Measurement Protocol

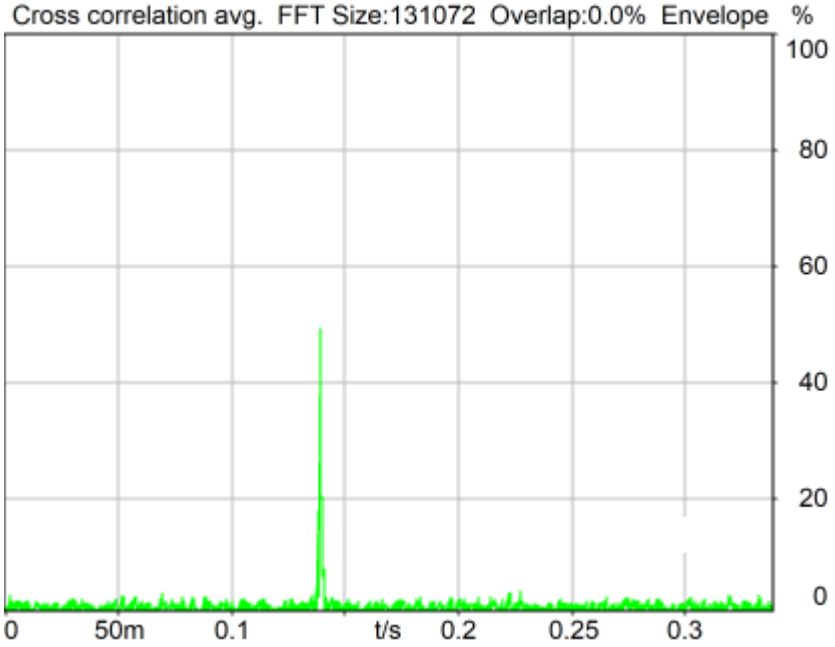
Measurement Object	LTE Band 12_10QPSK_50_0_EVS NB 24.4kbps_CH23095
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:45
Responsible Person	audio

Overall Receive Delay NB, Index: 1 3
5.1a Receive Volume Control Performance 8N NB, Index: 1 3
5.1b Receive Volume Control Performance 2N NB, Index: 1 4
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 5
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 6
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 8
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 10
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 11
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 11
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 12
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 14
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 16
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 18
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 19
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 19
5.3 Frequency Response 8N FF HANB, Index: 1 20
5.3 Frequency Response 8N DF HANB, Index: 1 21
5.3 Frequency Response 2N FF HANB, Index: 1 21
5.3 Frequency Response 2N DF HANB, Index: 1 22

Overall Receive Delay NB, Index: 1

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

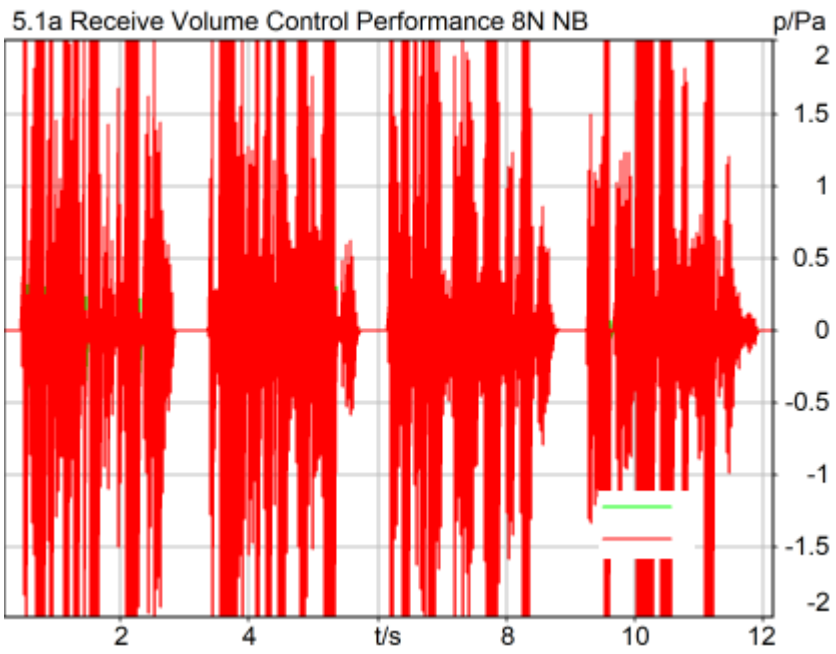


Delay (Cross): 139.6 ms

2024/3/12 21:26 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N NB, Index: 1

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



Correction

X - 70

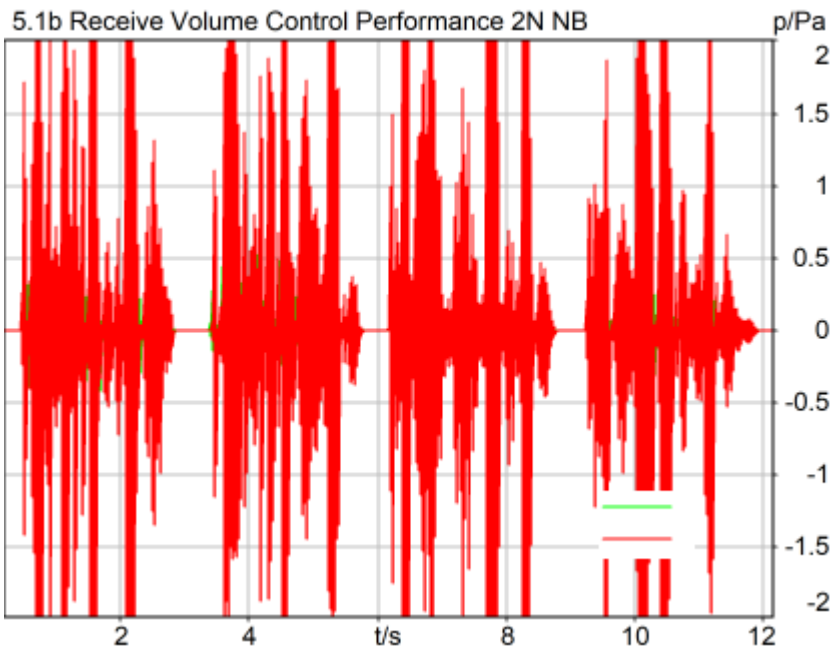
Speech Level RCV: 91.70 dB[SPL], Act.: 81.12%
Corrected Speech Level: 21.70 dB[SPL] Ok

Ok

2024/3/12 21:42 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N NB, Index: 1

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



Correction

X - 70

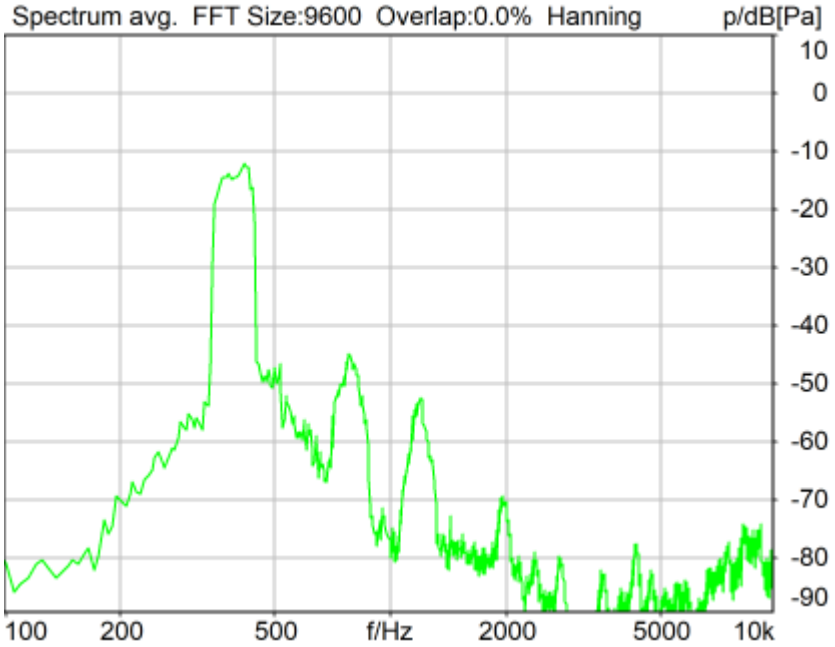
Speech Level RCV: 86.10 dB[SPL], Act.: 83.53%
Corrected Speech Level: 16.10 dB[SPL] Ok

Ok

2024/3/12 23:59 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



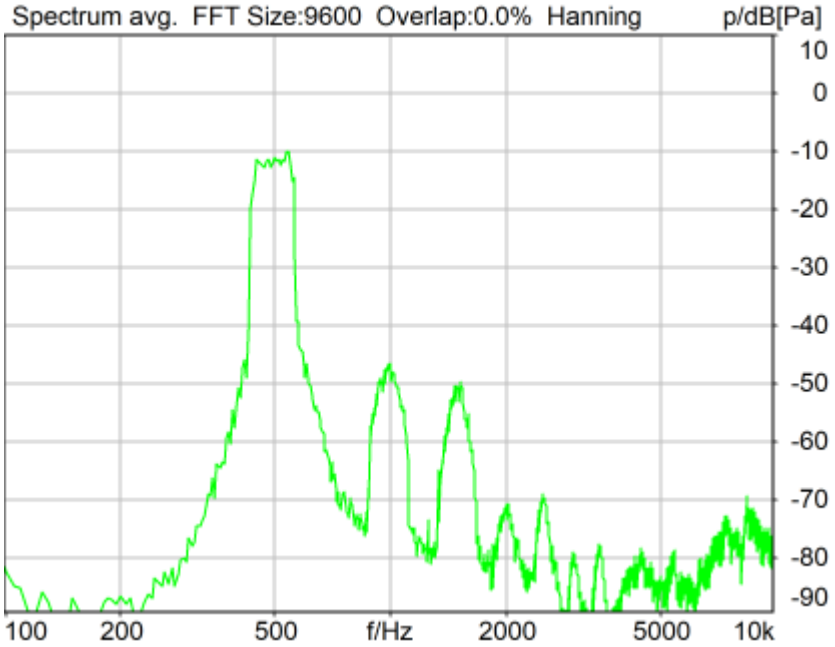
Distortion (Noise) RCV (packed): 31.38 dB (2.70%) Ok

Ok

2024/3/12 21:43 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



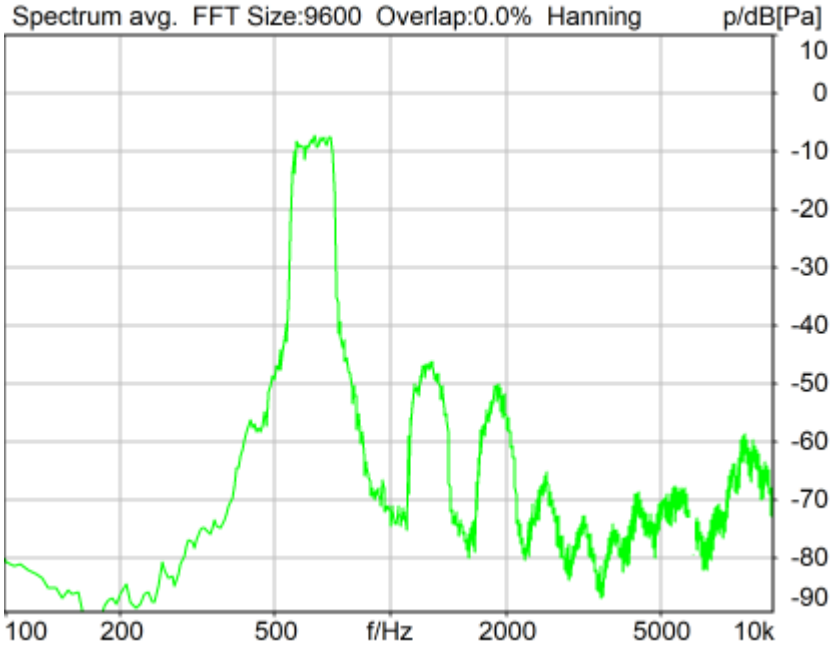
Distortion (Noise) RCV (packed): 33.37 dB (2.15%) Ok

Ok

2024/3/12 21:43 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



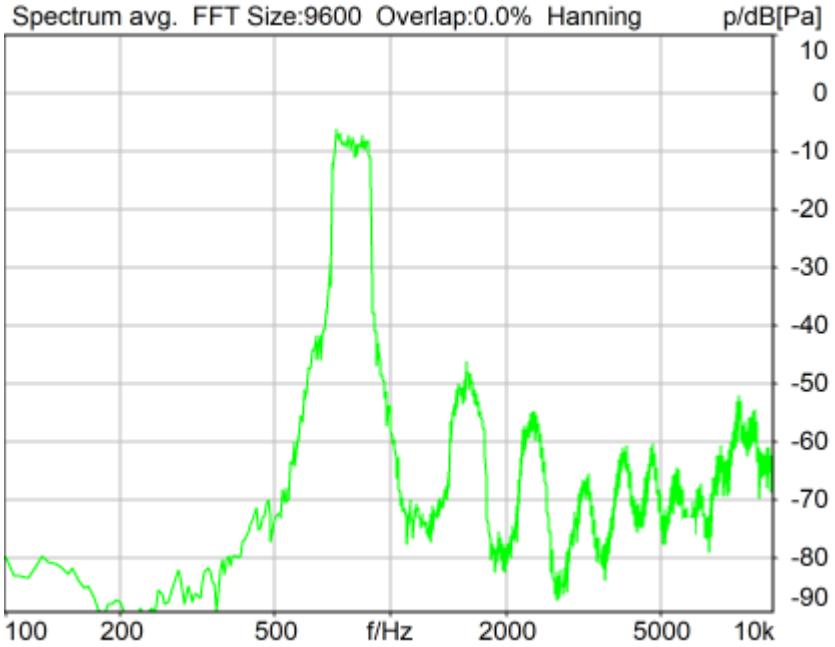
Distortion (Noise) RCV (packed): 34.17 dB (1.96%) Ok

Ok

2024/3/12 21:44 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



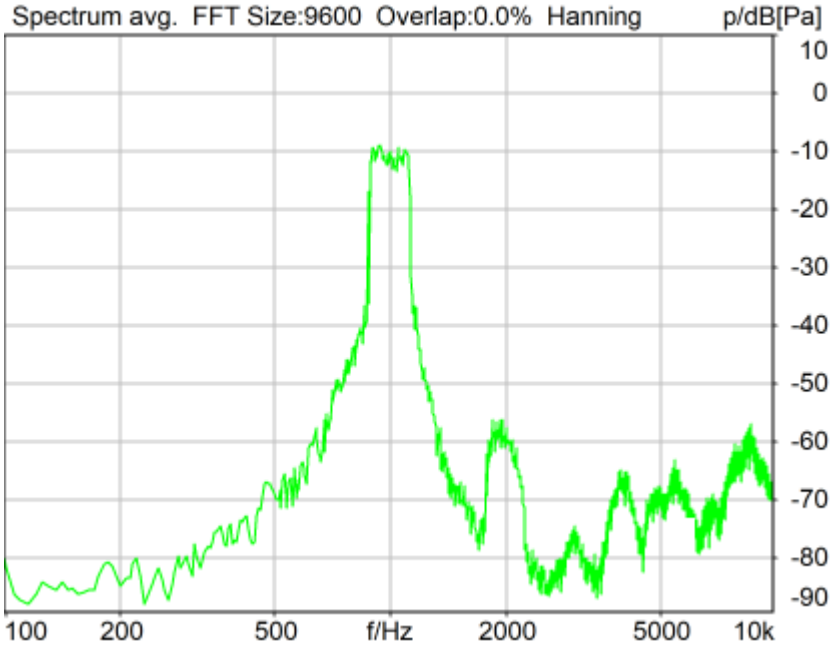
Distortion (Noise) RCV (packed): 34.56 dB (1.87%) Ok

Ok

2024/3/12 21:44 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



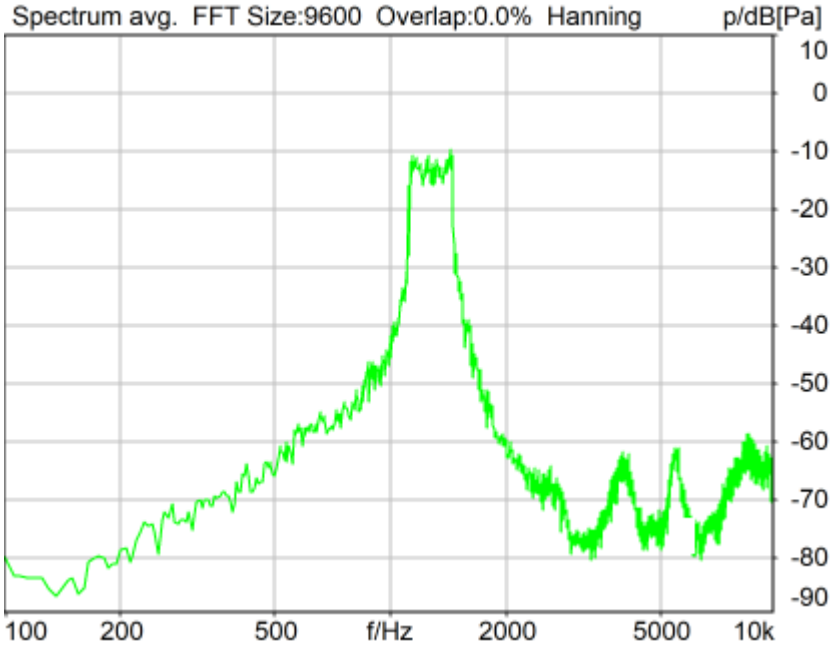
Distortion (Noise) RCV (packed): 32.80 dB (2.29%) Ok

Ok

2024/3/12 21:44 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



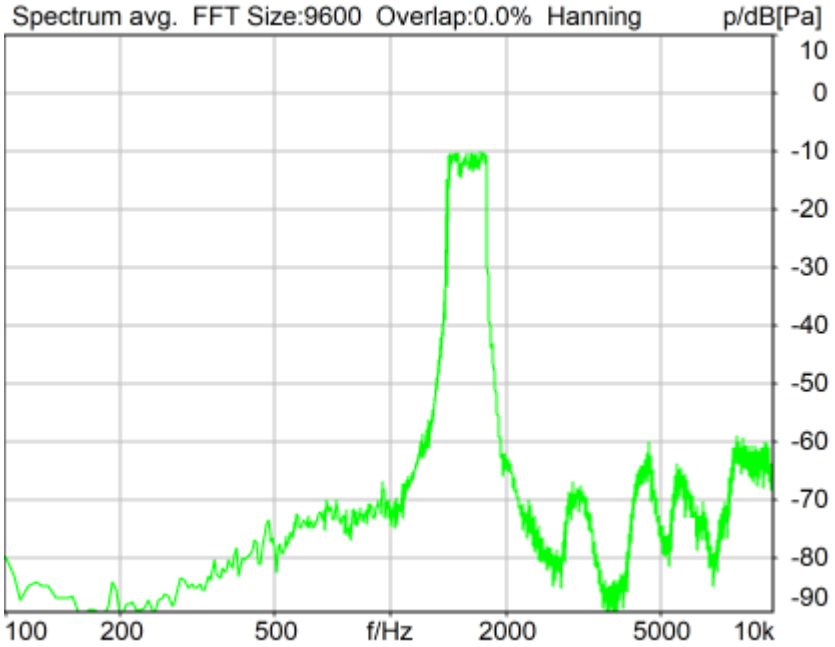
Distortion (Noise) RCV (packed): 21.22 dB (8.69%) Ok

Ok

2024/3/12 21:45 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



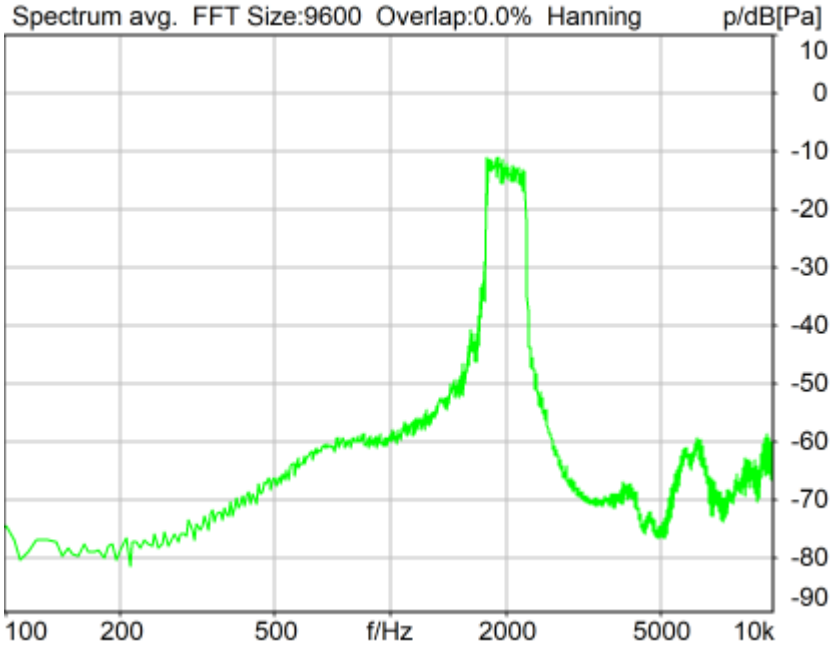
Distortion (Noise) RCV (packed): 36.36 dB (1.52%) Ok

Ok

2024/3/12 21:45 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



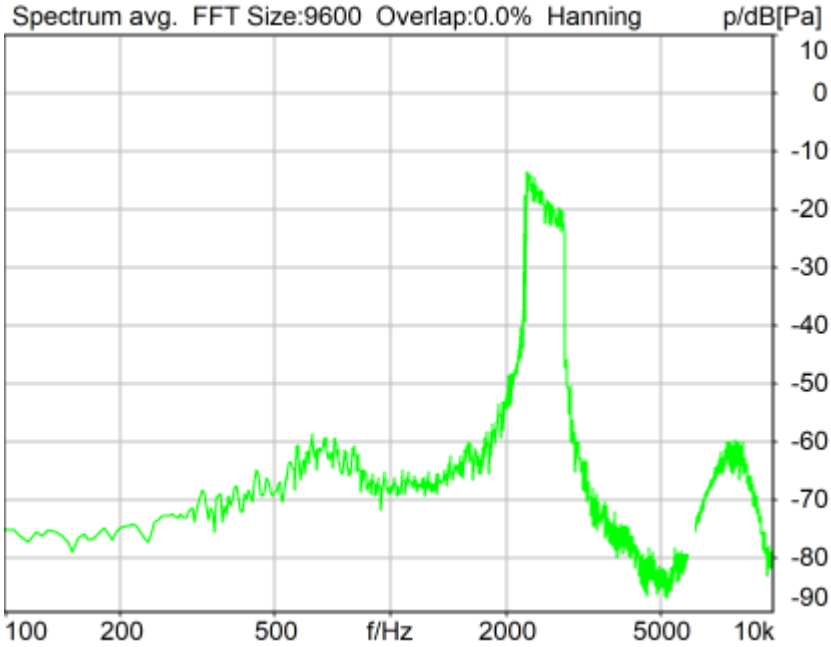
Distortion (Noise) RCV (packed): 27.99 dB (3.98%) Ok

Ok

2024/3/12 21:46 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



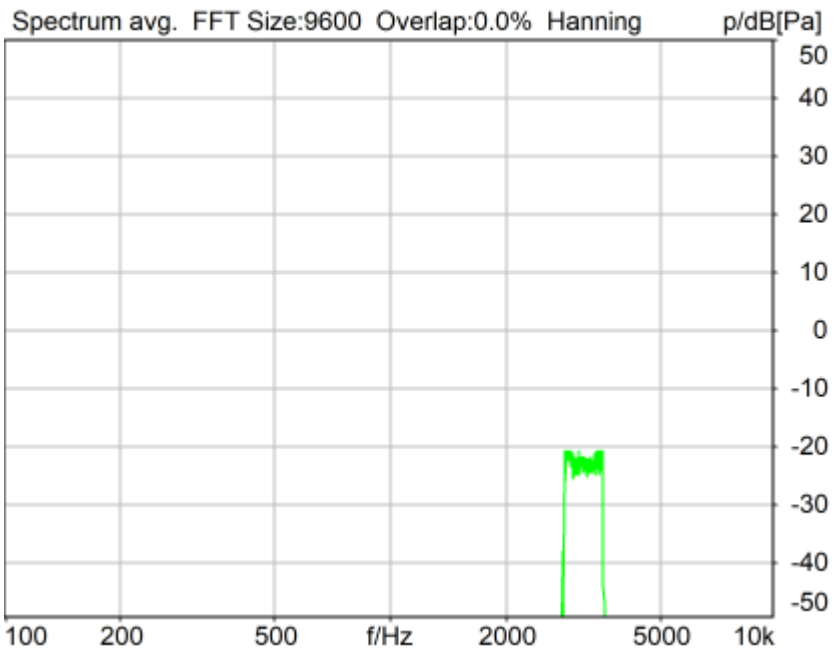
Distortion (Noise) RCV (packed): 29.67 dB (3.28%) Ok

Ok

2024/3/12 21:46 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 32.96 dB (2.25%) Ok

Ok

2024/3/12 21:46 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

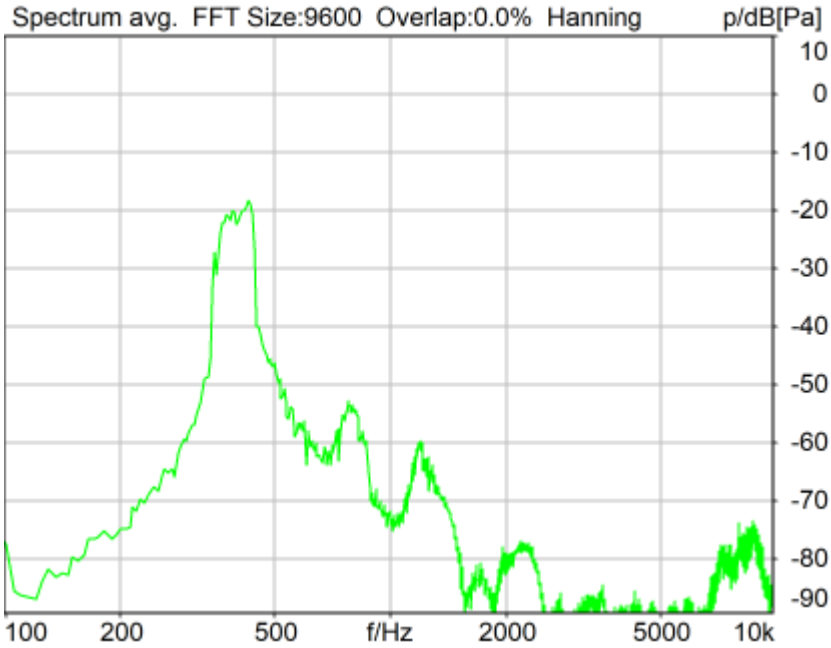
Region	Frequency	SDNR
1	400Hz	31.38 dB
2	500Hz	33.37 dB
3	630Hz	34.17 dB
4	800Hz	34.56 dB
5	1000Hz	32.80 dB
6	1250Hz	21.22 dB
7	1600Hz	36.36 dB
8	2000Hz	27.99 dB
9	2500Hz	29.67 dB
10	3150Hz	32.96 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 21.22dB at 1250Hz.

2024/3/12 21:47 ACQUA

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



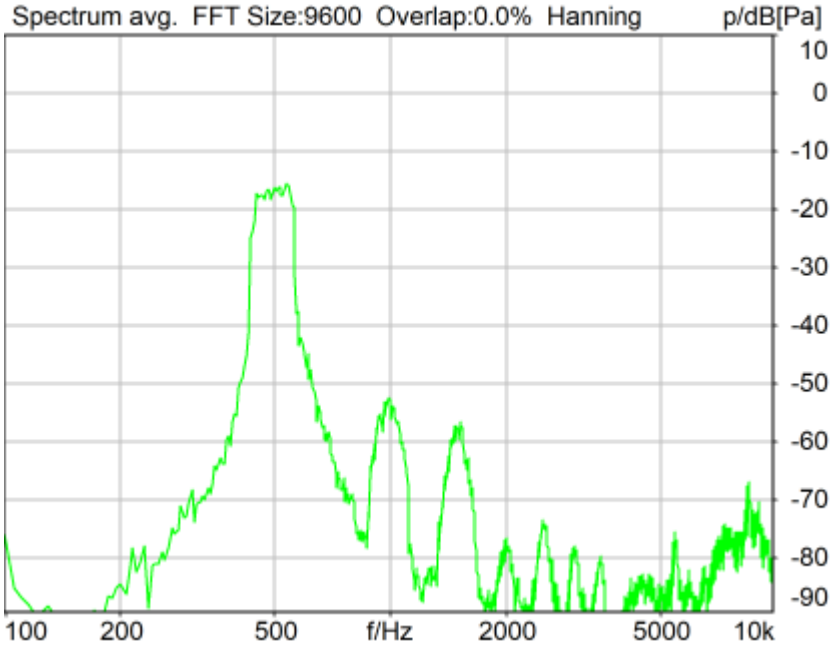
Distortion (Noise) RCV (packed): 28.87 dB (3.60%) Ok

Ok

2024/3/13 0:00 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



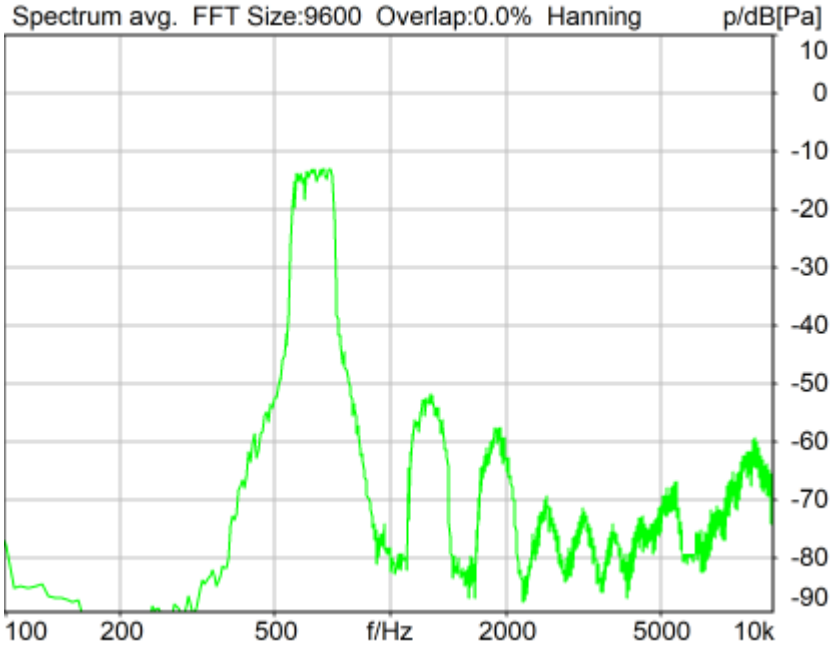
Distortion (Noise) RCV (packed): 32.23 dB (2.45%) Ok

Ok

2024/3/13 0:00 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



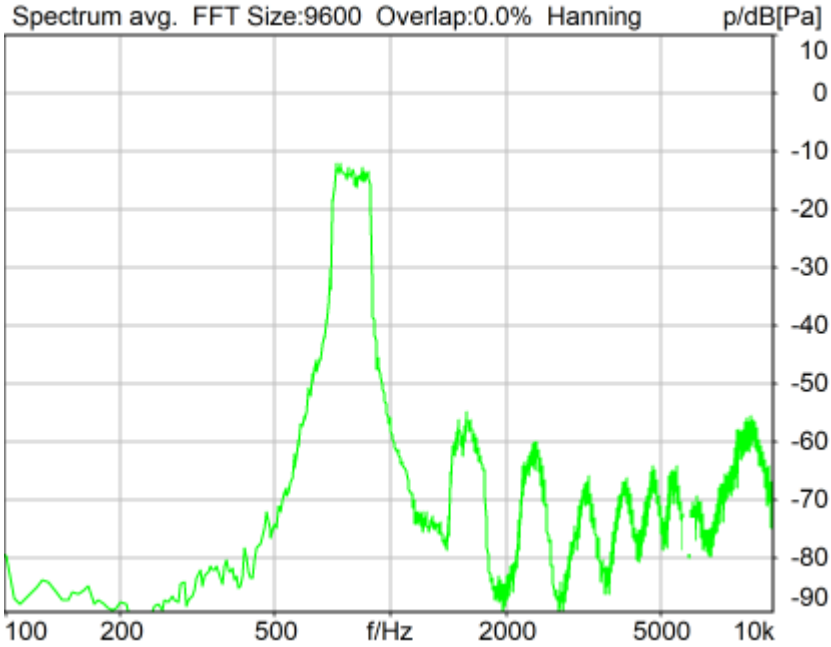
Distortion (Noise) RCV (packed): 33.23 dB (2.18%) Ok

Ok

2024/3/13 0:01 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



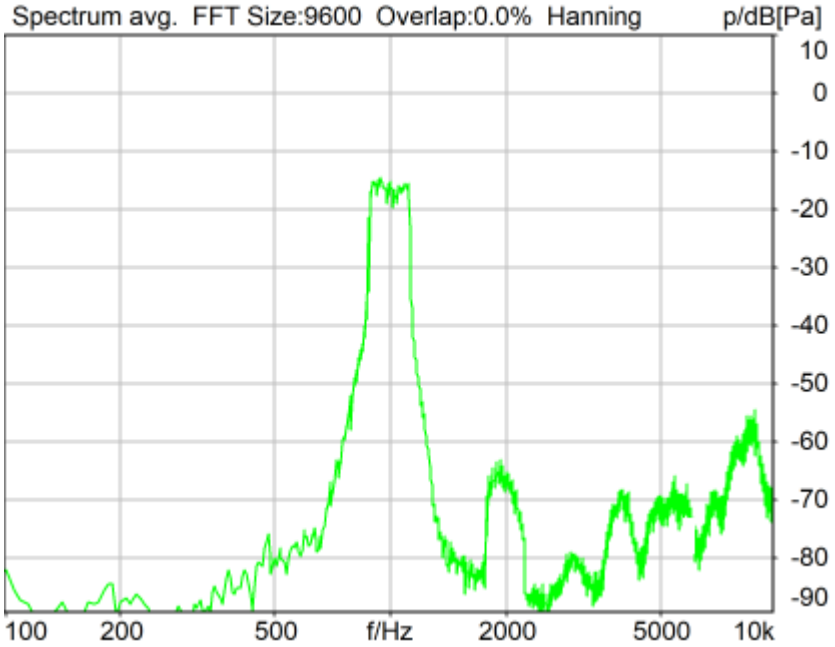
Distortion (Noise) RCV (packed): 32.84 dB (2.28%) Ok

Ok

2024/3/13 0:01 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



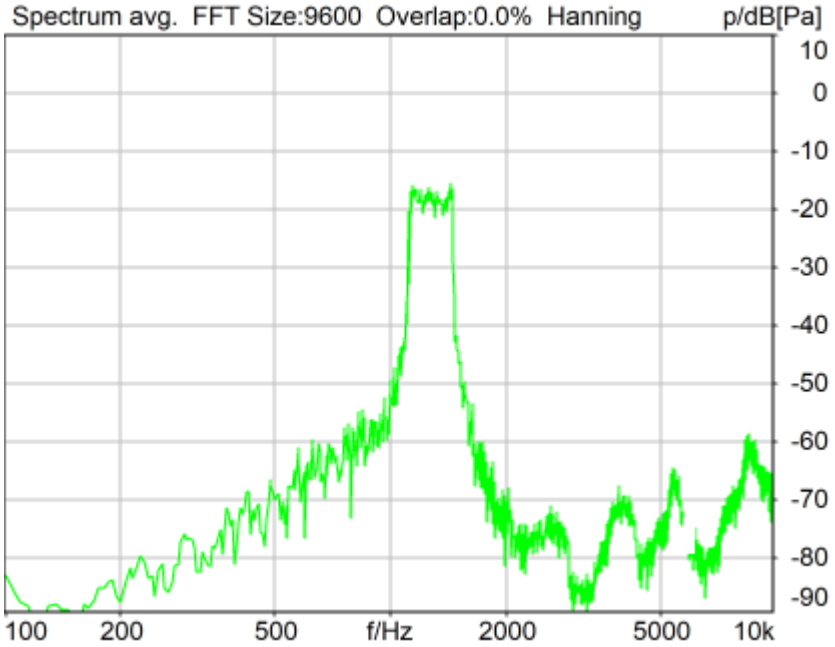
Distortion (Noise) RCV (packed): 32.12 dB (2.48%) Ok

Ok

2024/3/13 0:01 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



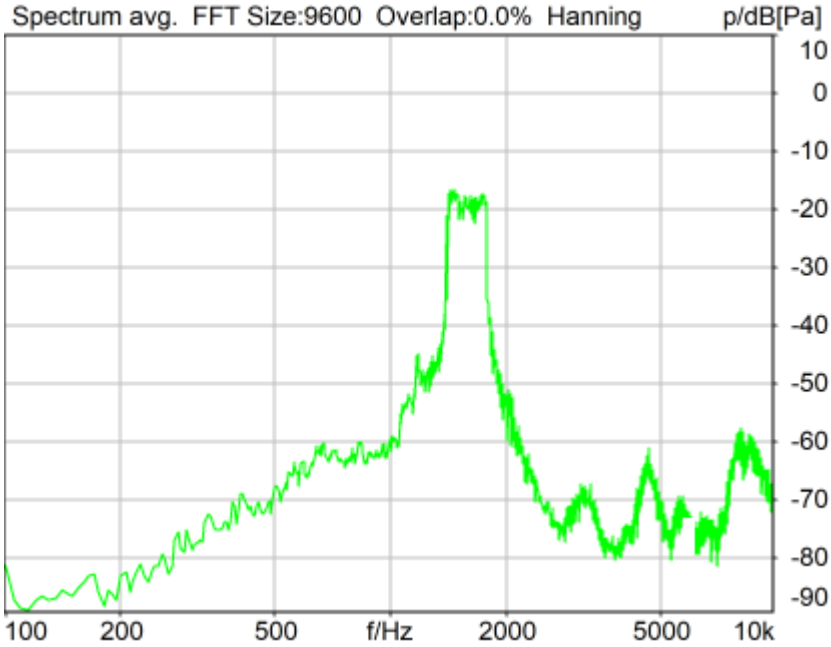
Distortion (Noise) RCV (packed): 25.33 dB (5.41%) Ok

Ok

2024/3/13 0:02 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



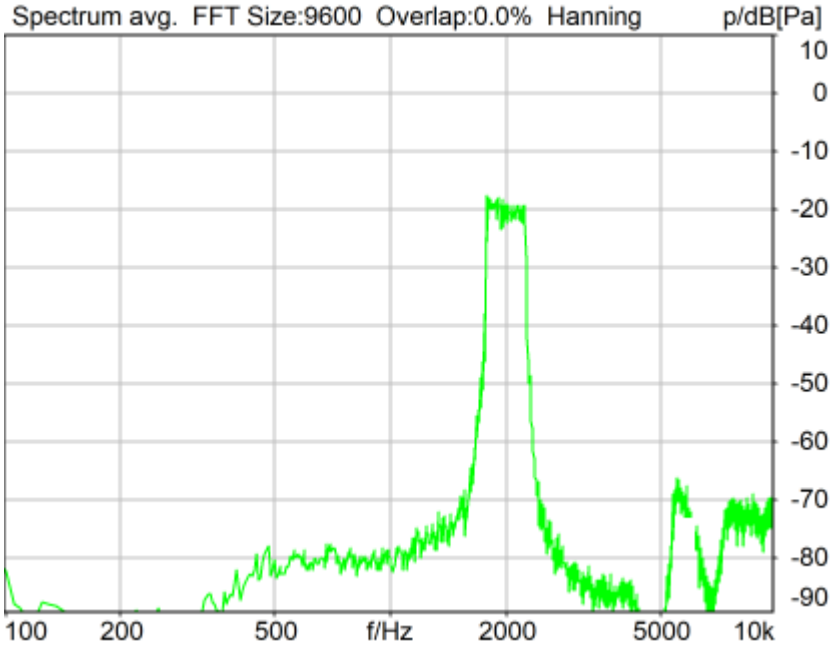
Distortion (Noise) RCV (packed): 26.39 dB (4.79%) Ok

Ok

2024/3/13 0:02 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



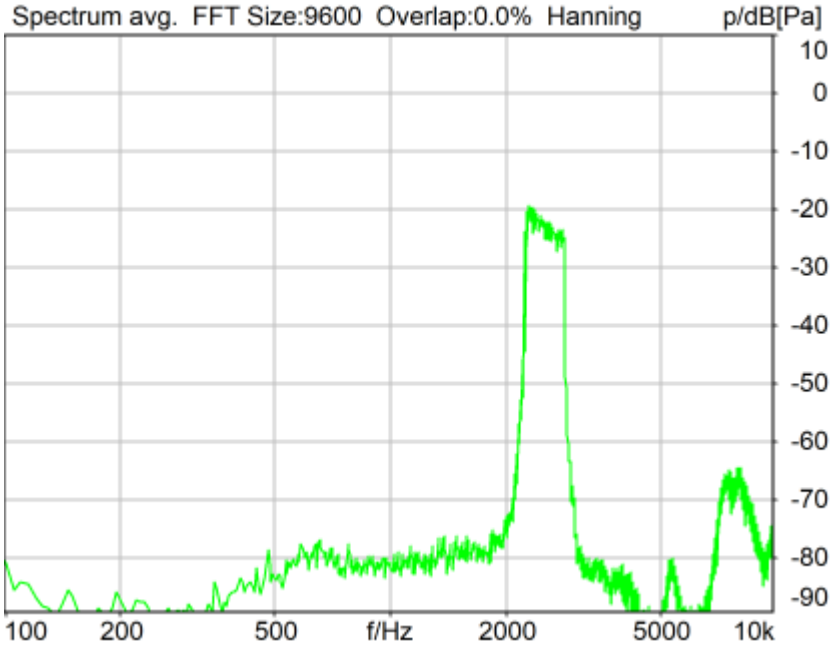
Distortion (Noise) RCV (packed): 34.98 dB (1.78%) Ok

Ok

2024/3/13 0:03 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



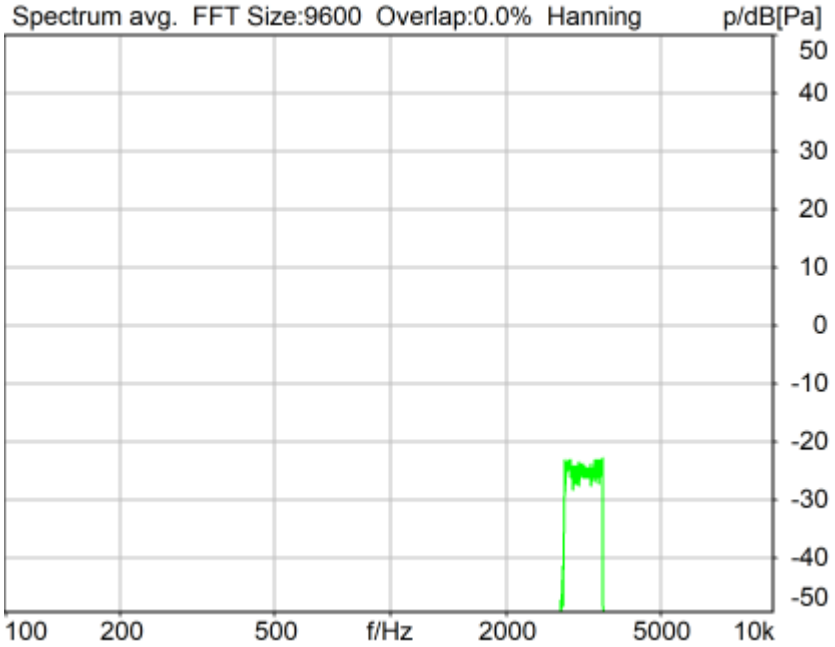
Distortion (Noise) RCV (packed): 36.68 dB (1.47%) Ok

Ok

2024/3/13 0:03 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



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

Ok

2024/3/13 0:03 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

Region	Frequency	SDNR
1	400Hz	28.87 dB

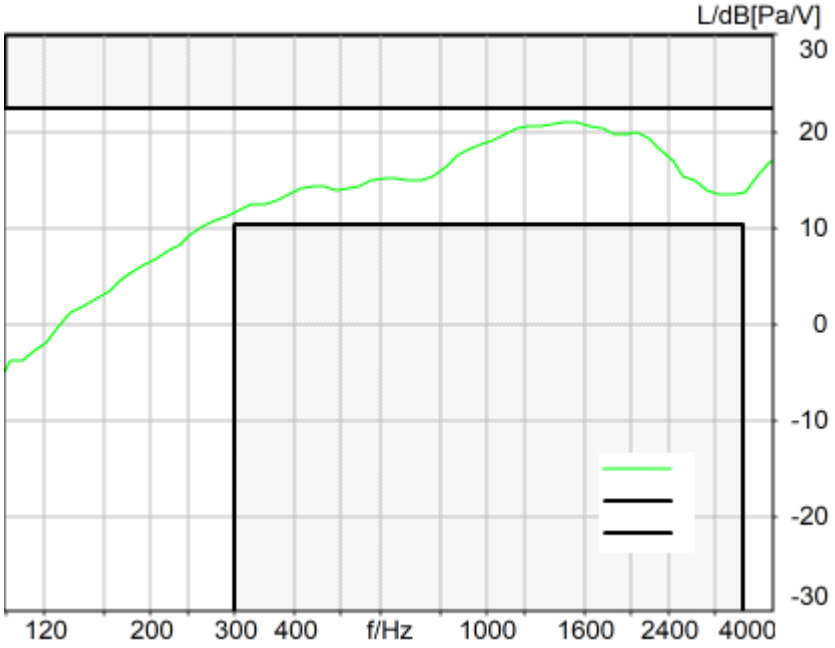
2	500Hz	32.23 dB
3	630Hz	33.23 dB
4	800Hz	32.84 dB
5	1000Hz	32.12 dB
6	1250Hz	25.33 dB
7	1600Hz	26.39 dB
8	2000Hz	34.98 dB
9	2500Hz	36.68 dB
10	3150Hz	30.79 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 25.33dB at 1250Hz.

2024/3/13 0:03 ACQUA

5.3 Frequency Response 8N FF HANB, Index: 1

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



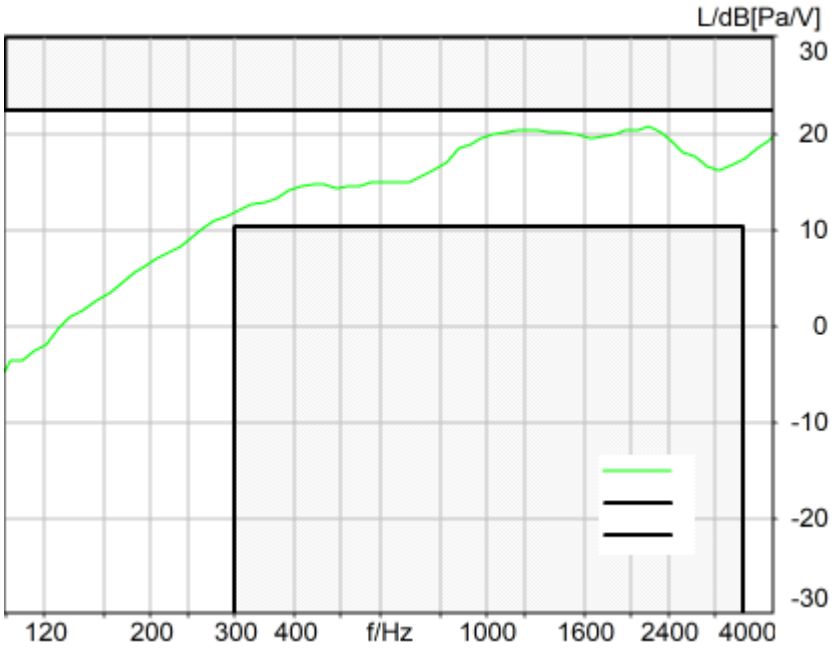
Absolute minimal distance
1.44 dB at 1547.5 Hz Ok

Ok

2024/3/12 21:48 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF HANB, Index: 1

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



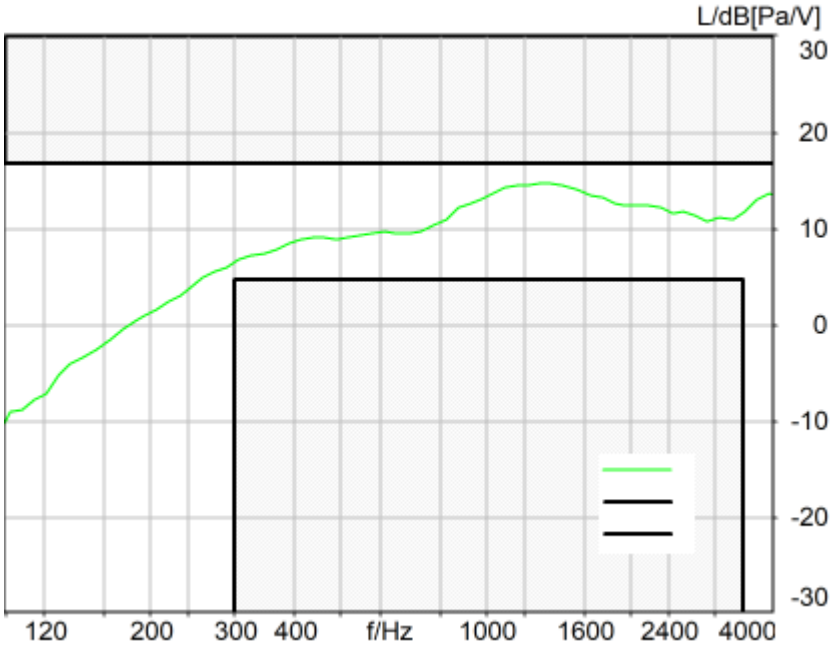
Absolute minimal distance
1.68 dB at 2177.4 Hz Ok

Ok

2024/3/12 21:47 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF HANB, Index: 1

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



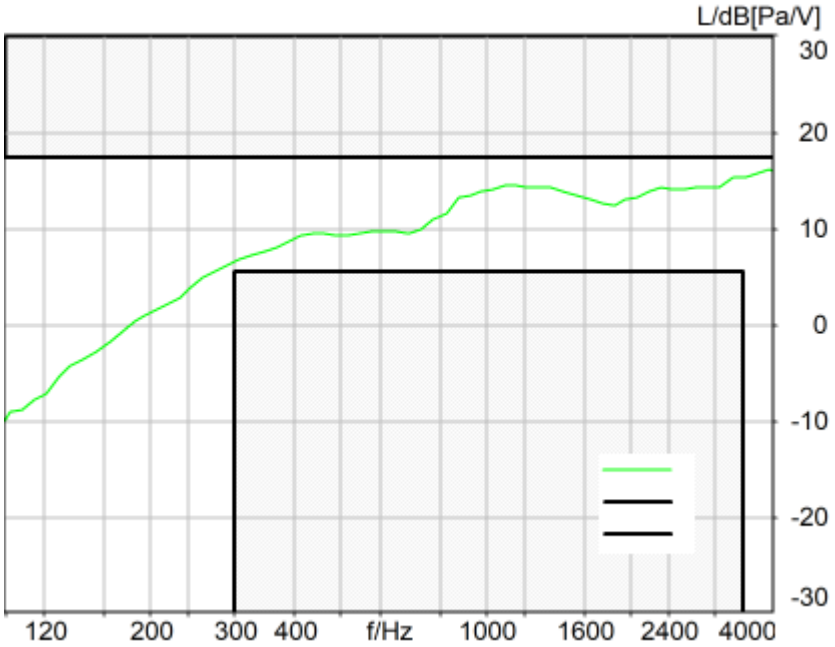
Absolute minimal distance
2.00 dB at 305.9 Hz Ok

Ok

2024/3/13 0:05 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF HANB, Index: 1

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



Absolute minimal distance
1.27 dB at 3882.4 Hz Ok

Ok

2024/3/13 0:04 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

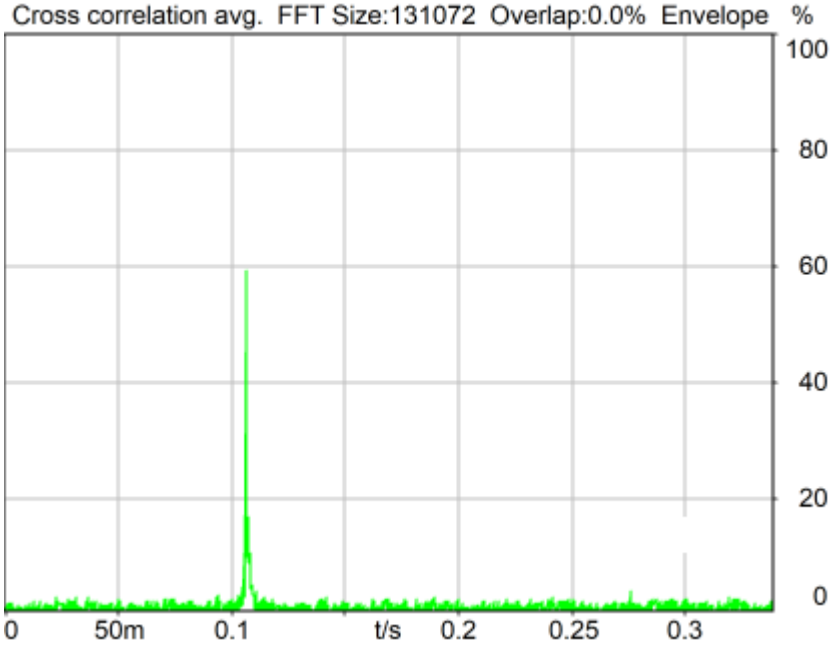
Measurement Object	LTE Band 12_10QPSK_50_0_EVS WB128kbps_CH23095
Project	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:46
Responsible Person	audio

Overall Receive Delay WB, Index: 1 3
5.1a Receive Volume Control Performance 8N WB, Index: 1 3
5.1b Receive Volume Control Performance 2N WB, Index: 1 4
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 5
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 6
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 8
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 10
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 12
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 14
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 15
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 15
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 16
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 18
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 20
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 22
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 24
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 25
5.3 Frequency Response 8N FF, Index: 1 25
5.3 Frequency Response 8N DF, Index: 1 26
5.3 Frequency Response 2N FF, Index: 1 27
5.3 Frequency Response 2N DF, Index: 1 28

Overall Receive Delay WB, Index: 1

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

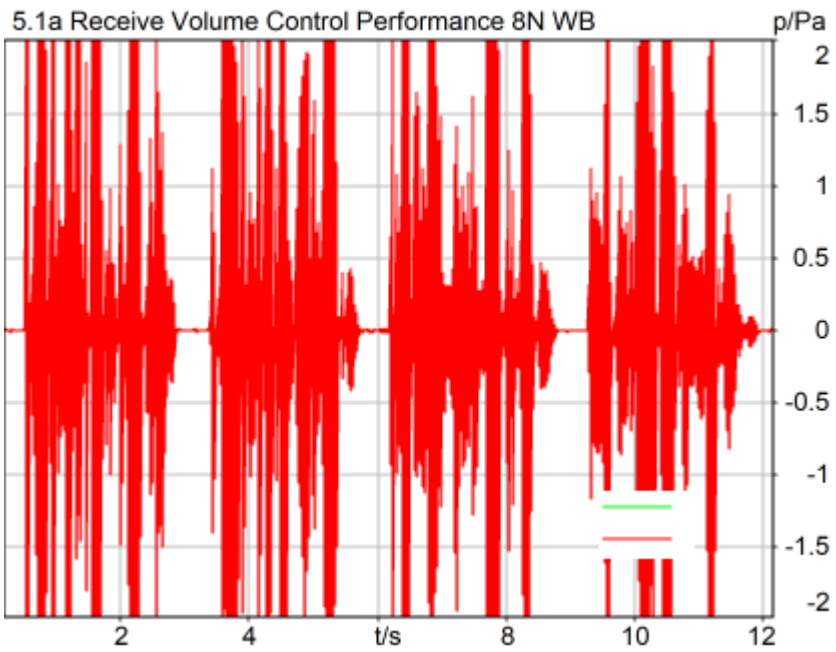


Delay (Cross): 106.7 ms

2024/3/13 15:07 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N WB, Index: 1

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



Correction

X - 70

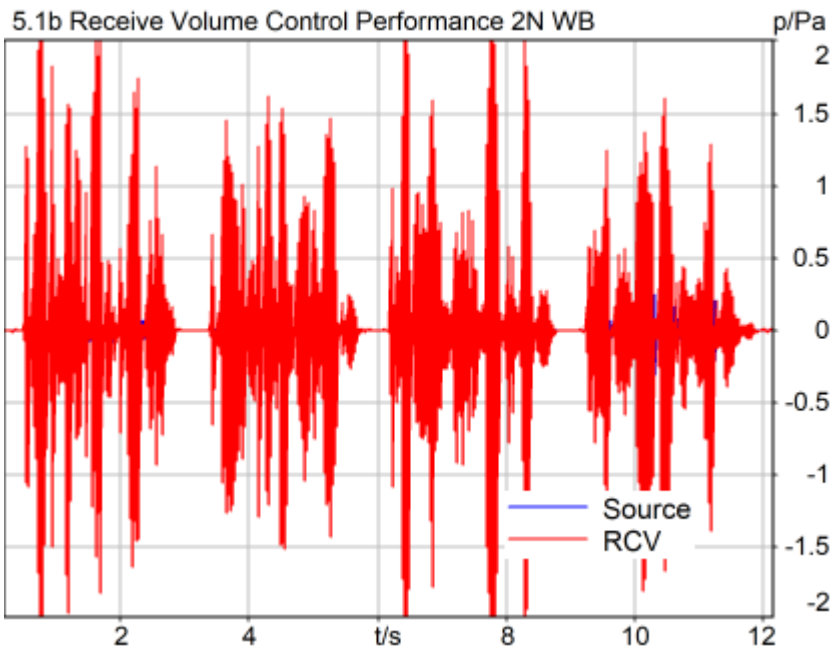
Speech Level RCV: 87.65 dB[SPL], Act.: 82.86%
Corrected Speech Level: 17.65 dB[SPL] Ok

Ok

2024/3/13 15:07 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N WB, Index: 1

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



Correction

X - 70

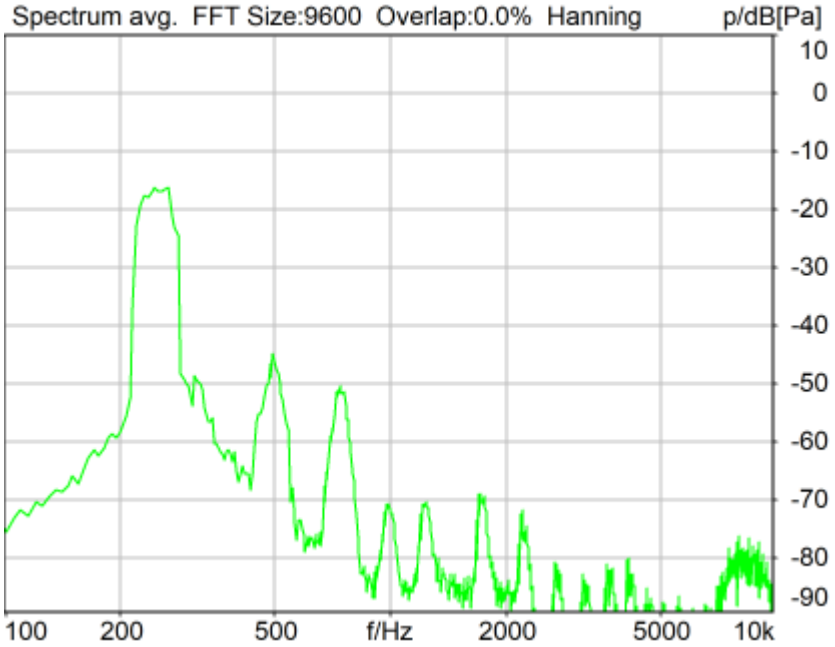
Speech Level RCV: 81.45 dB[SPL], Act.: 82.53%
Corrected Speech Level: 11.45 dB[SPL] Ok

Ok

2024/3/13 14:54 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



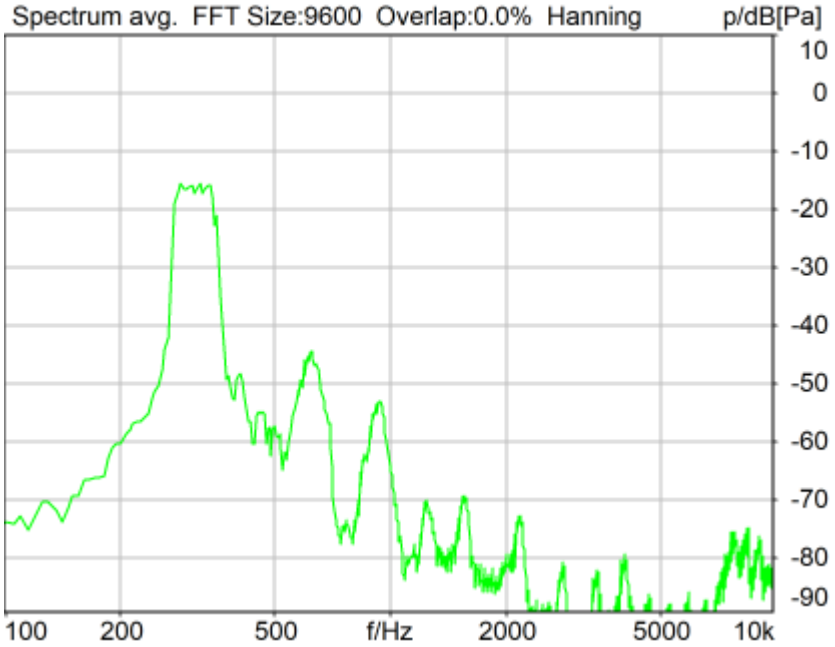
Distortion (Noise) RCV (packed): 30.59 dB (2.96%) Ok

Ok

2024/3/13 15:08 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



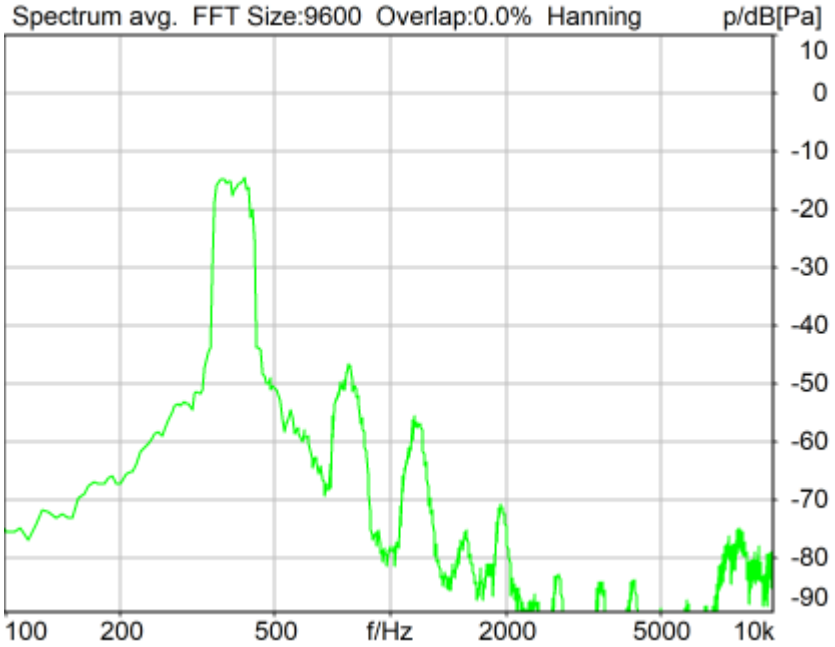
Distortion (Noise) RCV (packed): 29.92 dB (3.19%) Ok

Ok

2024/3/13 15:08 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



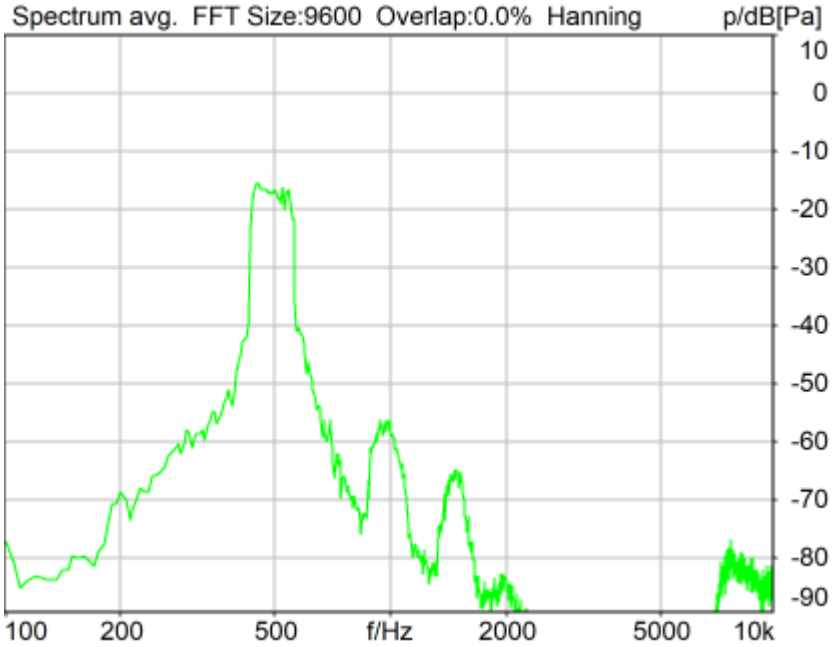
Distortion (Noise) RCV (packed): 31.86 dB (2.55%) Ok

Ok

2024/3/13 15:08 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



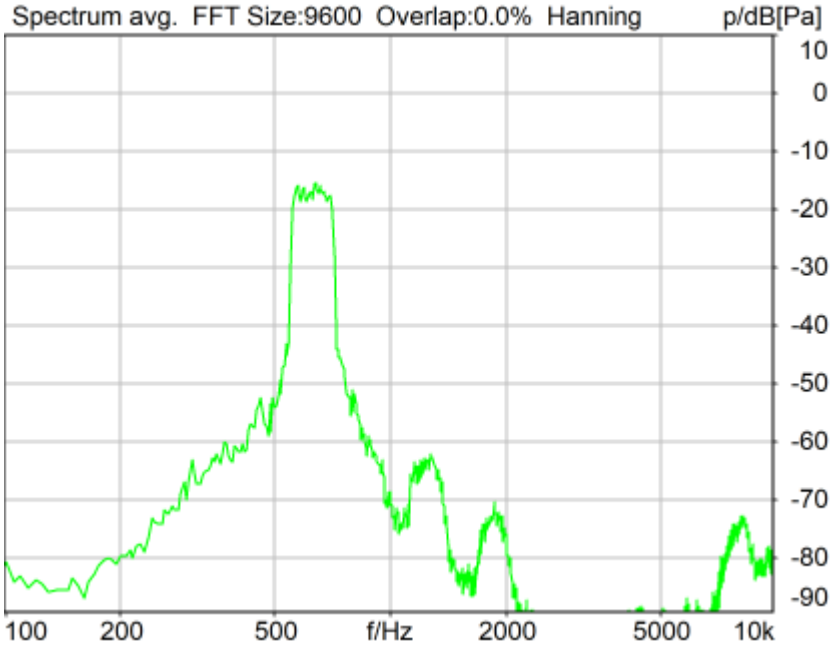
Distortion (Noise) RCV (packed): 33.98 dB (2.00%) Ok

Ok

2024/3/13 15:09 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



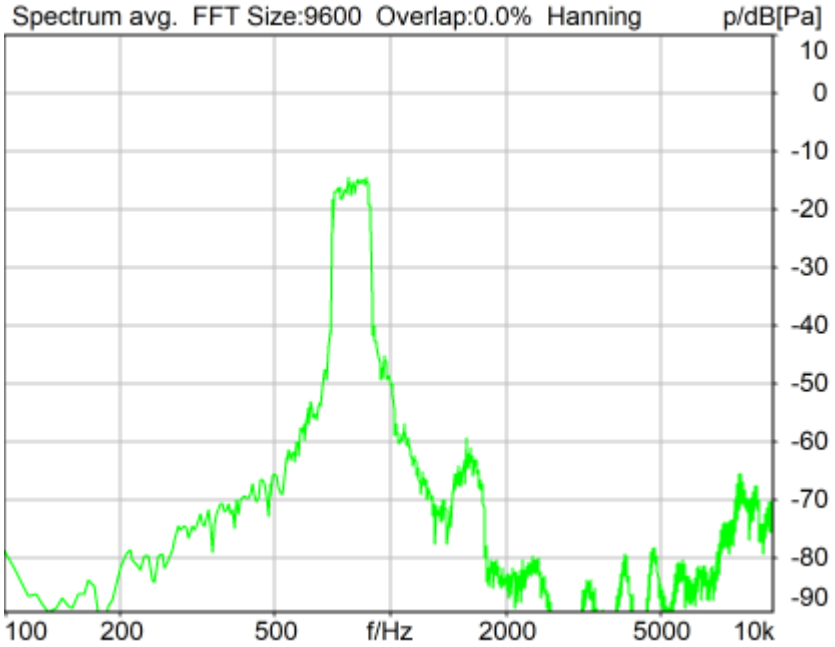
Distortion (Noise) RCV (packed): 35.24 dB (1.73%) Ok

Ok

2024/3/13 15:09 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



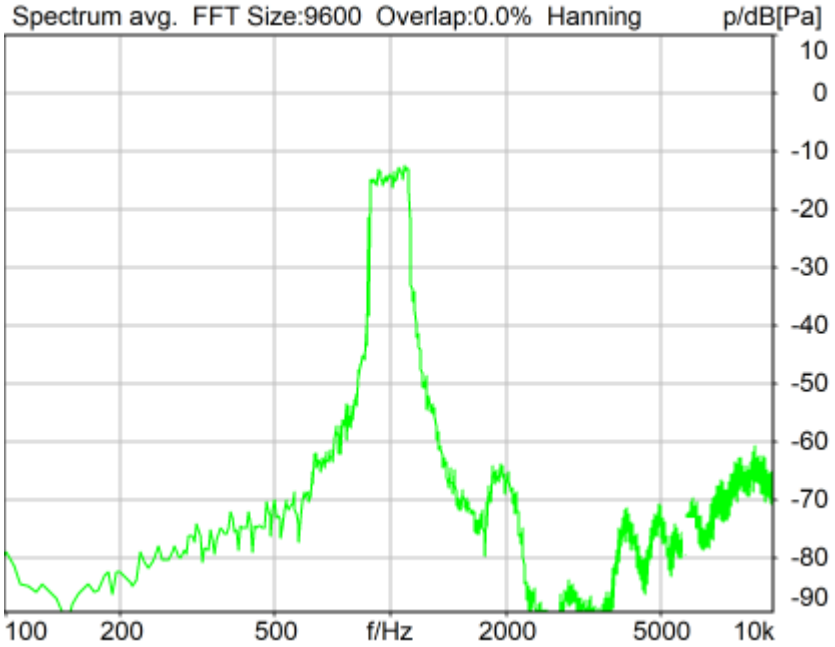
Distortion (Noise) RCV (packed): 33.14 dB (2.20%) Ok

Ok

2024/3/13 15:10 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



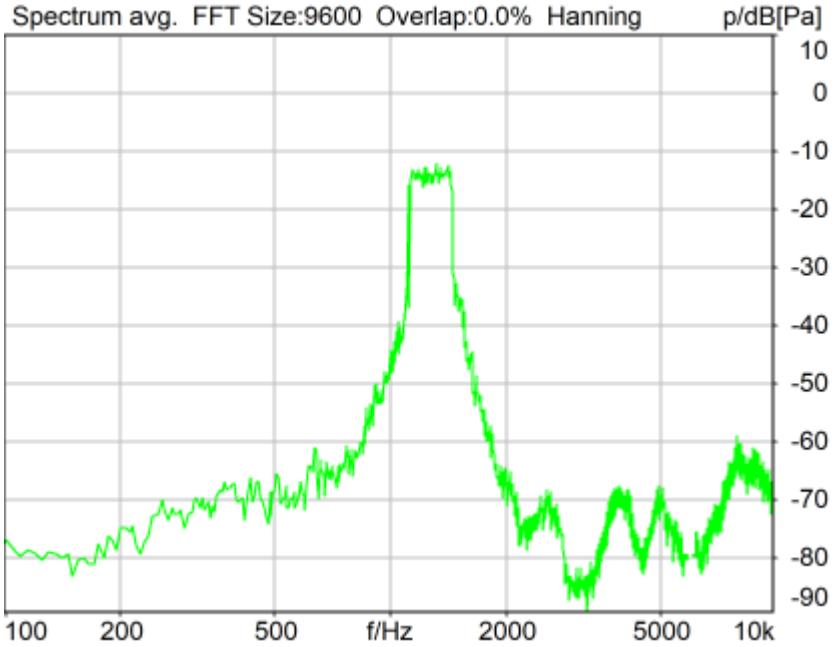
Distortion (Noise) RCV (packed): 32.05 dB (2.50%) Ok

Ok

2024/3/13 15:10 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



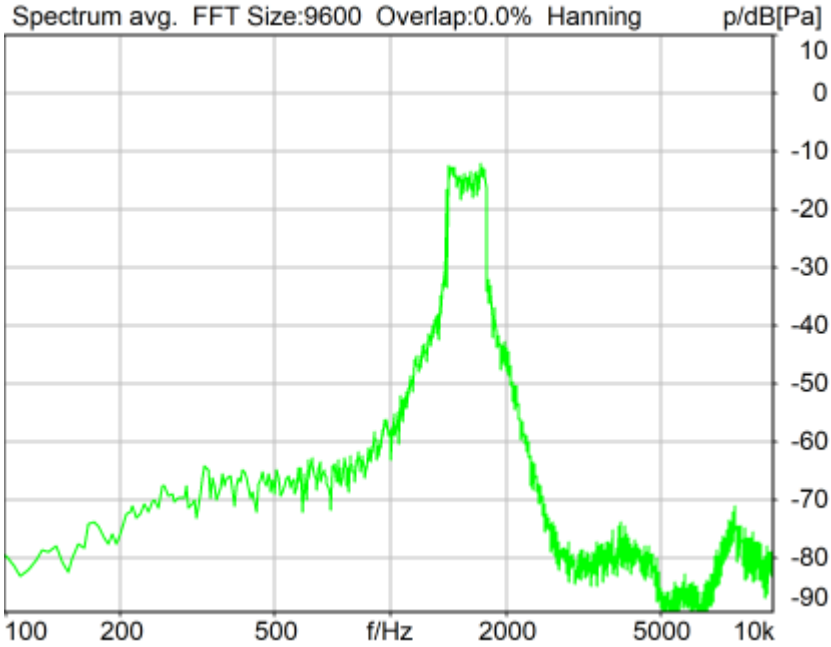
Distortion (Noise) RCV (packed): 24.33 dB (6.07%) Ok

Ok

2024/3/13 15:10 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



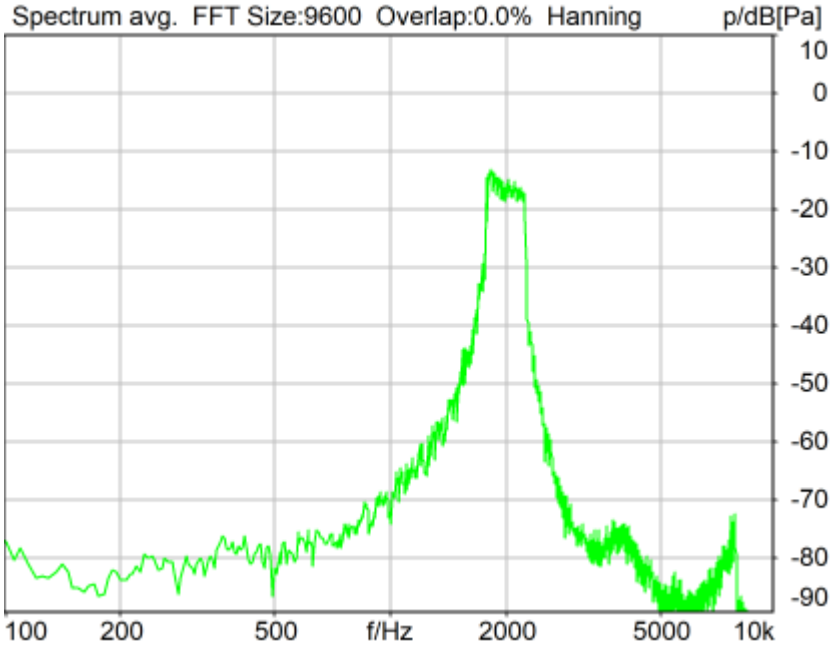
Distortion (Noise) RCV (packed): 24.73 dB (5.80%) Ok

Ok

2024/3/13 15:11 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



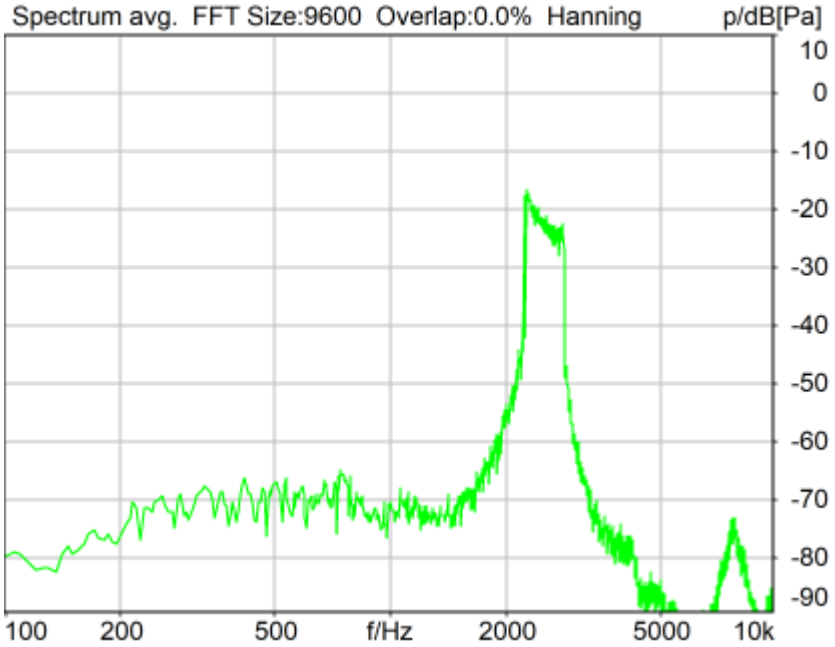
Distortion (Noise) RCV (packed): 22.87 dB (7.18%) Ok

Ok

2024/3/13 15:11 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



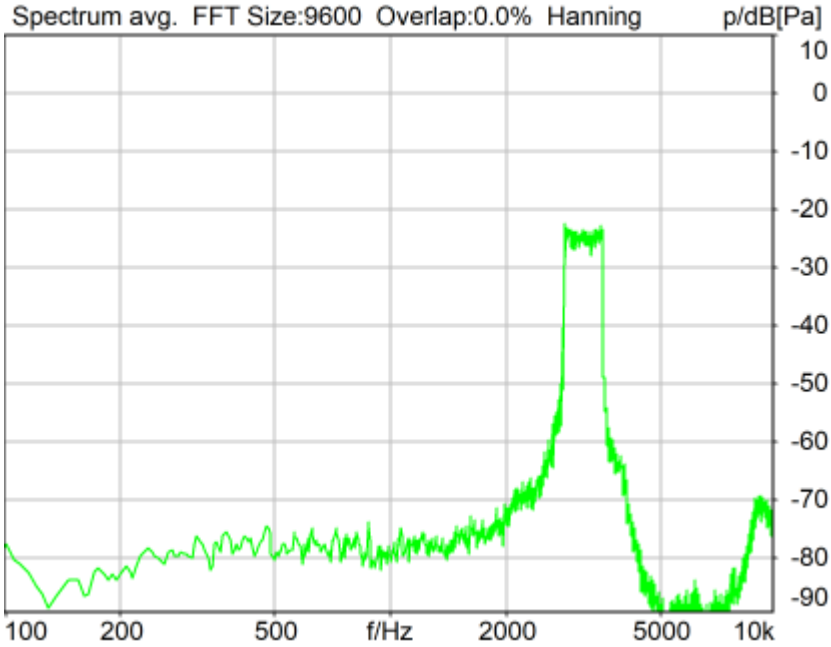
Distortion (Noise) RCV (packed): 29.12 dB (3.50%) Ok

Ok

2024/3/13 15:12 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



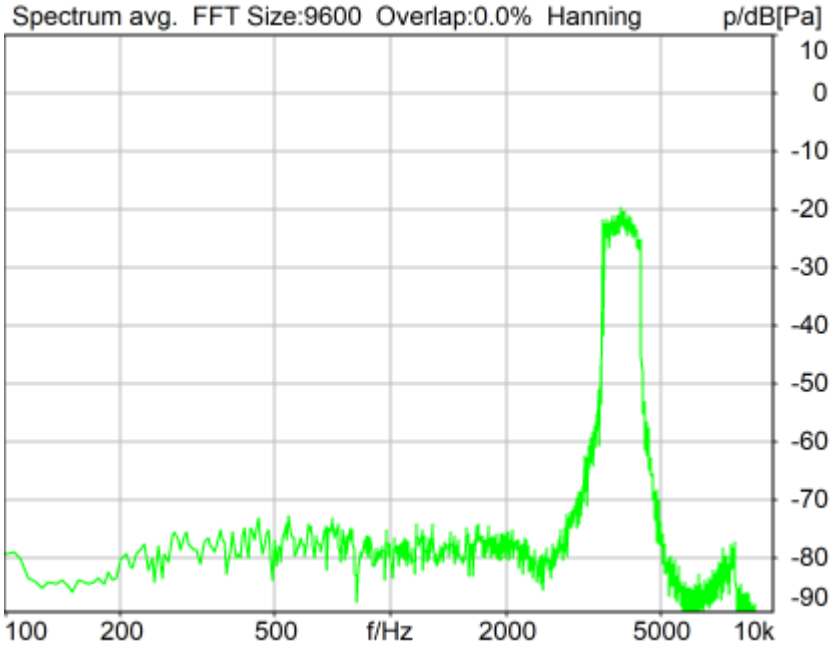
Distortion (Noise) RCV (packed): 32.19 dB (2.46%) Ok

Ok

2024/3/13 15:12 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



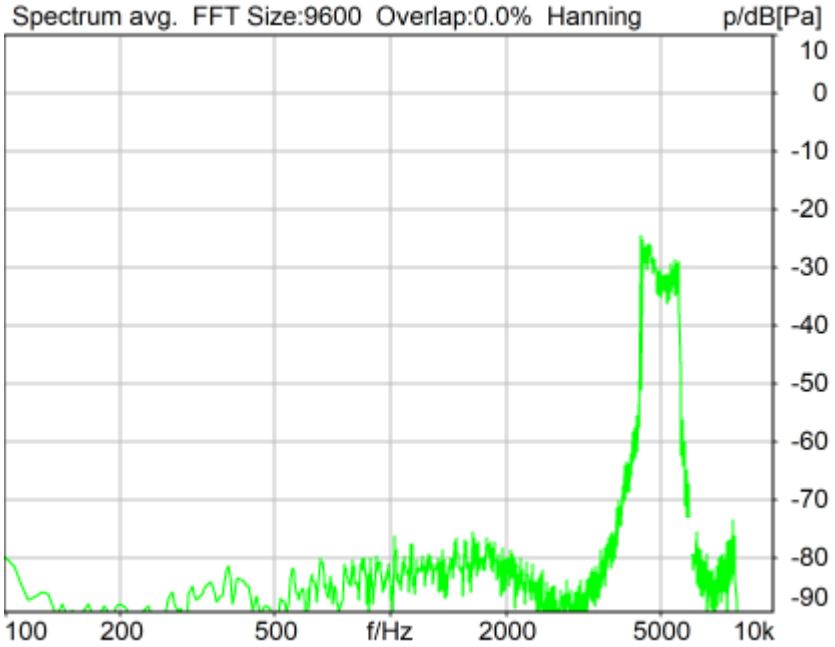
Distortion (Noise) RCV (packed): 34.76 dB (1.83%) Ok

Ok

2024/3/13 15:12 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 32.22 dB (2.45%) Ok

Ok

2024/3/13 15:13 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

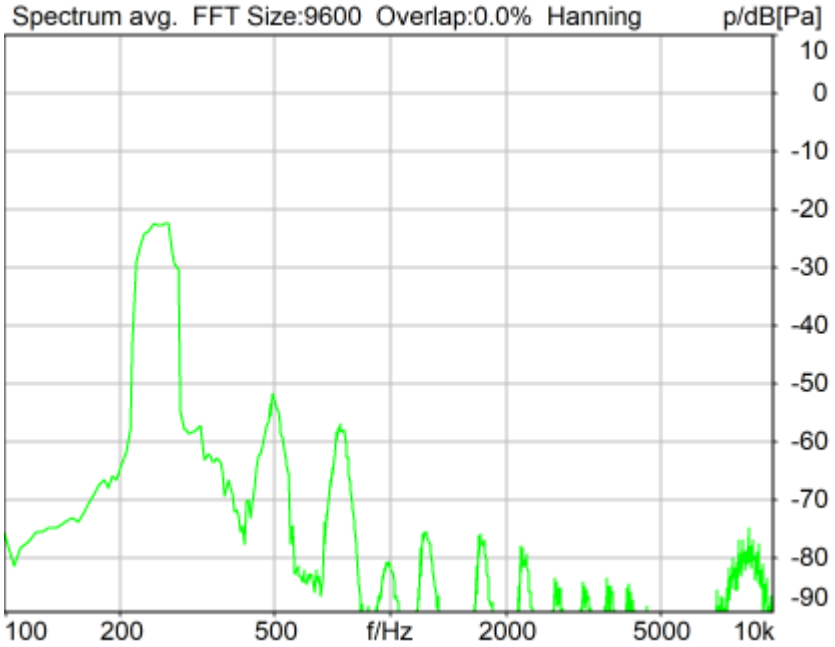
Region	Frequency	SDNR
1	250Hz	30.59 dB
2	315Hz	29.92 dB
3	400Hz	31.86 dB
4	500Hz	33.98 dB
5	630Hz	35.24 dB
6	800Hz	33.14 dB
7	1000Hz	32.05 dB
8	1250Hz	24.33 dB
9	1600Hz	24.73 dB
10	2000Hz	22.87 dB
11	2500Hz	29.12 dB
12	3150Hz	32.19 dB
13	4000Hz	34.76 dB
14	5000Hz	32.22 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 22.87dB at 2000Hz.

2024/3/13 15:13 ACQUA

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



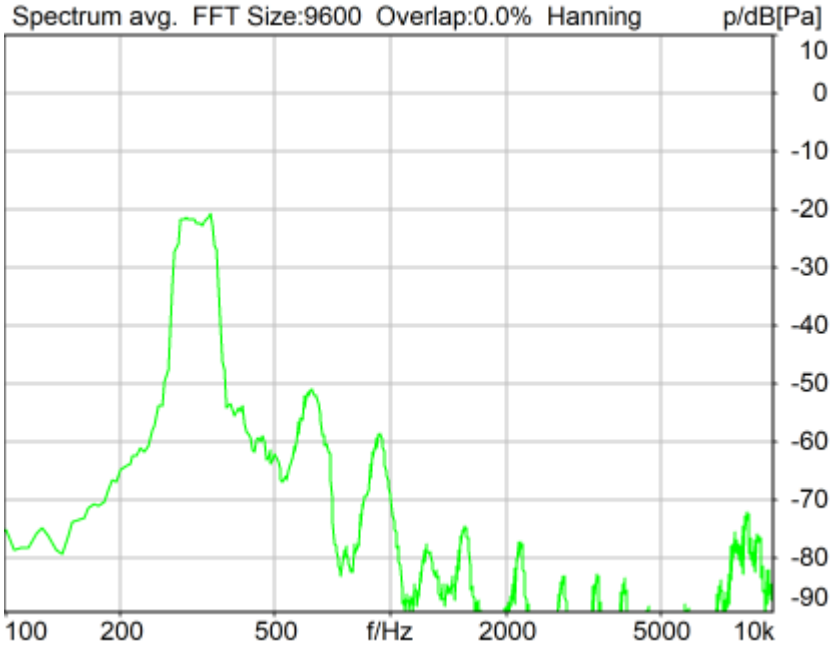
Distortion (Noise) RCV (packed): 30.94 dB (2.84%) Ok

Ok

2024/3/13 14:55 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



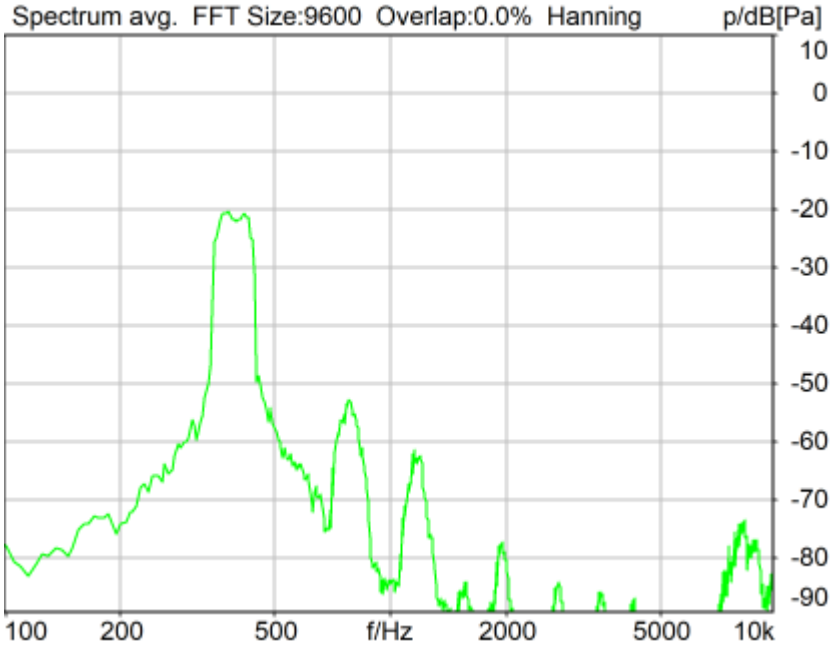
Distortion (Noise) RCV (packed): 29.77 dB (3.25%) Ok

Ok

2024/3/13 14:55 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



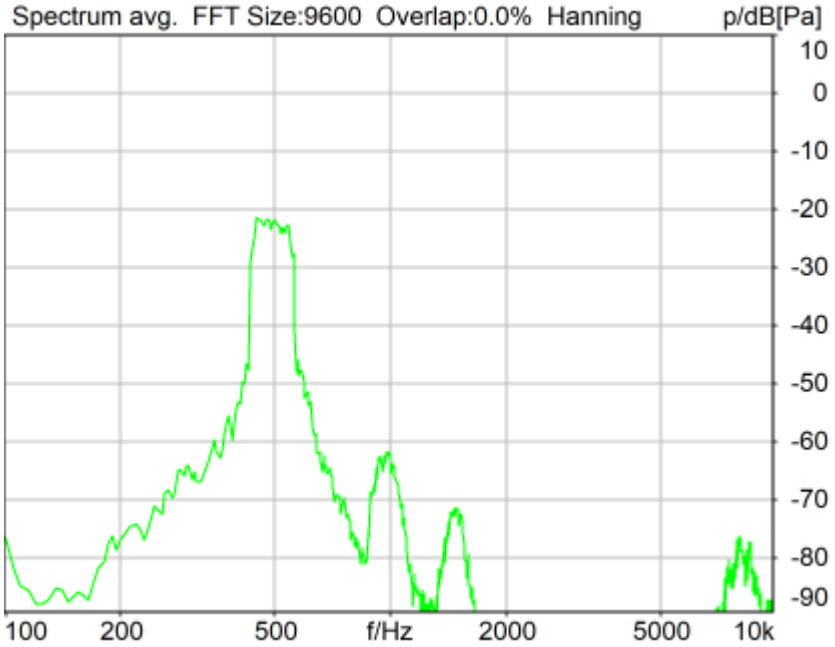
Distortion (Noise) RCV (packed): 31.65 dB (2.61%) Ok

Ok

2024/3/13 14:56 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



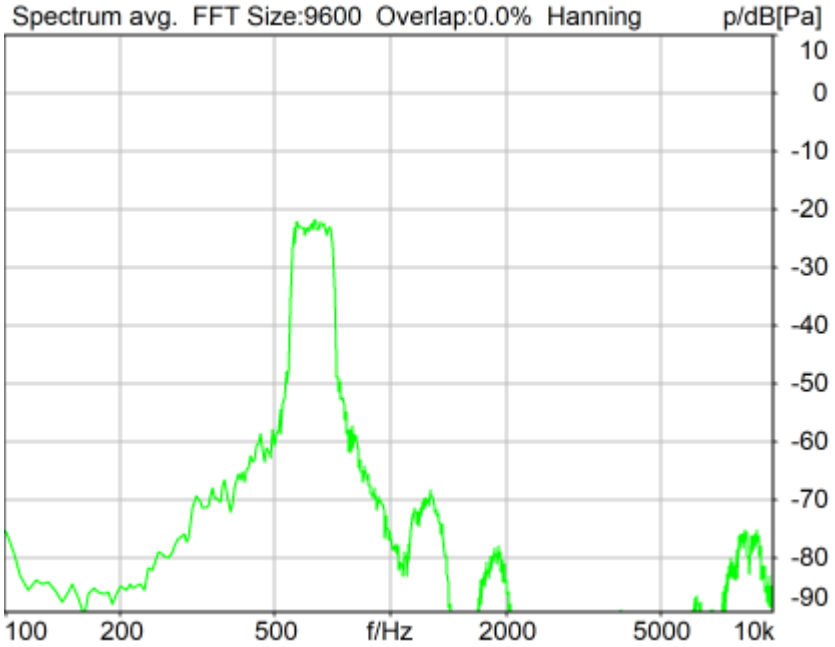
Distortion (Noise) RCV (packed): 33.97 dB (2.00%) Ok

Ok

2024/3/13 14:56 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



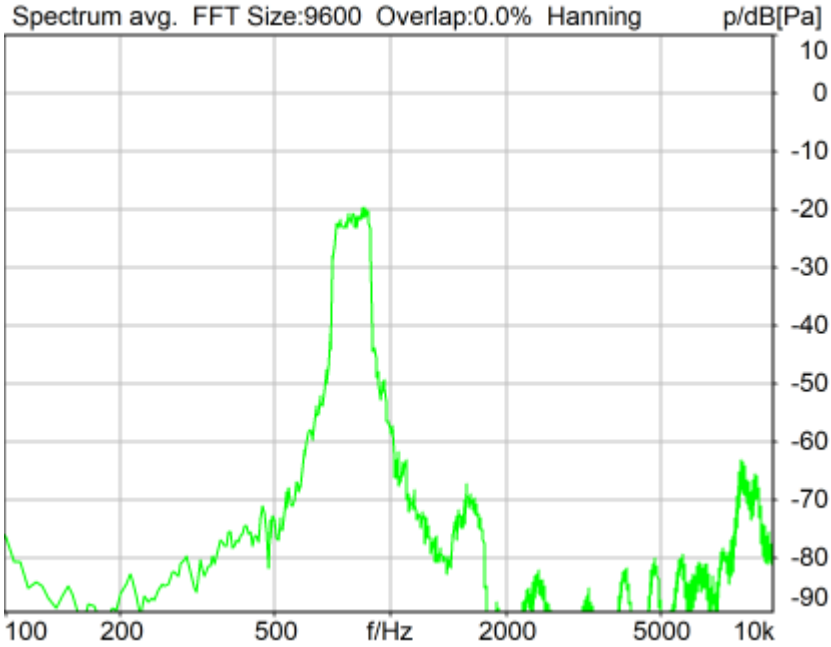
Distortion (Noise) RCV (packed): 35.17 dB (1.74%) Ok

Ok

2024/3/13 14:57 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



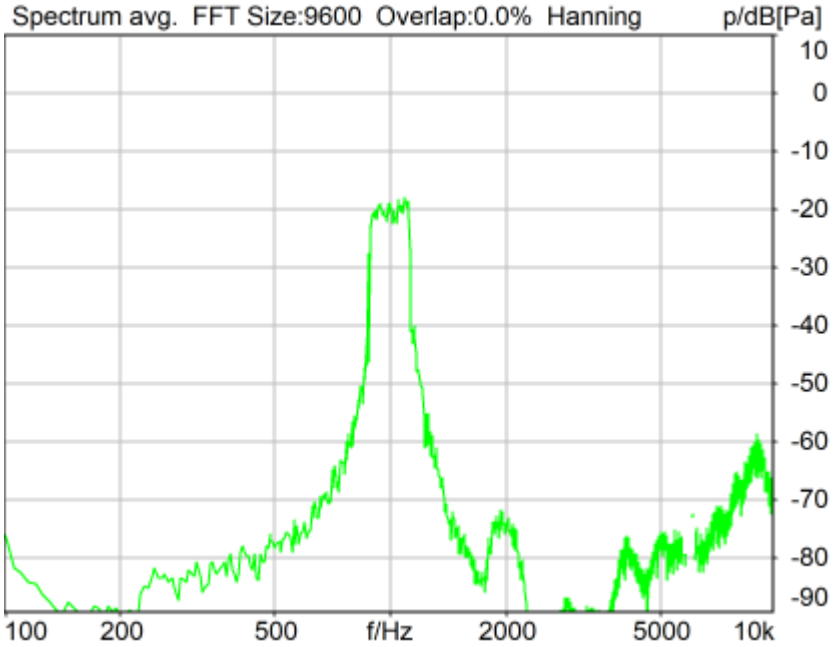
Distortion (Noise) RCV (packed): 31.51 dB (2.66%) Ok

Ok

2024/3/13 14:57 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



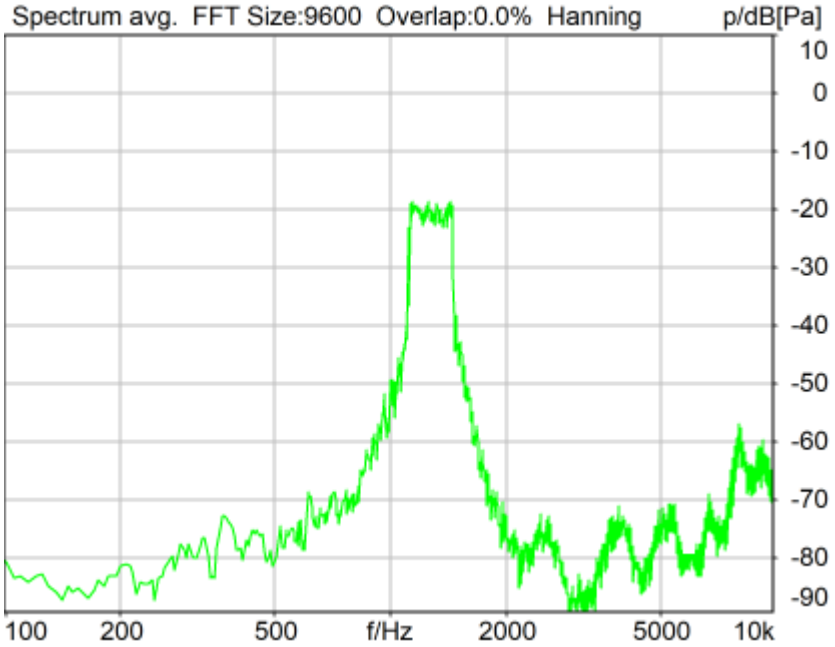
Distortion (Noise) RCV (packed): 30.48 dB (2.99%) Ok

Ok

2024/3/13 14:57 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



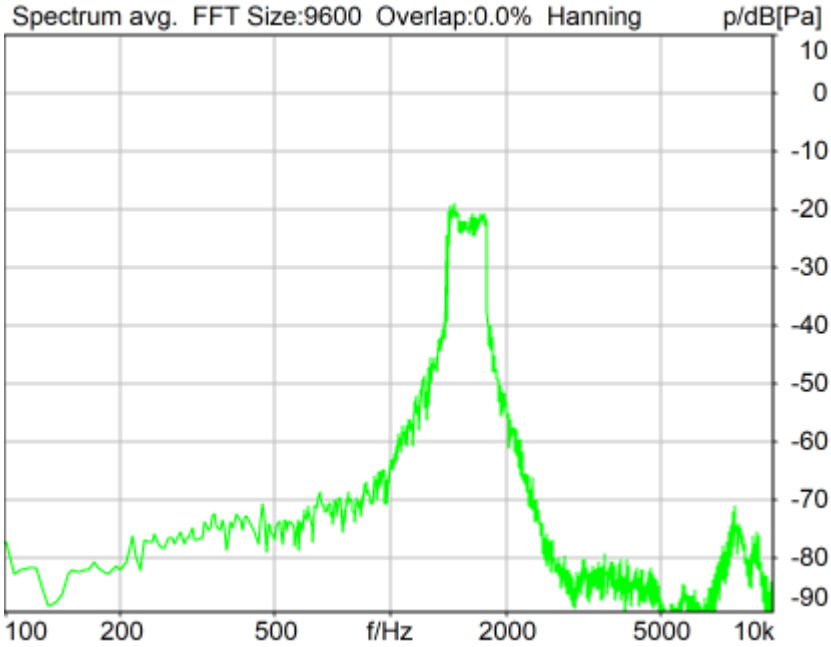
Distortion (Noise) RCV (packed): 23.72 dB (6.52%) Ok

Ok

2024/3/13 14:58 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



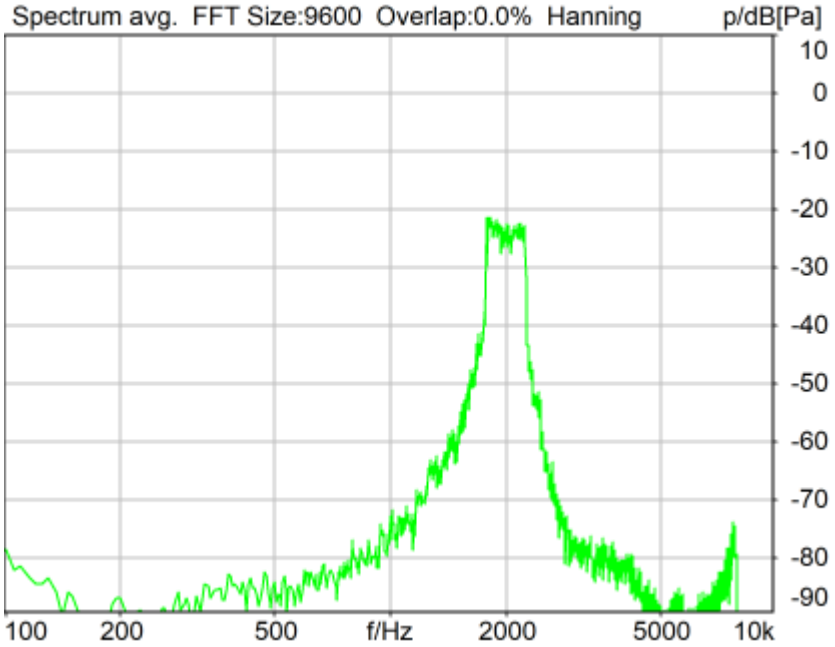
Distortion (Noise) RCV (packed): 24.17 dB (6.18%) Ok

Ok

2024/3/13 14:58 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



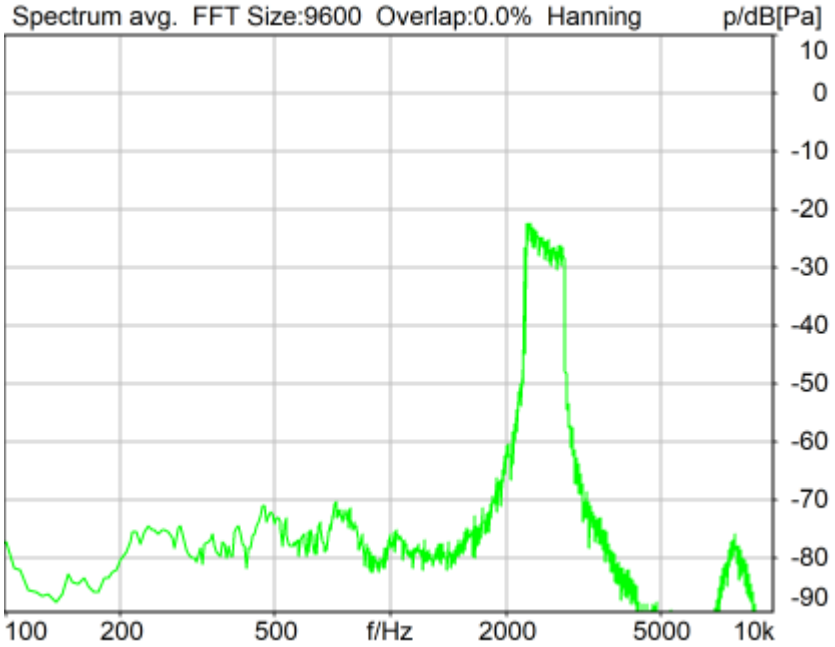
Distortion (Noise) RCV (packed): 23.71 dB (6.52%) Ok

Ok

2024/3/13 14:59 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



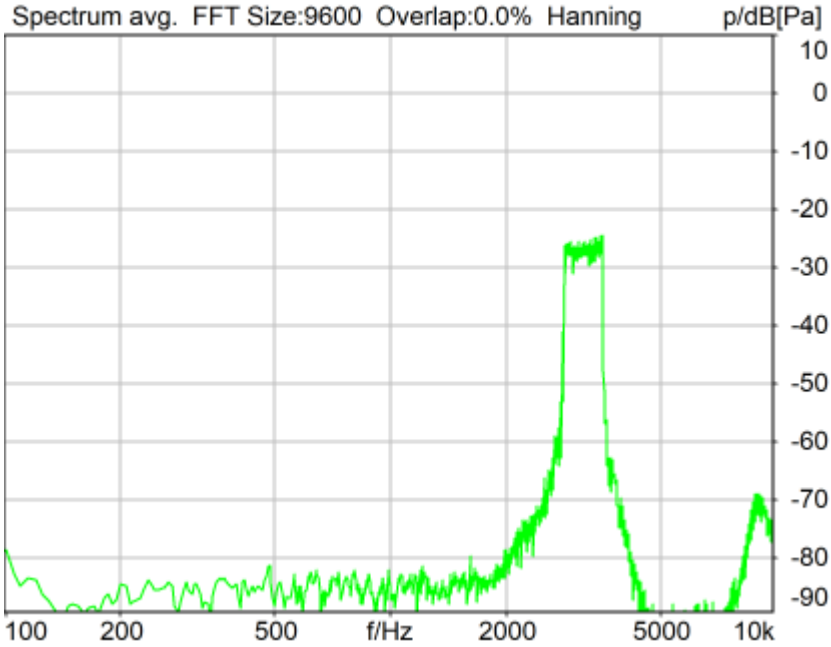
Distortion (Noise) RCV (packed): 30.54 dB (2.97%) Ok

Ok

2024/3/13 14:59 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



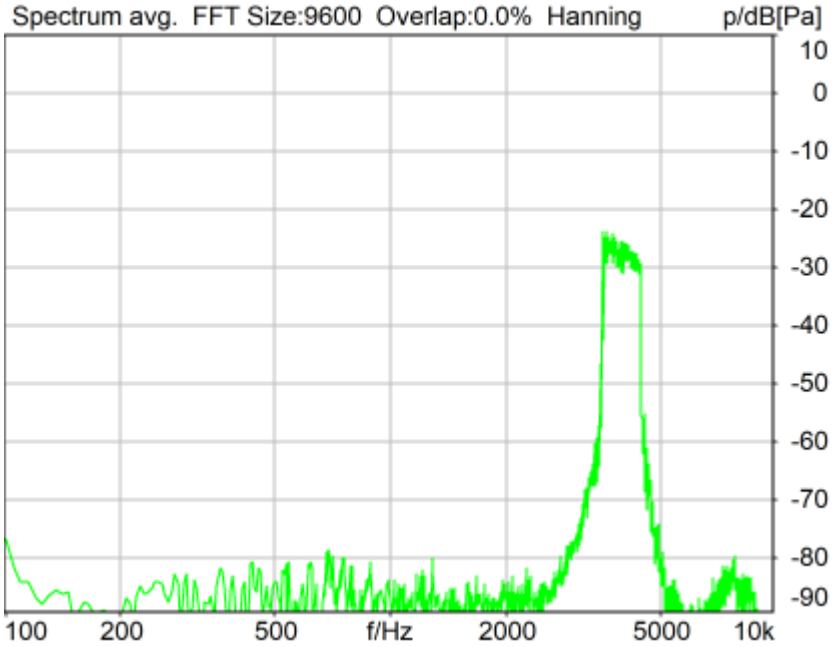
Distortion (Noise) RCV (packed): 33.71 dB (2.06%) Ok

Ok

2024/3/13 14:59 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



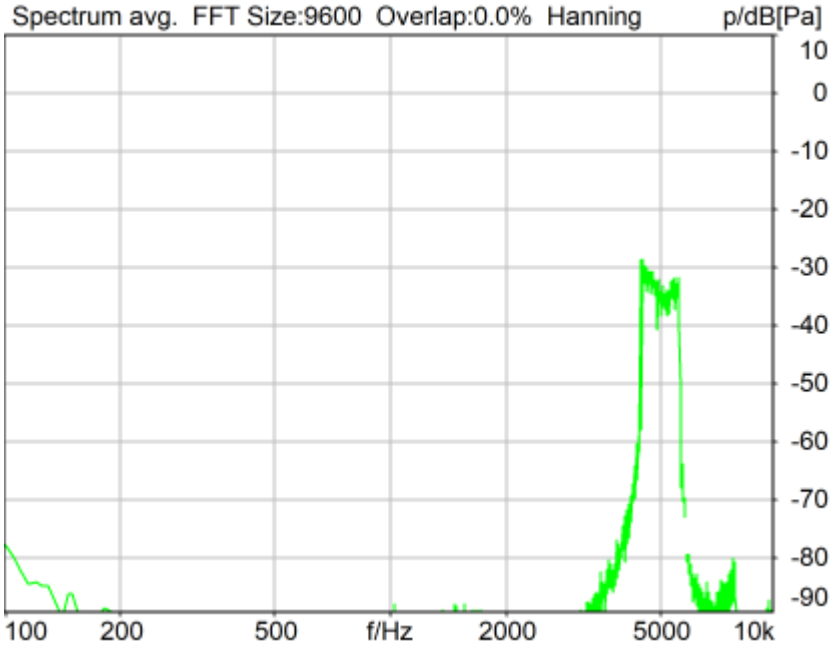
Distortion (Noise) RCV (packed): 35.90 dB (1.60%) Ok

Ok

2024/3/13 15:00 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 35.72 dB (1.64%) Ok

Ok

2024/3/13 15:00 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

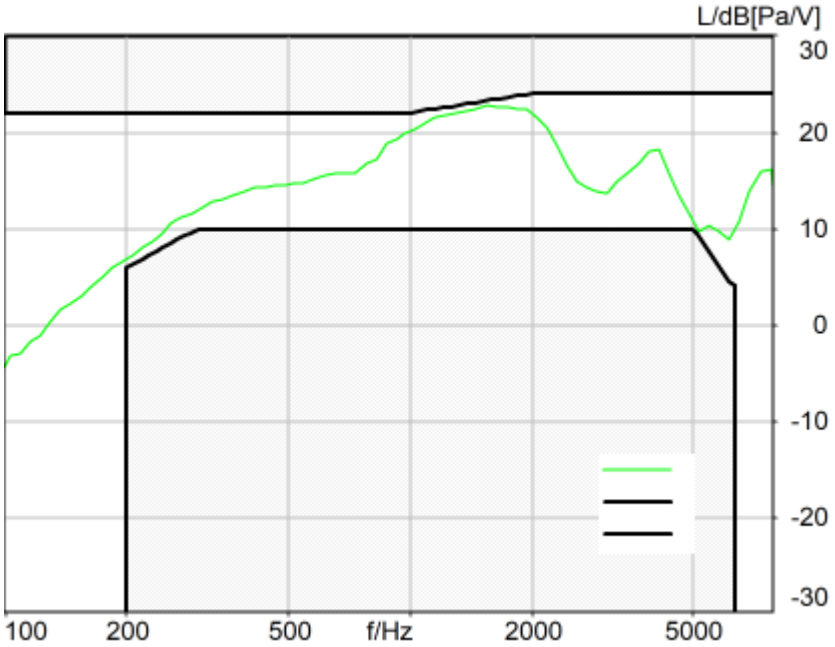
Region	Frequency	SDNR
1	250Hz	30.94 dB
2	315Hz	29.77 dB
3	400Hz	31.65 dB
4	500Hz	33.97 dB
5	630Hz	35.17 dB
6	800Hz	31.51 dB
7	1000Hz	30.48 dB
8	1250Hz	23.72 dB
9	1600Hz	24.17 dB
10	2000Hz	23.71 dB
11	2500Hz	30.54 dB
12	3150Hz	33.71 dB
13	4000Hz	35.90 dB
14	5000Hz	35.72 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 23.71dB at 2000Hz.

2024/3/13 15:00 ACQUA

5.3 Frequency Response 8N FF, Index: 1

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



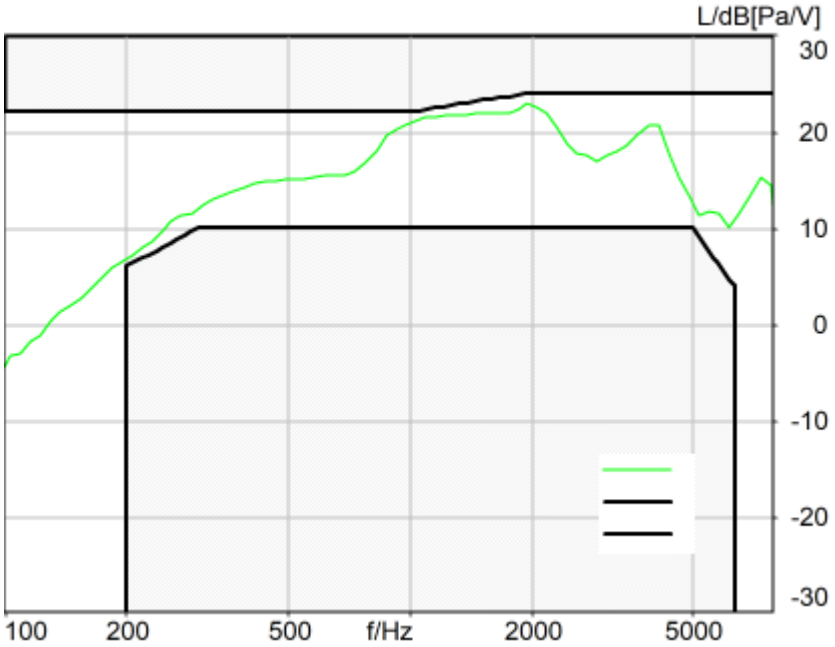
Absolute minimal distance
0.51 dB at 5143.7 Hz Ok

Ok

2024/3/13 15:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF, Index: 1

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



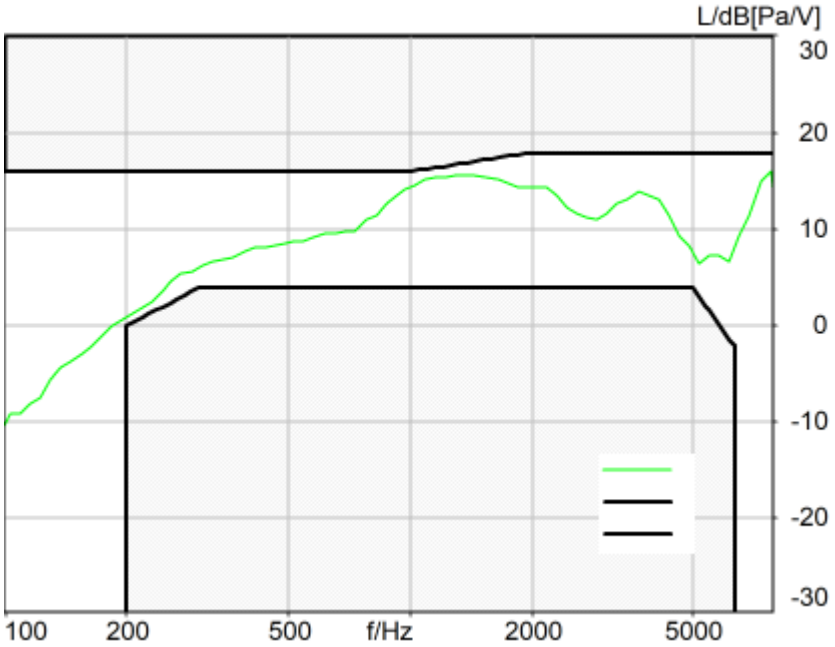
Absolute minimal distance
0.89 dB at 205.7 Hz Ok

Ok

2024/3/13 15:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF, Index: 1

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



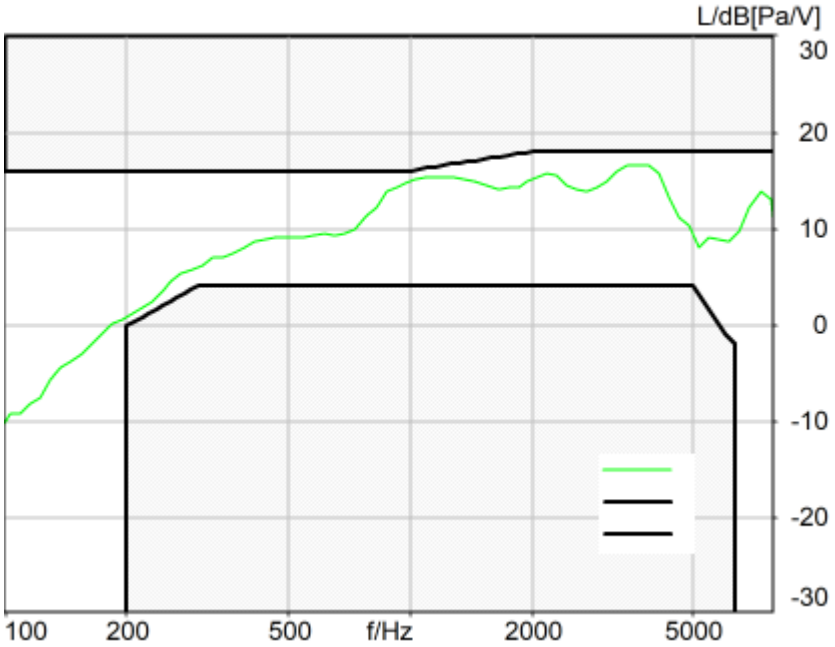
Absolute minimal distance
1.01 dB at 1151.2 Hz Ok

Ok

2024/3/13 15:01 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF, Index: 1

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



Absolute minimal distance
0.94 dB at 205.7 Hz Ok

Ok

2024/3/13 15:05 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

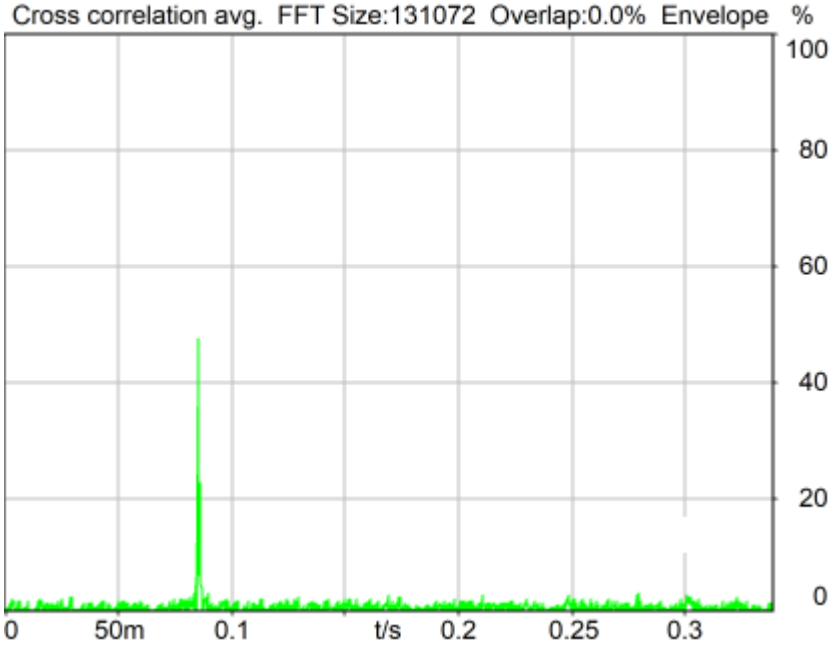
Measurement Object	LTE Band 13_10QPSK_50_0_EVS NB 24.4kbps_CH23230
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:47
Responsible Person	audio

Overall Receive Delay NB, Index: 1 3
5.1a Receive Volume Control Performance 8N NB, Index: 1 3
5.1b Receive Volume Control Performance 2N NB, Index: 1 4
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 5
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 6
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 8
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 10
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 11
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 11
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 12
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 14
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 16
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 18
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 19
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 19
5.3 Frequency Response 8N FF HANB, Index: 1 20
5.3 Frequency Response 8N DF HANB, Index: 1 21
5.3 Frequency Response 2N FF HANB, Index: 1 21
5.3 Frequency Response 2N DF HANB, Index: 1 22

Overall Receive Delay NB, Index: 1

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

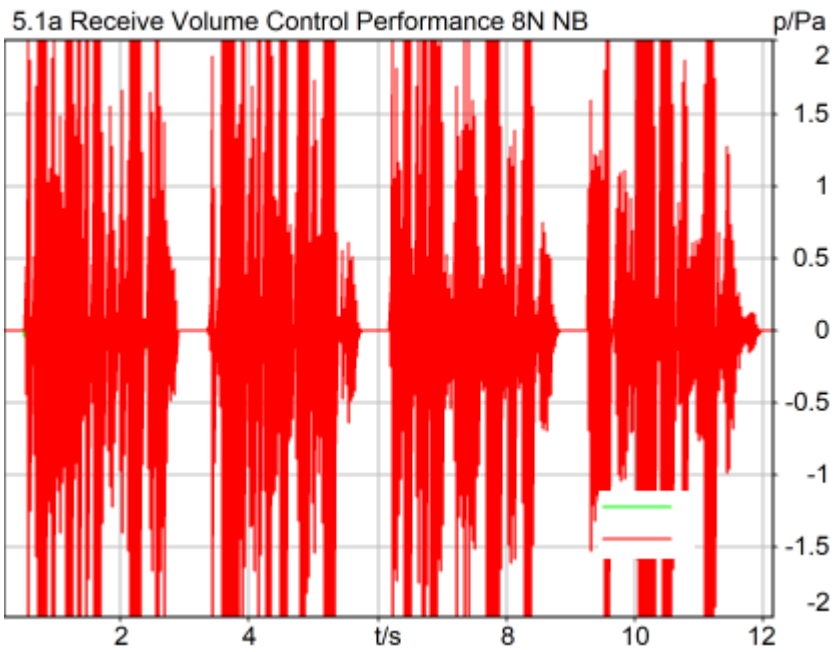


Delay (Cross): 85.7 ms

2024/3/12 21:58 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N NB, Index: 1

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



Correction

X - 70

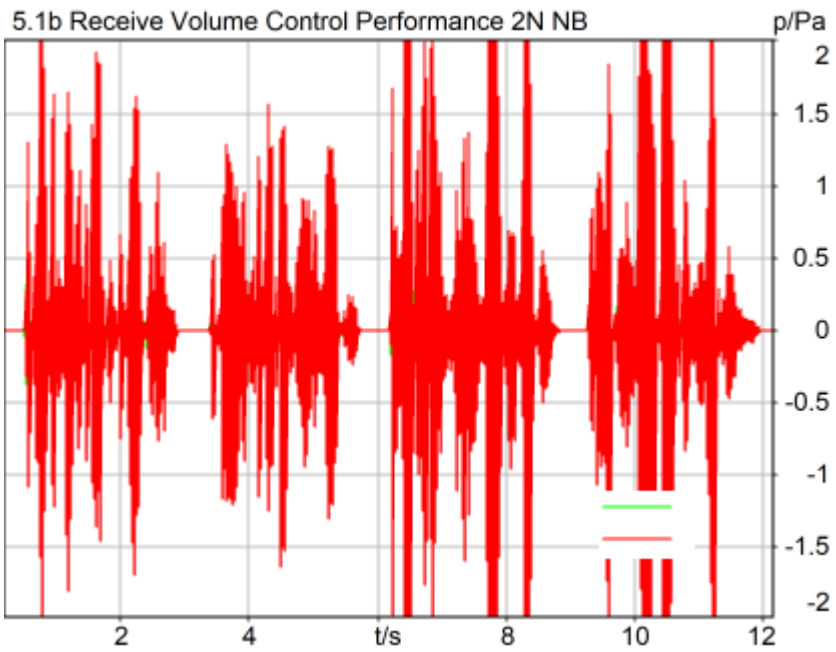
Speech Level RCV: 91.15 dB[SPL], Act.: 82.50%
Corrected Speech Level: 21.15 dB[SPL] Ok

Ok

2024/3/12 21:58 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N NB, Index: 1

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



Correction

X - 70

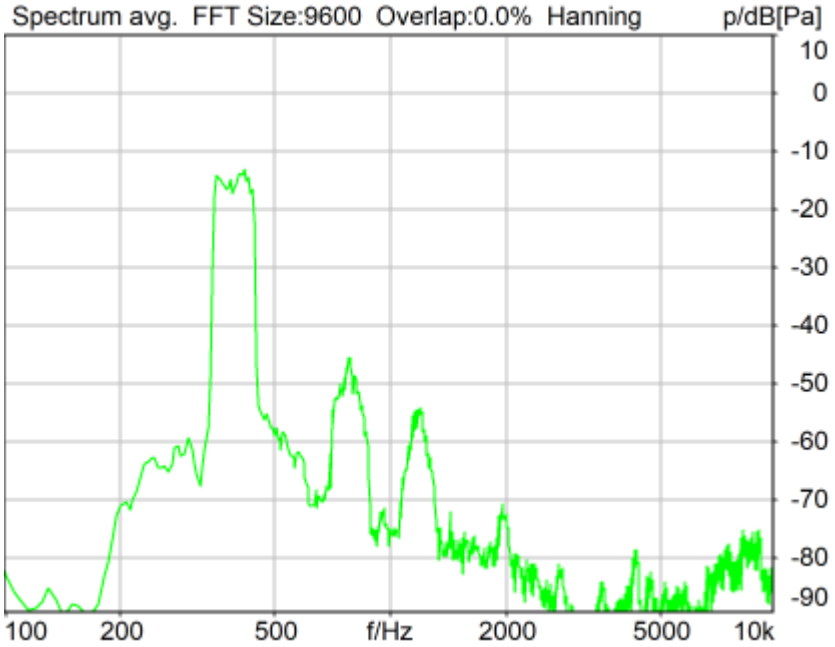
Speech Level RCV: 84.07 dB[SPL], Act.: 81.23%
Corrected Speech Level: 14.07 dB[SPL] Ok

Ok

2024/3/12 23:52 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



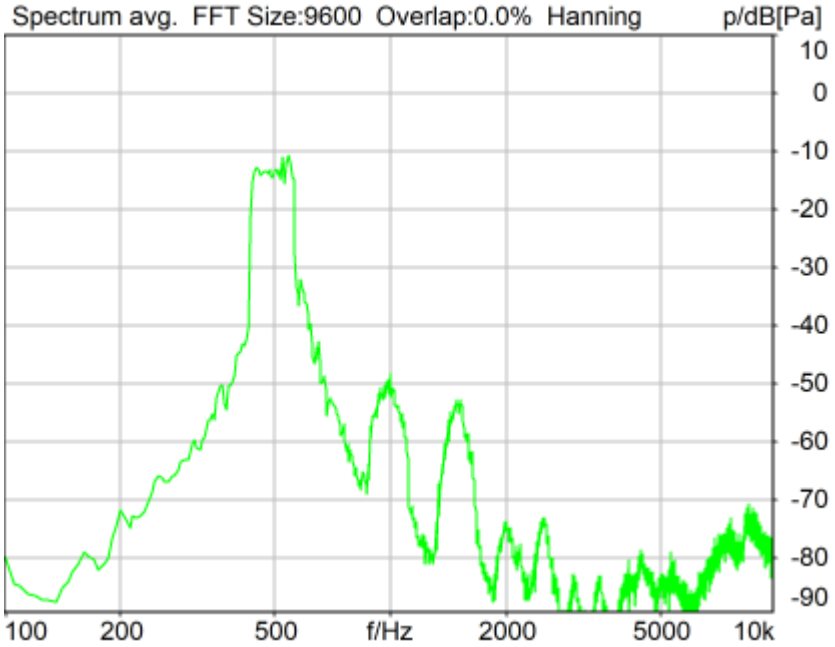
Distortion (Noise) RCV (packed): 32.33 dB (2.42%) Ok

Ok

2024/3/12 21:59 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



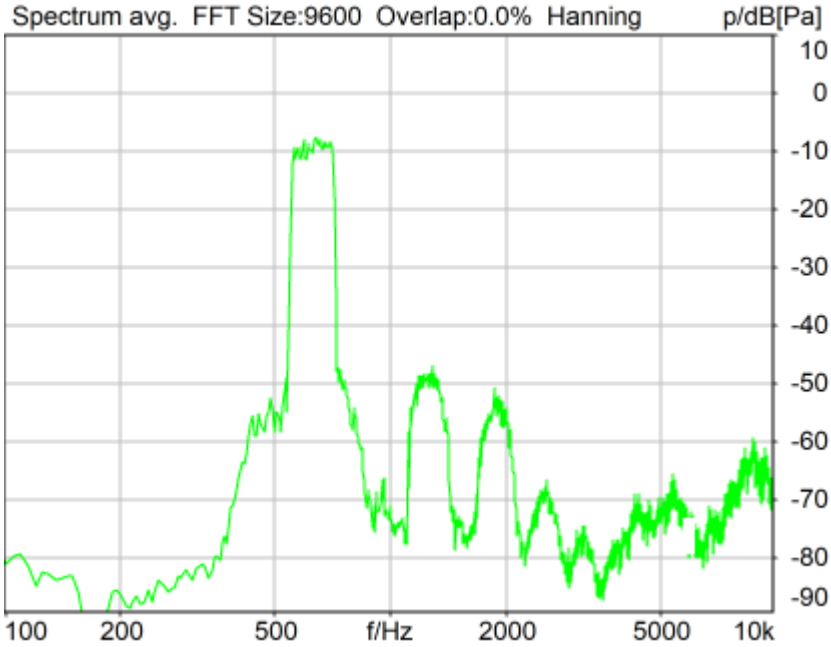
Distortion (Noise) RCV (packed): 30.22 dB (3.08%) Ok

Ok

2024/3/12 21:59 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



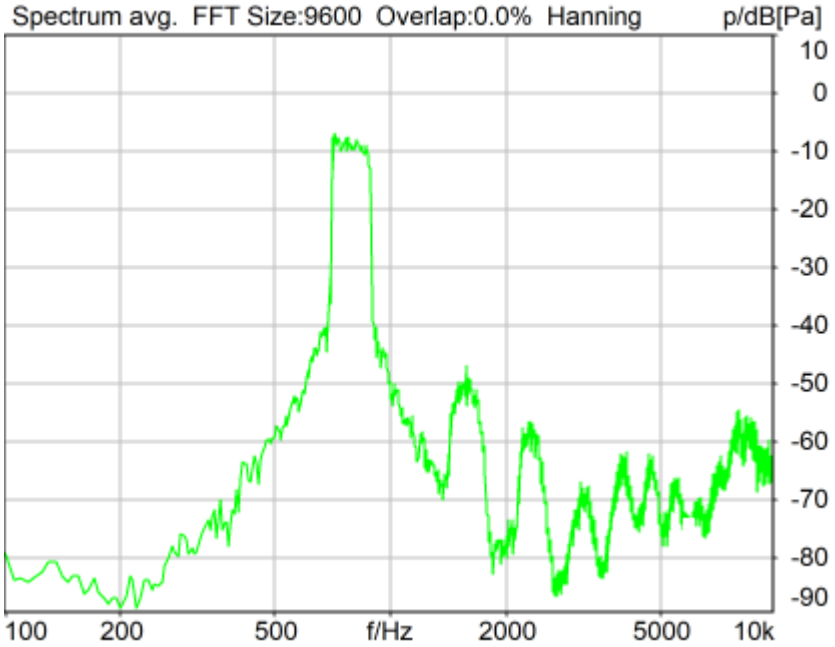
Distortion (Noise) RCV (packed): 35.65 dB (1.65%) Ok

Ok

2024/3/12 22:00 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



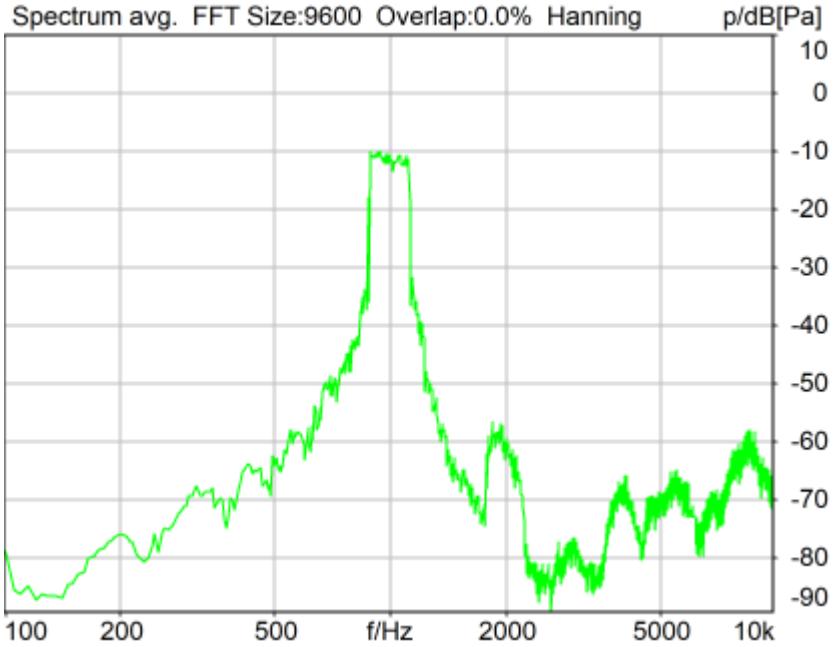
Distortion (Noise) RCV (packed): 33.76 dB (2.05%) Ok

Ok

2024/3/12 22:00 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



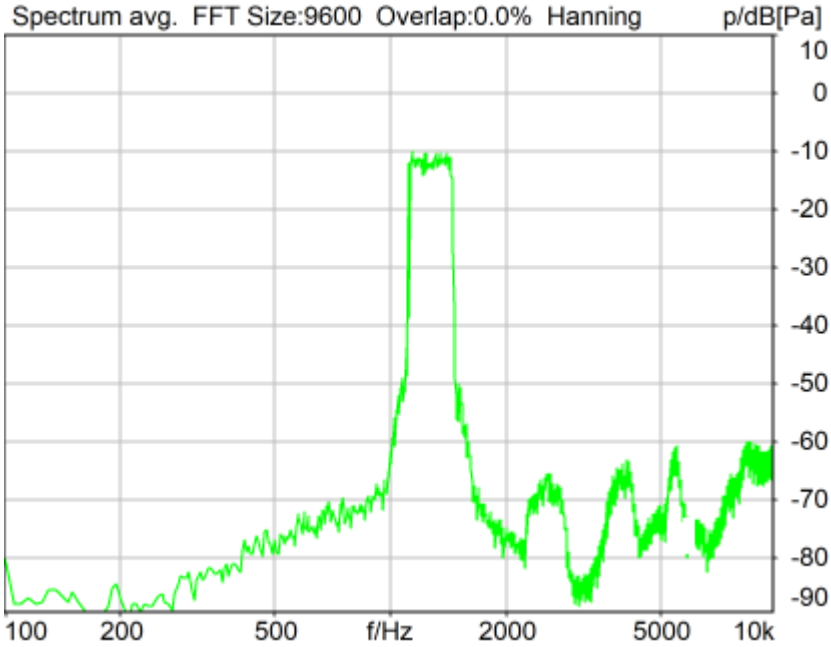
Distortion (Noise) RCV (packed): 30.36 dB (3.03%) Ok

Ok

2024/3/12 22:01 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



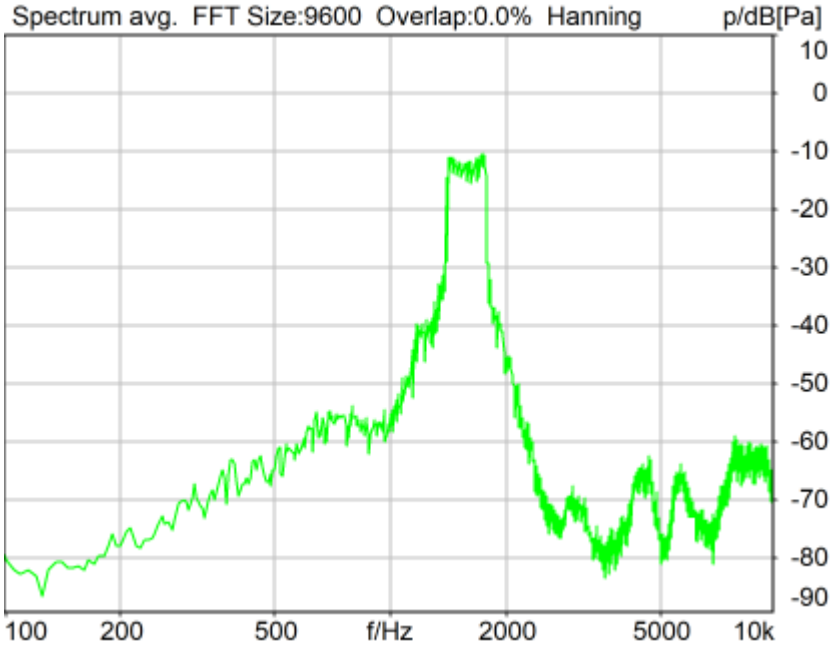
Distortion (Noise) RCV (packed): 32.17 dB (2.46%) Ok

Ok

2024/3/12 22:01 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



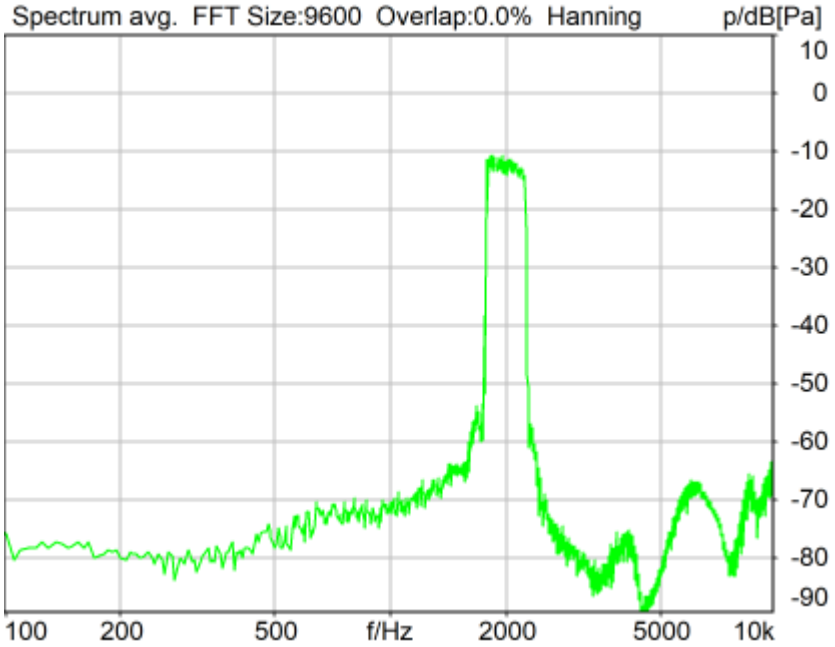
Distortion (Noise) RCV (packed): 25.06 dB (5.59%) Ok

Ok

2024/3/12 22:01 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



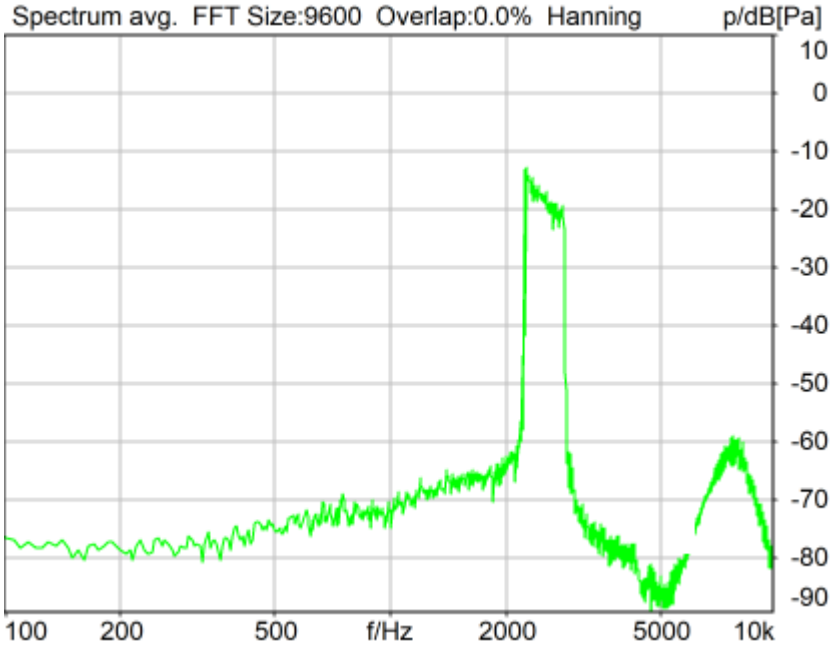
Distortion (Noise) RCV (packed): 43.17 dB (0.69%) Ok

Ok

2024/3/12 22:02 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



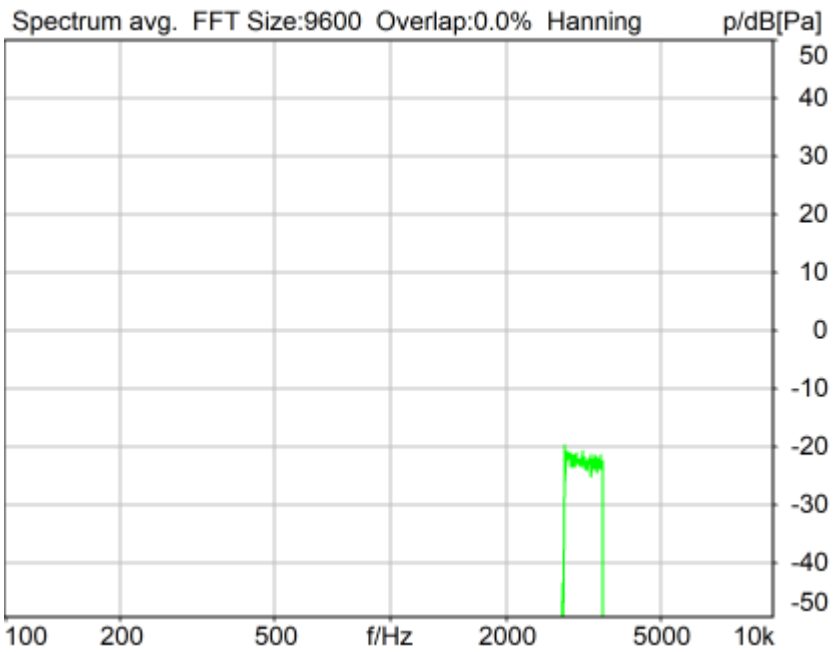
Distortion (Noise) RCV (packed): 37.52 dB (1.33%) Ok

Ok

2024/3/12 22:02 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 37.16 dB (1.39%) Ok

Ok

2024/3/12 22:03 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

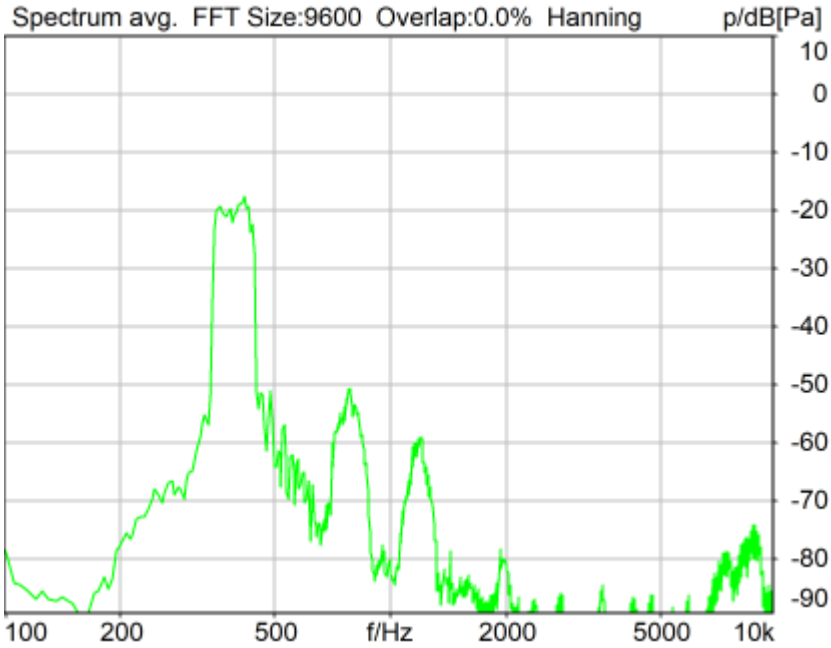
Region	Frequency	SDNR
1	400Hz	32.33 dB
2	500Hz	30.22 dB
3	630Hz	35.65 dB
4	800Hz	33.76 dB
5	1000Hz	30.36 dB
6	1250Hz	32.17 dB
7	1600Hz	25.06 dB
8	2000Hz	43.17 dB
9	2500Hz	37.52 dB
10	3150Hz	37.16 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 25.06dB at 1600Hz.

2024/3/12 22:03 ACQUA

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



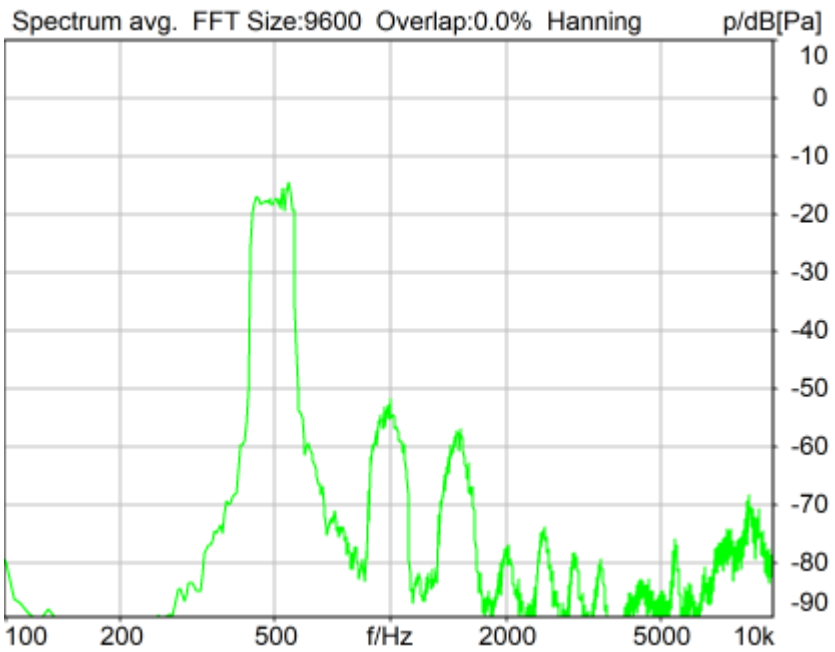
Distortion (Noise) RCV (packed): 31.90 dB (2.54%) Ok

Ok

2024/3/12 23:52 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



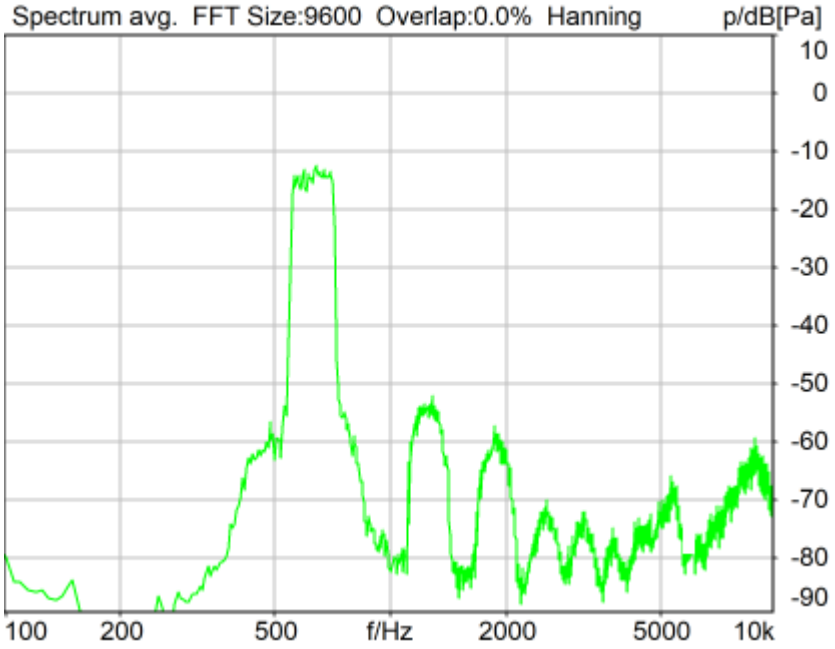
Distortion (Noise) RCV (packed): 34.34 dB (1.92%) Ok

Ok

2024/3/12 23:53 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



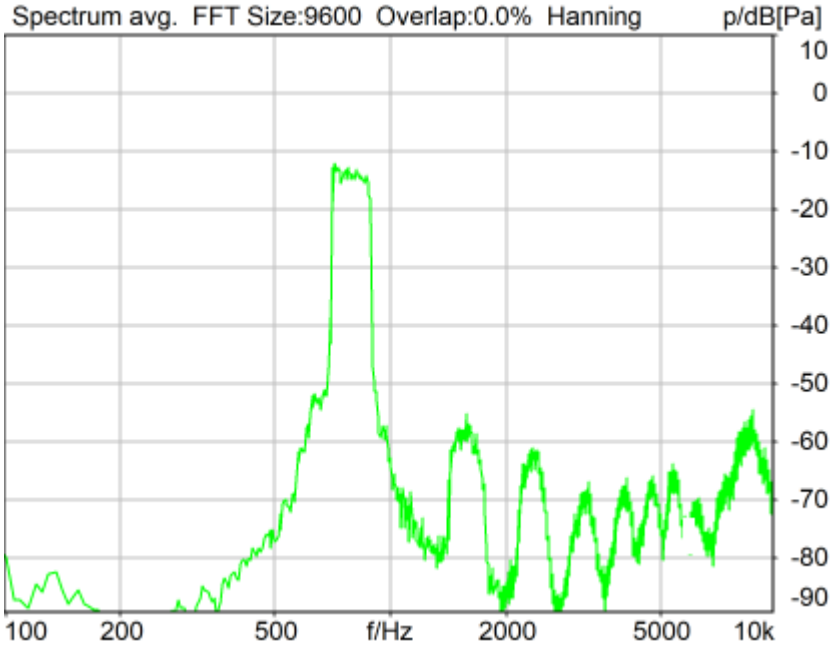
Distortion (Noise) RCV (packed): 34.94 dB (1.79%) Ok

Ok

2024/3/12 23:53 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



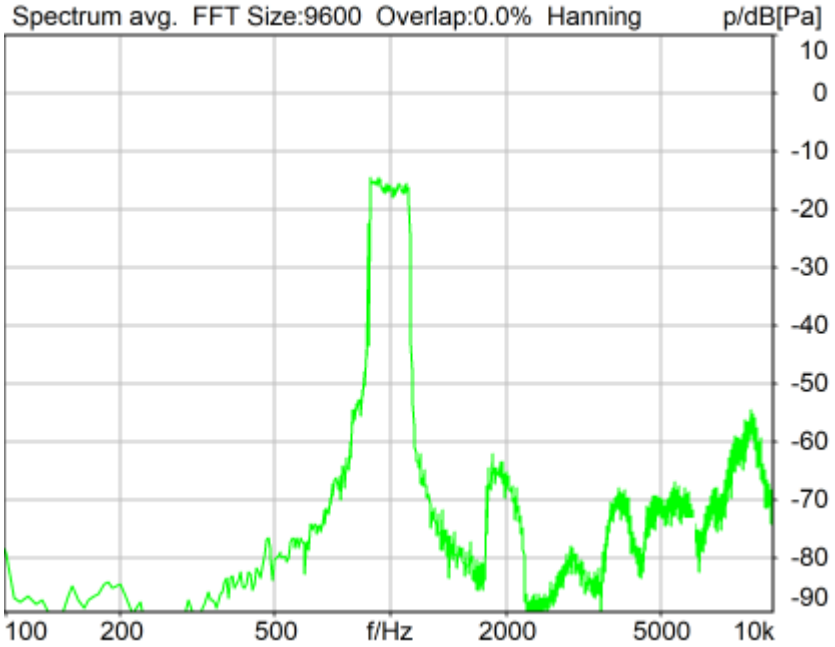
Distortion (Noise) RCV (packed): 34.64 dB (1.85%) Ok

Ok

2024/3/12 23:54 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



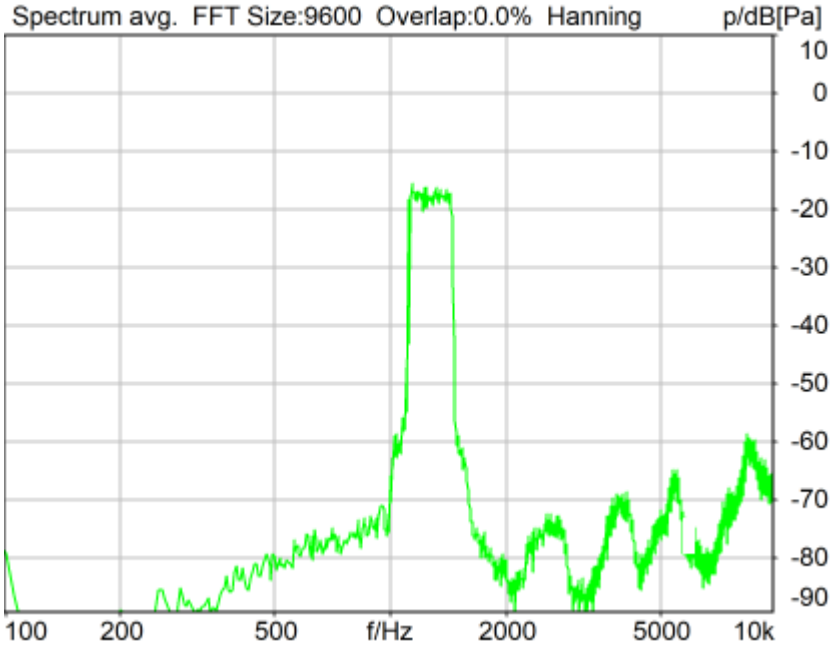
Distortion (Noise) RCV (packed): 34.74 dB (1.83%) Ok

Ok

2024/3/12 23:54 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



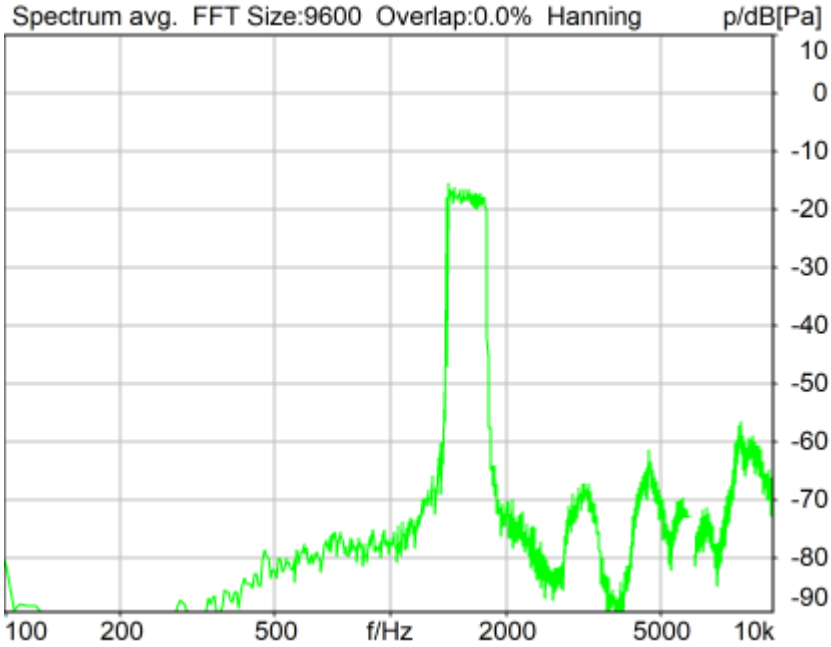
Distortion (Noise) RCV (packed): 31.34 dB (2.71%) Ok

Ok

2024/3/12 23:54 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



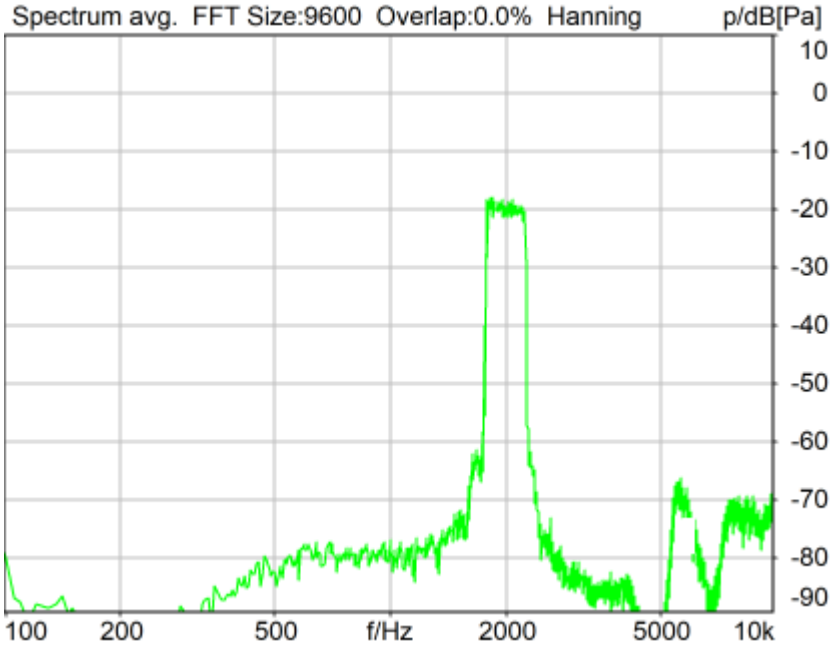
Distortion (Noise) RCV (packed): 36.86 dB (1.44%) Ok

Ok

2024/3/12 23:55 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



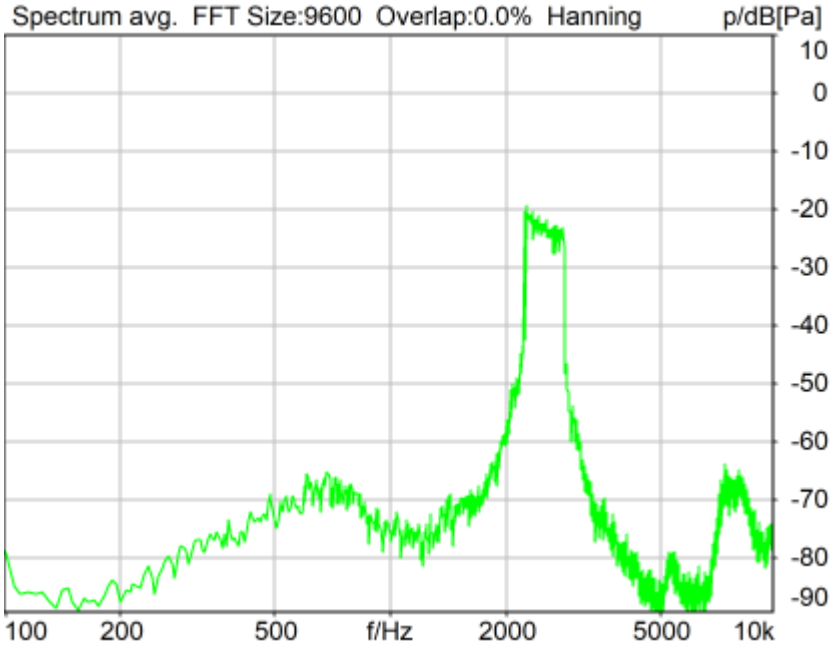
Distortion (Noise) RCV (packed): 41.78 dB (0.82%) Ok

Ok

2024/3/12 23:55 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



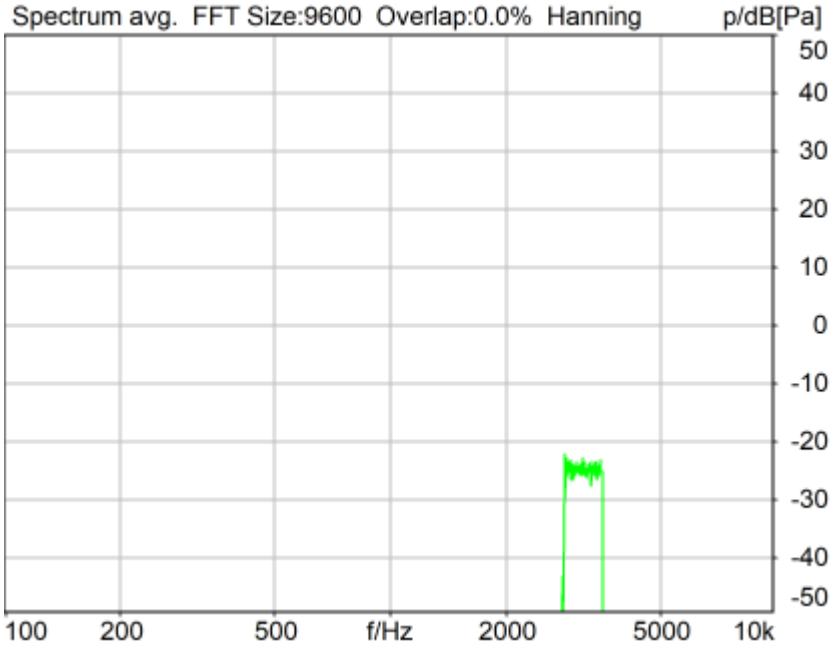
Distortion (Noise) RCV (packed): 28.53 dB (3.74%) Ok

Ok

2024/3/12 23:56 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 37.04 dB (1.41%) Ok

Ok

2024/3/12 23:56 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

Region	Frequency	SDNR
1	400Hz	31.90 dB

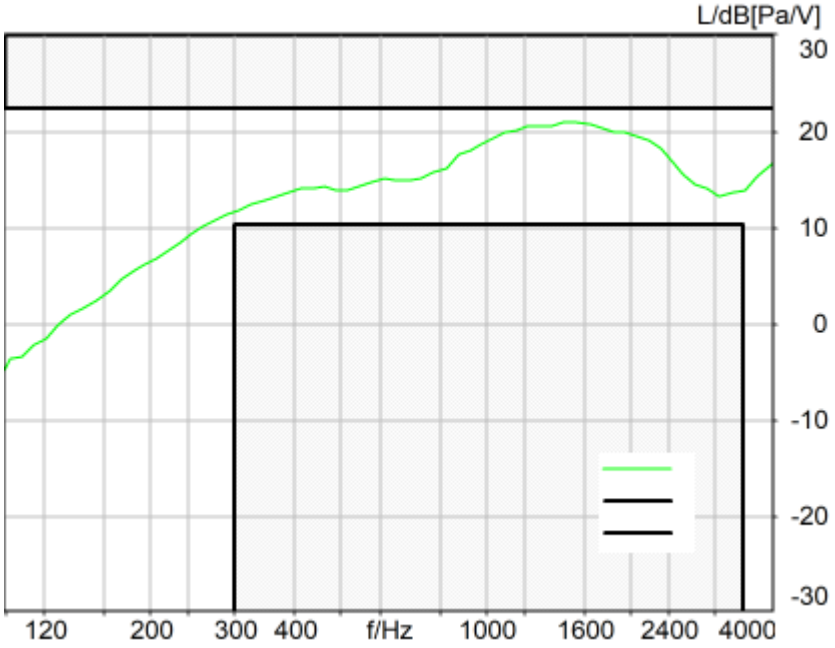
2	500Hz	34.34 dB
3	630Hz	34.94 dB
4	800Hz	34.64 dB
5	1000Hz	34.74 dB
6	1250Hz	31.34 dB
7	1600Hz	36.86 dB
8	2000Hz	41.78 dB
9	2500Hz	28.53 dB
10	3150Hz	37.04 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 28.53dB at 2500Hz.

2024/3/12 23:56 ACQUA

5.3 Frequency Response 8N FF HANB, Index: 1

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



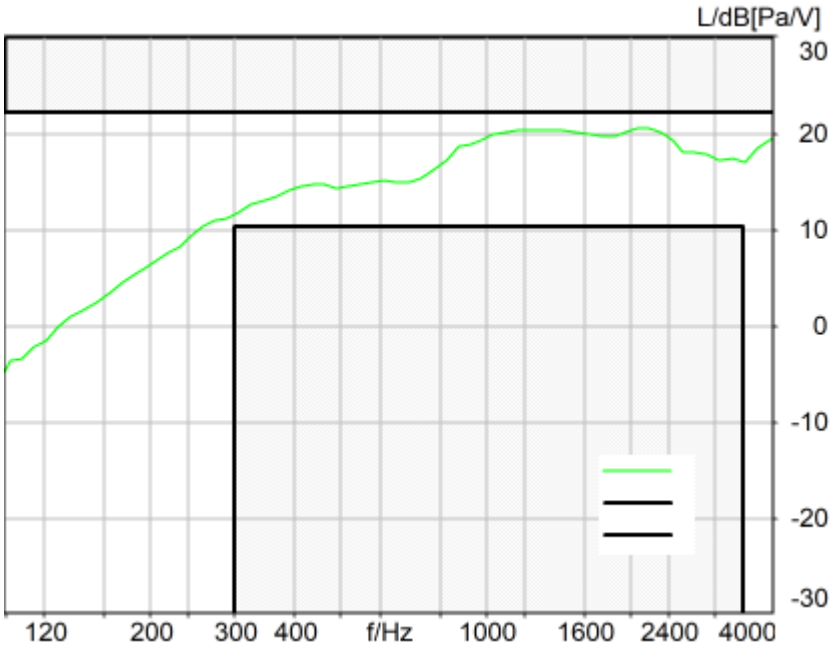
Absolute minimal distance
1.43 dB at 1547.5 Hz Ok

Ok

2024/3/12 22:04 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF HANB, Index: 1

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



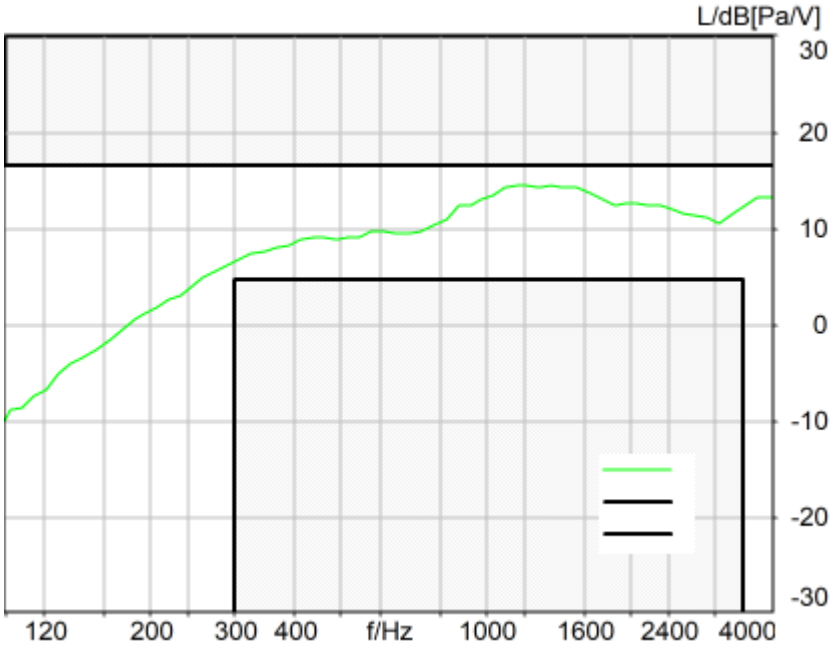
Absolute minimal distance
1.63 dB at 2177.4 Hz Ok

Ok

2024/3/12 22:04 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF HANB, Index: 1

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



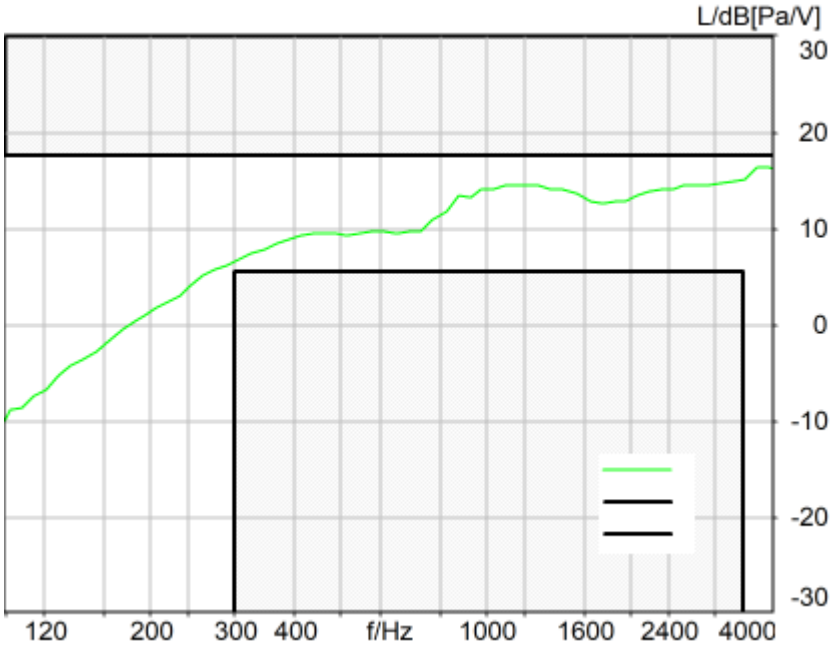
Absolute minimal distance
2.06 dB at 305.9 Hz Ok

Ok

2024/3/13 0:05 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF HANB, Index: 1

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



Absolute minimal distance
1.19 dB at 3882.4 Hz Ok

Ok

2024/3/13 0:05 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

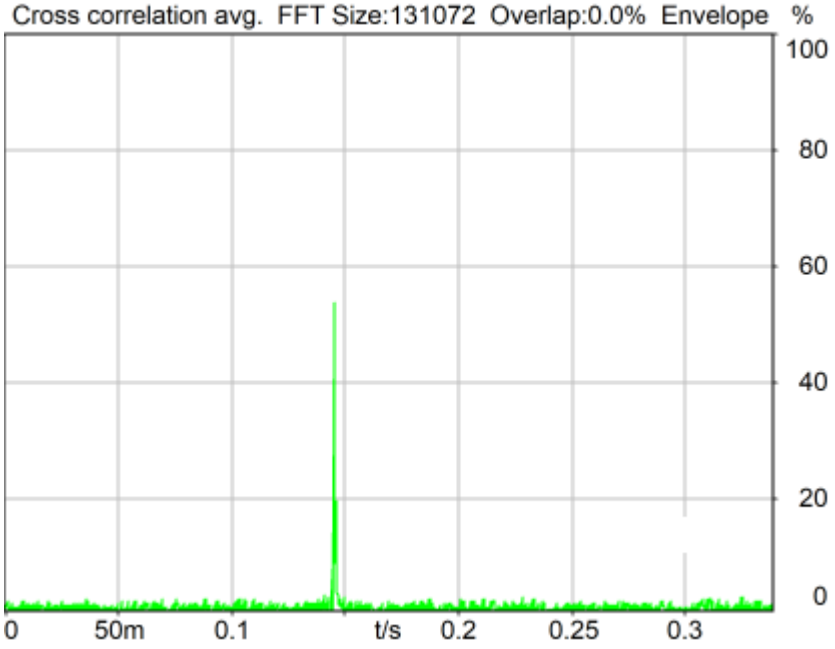
Measurement Object	LTE Band 13_10QPSK_50_0_EVS WB 128kbps_CH23230
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:49
Responsible Person	audio

Overall Receive Delay WB, Index: 1 3
5.1a Receive Volume Control Performance 8N WB, Index: 1 3
5.1b Receive Volume Control Performance 2N WB, Index: 1 4
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 5
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 6
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 8
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 10
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 12
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 14
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 15
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 15
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 16
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 18
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 20
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 22
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 24
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 25
5.3 Frequency Response 8N FF, Index: 1 25
5.3 Frequency Response 8N DF, Index: 1 26
5.3 Frequency Response 2N FF, Index: 1 27
5.3 Frequency Response 2N DF, Index: 1 28

Overall Receive Delay WB, Index: 1

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

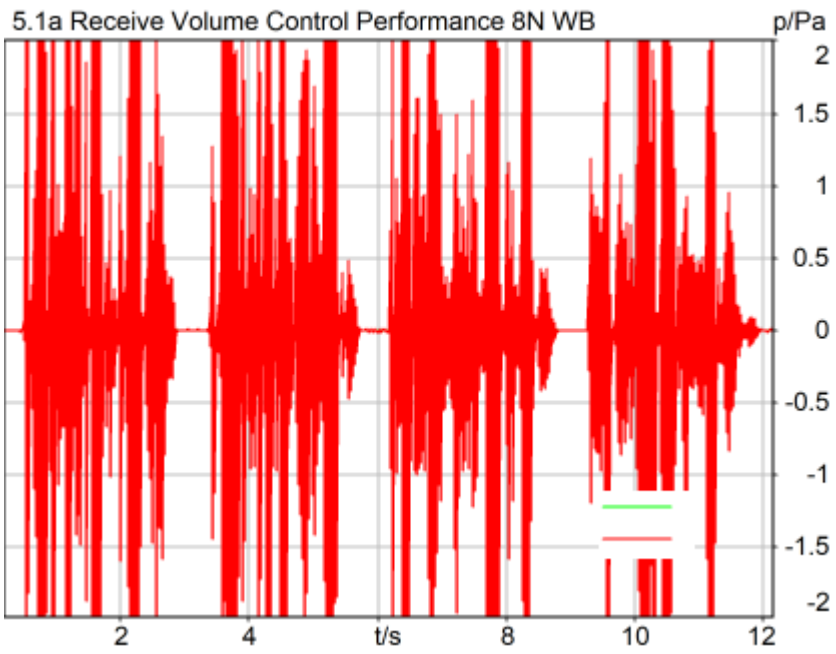


Delay (Cross): 145.2 ms

2024/3/14 20:56 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N WB, Index: 1

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



Correction

X - 70

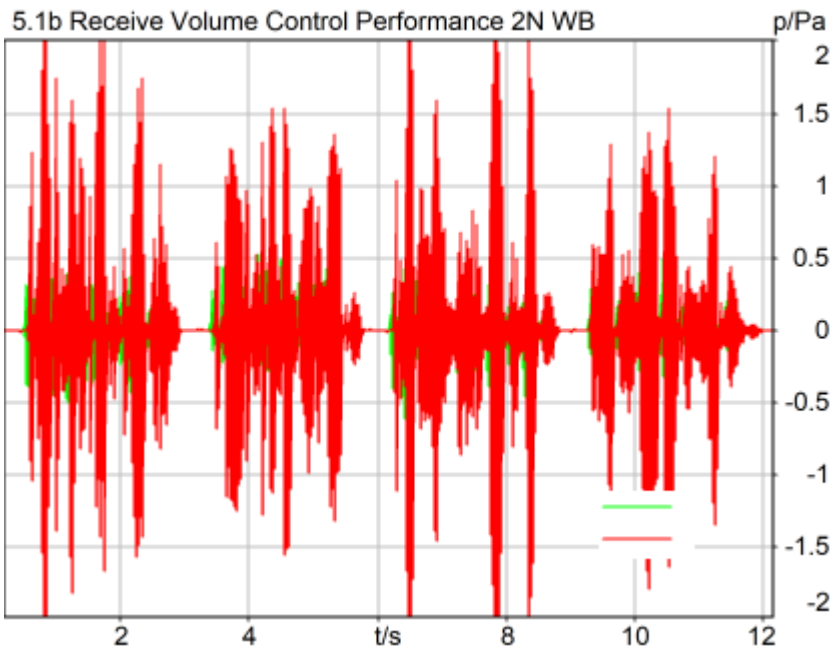
Speech Level RCV: 87.58 dB[SPL], Act.: 83.84%
Corrected Speech Level: 17.58 dB[SPL] Ok

Ok

2024/3/13 15:36 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N WB, Index: 1

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



Correction

X - 70

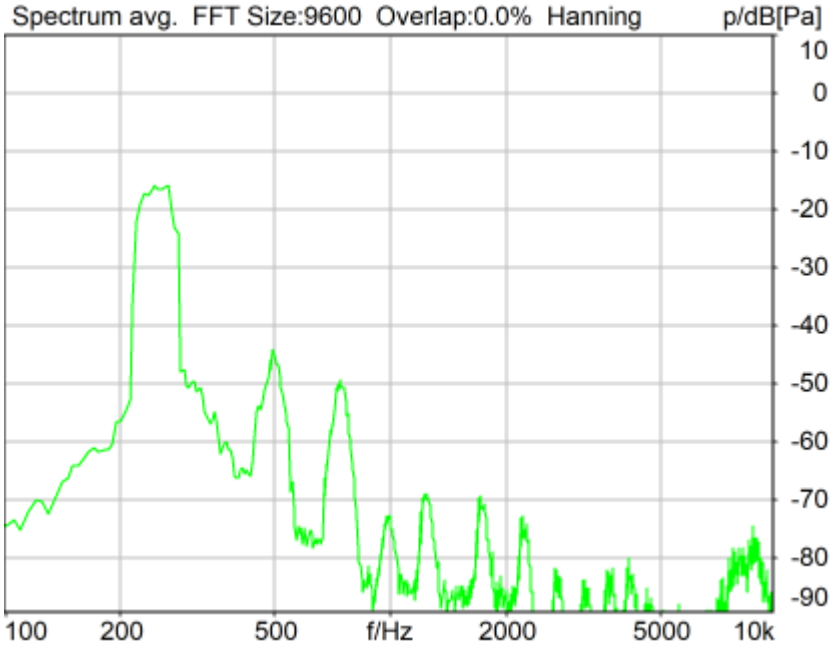
Speech Level RCV: 81.36 dB[SPL], Act.: 83.66%
Corrected Speech Level: 11.36 dB[SPL] Ok

Ok

2024/3/13 15:24 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



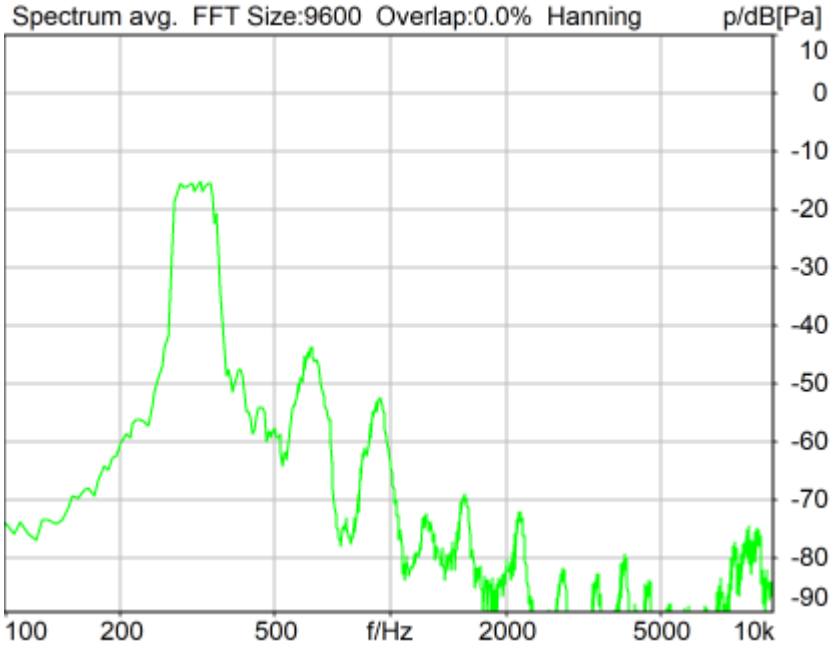
Distortion (Noise) RCV (packed): 30.08 dB (3.13%) Ok

Ok

2024/3/13 15:37 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



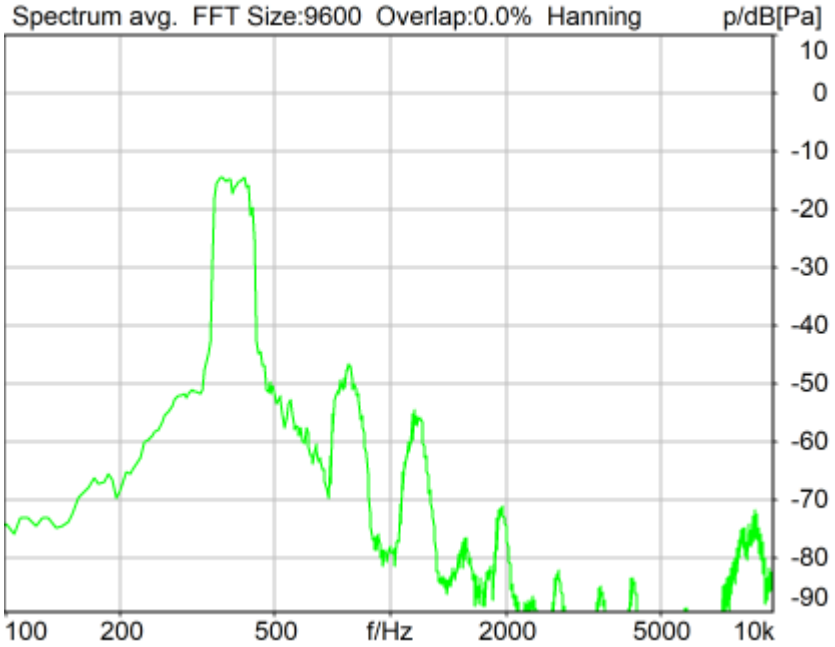
Distortion (Noise) RCV (packed): 29.60 dB (3.31%) Ok

Ok

2024/3/13 15:37 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



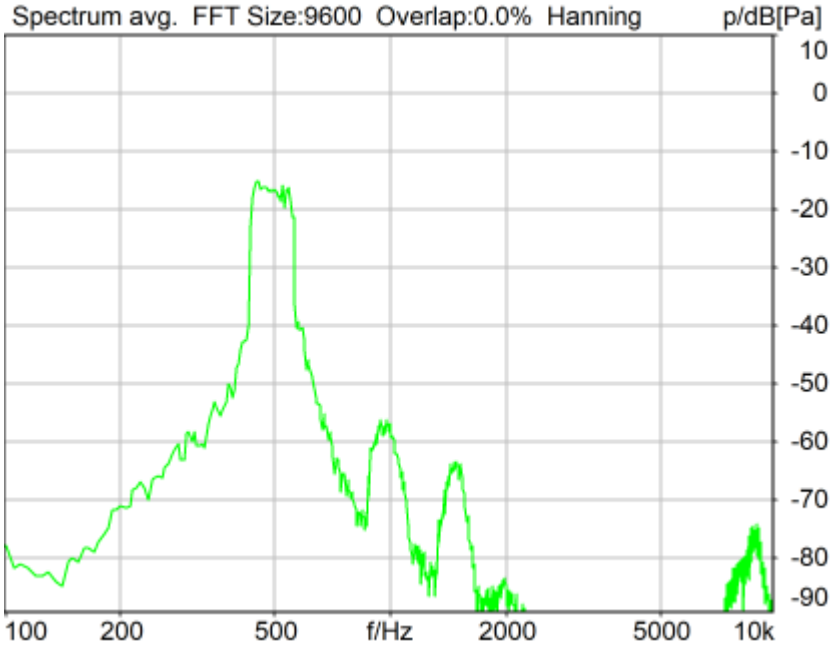
Distortion (Noise) RCV (packed): 31.80 dB (2.57%) Ok

Ok

2024/3/13 15:38 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



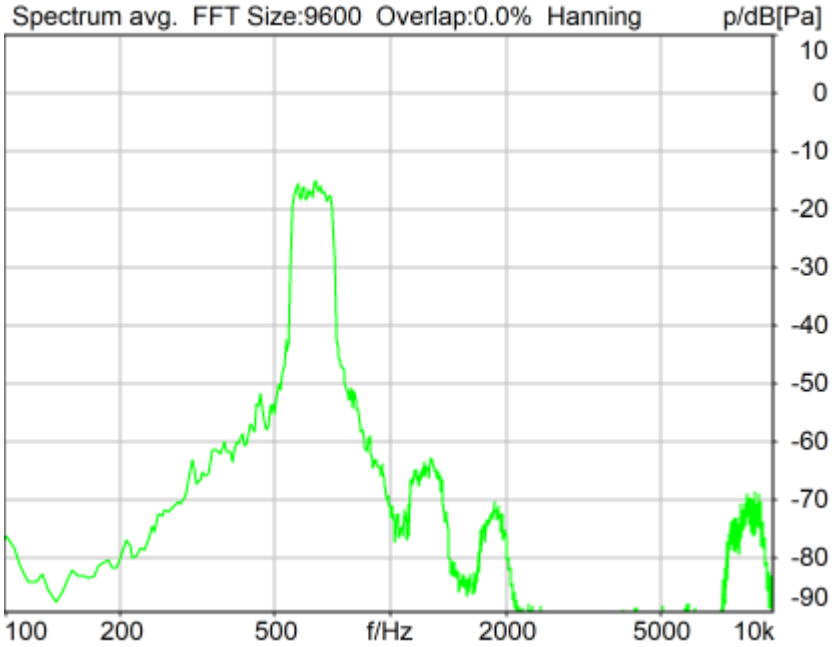
Distortion (Noise) RCV (packed): 33.90 dB (2.02%) Ok

Ok

2024/3/13 15:38 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



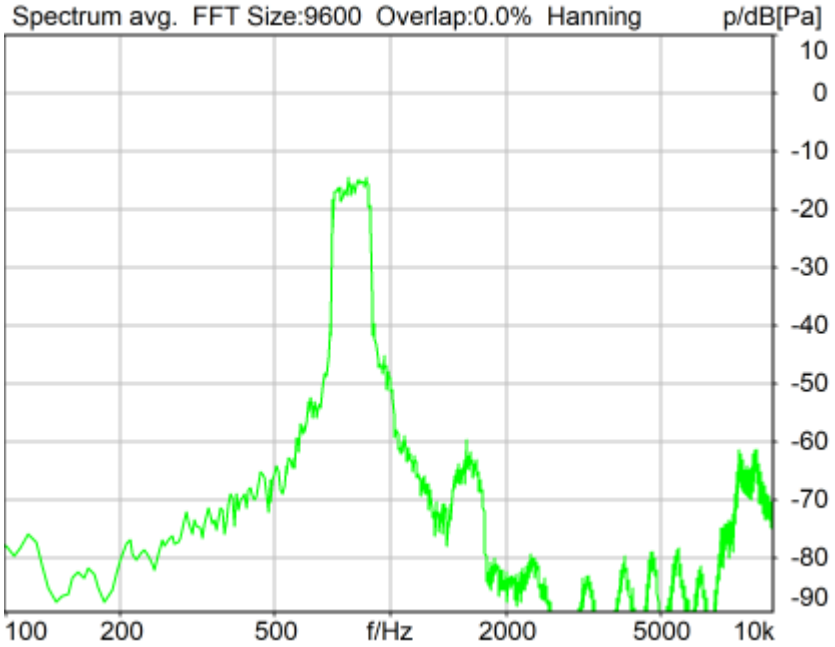
Distortion (Noise) RCV (packed): 35.15 dB (1.75%) Ok

Ok

2024/3/13 15:38 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



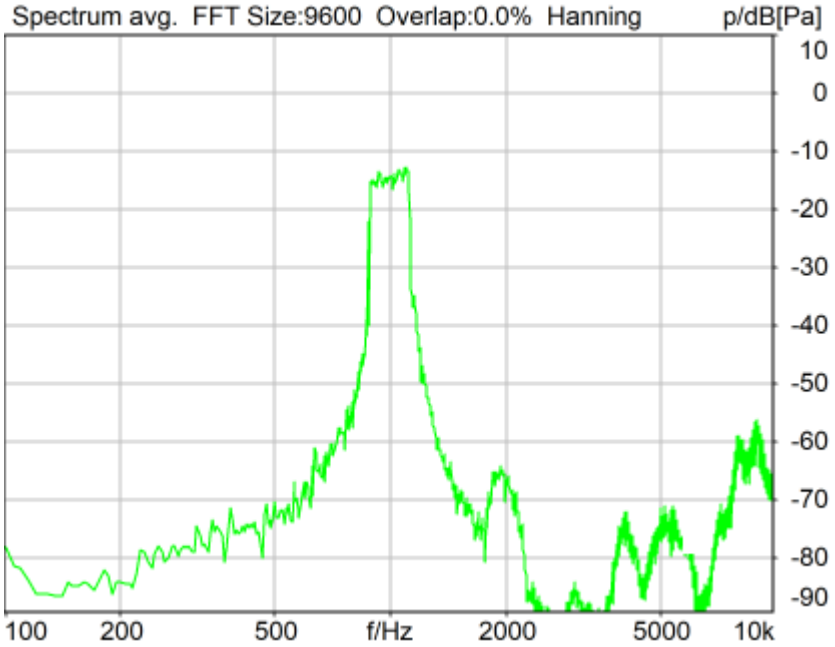
Distortion (Noise) RCV (packed): 32.94 dB (2.26%) Ok

Ok

2024/3/13 15:39 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



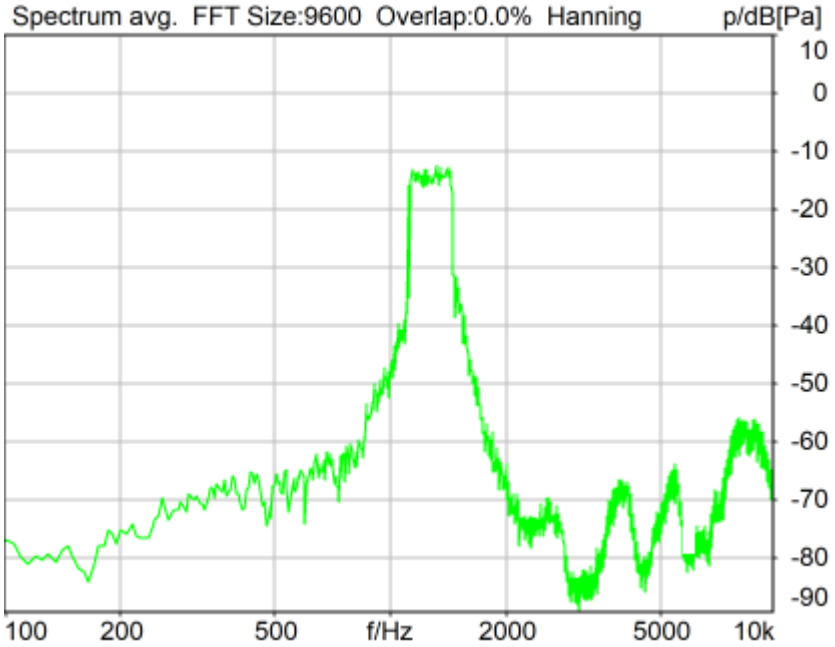
Distortion (Noise) RCV (packed): 31.12 dB (2.78%) Ok

Ok

2024/3/13 15:39 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



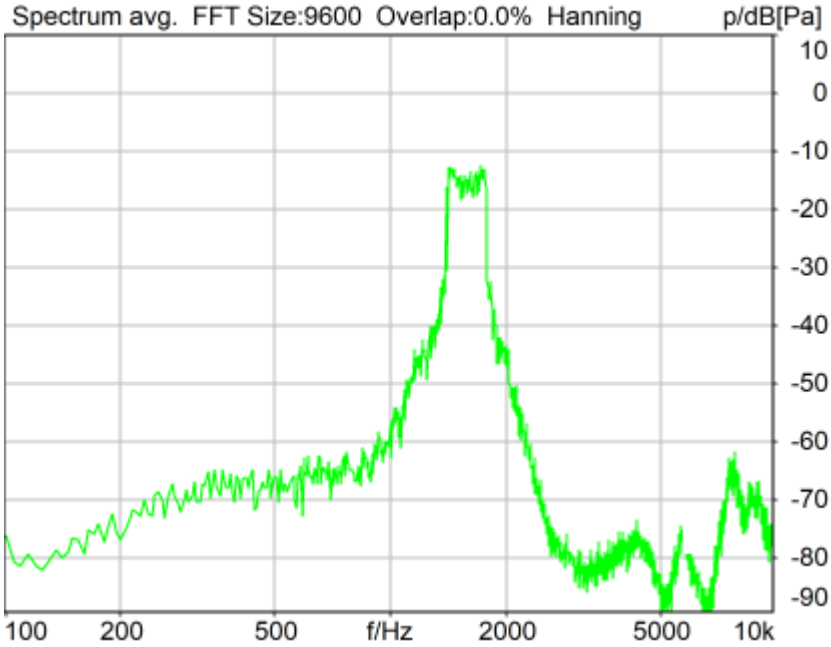
Distortion (Noise) RCV (packed): 23.95 dB (6.35%) Ok

Ok

2024/3/13 15:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



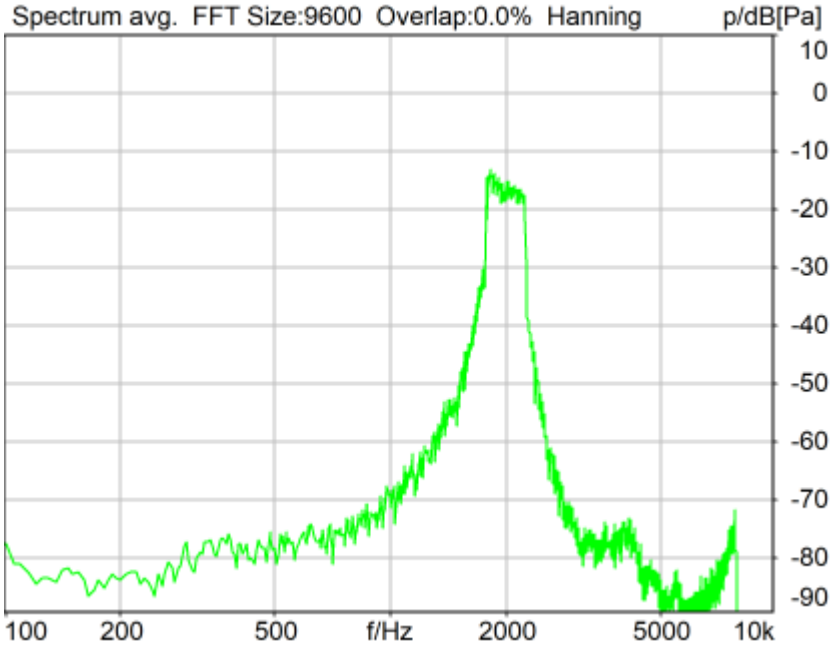
Distortion (Noise) RCV (packed): 24.47 dB (5.98%) Ok

Ok

2024/3/13 15:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



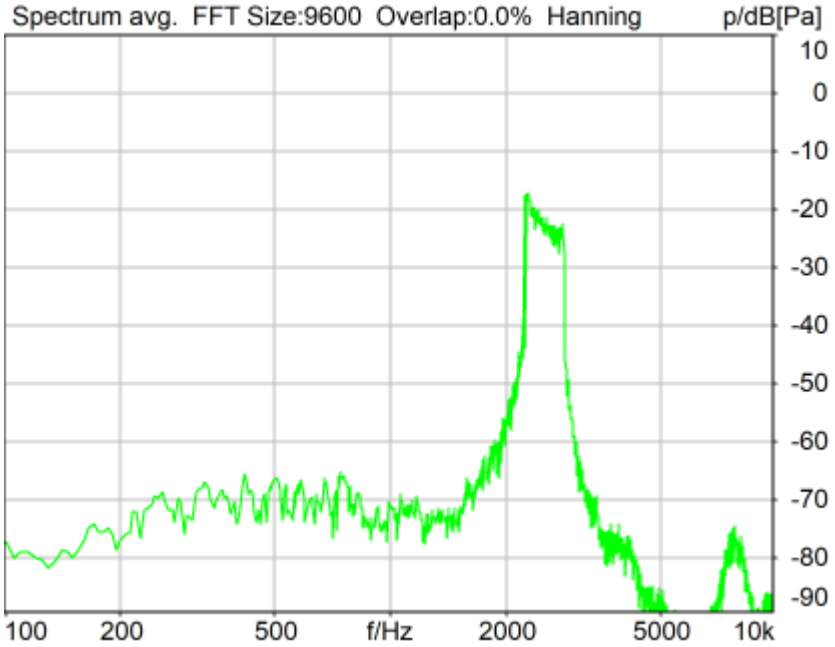
Distortion (Noise) RCV (packed): 23.11 dB (6.99%) Ok

Ok

2024/3/13 15:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



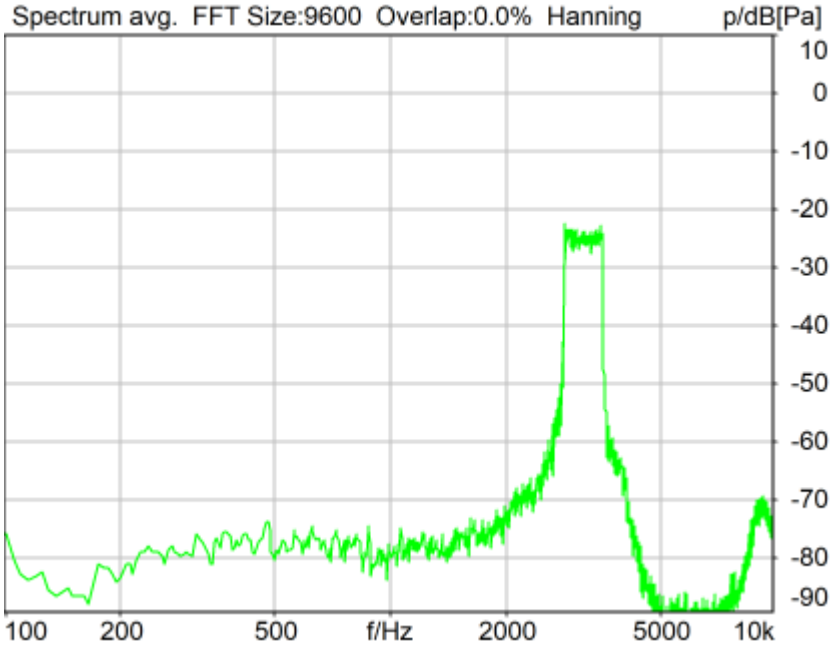
Distortion (Noise) RCV (packed): 29.07 dB (3.52%) Ok

Ok

2024/3/13 15:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



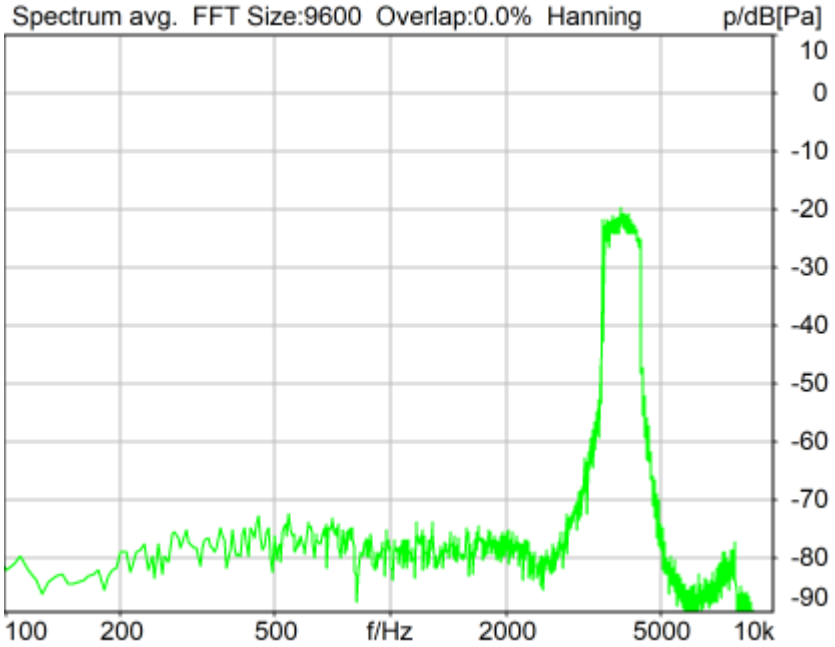
Distortion (Noise) RCV (packed): 32.19 dB (2.46%) Ok

Ok

2024/3/13 15:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



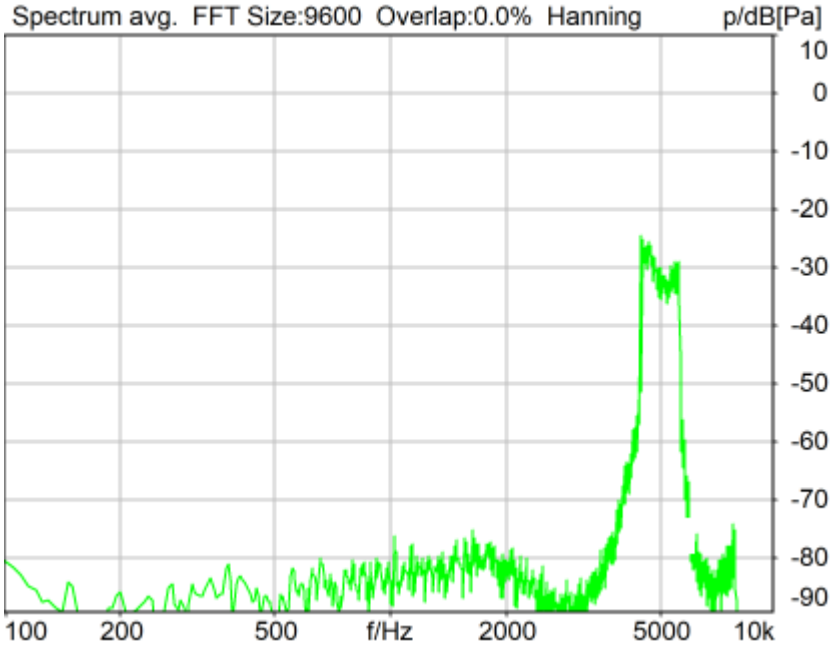
Distortion (Noise) RCV (packed): 34.66 dB (1.85%) Ok

Ok

2024/3/13 15:42 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 32.20 dB (2.45%) Ok

Ok

2024/3/13 15:42 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

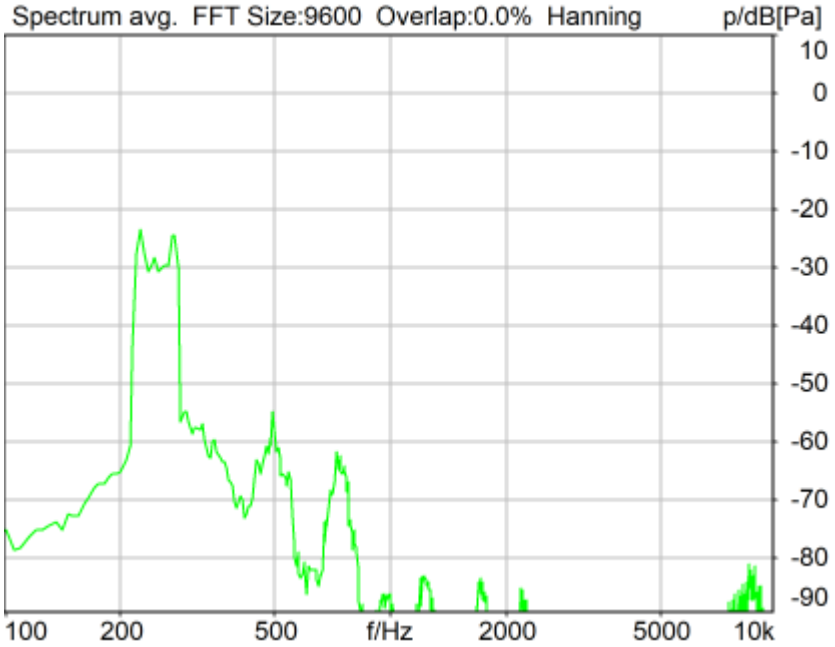
Region	Frequency	SDNR
1	250Hz	30.08 dB
2	315Hz	29.60 dB
3	400Hz	31.80 dB
4	500Hz	33.90 dB
5	630Hz	35.15 dB
6	800Hz	32.94 dB
7	1000Hz	31.12 dB
8	1250Hz	23.95 dB
9	1600Hz	24.47 dB
10	2000Hz	23.11 dB
11	2500Hz	29.07 dB
12	3150Hz	32.19 dB
13	4000Hz	34.66 dB
14	5000Hz	32.20 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 23.11dB at 2000Hz.

2024/3/13 15:44 ACQUA

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



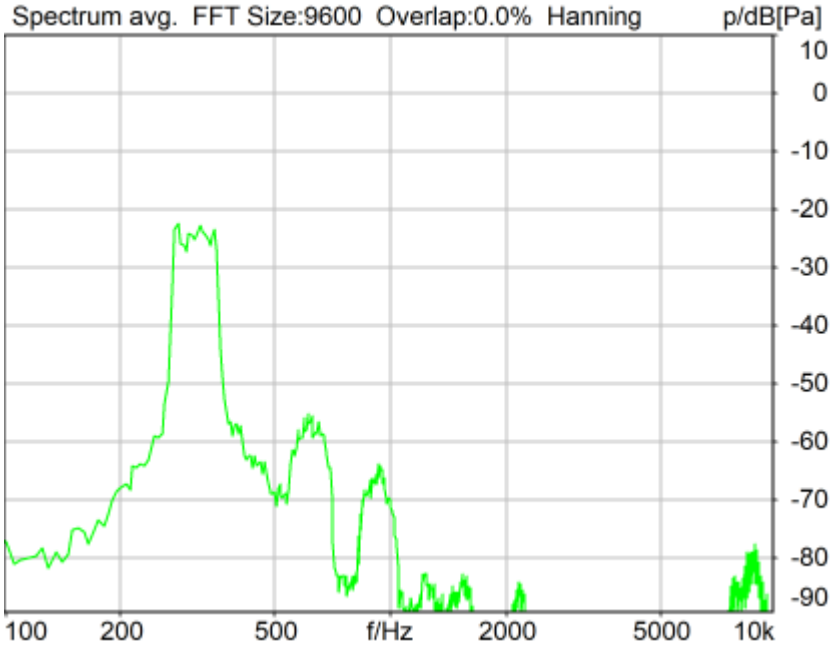
Distortion (Noise) RCV (packed): 32.02 dB (2.51%) Ok

Ok

2024/3/13 15:25 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



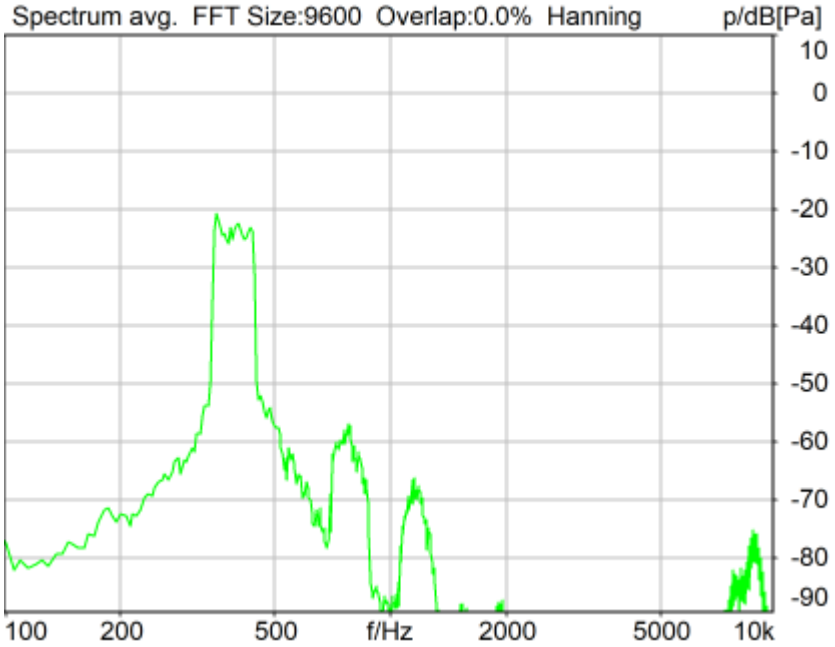
Distortion (Noise) RCV (packed): 31.95 dB (2.53%) Ok

Ok

2024/3/13 15:25 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



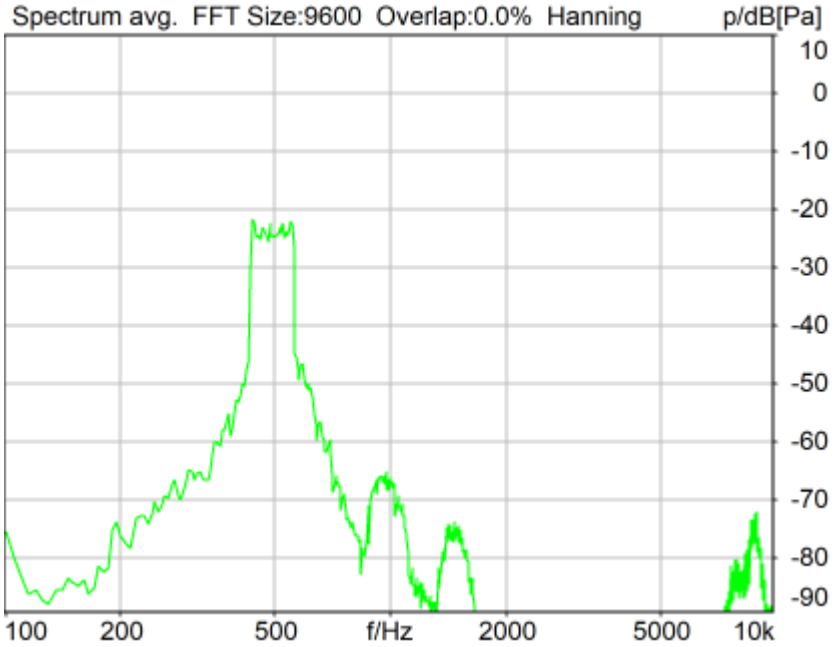
Distortion (Noise) RCV (packed): 33.31 dB (2.16%) Ok

Ok

2024/3/13 15:26 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



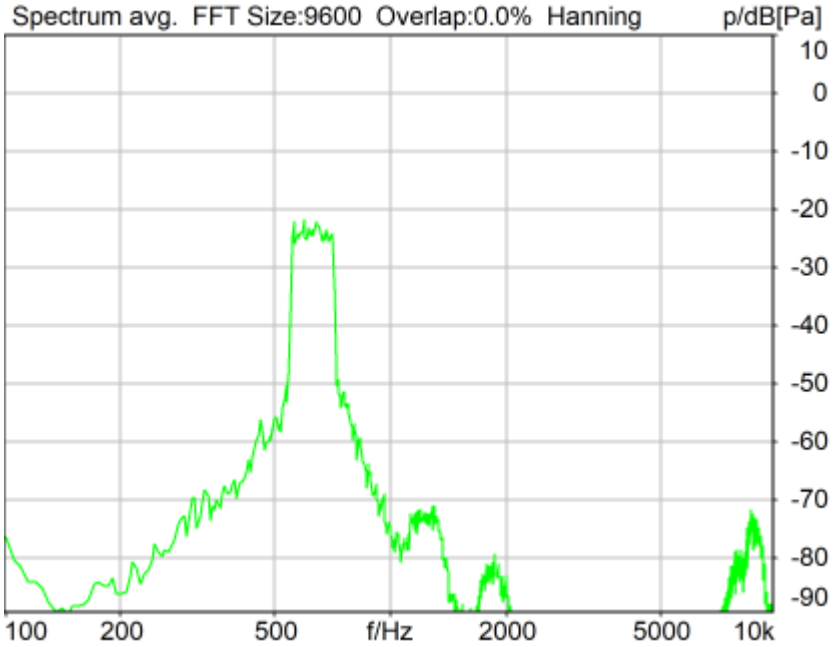
Distortion (Noise) RCV (packed): 31.84 dB (2.56%) Ok

Ok

2024/3/13 15:26 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



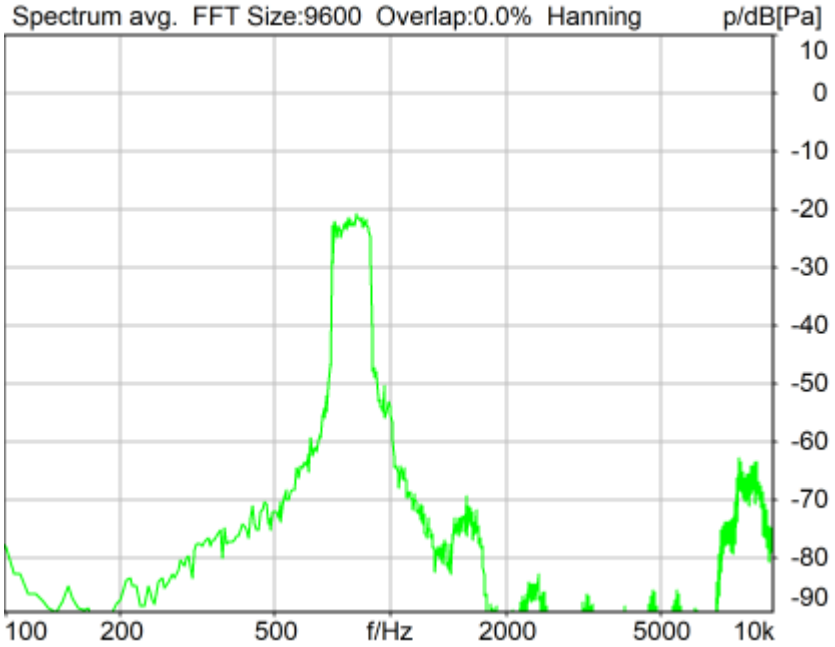
Distortion (Noise) RCV (packed): 33.10 dB (2.21%) Ok

Ok

2024/3/13 15:26 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



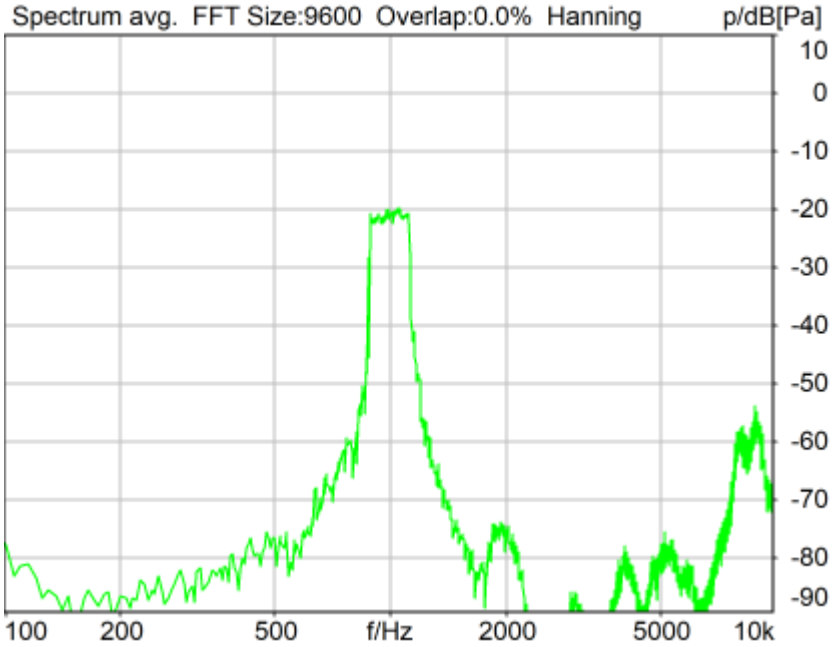
Distortion (Noise) RCV (packed): 31.74 dB (2.59%) Ok

Ok

2024/3/13 15:27 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



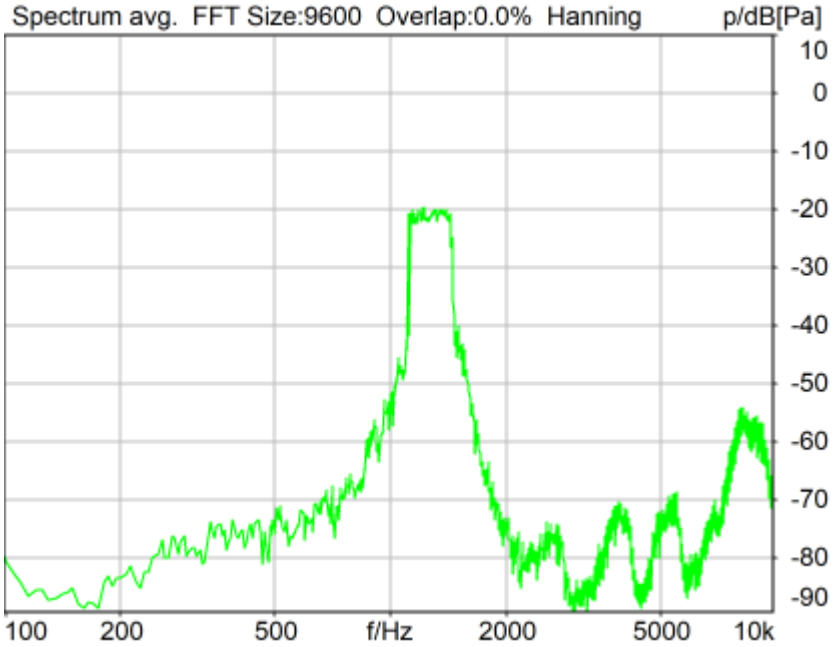
Distortion (Noise) RCV (packed): 29.21 dB (3.46%) Ok

Ok

2024/3/13 15:27 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



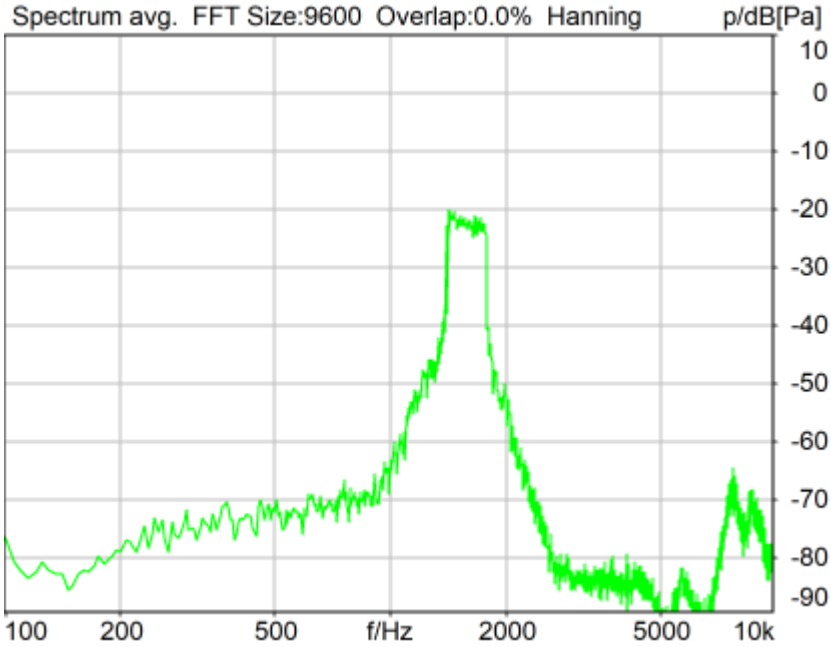
Distortion (Noise) RCV (packed): 23.21 dB (6.91%) Ok

Ok

2024/3/13 15:28 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



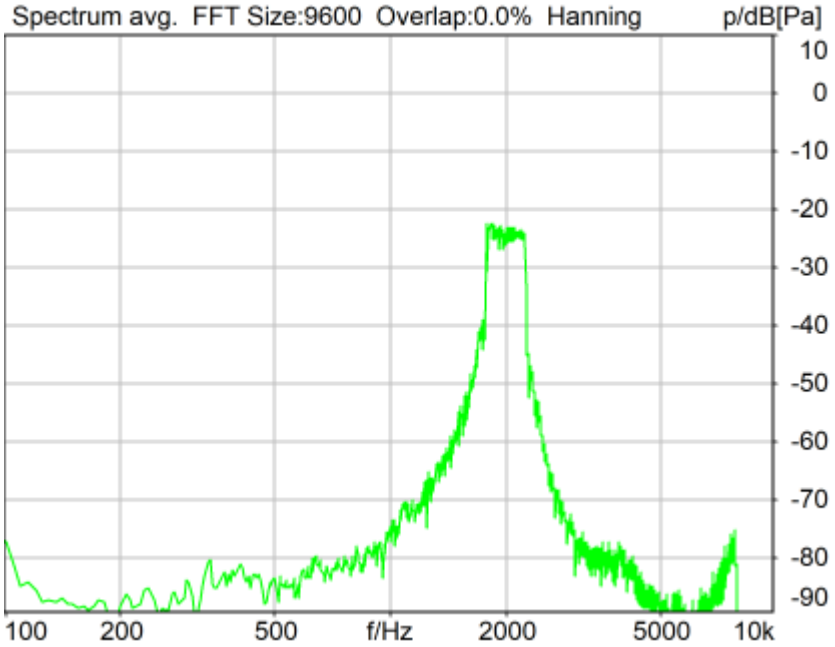
Distortion (Noise) RCV (packed): 24.01 dB (6.30%) Ok

Ok

2024/3/13 15:28 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



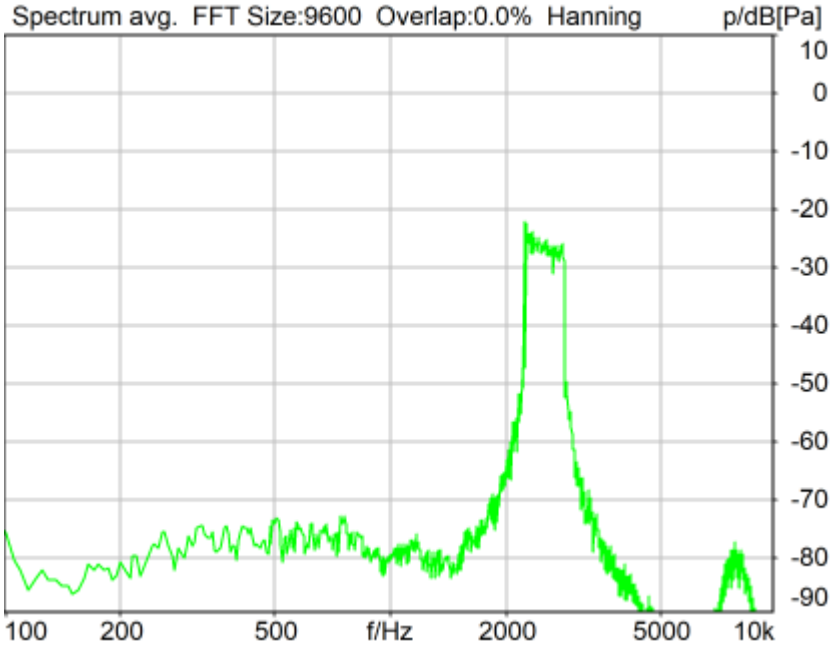
Distortion (Noise) RCV (packed): 22.78 dB (7.26%) Ok

Ok

2024/3/13 15:28 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



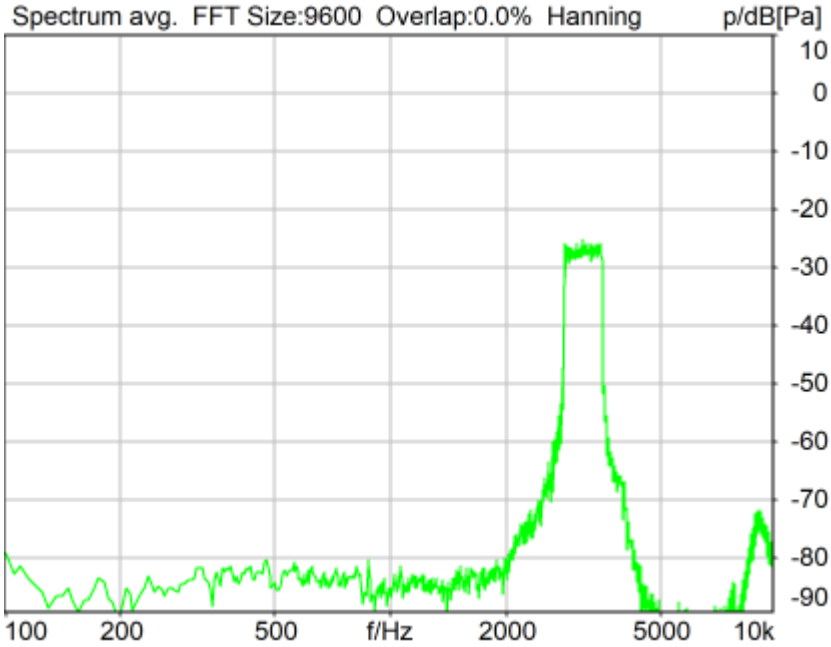
Distortion (Noise) RCV (packed): 30.20 dB (3.09%) Ok

Ok

2024/3/13 15:29 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



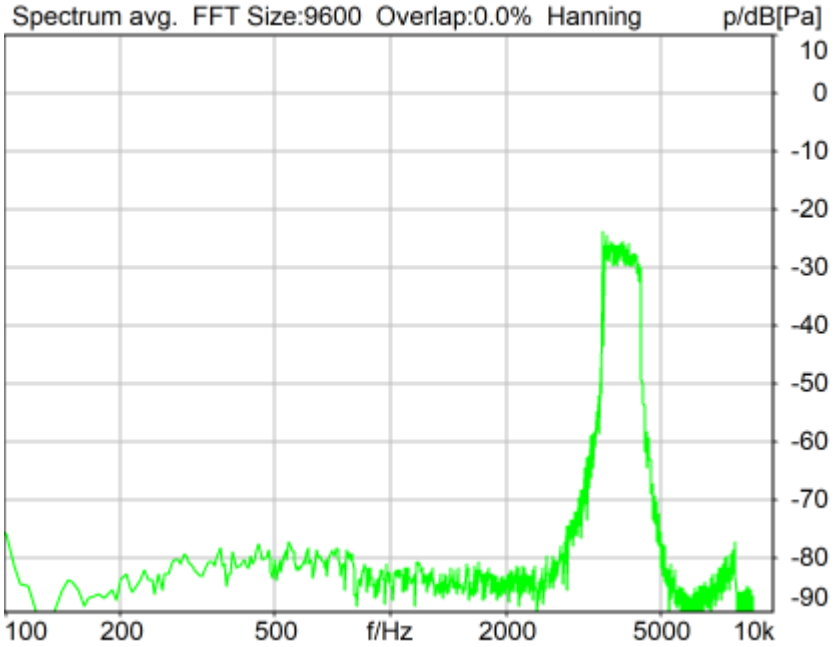
Distortion (Noise) RCV (packed): 32.82 dB (2.29%) Ok

Ok

2024/3/13 15:29 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



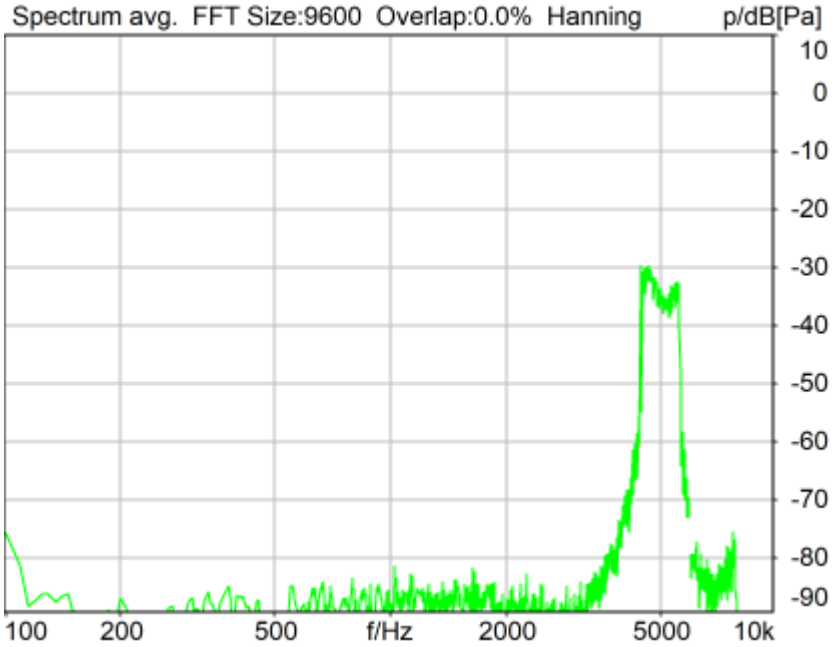
Distortion (Noise) RCV (packed): 30.87 dB (2.86%) Ok

Ok

2024/3/13 15:30 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 31.51 dB (2.66%) Ok

Ok

2024/3/13 15:30 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

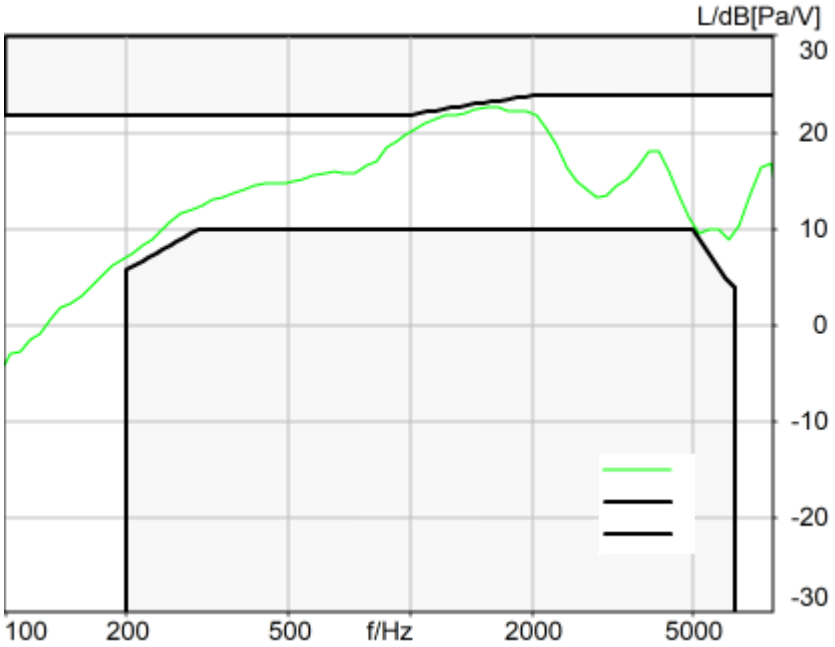
Region	Frequency	SDNR
1	250Hz	32.02 dB
2	315Hz	31.95 dB
3	400Hz	33.31 dB
4	500Hz	31.84 dB
5	630Hz	33.10 dB
6	800Hz	31.74 dB
7	1000Hz	29.21 dB
8	1250Hz	23.21 dB
9	1600Hz	24.01 dB
10	2000Hz	22.78 dB
11	2500Hz	30.20 dB
12	3150Hz	32.82 dB
13	4000Hz	30.87 dB
14	5000Hz	31.51 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 22.78dB at 2000Hz.

2024/3/13 15:31 ACQUA

5.3 Frequency Response 8N FF, Index: 1

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



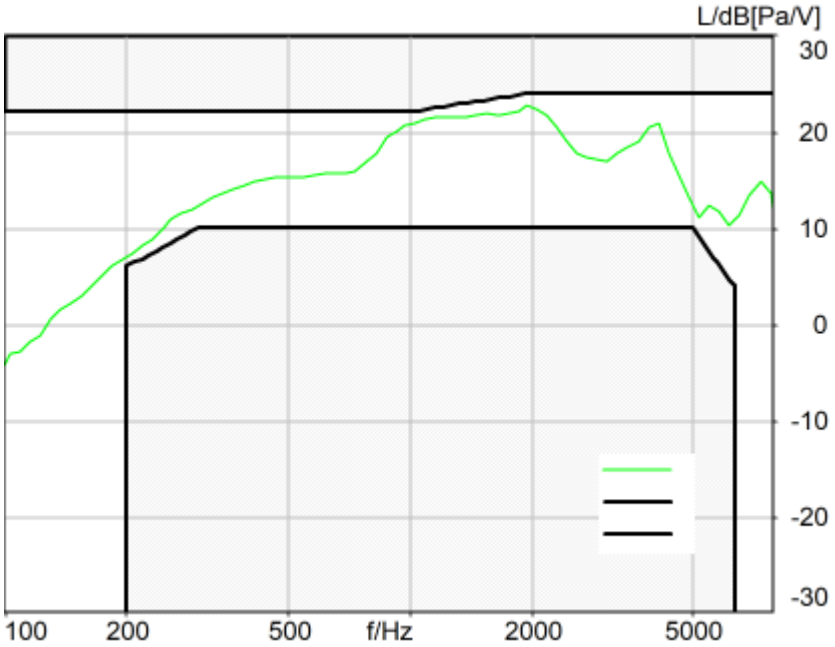
Absolute minimal distance
0.44 dB at 1547.5 Hz Ok

Ok

2024/3/13 15:46 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF, Index: 1

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



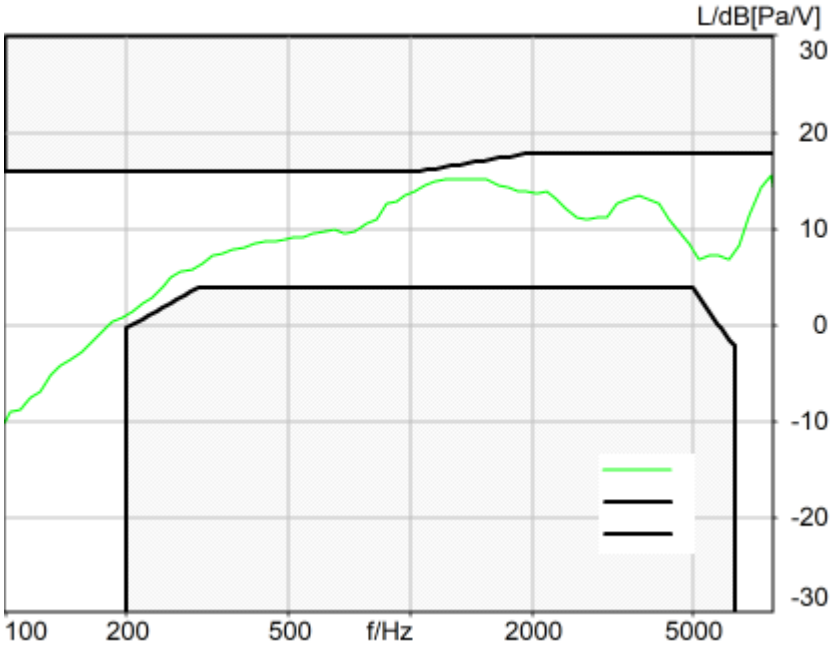
Absolute minimal distance
1.06 dB at 1088.7 Hz Ok

Ok

2024/3/13 15:47 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF, Index: 1

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



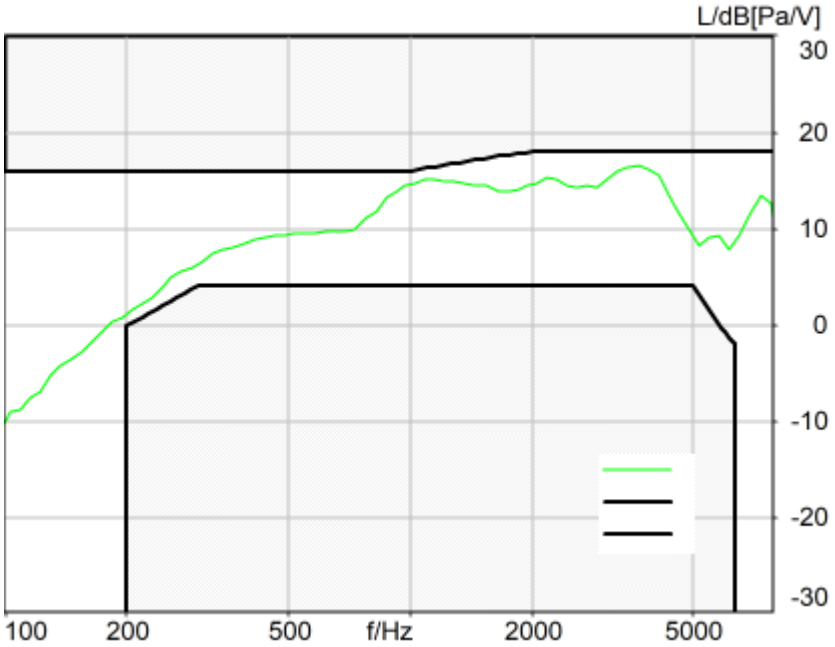
Absolute minimal distance
1.38 dB at 1285.9 Hz Ok

Ok

2024/3/13 15:31 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF, Index: 1

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



Absolute minimal distance
1.23 dB at 1088.7 Hz Ok

Ok

2024/3/13 15:32 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

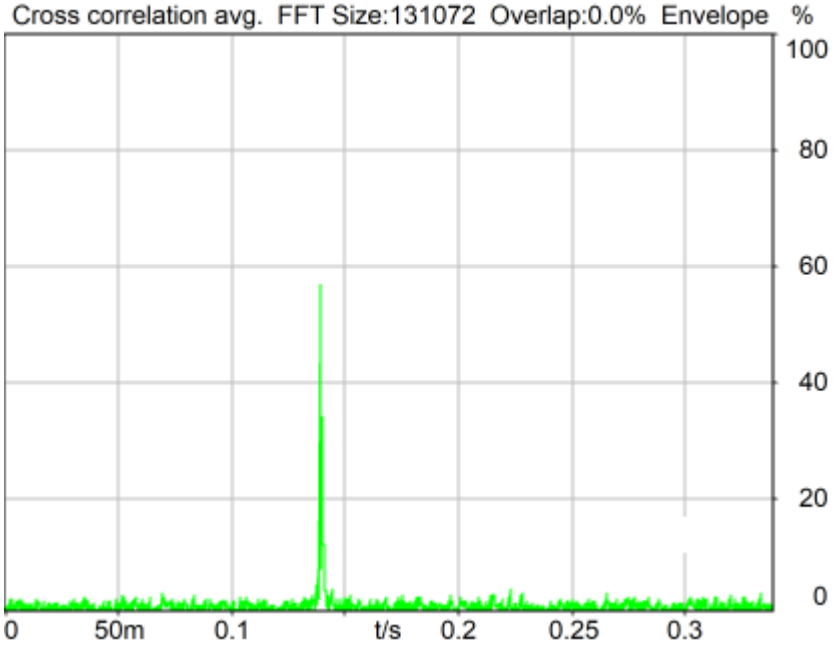
Measurement Object	LTE Band 14_10QPSK_50_0_EVS NB 24.4kbps_CH23330
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:50
Responsible Person	audio

Overall Receive Delay NB, Index: 1 3
5.1a Receive Volume Control Performance 8N NB, Index: 1 3
5.1b Receive Volume Control Performance 2N NB, Index: 1 4
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 5
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 6
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 8
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 10
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 11
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 11
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 12
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 14
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 16
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 18
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 19
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 19
5.3 Frequency Response 8N FF HANB, Index: 1 20
5.3 Frequency Response 8N DF HANB, Index: 1 21
5.3 Frequency Response 2N FF HANB, Index: 1 21
5.3 Frequency Response 2N DF HANB, Index: 1 22

Overall Receive Delay NB, Index: 1

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

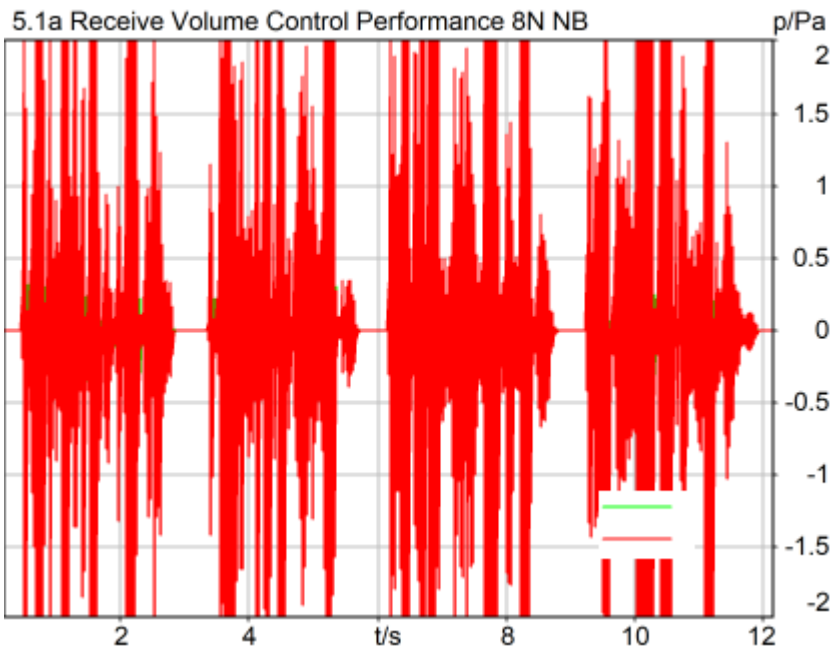


Delay (Cross): 140.1 ms

2024/3/12 22:39 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N NB, Index: 1

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



Correction

X - 70

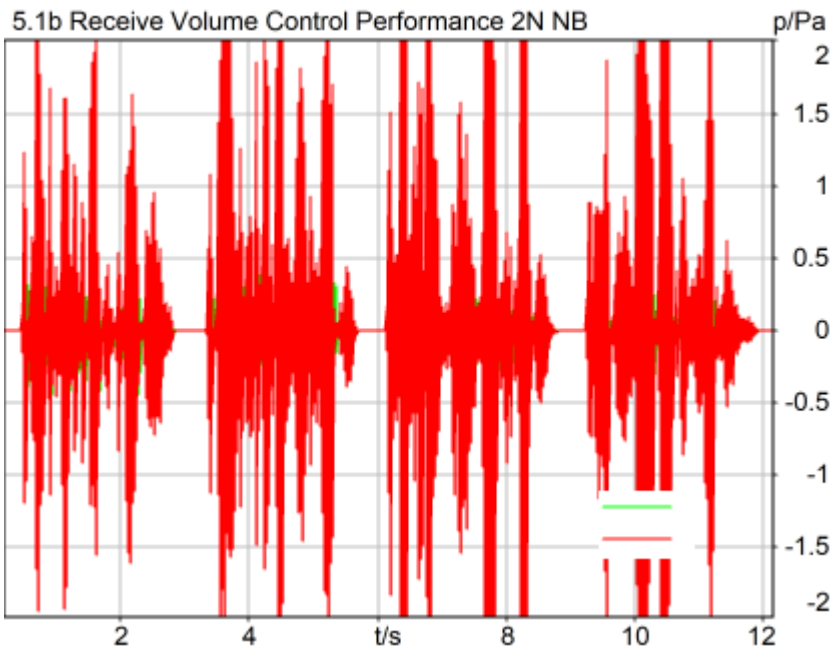
Speech Level RCV: 90.02 dB[SPL], Act.: 81.52%
Corrected Speech Level: 20.02 dB[SPL] Ok

Ok

2024/3/12 23:07 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N NB, Index: 1

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



Correction

X - 70

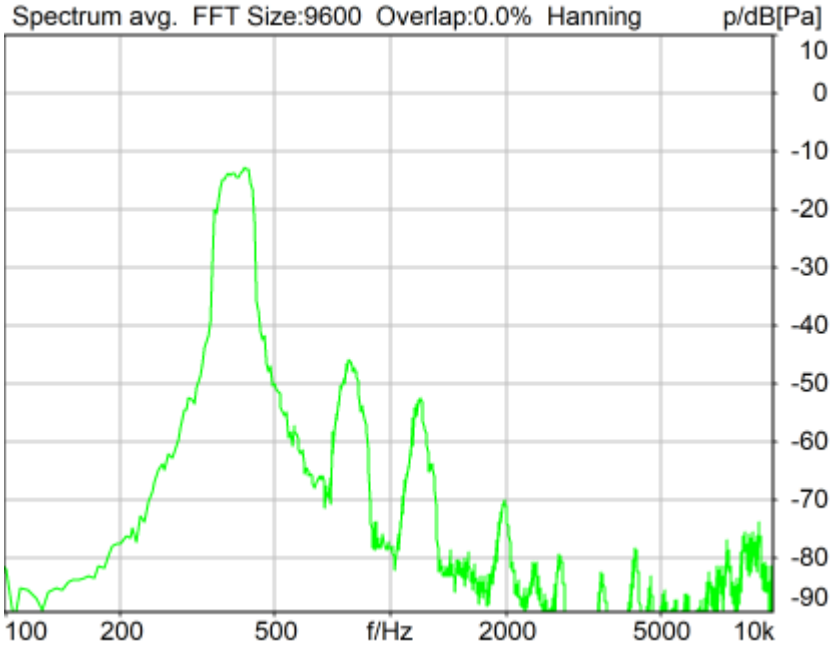
Speech Level RCV: 84.72 dB[SPL], Act.: 83.05%
Corrected Speech Level: 14.72 dB[SPL] Ok

Ok

2024/3/13 0:06 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



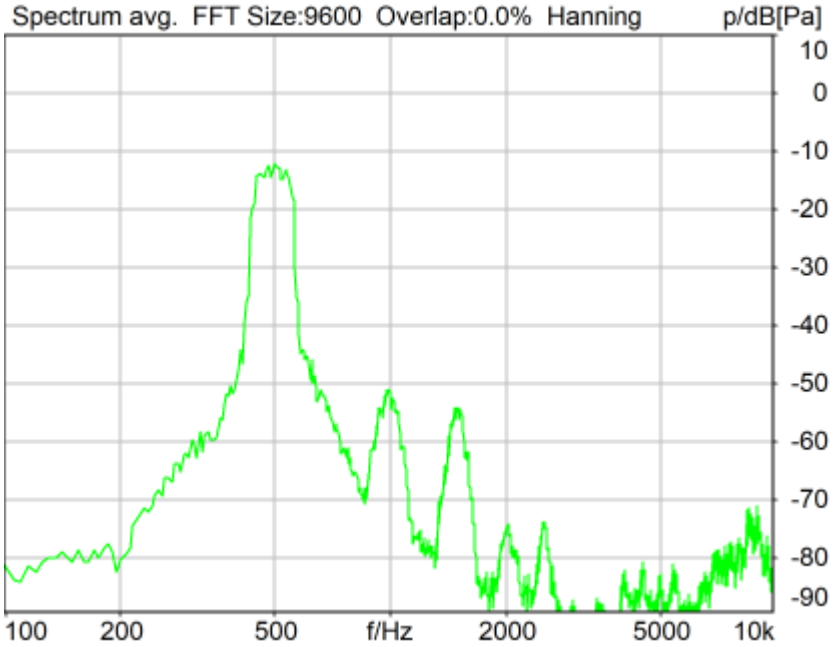
Distortion (Noise) RCV (packed): 32.01 dB (2.51%) Ok

Ok

2024/3/12 22:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



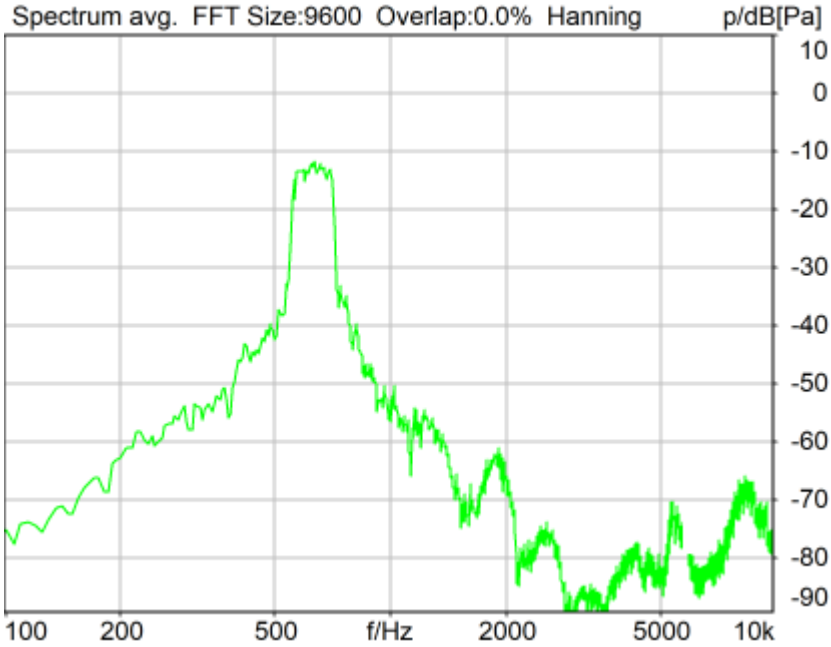
Distortion (Noise) RCV (packed): 33.57 dB (2.10%) Ok

Ok

2024/3/12 22:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



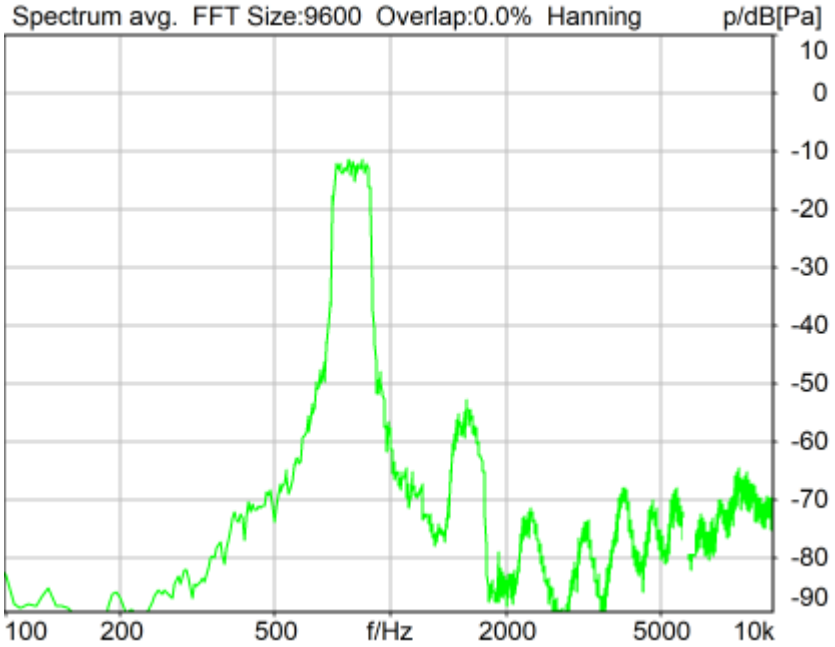
Distortion (Noise) RCV (packed): 26.73 dB (4.61%) Ok

Ok

2024/3/12 22:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



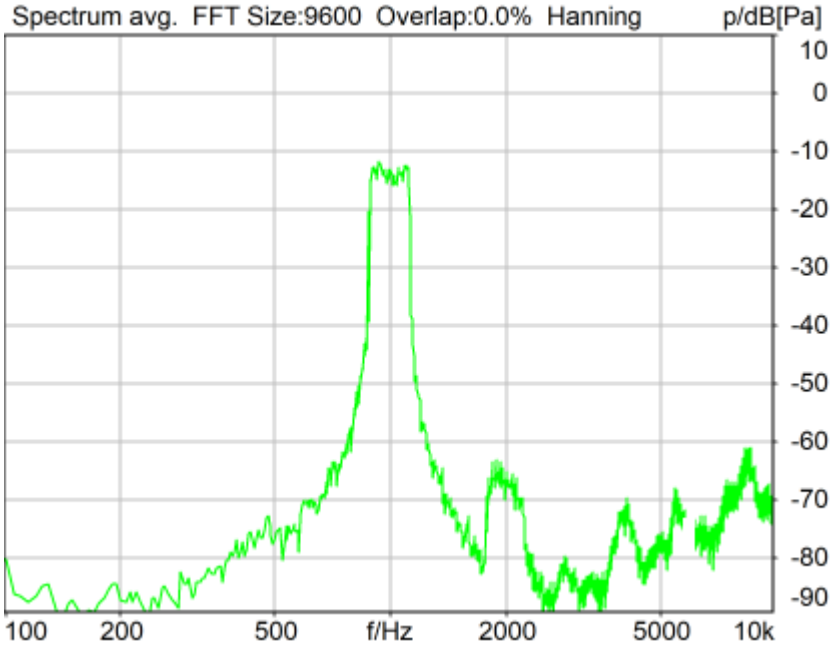
Distortion (Noise) RCV (packed): 37.17 dB (1.38%) Ok

Ok

2024/3/12 22:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



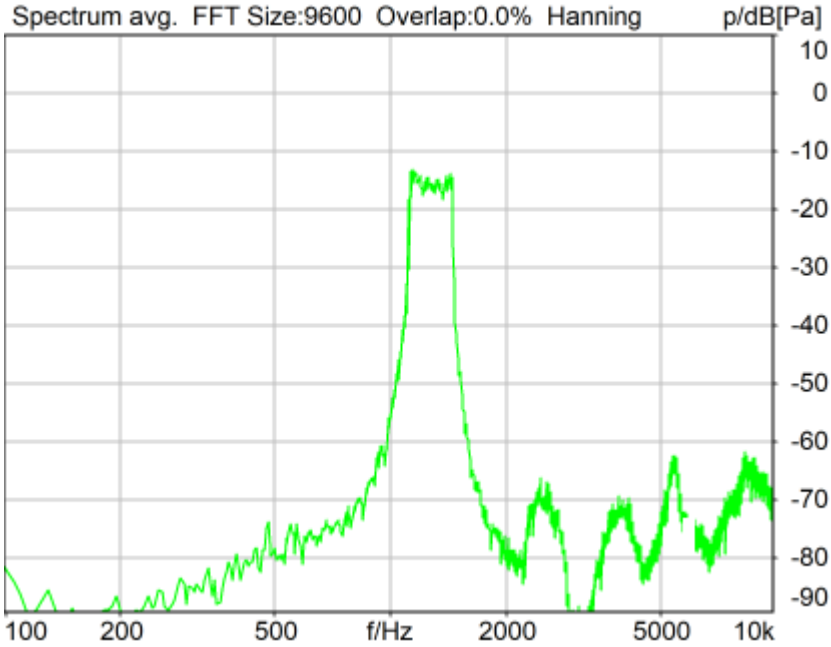
Distortion (Noise) RCV (packed): 38.45 dB (1.19%) Ok

Ok

2024/3/12 22:42 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



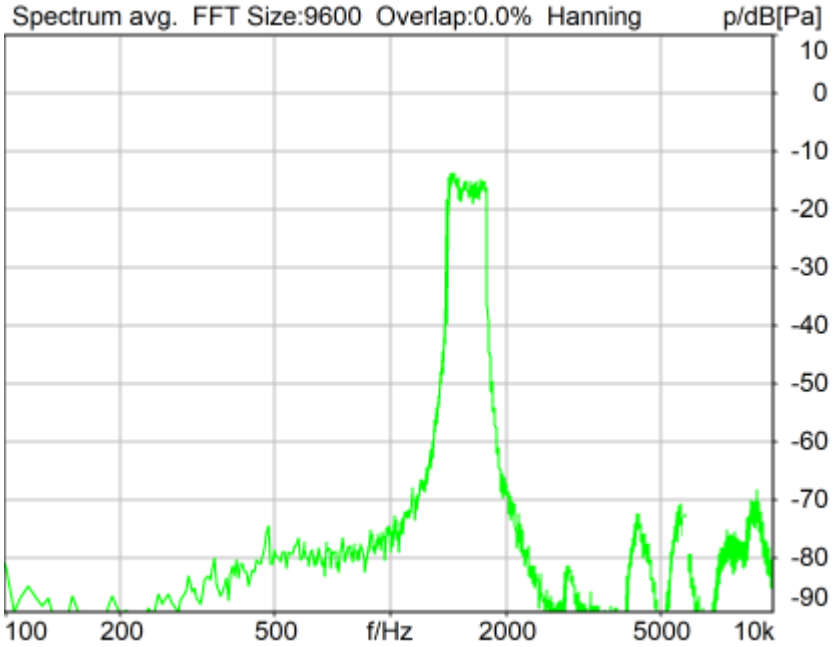
Distortion (Noise) RCV (packed): 26.22 dB (4.89%) Ok

Ok

2024/3/12 22:42 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



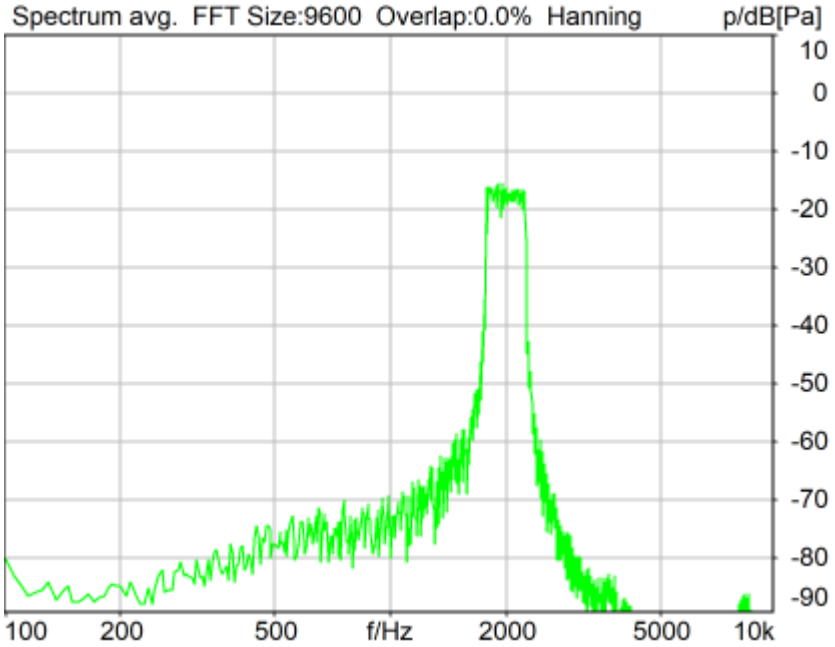
Distortion (Noise) RCV (packed): 38.71 dB (1.16%) Ok

Ok

2024/3/12 22:42 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



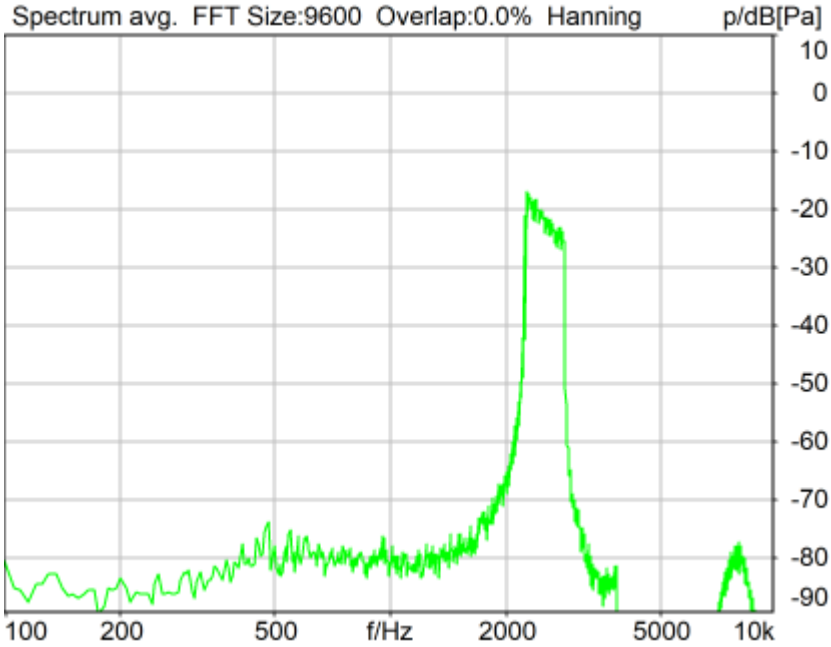
Distortion (Noise) RCV (packed): 34.48 dB (1.89%) Ok

Ok

2024/3/12 22:43 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



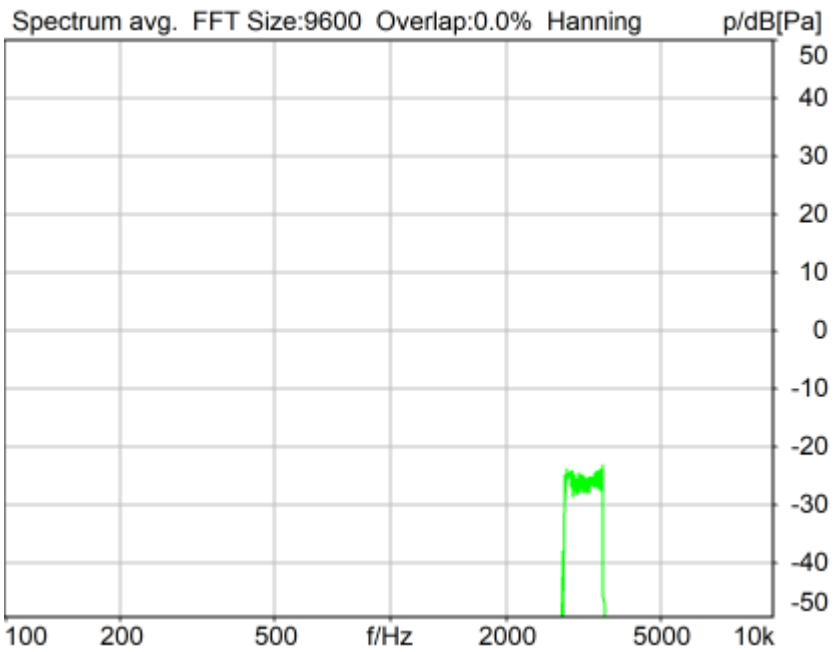
Distortion (Noise) RCV (packed): 36.98 dB (1.42%) Ok

Ok

2024/3/12 22:43 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 36.47 dB (1.50%) Ok

Ok

2024/3/12 22:44 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

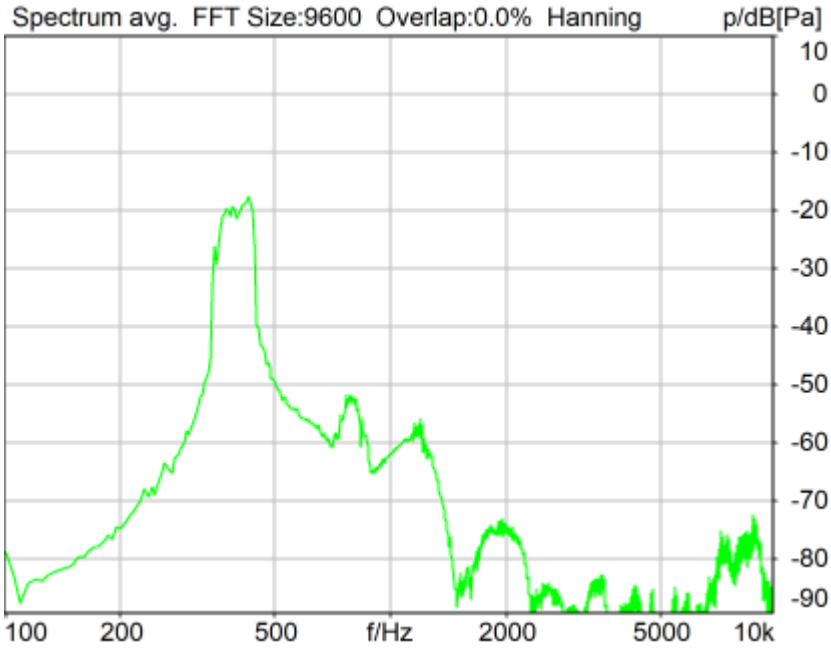
Region	Frequency	SDNR
1	400Hz	32.01 dB
2	500Hz	33.57 dB
3	630Hz	26.73 dB
4	800Hz	37.17 dB
5	1000Hz	38.45 dB
6	1250Hz	26.22 dB
7	1600Hz	38.71 dB
8	2000Hz	34.48 dB
9	2500Hz	36.98 dB
10	3150Hz	36.47 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 26.22dB at 1250Hz.

2024/3/12 22:44 ACQUA

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



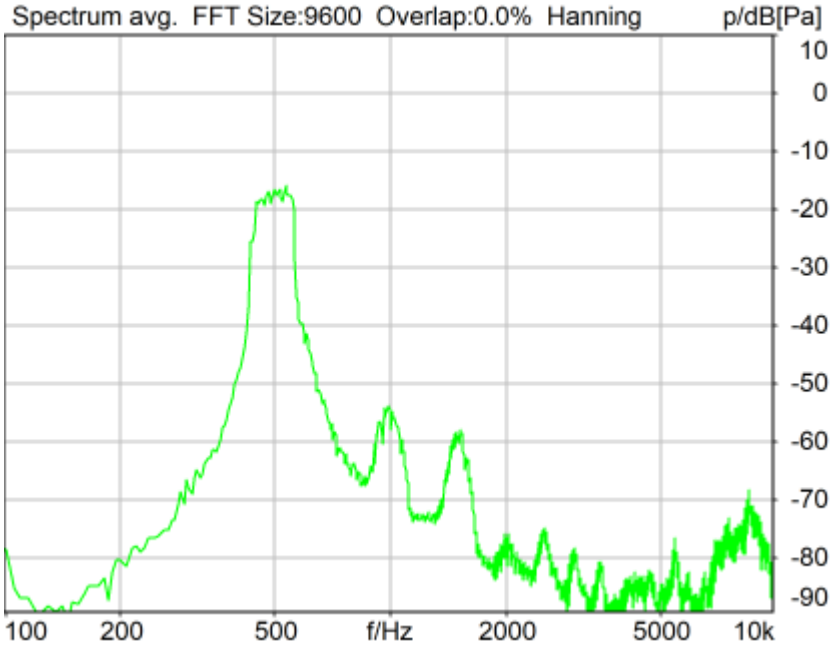
Distortion (Noise) RCV (packed): 28.31 dB (3.84%) Ok

Ok

2024/3/13 0:06 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



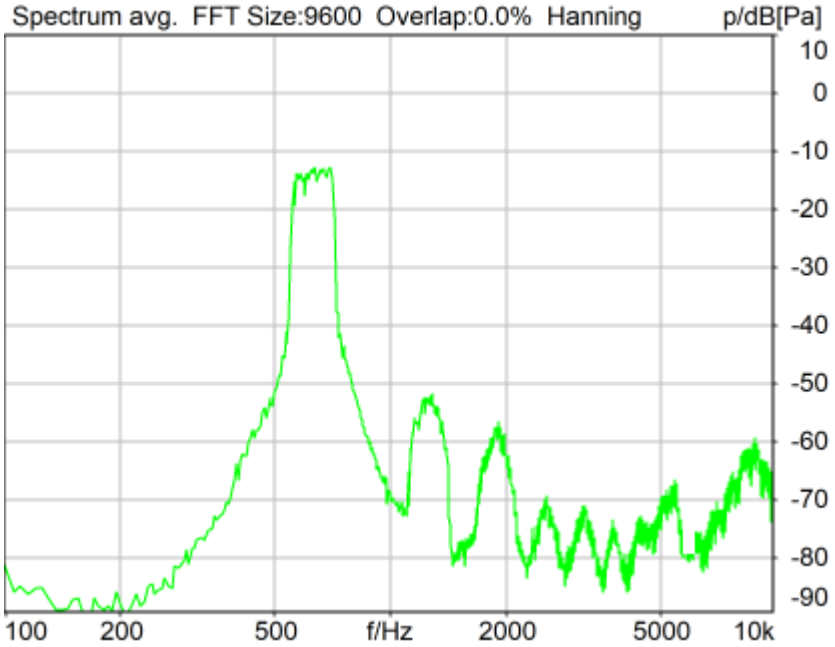
Distortion (Noise) RCV (packed): 29.88 dB (3.21%) Ok

Ok

2024/3/13 0:07 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



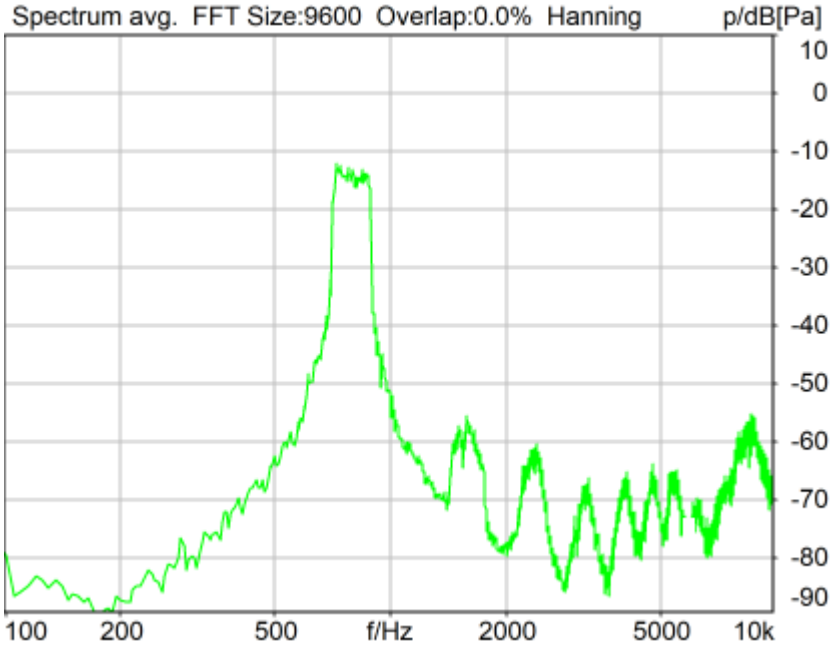
Distortion (Noise) RCV (packed): 32.49 dB (2.38%) Ok

Ok

2024/3/13 0:07 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



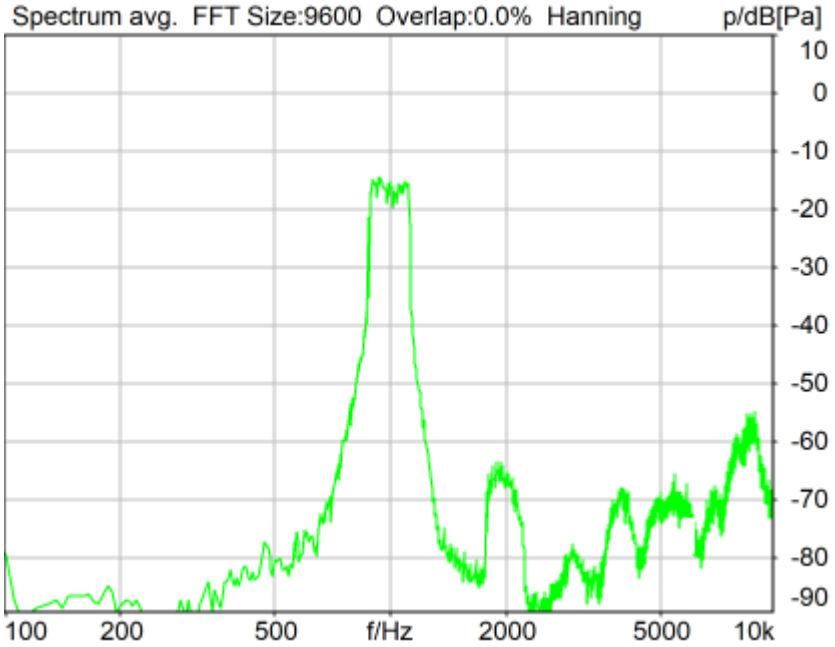
Distortion (Noise) RCV (packed): 31.63 dB (2.62%) Ok

Ok

2024/3/13 0:08 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



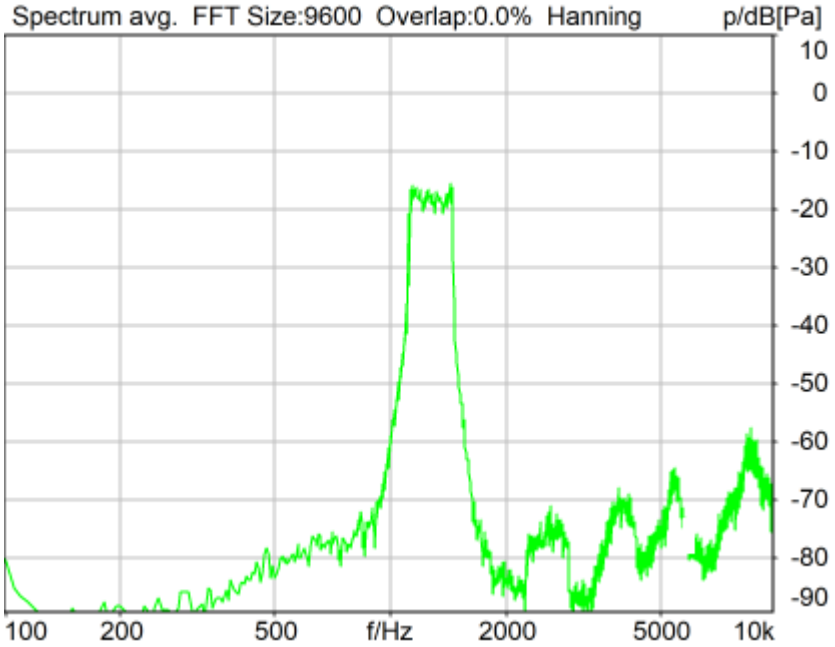
Distortion (Noise) RCV (packed): 32.68 dB (2.32%) Ok

Ok

2024/3/13 0:08 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



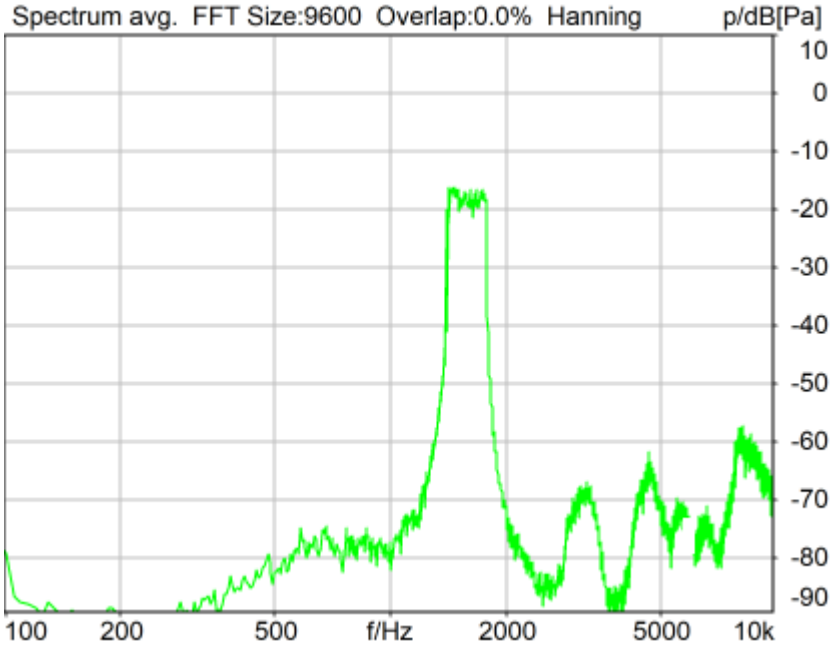
Distortion (Noise) RCV (packed): 26.37 dB (4.80%) Ok

Ok

2024/3/13 0:08 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



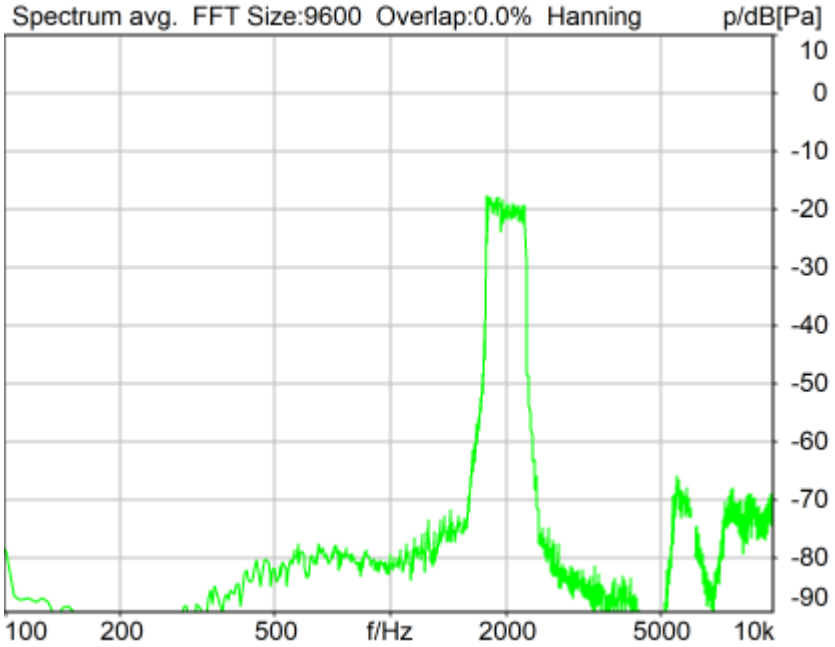
Distortion (Noise) RCV (packed): 35.41 dB (1.70%) Ok

Ok

2024/3/13 0:09 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



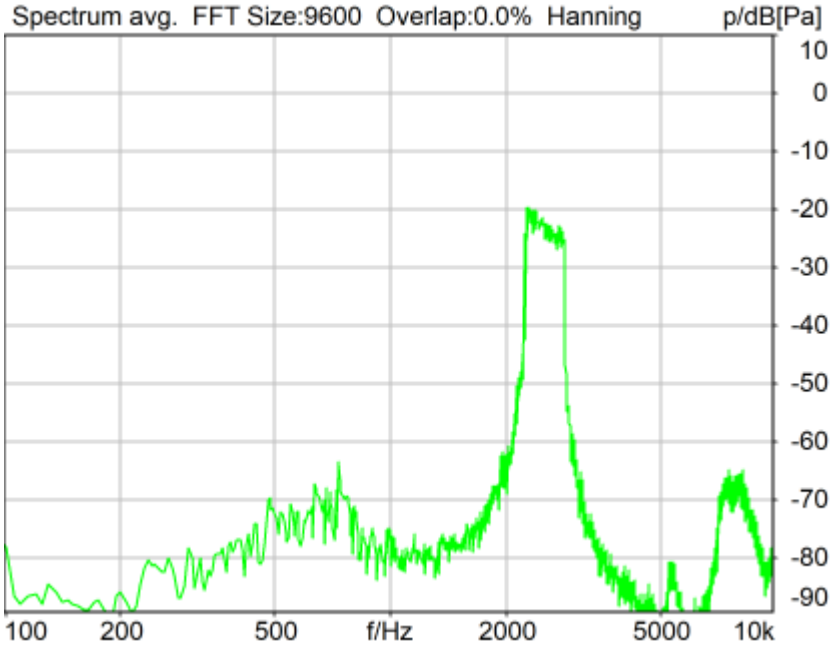
Distortion (Noise) RCV (packed): 37.22 dB (1.38%) Ok

Ok

2024/3/13 0:09 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



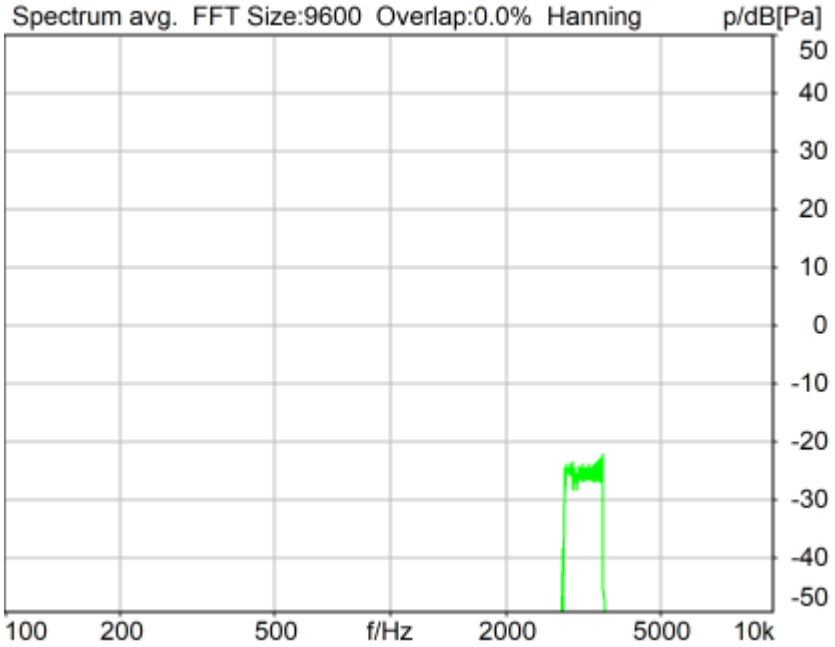
Distortion (Noise) RCV (packed): 31.95 dB (2.53%) Ok

Ok

2024/3/13 0:10 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 29.43 dB (3.38%) Ok

Ok

2024/3/13 0:10 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

Region	Frequency	SDNR
1	400Hz	28.31 dB

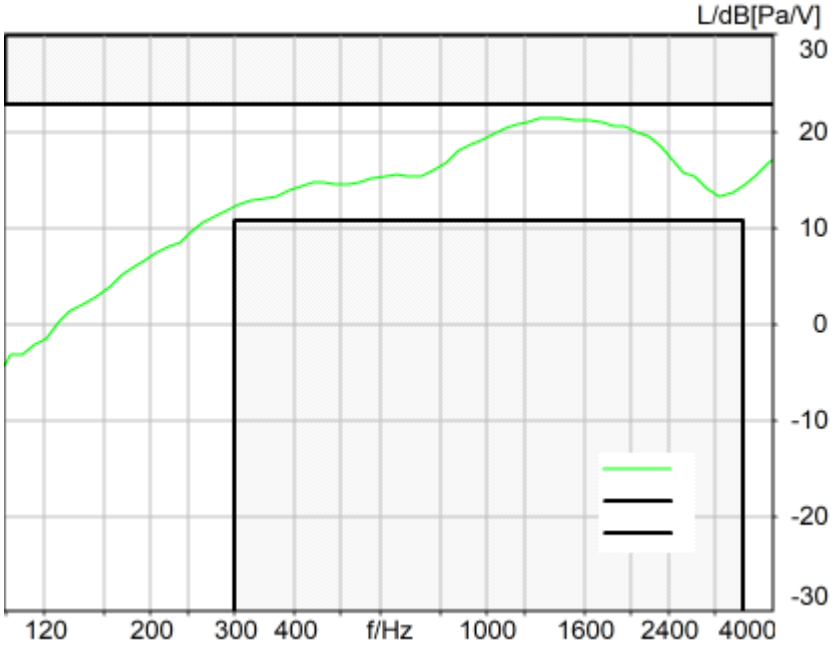
2	500Hz	29.88 dB
3	630Hz	32.49 dB
4	800Hz	31.63 dB
5	1000Hz	32.68 dB
6	1250Hz	26.37 dB
7	1600Hz	35.41 dB
8	2000Hz	37.22 dB
9	2500Hz	31.95 dB
10	3150Hz	29.43 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 26.37dB at 1250Hz.

2024/3/13 0:10 ACQUA

5.3 Frequency Response 8N FF HANB, Index: 1

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



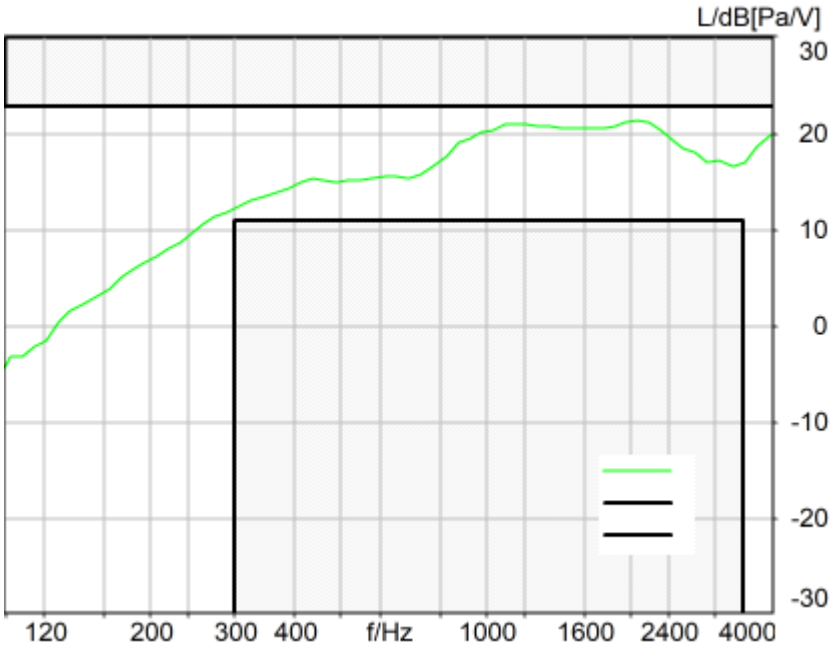
Absolute minimal distance
1.52 dB at 305.9 Hz Ok

Ok

2024/3/12 23:06 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF HANB, Index: 1

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



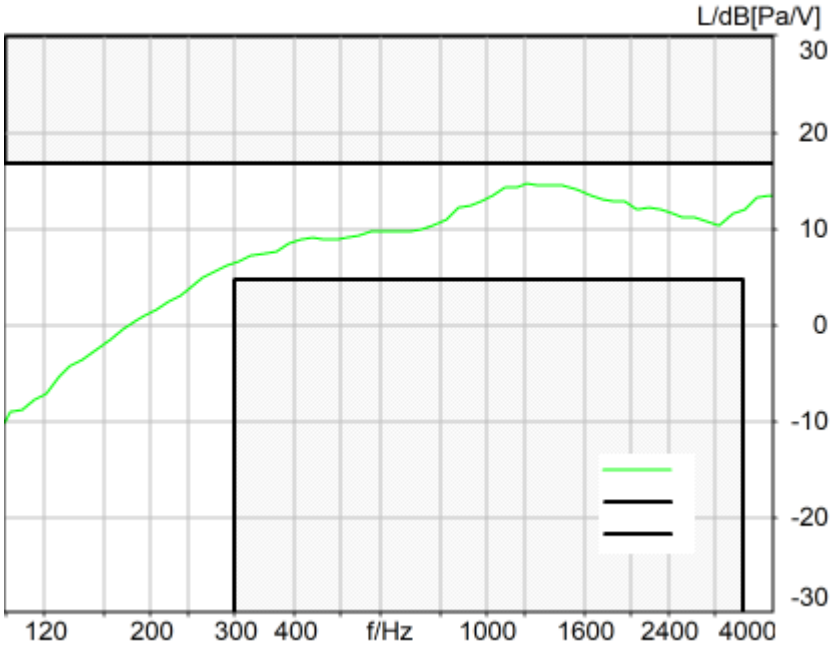
Absolute minimal distance
1.55 dB at 305.9 Hz Ok

Ok

2024/3/12 23:06 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF HANB, Index: 1

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



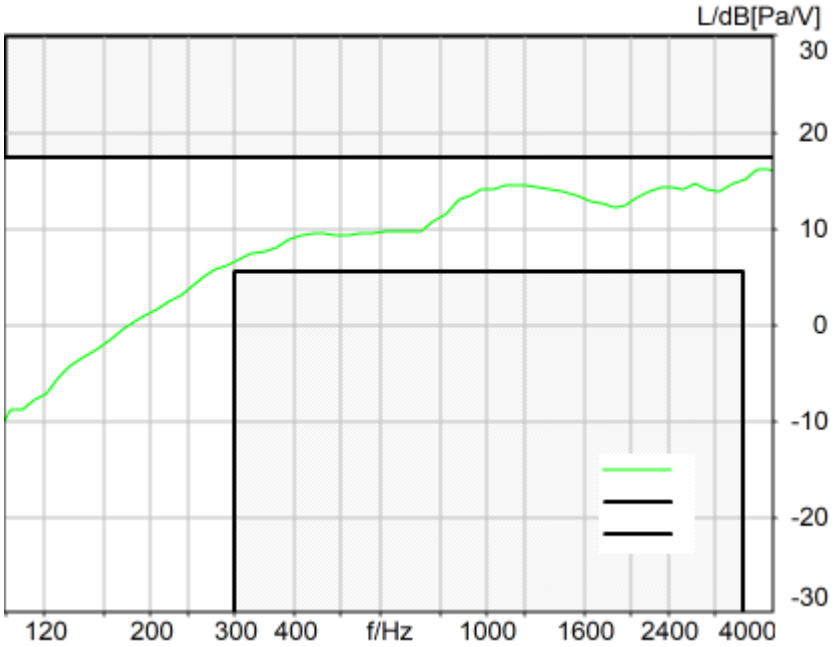
Absolute minimal distance
1.99 dB at 1216.1 Hz Ok

Ok

2024/3/13 0:11 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF HANB, Index: 1

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



Absolute minimal distance
1.27 dB at 3657.5 Hz Ok

Ok

2024/3/13 0:11 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

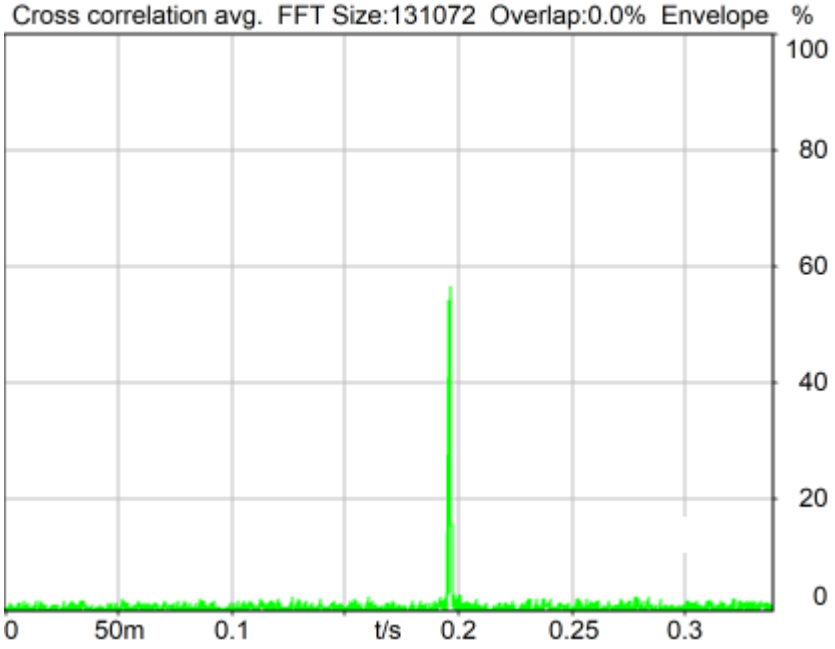
Measurement Object	LTE Band 14_10QPSK_50_0_EVS WB 128kbps_CH23330
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:51
Responsible Person	audio

Overall Receive Delay WB, Index: 1 3
5.1a Receive Volume Control Performance 8N WB, Index: 1 3
5.1b Receive Volume Control Performance 2N WB, Index: 1 4
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 5
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 6
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 8
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 10
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 12
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 14
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 15
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 15
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 16
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 18
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 20
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 22
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 24
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 25
5.3 Frequency Response 8N FF, Index: 1 25
5.3 Frequency Response 8N DF, Index: 1 26
5.3 Frequency Response 2N FF, Index: 1 27
5.3 Frequency Response 2N DF, Index: 1 28

Overall Receive Delay WB, Index: 1

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

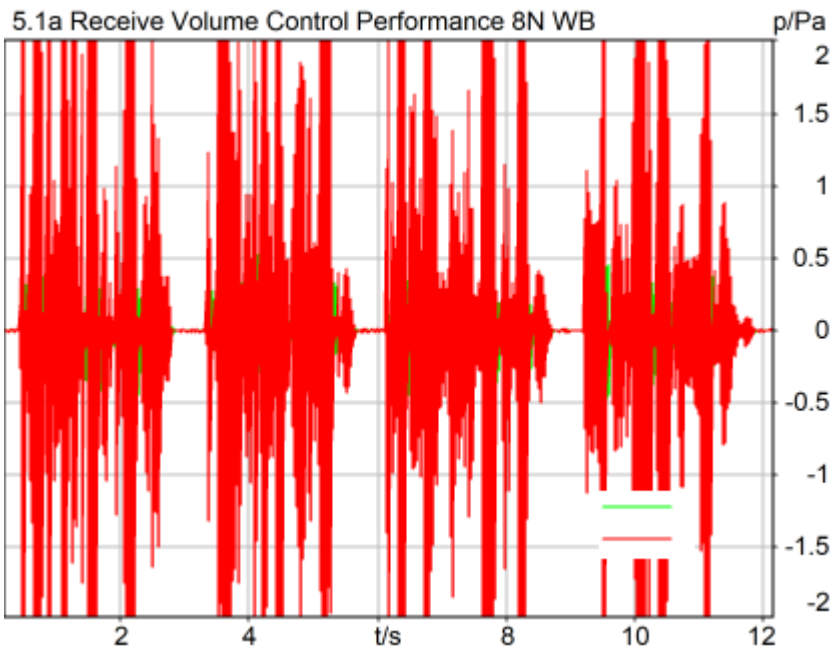


Delay (Cross): 196.2 ms

2024/3/13 16:54 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N WB, Index: 1

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



Correction

X - 70

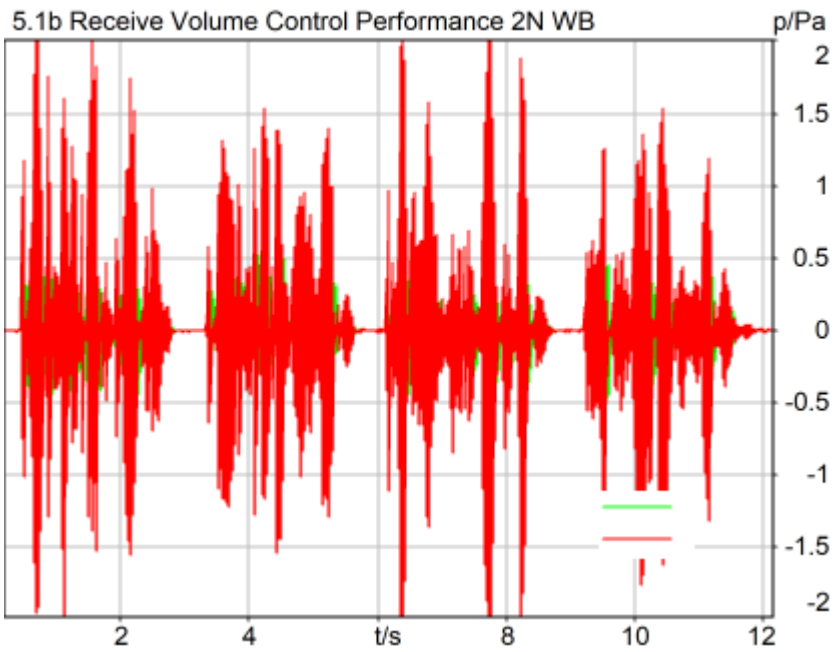
Speech Level RCV: 87.28 dB[SPL], Act.: 83.50%
Corrected Speech Level: 17.28 dB[SPL] Ok

Ok

2024/3/18 9:40 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N WB, Index: 1

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



Correction

X - 70

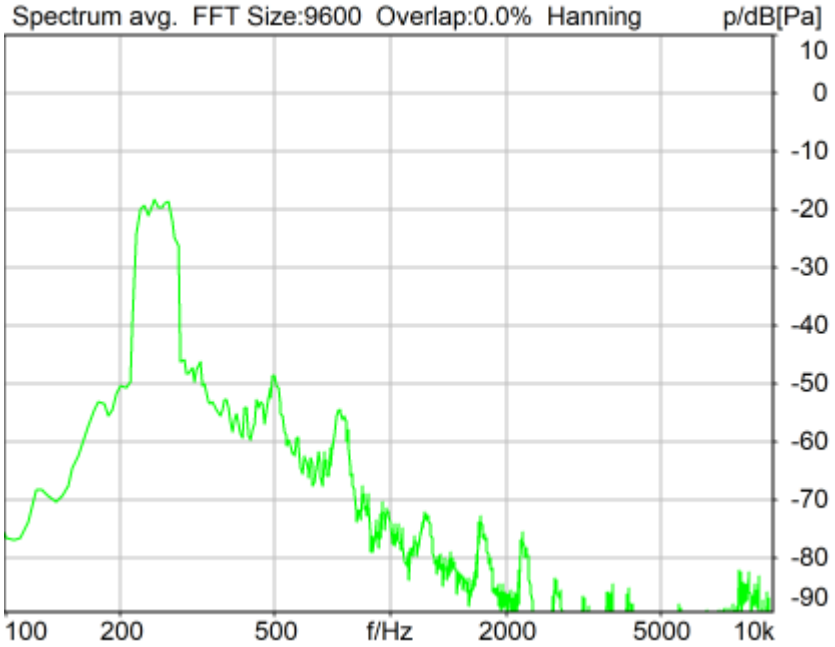
Speech Level RCV: 81.25 dB[SPL], Act.: 84.19%
Corrected Speech Level: 11.25 dB[SPL] Ok

Ok

2024/3/18 10:21 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



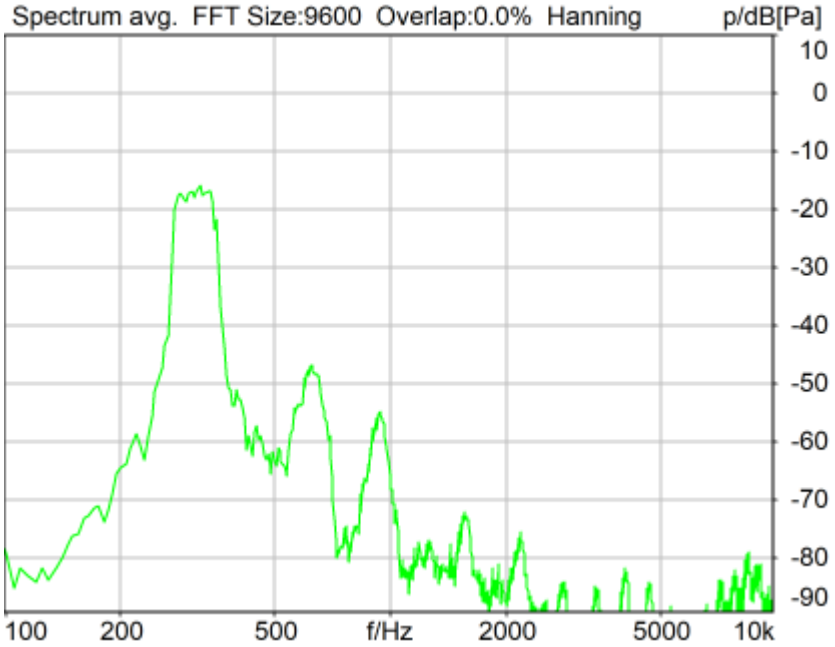
Distortion (Noise) RCV (packed): 29.89 dB (3.20%) Ok

Ok

2024/3/12 22:46 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



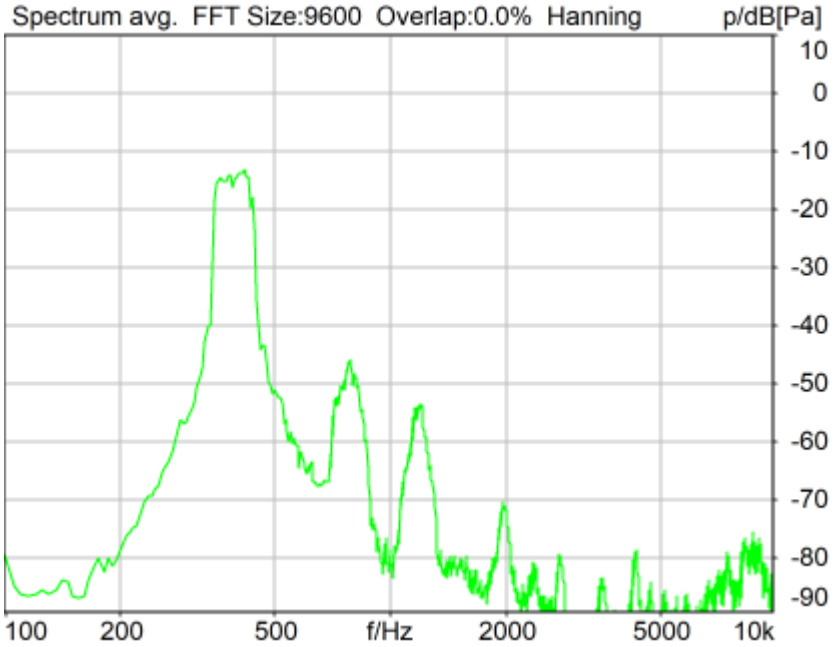
Distortion (Noise) RCV (packed): 31.17 dB (2.76%) Ok

Ok

2024/3/12 22:47 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



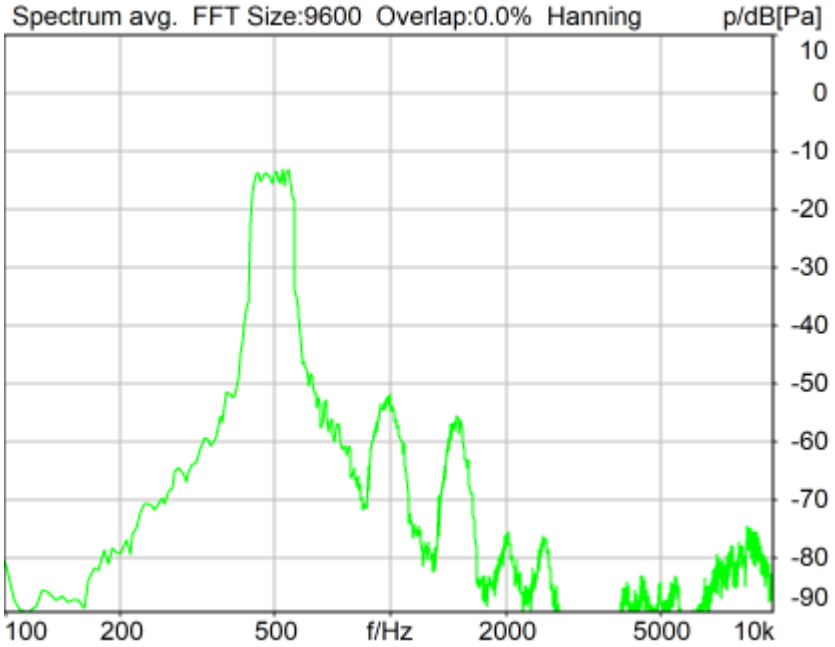
Distortion (Noise) RCV (packed): 32.25 dB (2.44%) Ok

Ok

2024/3/12 22:47 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



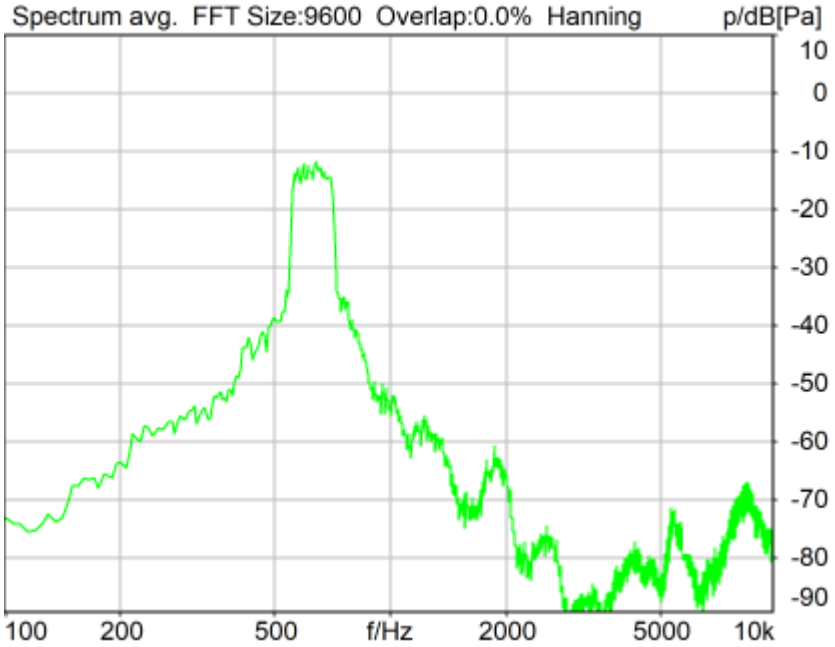
Distortion (Noise) RCV (packed): 34.38 dB (1.91%) Ok

Ok

2024/3/12 22:47 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



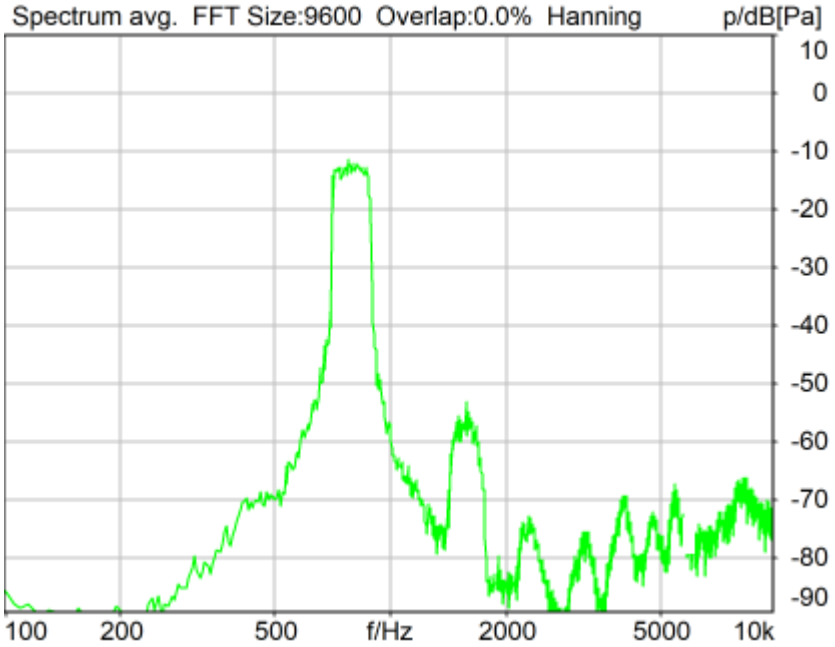
Distortion (Noise) RCV (packed): 26.09 dB (4.96%) Ok

Ok

2024/3/12 22:48 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



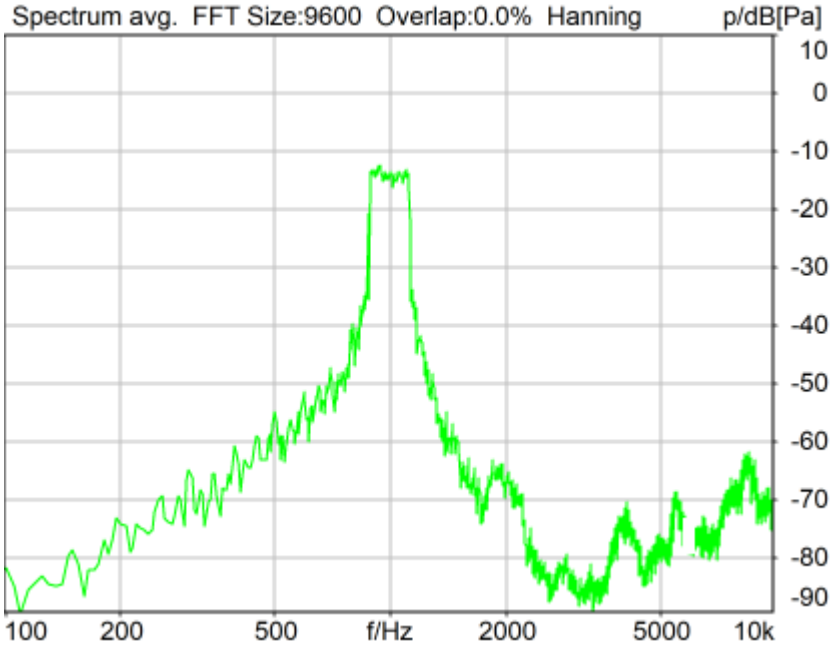
Distortion (Noise) RCV (packed): 37.43 dB (1.34%) Ok

Ok

2024/3/12 22:48 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



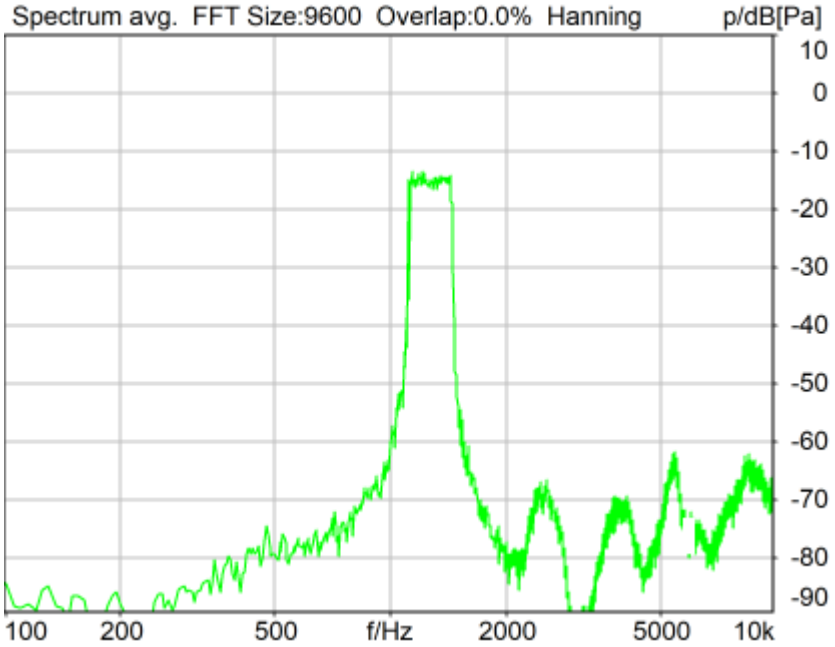
Distortion (Noise) RCV (packed): 28.51 dB (3.75%) Ok

Ok

2024/3/12 22:49 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



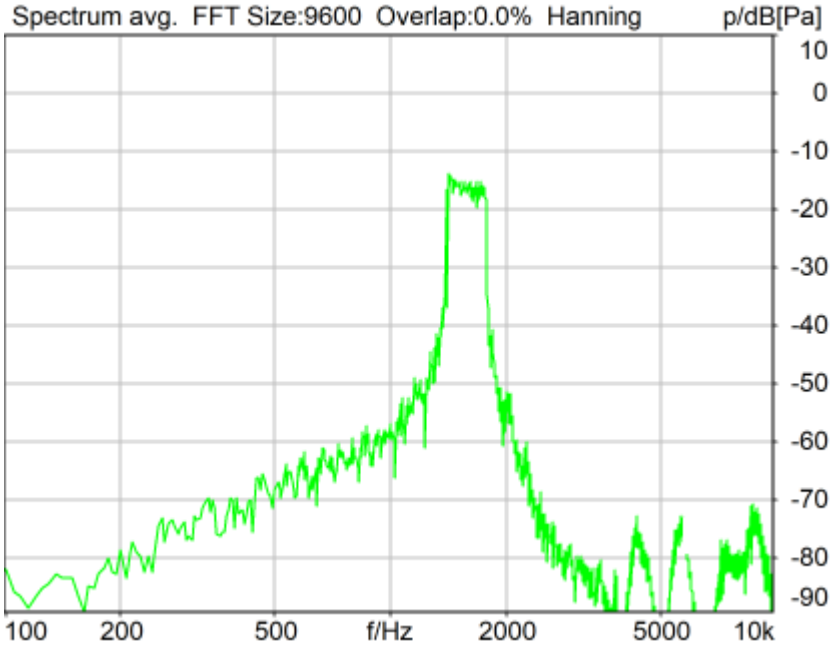
Distortion (Noise) RCV (packed): 31.67 dB (2.61%) Ok

Ok

2024/3/12 22:49 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



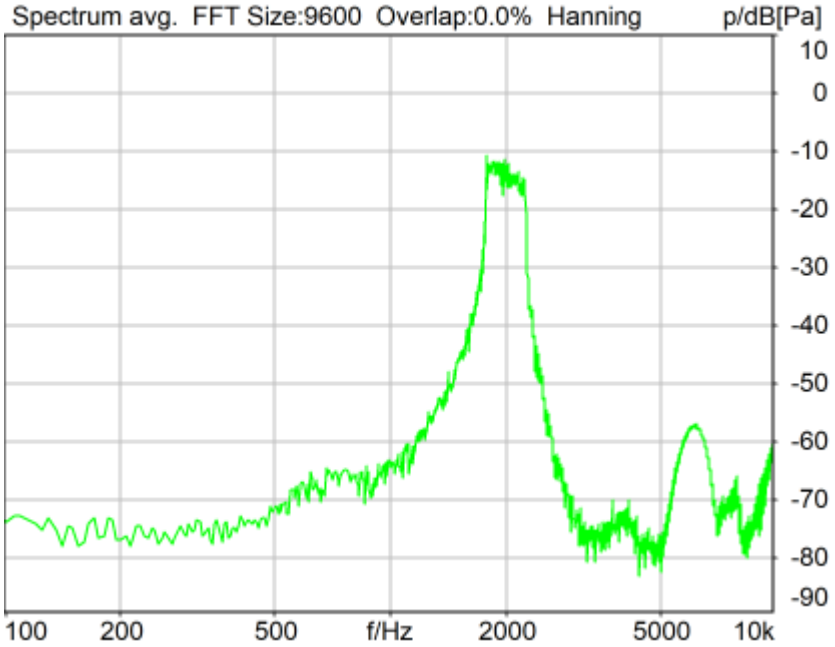
Distortion (Noise) RCV (packed): 28.67 dB (3.69%) Ok

Ok

2024/3/12 22:49 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



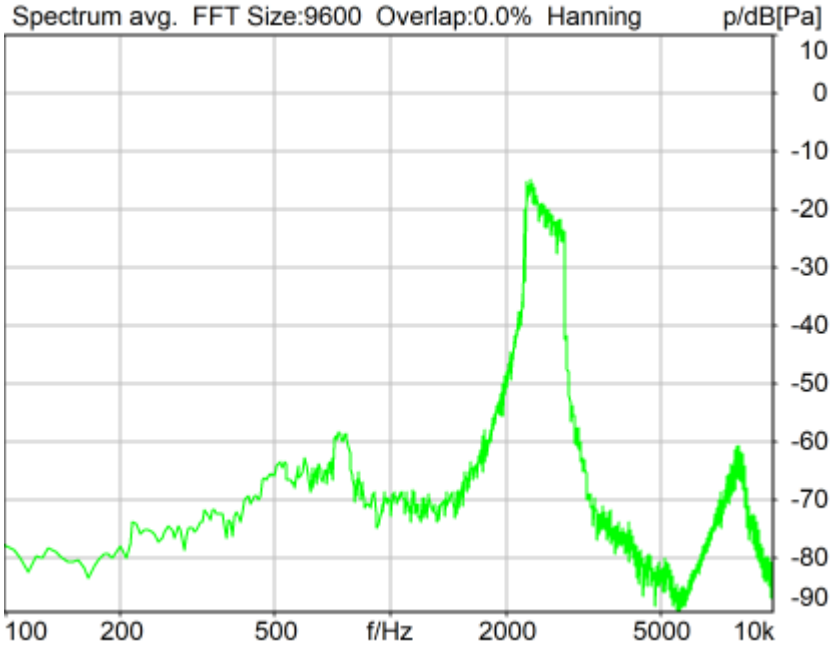
Distortion (Noise) RCV (packed): 22.73 dB (7.30%) Ok

Ok

2024/3/13 23:54 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



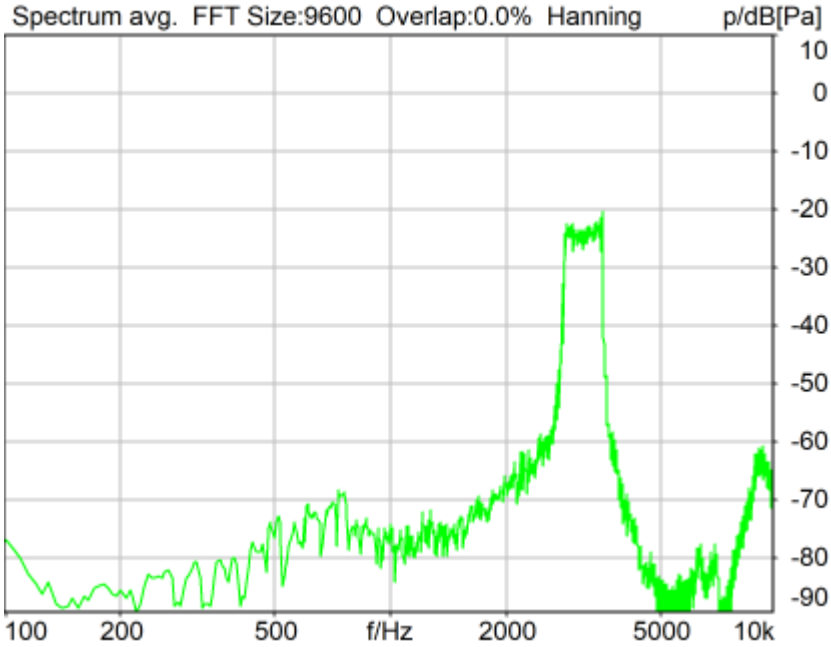
Distortion (Noise) RCV (packed): 24.19 dB (6.18%) Ok

Ok

2024/3/13 23:54 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



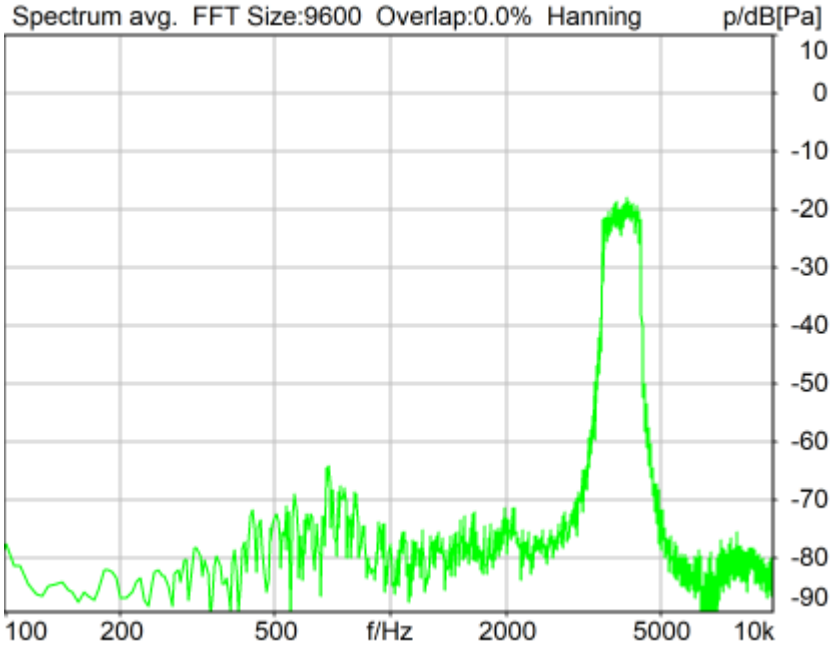
Distortion (Noise) RCV (packed): 28.60 dB (3.72%) Ok

Ok

2024/3/13 23:54 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



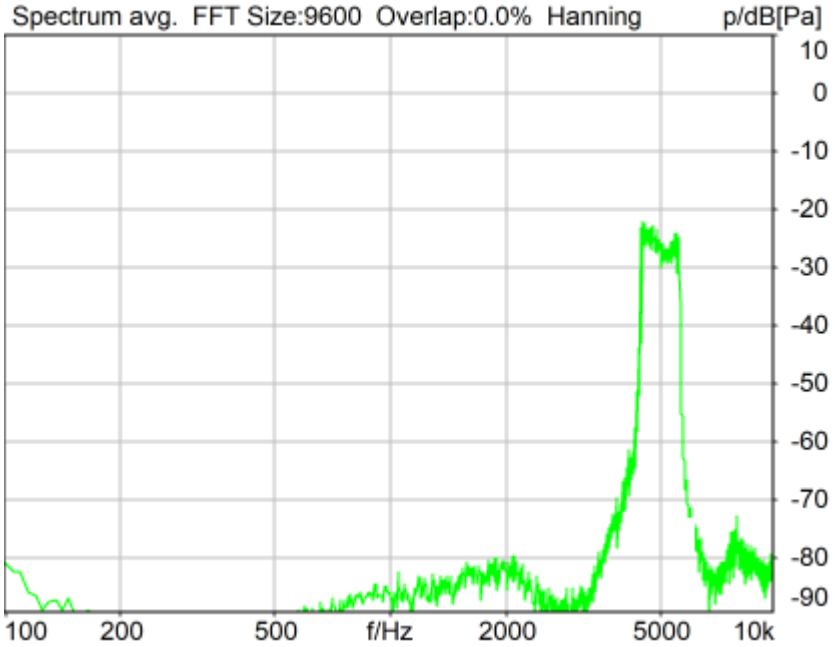
Distortion (Noise) RCV (packed): 30.83 dB (2.87%) Ok

Ok

2024/3/13 23:55 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 33.11 dB (2.21%) Ok

Ok

2024/3/13 23:55 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

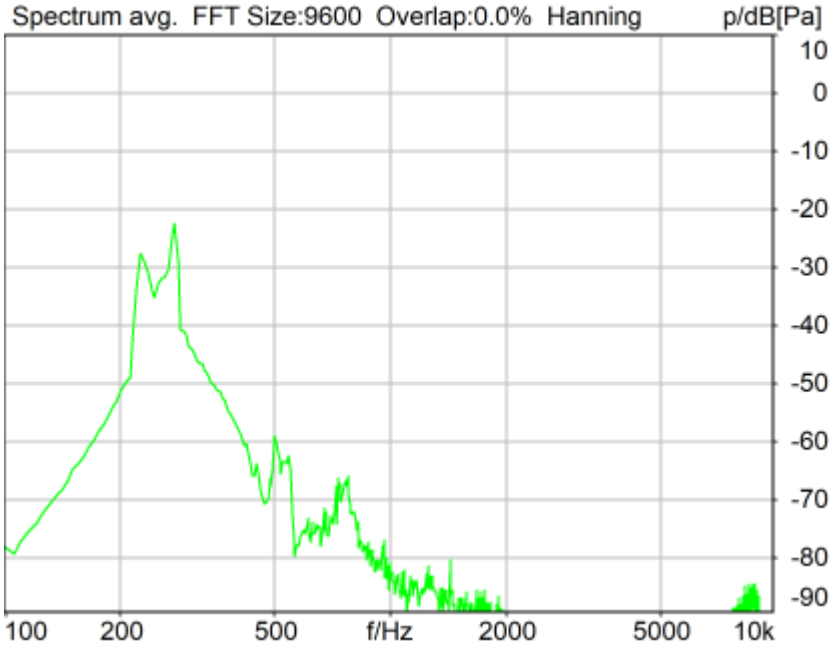
Region	Frequency	SDNR
1	250Hz	25.82 dB
2	315Hz	23.52 dB
3	400Hz	28.86 dB
4	500Hz	30.37 dB
5	630Hz	26.29 dB
6	800Hz	31.93 dB
7	1000Hz	31.87 dB
8	1250Hz	28.91 dB
9	1600Hz	22.34 dB
10	2000Hz	22.73 dB
11	2500Hz	24.19 dB
12	3150Hz	28.60 dB
13	4000Hz	30.83 dB
14	5000Hz	33.11 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 22.34dB at 1600Hz.

2024/3/13 23:55 ACQUA

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



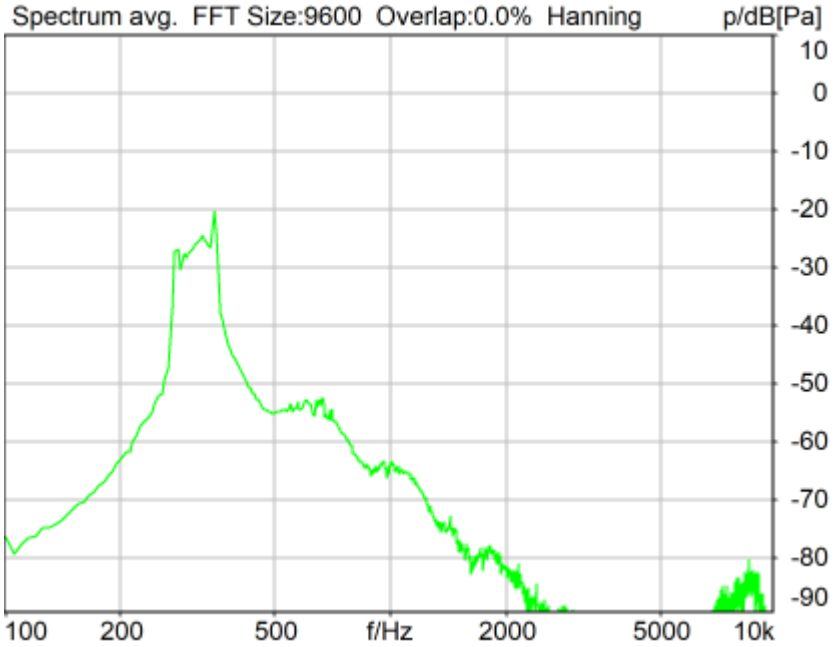
Distortion (Noise) RCV (packed): 25.82 dB (5.12%) Ok

Ok

2024/3/12 23:39 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



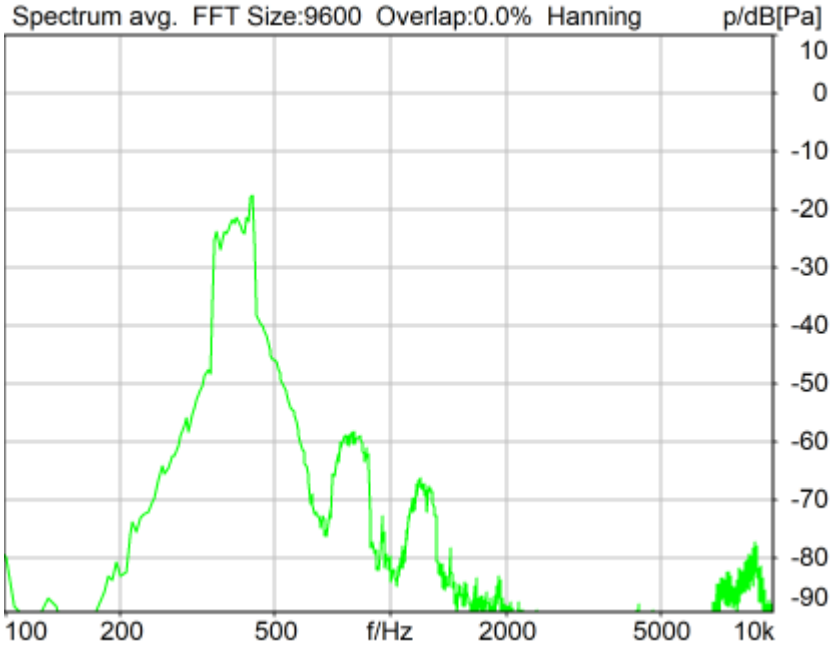
Distortion (Noise) RCV (packed): 23.52 dB (6.67%) Ok

Ok

2024/3/12 23:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



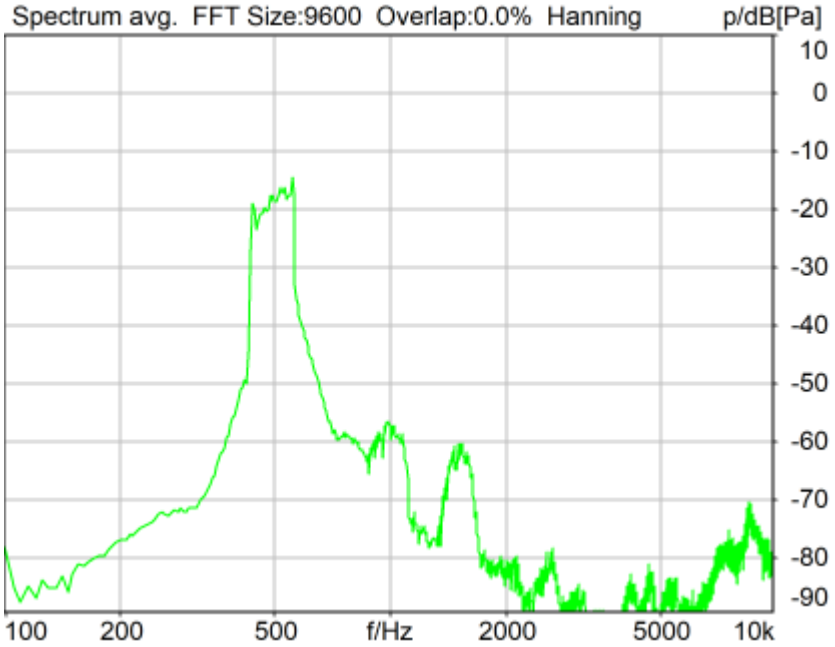
Distortion (Noise) RCV (packed): 28.86 dB (3.61%) Ok

Ok

2024/3/12 23:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



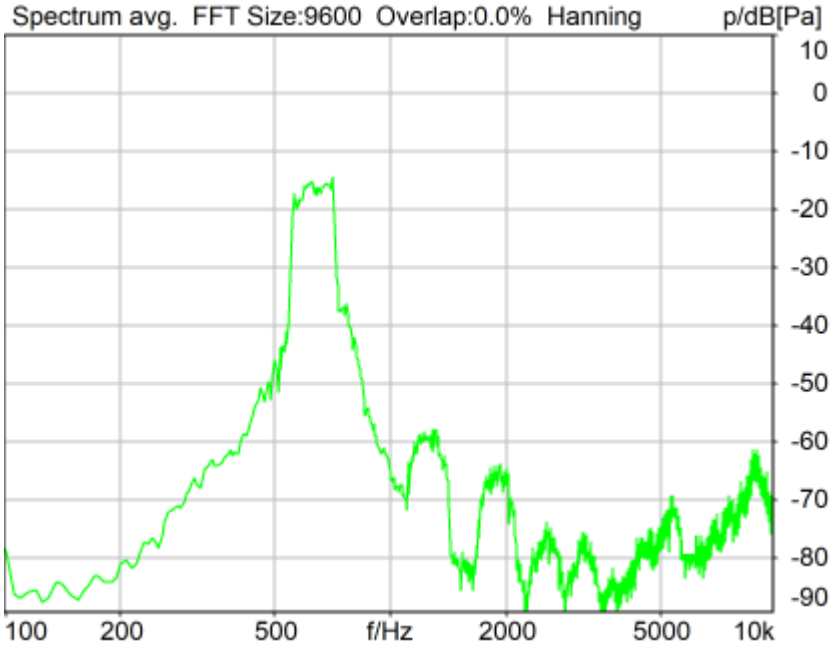
Distortion (Noise) RCV (packed): 30.37 dB (3.03%) Ok

Ok

2024/3/12 23:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



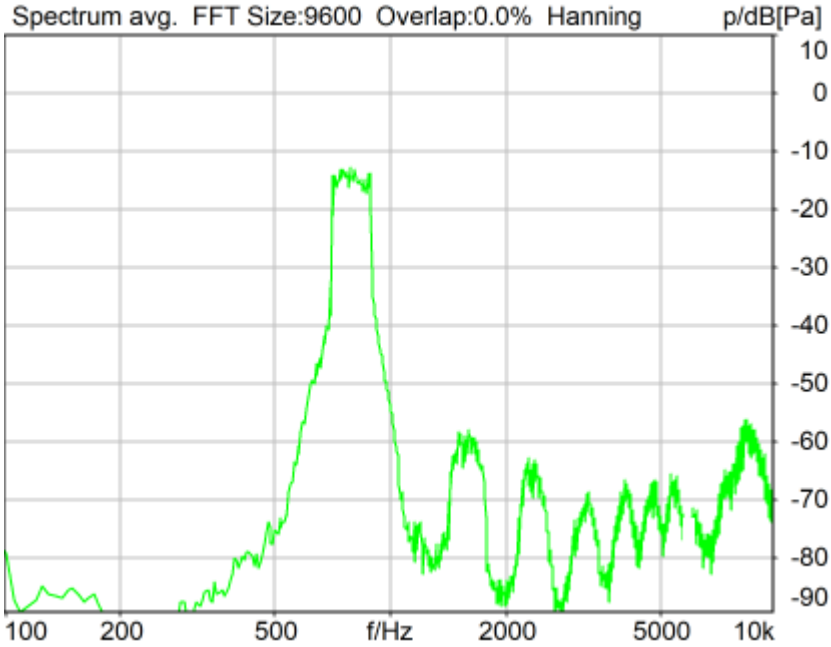
Distortion (Noise) RCV (packed): 26.29 dB (4.85%) Ok

Ok

2024/3/12 23:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



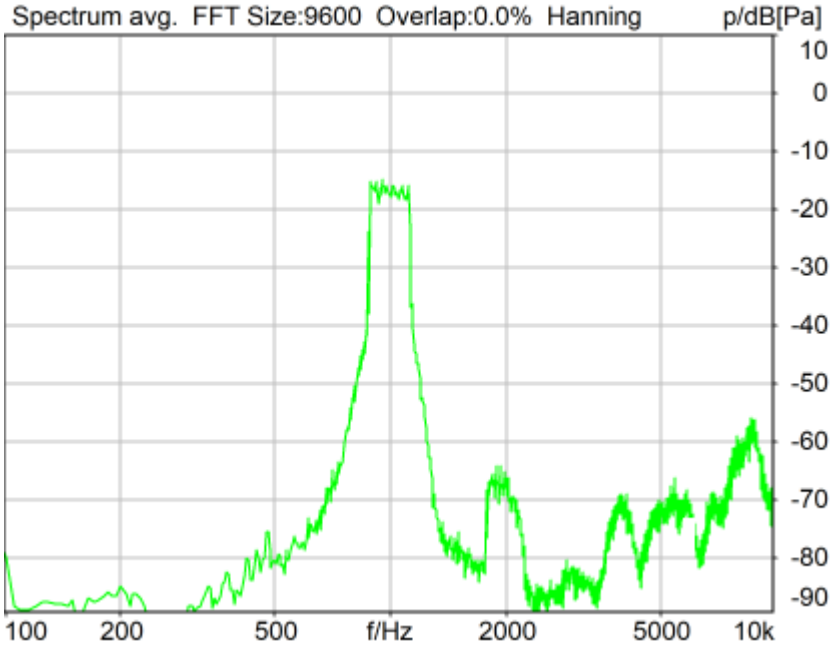
Distortion (Noise) RCV (packed): 31.93 dB (2.53%) Ok

Ok

2024/3/12 23:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



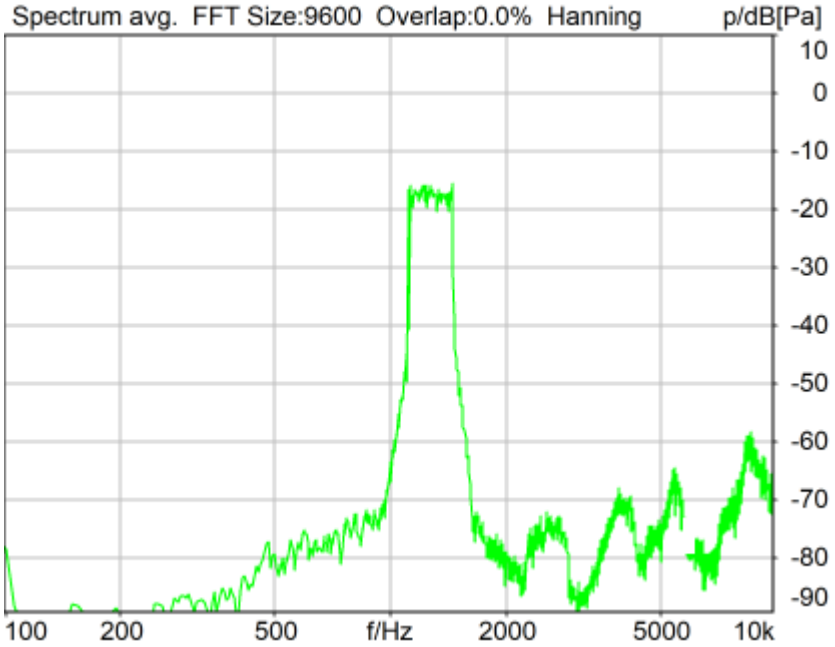
Distortion (Noise) RCV (packed): 31.87 dB (2.55%) Ok

Ok

2024/3/12 23:42 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



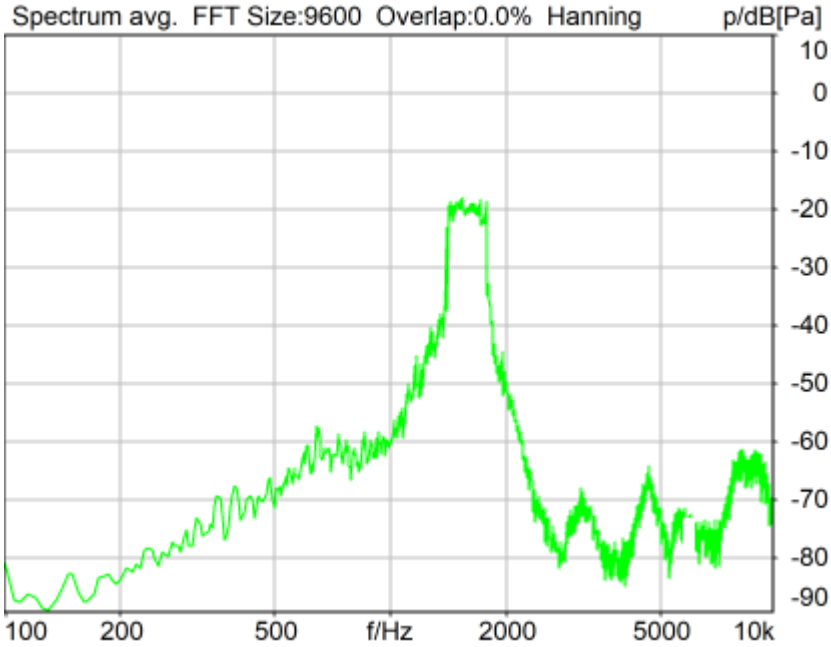
Distortion (Noise) RCV (packed): 28.91 dB (3.58%) Ok

Ok

2024/3/12 23:42 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



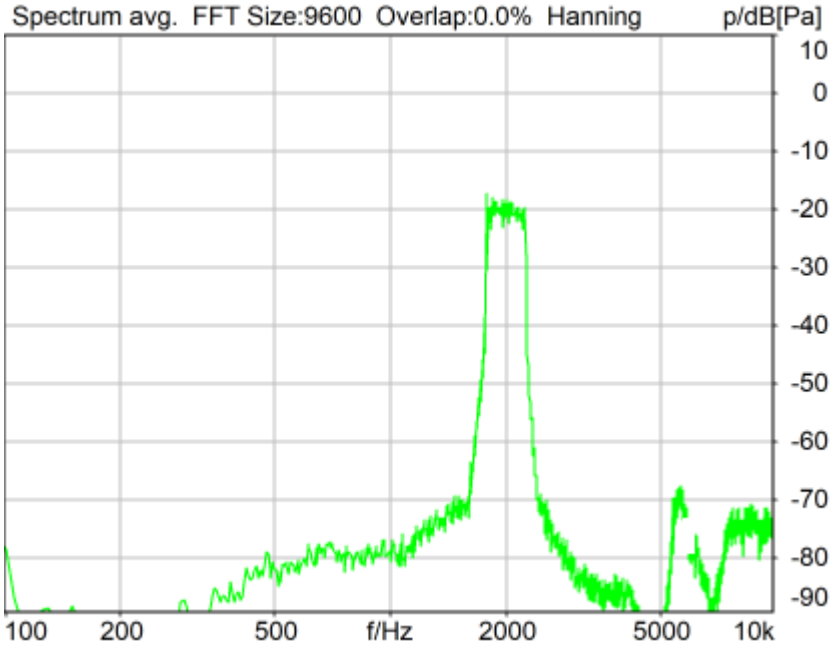
Distortion (Noise) RCV (packed): 22.34 dB (7.64%) Ok

Ok

2024/3/12 23:43 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



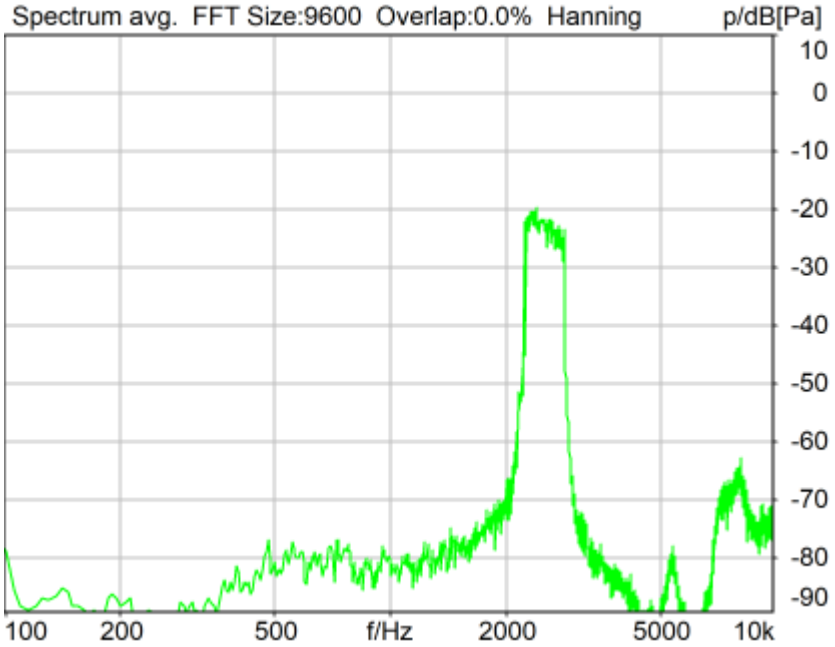
Distortion (Noise) RCV (packed): 35.12 dB (1.75%) Ok

Ok

2024/3/12 23:43 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



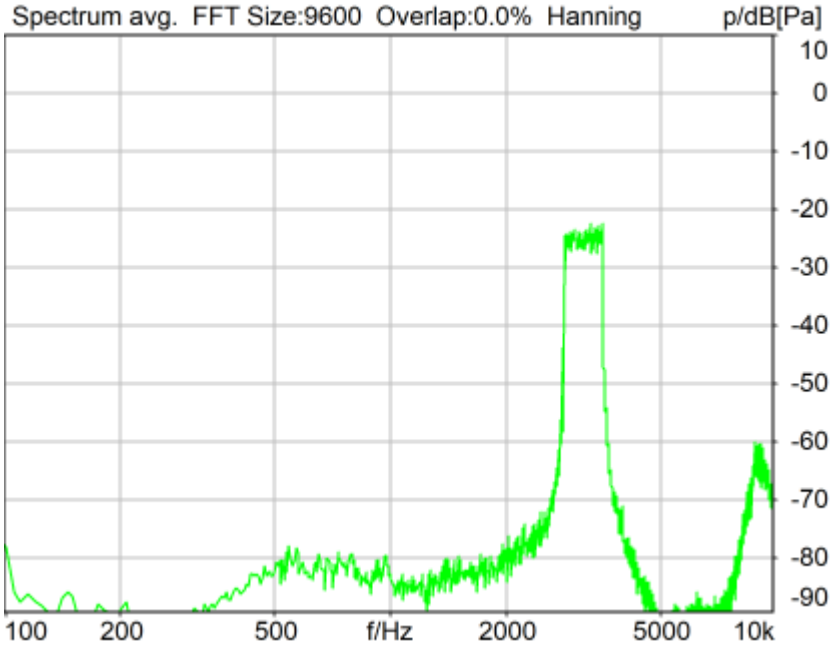
Distortion (Noise) RCV (packed): 34.74 dB (1.83%) Ok

Ok

2024/3/12 23:43 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



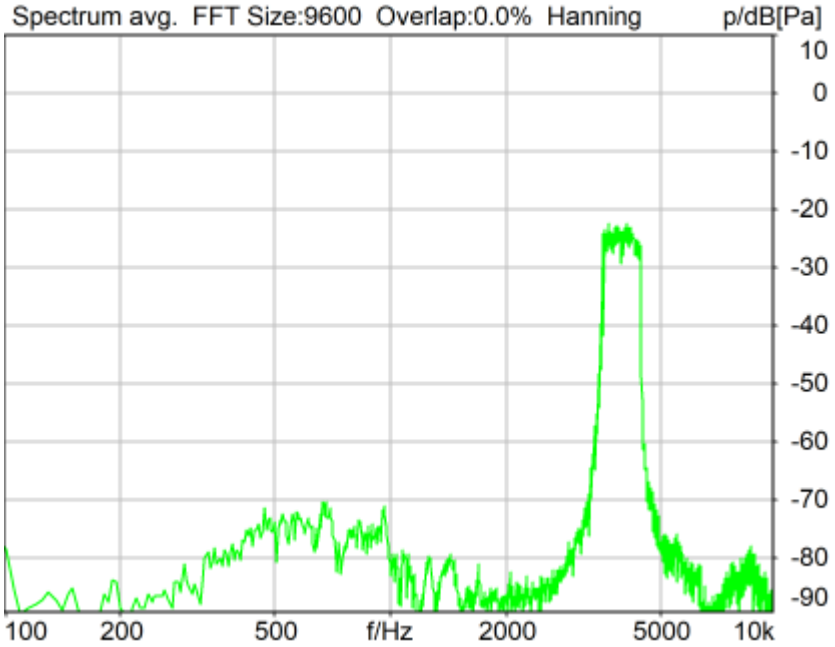
Distortion (Noise) RCV (packed): 34.36 dB (1.91%) Ok

Ok

2024/3/12 23:44 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



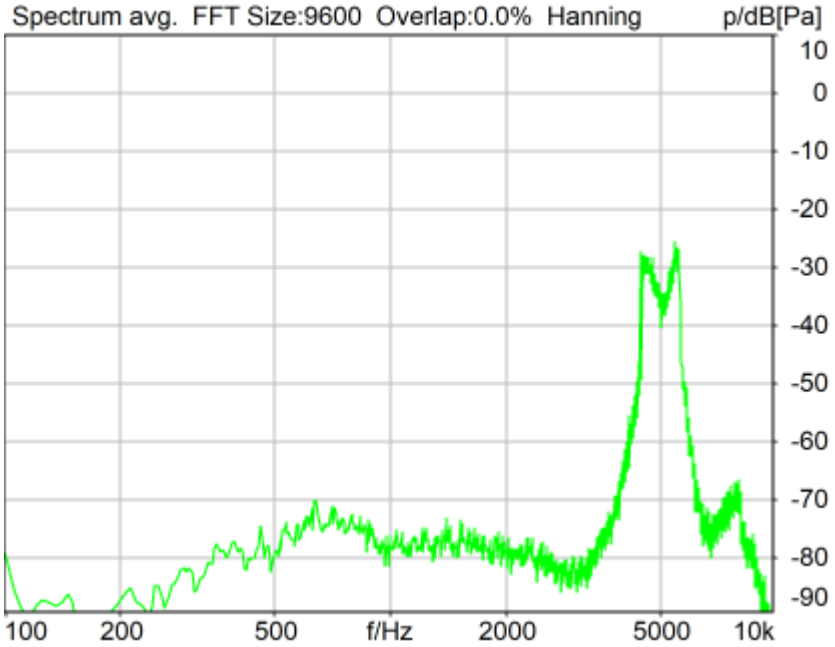
Distortion (Noise) RCV (packed): 32.97 dB (2.25%) Ok

Ok

2024/3/12 23:44 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 22.63 dB (7.39%) Ok

Ok

2024/3/12 23:45 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

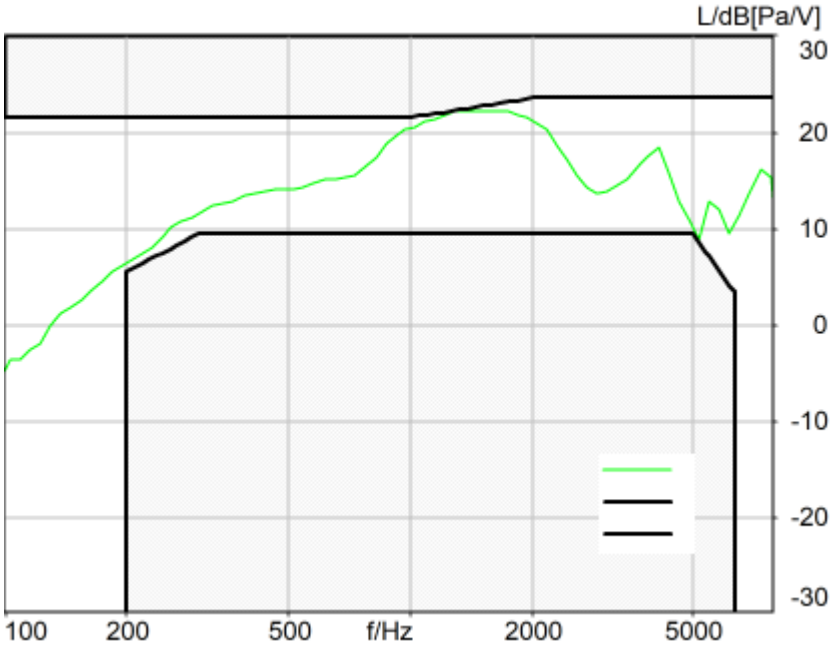
Region	Frequency	SDNR
1	250Hz	25.82 dB
2	315Hz	23.52 dB
3	400Hz	28.86 dB
4	500Hz	30.37 dB
5	630Hz	26.29 dB
6	800Hz	31.93 dB
7	1000Hz	31.87 dB
8	1250Hz	28.91 dB
9	1600Hz	22.34 dB
10	2000Hz	35.12 dB
11	2500Hz	34.74 dB
12	3150Hz	34.36 dB
13	4000Hz	32.97 dB
14	5000Hz	22.63 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 22.34dB at 1600Hz.

2024/3/12 23:45 ACQUA

5.3 Frequency Response 8N FF, Index: 1

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



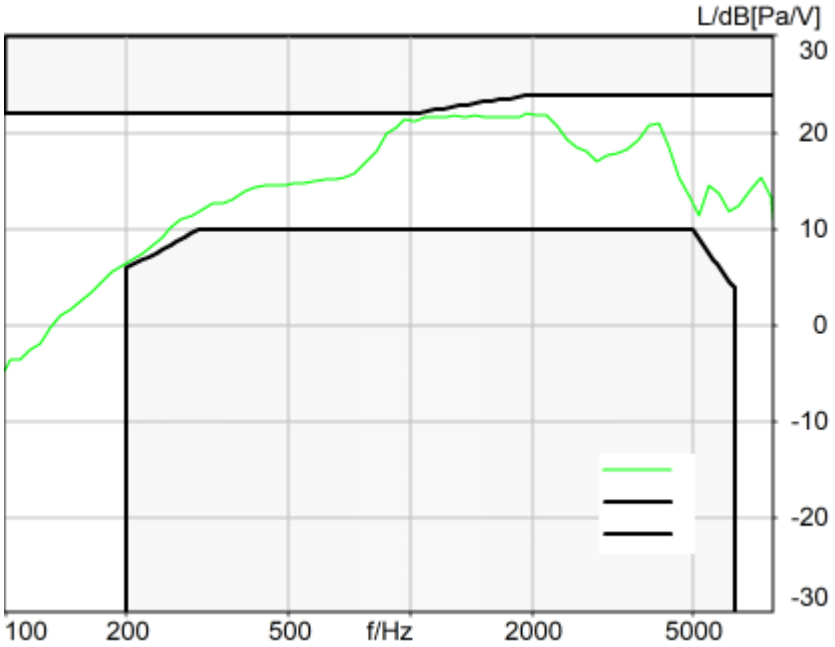
Absolute minimal distance
0.11 dB at 1285.9 Hz Ok

Ok

2024/3/18 9:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF, Index: 1

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



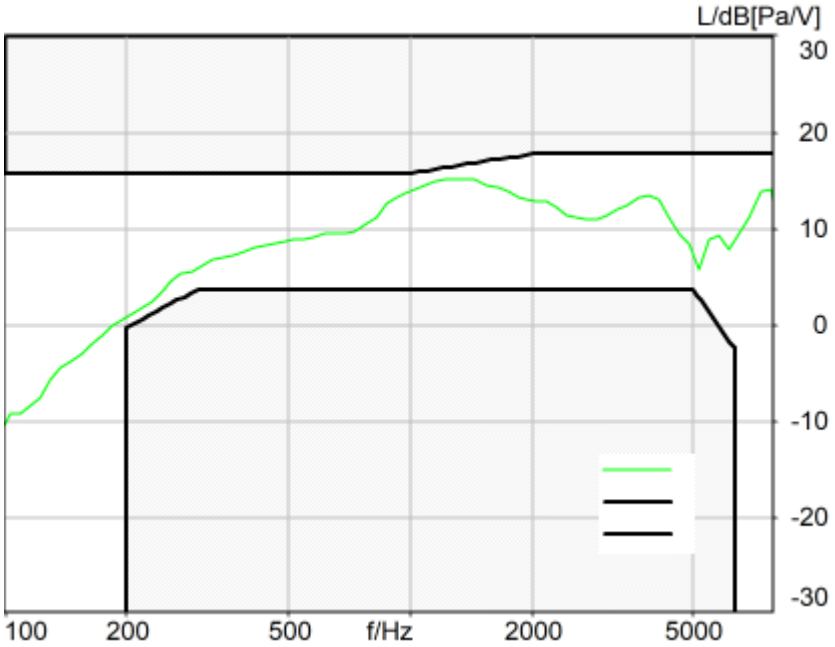
Absolute minimal distance
0.60 dB at 974.0 Hz Ok

Ok

2024/3/18 9:40 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF, Index: 1

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



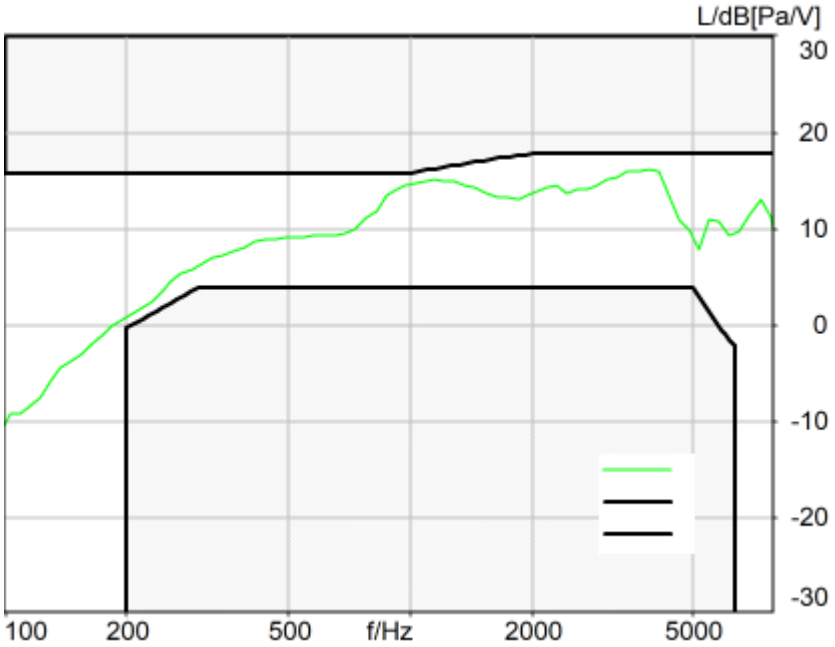
Absolute minimal distance
1.20 dB at 1216.1 Hz Ok

Ok

2024/3/18 10:22 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF, Index: 1

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



Absolute minimal distance
1.10 dB at 1088.7 Hz Ok

Ok

2024/3/18 10:22 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

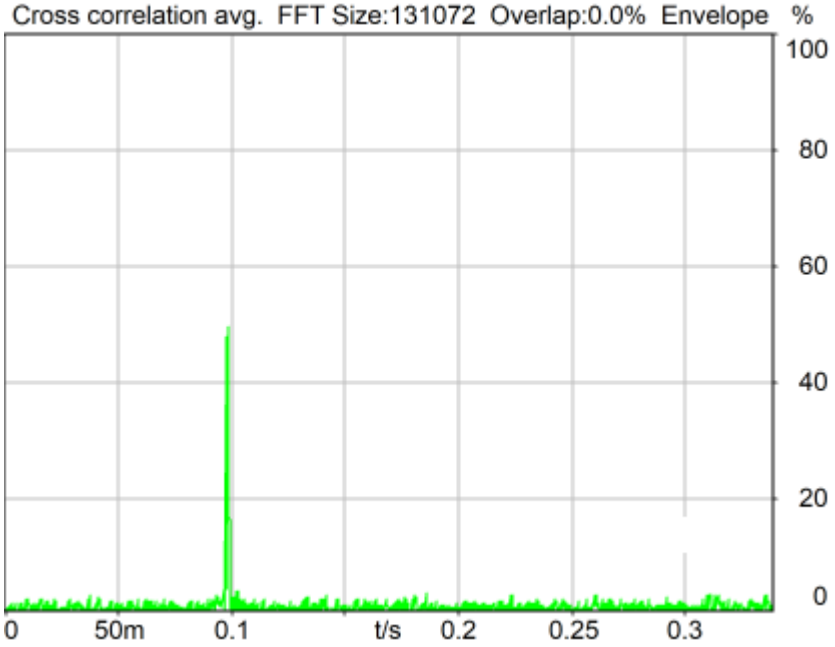
Measurement Object	LTE Band 25_20QPSK_100_0_EVS NB 24.4kbps_CH26340
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:52
Responsible Person	audio

Overall Receive Delay NB, Index: 1 3
5.1a Receive Volume Control Performance 8N NB, Index: 1 3
5.1b Receive Volume Control Performance 2N NB, Index: 1 4
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 5
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 6
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 8
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 10
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 11
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 11
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 12
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 14
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 16
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 18
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 19
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 19
5.3 Frequency Response 8N FF HANB, Index: 1 20
5.3 Frequency Response 8N DF HANB, Index: 1 21
5.3 Frequency Response 2N FF HANB, Index: 1 21
5.3 Frequency Response 2N DF HANB, Index: 1 22

Overall Receive Delay NB, Index: 1

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

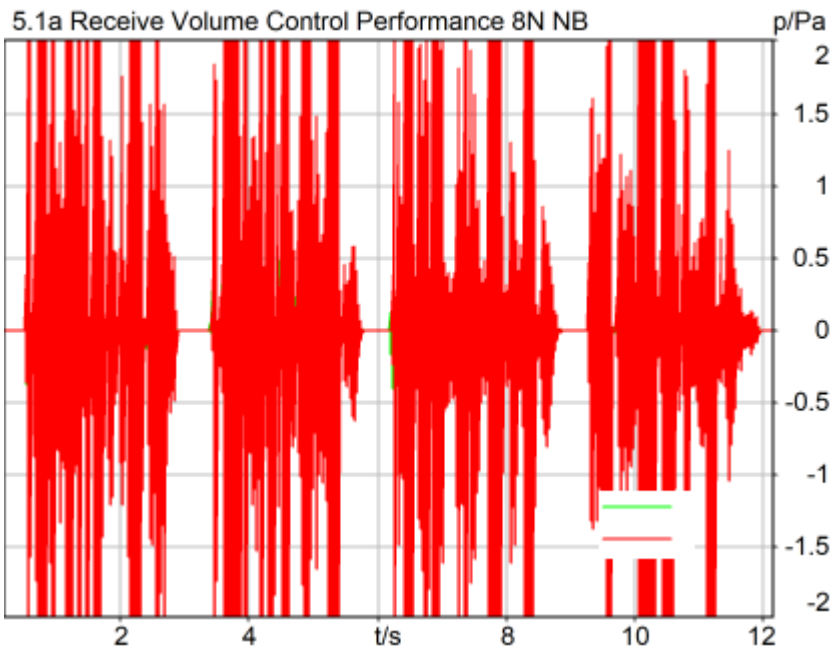


Delay (Cross): 98.1 ms

2024/3/12 22:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N NB, Index: 1

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



Correction

X - 70

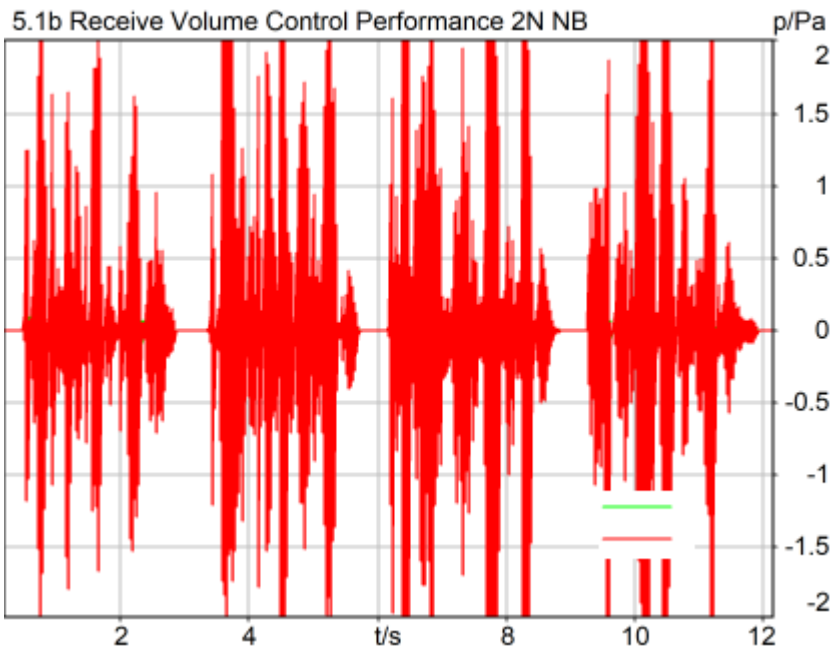
Speech Level RCV: 91.44 dB[SPL], Act.: 81.44%
Corrected Speech Level: 21.44 dB[SPL] Ok

Ok

2024/3/12 22:15 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N NB, Index: 1

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



Correction

X - 70

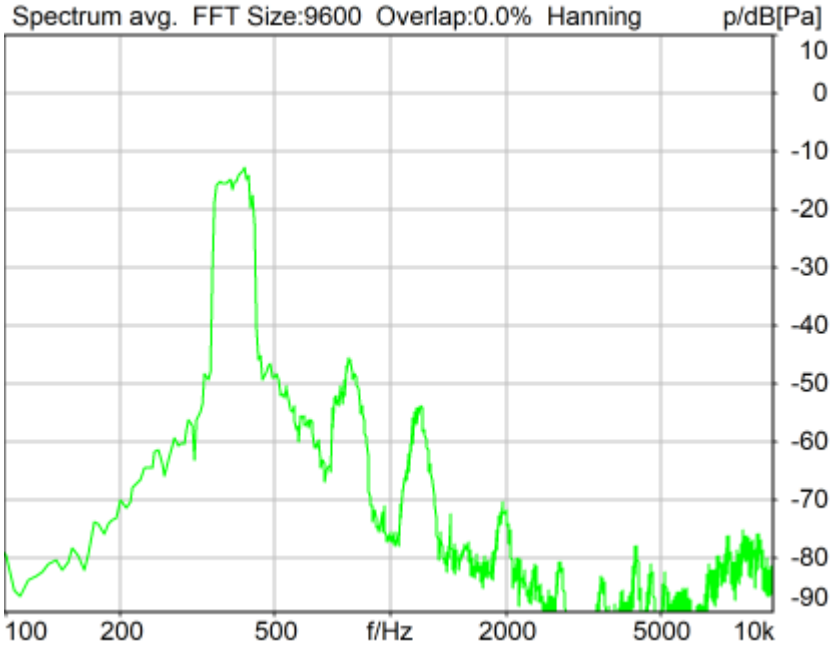
Speech Level RCV: 84.91 dB[SPL], Act.: 81.85%
Corrected Speech Level: 14.91 dB[SPL] Ok

Ok

2024/3/13 0:12 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



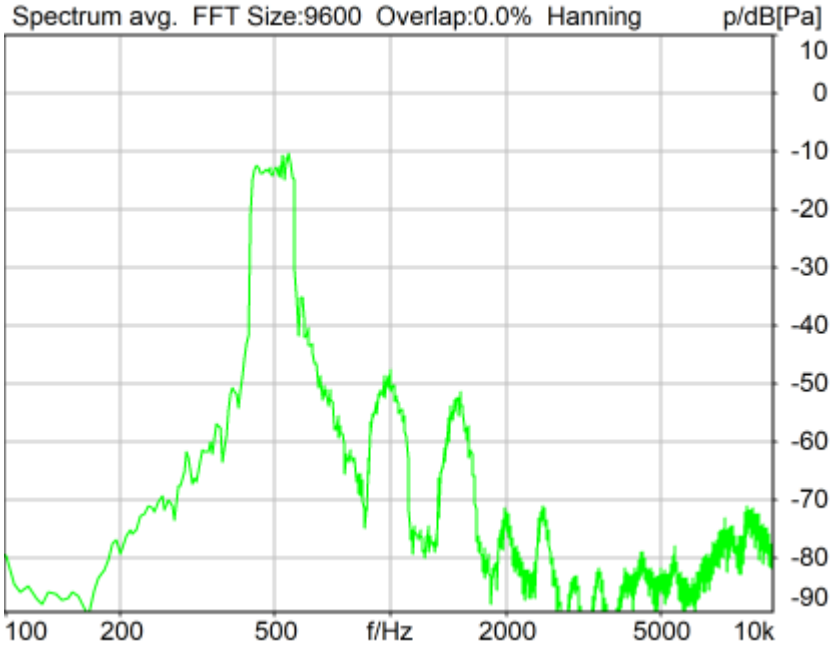
Distortion (Noise) RCV (packed): 31.39 dB (2.70%) Ok

Ok

2024/3/12 22:16 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



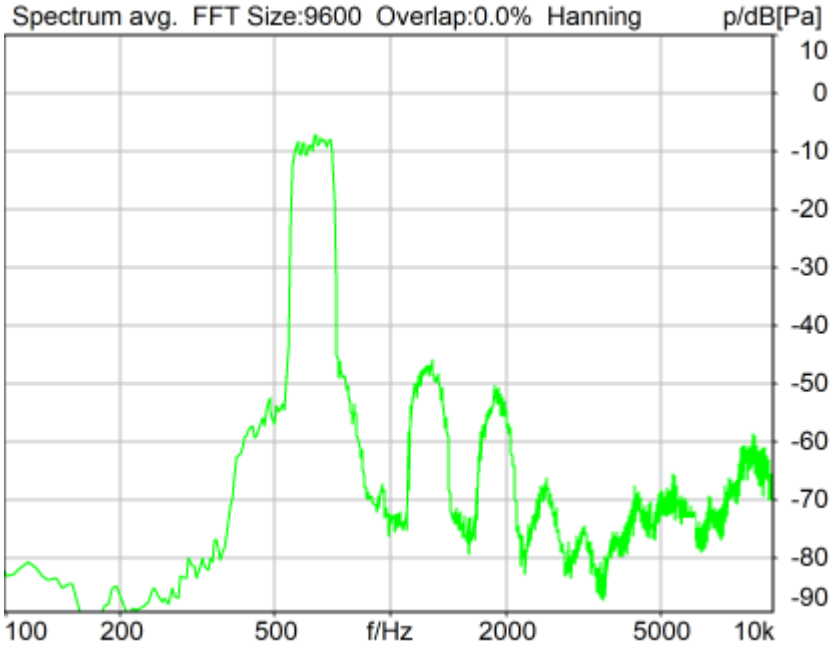
Distortion (Noise) RCV (packed): 31.99 dB (2.52%) Ok

Ok

2024/3/12 22:16 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



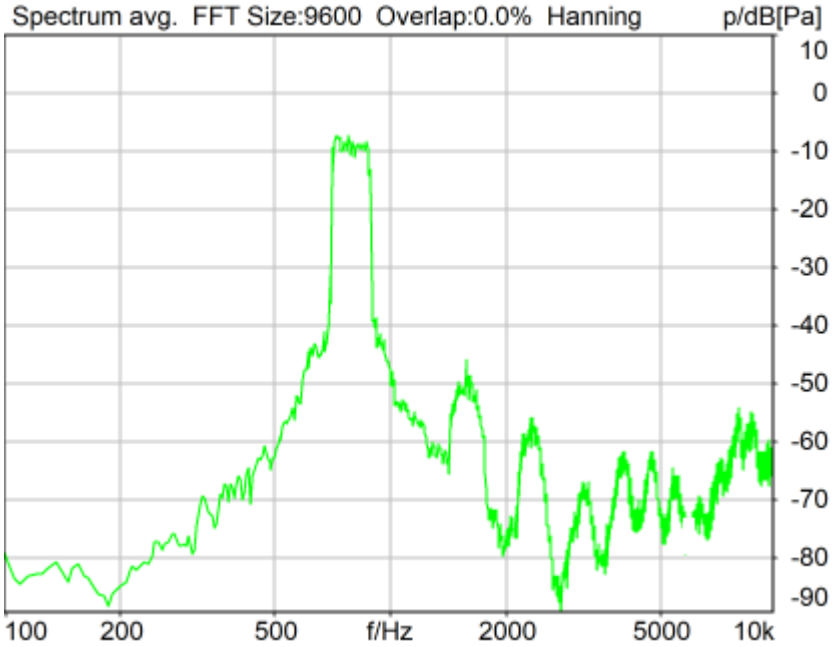
Distortion (Noise) RCV (packed): 34.92 dB (1.80%) Ok

Ok

2024/3/12 22:16 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



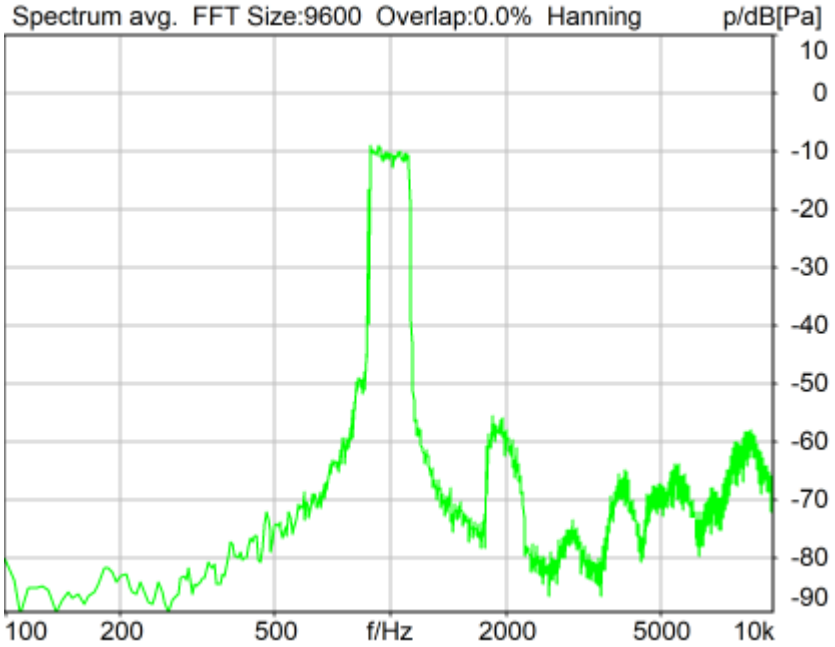
Distortion (Noise) RCV (packed): 33.27 dB (2.17%) Ok

Ok

2024/3/12 22:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



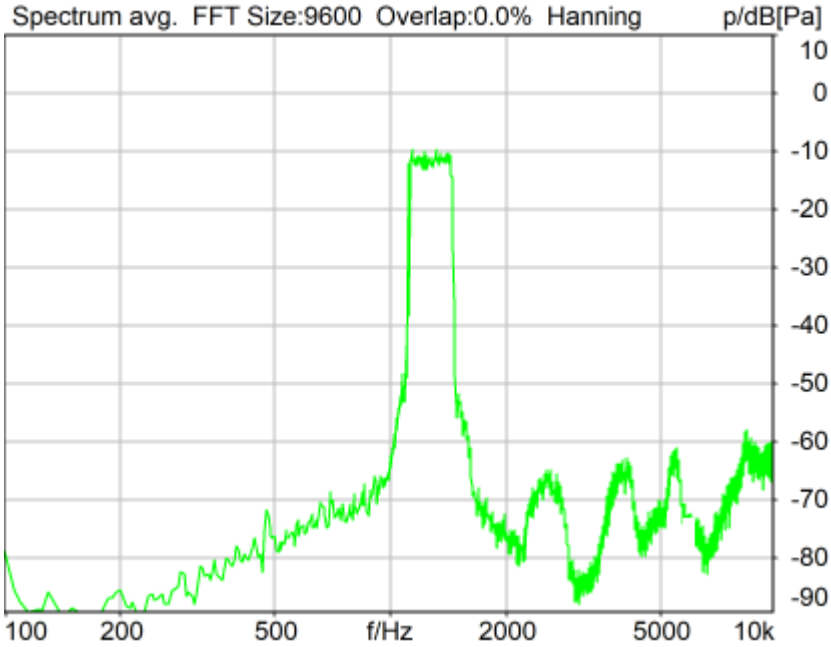
Distortion (Noise) RCV (packed): 39.23 dB (1.09%) Ok

Ok

2024/3/12 22:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



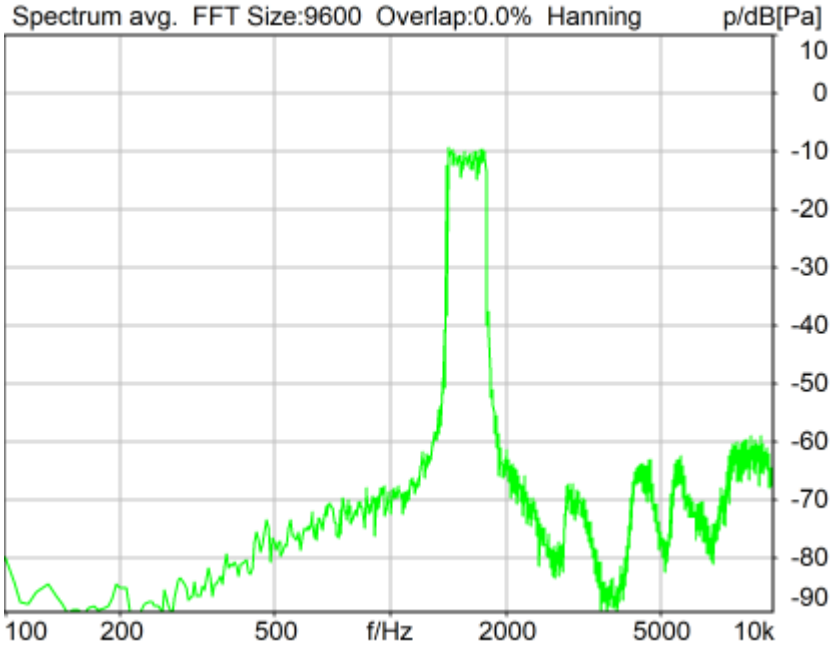
Distortion (Noise) RCV (packed): 32.00 dB (2.51%) Ok

Ok

2024/3/12 22:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



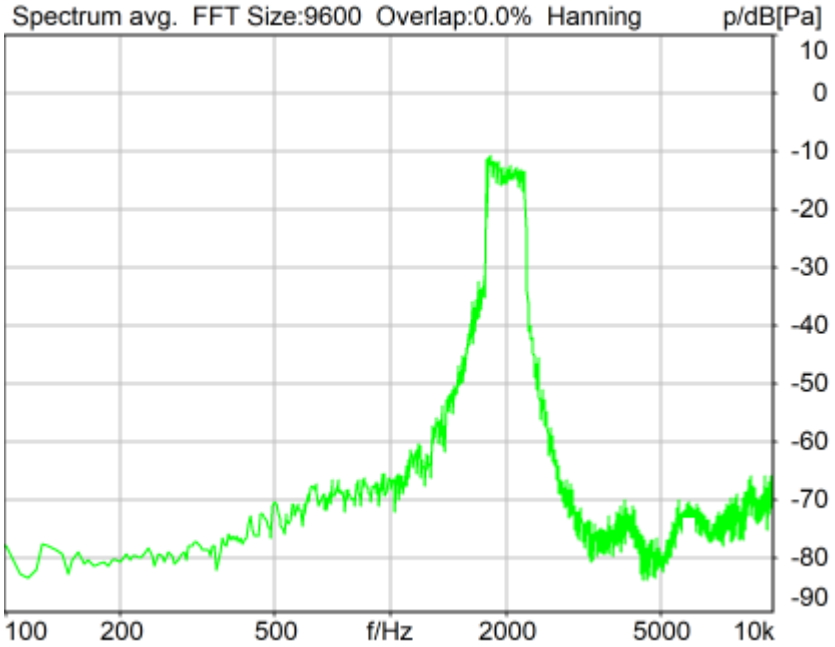
Distortion (Noise) RCV (packed): 40.94 dB (0.90%) Ok

Ok

2024/3/12 22:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



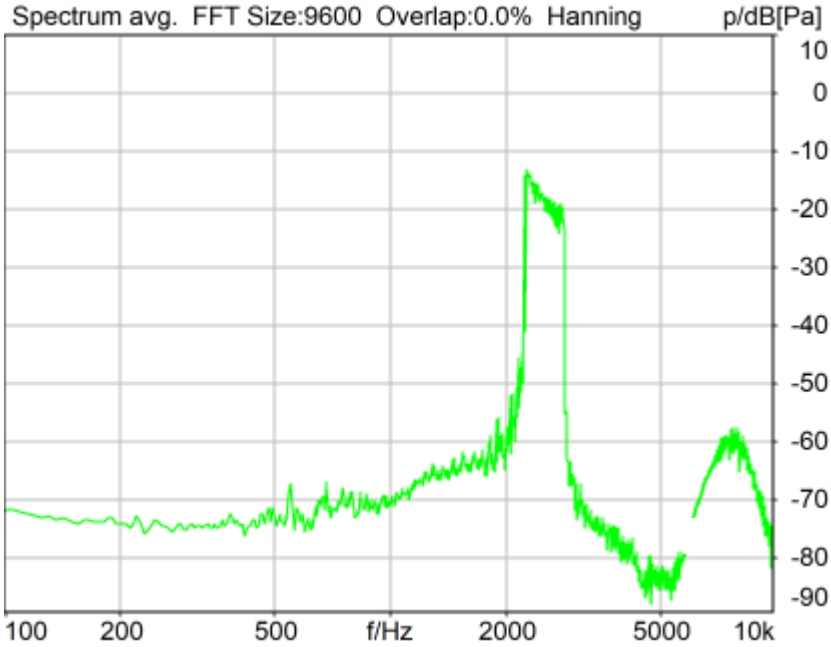
Distortion (Noise) RCV (packed): 26.01 dB (5.01%) Ok

Ok

2024/3/12 22:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



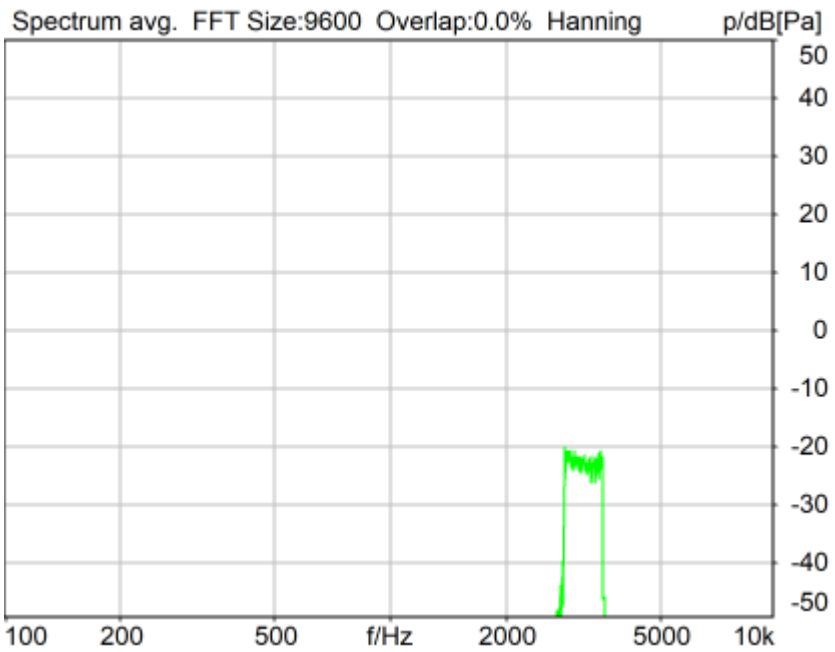
Distortion (Noise) RCV (packed): 33.87 dB (2.03%) Ok

Ok

2024/3/12 22:19 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 30.02 dB (3.15%) Ok

Ok

2024/3/12 22:19 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

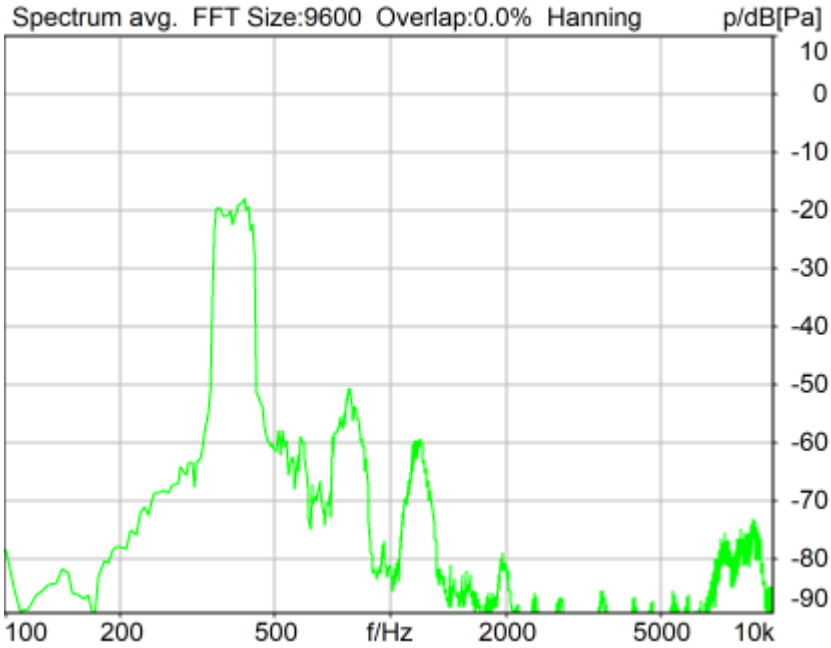
Region	Frequency	SDNR
1	400Hz	31.39 dB
2	500Hz	31.99 dB
3	630Hz	34.92 dB
4	800Hz	33.27 dB
5	1000Hz	39.23 dB
6	1250Hz	32.00 dB
7	1600Hz	40.94 dB
8	2000Hz	26.01 dB
9	2500Hz	33.87 dB
10	3150Hz	30.02 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 26.01dB at 2000Hz.

2024/3/12 22:20 ACQUA

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



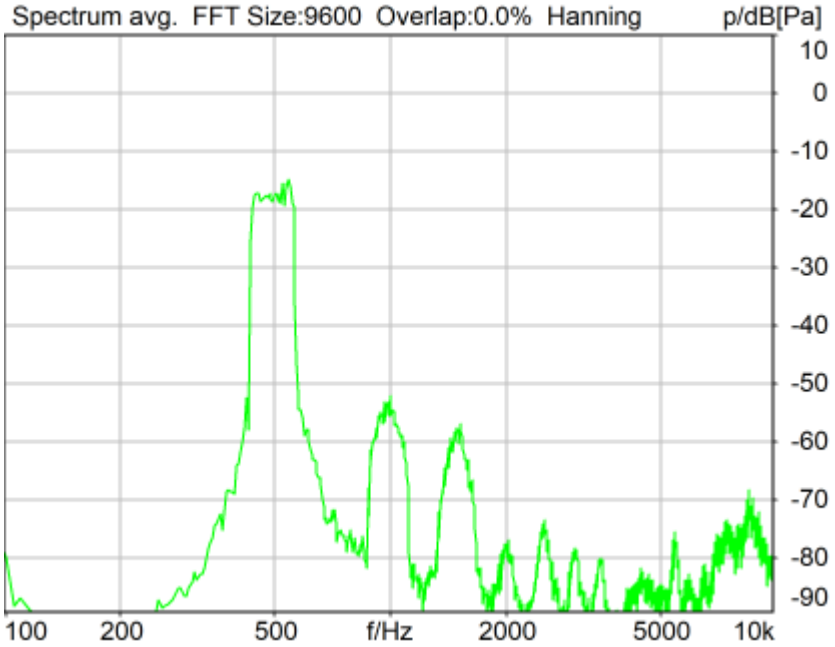
Distortion (Noise) RCV (packed): 32.04 dB (2.50%) Ok

Ok

2024/3/13 0:12 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



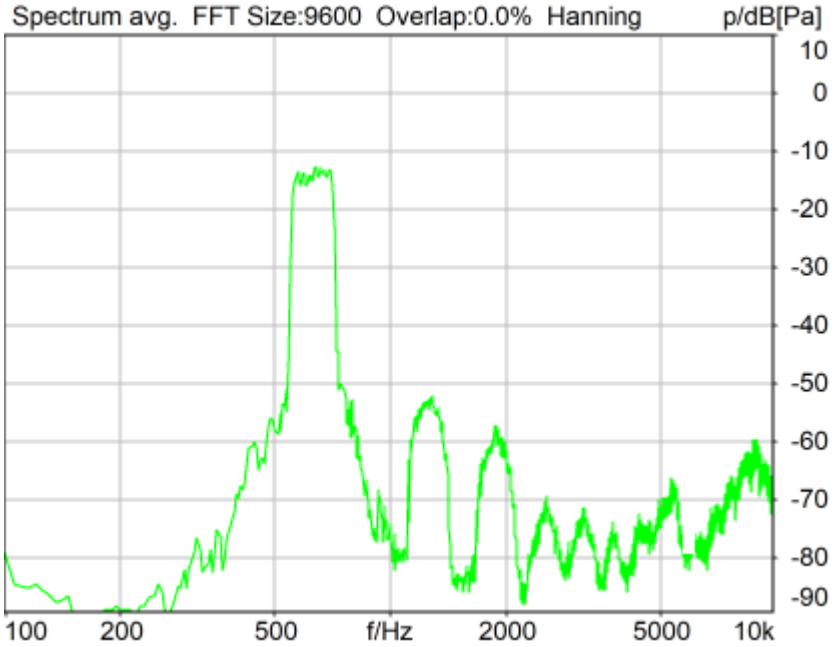
Distortion (Noise) RCV (packed): 34.34 dB (1.92%) Ok

Ok

2024/3/13 0:13 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



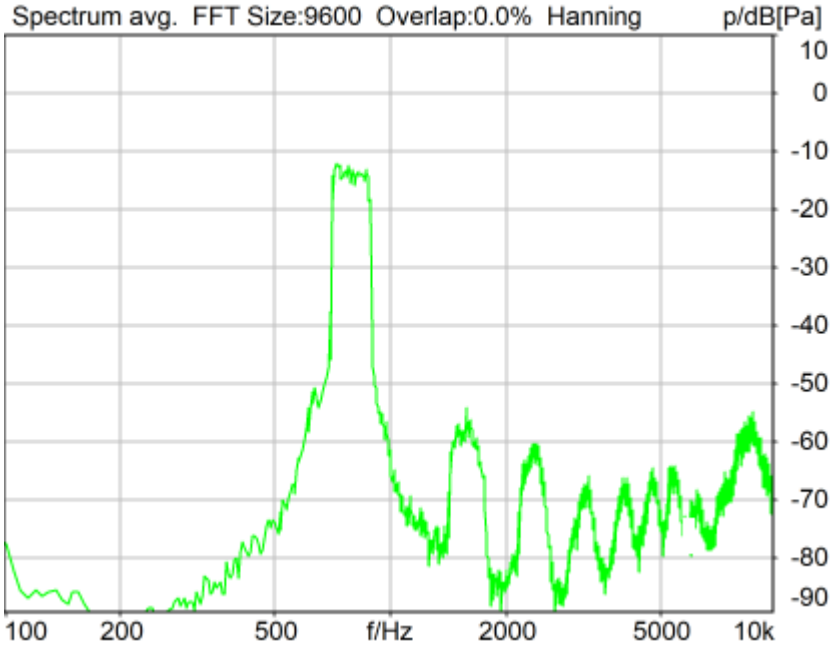
Distortion (Noise) RCV (packed): 34.22 dB (1.94%) Ok

Ok

2024/3/13 0:13 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



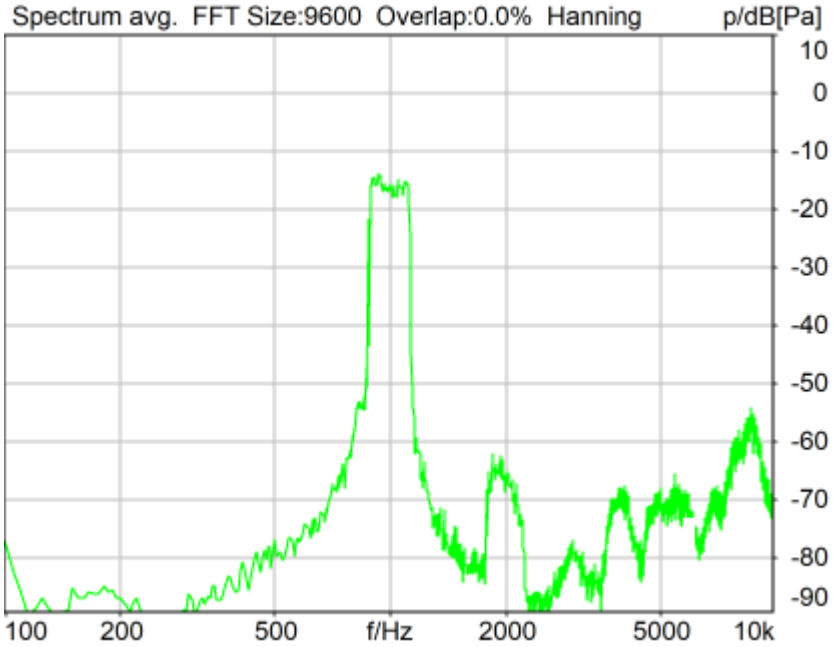
Distortion (Noise) RCV (packed): 34.46 dB (1.89%) Ok

Ok

2024/3/13 0:13 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



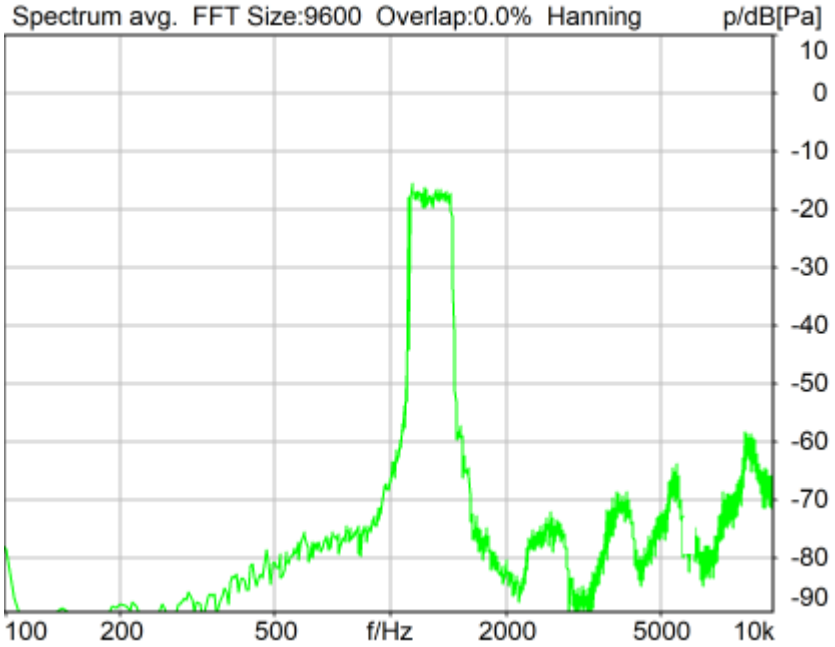
Distortion (Noise) RCV (packed): 34.86 dB (1.81%) Ok

Ok

2024/3/13 0:14 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



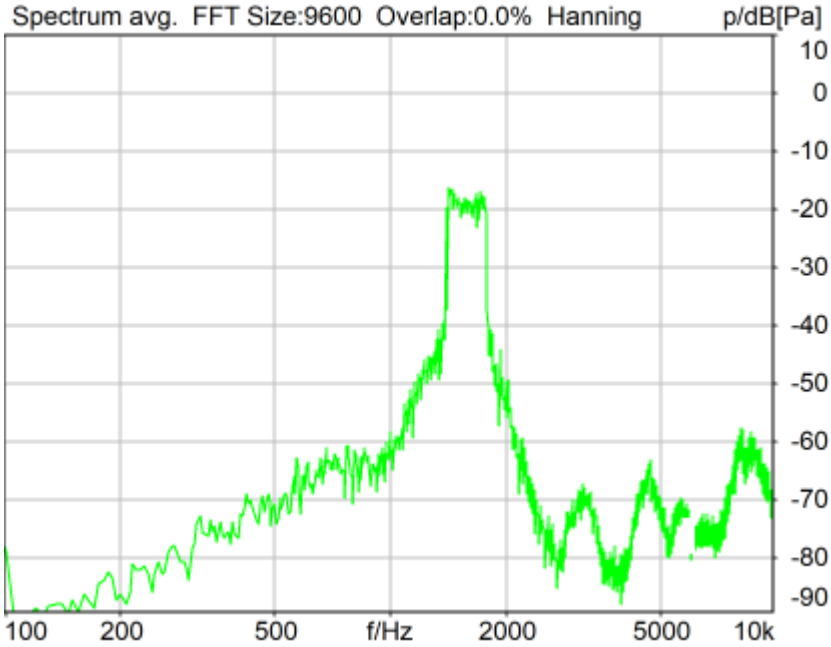
Distortion (Noise) RCV (packed): 31.47 dB (2.67%) Ok

Ok

2024/3/13 0:14 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



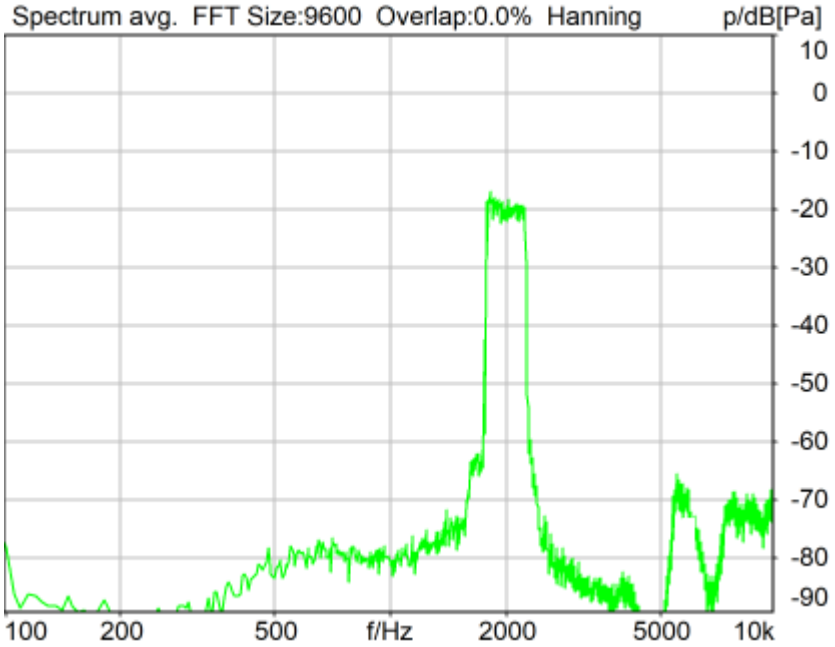
Distortion (Noise) RCV (packed): 26.06 dB (4.98%) Ok

Ok

2024/3/13 0:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



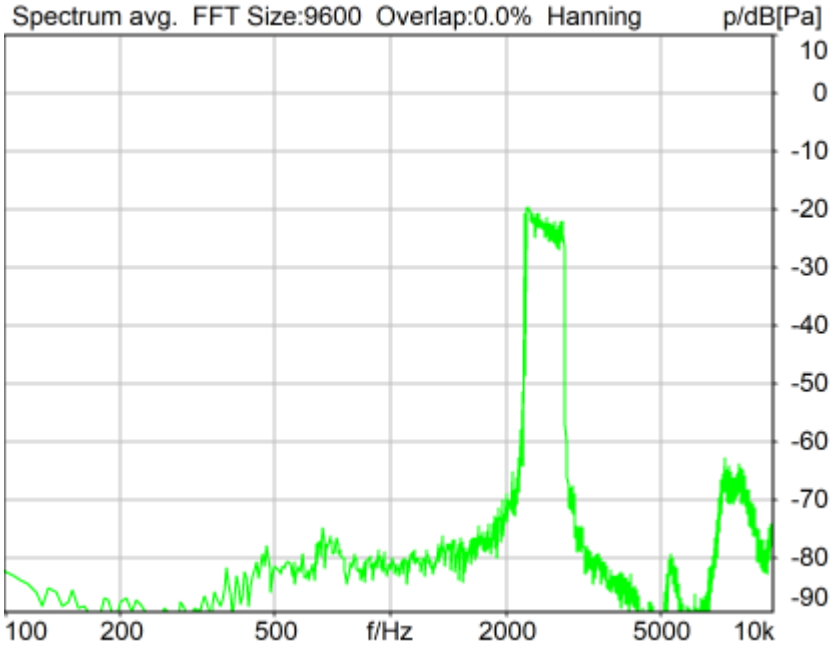
Distortion (Noise) RCV (packed): 41.02 dB (0.89%) Ok

Ok

2024/3/13 0:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



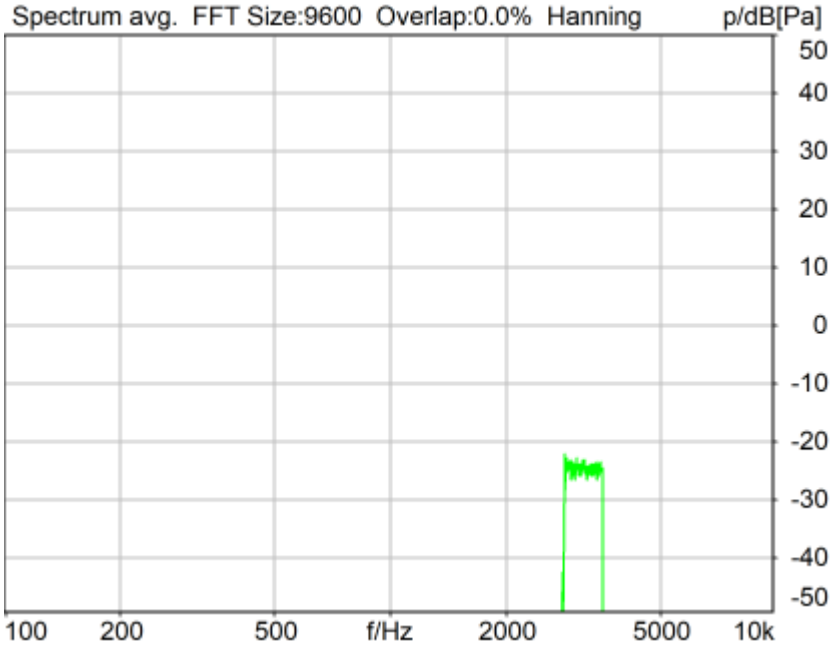
Distortion (Noise) RCV (packed): 39.55 dB (1.05%) Ok

Ok

2024/3/13 0:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 35.38 dB (1.70%) Ok

Ok

2024/3/13 0:16 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

Region	Frequency	SDNR
1	400Hz	32.04 dB

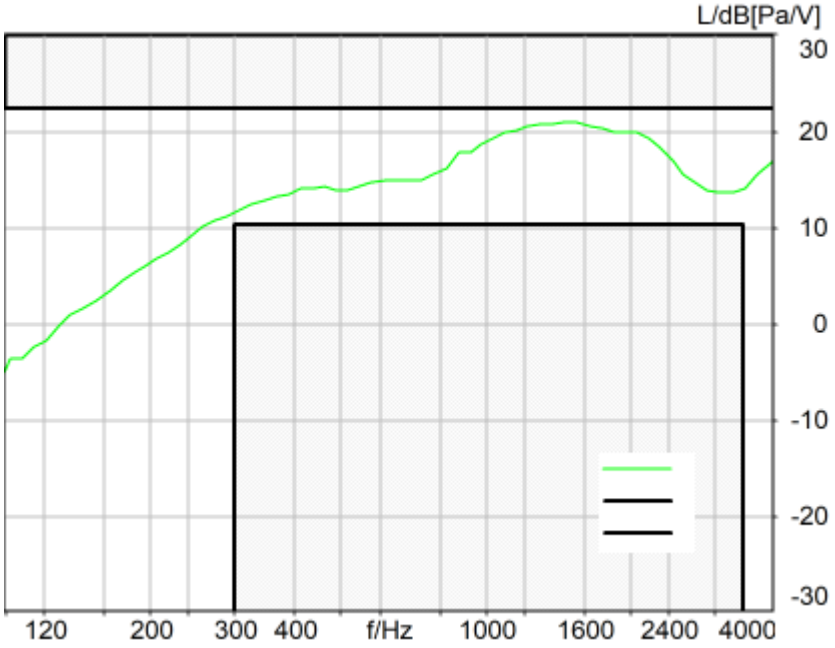
2	500Hz	34.34 dB
3	630Hz	34.22 dB
4	800Hz	34.46 dB
5	1000Hz	34.86 dB
6	1250Hz	31.47 dB
7	1600Hz	26.06 dB
8	2000Hz	41.02 dB
9	2500Hz	39.55 dB
10	3150Hz	35.38 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 26.06dB at 1600Hz.

2024/3/13 0:16 ACQUA

5.3 Frequency Response 8N FF HANB, Index: 1

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



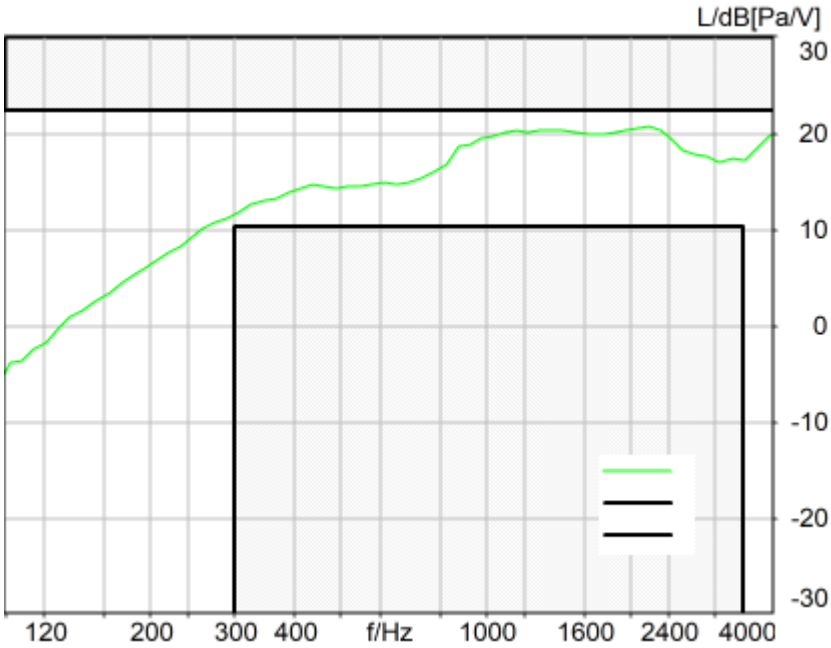
Absolute minimal distance
1.41 dB at 305.9 Hz Ok

Ok

2024/3/12 22:21 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF HANB, Index: 1

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



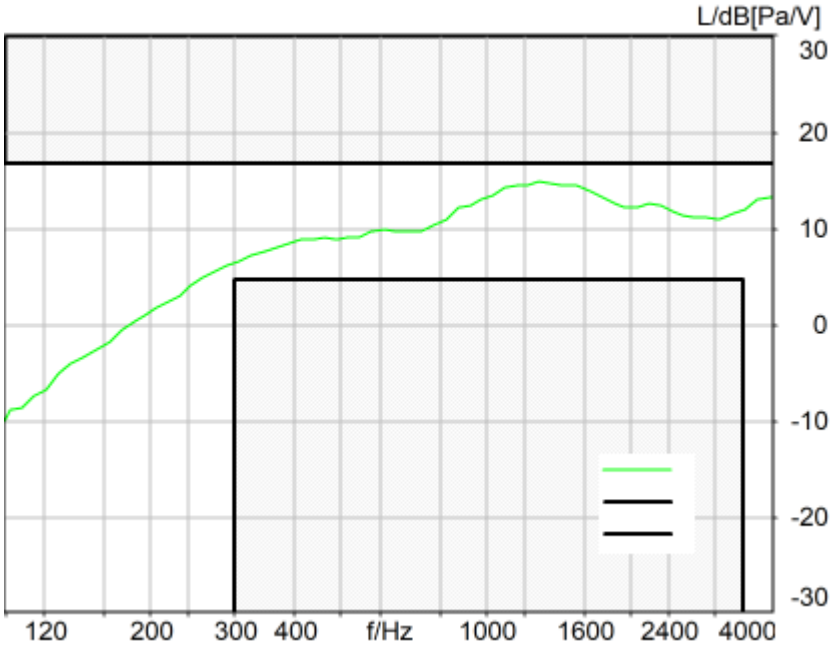
Absolute minimal distance
1.58 dB at 2177.4 Hz Ok

Ok

2024/3/12 22:20 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF HANB, Index: 1

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



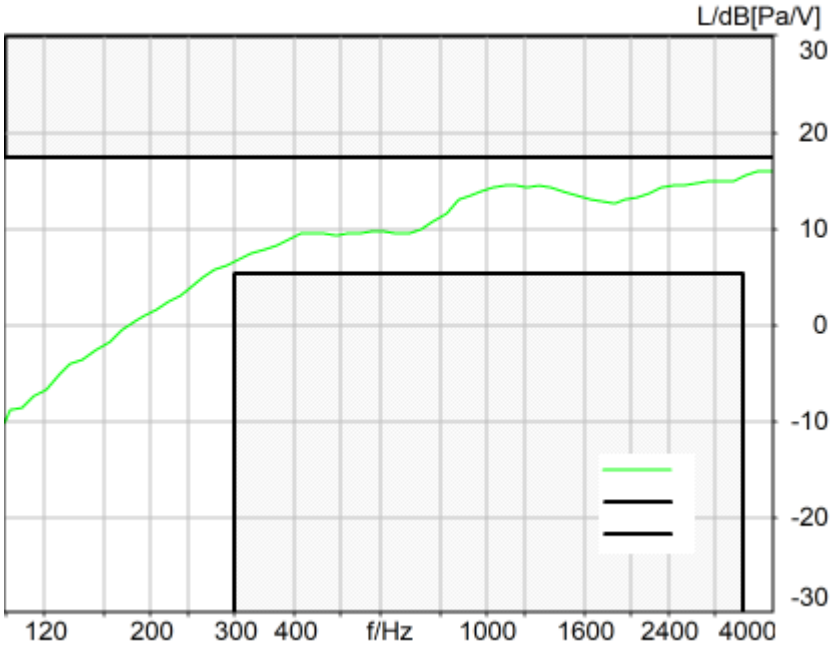
Absolute minimal distance
1.86 dB at 1285.9 Hz Ok

Ok

2024/3/13 0:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF HANB, Index: 1

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



Absolute minimal distance
1.38 dB at 3657.5 Hz Ok

Ok

2024/3/13 0:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

Measurement Object	LTE Band 25_20QPSK_100_0_EVS WB 128kbps_CH26340
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:53
Responsible Person	audio

Overall Receive Delay WB, Index: 1 3
5.1a Receive Volume Control Performance 8N WB, Index: 1 3
5.1b Receive Volume Control Performance 2N WB, Index: 1 4
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 5
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 6
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 8
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 10
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 12
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 14
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 15
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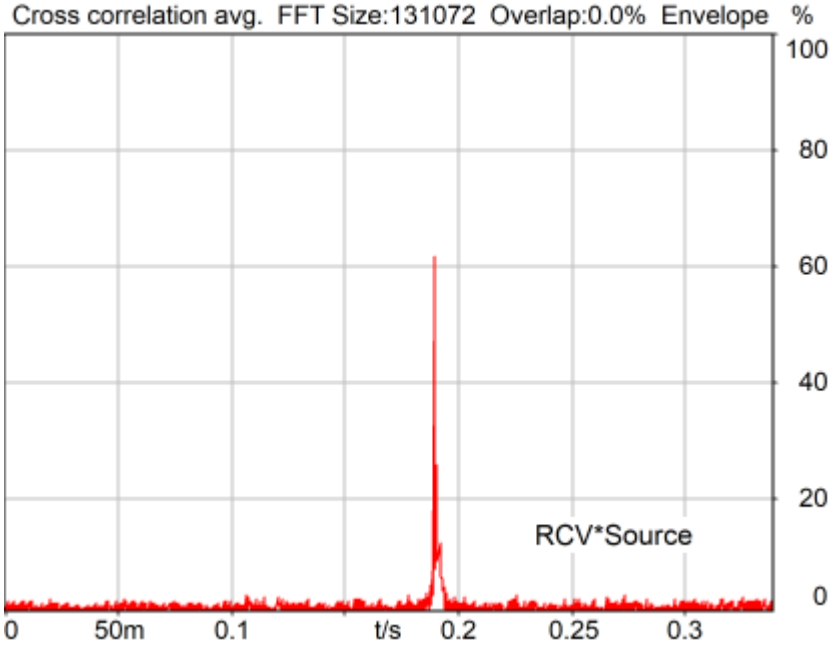
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 16
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 18
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 20
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 22
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 24
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 25
5.3 Frequency Response 8N FF, Index: 1 25
5.3 Frequency Response 8N DF, Index: 1 26
5.3 Frequency Response 2N FF, Index: 1 27
5.3 Frequency Response 2N DF, Index: 1 28

Overall Receive Delay WB, Index: 1

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

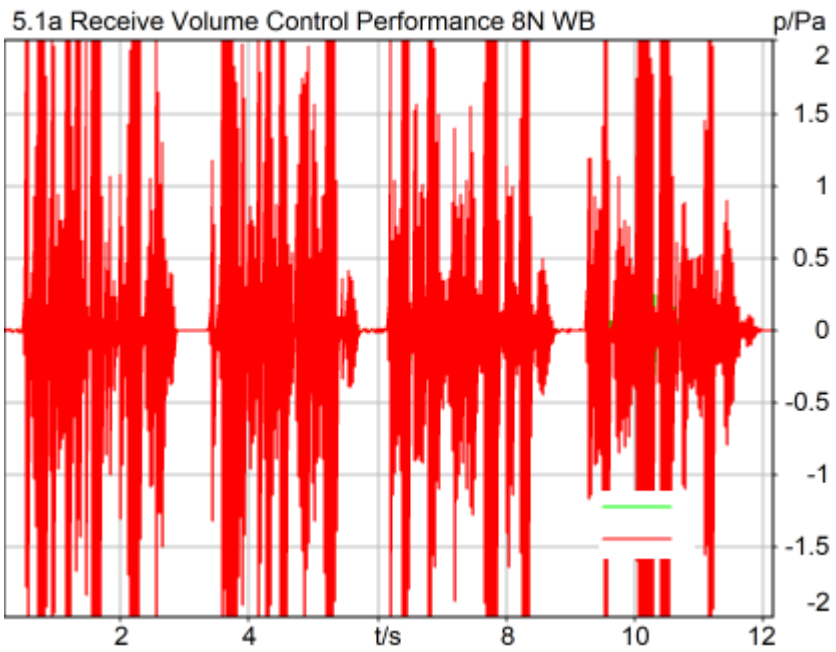


Delay (Cross): 190.5 ms

2024/3/18 9:32 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N WB, Index: 1

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



Correction

X - 70

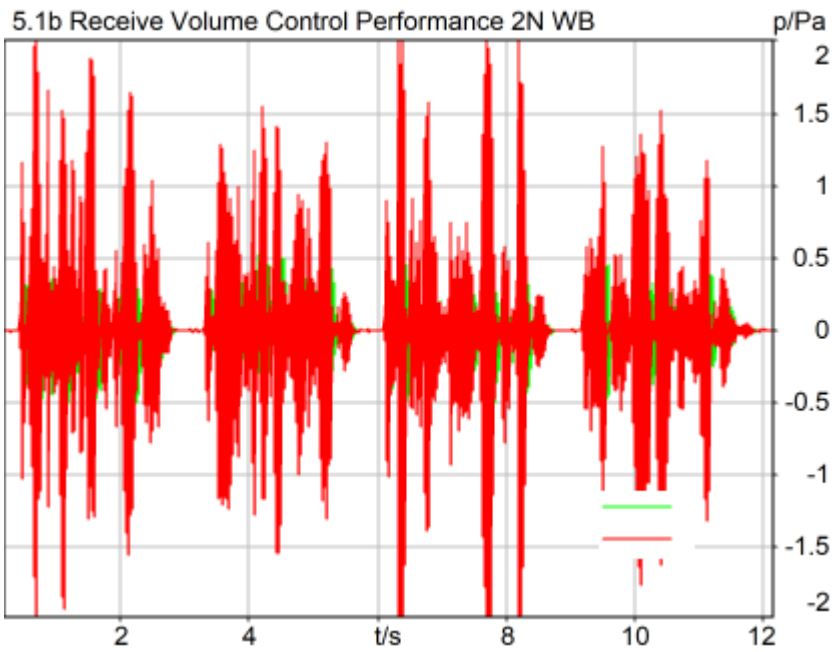
Speech Level RCV: 87.51 dB[SPL], Act.: 82.84%
Corrected Speech Level: 17.51 dB[SPL] Ok

Ok

2024/3/18 9:33 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N WB, Index: 1

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



Correction

X - 70

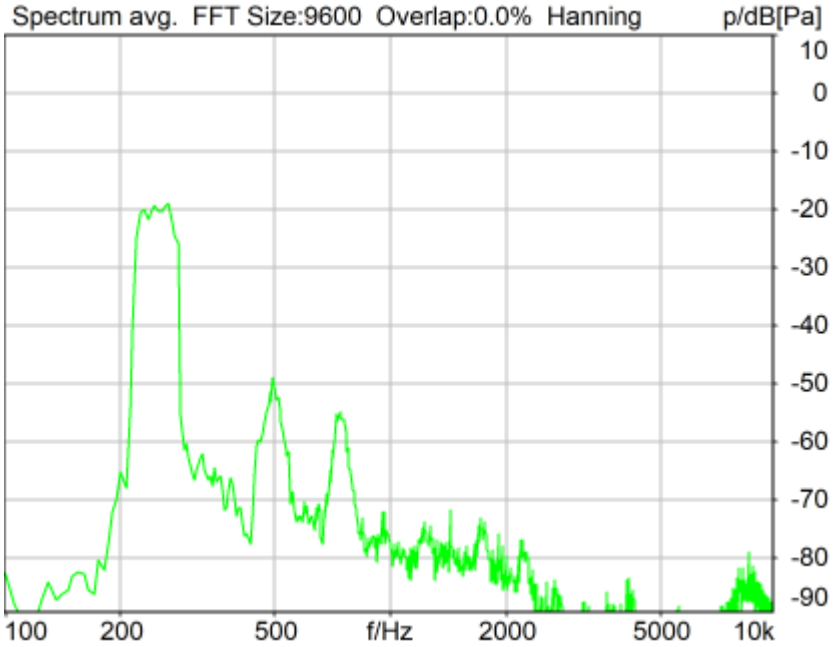
Speech Level RCV: 81.14 dB[SPL], Act.: 83.20%
Corrected Speech Level: 11.14 dB[SPL] Ok

Ok

2024/3/18 10:13 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



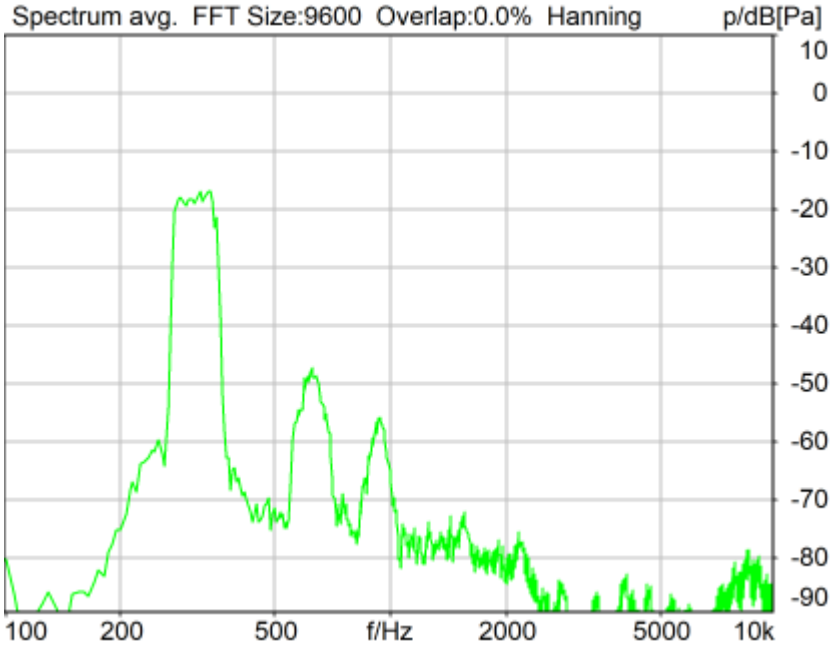
Distortion (Noise) RCV (packed): 32.21 dB (2.45%) Ok

Ok

2024/3/12 22:23 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



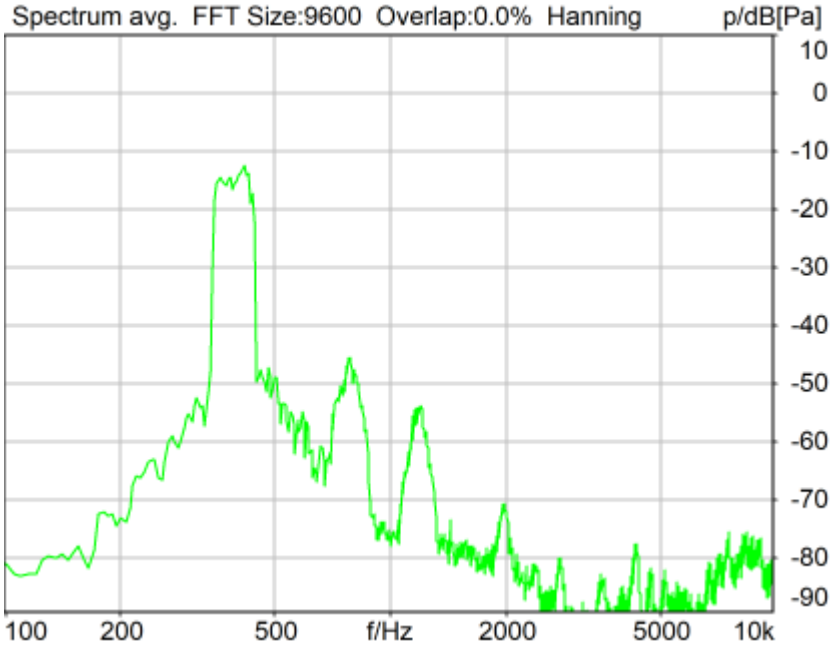
Distortion (Noise) RCV (packed): 31.57 dB (2.64%) Ok

Ok

2024/3/12 22:23 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



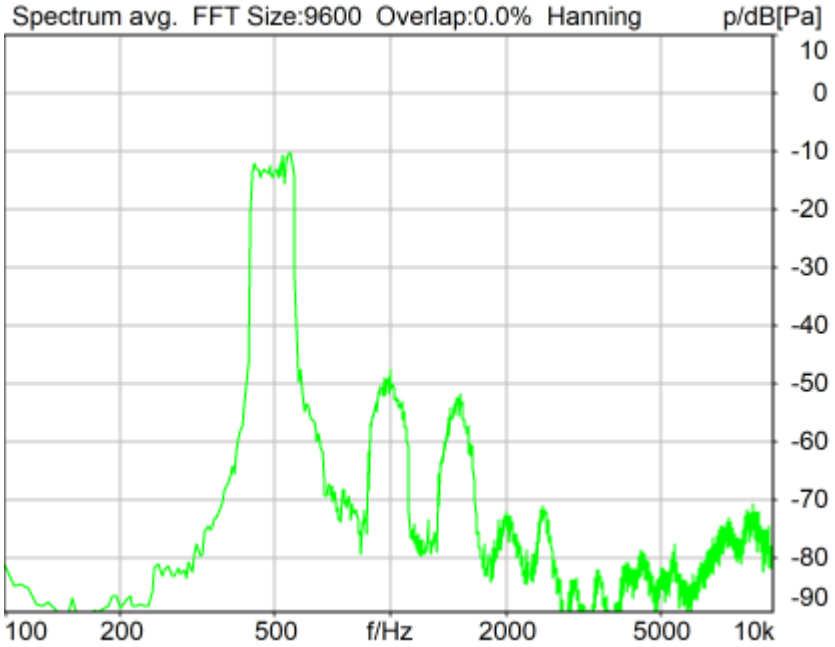
Distortion (Noise) RCV (packed): 31.79 dB (2.57%) Ok

Ok

2024/3/12 22:24 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



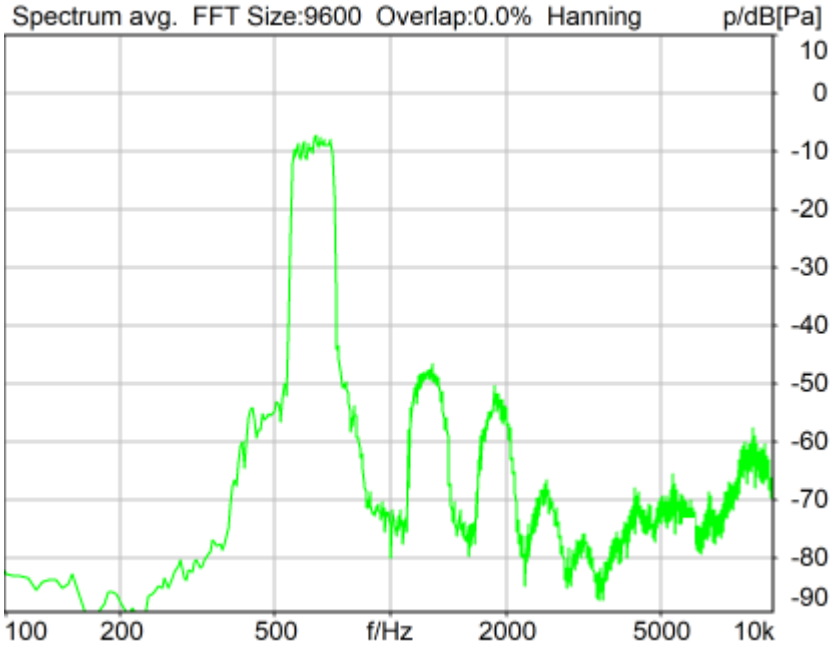
Distortion (Noise) RCV (packed): 34.49 dB (1.89%) Ok

Ok

2024/3/12 22:24 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



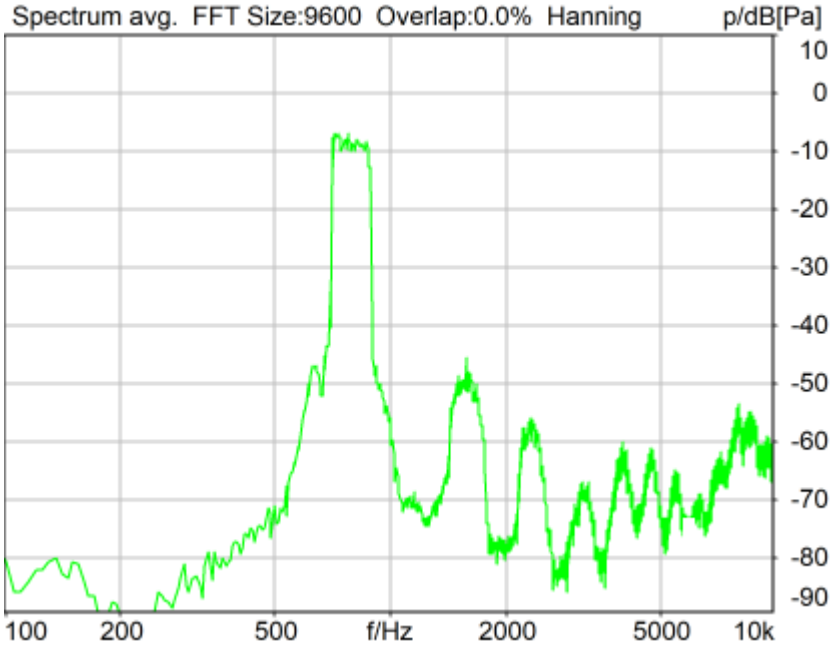
Distortion (Noise) RCV (packed): 35.26 dB (1.73%) Ok

Ok

2024/3/12 22:25 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



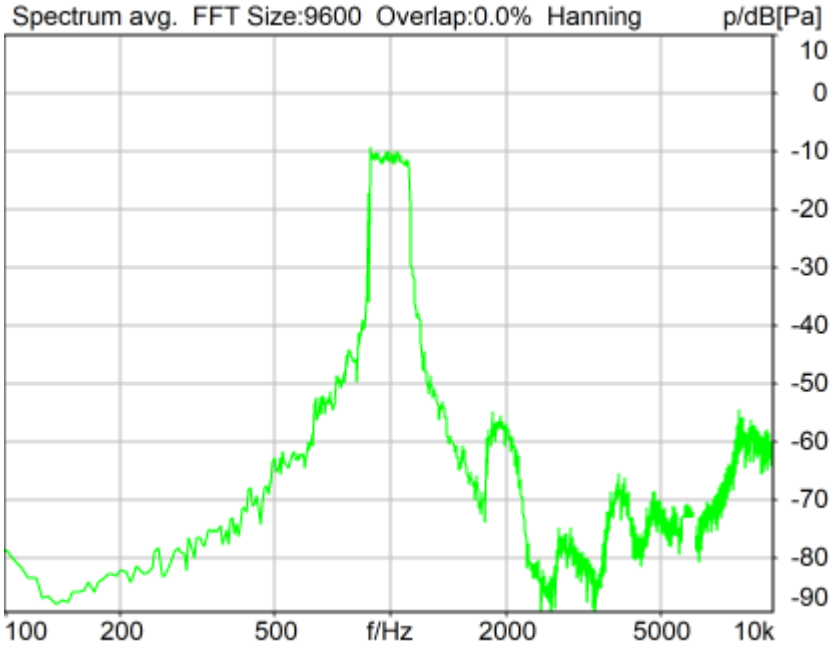
Distortion (Noise) RCV (packed): 35.29 dB (1.72%) Ok

Ok

2024/3/12 22:25 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



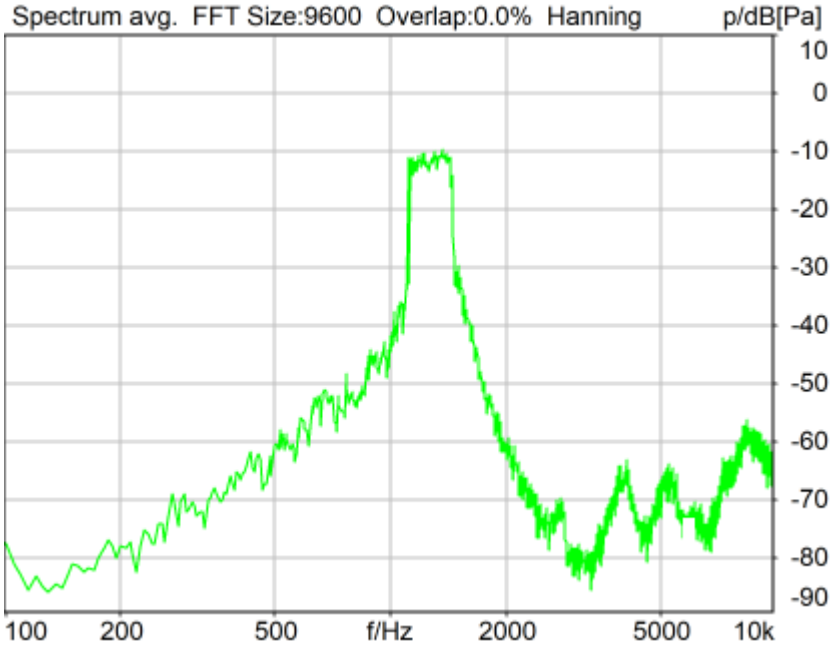
Distortion (Noise) RCV (packed): 30.98 dB (2.82%) Ok

Ok

2024/3/13 23:50 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



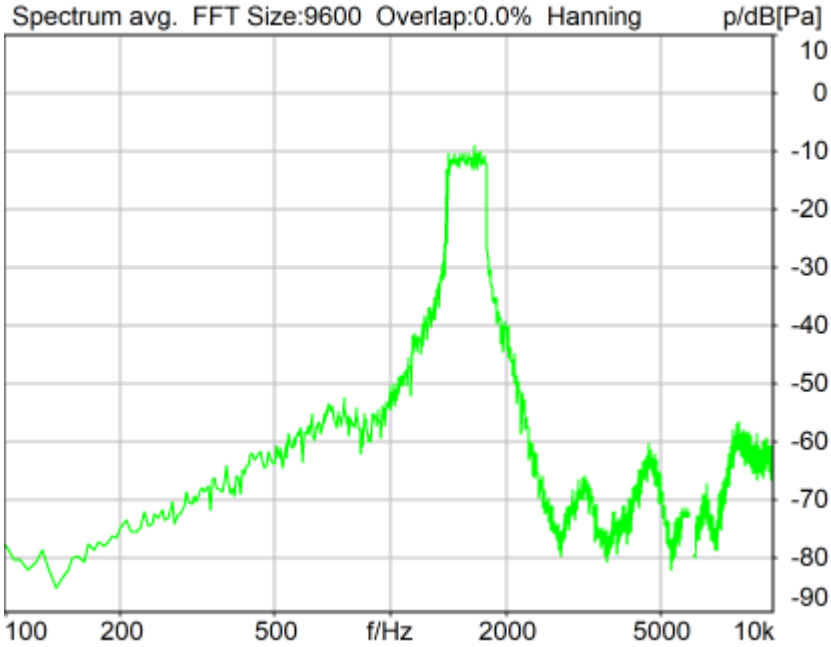
Distortion (Noise) RCV (packed): 22.84 dB (7.21%) Ok

Ok

2024/3/13 23:50 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



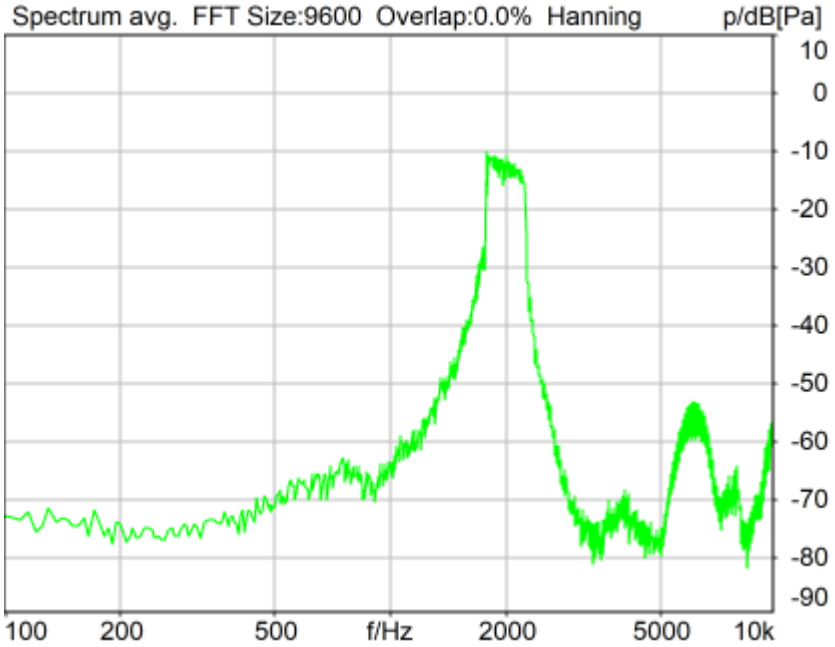
Distortion (Noise) RCV (packed): 23.93 dB (6.36%) Ok

Ok

2024/3/13 23:51 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



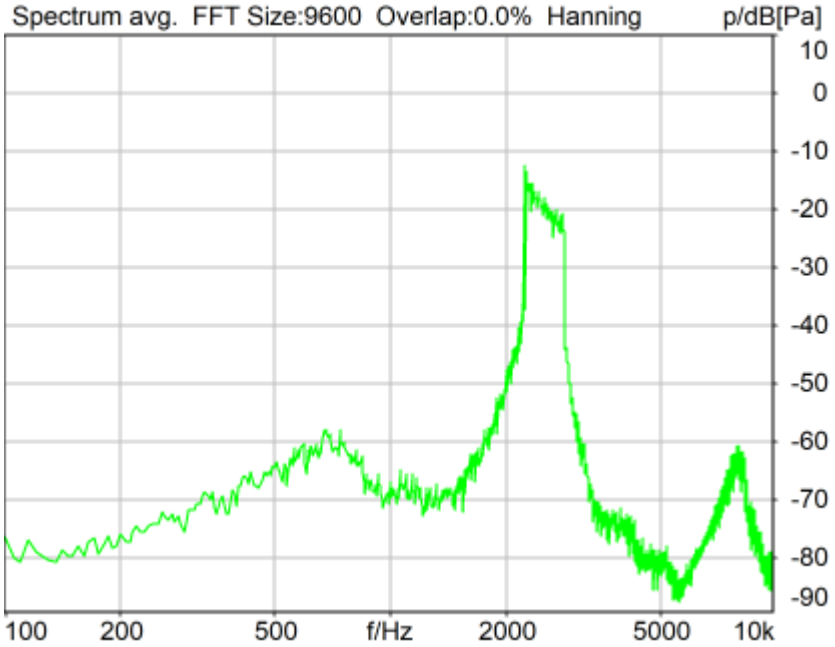
Distortion (Noise) RCV (packed): 22.12 dB (7.83%) Ok

Ok

2024/3/13 23:51 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



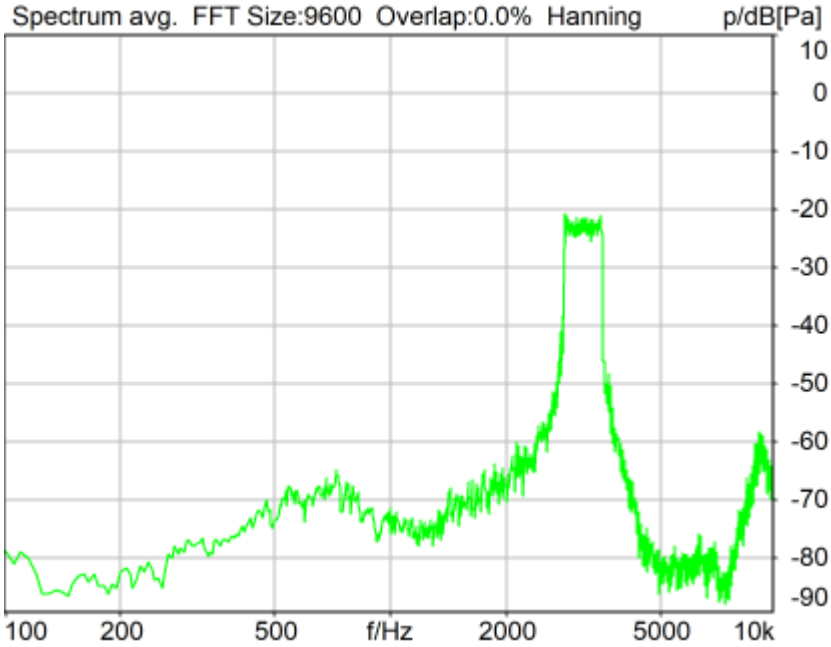
Distortion (Noise) RCV (packed): 26.99 dB (4.47%) Ok

Ok

2024/3/13 23:51 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



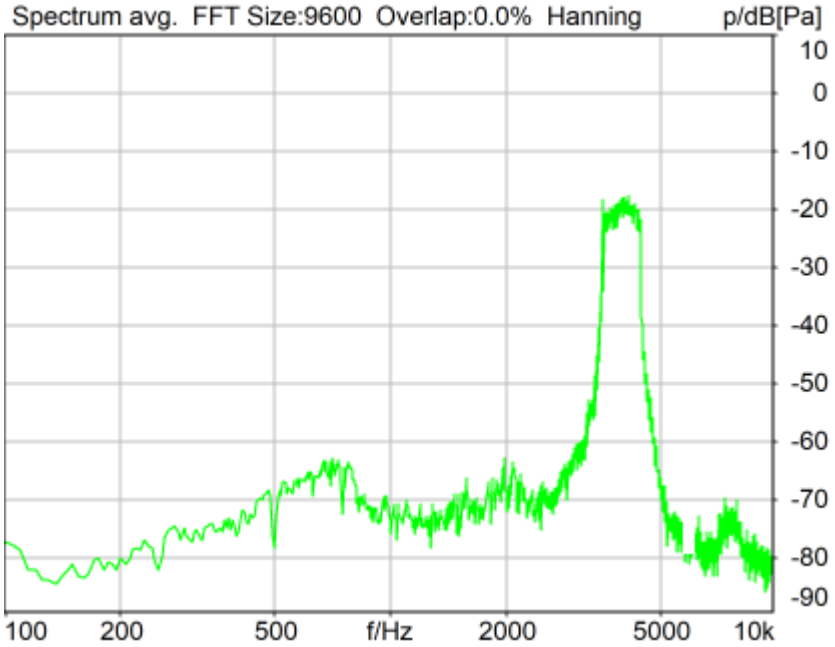
Distortion (Noise) RCV (packed): 28.24 dB (3.87%) Ok

Ok

2024/3/13 23:52 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



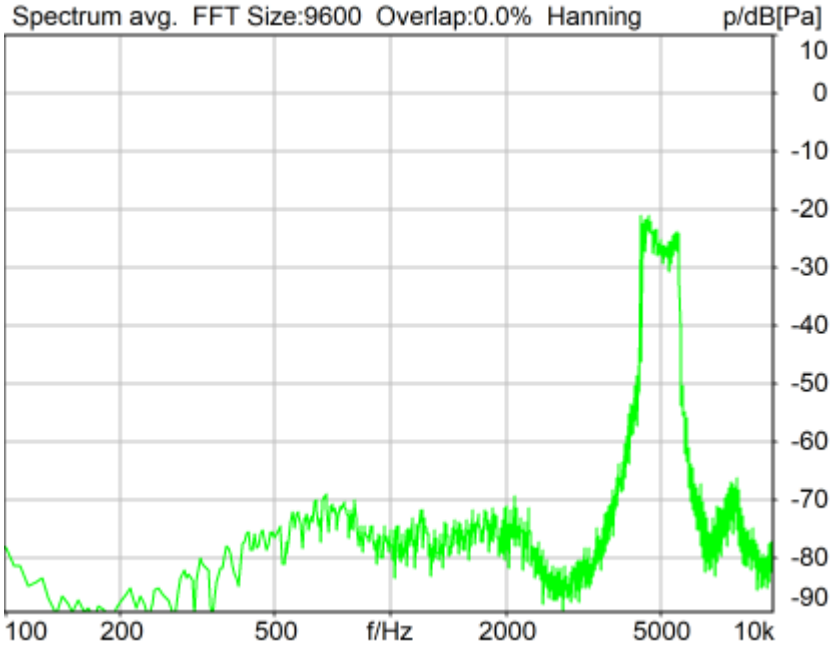
Distortion (Noise) RCV (packed): 27.94 dB (4.01%) Ok

Ok

2024/3/13 23:52 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 30.94 dB (2.84%) Ok

Ok

2024/3/13 23:53 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

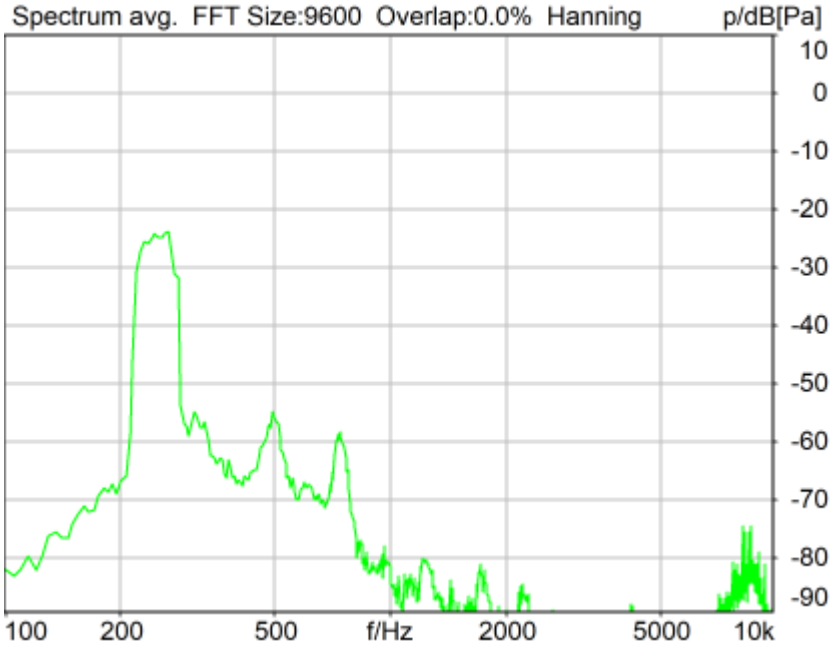
Region	Frequency	SDNR
1	250Hz	30.47 dB
2	315Hz	31.89 dB
3	400Hz	31.52 dB
4	500Hz	31.56 dB
5	630Hz	34.56 dB
6	800Hz	34.47 dB
7	1000Hz	30.98 dB
8	1250Hz	22.84 dB
9	1600Hz	23.93 dB
10	2000Hz	22.12 dB
11	2500Hz	26.99 dB
12	3150Hz	28.24 dB
13	4000Hz	27.94 dB
14	5000Hz	30.94 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 22.12dB at 2000Hz.

2024/3/13 23:53 ACQUA

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



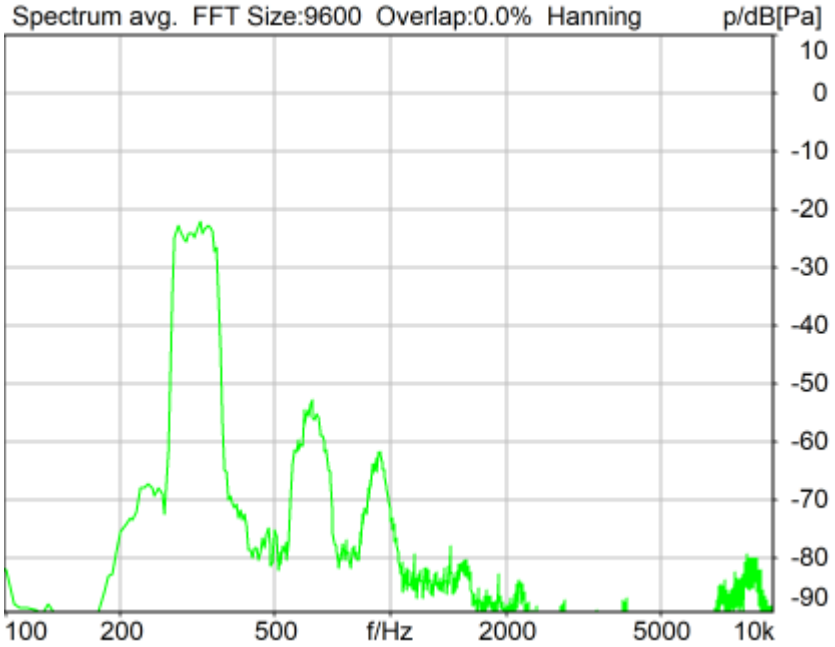
Distortion (Noise) RCV (packed): 30.47 dB (3.00%) Ok

Ok

2024/3/12 23:33 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



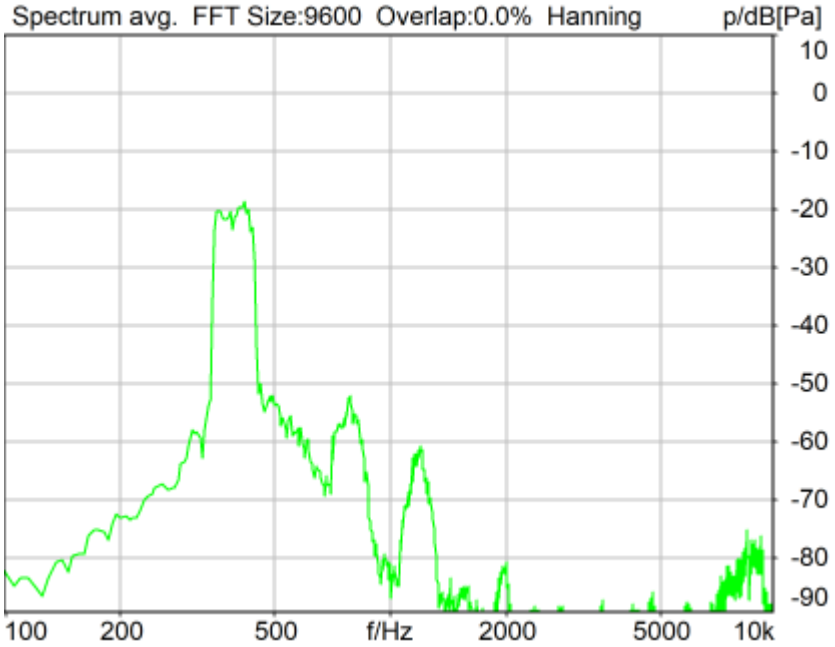
Distortion (Noise) RCV (packed): 31.89 dB (2.55%) Ok

Ok

2024/3/12 23:33 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



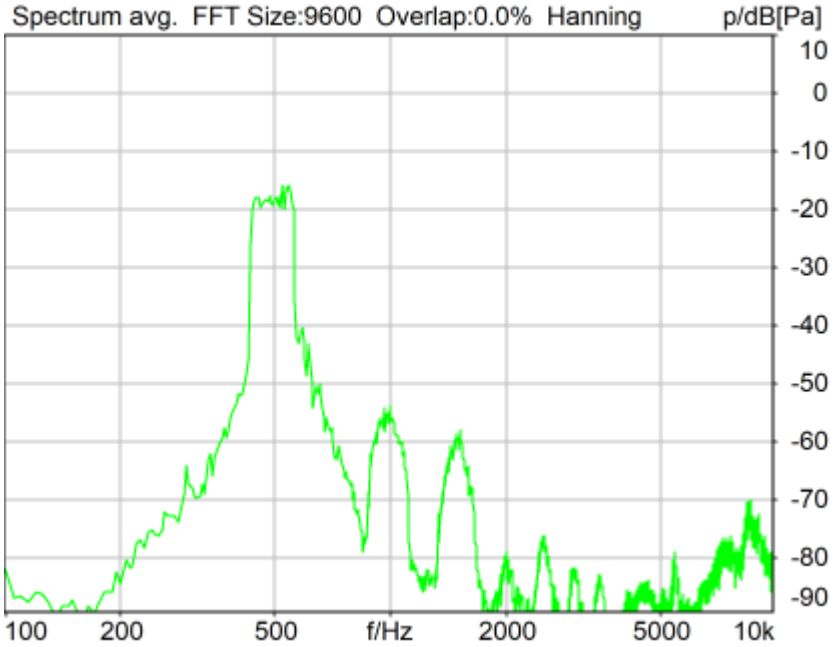
Distortion (Noise) RCV (packed): 31.52 dB (2.65%) Ok

Ok

2024/3/12 23:34 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



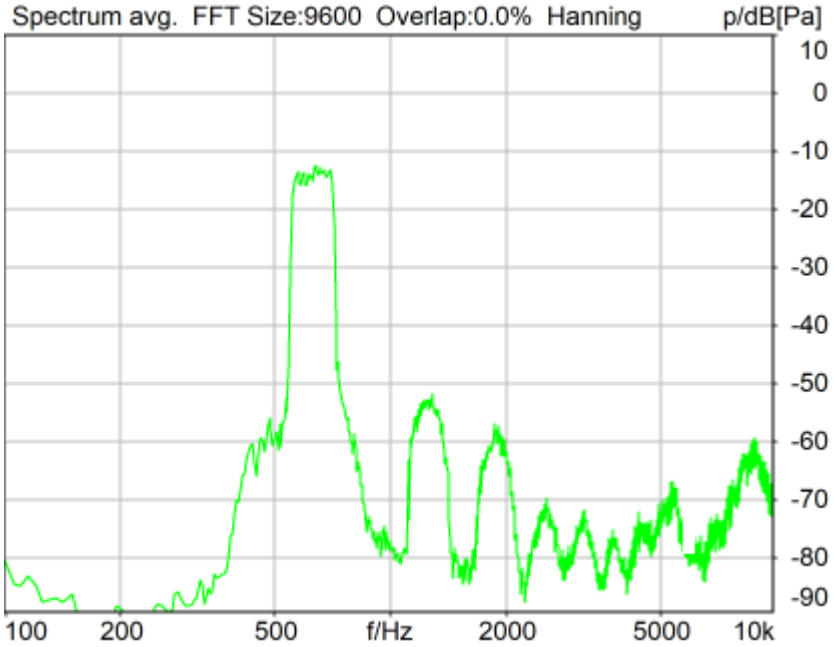
Distortion (Noise) RCV (packed): 31.56 dB (2.64%) Ok

Ok

2024/3/12 23:34 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



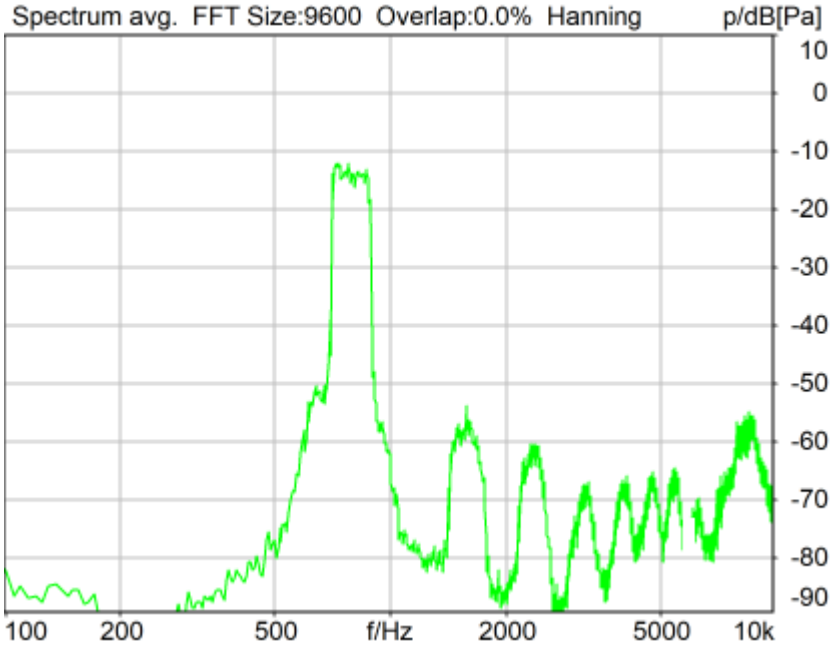
Distortion (Noise) RCV (packed): 34.56 dB (1.87%) Ok

Ok

2024/3/12 23:35 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



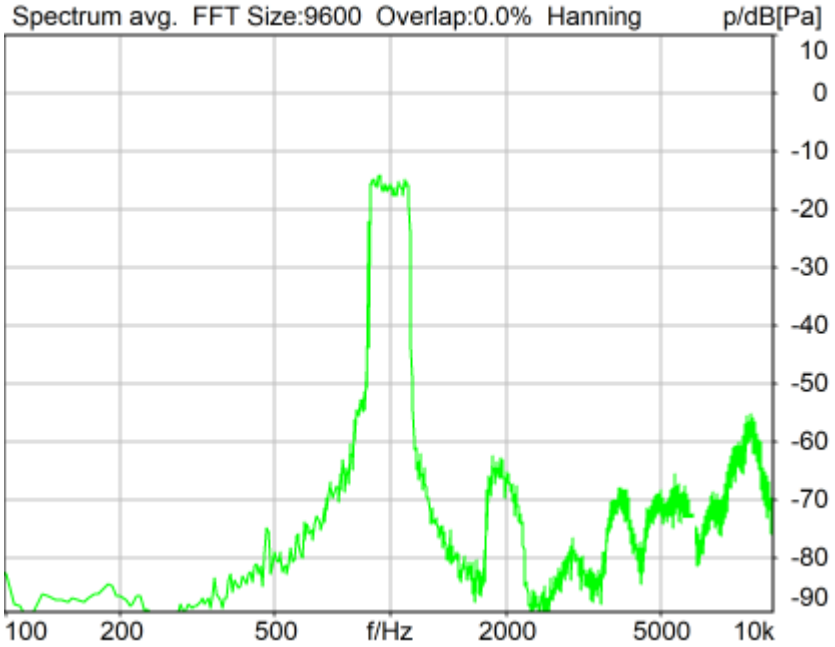
Distortion (Noise) RCV (packed): 34.47 dB (1.89%) Ok

Ok

2024/3/12 23:35 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



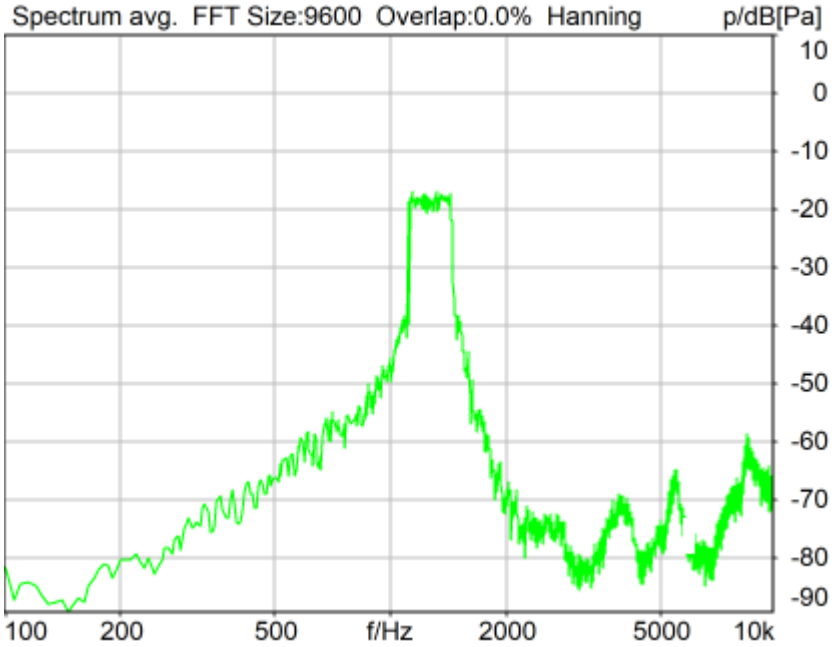
Distortion (Noise) RCV (packed): 35.48 dB (1.68%) Ok

Ok

2024/3/12 23:35 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



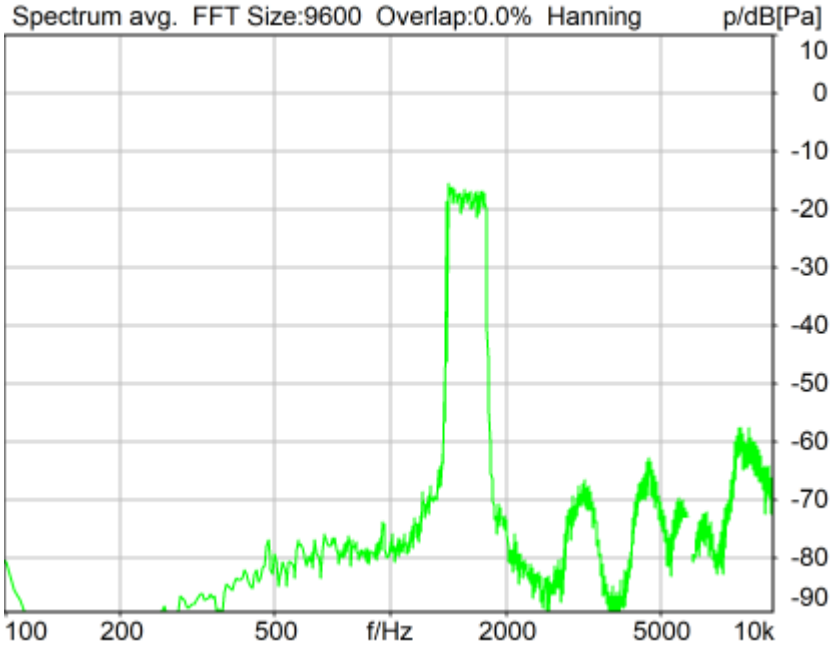
Distortion (Noise) RCV (packed): 22.86 dB (7.20%) Ok

Ok

2024/3/12 23:36 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



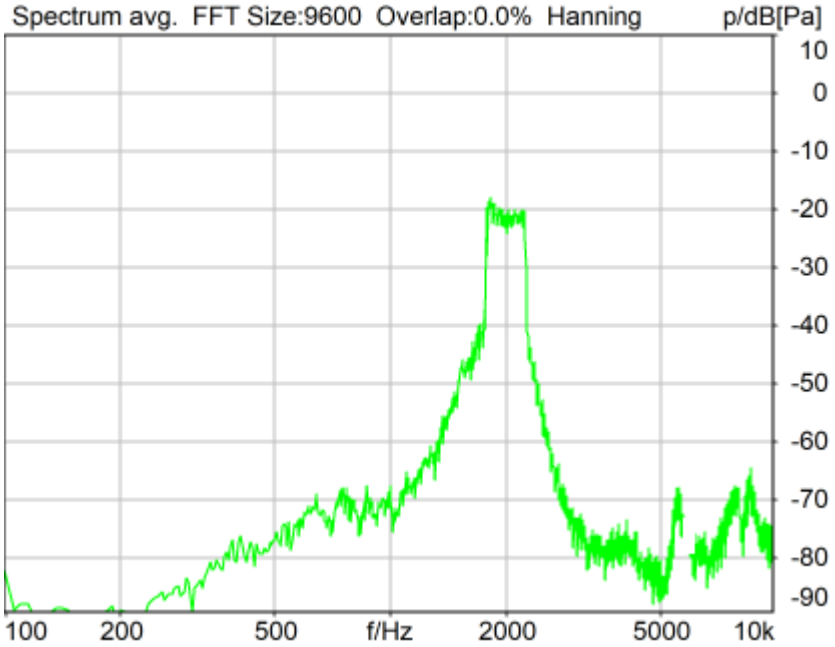
Distortion (Noise) RCV (packed): 37.09 dB (1.40%) Ok

Ok

2024/3/12 23:36 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



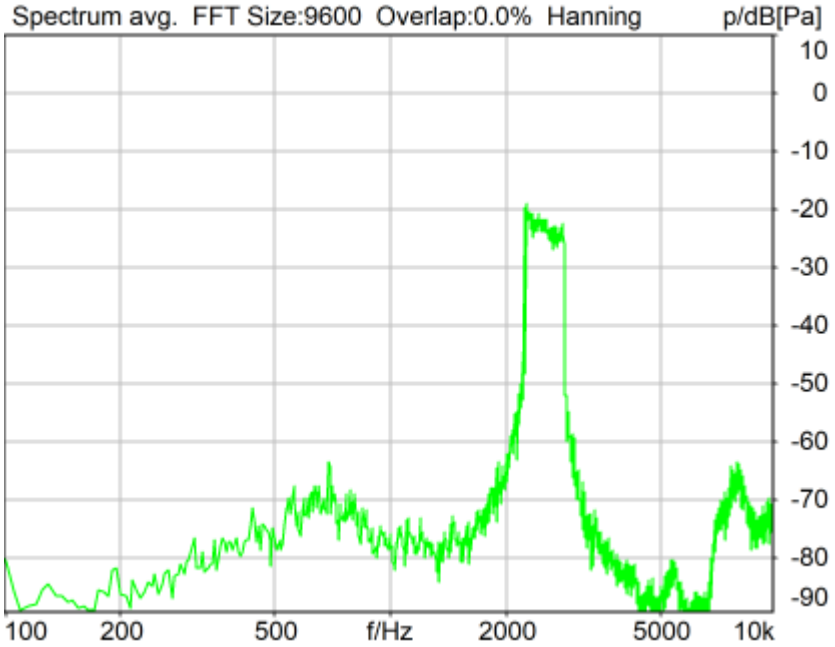
Distortion (Noise) RCV (packed): 23.47 dB (6.71%) Ok

Ok

2024/3/12 23:37 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



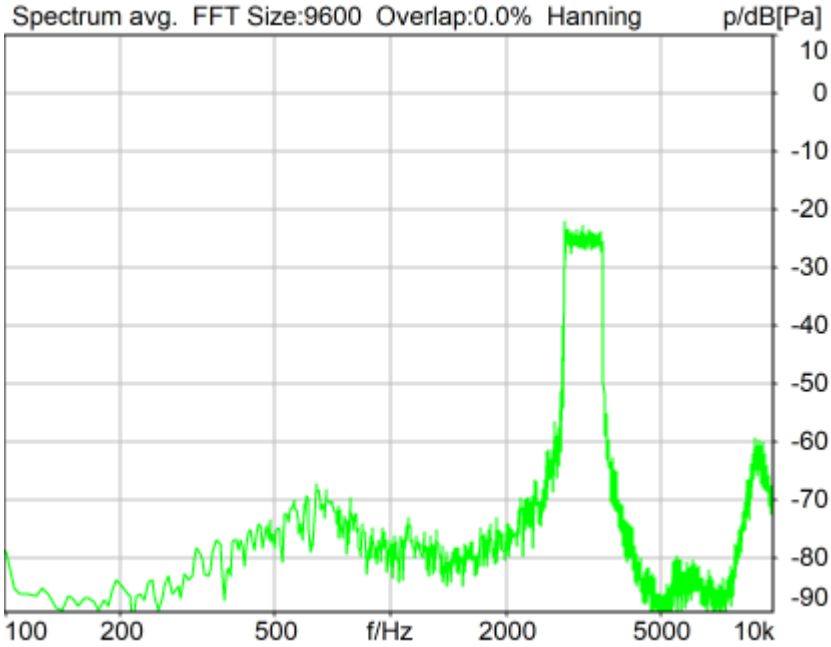
Distortion (Noise) RCV (packed): 33.71 dB (2.06%) Ok

Ok

2024/3/12 23:37 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



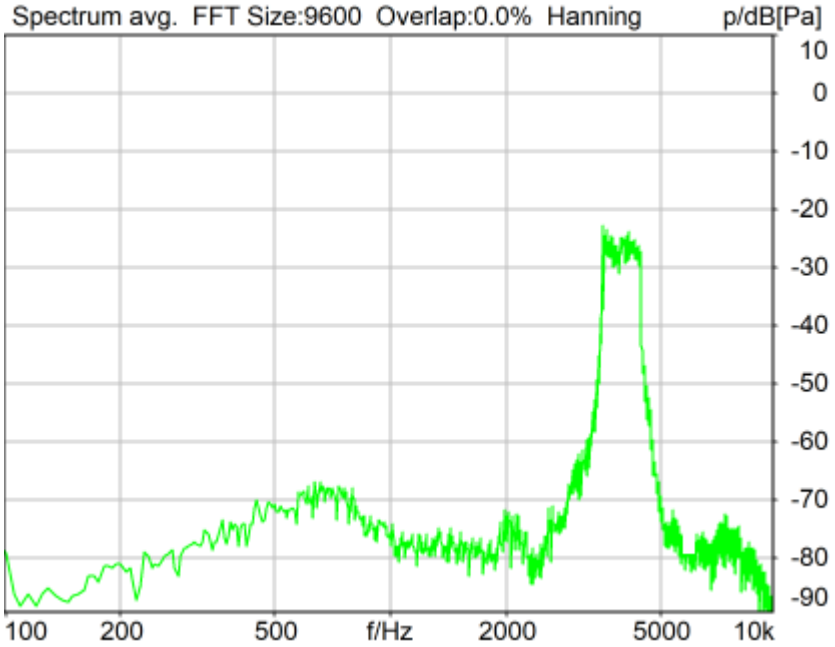
Distortion (Noise) RCV (packed): 33.53 dB (2.11%) Ok

Ok

2024/3/12 23:37 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



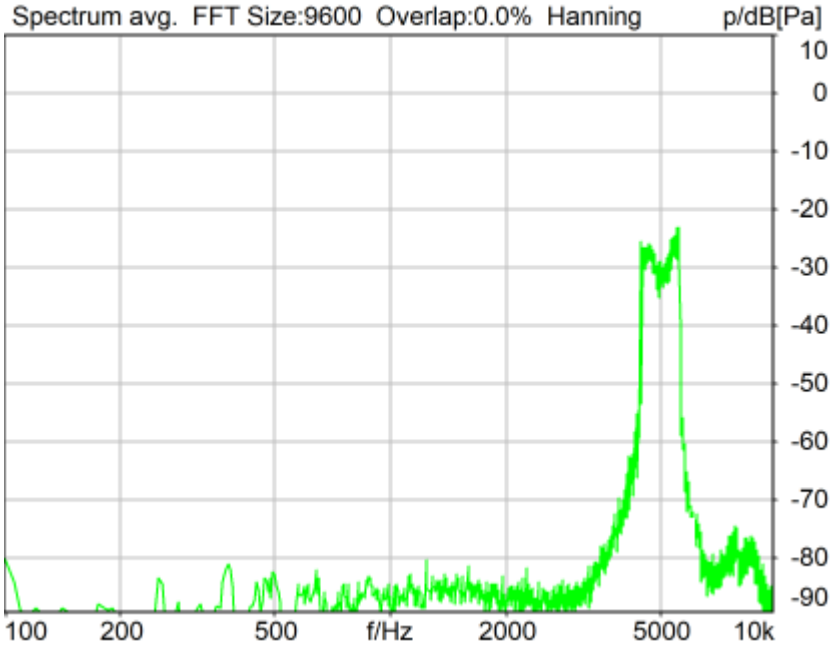
Distortion (Noise) RCV (packed): 25.65 dB (5.22%) Ok

Ok

2024/3/12 23:38 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



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

Ok

2024/3/12 23:38 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

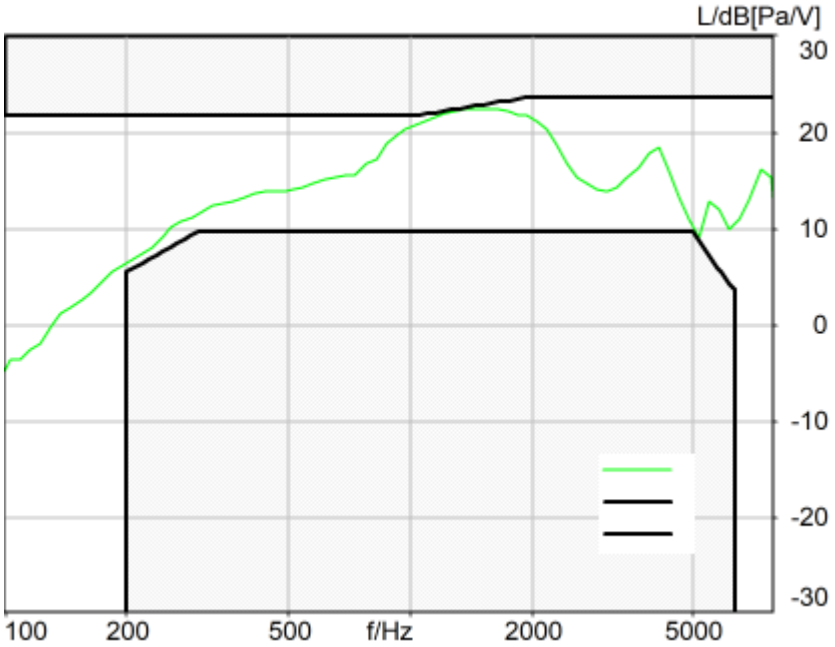
Region	Frequency	SDNR
1	250Hz	30.47 dB
2	315Hz	31.89 dB
3	400Hz	31.52 dB
4	500Hz	31.56 dB
5	630Hz	34.56 dB
6	800Hz	34.47 dB
7	1000Hz	35.48 dB
8	1250Hz	22.86 dB
9	1600Hz	37.09 dB
10	2000Hz	23.47 dB
11	2500Hz	33.71 dB
12	3150Hz	33.53 dB
13	4000Hz	25.65 dB
14	5000Hz	35.20 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 22.86dB at 1250Hz.

2024/3/12 23:38 ACQUA

5.3 Frequency Response 8N FF, Index: 1

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



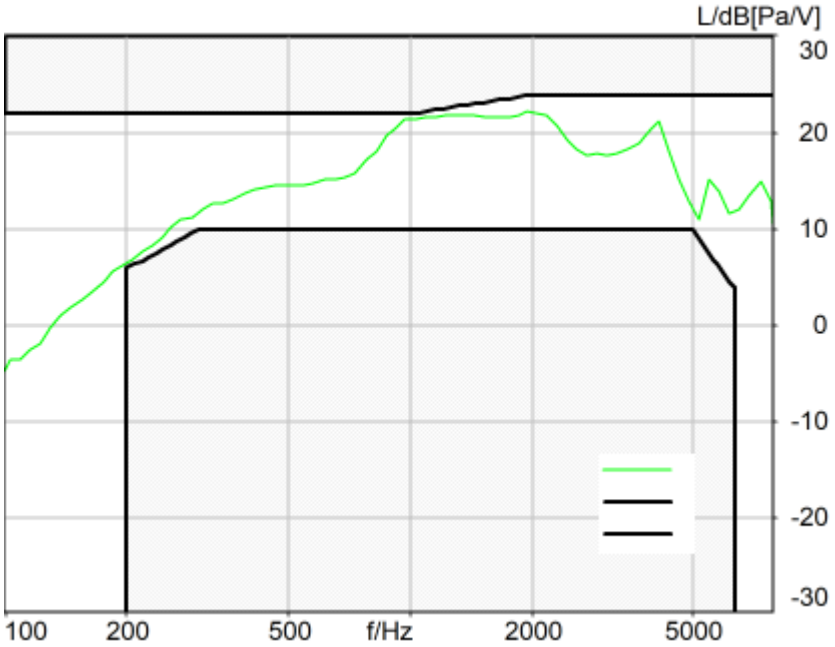
Absolute minimal distance
0.20 dB at 1285.9 Hz Ok

Ok

2024/3/18 9:34 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF, Index: 1

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



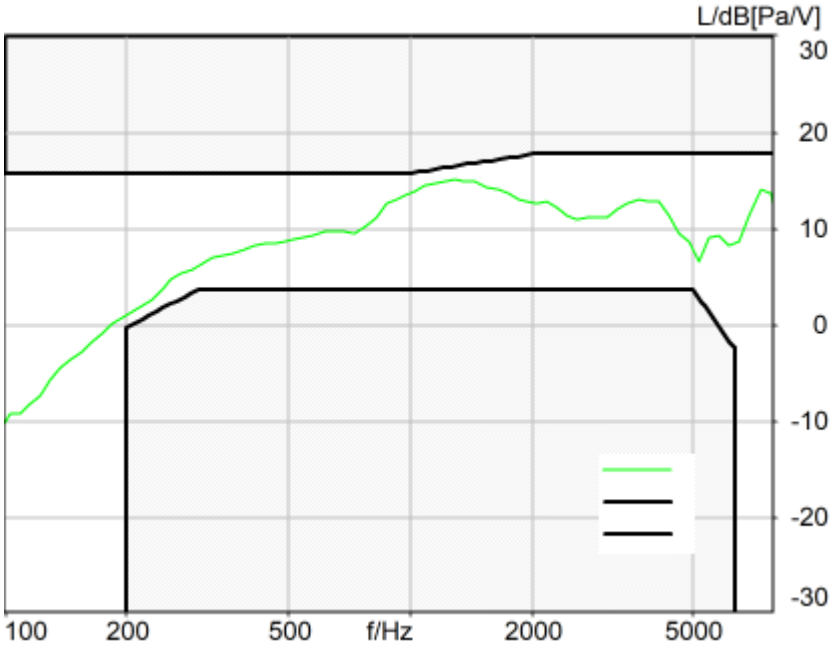
Absolute minimal distance
0.61 dB at 1088.7 Hz Ok

Ok

2024/3/18 9:34 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF, Index: 1

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



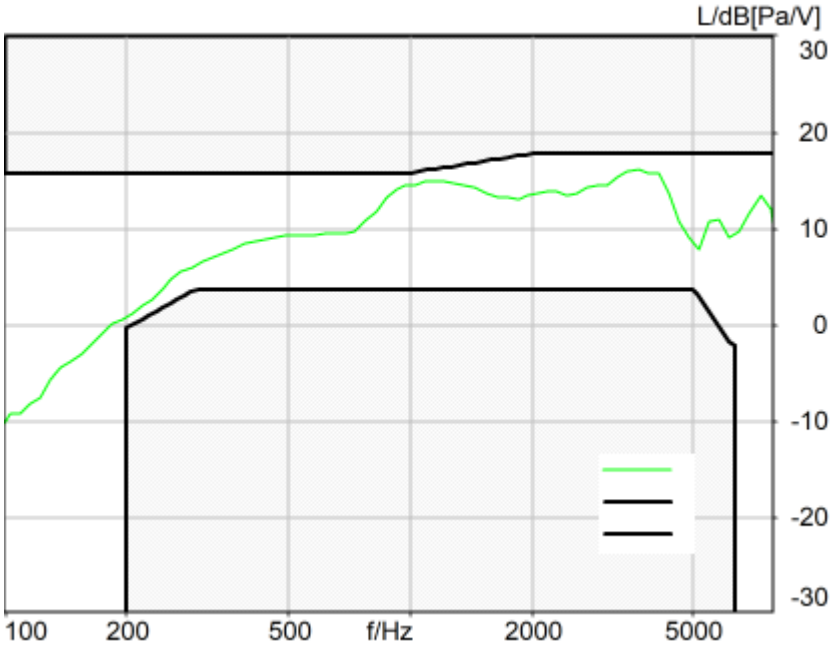
Absolute minimal distance
1.33 dB at 1216.1 Hz Ok

Ok

2024/3/18 10:14 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF, Index: 1

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



Absolute minimal distance
1.22 dB at 1088.7 Hz Ok

Ok

2024/3/18 10:14 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

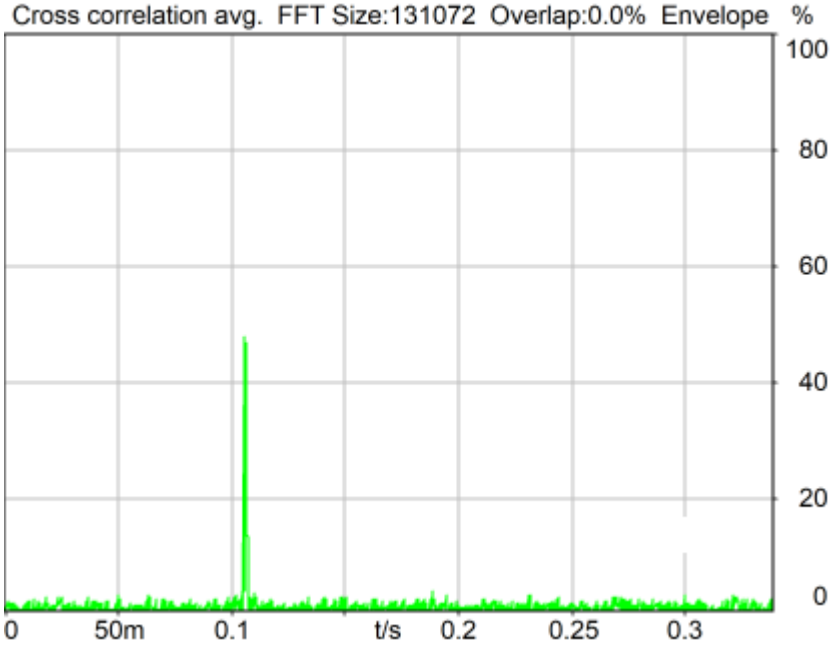
Measurement Object	LTE Band 26_15QPSK_75_0_EVS NB 24.4kbps_CH26865
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:54
Responsible Person	audio

Overall Receive Delay NB, Index: 1 3
5.1a Receive Volume Control Performance 8N NB, Index: 1 3
5.1b Receive Volume Control Performance 2N NB, Index: 1 4
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 5
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 6
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 7
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 8
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 9
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 10
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 11
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 11
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 12
5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1 13
5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1 14
5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1 15
5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1 16
5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1 17
5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1 18
5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1 19
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 19
5.3 Frequency Response 8N FF HANB, Index: 1 20
5.3 Frequency Response 8N DF HANB, Index: 1 21
5.3 Frequency Response 2N FF HANB, Index: 1 21
5.3 Frequency Response 2N DF HANB, Index: 1 22

Overall Receive Delay NB, Index: 1

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

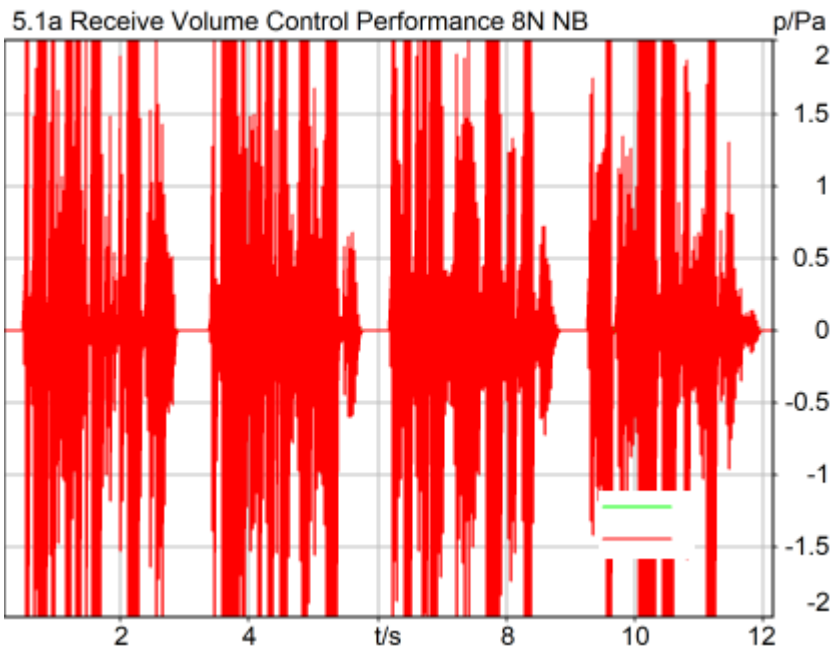


Delay (Cross): 106.3 ms

2024/3/12 23:08 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N NB, Index: 1

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



Correction

X - 70

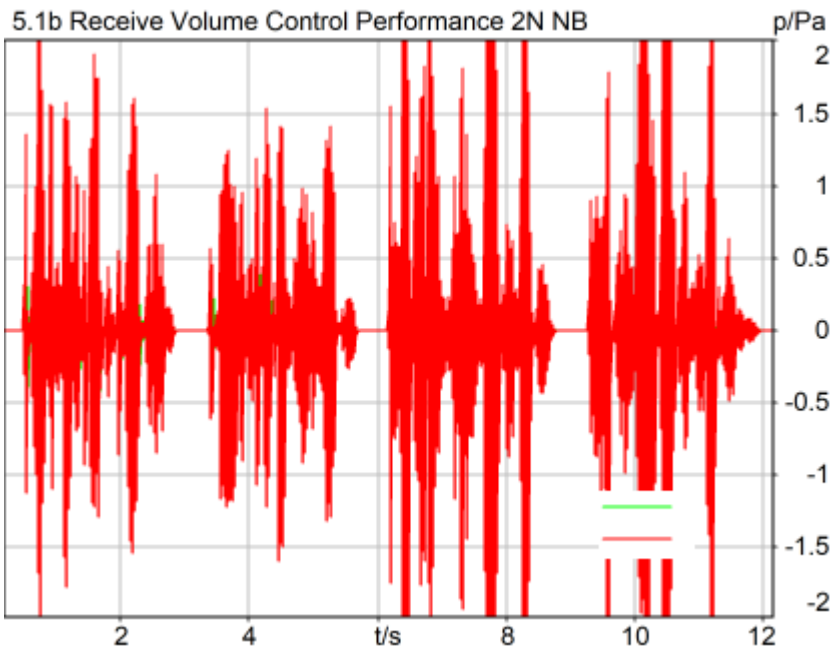
Speech Level RCV: 92.00 dB[SPL], Act.: 81.57%
Corrected Speech Level: 22.00 dB[SPL] Ok

Ok

2024/3/12 23:08 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N NB, Index: 1

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



Correction

X - 70

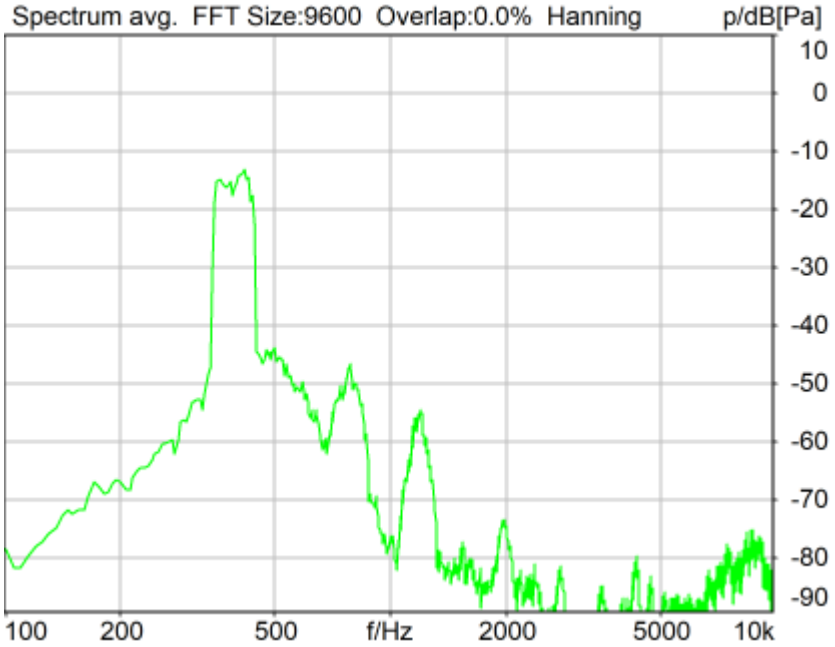
Speech Level RCV: 84.18 dB[SPL], Act.: 81.32%
Corrected Speech Level: 14.18 dB[SPL] Ok

Ok

2024/3/13 0:18 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



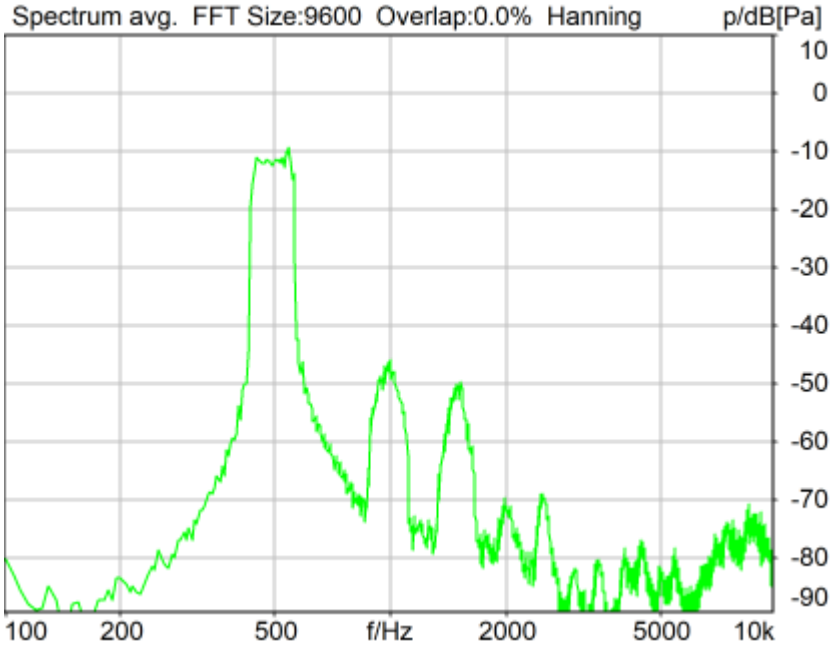
Distortion (Noise) RCV (packed): 30.29 dB (3.06%) Ok

Ok

2024/3/12 23:09 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



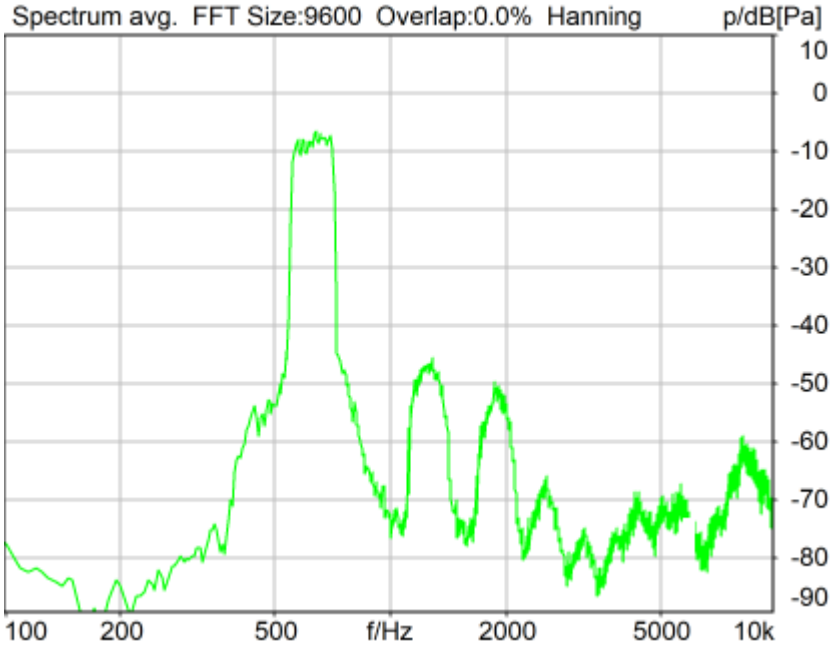
Distortion (Noise) RCV (packed): 33.66 dB (2.08%) Ok

Ok

2024/3/12 23:09 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



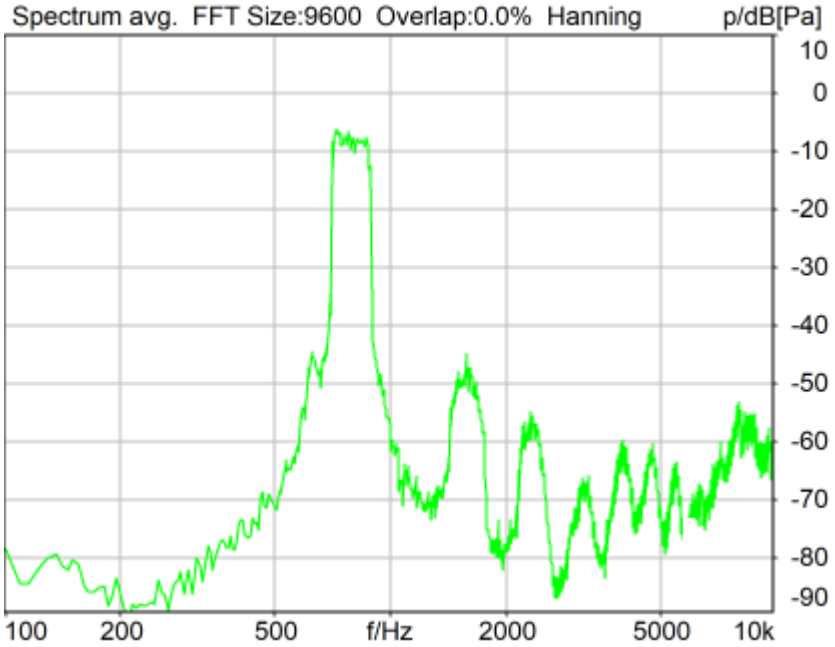
Distortion (Noise) RCV (packed): 35.04 dB (1.77%) Ok

Ok

2024/3/12 23:10 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



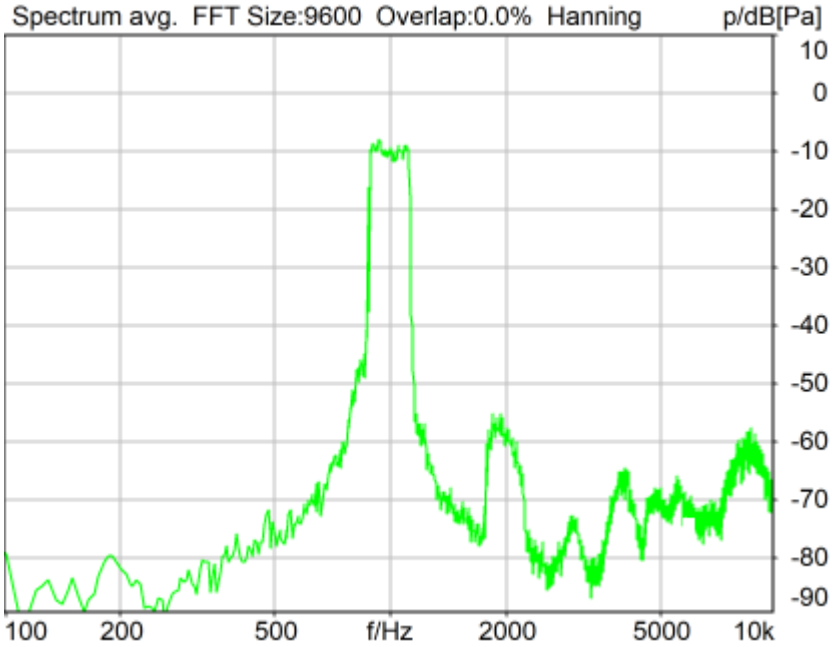
Distortion (Noise) RCV (packed): 35.15 dB (1.75%) Ok

Ok

2024/3/12 23:10 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



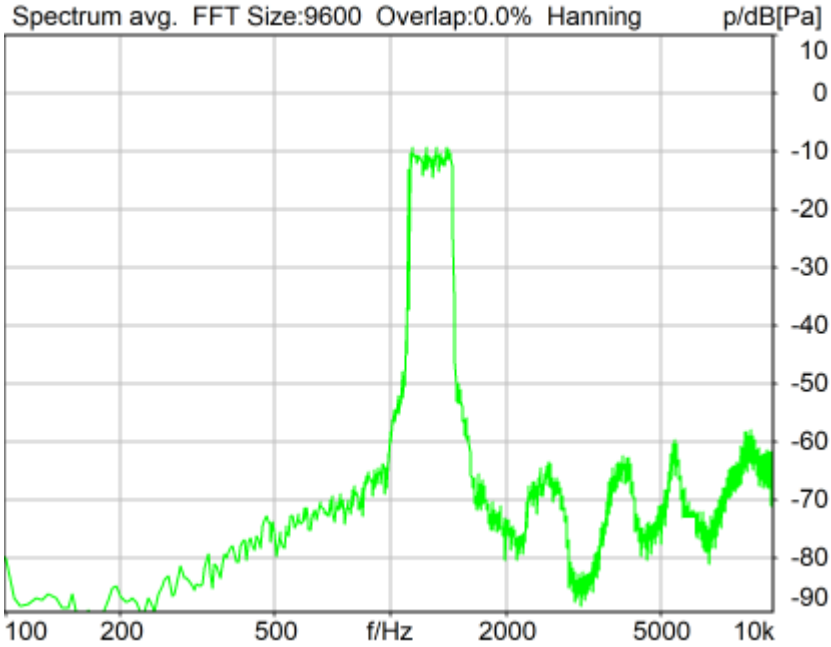
Distortion (Noise) RCV (packed): 39.48 dB (1.06%) Ok

Ok

2024/3/12 23:11 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



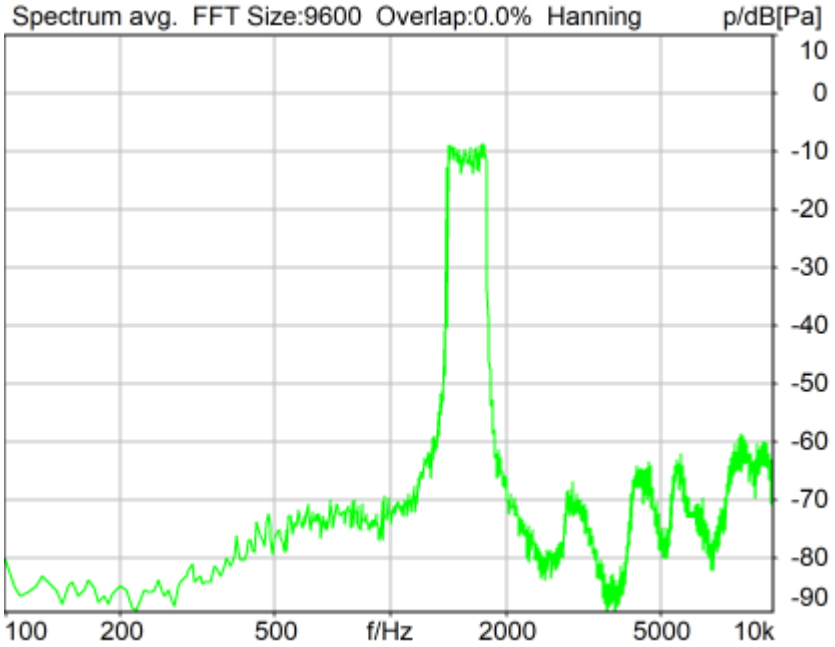
Distortion (Noise) RCV (packed): 30.37 dB (3.03%) Ok

Ok

2024/3/12 23:11 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



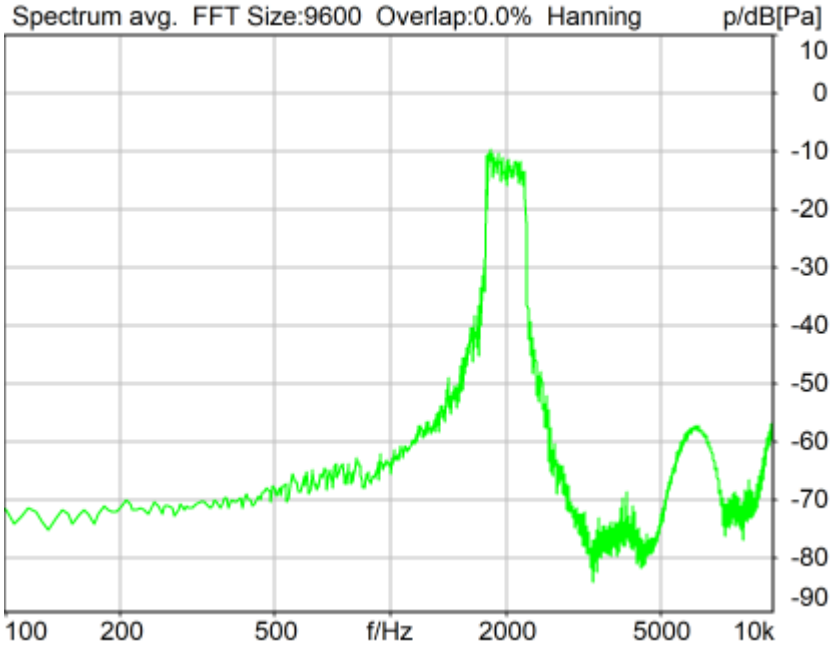
Distortion (Noise) RCV (packed): 42.35 dB (0.76%) Ok

Ok

2024/3/12 23:11 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



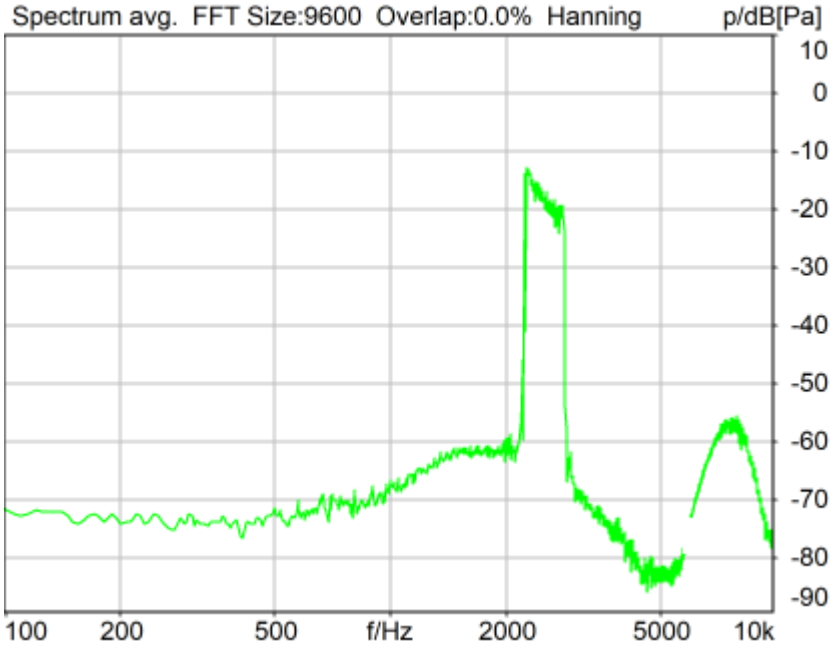
Distortion (Noise) RCV (packed): 27.45 dB (4.24%) Ok

Ok

2024/3/12 23:12 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



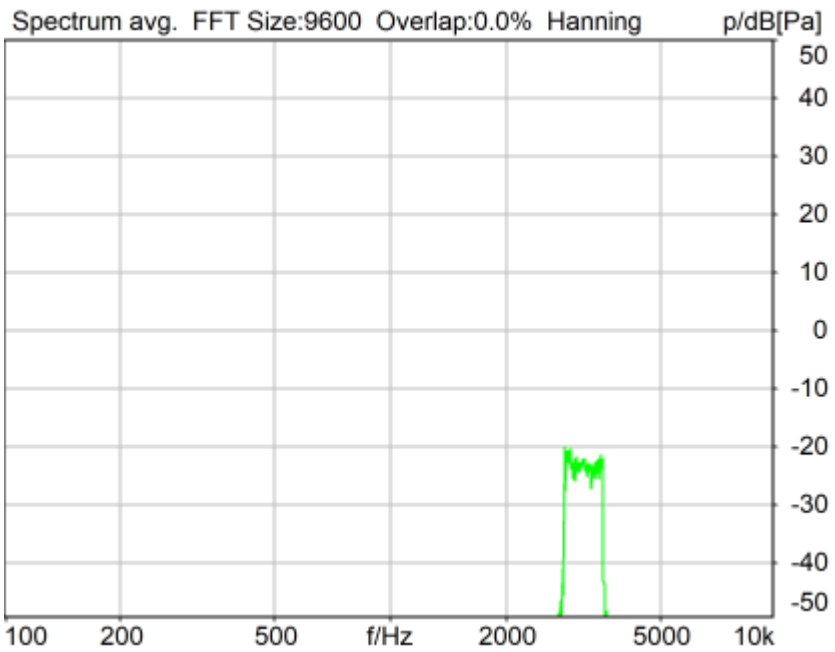
Distortion (Noise) RCV (packed): 33.66 dB (2.08%) Ok

Ok

2024/3/12 23:12 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



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

Ok

2024/3/12 23:13 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

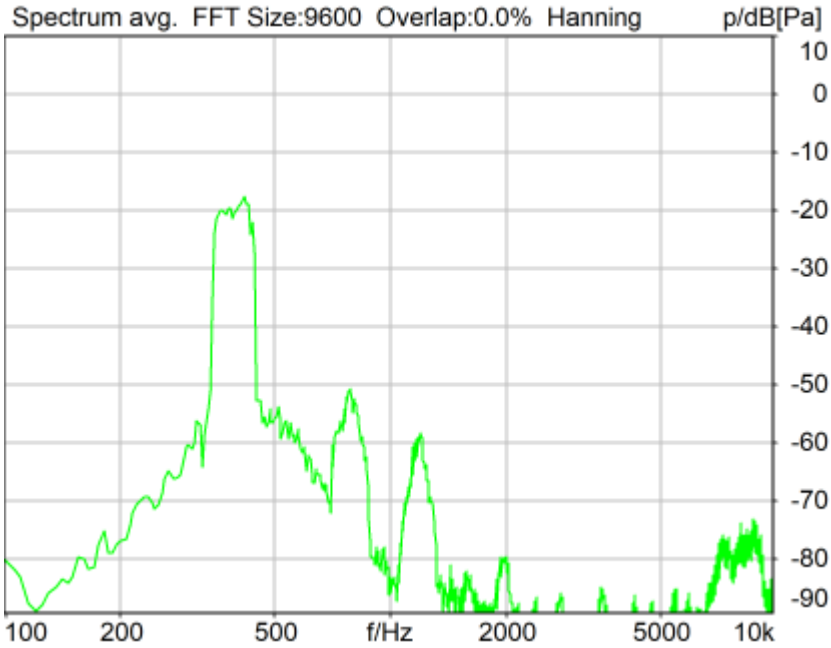
Region	Frequency	SDNR
1	400Hz	30.29 dB
2	500Hz	33.66 dB
3	630Hz	35.04 dB
4	800Hz	35.15 dB
5	1000Hz	39.48 dB
6	1250Hz	30.37 dB
7	1600Hz	42.35 dB
8	2000Hz	27.45 dB
9	2500Hz	33.66 dB
10	3150Hz	28.66 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 27.45dB at 2000Hz.

2024/3/12 23:13 ACQUA

5.2 RCV Distortion and Noise - 400 Hz NB, Index: 1

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



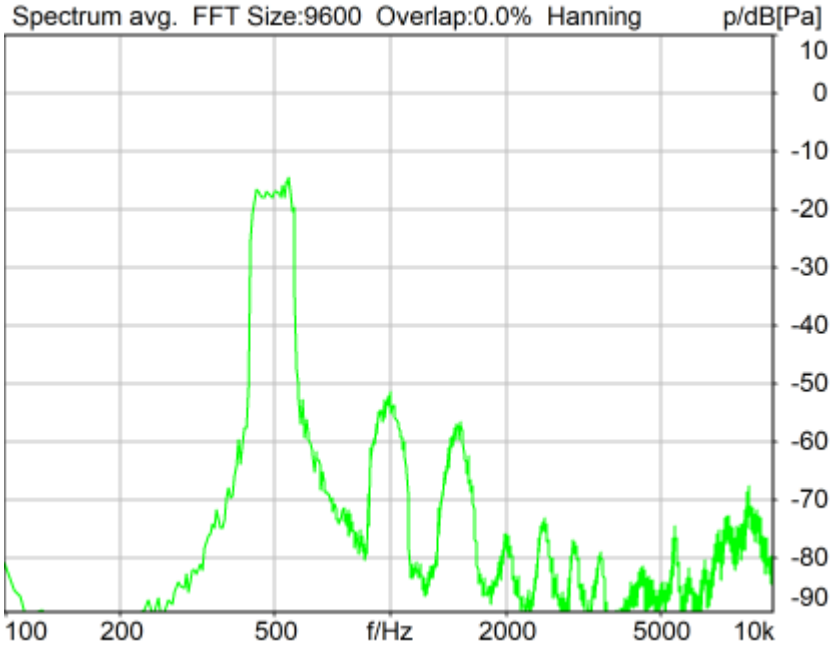
Distortion (Noise) RCV (packed): 31.52 dB (2.66%) Ok

Ok

2024/3/13 0:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz NB, Index: 1

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



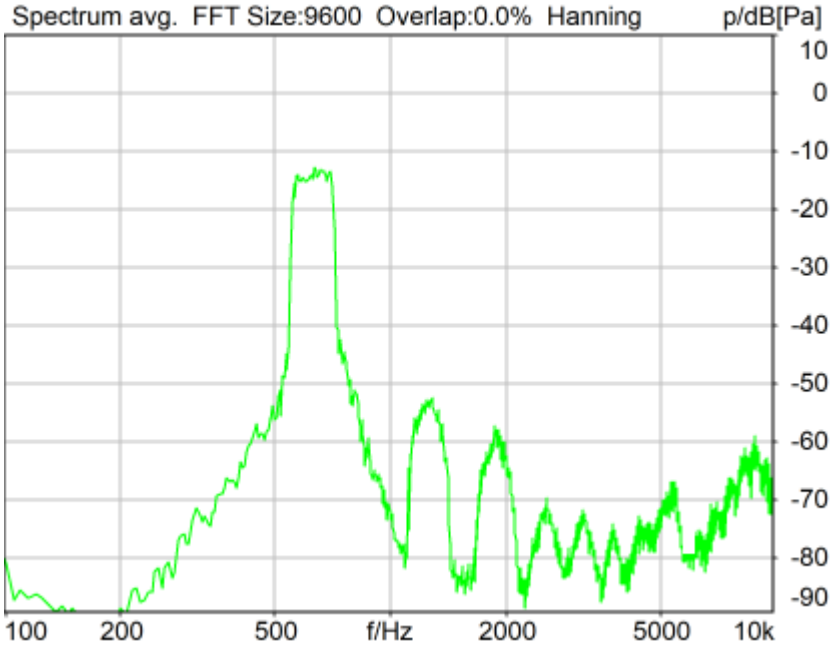
Distortion (Noise) RCV (packed): 33.99 dB (2.00%) Ok

Ok

2024/3/13 0:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz NB, Index: 1

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



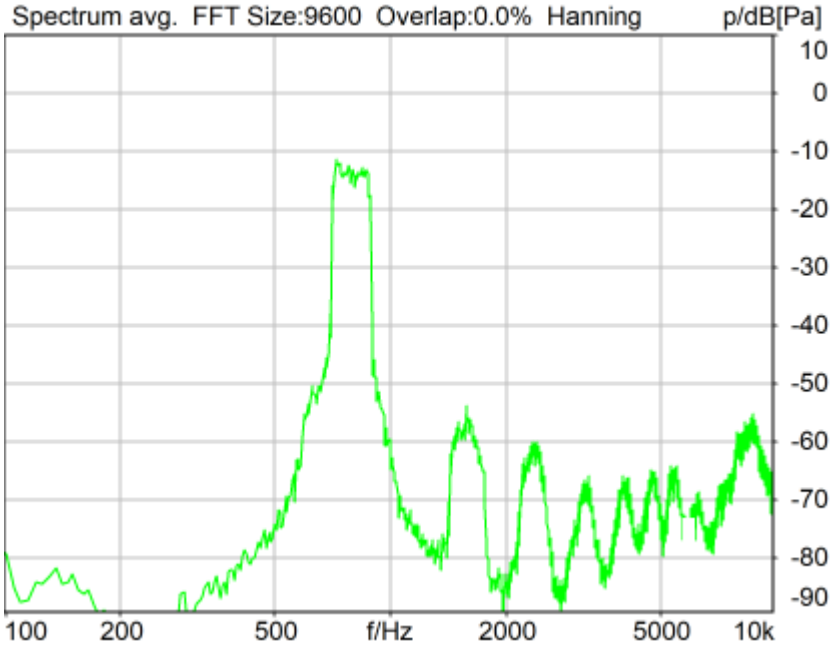
Distortion (Noise) RCV (packed): 33.06 dB (2.22%) Ok

Ok

2024/3/13 0:19 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz NB, Index: 1

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



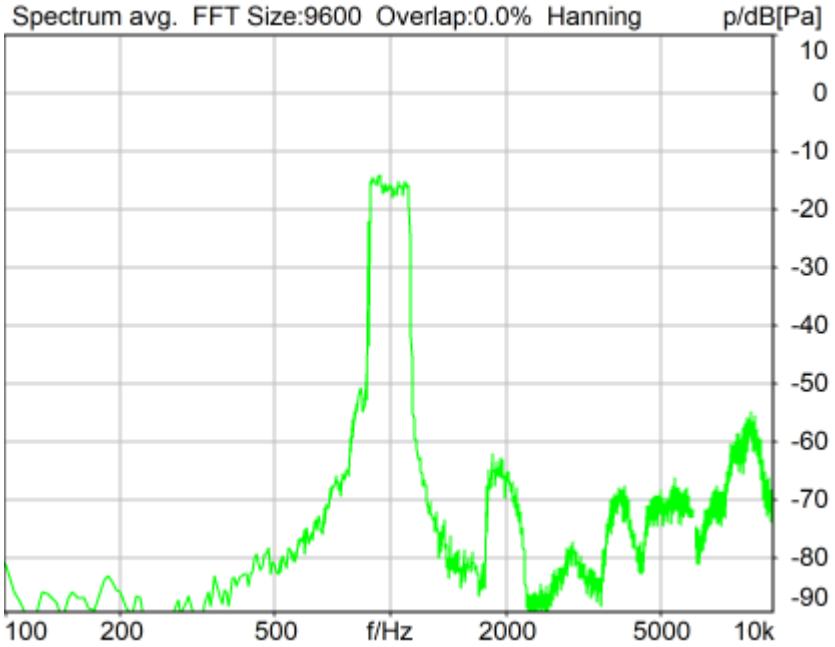
Distortion (Noise) RCV (packed): 34.17 dB (1.96%) Ok

Ok

2024/3/13 0:19 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz NB, Index: 1

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



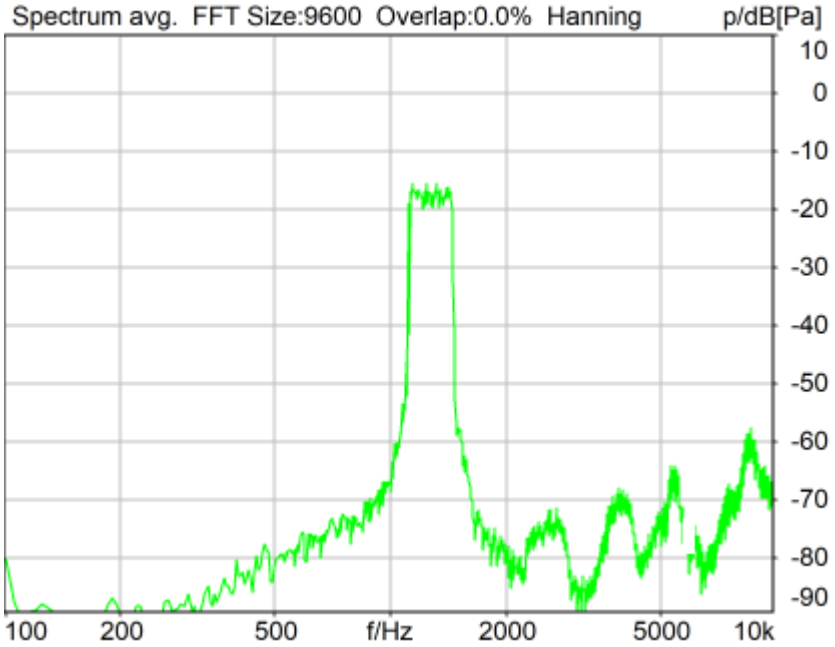
Distortion (Noise) RCV (packed): 34.66 dB (1.85%) Ok

Ok

2024/3/13 0:20 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz NB, Index: 1

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



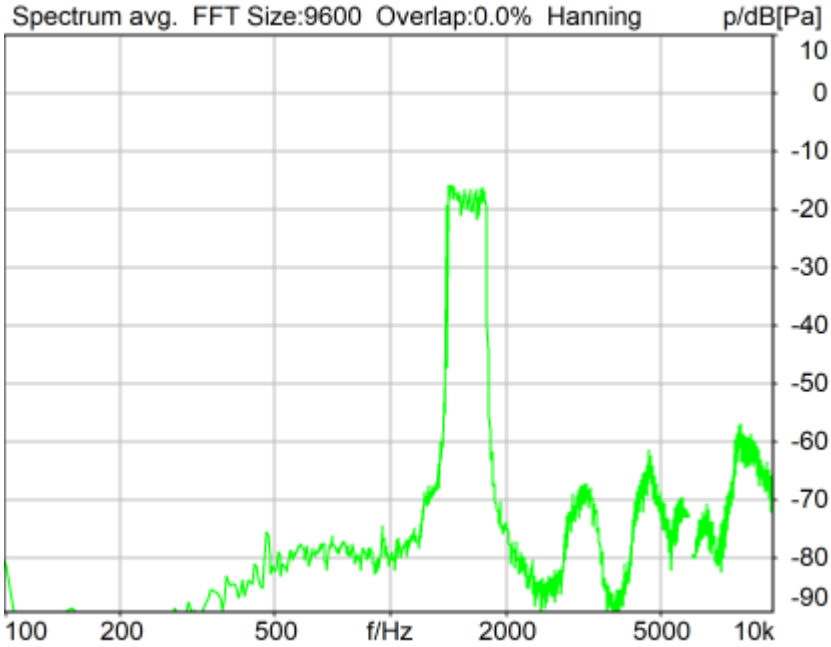
Distortion (Noise) RCV (packed): 30.91 dB (2.85%) Ok

Ok

2024/3/13 0:20 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz NB, Index: 1

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



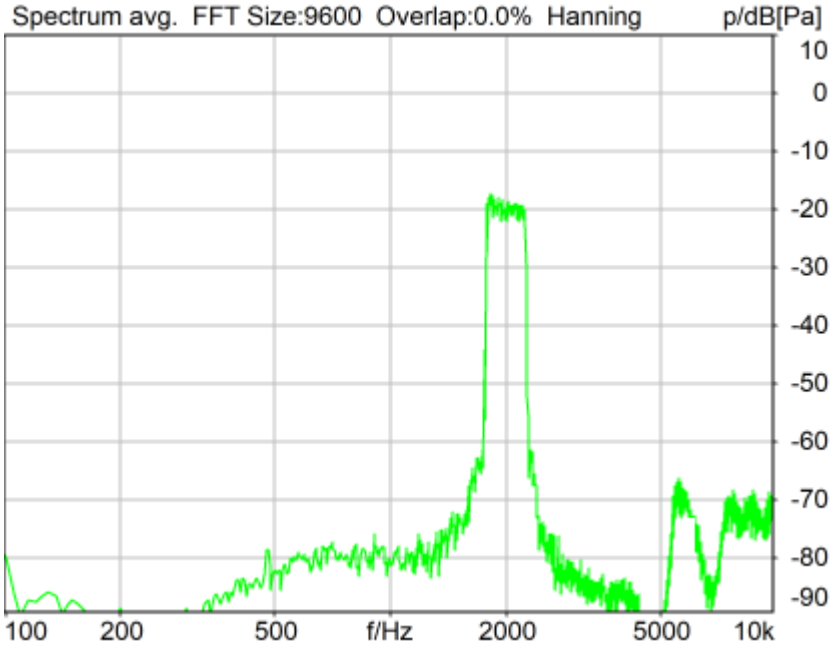
Distortion (Noise) RCV (packed): 36.71 dB (1.46%) Ok

Ok

2024/3/13 0:21 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz NB, Index: 1

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



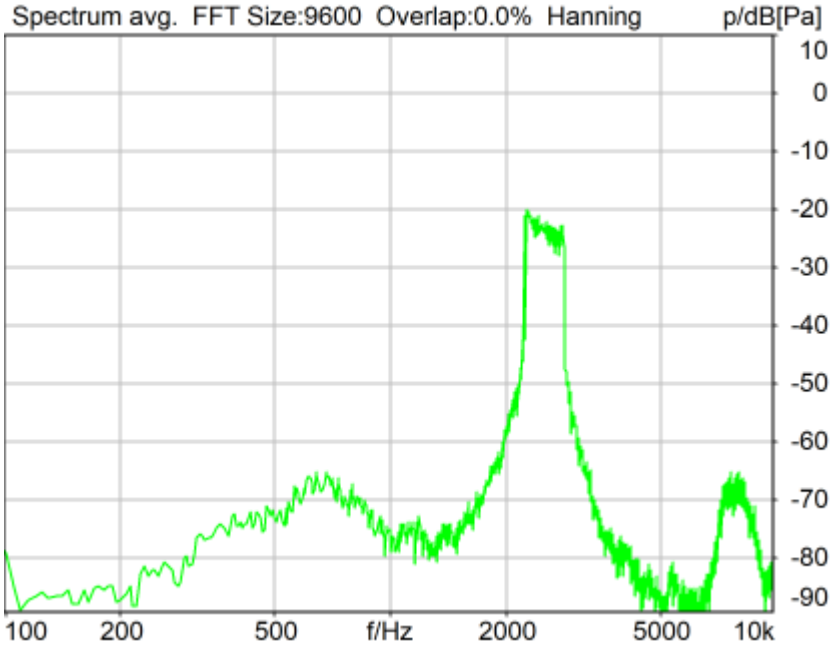
Distortion (Noise) RCV (packed): 41.46 dB (0.85%) Ok

Ok

2024/3/13 0:21 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz NB, Index: 1

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



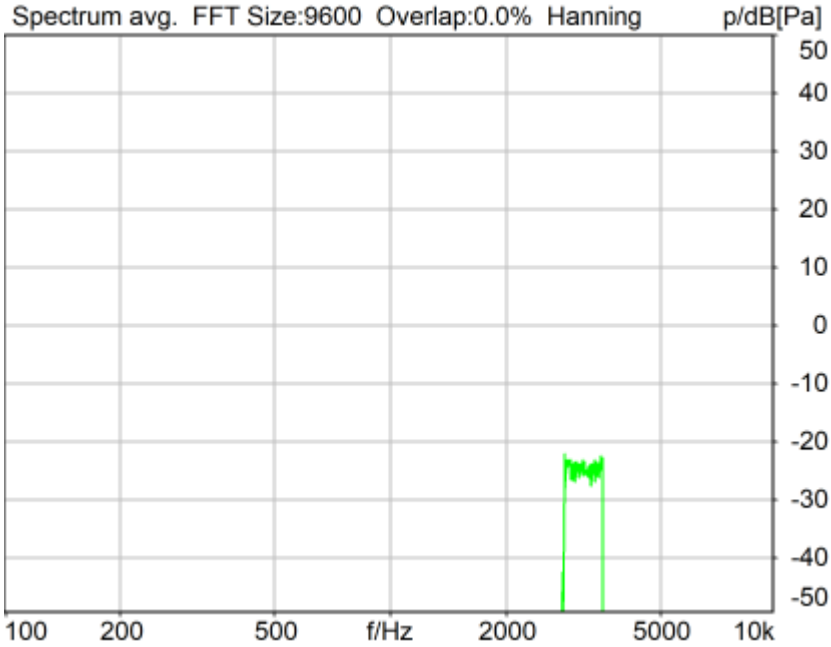
Distortion (Noise) RCV (packed): 29.26 dB (3.44%) Ok

Ok

2024/3/13 0:21 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz NB, Index: 1

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



Distortion (Noise) RCV (packed): 35.53 dB (1.67%) Ok

Ok

2024/3/13 0:22 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

Region	Frequency	SDNR
1	400Hz	31.52 dB

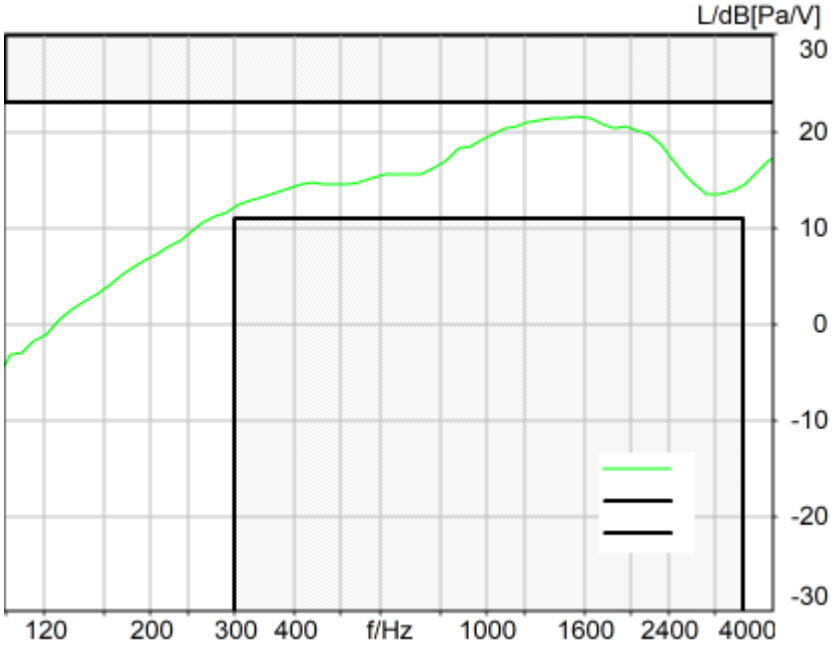
2	500Hz	33.99 dB
3	630Hz	33.06 dB
4	800Hz	34.17 dB
5	1000Hz	34.66 dB
6	1250Hz	30.91 dB
7	1600Hz	36.71 dB
8	2000Hz	41.46 dB
9	2500Hz	29.26 dB
10	3150Hz	35.53 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 29.26dB at 2500Hz.

2024/3/13 0:22 ACQUA

5.3 Frequency Response 8N FF HANB, Index: 1

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



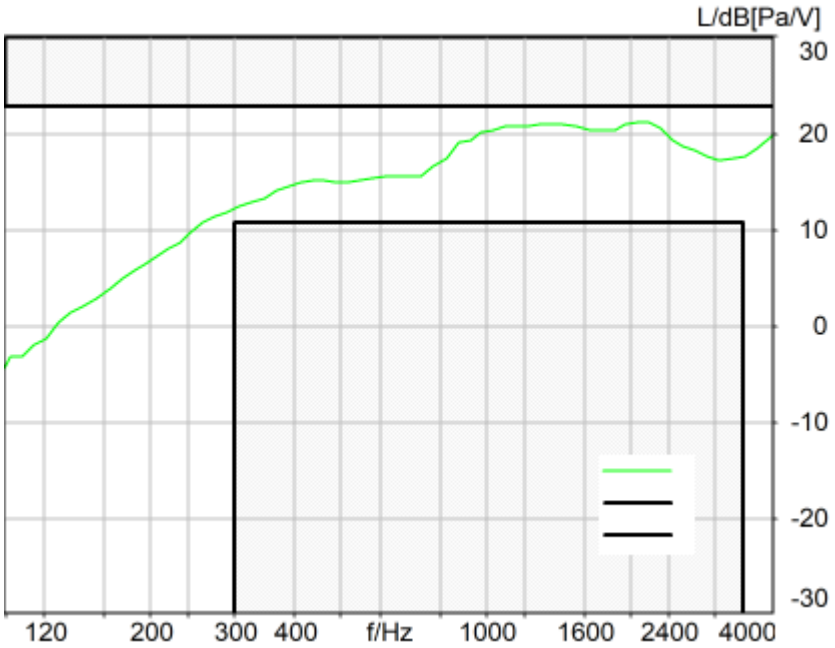
Absolute minimal distance
1.37 dB at 305.9 Hz Ok

Ok

2024/3/12 23:14 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF HANB, Index: 1

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



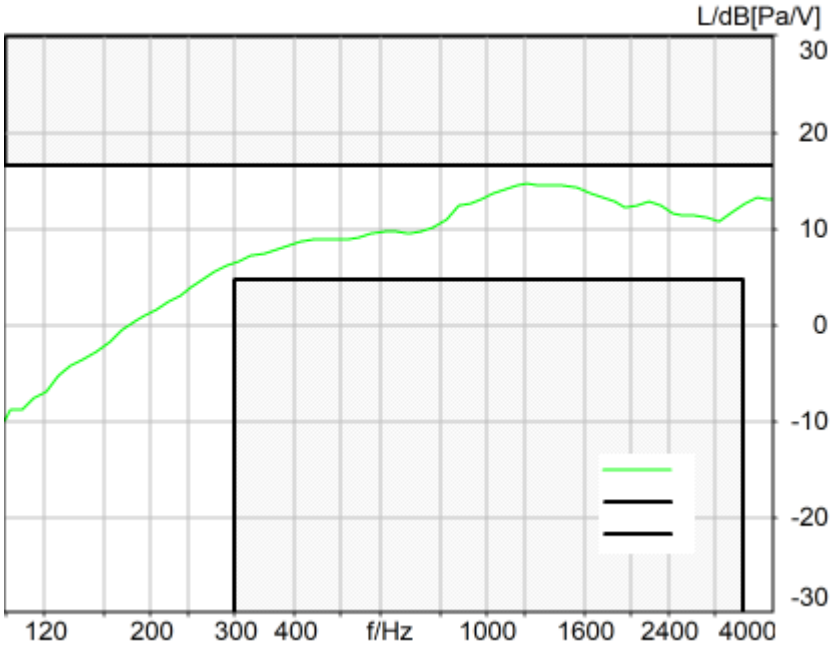
Absolute minimal distance
1.58 dB at 2057.5 Hz Ok

Ok

2024/3/12 23:13 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF HANB, Index: 1

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



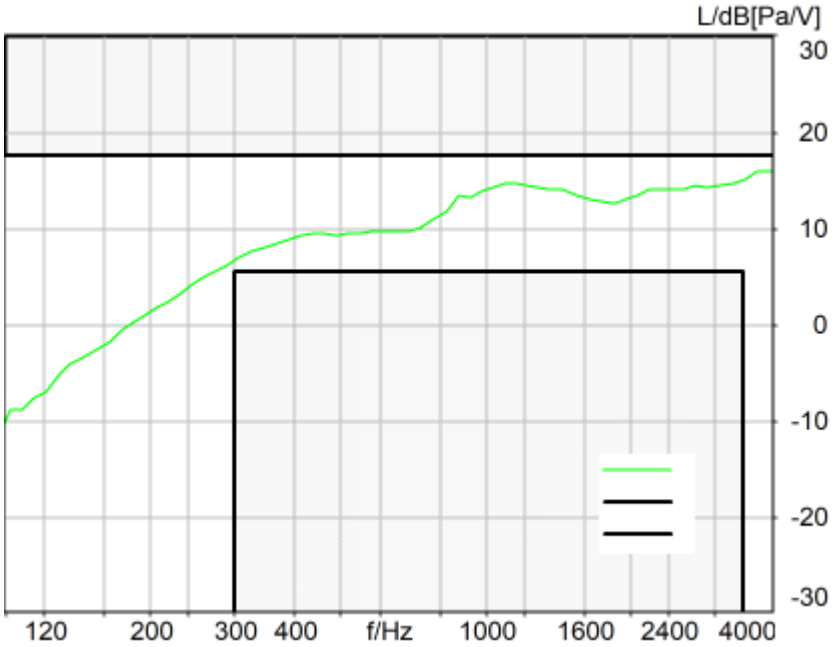
Absolute minimal distance
1.99 dB at 1216.1 Hz Ok

Ok

2024/3/13 0:23 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF HANB, Index: 1

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



Absolute minimal distance
1.47 dB at 3882.4 Hz Ok

Ok

2024/3/13 0:23 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Measurement Protocol

Measurement Object	LTE Band 26_15QPSK_75_0_EVS WB 128kbps_CH26865
Description	CJWQ-W7L-P23120020 DTNC PM95

Project	TIA-5050 (2018-01)
Report Generation Date	2024/5/21 14:55
Responsible Person	audio

Overall Receive Delay WB, Index: 1 3
5.1a Receive Volume Control Performance 8N WB, Index: 1 3
5.1b Receive Volume Control Performance 2N WB, Index: 1 4
5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1 5
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 6
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 7
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 8
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 9
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 10
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 11
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 12
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 13
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 14
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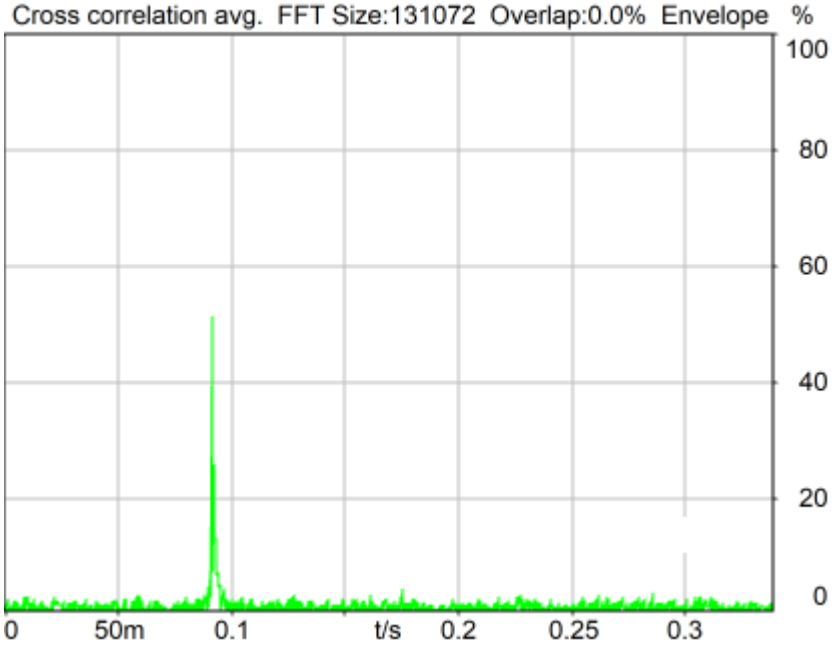
5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1 16
5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1 17
5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1 18
5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1 19
5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1 20
5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1 21
5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1 22
5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1 23
5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1 24
Report - Receive Distortion and Noise (Conversational Gain), Index: 1 25
5.3 Frequency Response 8N FF, Index: 1 25
5.3 Frequency Response 8N DF, Index: 1 26
5.3 Frequency Response 2N FF, Index: 1 27
5.3 Frequency Response 2N DF, Index: 1 28

Overall Receive Delay WB, Index: 1

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

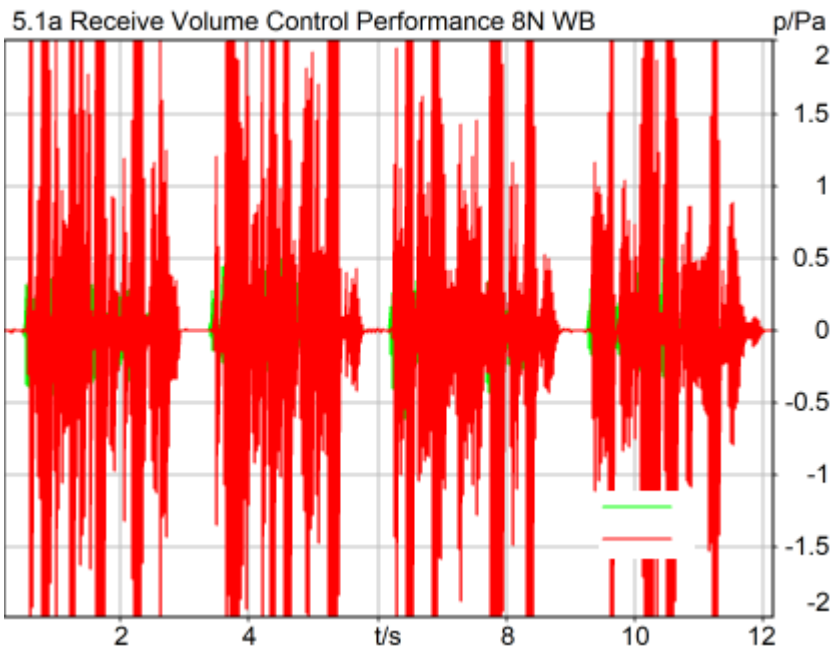


Delay (Cross): 92.3 ms

2024/3/12 23:14 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.1a Receive Volume Control Performance 8N WB, Index: 1

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



Correction

X - 70

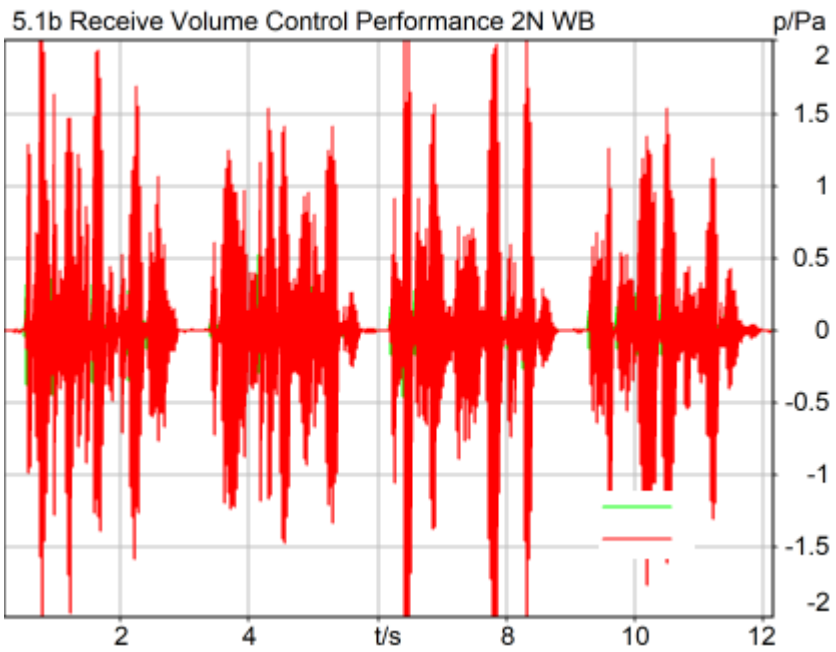
Speech Level RCV: 87.64 dB[SPL], Act.: 83.72%
Corrected Speech Level: 17.64 dB[SPL] Ok

Ok

2024/3/18 9:33 ACQUA 5.1.200

5.1b Receive Volume Control Performance 2N WB, Index: 1

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



Correction

X - 70

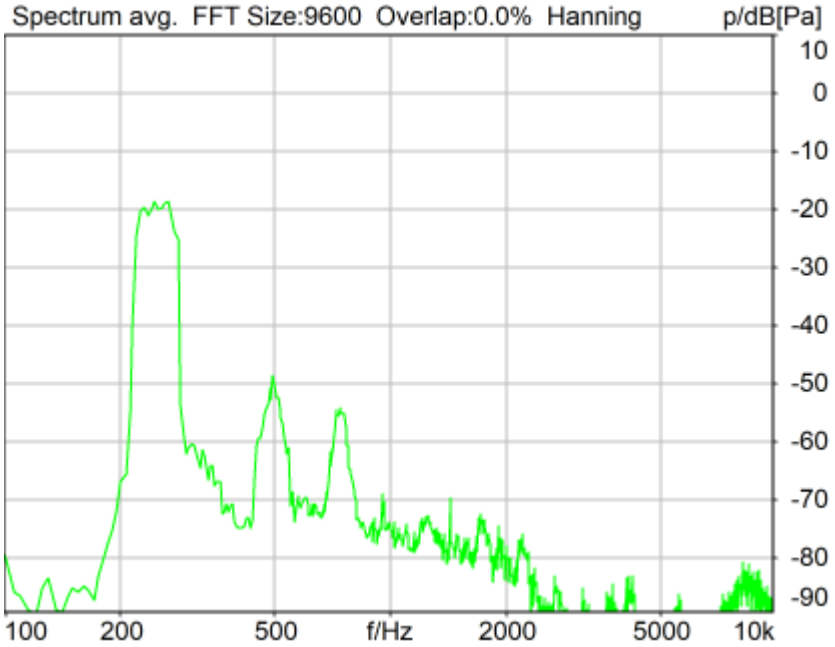
Speech Level RCV: 81.09 dB[SPL], Act.: 84.02%
Corrected Speech Level: 11.09 dB[SPL] Ok

Ok

2024/3/18 10:16 ACQUA 5.1.200

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



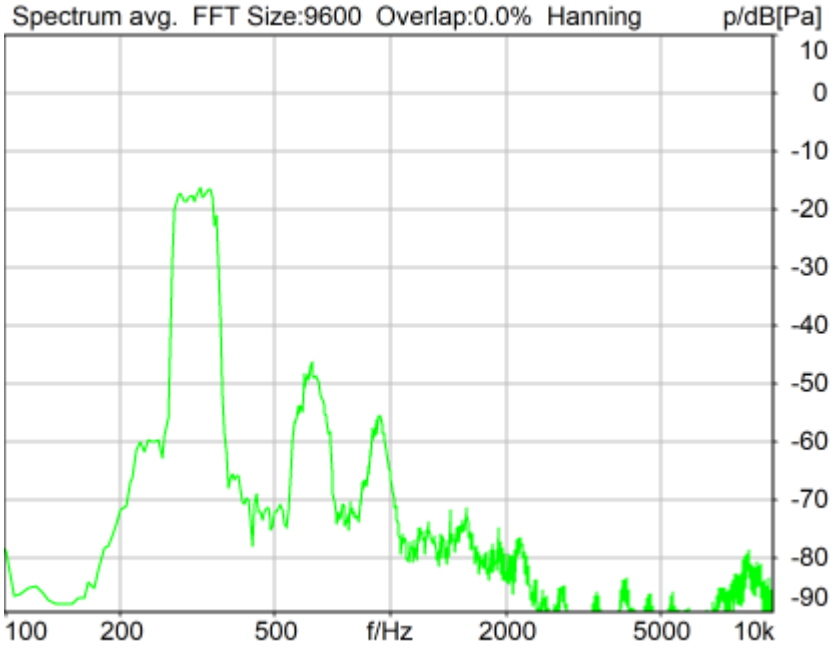
Distortion (Noise) RCV (packed): 31.96 dB (2.52%) Ok

Ok

2024/3/12 23:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



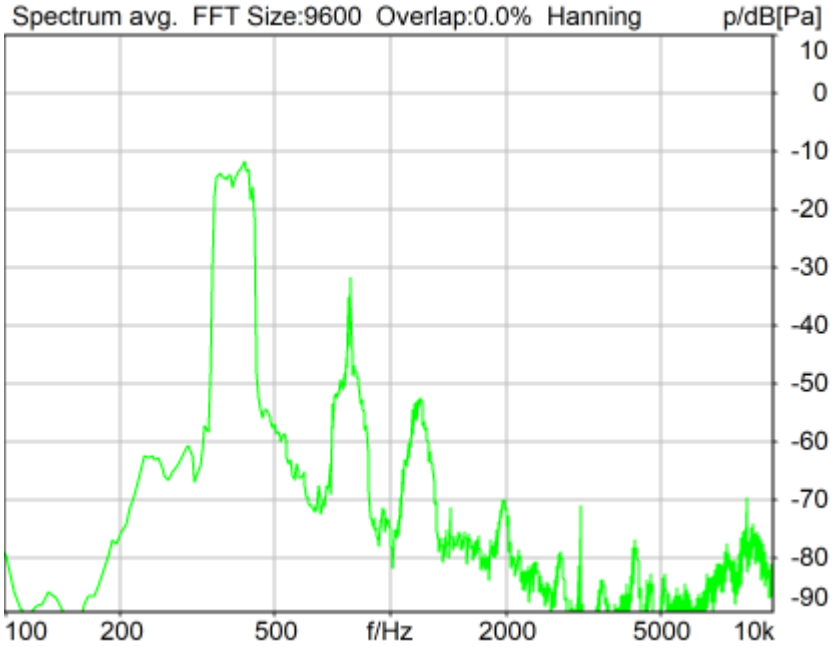
Distortion (Noise) RCV (packed): 31.64 dB (2.62%) Ok

Ok

2024/3/12 23:16 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



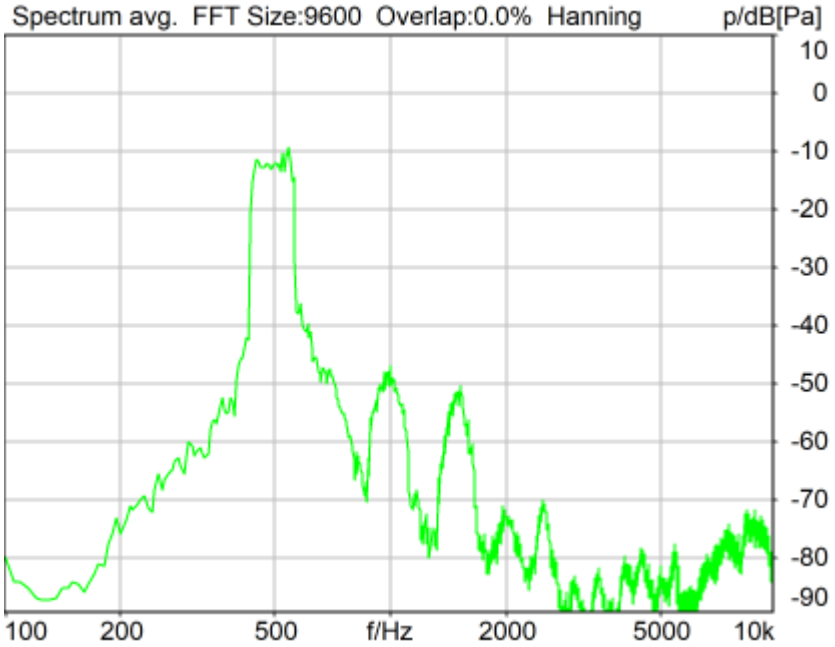
Distortion (Noise) RCV (packed): 27.30 dB (4.31%) Ok

Ok

2024/3/12 23:16 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



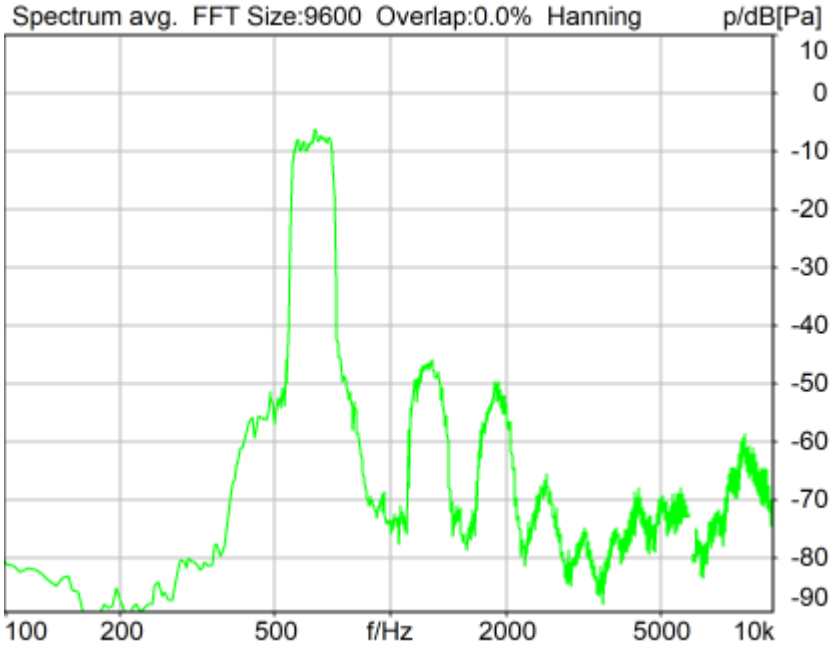
Distortion (Noise) RCV (packed): 31.39 dB (2.69%) Ok

Ok

2024/3/12 23:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



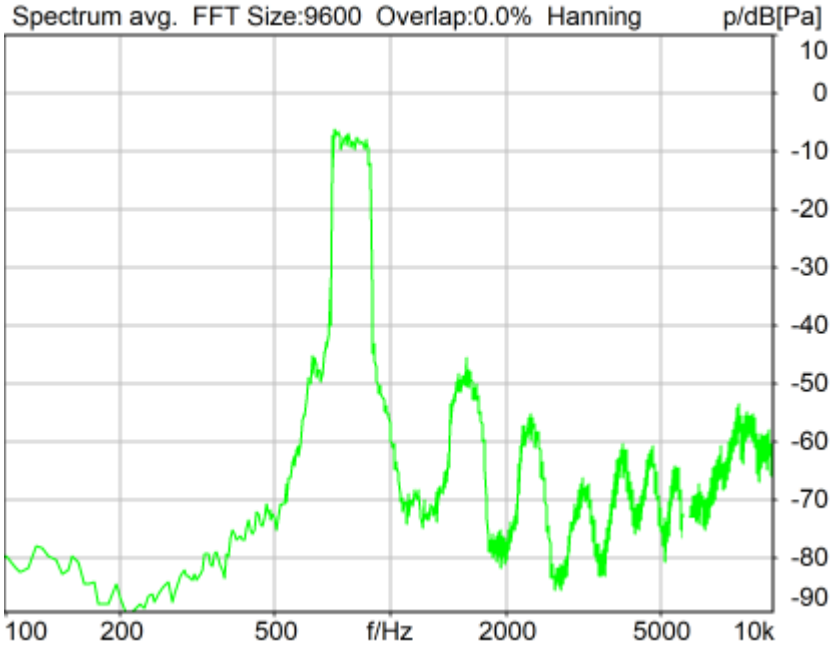
Distortion (Noise) RCV (packed): 35.06 dB (1.77%) Ok

Ok

2024/3/12 23:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



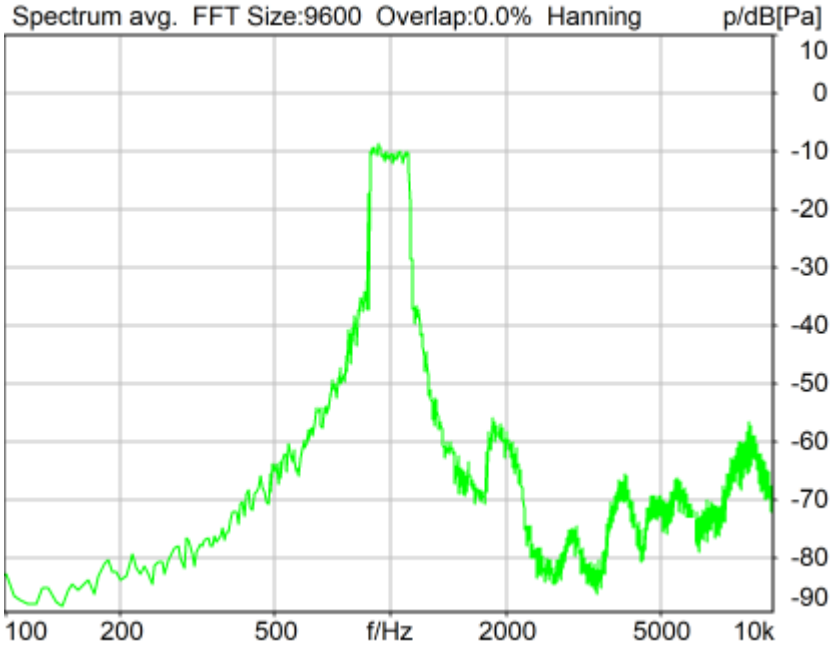
Distortion (Noise) RCV (packed): 35.36 dB (1.71%) Ok

Ok

2024/3/12 23:17 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



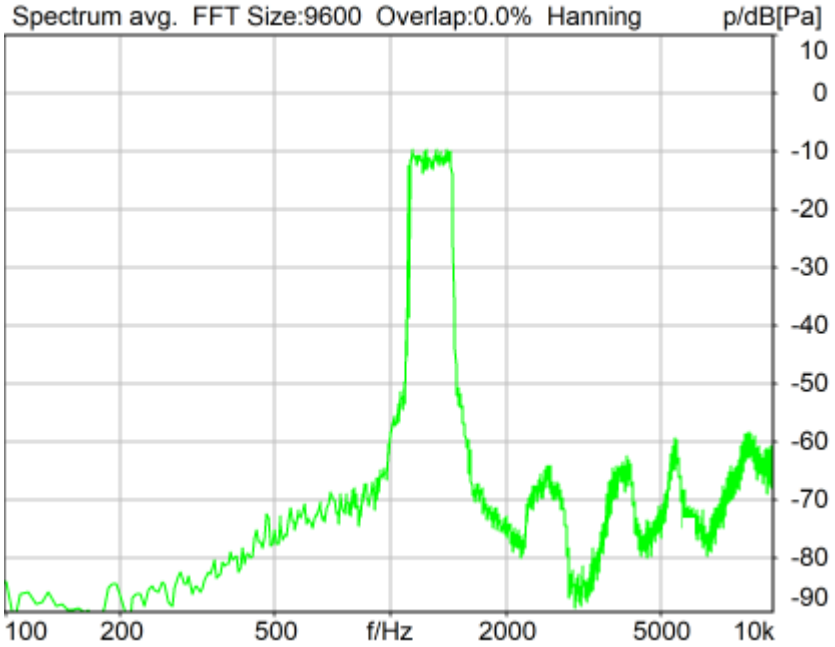
Distortion (Noise) RCV (packed): 30.23 dB (3.08%) Ok

Ok

2024/3/12 23:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



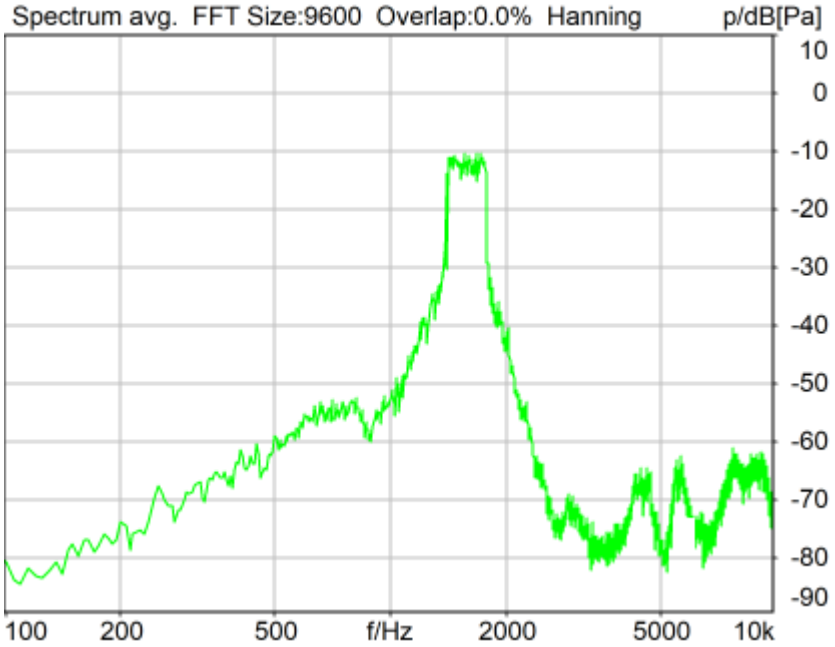
Distortion (Noise) RCV (packed): 31.47 dB (2.67%) Ok

Ok

2024/3/12 23:18 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



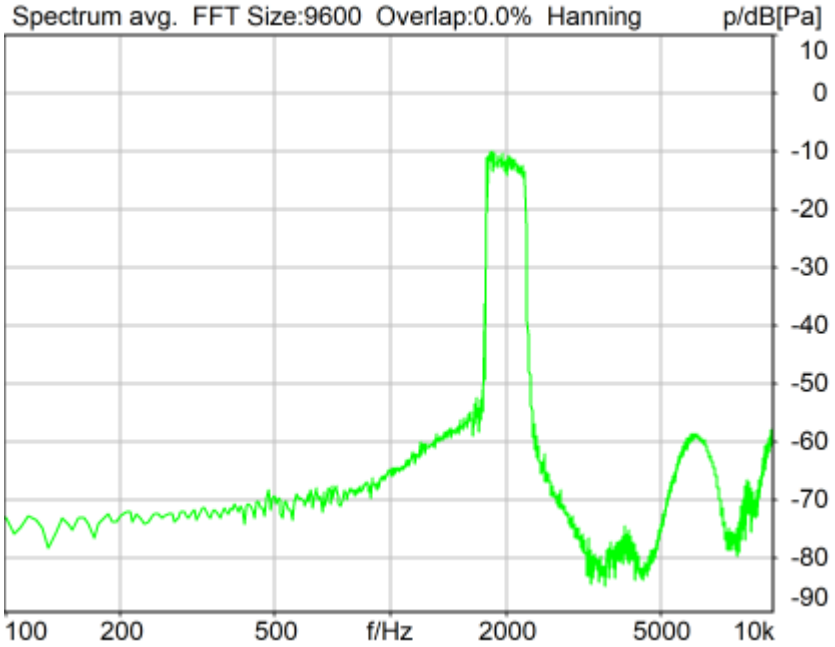
Distortion (Noise) RCV (packed): 23.75 dB (6.49%) Ok

Ok

2024/3/12 23:19 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



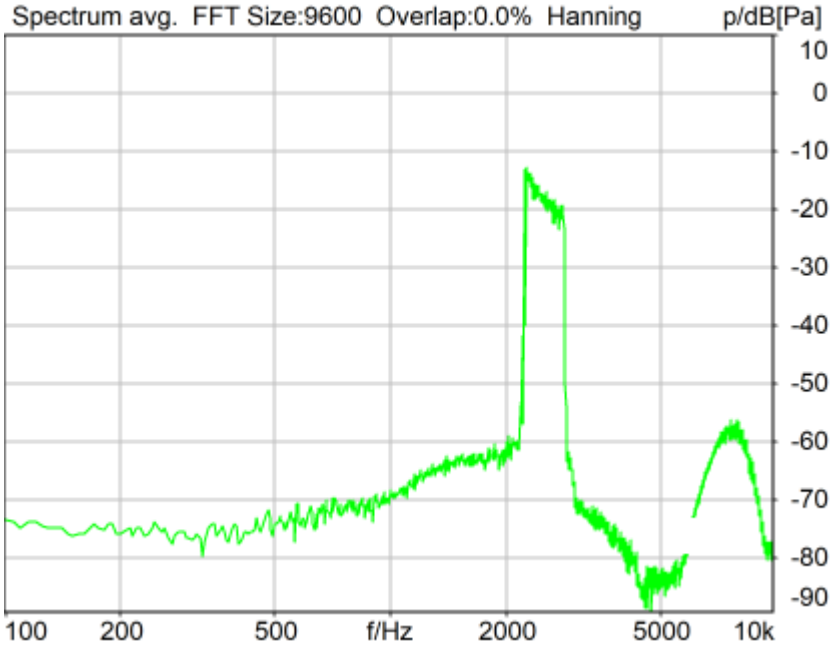
Distortion (Noise) RCV (packed): 37.30 dB (1.36%) Ok

Ok

2024/3/12 23:19 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



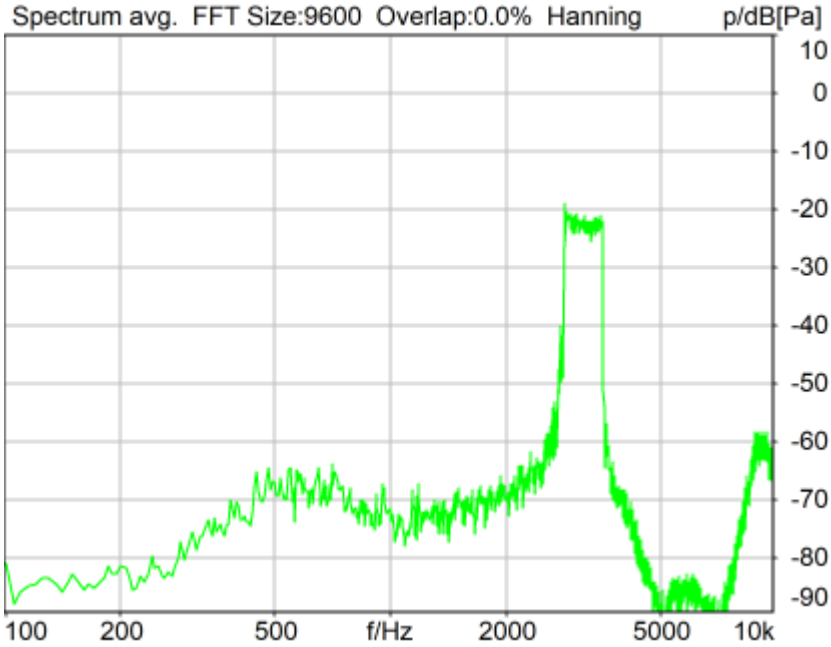
Distortion (Noise) RCV (packed): 34.63 dB (1.86%) Ok

Ok

2024/3/12 23:19 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



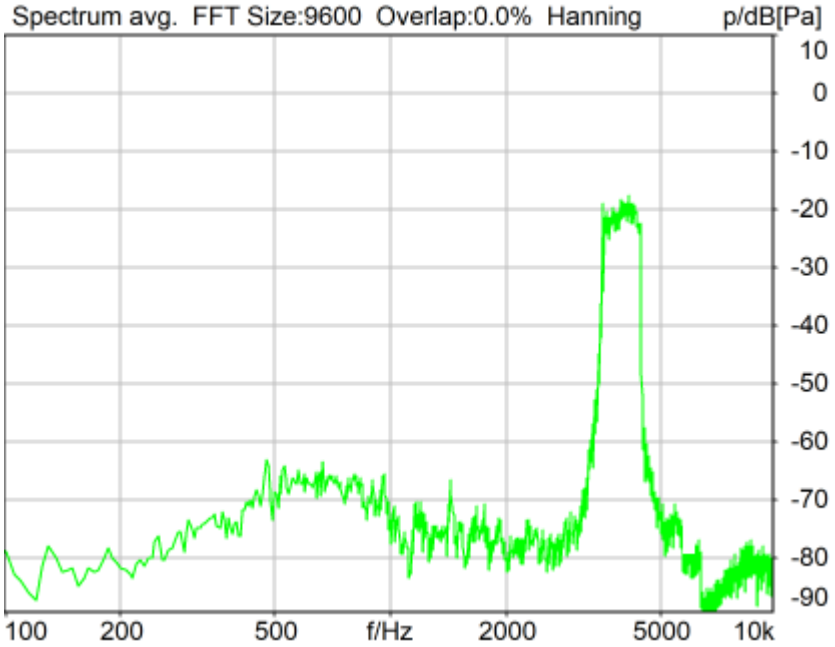
Distortion (Noise) RCV (packed): 31.32 dB (2.71%) Ok

Ok

2024/3/12 23:20 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



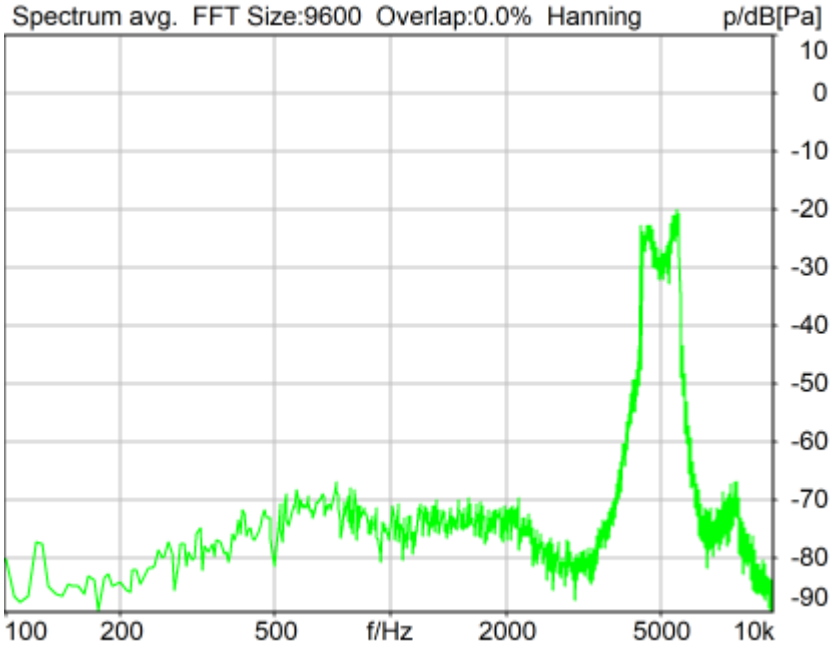
Distortion (Noise) RCV (packed): 31.23 dB (2.75%) Ok

Ok

2024/3/12 23:20 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 27.64 dB (4.15%) Ok

Ok

2024/3/12 23:21 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

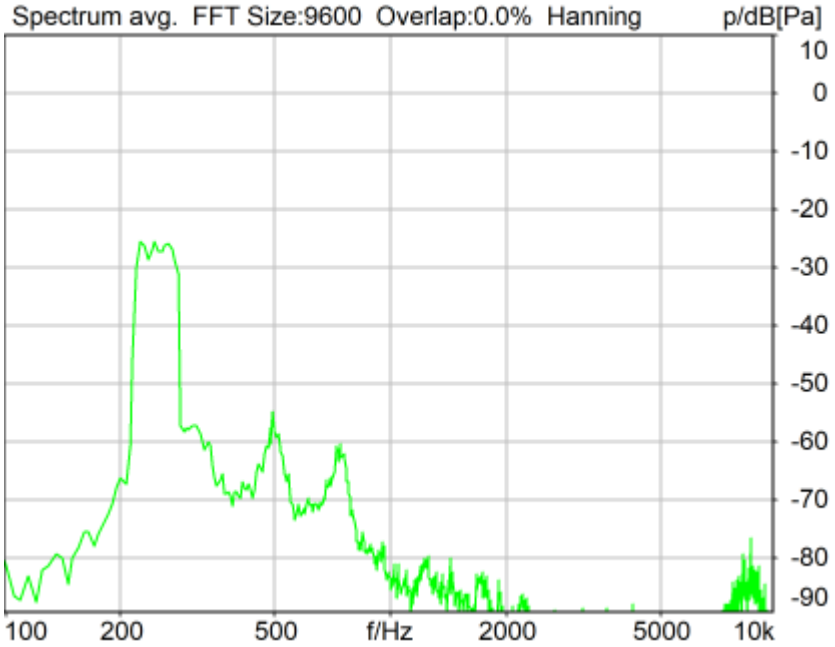
Region	Frequency	SDNR
1	250Hz	31.96 dB
2	315Hz	31.64 dB
3	400Hz	27.30 dB
4	500Hz	31.39 dB
5	630Hz	35.06 dB
6	800Hz	35.36 dB
7	1000Hz	30.23 dB
8	1250Hz	31.47 dB
9	1600Hz	23.75 dB
10	2000Hz	37.30 dB
11	2500Hz	34.63 dB
12	3150Hz	31.32 dB
13	4000Hz	31.23 dB
14	5000Hz	27.64 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 23.75dB at 1600Hz.

2024/3/12 23:21 ACQUA

5.2 RCV Distortion and Noise - 250 Hz WB, Index: 1

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



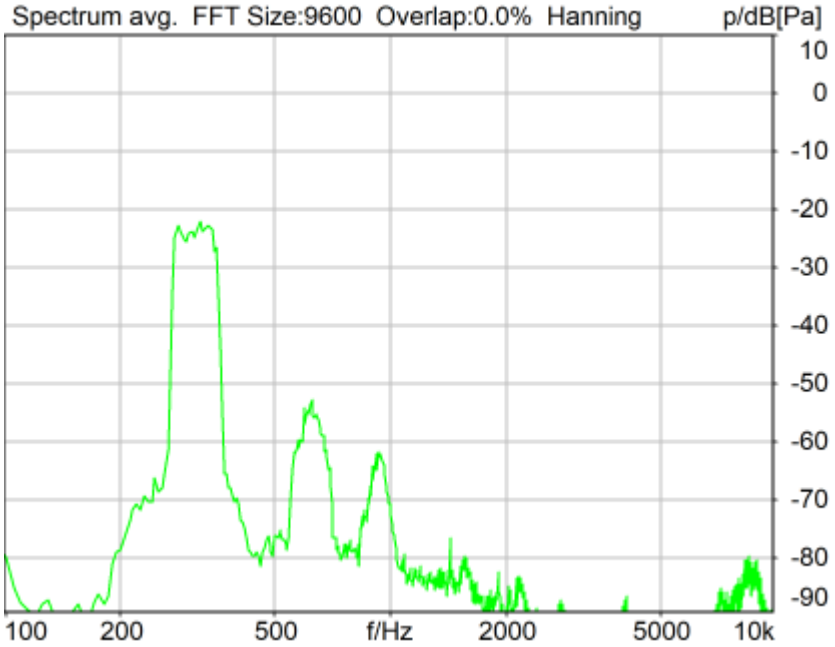
Distortion (Noise) RCV (packed): 30.98 dB (2.83%) Ok

Ok

2024/3/12 23:26 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 315 Hz WB, Index: 1

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



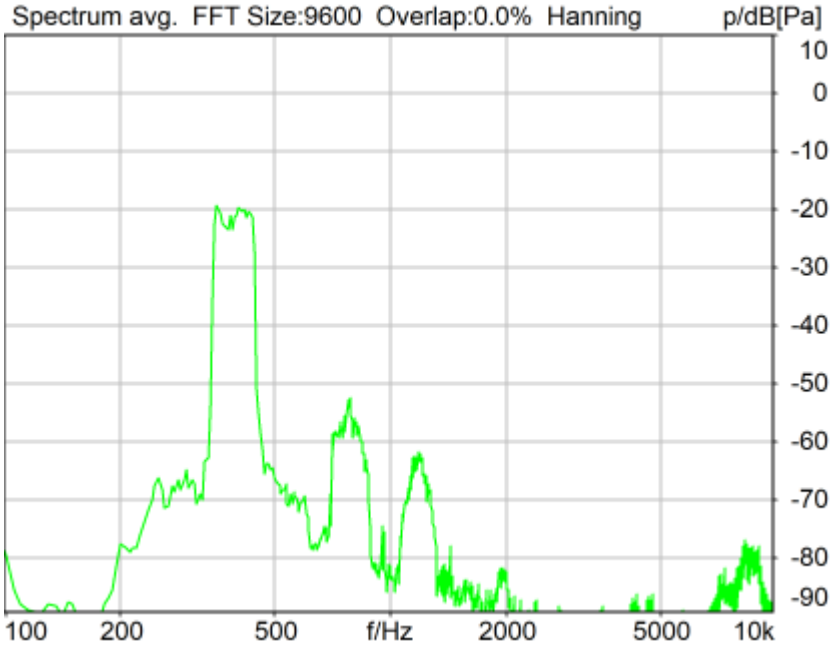
Distortion (Noise) RCV (packed): 31.89 dB (2.54%) Ok

Ok

2024/3/12 23:27 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 400 Hz WB, Index: 1

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



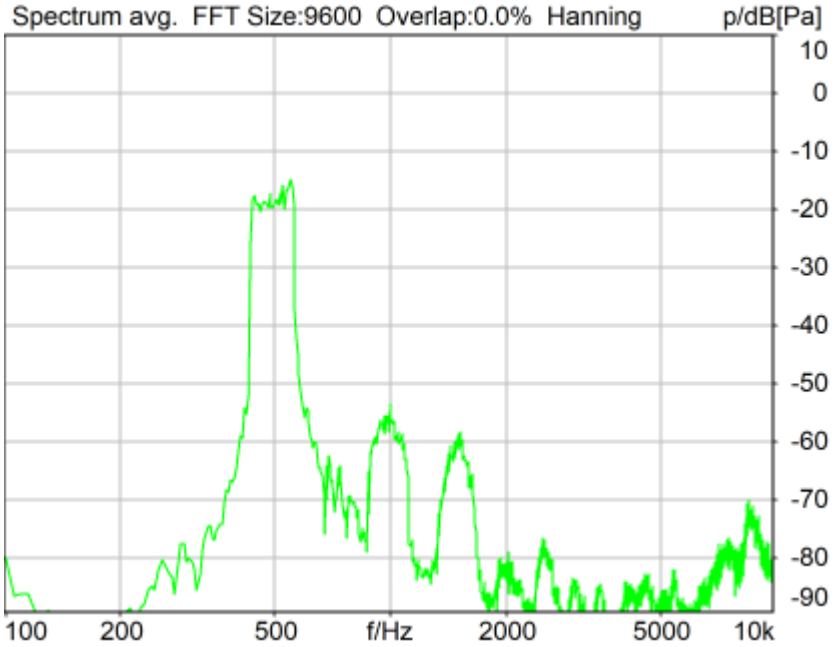
Distortion (Noise) RCV (packed): 33.42 dB (2.13%) Ok

Ok

2024/3/12 23:27 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 500 Hz WB, Index: 1

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



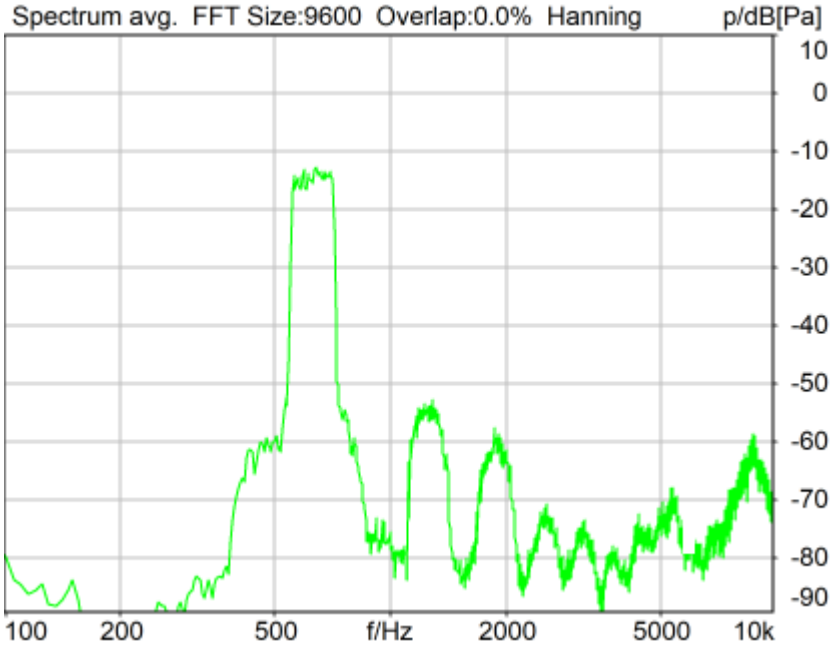
Distortion (Noise) RCV (packed): 34.91 dB (1.80%) Ok

Ok

2024/3/12 23:27 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 630 Hz WB, Index: 1

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



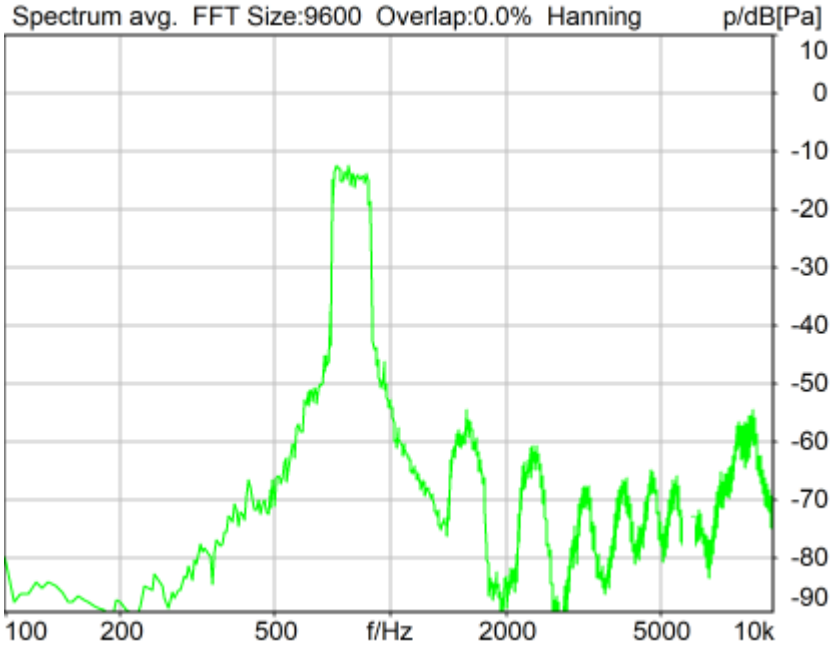
Distortion (Noise) RCV (packed): 35.03 dB (1.77%) Ok

Ok

2024/3/12 23:28 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 800 Hz WB, Index: 1

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



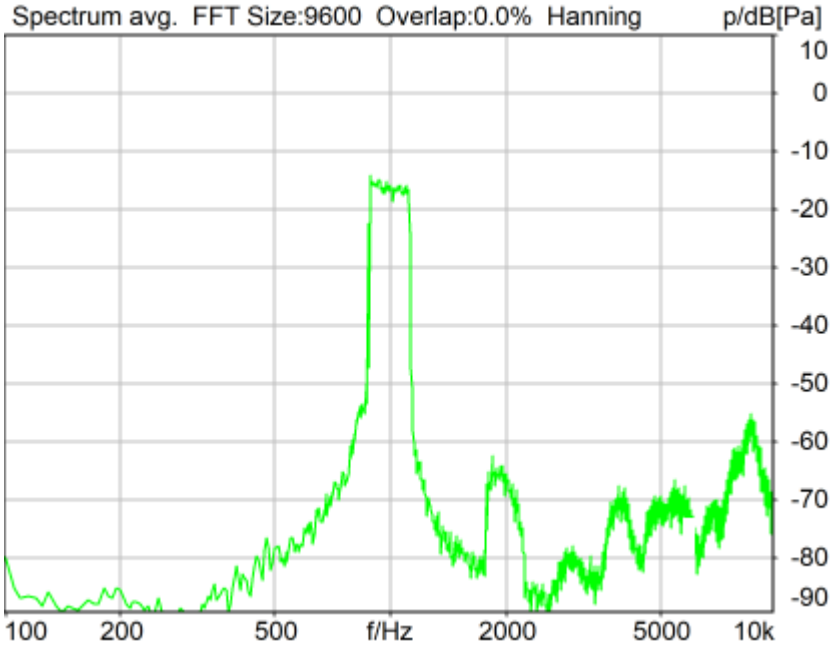
Distortion (Noise) RCV (packed): 32.91 dB (2.26%) Ok

Ok

2024/3/12 23:28 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1000 Hz WB, Index: 1

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



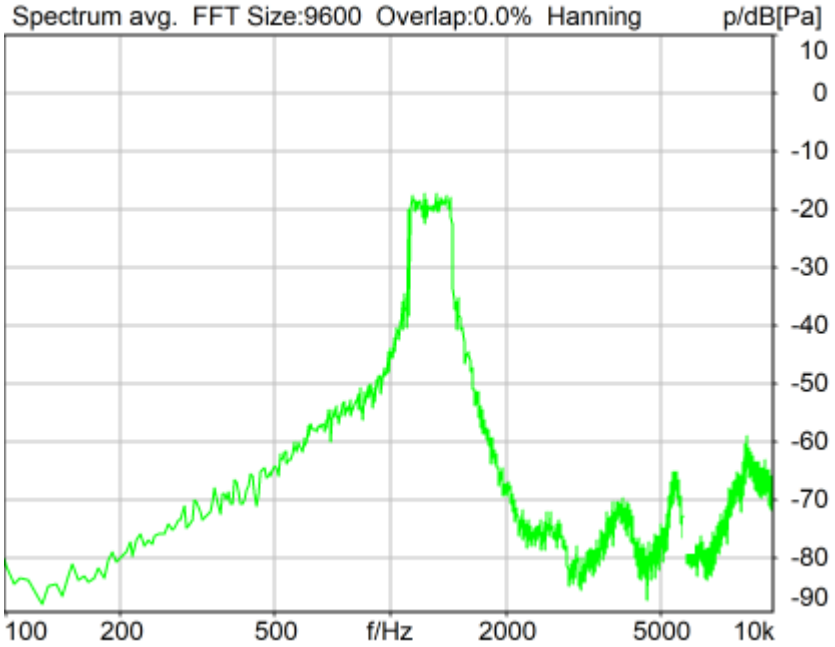
Distortion (Noise) RCV (packed): 35.66 dB (1.65%) Ok

Ok

2024/3/12 23:29 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1250 Hz WB, Index: 1

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



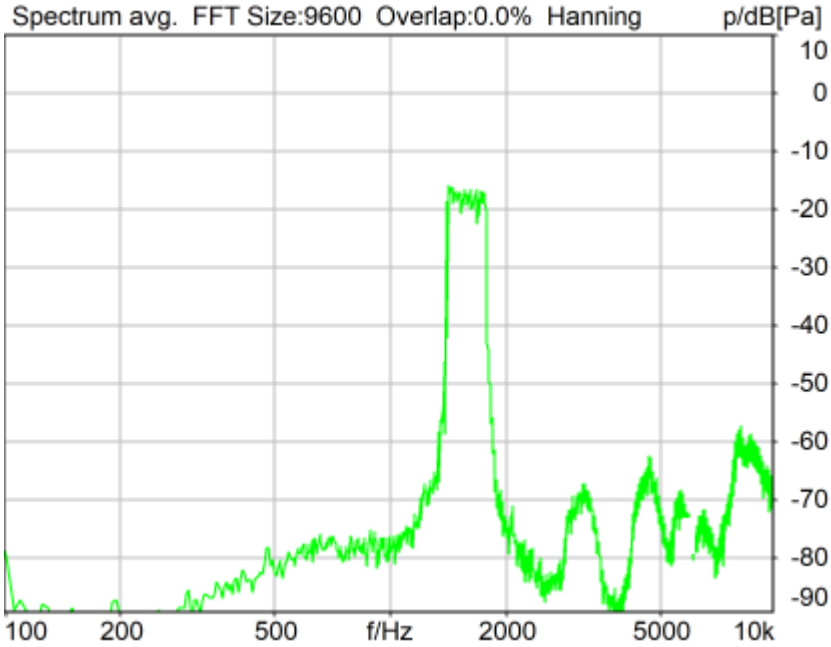
Distortion (Noise) RCV (packed): 20.95 dB (8.96%) Ok

Ok

2024/3/12 23:29 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 1600 Hz WB, Index: 1

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



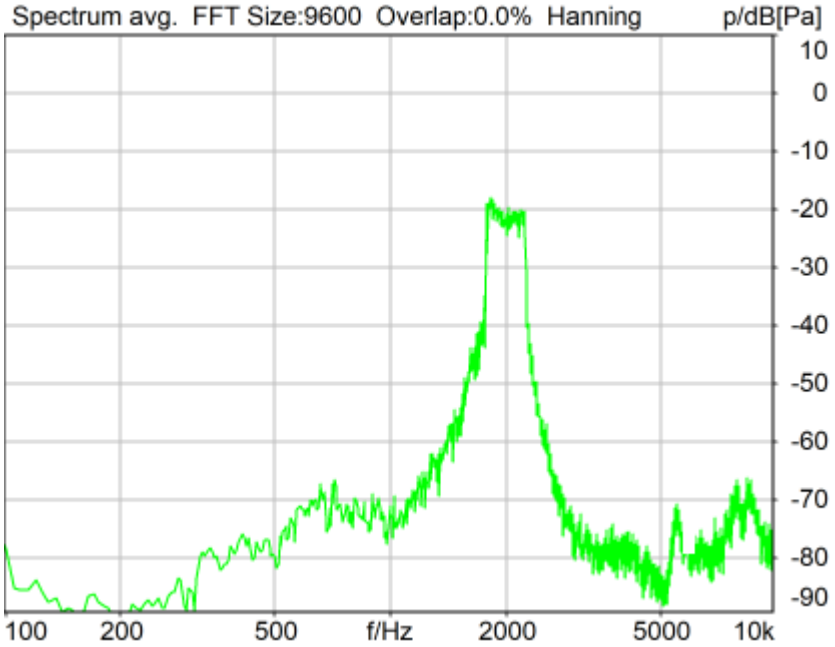
Distortion (Noise) RCV (packed): 36.49 dB (1.50%) Ok

Ok

2024/3/12 23:29 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2000 Hz WB, Index: 1

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



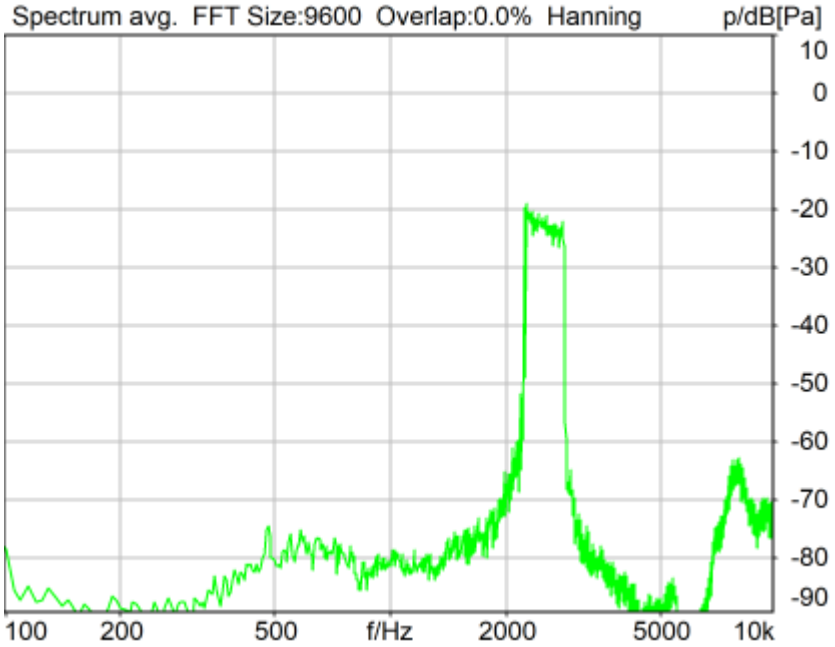
Distortion (Noise) RCV (packed): 24.80 dB (5.75%) Ok

Ok

2024/3/12 23:30 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 2500 Hz WB, Index: 1

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



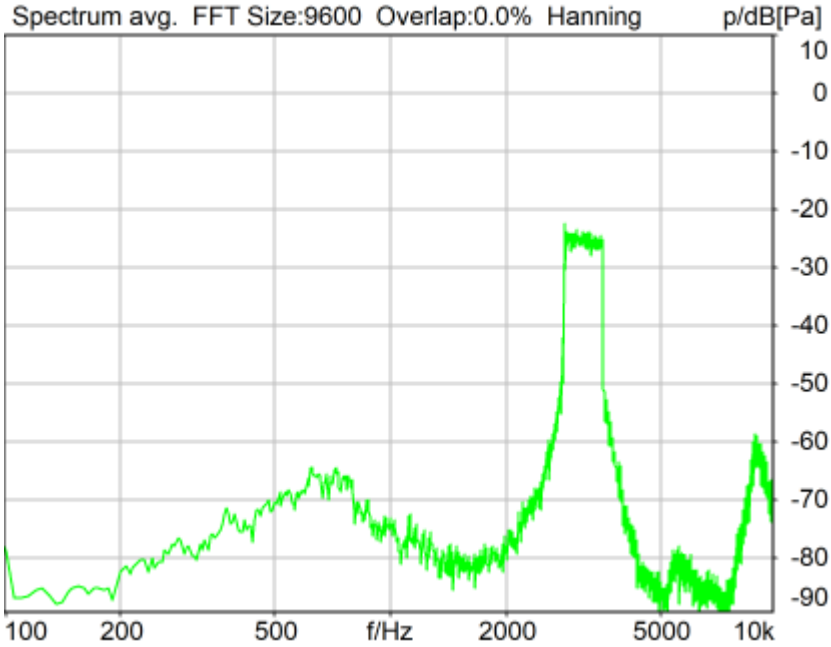
Distortion (Noise) RCV (packed): 37.72 dB (1.30%) Ok

Ok

2024/3/12 23:30 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 3150 Hz WB, Index: 1

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



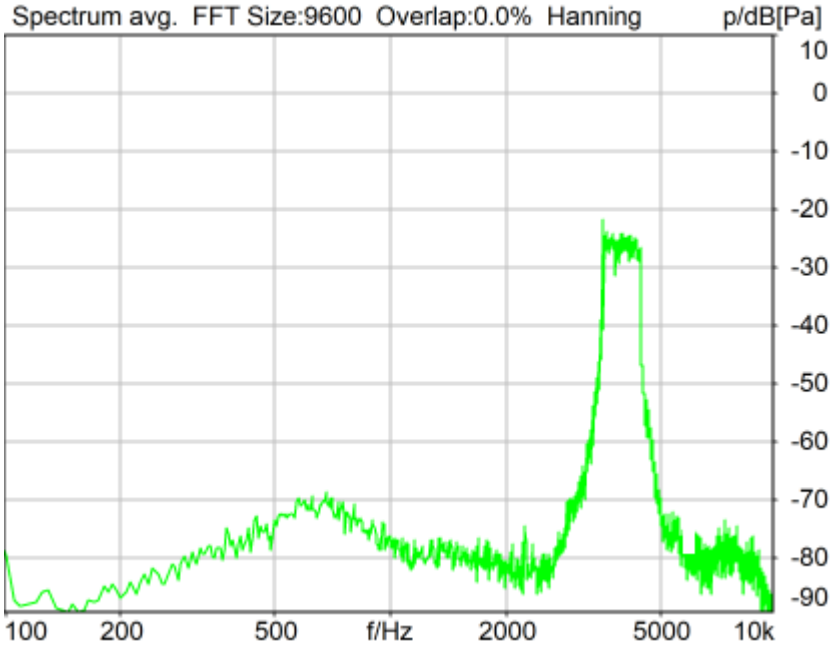
Distortion (Noise) RCV (packed): 30.76 dB (2.90%) Ok

Ok

2024/3/12 23:31 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 4000 Hz WB, Index: 1

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



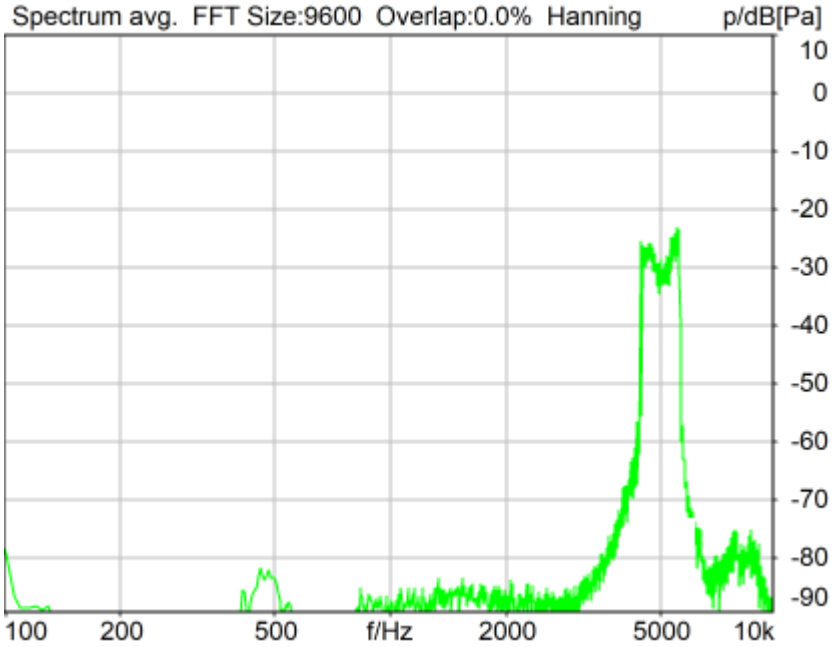
Distortion (Noise) RCV (packed): 27.11 dB (4.41%) Ok

Ok

2024/3/12 23:31 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.2 RCV Distortion and Noise - 5000 Hz WB, Index: 1

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



Distortion (Noise) RCV (packed): 36.27 dB (1.54%) Ok

Ok

2024/3/12 23:31 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

Report - Receive Distortion and Noise (Conversational Gain), Index: 1

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

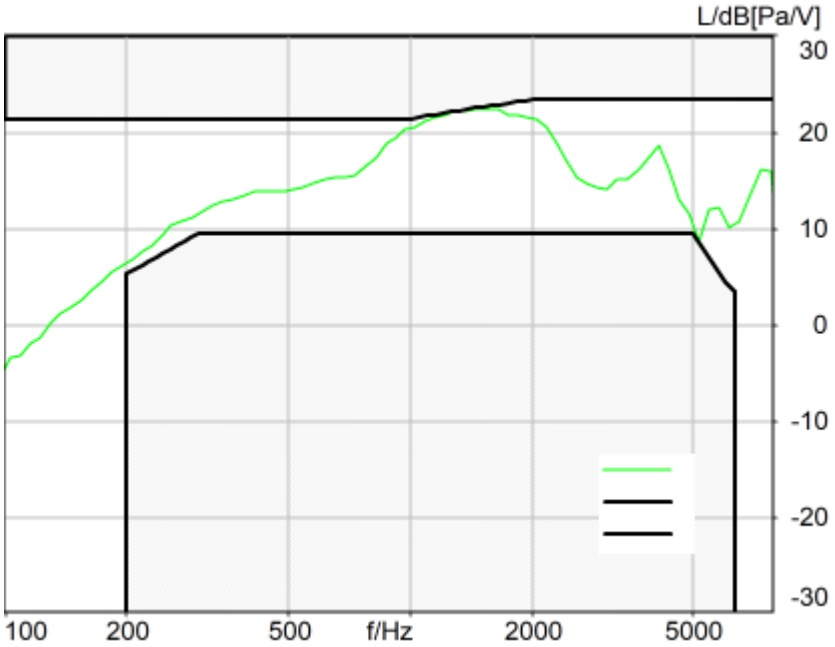
Region	Frequency	SDNR
1	250Hz	30.98 dB
2	315Hz	31.89 dB
3	400Hz	33.42 dB
4	500Hz	34.91 dB
5	630Hz	35.03 dB
6	800Hz	32.91 dB
7	1000Hz	35.66 dB
8	1250Hz	20.95 dB
9	1600Hz	36.49 dB
10	2000Hz	24.80 dB
11	2500Hz	37.72 dB
12	3150Hz	30.76 dB
13	4000Hz	27.11 dB
14	5000Hz	36.27 dB

All SDNRs were greater than 20.0 dB, requirement was met.
Smallest SDNR was 20.95dB at 1250Hz.

2024/3/12 23:31 ACQUA

5.3 Frequency Response 8N FF, Index: 1

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



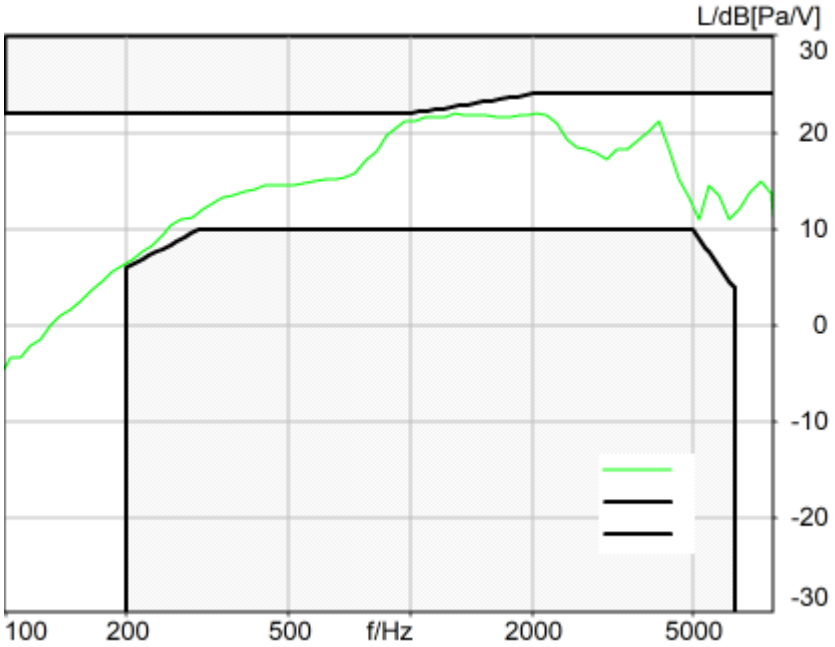
Absolute minimal distance
0.07 dB at 1285.9 Hz Ok

Ok

2024/3/18 9:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 8N DF, Index: 1

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



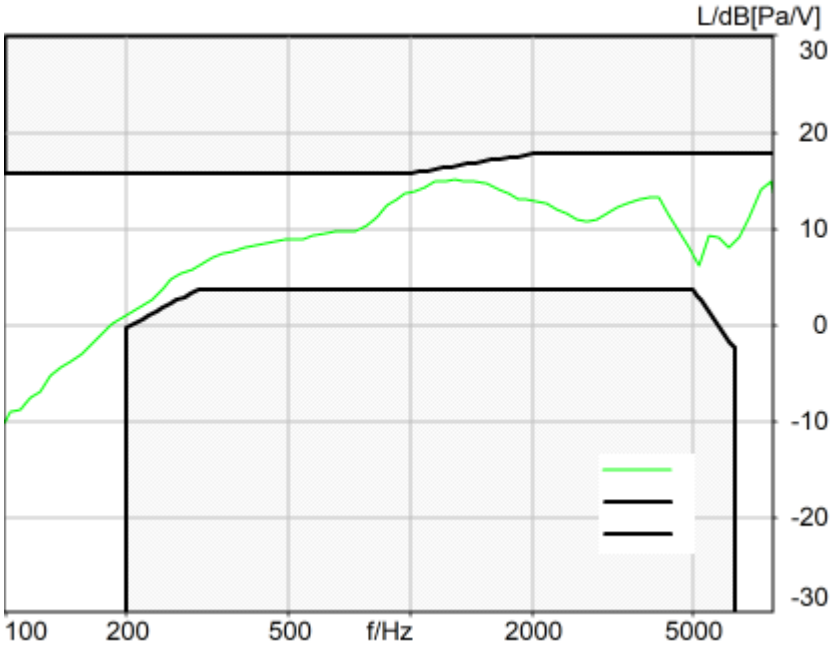
Absolute minimal distance
0.61 dB at 1088.7 Hz Ok

Ok

2024/3/18 9:41 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N FF, Index: 1

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



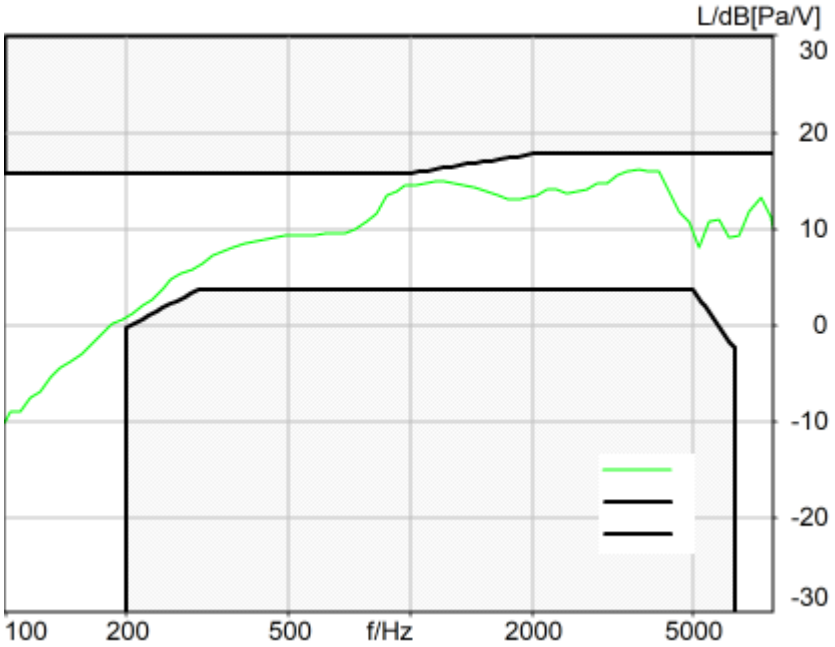
Absolute minimal distance
1.36 dB at 1151.2 Hz Ok

Ok

2024/3/18 10:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor

5.3 Frequency Response 2N DF, Index: 1

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



Absolute minimal distance
1.28 dB at 1088.7 Hz Ok

Ok

2024/3/18 10:15 ACQUA 5.1.200
Unmodified HEAD acoustics Measurement Descriptor