AC

## **Status Overview**

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay WB	Done	Delay (Cross) [ms]	219.2	WCDMA II_Voice_AMR WB 6.6kbps_Ch9400_2N
5.1b Receive Volume Control Performance 2N WB	Ok	Speech Level [dB[SPL]]	88.23	WCDMA II_Voice_AMR WB 6.6kbps_Ch9400_2N

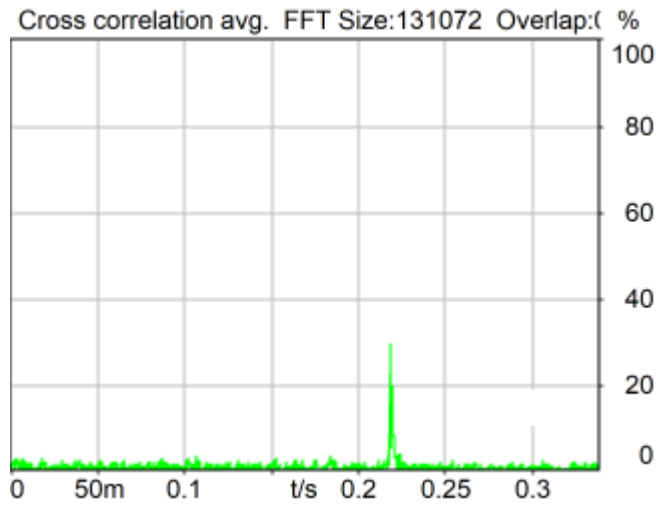
---

Overall Receive Delay WB	5
5.1b Receive Volume Control Performance 2N WB	6



## Overall Receive Delay WB

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



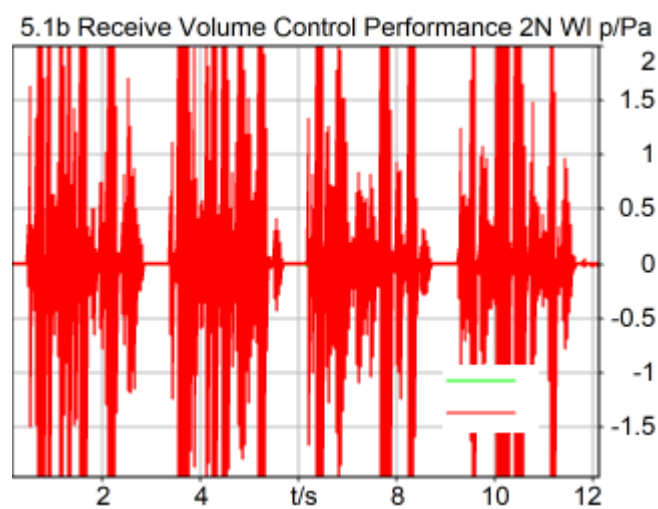
Delay (Cross): 219.2 ms

2024/1/15 14:46 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.1b Receive Volume Control Performance 2N WB

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



Speech Level RCV: 88.23 dB[SPL], Act.: 79.73% Ok

**Ok**

2024/1/15 14:46 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

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## **Measurement Protocol**

Measurement Object	LTE Band71_20M_QPSK_1RB_0Offset_AMR WB 23.85kbps_Ch133297_2N
--------------------	--

Project	3D0836
Report Generation Date	2024/1/17 8:46
Responsible Person	AC

## **Status Overview**

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay WB	Done	Delay (Cross) [ms]	162.7	LTE Band71_20M_QPSK_1RB_0Offset_AMR WB 23.85kbps_Ch133297_2N
5.1b Receive Volume Control Performance 2N WB	Ok	Speech Level [dB[SPL]]	87.76	LTE Band71_20M_QPSK_1RB_0Offset_AMR WB 23.85kbps_Ch133297_2N



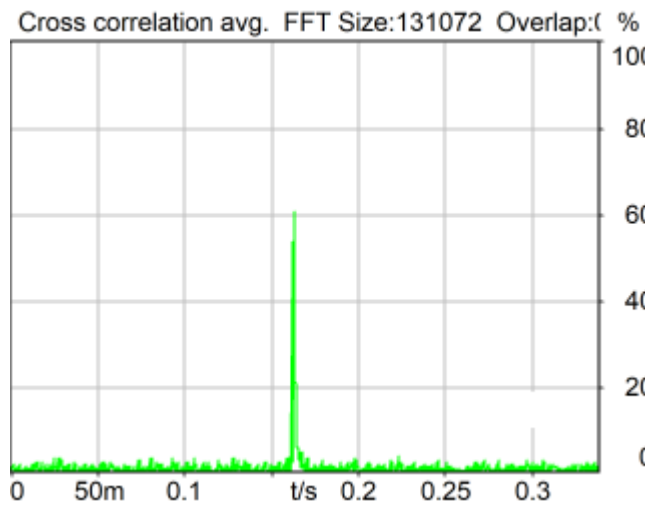
---

Overall Receive Delay WB	5
5.1b Receive Volume Control Performance 2N WB	6



## Overall Receive Delay WB

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



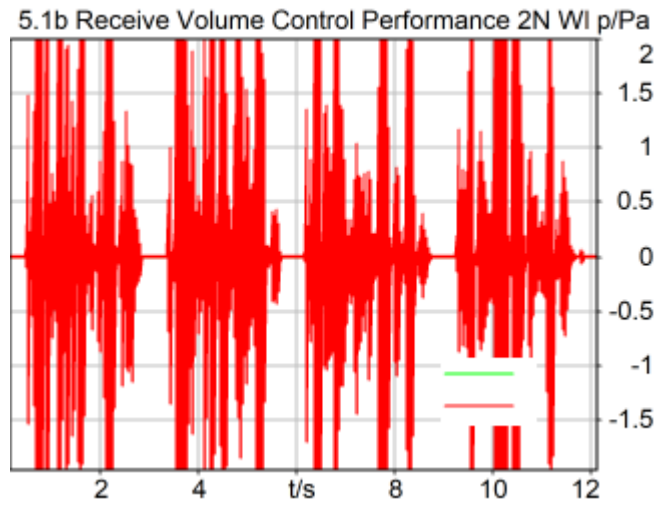
Delay (Cross): 162.7 ms

2024/1/16 16:03 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.1b Receive Volume Control Performance 2N WB**

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



Speech Level RCV: 87.76 dB[SPL], Act.: 81.57% Ok

**Ok**

2024/1/16 16:04 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

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## **Measurement Protocol**

Measurement Object	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2N
--------------------	--

Project	3D0836
Report Generation Date	2024/1/8 21:10
Responsible Person	AC

## Status Overview

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay WB	Done	Delay (Cross) [ms]	293.0	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.1b Receive Volume Control Performance 2N WB	Ok	Speech Level [dB[SPL]]	83.67	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 250 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	22.84	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 315 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	23.45	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 400 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	31.26	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 500 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	28.17	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 630 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	35.85	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 800 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	29.06	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 1000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	34.55	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 1250 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	31.24	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 1600 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	36.93	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 2000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	34.85	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 2500 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	41.40	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 3150 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	42.82	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 4000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	44.16	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.2 RCV Distortion and Noise - 5000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	46.16	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
Report - Receive Distortion	Ok	Minimum SDNR	22.84	FR1 n77

and Noise (Conversational Gain)		[dB], (occured at 250Hz)		270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.3 Frequency Response 2N FF	Ok	Min. dist. to tolerance scheme [dB], 1151.2 Hz	0.09	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N
5.3 Frequency Response 2N DF	Not Ok	Min. dist. to tolerance scheme [dB], 3882.4 Hz	-1.22	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_2 N

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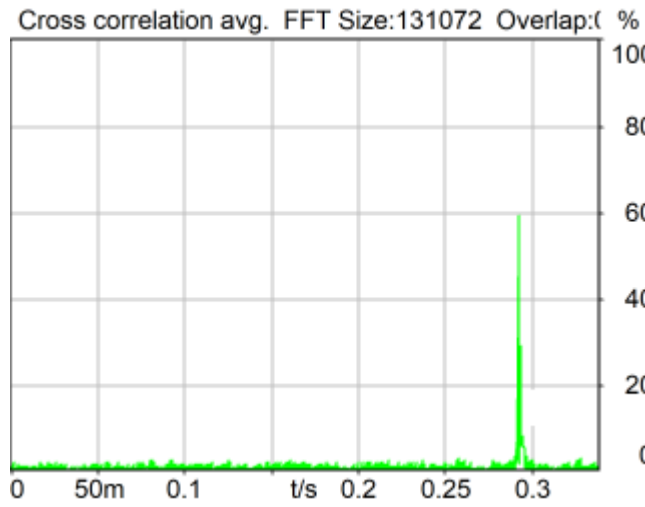
Overall Receive Delay WB	6
5.1b Receive Volume Control Performance 2N WB	7
5.2 RCV Distortion and Noise - 250 Hz WB	8
5.2 RCV Distortion and Noise - 315 Hz WB	9
5.2 RCV Distortion and Noise - 400 Hz WB	10
5.2 RCV Distortion and Noise - 500 Hz WB	11
5.2 RCV Distortion and Noise - 630 Hz WB	12
5.2 RCV Distortion and Noise - 800 Hz WB	13
5.2 RCV Distortion and Noise - 1000 Hz WB	14
5.2 RCV Distortion and Noise - 1250 Hz WB	15
5.2 RCV Distortion and Noise - 1600 Hz WB	16
5.2 RCV Distortion and Noise - 2000 Hz WB	17
5.2 RCV Distortion and Noise - 2500 Hz WB	18
5.2 RCV Distortion and Noise - 3150 Hz WB	19
5.2 RCV Distortion and Noise - 4000 Hz WB	20
5.2 RCV Distortion and Noise - 5000 Hz WB	21
Report - Receive Distortion and Noise (Conversational Gain)	22
5.3 Frequency Response 2N FF	23
5.3 Frequency Response 2N DF	24





## Overall Receive Delay WB

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



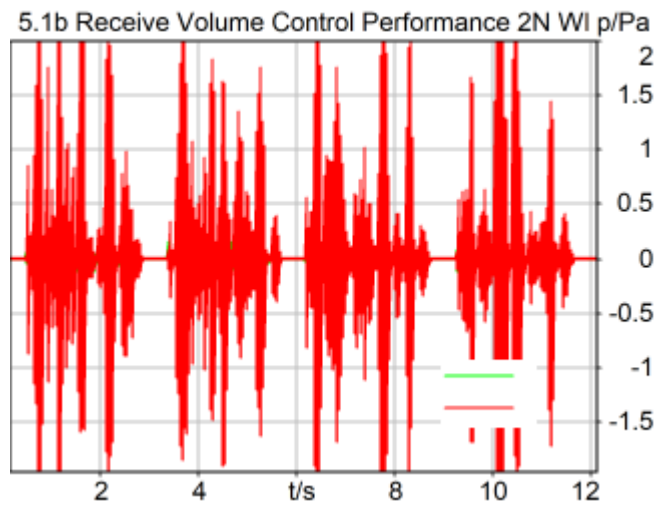
Delay (Cross): 293.0 ms

2024/1/8 21:00 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.1b Receive Volume Control Performance 2N WB

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



Speech Level RCV: 83.67 dB[SPL], Act.: 81.42% Ok

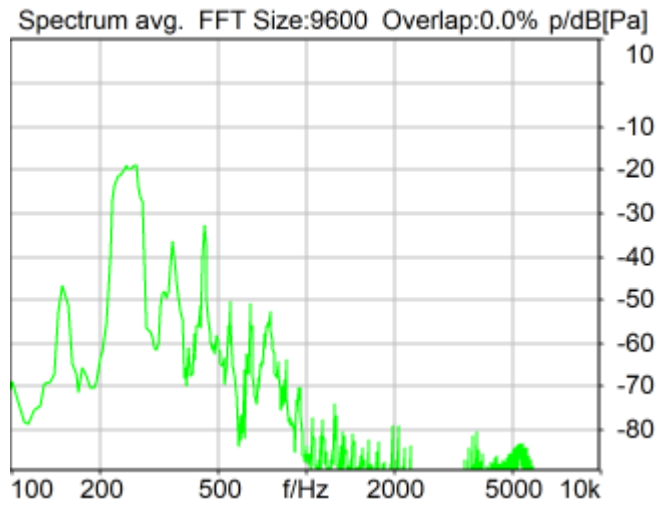
**Ok**

2024/1/8 21:00 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 250 Hz WB**

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



Distortion (Noise) RCV (packed): 22.84 dB (7.21%) Ok

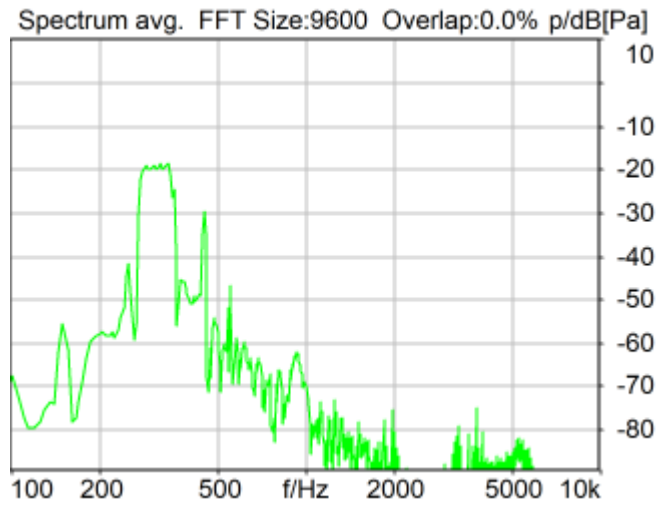
**Ok**

2024/1/8 21:01 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 315 Hz WB**

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



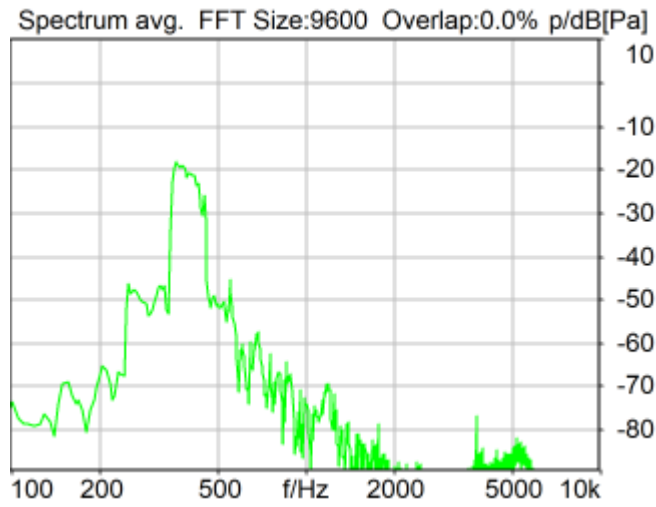
Distortion (Noise) RCV (packed): 23.45 dB (6.72%) Ok

**Ok**

2024/1/8 21:01 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 400 Hz WB**

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



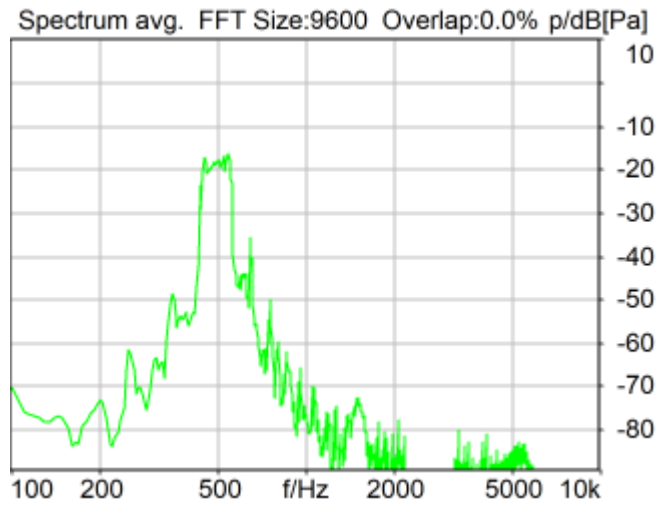
Distortion (Noise) RCV (packed): 31.26 dB (2.73%) Ok

**Ok**

2024/1/8 21:01 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 500 Hz WB**

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



Distortion (Noise) RCV (packed): 28.17 dB (3.90%) Ok

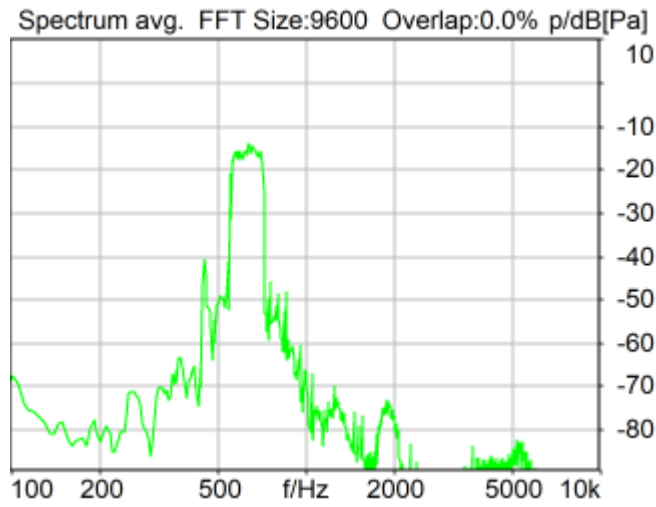
**Ok**

2024/1/8 21:02 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 630 Hz WB**

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



Distortion (Noise) RCV (packed): 35.85 dB (1.61%) Ok

**Ok**

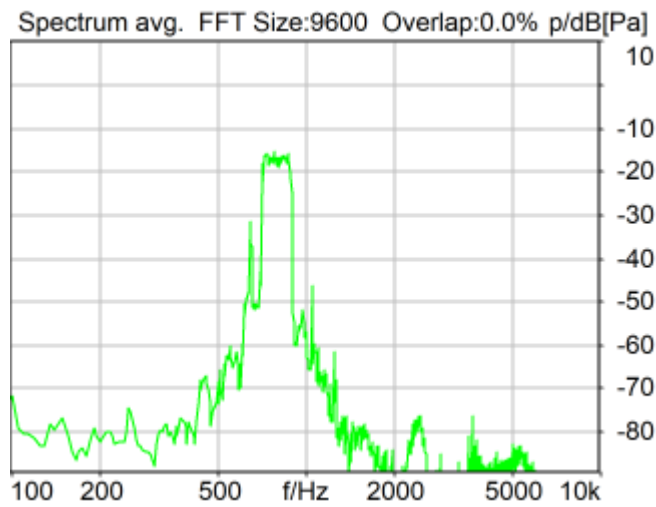
2024/1/8 21:02 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor



## **5.2 RCV Distortion and Noise - 800 Hz WB**

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



Distortion (Noise) RCV (packed): 29.06 dB (3.52%) Ok

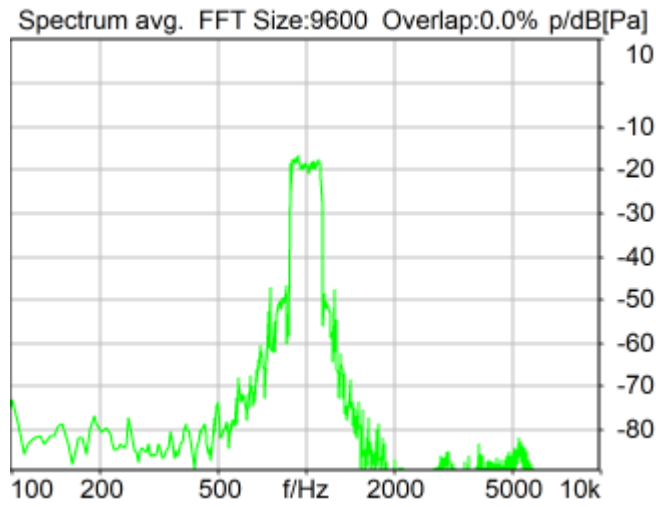
**Ok**

2024/1/8 21:03 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1000 Hz WB**

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



Distortion (Noise) RCV (packed): 34.55 dB (1.87%) Ok

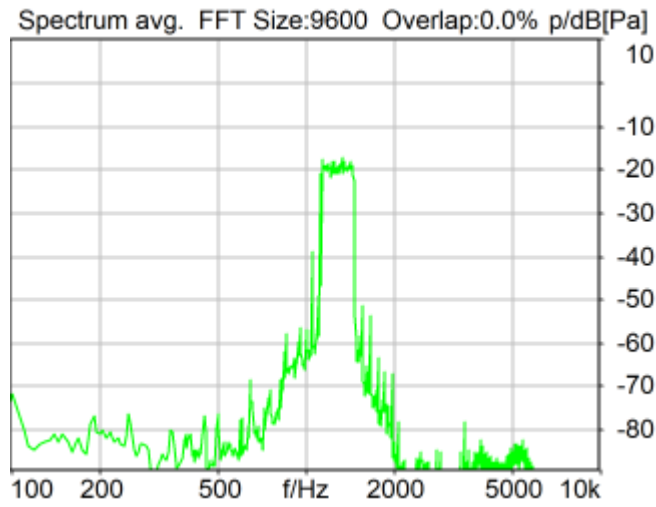
**Ok**

2024/1/8 21:03 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 1250 Hz WB

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



Distortion (Noise) RCV (packed): 31.24 dB (2.74%) Ok

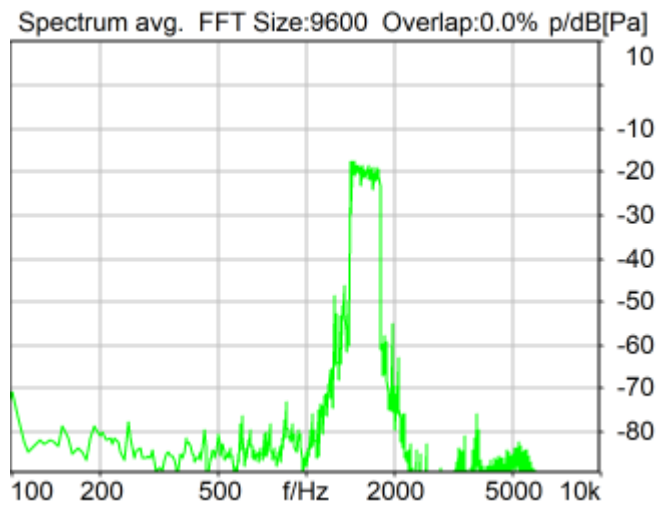
Ok

2024/1/8 21:03 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 1600 Hz WB

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



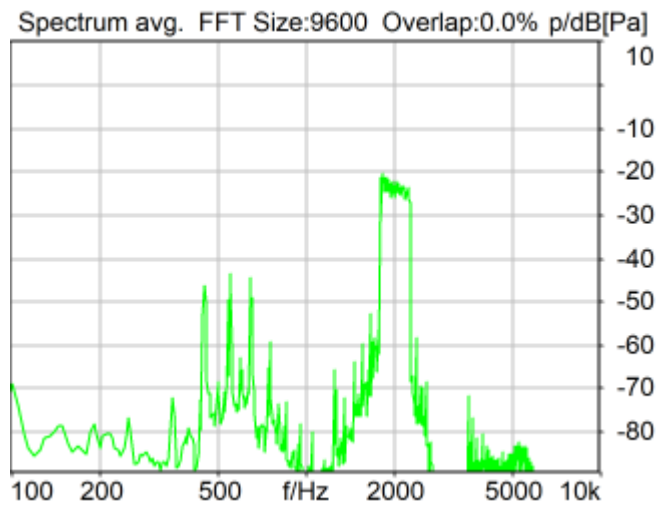
Distortion (Noise) RCV (packed): 36.93 dB (1.42%) Ok

**Ok**

2024/1/8 21:04 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2000 Hz WB**

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



Distortion (Noise) RCV (packed): 34.85 dB (1.81%) Ok

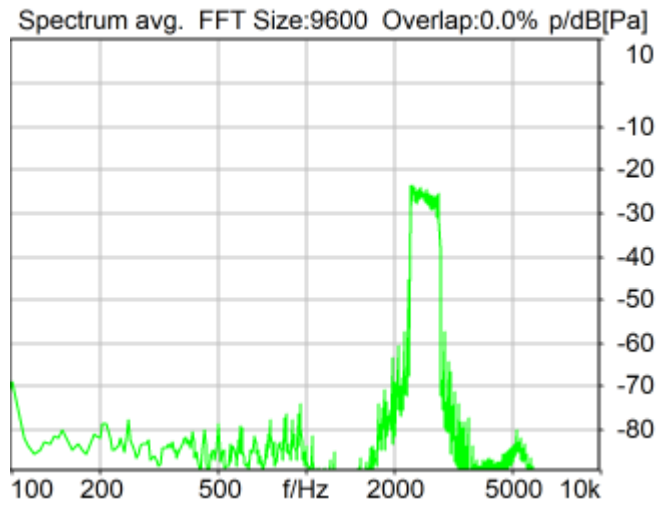
**Ok**

2024/1/8 21:04 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2500 Hz WB**

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



Distortion (Noise) RCV (packed): 41.40 dB (0.85%) Ok

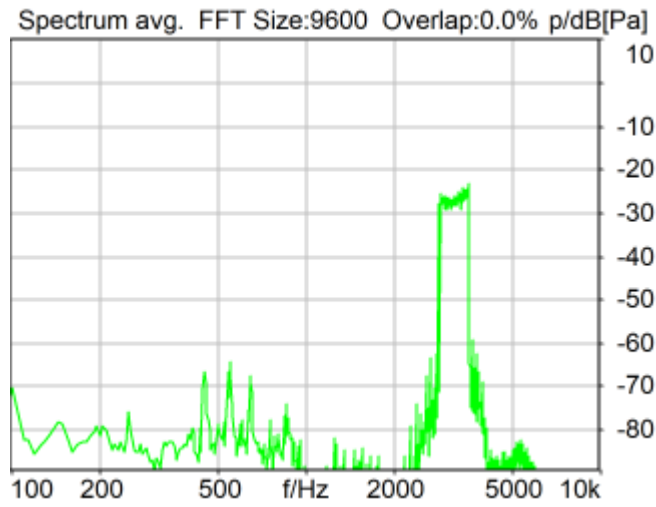
**Ok**

2024/1/8 21:05 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 3150 Hz WB

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



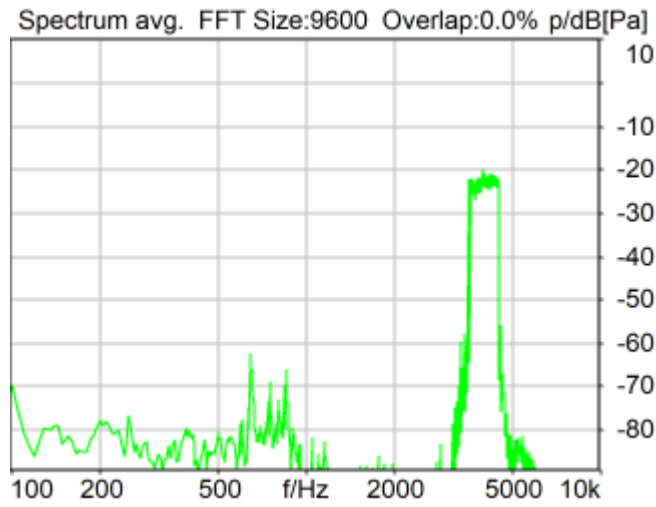
Distortion (Noise) RCV (packed): 42.82 dB (0.72%) Ok

Ok

2024/1/8 21:05 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 4000 Hz WB**

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



Distortion (Noise) RCV (packed): 44.16 dB (0.62%) Ok

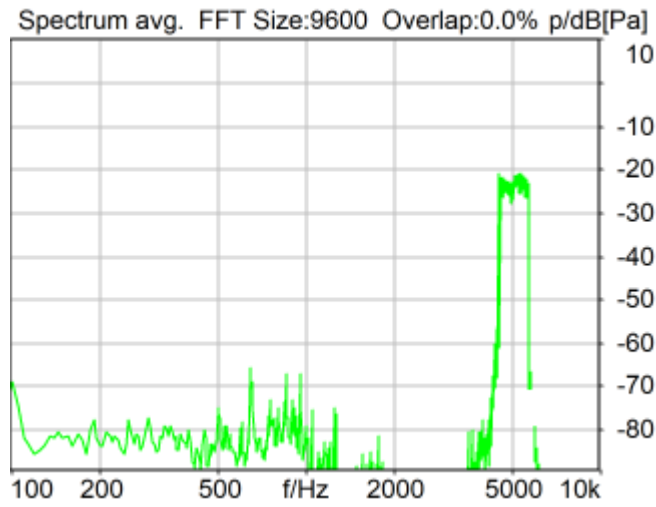
**Ok**

2024/1/8 21:05 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor



## **5.2 RCV Distortion and Noise - 5000 Hz WB**

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



Distortion (Noise) RCV (packed): 46.16 dB (0.49%) Ok

**Ok**

2024/1/8 21:06 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **Report - Receive Distortion and Noise (Conversational Gain)**

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

<b>Region</b>	<b>Frequency</b>	<b>SDNR</b>
1	250Hz	22.84 dB
2	315Hz	23.45 dB
3	400Hz	31.26 dB
4	500Hz	28.17 dB
5	630Hz	35.85 dB
6	800Hz	29.06 dB
7	1000Hz	34.55 dB
8	1250Hz	31.24 dB
9	1600Hz	36.93 dB
10	2000Hz	34.85 dB
11	2500Hz	41.40 dB
12	3150Hz	42.82 dB
13	4000Hz	44.16 dB
14	5000Hz	46.16 dB

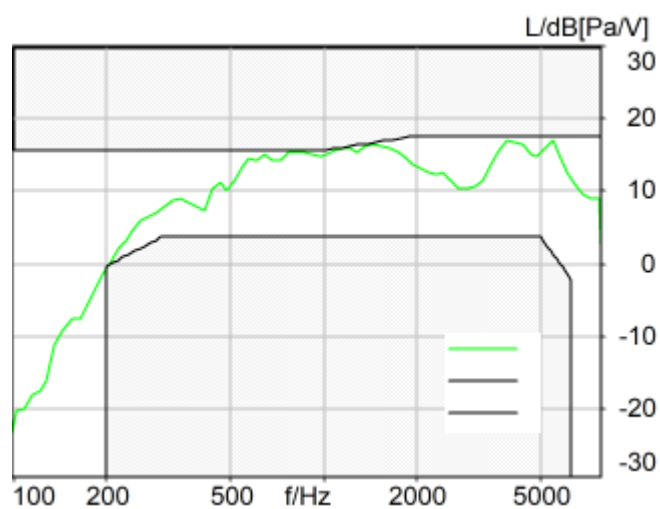
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 22.84dB at 250Hz.

2024/1/8 21:06 ACQUA

### 5.3 Frequency Response 2N FF

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



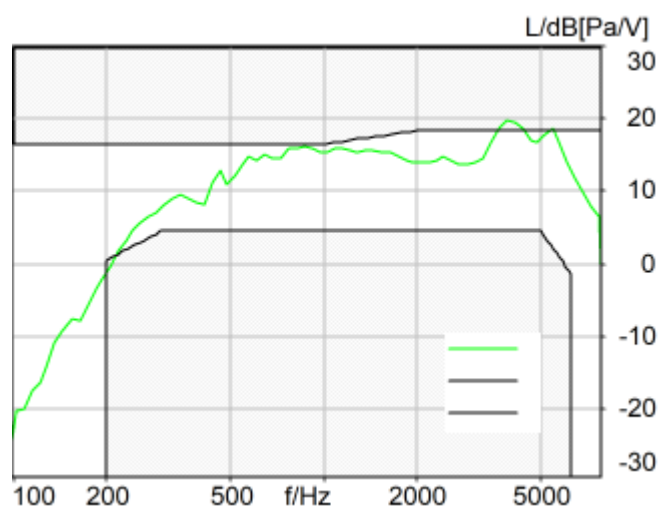
Absolute minimal distance  
0.09 dB at 1151.2 Hz Ok

**Ok**

2024/1/8 21:08 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## 5.3 Frequency Response 2N DF

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



Absolute minimal distance  
-1.22 dB at 3882.4 Hz Not Ok

### Not Ok

2024/1/8 21:09 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

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## **Measurement Protocol**

Measurement Object	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
--------------------	--

Project	#R2340252
Report Generation Date	2024/1/8 21:20
Responsible Person	AC

## Status Overview

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay WB	Done	Delay (Cross) [ms]	294.9	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.1a Receive Volume Control Performance 8N WB	Ok	Speech Level [dB[SPL]]	88.23	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 250 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	27.62	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 315 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	24.56	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 400 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	32.08	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 500 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	30.21	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 630 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	31.68	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 800 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	28.50	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 1000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	33.74	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 1250 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	31.00	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 1600 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	36.77	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 2000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	41.45	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 2500 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	40.09	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 3150 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	42.06	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 4000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	44.87	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.2 RCV Distortion and Noise - 5000 Hz WB	Ok	Distortion (Noise) [dB], 0.0 dB	46.01	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
Report - Receive Distortion	Ok	Minimum SDNR	24.56	FR1 n77

and Noise (Conversational Gain)		[dB], (occured at 315Hz)		270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.3 Frequency Response 8N FF	Ok	Min. dist. to tolerance scheme [dB], 205.7 Hz	0.36	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N
5.3 Frequency Response 8N DF	Not Ok	Min. dist. to tolerance scheme [dB], 873.9 Hz	-0.16	FR1 n77 270_100M_BPSK_1RB_1Offset_EVS WB 128kbps_Ch656000_8N

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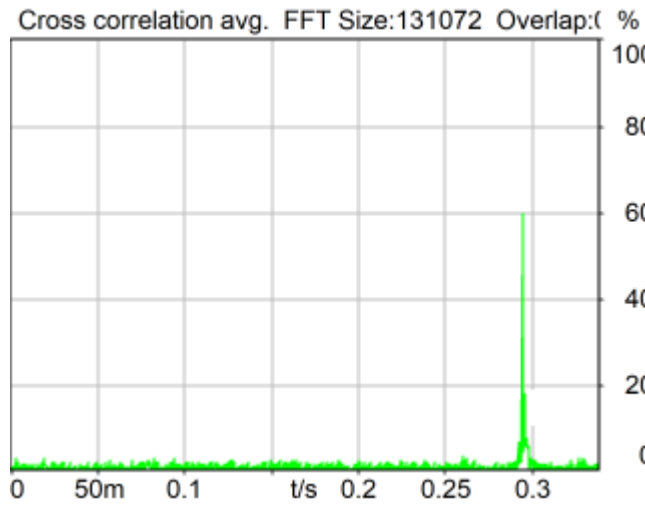
Overall Receive Delay WB	6
5.1a Receive Volume Control Performance 8N WB	7
5.2 RCV Distortion and Noise - 250 Hz WB	8
5.2 RCV Distortion and Noise - 315 Hz WB	9
5.2 RCV Distortion and Noise - 400 Hz WB	10
5.2 RCV Distortion and Noise - 500 Hz WB	11
5.2 RCV Distortion and Noise - 630 Hz WB	12
5.2 RCV Distortion and Noise - 800 Hz WB	13
5.2 RCV Distortion and Noise - 1000 Hz WB	14
5.2 RCV Distortion and Noise - 1250 Hz WB	15
5.2 RCV Distortion and Noise - 1600 Hz WB	16
5.2 RCV Distortion and Noise - 2000 Hz WB	17
5.2 RCV Distortion and Noise - 2500 Hz WB	18
5.2 RCV Distortion and Noise - 3150 Hz WB	19
5.2 RCV Distortion and Noise - 4000 Hz WB	20
5.2 RCV Distortion and Noise - 5000 Hz WB	21
Report - Receive Distortion and Noise (Conversational Gain)	22
5.3 Frequency Response 8N FF	23
5.3 Frequency Response 8N DF	24





## Overall Receive Delay WB

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



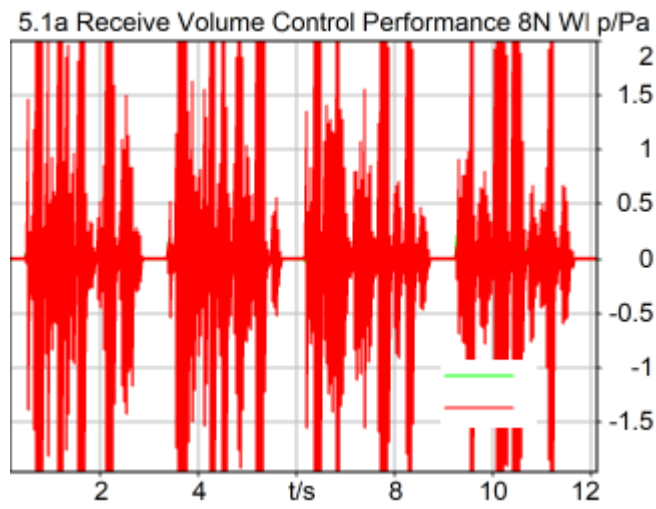
Delay (Cross): 294.9 ms

2024/1/8 21:12 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## 5.1a Receive Volume Control Performance 8N WB

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



Speech Level RCV: 88.23 dB[SPL], Act.: 80.99% Ok

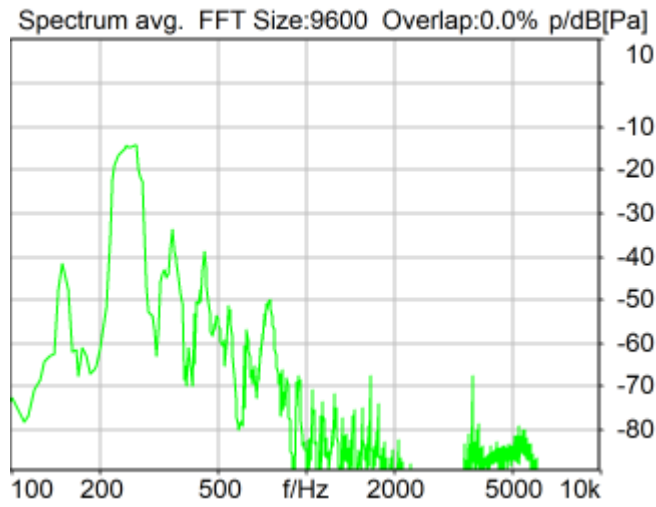
**Ok**

2024/1/8 21:19 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 250 Hz WB**

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



Distortion (Noise) RCV (packed): 27.62 dB (4.16%) Ok

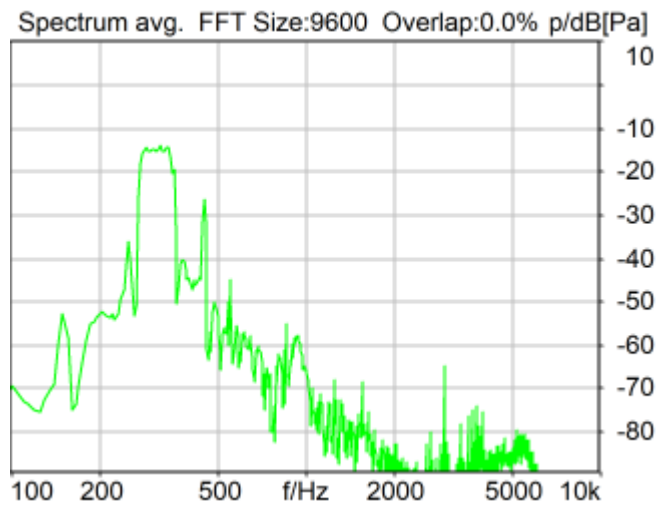
**Ok**

2024/1/8 21:12 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 315 Hz WB**

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



Distortion (Noise) RCV (packed): 24.56 dB (5.91%) Ok

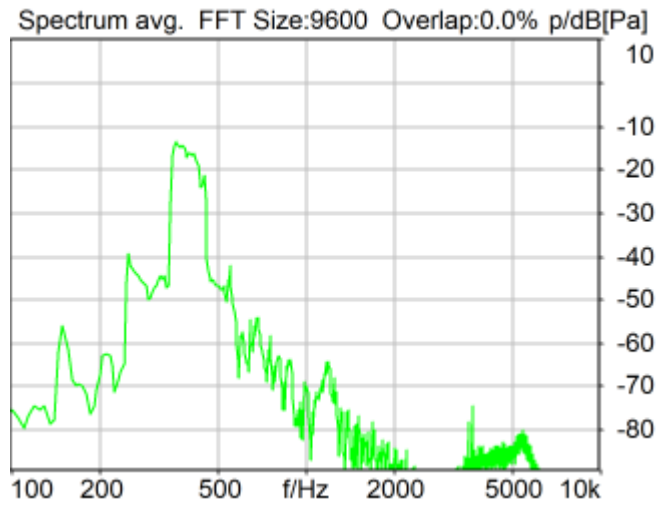
**Ok**

2024/1/8 21:13 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 400 Hz WB**

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



Distortion (Noise) RCV (packed): 32.08 dB (2.49%) Ok

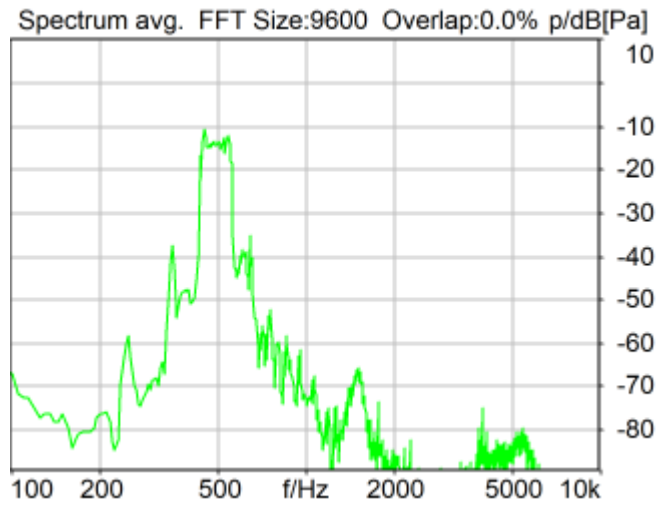
**Ok**

2024/1/8 21:13 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 500 Hz WB**

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



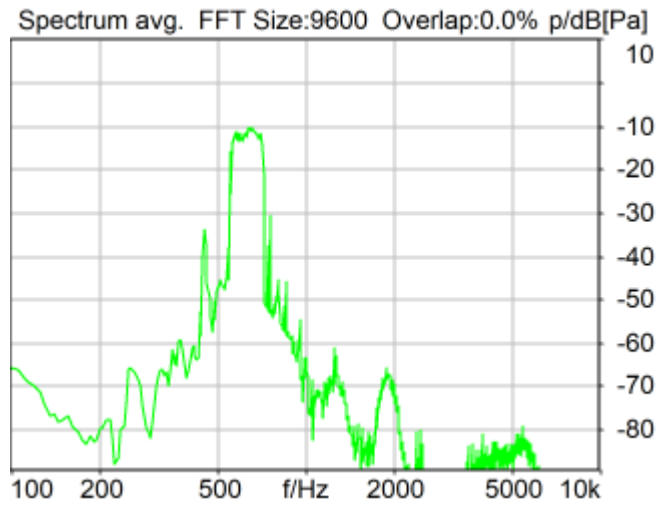
Distortion (Noise) RCV (packed): 30.21 dB (3.09%) Ok

**Ok**

2024/1/8 21:14 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 630 Hz WB**

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



Distortion (Noise) RCV (packed): 31.68 dB (2.61%) Ok

**Ok**

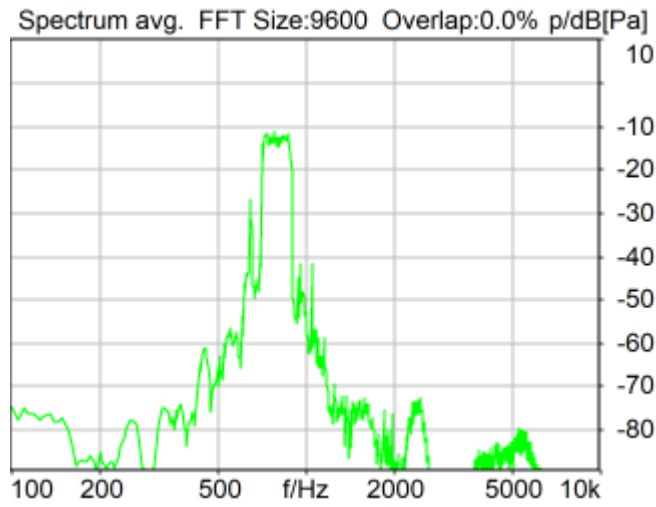
2024/1/8 21:14 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor



## **5.2 RCV Distortion and Noise - 800 Hz WB**

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



Distortion (Noise) RCV (packed): 28.50 dB (3.76%) Ok

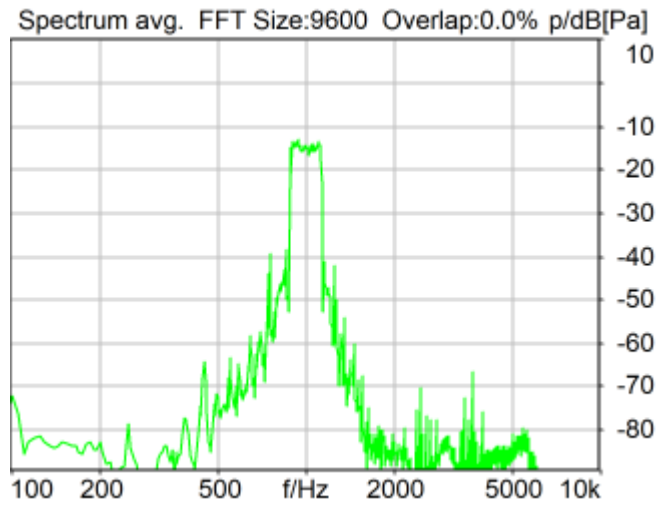
**Ok**

2024/1/8 21:14 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1000 Hz WB**

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



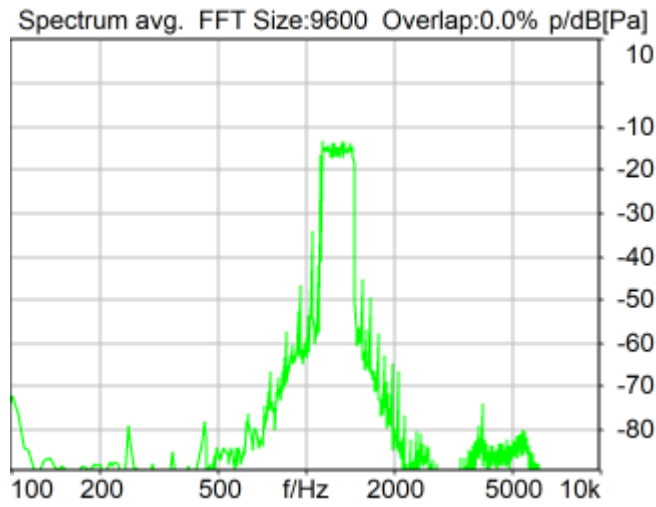
Distortion (Noise) RCV (packed): 33.74 dB (2.06%) Ok

**Ok**

2024/1/8 21:15 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## 5.2 RCV Distortion and Noise - 1250 Hz WB

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



Distortion (Noise) RCV (packed): 31.00 dB (2.82%) Ok

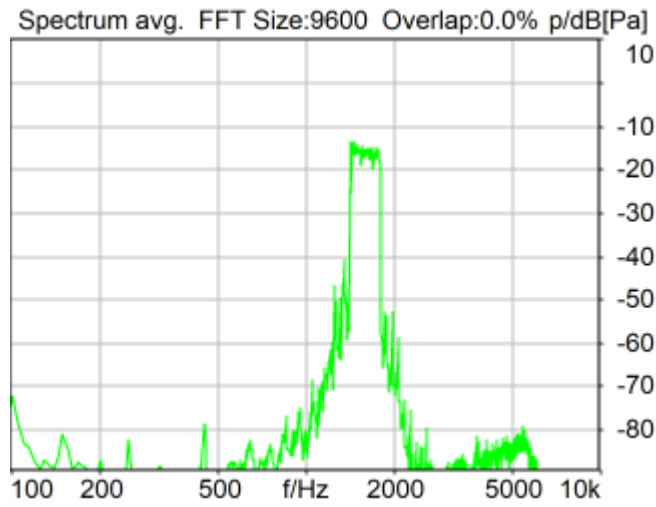
Ok

2024/1/8 21:15 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 1600 Hz WB**

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



Distortion (Noise) RCV (packed): 36.77 dB (1.45%) Ok

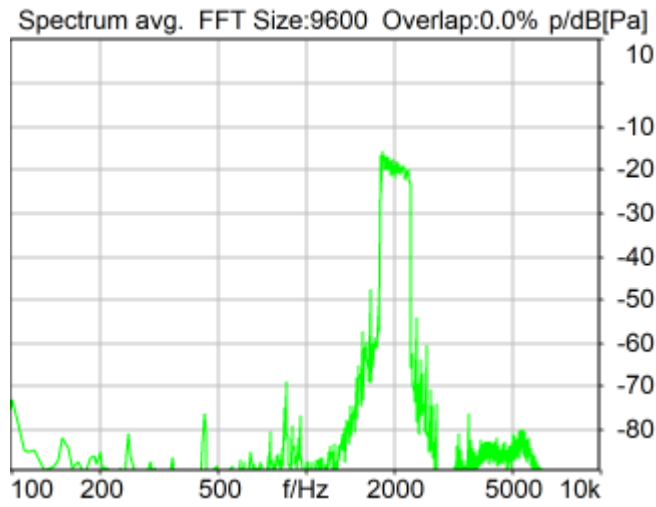
**Ok**

2024/1/8 21:16 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2000 Hz WB**

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



Distortion (Noise) RCV (packed): 41.45 dB (0.85%) Ok

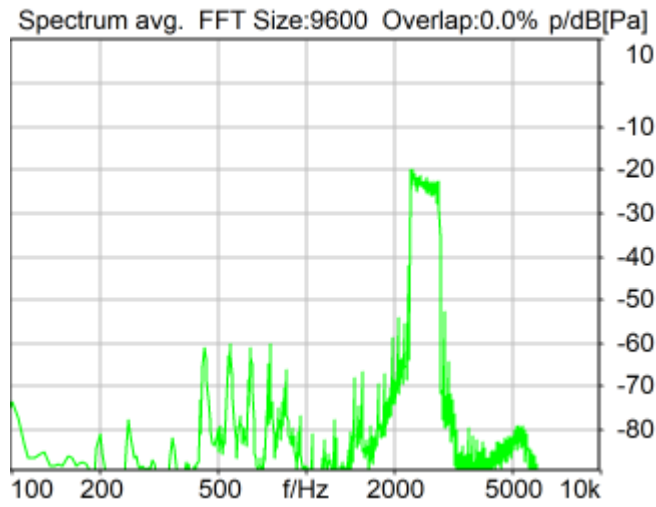
**Ok**

2024/1/8 21:16 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 2500 Hz WB**

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



Distortion (Noise) RCV (packed): 40.09 dB (0.99%) Ok

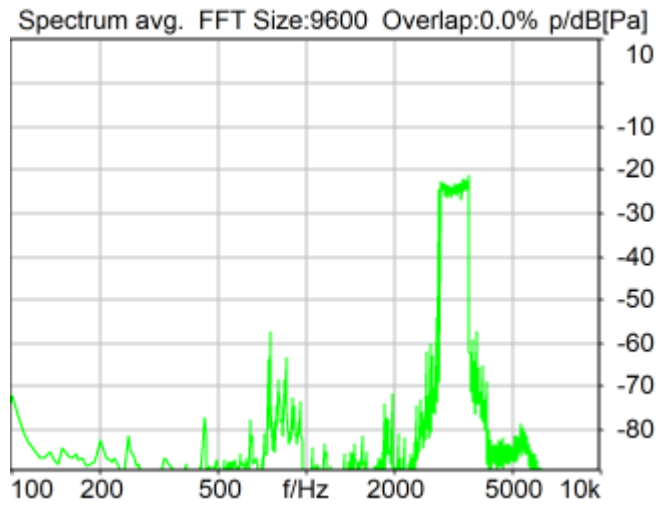
**Ok**

2024/1/8 21:16 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 3150 Hz WB**

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



Distortion (Noise) RCV (packed): 42.06 dB (0.79%) Ok

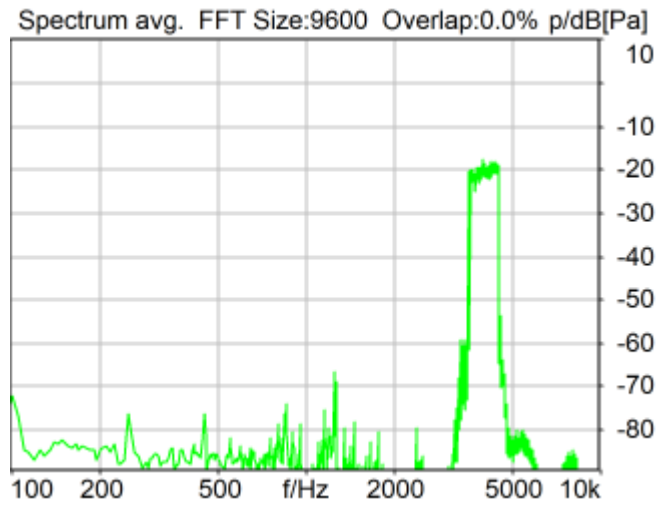
**Ok**

2024/1/8 21:17 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.2 RCV Distortion and Noise - 4000 Hz WB**

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



Distortion (Noise) RCV (packed): 44.87 dB (0.57%) Ok

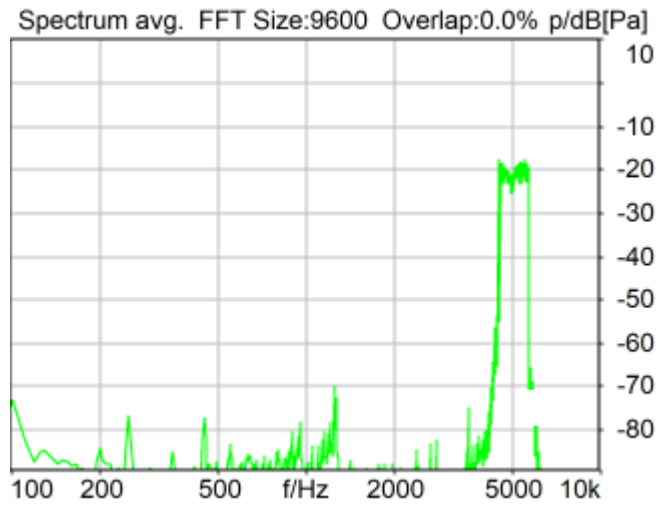
**Ok**

2024/1/8 21:17 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor



## **5.2 RCV Distortion and Noise - 5000 Hz WB**

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



Distortion (Noise) RCV (packed): 46.01 dB (0.50%) Ok

**Ok**

2024/1/8 21:18 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **Report - Receive Distortion and Noise (Conversational Gain)**

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

<b>Region</b>	<b>Frequency</b>	<b>SDNR</b>
1	250Hz	27.62 dB
2	315Hz	24.56 dB
3	400Hz	32.08 dB
4	500Hz	30.21 dB
5	630Hz	31.68 dB
6	800Hz	28.50 dB
7	1000Hz	33.74 dB
8	1250Hz	31.00 dB
9	1600Hz	36.77 dB
10	2000Hz	41.45 dB
11	2500Hz	40.09 dB
12	3150Hz	42.06 dB
13	4000Hz	44.87 dB
14	5000Hz	46.01 dB

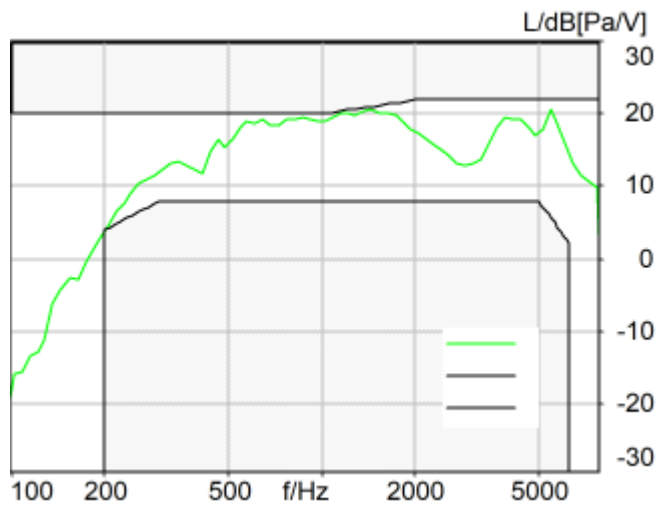
All SDNRs were greater than 20.0 dB, requirement was met.

Smallest SDNR was 24.56dB at 315Hz.

2024/1/8 21:18 ACQUA

### 5.3 Frequency Response 8N FF

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



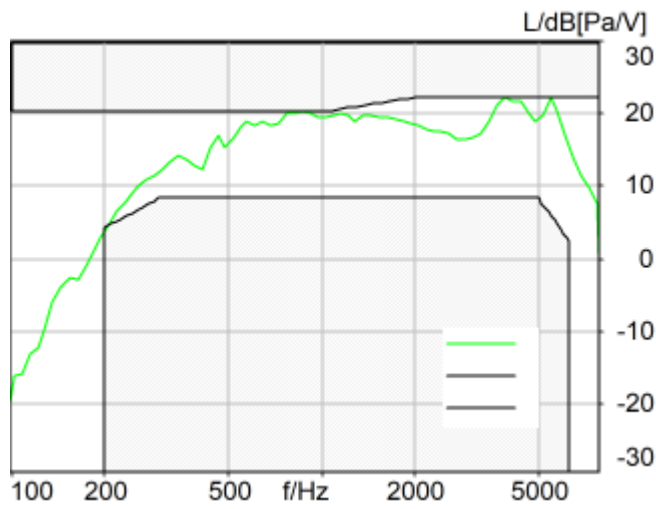
Absolute minimal distance  
0.36 dB at 205.7 Hz Ok

**Ok**

2024/1/8 21:18 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

### 5.3 Frequency Response 8N DF

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



Absolute minimal distance  
-0.16 dB at 873.9 Hz Not Ok

#### Not Ok

2024/1/8 21:18 ACQUA 5.1.200  
Unmodified HEAD acoustics Measurement Descriptor

## **Measurement Protocol**

Measurement Object	WLAN2.4GHz_802.11b 1Mbps_EVS WB 5.9kbps_Ch6_2N
--------------------	--

Project	3D0836
Report Generation Date	2024/1/7 21:49
Responsible Person	AC

## **Status Overview**

SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay WB	Done	Delay (Cross) [ms]	166.7	WLAN2.4GHz_802.11b 1Mbps_EVS WB 5.9kbps_Ch6_2N
5.1b Receive Volume Control Performance 2N WB	Ok	Speech Level [dB[SPL]]	87.94	WLAN2.4GHz_802.11b 1Mbps_EVS WB 5.9kbps_Ch6_2N

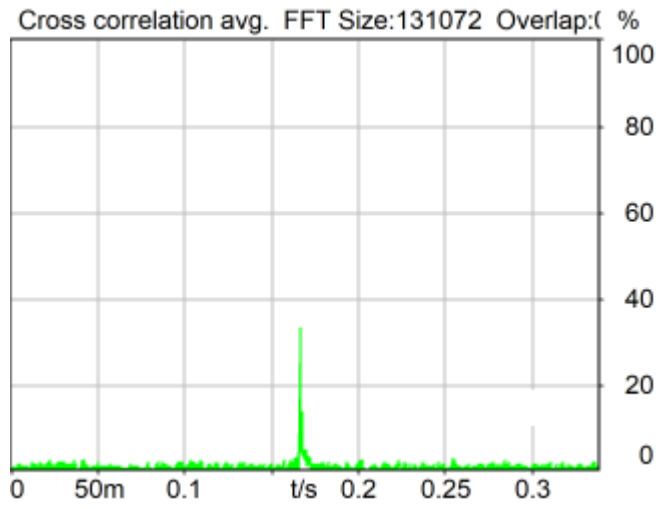
Overall Receive Delay WB	5
5.1b Receive Volume Control Performance 2N WB	6





## Overall Receive Delay WB

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



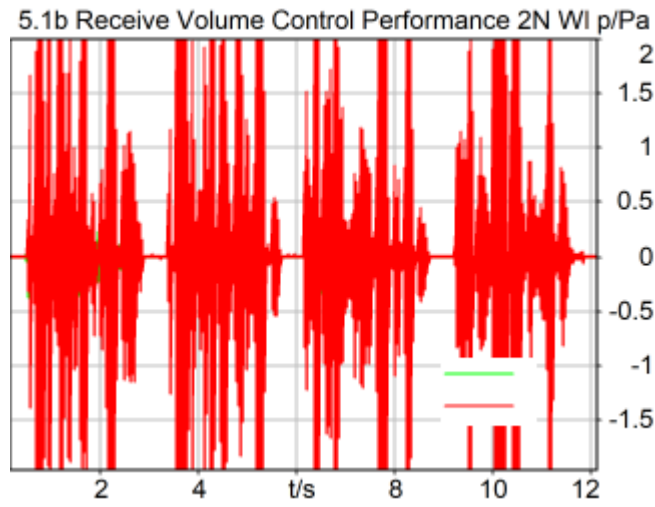
Delay (Cross): 166.7 ms

2024/1/7 21:48 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor

## **5.1b Receive Volume Control Performance 2N WB**

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



Speech Level RCV: 87.94 dB[SPL], Act.: 81.77% Ok

**Ok**

2024/1/7 21:49 ACQUA 5.1.200

Unmodified HEAD acoustics Measurement Descriptor