# Appendix A. Volume Control Evaluation Results

<Evaluation results for KDB 285076 D05 2.a>

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# SPORTON LAB. Volume Control Evaluation Report

Report No.: HA4N0917C

# #1 LTE B25 EVS NB 24.4Kbps

SMD	Status	Single Value Description	Single Value
Overall Receive Delay NB	Done	Delay (Cross) [ms]	193.2
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	89.41
5.2 RCV Distortion and Noise - 400 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	32.10
5.2 RCV Distortion and Noise - 500 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.37
5.2 RCV Distortion and Noise - 630 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.02
5.2 RCV Distortion and Noise - 800 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.62
5.2 RCV Distortion and Noise - 1000 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	20.70
5.2 RCV Distortion and Noise - 1250 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.57
5.2 RCV Distortion and Noise - 1600 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	26.87
5.2 RCV Distortion and Noise - 2000 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	23.31
5.2 RCV Distortion and Noise - 2500 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	29.88
5.2 RCV Distortion and Noise - 3150 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	41.17
5.3 Frequency Response 8N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 2571.8 Hz	1.24
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	86.77
5.2 RCV Distortion and Noise - 400 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	31.37
5.2 RCV Distortion and Noise - 500 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.29
5.2 RCV Distortion and Noise - 630 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.79
5.2 RCV Distortion and Noise - 800 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.75
5.2 RCV Distortion and Noise - 1000 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	21.21
5.2 RCV Distortion and Noise - 1250 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.31
5.2 RCV Distortion and Noise - 1600 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	26.50
5.2 RCV Distortion and Noise - 2000 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	23.48
5.2 RCV Distortion and Noise - 2500 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.35
5.2 RCV Distortion and Noise - 3150 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	44.19
5.3 Frequency Response 2N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 2571.8 Hz	2.07

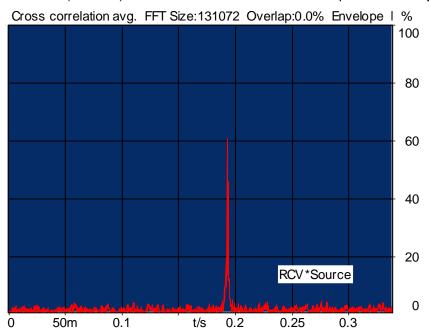
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# **Overall Receive Delay NB**

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

Report No.: HA4N0917C



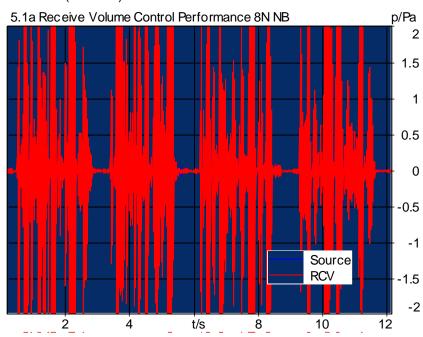
Channel	Delay	Correlation
RCV*Source	193.2 ms	60.70 %

2025-02-06 下午 05:43 ACQUA 6.1.100

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# 5.1a Receive Volume Control Performance 8N NB

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



Channel	Speech level	Activity	
RCV	89.41 dB[SPL]	59.49%	Ok

### Ok

2025-02-06 下午 05:43 ACQUA 6.1.100

## Limits

lower

76.00 dB[SPL]

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# 5.2 RCV Distortion and Noise - 400 Hz 8N NB

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



Distortion (Noise) RCV (packed): 32.10 dB (2.48%) Ok

### Ok

2025-02-06 下午 05:44 ACQUA 6.1.100

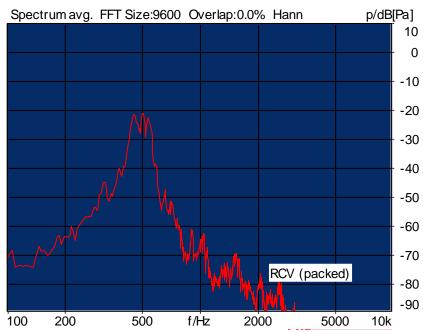
Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 500 Hz 8N NB

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



Distortion (Noise) RCV (packed): 24.37 dB (6.05%) Ok

### Ok

2025-02-06 下午 05:44 ACQUA 6.1.100

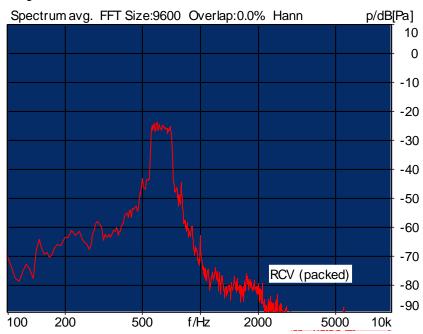
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 630 Hz 8N NB

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



Distortion (Noise) RCV (packed): 25.02 dB (5.61%) Ok

### Ok

2025-02-06 下午 05:48 ACQUA 6.1.100

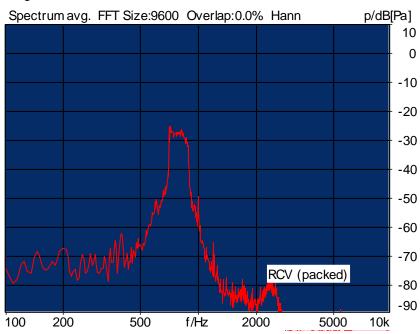
Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 800 Hz 8N NB

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



Distortion (Noise) RCV (packed): 25.62 dB (5.23%) Ok

### Ok

2025-02-06 下午 05:48 ACQUA 6.1.100

## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 1000 Hz 8N NB

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



Distortion (Noise) RCV (packed): 20.70 dB (9.23%) Ok

### Ok

2025-02-06 下午 05:49 ACQUA 6.1.100

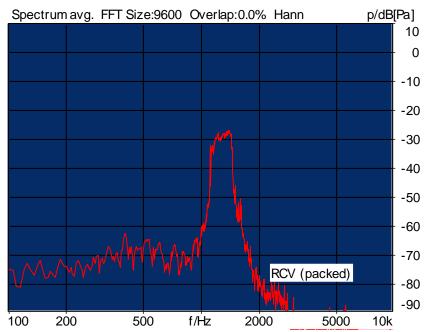
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 1250 Hz 8N NB

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



Distortion (Noise) RCV (packed): 22.57 dB (7.44%) Ok

### Ok

2025-02-06 下午 05:49 ACQUA 6.1.100

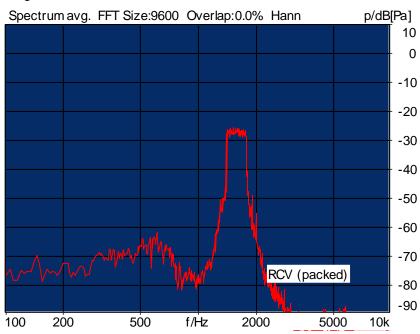
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 1600 Hz 8N NB

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



Distortion (Noise) RCV (packed): 26.87 dB (4.54%) Ok

### Ok

2025-02-06 下午 05:50 ACQUA 6.1.100

## Limits

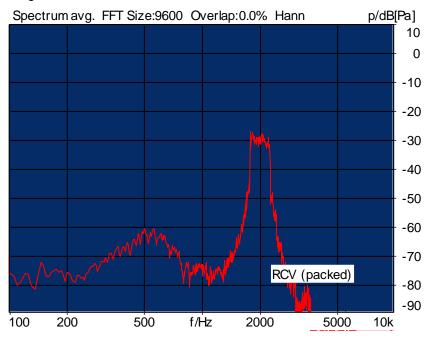
lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 2000 Hz 8N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 23.31 dB (6.83%) Ok

### Ok

2025-02-06 下午 05:51 ACQUA 6.1.100

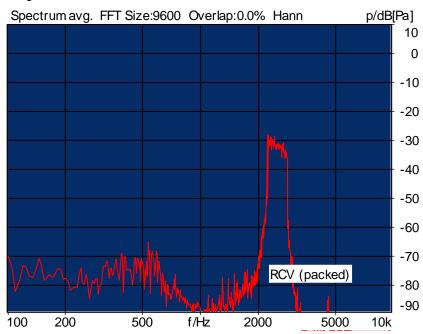
Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 2500 Hz 8N NB

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



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

### Ok

2025-02-06 下午 05:51 ACQUA 6.1.100

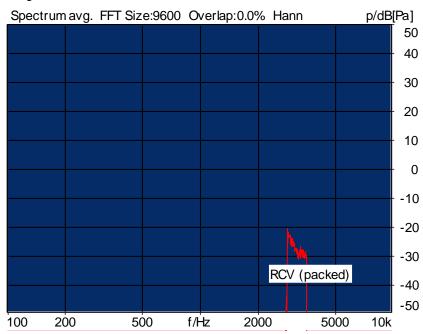
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 3150 Hz 8N NB

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



Distortion (Noise) RCV (packed): 41.17 dB (0.87%) Ok

### Ok

2025-02-06 下午 05:52 ACQUA 6.1.100

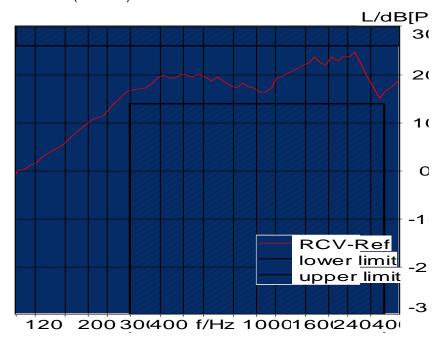
## Limits

lower 20.00 dB

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# 5.3 Frequency Response 8N DF HANB

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



Absolute minimal distance 1.24 dB at 2571.8 Hz Ok

### Ok

2025-02-06 下午 05:52 ACQUA 6.1.100

## Limits

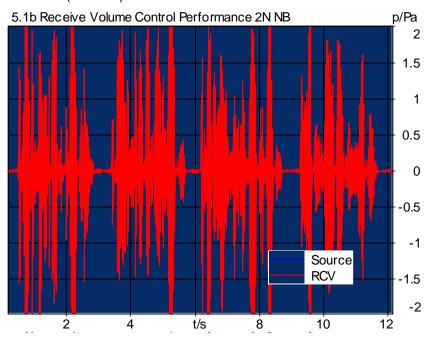
lower

Fit into tolerance

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# 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	86.77 dB[SPL]	49.11%	Ok

### Ok

2025-02-06 下午 05:53 ACQUA 6.1.100

## Limits

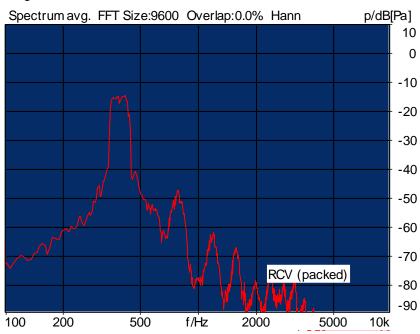
lower

76.00 dB[SPL]

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# 5.2 RCV Distortion and Noise - 400 Hz 2N NB

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



Distortion (Noise) RCV (packed): 31.37 dB (2.70%) Ok

### Ok

2025-02-06 下午 05:54 ACQUA 6.1.100

## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 500 Hz 2N NB

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



Distortion (Noise) RCV (packed): 28.29 dB (3.85%) Ok

### Ok

2025-02-06 下午 05:54 ACQUA 6.1.100

Limits

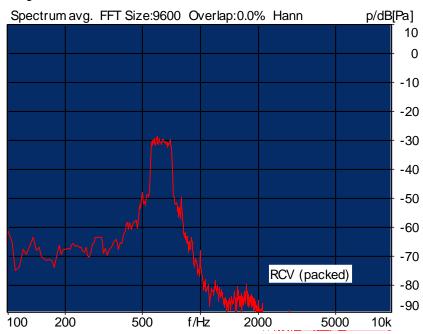
lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 630 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 24.79 dB (5.76%) Ok

### Ok

2025-02-06 下午 05:55 ACQUA 6.1.100

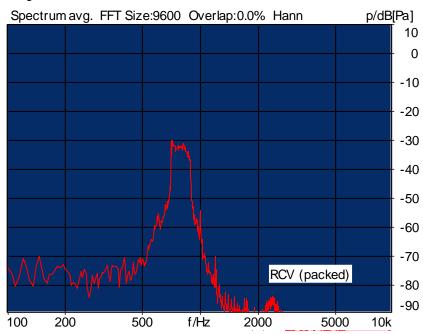
Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 800 Hz 2N NB

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



Distortion (Noise) RCV (packed): 25.75 dB (5.16%) Ok

### Ok

2025-02-06 下午 05:55 ACQUA 6.1.100

## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 1000 Hz 2N NB

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



Distortion (Noise) RCV (packed): 21.21 dB (8.70%) Ok

### Ok

2025-02-06 下午 05:56 ACQUA 6.1.100

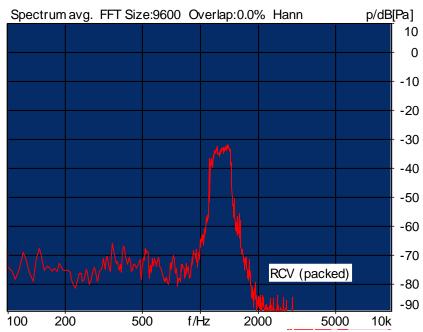
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 1250 Hz 2N NB

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



Distortion (Noise) RCV (packed): 22.31 dB (7.66%) Ok

### Ok

2025-02-06 下午 05:57 ACQUA 6.1.100

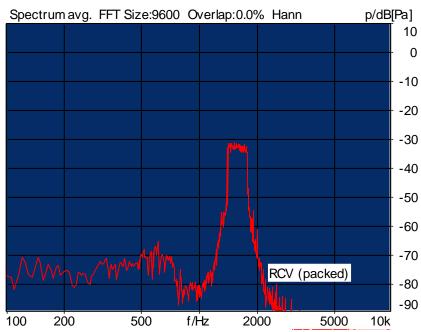
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 1600 Hz 2N NB

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



Distortion (Noise) RCV (packed): 26.50 dB (4.73%) Ok

### Ok

2025-02-06 下午 05:57 ACQUA 6.1.100

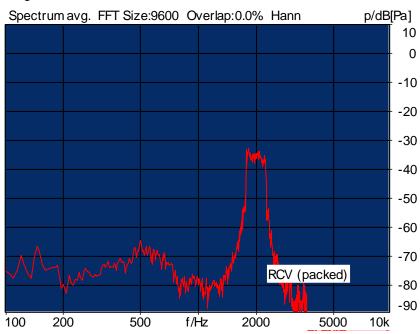
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 2000 Hz 2N NB

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



Distortion (Noise) RCV (packed): 23.48 dB (6.70%) Ok

### Ok

2025-02-06 下午 05:58 ACQUA 6.1.100

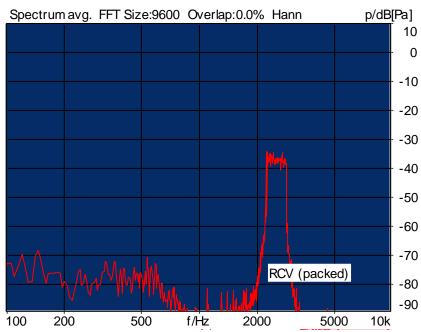
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 2500 Hz 2N NB

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



Distortion (Noise) RCV (packed): 30.35 dB (3.04%) Ok

### Ok

2025-02-06 下午 05:59 ACQUA 6.1.100

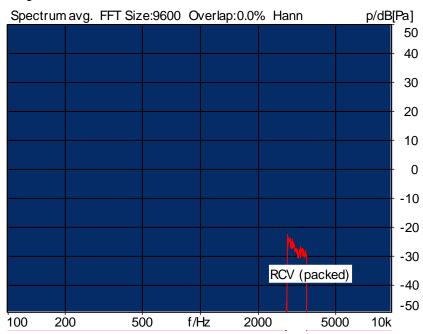
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 3150 Hz 2N NB

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



Distortion (Noise) RCV (packed): 44.19 dB (0.62%) Ok

### Ok

2025-02-06 下午 05:59 ACQUA 6.1.100

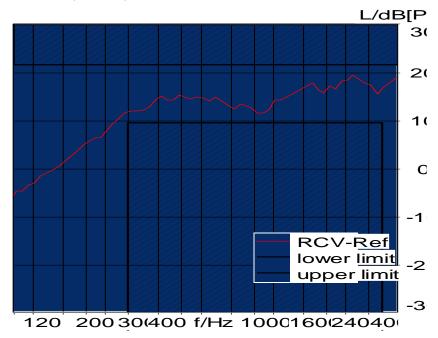
## Limits

lower 20.00 dB

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# 5.3 Frequency Response 2N DF HANB

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



Absolute minimal distance 2.07 dB at 2571.8 Hz Ok

### Ok

2025-02-06 下午 06:00 ACQUA 6.1.100

## Limits

lower

Fit into tolerance

Form version: 231017 Page C27 of C123



# SPORTON LAB. Volume Control Evaluation Report

Report No.: HA4N0917C

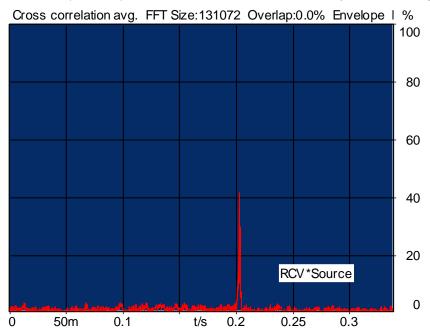
# #2 FR1 n77 EVS NB 24.4kbps

SMD	Status	Single Value Description	Single Value
Overall Receive Delay NB	Done	Delay (Cross) [ms]	203.0
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	90.91
5.2 RCV Distortion and Noise - 400 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	32.18
5.2 RCV Distortion and Noise - 500 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.35
5.2 RCV Distortion and Noise - 630 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.97
5.2 RCV Distortion and Noise - 800 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	26.39
5.2 RCV Distortion and Noise - 1000 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	20.89
5.2 RCV Distortion and Noise - 1250 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.17
5.2 RCV Distortion and Noise - 1600 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	26.38
5.2 RCV Distortion and Noise - 2000 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	23.46
5.2 RCV Distortion and Noise - 2500 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	29.96
5.2 RCV Distortion and Noise - 3150 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	40.39
5.3 Frequency Response 8N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 2571.8 Hz	1.34
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	87.70
5.2 RCV Distortion and Noise - 400 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	31.54
5.2 RCV Distortion and Noise - 500 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.29
5.2 RCV Distortion and Noise - 630 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.69
5.2 RCV Distortion and Noise - 800 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.69
5.2 RCV Distortion and Noise - 1000 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	21.63
5.2 RCV Distortion and Noise - 1250 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	21.97
5.2 RCV Distortion and Noise - 1600 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	26.45
5.2 RCV Distortion and Noise - 2000 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.99
5.2 RCV Distortion and Noise - 2500 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	30.63
5.2 RCV Distortion and Noise - 3150 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	41.69
5.3 Frequency Response 2N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 2571.8 Hz	1.80

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# **Overall Receive Delay NB**

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



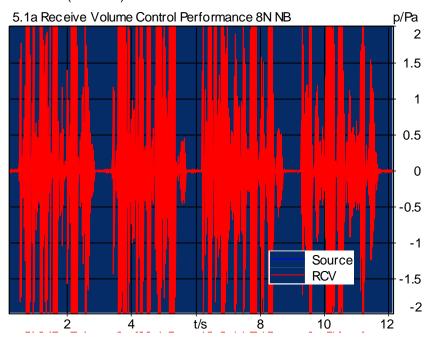
Channel	Delay	Correlation
RCV*Source	203.0 ms	41.84 %

2025-02-20 上午 03:38 ACQUA 6.1.110

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# 5.1a Receive Volume Control Performance 8N NB

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



Channel	Speech level	Activity	
RCV	90.91 dB[SPL]	62.81%	Ok

## Ok

2025-02-20 上午 03:39 ACQUA 6.1.110

## Limits

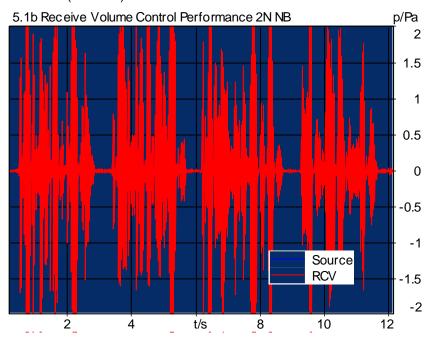
lower

76.00 dB[SPL]

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# 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	87.70 dB[SPL]	49.93%	Ok

## Ok

2025-02-20 上午 03:46 ACQUA 6.1.110

#### Limits

lower

76.00 dB[SPL]

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# 5.2 RCV Distortion and Noise - 400 Hz 8N NB

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



Distortion (Noise) RCV (packed): 32.18 dB (2.46%) Ok

#### Ok

2025-02-20 上午 03:39 ACQUA 6.1.110

## Limits

lower 20.00 dB

Form version: 231017 Page C32 of C123

# 5.2 RCV Distortion and Noise - 500 Hz 8N NB

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



Distortion (Noise) RCV (packed): 28.35 dB (3.82%) Ok

#### Ok

2025-02-20 上午 03:40 ACQUA 6.1.110

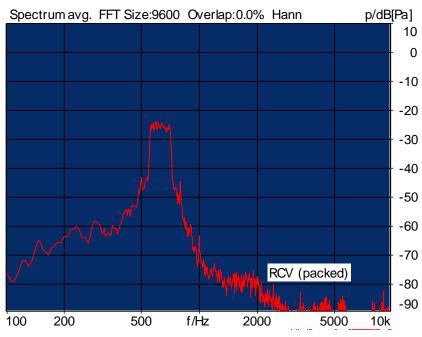
## Limits

lower 20.00 dB

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# 5.2 RCV Distortion and Noise - 630 Hz 8N NB

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



Distortion (Noise) RCV (packed): 24.97 dB (5.64%) Ok

#### Ok

2025-02-20 上午 03:40 ACQUA 6.1.110

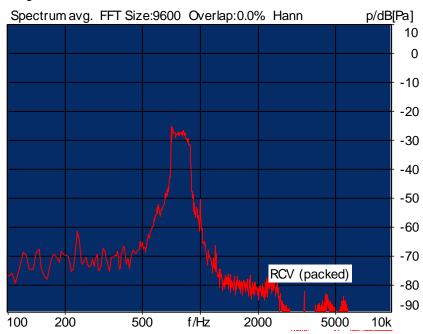
## Limits

lower 20.00 dB

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5.2 RCV Distortion and Noise - 800 Hz 8N NB

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



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

#### Ok

2025-02-20 上午 03:41 ACQUA 6.1.110

Limits

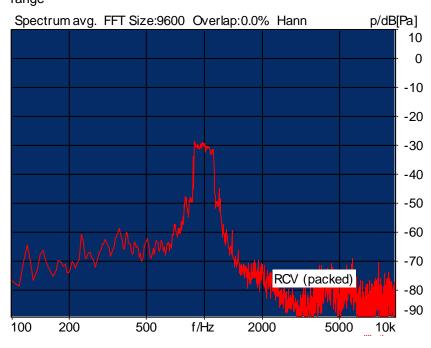
lower 20.00 dB

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5.2 RCV Distortion and Noise - 1000 Hz 8N NB

# Report No. :HA4N0917C

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



Distortion (Noise) RCV (packed): 20.89 dB (9.03%) Ok

#### Ok

2025-02-20 上午 03:42 ACQUA 6.1.110

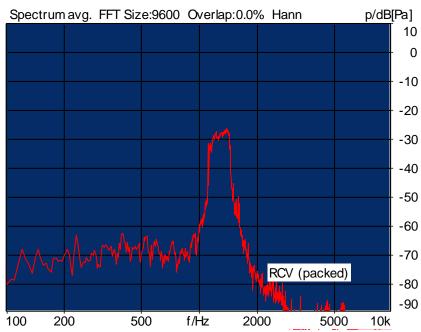
Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 1250 Hz 8N NB

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



Distortion (Noise) RCV (packed): 22.17 dB (7.79%) Ok

#### Ok

2025-02-20 上午 03:42 ACQUA 6.1.110

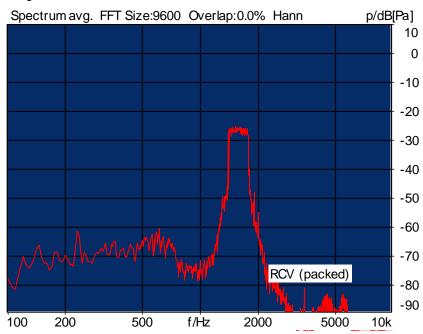
## Limits

lower 20.00 dB

Form version: 231017 Page C37 of C123

## 5.2 RCV Distortion and Noise - 1600 Hz 8N NB

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



Distortion (Noise) RCV (packed): 26.38 dB (4.80%) Ok

#### Ok

2025-02-20 上午 03:43 ACQUA 6.1.110

## Limits

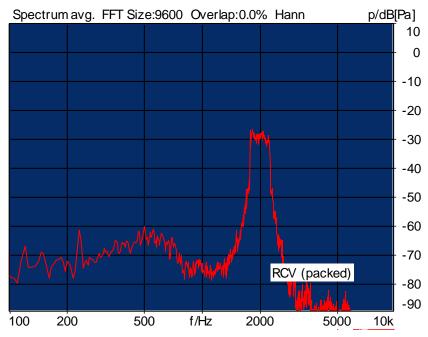
lower 20.00 dB

Form version: 231017 Page C38 of C123

## 5.2 RCV Distortion and Noise - 2000 Hz 8N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 23.46 dB (6.72%) Ok

#### Ok

2025-02-20 上午 03:43 ACQUA 6.1.110

## Limits

lower 20.00 dB

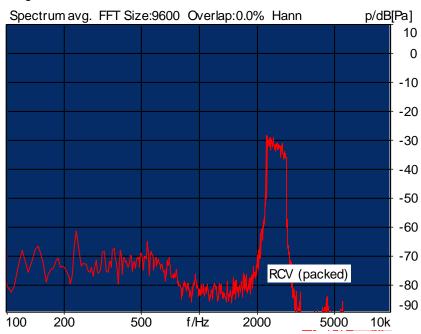
Form version: 231017 Page C39 of C123

# SPORTON LAB.

Report No.: HA4N0917C

## 5.2 RCV Distortion and Noise - 2500 Hz 8N NB

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



Distortion (Noise) RCV (packed): 29.96 dB (3.18%) Ok

#### Ok

2025-02-20 上午 03:44 ACQUA 6.1.110

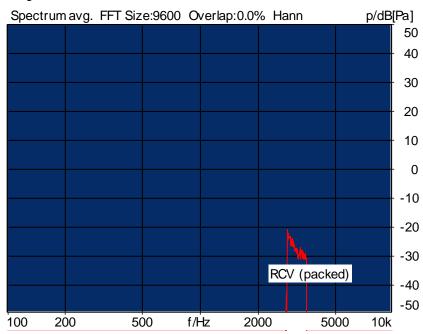
## Limits

lower 20.00 dB

Form version: 231017 Page C40 of C123

## 5.2 RCV Distortion and Noise - 3150 Hz 8N NB

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



Distortion (Noise) RCV (packed): 40.39 dB (0.96%) Ok

#### Ok

2025-02-20 上午 03:44 ACQUA 6.1.110

Limits

lower 20.00 dB

Form version: 231017 Page C41 of C123

## Report - Receive Distortion and Noise (Conversational Gain) 8N NB

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

Region	Frequency	SDNR	
1	400Hz	32.18 dB	
2	500Hz	28.35 dB	
3	630Hz	24.97 dB	
4	800Hz	26.39 dB	
5	1000Hz	20.89 dB	
6	1250Hz	22.17 dB	
7	1600Hz	26.38 dB	
8	2000Hz	23.46 dB	
9	2500Hz	29.96 dB	
10	3150Hz	40.39 dB	

All SDNRs were greater than 20.0 dB, requirement was met. Smallest SDNR was 20.89dB at 1000Hz.

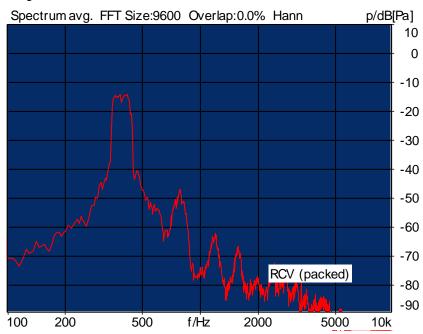
2025-02-20 上午 03:45 ACQUA

Form version: 231017 Page C42 of C123

5.2 RCV Distortion and Noise - 400 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 31.54 dB (2.65%) Ok

#### Ok

2025-02-20 上午 03:46 ACQUA 6.1.110

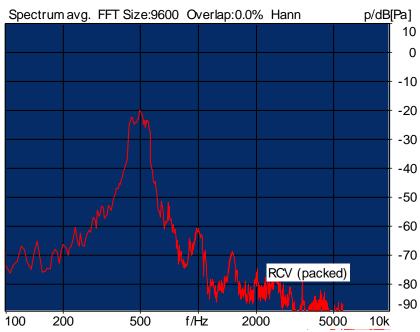
## Limits

lower 20.00 dB

Form version: 231017 Page C43 of C123

## 5.2 RCV Distortion and Noise - 500 Hz 2N NB

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



Distortion (Noise) RCV (packed): 28.29 dB (3.85%) Ok

#### Ok

2025-02-20 上午 03:47 ACQUA 6.1.110

## Limits

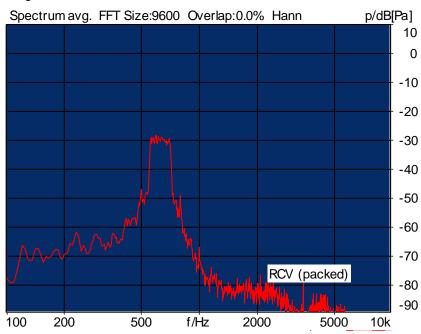
lower 20.00 dB

Form version: 231017 Page C44 of C123

## 5.2 RCV Distortion and Noise - 630 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 24.69 dB (5.83%) Ok

#### Ok

2025-02-20 上午 03:48 ACQUA 6.1.110

Limits

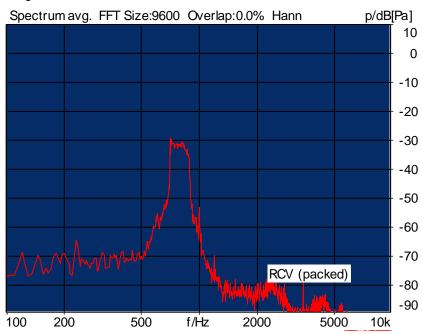
lower 20.00 dB

Form version: 231017 Page C45 of C123

## 5.2 RCV Distortion and Noise - 800 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 25.69 dB (5.19%) Ok

#### Ok

2025-02-20 上午 03:48 ACQUA 6.1.110

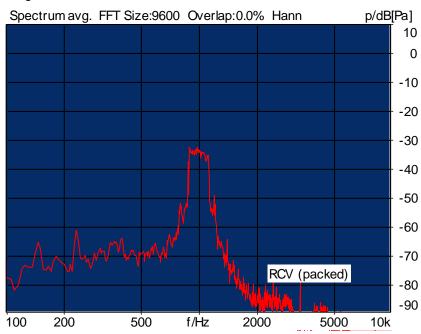
Limits

lower 20.00 dB

Form version: 231017 Page C46 of C123

## 5.2 RCV Distortion and Noise - 1000 Hz 2N NB

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



Distortion (Noise) RCV (packed): 21.63 dB (8.29%) Ok

#### Ok

2025-02-20 上午 03:49 ACQUA 6.1.110

Limits

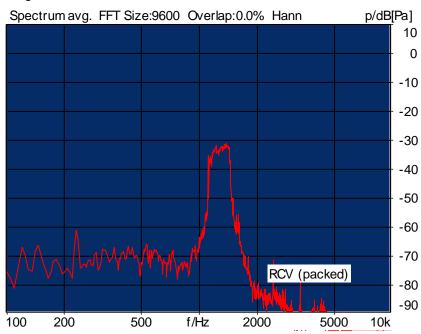
lower 20.00 dB

Form version: 231017 Page C47 of C123

## 5.2 RCV Distortion and Noise - 1250 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 21.97 dB (7.97%) Ok

#### Ok

2025-02-20 上午 03:49 ACQUA 6.1.110

Limits

lower 20.00 dB

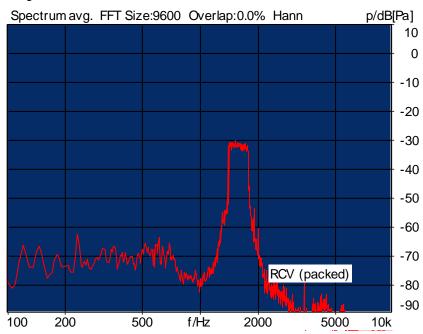
Form version: 231017 Page C48 of C123

# SPORTON LAB.

Report No.: HA4N0917C

## 5.2 RCV Distortion and Noise - 1600 Hz 2N NB

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



Distortion (Noise) RCV (packed): 26.45 dB (4.76%) Ok

#### Ok

2025-02-20 上午 03:50 ACQUA 6.1.110

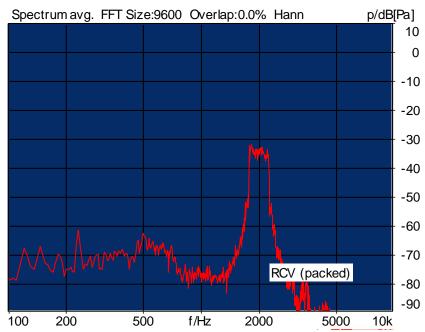
## Limits

lower 20.00 dB

Form version: 231017 Page C49 of C123

## 5.2 RCV Distortion and Noise - 2000 Hz 2N NB

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



Distortion (Noise) RCV (packed): 22.99 dB (7.08%) Ok

#### Ok

2025-02-20 上午 03:51 ACQUA 6.1.110

## Limits

lower 20.00 dB

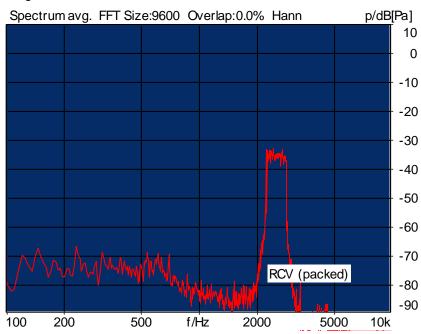
Form version: 231017 Page C50 of C123

# SPORTON LAB.

Report No.: HA4N0917C

## 5.2 RCV Distortion and Noise - 2500 Hz 2N NB

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



Distortion (Noise) RCV (packed): 30.63 dB (2.94%) Ok

#### Ok

2025-02-20 上午 03:51 ACQUA 6.1.110

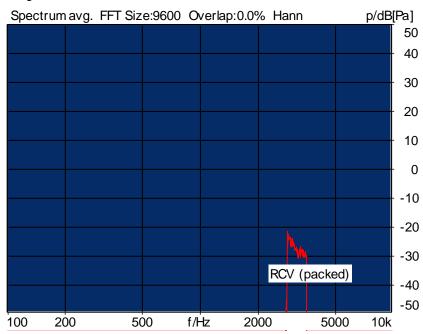
## Limits

lower 20.00 dB

Form version: 231017 Page C51 of C123

## 5.2 RCV Distortion and Noise - 3150 Hz 2N NB

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



Distortion (Noise) RCV (packed): 41.69 dB (0.82%) Ok

#### Ok

2025-02-20 上午 03:52 ACQUA 6.1.110

## Limits

lower 20.00 dB

Form version: 231017 Page C52 of C123

## Report - Receive Distortion and Noise (Conversational Gain) 2N NB

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

Report No.: HA4N0917C

Region	gion Frequency SDNR	
1	400Hz	31.54 dB
2	500Hz	28.29 dB
3	630Hz	24.69 dB
4	800Hz	25.69 dB
5	1000Hz	21.63 dB
6	1250Hz	21.97 dB
7	1600Hz	26.45 dB
8	2000Hz	22.99 dB
9	2500Hz	30.63 dB
10	3150Hz	41.69 dB

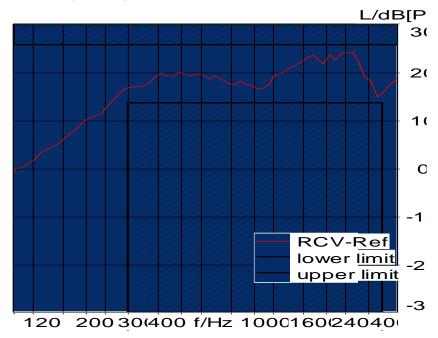
All SDNRs were greater than 20.0 dB, requirement was met. Smallest SDNR was 21.63dB at 1000Hz.

2025-02-20 上午 03:52 ACQUA

Form version: 231017 Page C53 of C123

## 5.3 Frequency Response 8N DF HANB

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



Absolute minimal distance 1.34 dB at 2571.8 Hz Ok

#### Ok

2025-02-20 上午 03:45 ACQUA 6.1.110

## Limits

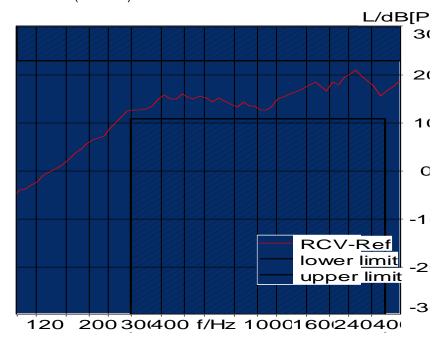
lower

Fit into tolerance

Form version: 231017 Page C54 of C123

## 5.3 Frequency Response 2N DF HANB

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



Absolute minimal distance 1.80 dB at 2571.8 Hz Ok

#### Ok

2025-02-20 上午 03:52 ACQUA 6.1.110

## Limits

lower

Fit into tolerance

Form version: 231017 Page C55 of C123



## SPORTON LAB. Volume Control Evaluation Report

Report No. :HA4N0917C

## #3 WiFi5.9GHz EVS NB 24.4kbps

SMD	Status	Single Value Description	Single Value
Overall Receive Delay NB	Done	Delay (Cross) [ms]	184.5
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	89.95
5.2 RCV Distortion and Noise - 400 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	32.44
5.2 RCV Distortion and Noise - 500 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	28.57
5.2 RCV Distortion and Noise - 630 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.42
5.2 RCV Distortion and Noise - 800 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.59
5.2 RCV Distortion and Noise - 1000 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	20.83
5.2 RCV Distortion and Noise - 1250 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.18
5.2 RCV Distortion and Noise - 1600 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	26.22
5.2 RCV Distortion and Noise - 2000 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.84
5.2 RCV Distortion and Noise - 2500 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	29.36
5.2 RCV Distortion and Noise - 3150 Hz 8N NB	Ok	Distortion (Noise) [dB], 0.0 dB	40.18
5.3 Frequency Response 8N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 3245.6 Hz	0.58
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	87.30
5.2 RCV Distortion and Noise - 400 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	31.93
5.2 RCV Distortion and Noise - 500 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	29.00
5.2 RCV Distortion and Noise - 630 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.02
5.2 RCV Distortion and Noise - 800 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	24.84
5.2 RCV Distortion and Noise - 1000 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	20.60
5.2 RCV Distortion and Noise - 1250 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.02
5.2 RCV Distortion and Noise - 1600 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	25.72
5.2 RCV Distortion and Noise - 2000 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	22.75
5.2 RCV Distortion and Noise - 2500 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	29.97
5.2 RCV Distortion and Noise - 3150 Hz 2N NB	Ok	Distortion (Noise) [dB], 0.0 dB	42.17
5.3 Frequency Response 2N DF HANB	Ok	Min. dist. to tolerance scheme [dB], 1028.7 Hz	1.57

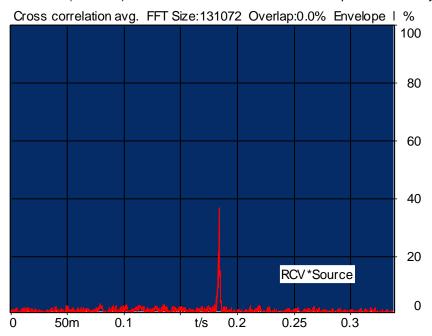
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## **Overall Receive Delay NB**

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

Report No.: HA4N0917C



Channel	Delay	Correlation
RCV*Source	184.5 ms	36.96 %

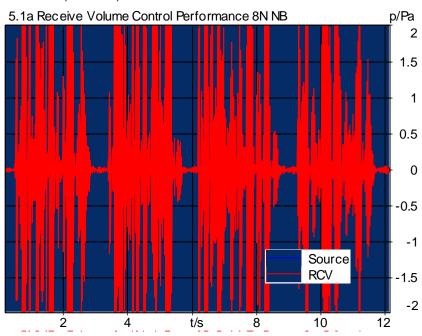
2025-02-07 下午 02:56 ACQUA 6.1.100

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## 5.1a Receive Volume Control Performance 8N NB

Report No.: HA4N0917C

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



Channel	Speech level	Activity	
RCV	89.95 dB[SPL]	59.87%	Ok

#### Ok

2025-02-07 下午 02:57 ACQUA 6.1.100

#### Limits

lower

76.00 dB[SPL]

Form version: 231017 Page C58 of C123

## 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	87.30 dB[SPL]	44.97%	Ok

## Ok

2025-02-07 下午 03:04 ACQUA 6.1.100

## Limits

lower

76.00 dB[SPL]

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## 5.2 RCV Distortion and Noise - 400 Hz 8N NB

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



Distortion (Noise) RCV (packed): 32.44 dB (2.39%) Ok

#### Ok

2025-02-07 下午 02:57 ACQUA 6.1.100

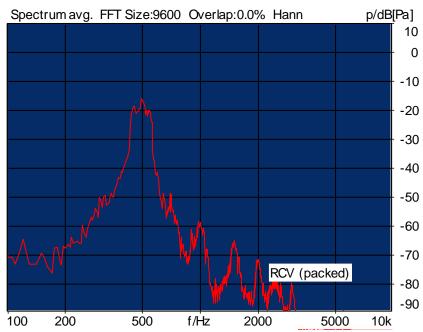
## Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 500 Hz 8N NB

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



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

#### Ok

2025-02-07 下午 02:58 ACQUA 6.1.100

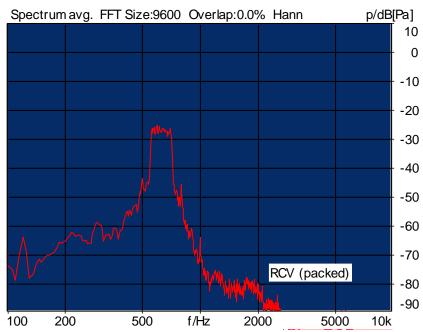
## Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 630 Hz 8N NB

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



Distortion (Noise) RCV (packed): 24.42 dB (6.01%) Ok

#### Ok

2025-02-07 下午 02:59 ACQUA 6.1.100

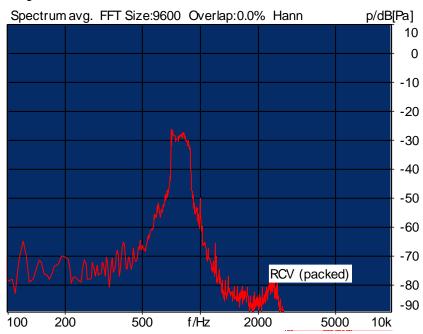
## Limits

lower 20.00 dB

Form version: 231017 Page C62 of C123

## 5.2 RCV Distortion and Noise - 800 Hz 8N NB

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



Distortion (Noise) RCV (packed): 25.59 dB (5.25%) Ok

#### Ok

2025-02-07 下午 02:59 ACQUA 6.1.100

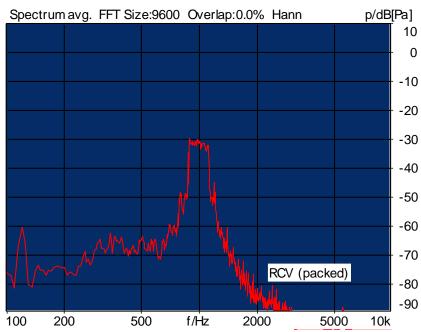
## Limits

lower 20.00 dB

Form version: 231017 Page C63 of C123

## 5.2 RCV Distortion and Noise - 1000 Hz 8N NB

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



Distortion (Noise) RCV (packed): 20.83 dB (9.09%) Ok

#### Ok

2025-02-07 下午 03:00 ACQUA 6.1.100

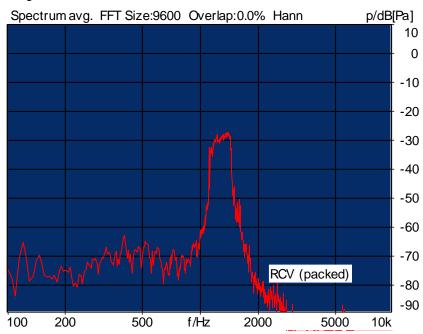
## Limits

lower 20.00 dB

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## Report No.: HA4N0917C 5.2 RCV Distortion and Noise - 1250 Hz 8N NB

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



Distortion (Noise) RCV (packed): 22.18 dB (7.78%) Ok

#### Ok

2025-02-07 下午 03:00 ACQUA 6.1.100

Limits

lower 20.00 dB

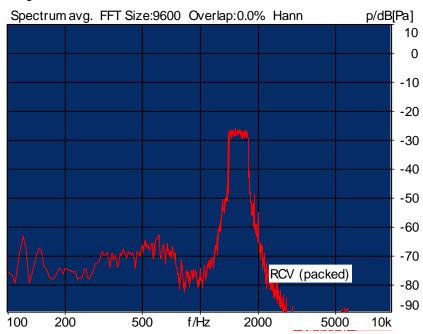
Form version: 231017 Page C65 of C123

## SPORTON LAB.

## 5.2 RCV Distortion and Noise - 1600 Hz 8N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 26.22 dB (4.88%) Ok

#### Ok

2025-02-07 下午 03:01 ACQUA 6.1.100

Limits

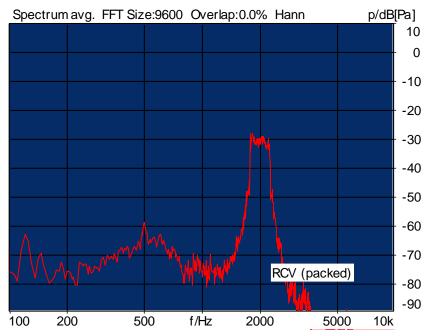
lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 2000 Hz 8N NB

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

Report No.: HA4N0917C



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

#### Ok

2025-02-07 下午 03:02 ACQUA 6.1.100

Limits

lower 20.00 dB

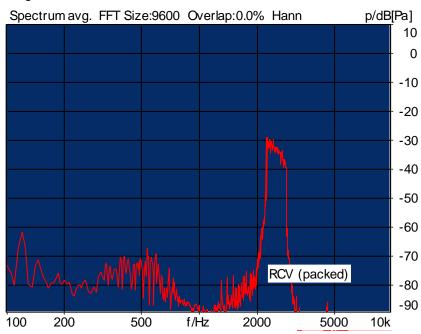
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## SPORTON LAB.

Report No.: HA4N0917C

## 5.2 RCV Distortion and Noise - 2500 Hz 8N NB

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



Distortion (Noise) RCV (packed): 29.36 dB (3.40%) Ok

#### Ok

2025-02-07 下午 03:02 ACQUA 6.1.100

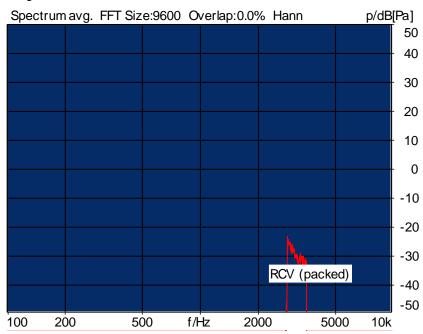
## Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 3150 Hz 8N NB

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



Distortion (Noise) RCV (packed): 40.18 dB (0.98%) Ok

#### Ok

2025-02-07 下午 03:03 ACQUA 6.1.100

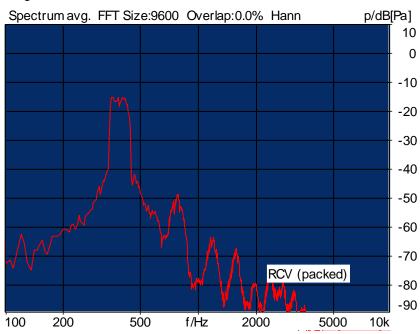
Limits

lower 20.00 dB

Form version: 231017 Page C69 of C123

## 5.2 RCV Distortion and Noise - 400 Hz 2N NB

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



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

#### Ok

2025-02-07 下午 03:05 ACQUA 6.1.100

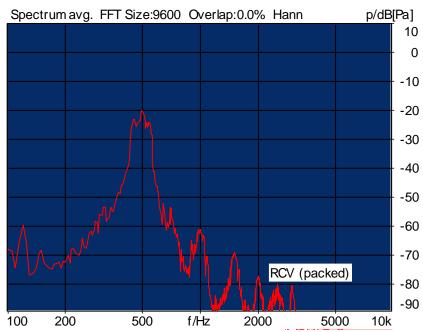
## Limits

lower 20.00 dB

Form version: 231017 Page C70 of C123

## 5.2 RCV Distortion and Noise - 500 Hz 2N NB

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



Distortion (Noise) RCV (packed): 29.00 dB (3.55%) Ok

#### Ok

2025-02-07 下午 03:05 ACQUA 6.1.100

## Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 630 Hz 2N NB

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



Distortion (Noise) RCV (packed): 24.02 dB (6.29%) Ok

#### Ok

2025-02-07 下午 03:06 ACQUA 6.1.100

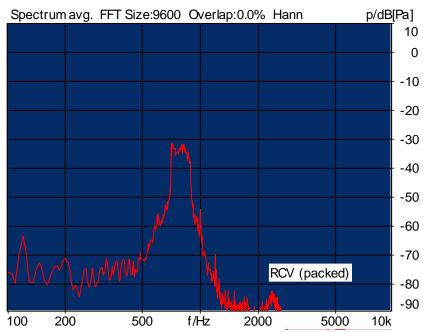
Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 800 Hz 2N NB

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



Distortion (Noise) RCV (packed): 24.84 dB (5.73%) Ok

#### Ok

2025-02-07 下午 03:07 ACQUA 6.1.100

#### Limits

lower 20.00 dB

Form version: 231017 Page C73 of C123

## 5.2 RCV Distortion and Noise - 1000 Hz 2N NB

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



Distortion (Noise) RCV (packed): 20.60 dB (9.33%) Ok

#### Ok

2025-02-07 下午 03:07 ACQUA 6.1.100

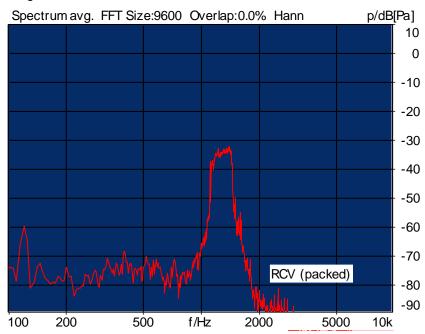
#### Limits

lower 20.00 dB

Form version: 231017 Page C74 of C123

## 5.2 RCV Distortion and Noise - 1250 Hz 2N NB

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



Distortion (Noise) RCV (packed): 22.02 dB (7.92%) Ok

#### Ok

2025-02-07 下午 03:08 ACQUA 6.1.100

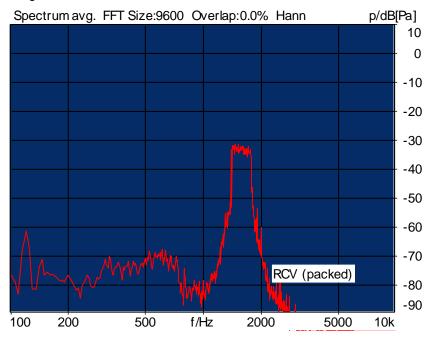
Limits

lower 20.00 dB

Form version: 231017 Page C75 of C123

## 5.2 RCV Distortion and Noise - 1600 Hz 2N NB

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



Distortion (Noise) RCV (packed): 25.72 dB (5.18%) Ok

#### Ok

2025-02-07 下午 03:08 ACQUA 6.1.100

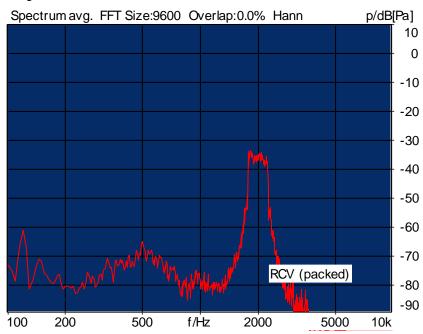
Limits

lower 20.00 dB

Form version: 231017 Page C76 of C123

## 5.2 RCV Distortion and Noise - 2000 Hz 2N NB

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



Distortion (Noise) RCV (packed): 22.75 dB (7.28%) Ok

#### Ok

2025-02-07 下午 03:09 ACQUA 6.1.100

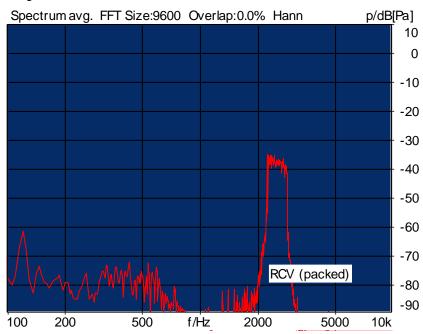
#### Limits

lower 20.00 dB

Form version: 231017 Page C77 of C123

## 5.2 RCV Distortion and Noise - 2500 Hz 2N NB

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



Distortion (Noise) RCV (packed): 29.97 dB (3.17%) Ok

#### Ok

2025-02-07 下午 03:10 ACQUA 6.1.100

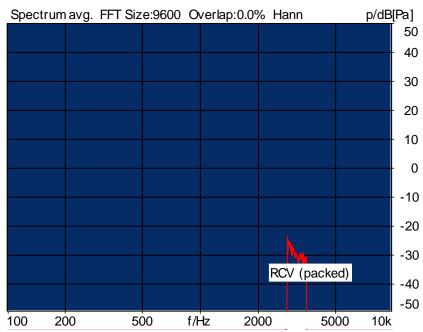
#### Limits

lower 20.00 dB

Form version: 231017 Page C78 of C123

## 5.2 RCV Distortion and Noise - 3150 Hz 2N NB

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



Distortion (Noise) RCV (packed): 42.17 dB (0.78%) Ok

#### Ok

2025-02-07 下午 03:10 ACQUA 6.1.100

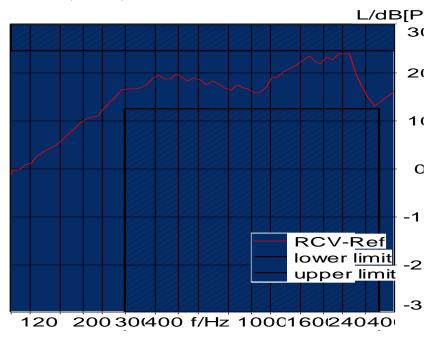
#### Limits

lower 20.00 dB

Form version: 231017 Page C79 of C123

## 5.3 Frequency Response 8N DF HANB

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



Absolute minimal distance 0.58 dB at 3245.6 Hz Ok

#### Ok

2025-02-07 下午 03:03 ACQUA 6.1.100

#### Limits

lower

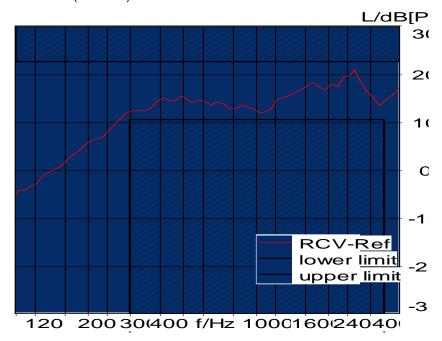
Fit into tolerance

Form version: 231017 Page C80 of C123



## 5.3 Frequency Response 2N DF HANB

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



Absolute minimal distance 1.57 dB at 1028.7 Hz Ok

#### Ok

2025-02-07 下午 03:11 ACQUA 6.1.100

#### Limits

lower

Fit into tolerance

Form version: 231017 Page C81 of C123

## Appendix A. Volume Control Evaluation Results

Report No.: HA4N0917C

<Evaluation results for KDB 285076 D05 2.b>

Form version: 231017 Page C82 of C123

## SPORTON LAB. Volume Control Evaluation Report

## #4 GSM1900 EFR NB 12.2kbps

SMD	Status	Single Value Description	Single Value
Overall Receive Delay NB	Done	Delay (Cross) [ms]	221.0
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	90.50
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	87.87

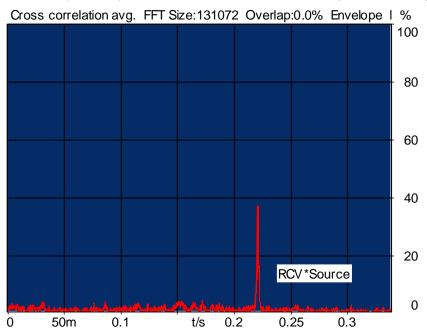
Report No. :HA4N0917C

Form version: 231017 Page C83 of C123



## **Overall Receive Delay NB**

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



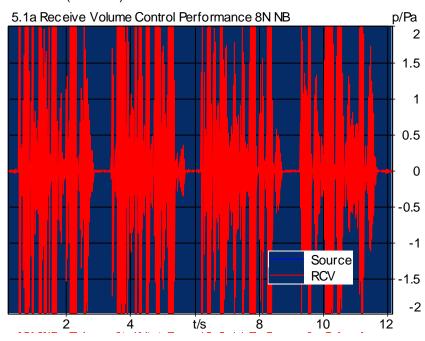
Channel	Delay	Correlation
RCV*Source	221.0 ms	37.26 %

2025-02-21 上午 12:33 ACQUA 6.1.110

Form version: 231017 Page C84 of C123

## 5.1a Receive Volume Control Performance 8N NB

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



Channel	Speech level	Activity	
RCV	90.50 dB[SPL]	66.69%	Ok

#### Ok

2025-02-21 上午 12:37 ACQUA 6.1.110

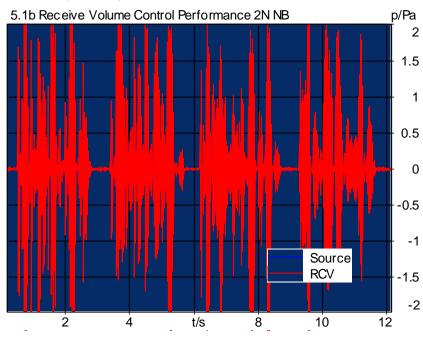
#### Limits

lower 76.00 dB[SPL]

Form version: 231017 Page C85 of C123

## 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	87.87 dB[SPL]	37.09%	Ok

#### Ok

2025-02-21 上午 12:34 ACQUA 6.1.110

#### Limits

lower 76.00 dB[SPL]

Form version: 231017 Page C86 of C123



## SPORTON LAB. Volume Control Evaluation Report

Report No. :HA4N0917C

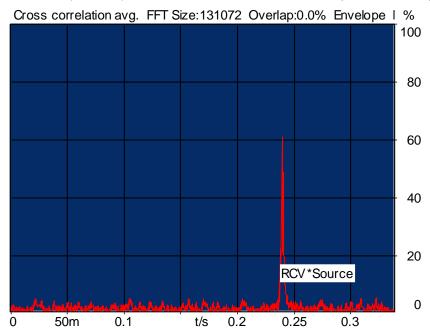
#5 WCDMA II AMR NB 12.2kbps

SMD	Status	Single Value Description	Single Value
Overall Receive Delay NB	Done	Delay (Cross) [ms]	239.7
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	89.72
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	88.19

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## **Overall Receive Delay NB**

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



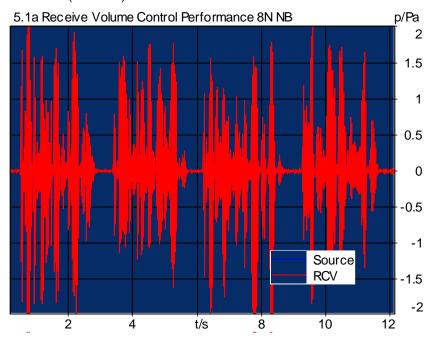
Channel	Delay	Correlation
RCV*Source	239.7 ms	60.97 %

2025-02-21 上午 01:43 ACQUA 6.1.110

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## 5.1a Receive Volume Control Performance 8N NB

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



Channel	Speech level	Activity	
RCV	89.72 dB[SPL]	16.99%	Ok

#### Ok

2025-02-21 上午 02:24 ACQUA 6.1.110

Limits

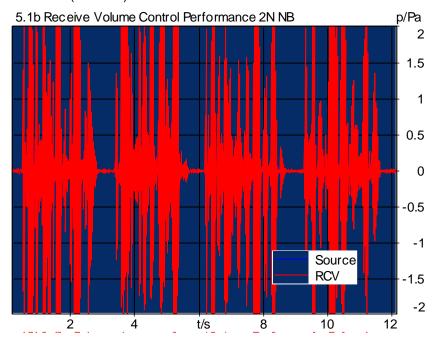
lower

76.00 dB[SPL]

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## 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	88.19 dB[SPL]	80.40%	Ok

#### Ok

2025-02-21 上午 03:16 ACQUA 6.1.110

#### Limits

lower

76.00 dB[SPL]

## #6 LTE Band 30 EVS NB 5.9kbps

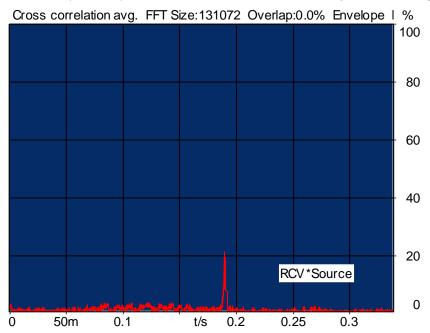
SMD	Status	Single Value Description	Single Value	Object
Overall Receive Delay NB	Done	Delay (Cross) [ms]	190.6	LTE 30 10M QPSK EVS-NB 5.9kbps
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	90.55	LTE 30 10M QPSK EVS-NB 5.9kbps
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	86.74	LTE 30 10M QPSK EVS-NB 5.9kbps

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## **Overall Receive Delay NB**

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



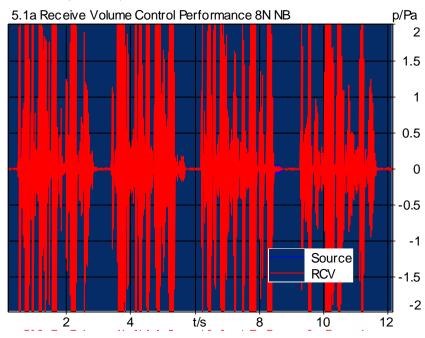
Channel	Delay Correlat	
RCV*Source	190.6 ms	21.39 %

2025-02-06 下午 11:25 ACQUA 6.1.100

Form version: 231017 Page C91 of C123

## 5.1a Receive Volume Control Performance 8N NB

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



Channel	Speech level	Activity	
RCV	90.55 dB[SPL]	57.94%	Ok

#### Ok

2025-02-06 下午 11:26 ACQUA 6.1.100

#### Limits

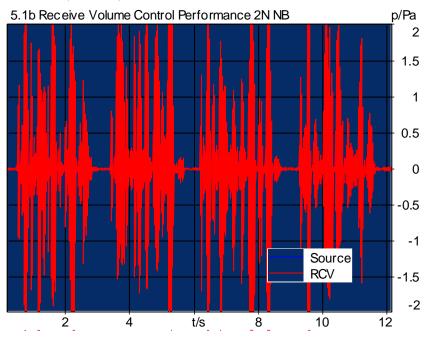
lower

76.00 dB[SPL]

Form version: 231017 Page C92 of C123

## 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	86.74 dB[SPL]	47.83%	Ok

#### Ok

2025-02-06 下午 11:25 ACQUA 6.1.100

Limits

lower

76.00 dB[SPL]

Form version: 231017 Page C93 of C123

## SPORTION LAB. Volume Control Evaluation Report

## #7 FR1 n30 AMR NB 12.2kbps

SMD	Status	Single Value Description	Single Value
Overall Receive Delay NB	Done	Delay (Cross) [ms]	194.1
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	90.50
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	86.95

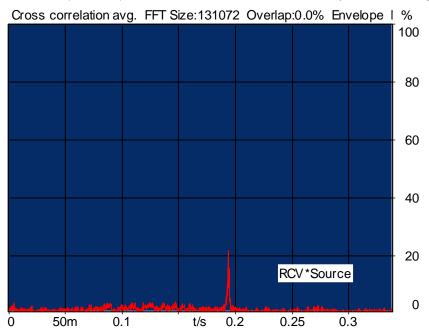
Report No. :HA4N0917C

Form version: 231017 Page C94 of C123



## **Overall Receive Delay NB**

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



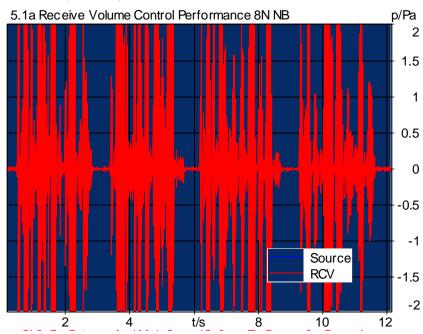
Channel	Delay	Correlation	
RCV*Source	194.1 ms	21.57 %	

2025-02-19 上午 06:56 ACQUA 6.1.110

Form version: 231017 Page C95 of C123

## 5.1a Receive Volume Control Performance 8N NB

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



Channel	Speech level	Activity	
RCV	90.50 dB[SPL]	60.43%	Ok

#### Ok

2025-02-19 上午 06:59 ACQUA 6.1.110

#### Limits

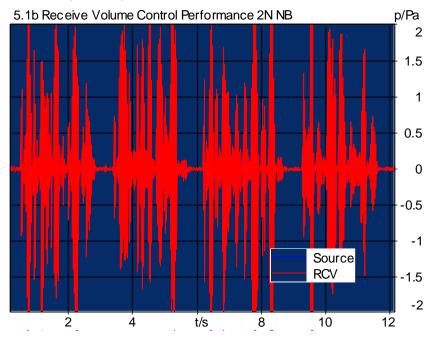
lower

76.00 dB[SPL]

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## 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	86.95 dB[SPL]	41.13%	Ok

#### Ok

2025-02-19 上午 06:57 ACQUA 6.1.110

Limits

lower

76.00 dB[SPL]

Form version: 231017 Page C97 of C123



## SPORTON LAB. Volume Control Evaluation Report

Report No. :HA4N0917C

#8 WiFi5.3GHz EVS NB 24.4kbps

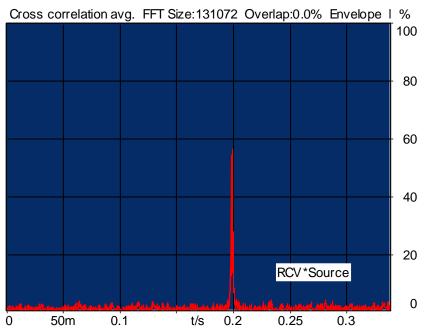
SMD	Status	Single Value Description	Single Value
Overall Receive Delay NB	Done	Delay (Cross) [ms]	199.0
5.1a Receive Volume Control Performance 8N NB	Ok	Speech Level [dB[SPL]]	89.09
5.1b Receive Volume Control Performance 2N NB	Ok	Speech Level [dB[SPL]]	87.04

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## **Overall Receive Delay NB**

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



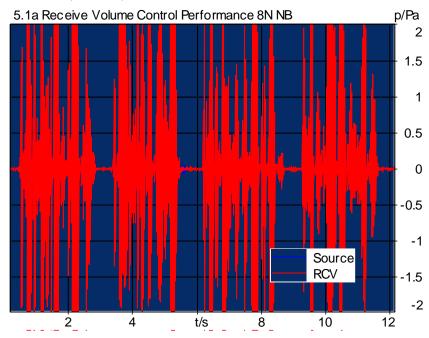
Channel Delay		Correlation	
RCV*Source	199.0 ms	56.52 %	

2025-02-07 上午 10:44 ACQUA 6.1.100

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## 5.1a Receive Volume Control Performance 8N NB

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



Channel	Speech level	Activity	
RCV	89.09 dB[SPL]	56.09%	Ok

#### Ok

2025-02-07 上午 10:45 ACQUA 6.1.100

#### Limits

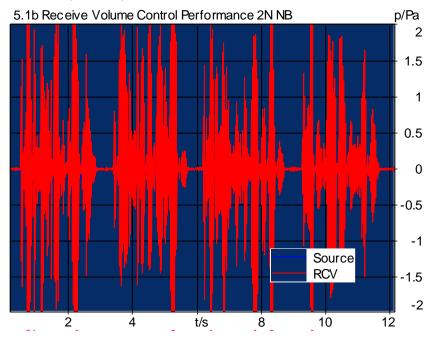
lower

76.00 dB[SPL]

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## 5.1b Receive Volume Control Performance 2N NB

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



Channel	Speech level	Activity	
RCV	87.04 dB[SPL]	47.22%	Ok

#### Ok

2025-02-07 上午 11:06 ACQUA 6.1.100

#### Limits

lower

76.00 dB[SPL]

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## 5.2 RCV Distortion and Noise - 400 Hz 8N NB

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



Distortion (Noise) RCV (packed): 32.60 dB (2.35%) Ok

#### Ok

2025-02-07 上午 10:46 ACQUA 6.1.100

#### Limits

lower 20.00 dB

Form version: 231017 Page C102 of C123

## 5.2 RCV Distortion and Noise - 500 Hz 8N NB

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



Distortion (Noise) RCV (packed): 24.31 dB (6.09%) Ok

#### Ok

2025-02-07 上午 10:46 ACQUA 6.1.100

Limits

lower 20.00 dB

Form version: 231017 Page C103 of C123

## 5.2 RCV Distortion and Noise - 630 Hz 8N NB

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



Distortion (Noise) RCV (packed): 25.26 dB (5.46%) Ok

#### Ok

2025-02-07 上午 11:01 ACQUA 6.1.100

#### Limits

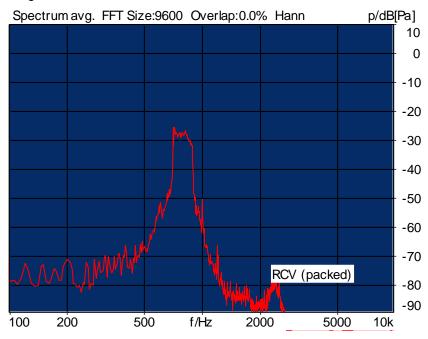
lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 800 Hz 8N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 26.51 dB (4.73%) Ok

#### Ok

2025-02-07 上午 11:01 ACQUA 6.1.100

Limits

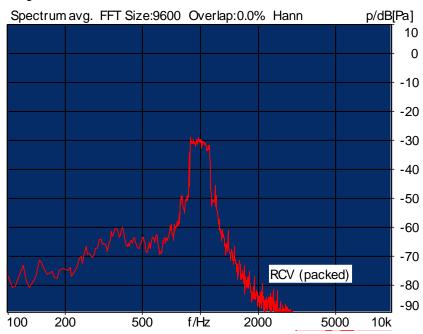
lower 20.00 dB

Form version: 231017 Page C105 of C123

## 5.2 RCV Distortion and Noise - 1000 Hz 8N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 21.52 dB (8.39%) Ok

#### Ok

2025-02-07 上午 11:02 ACQUA 6.1.100

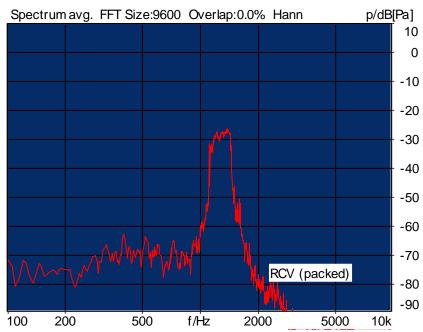
#### Limits

lower 20.00 dB

Form version: 231017 Page C106 of C123

## 5.2 RCV Distortion and Noise - 1250 Hz 8N NB

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



Distortion (Noise) RCV (packed): 22.93 dB (7.14%) Ok

#### Ok

2025-02-07 上午 11:02 ACQUA 6.1.100

#### Limits

lower 20.00 dB

Form version: 231017 Page C107 of C123

# SPORTON LAB.

Report No.: HA4N0917C

## 5.2 RCV Distortion and Noise - 1600 Hz 8N NB

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



Distortion (Noise) RCV (packed): 26.88 dB (4.53%) Ok

#### Ok

2025-02-07 上午 11:03 ACQUA 6.1.100

#### Limits

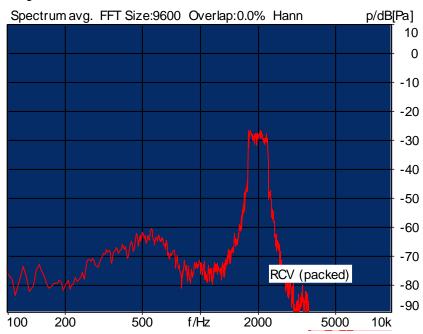
lower 20.00 dB

Form version: 231017 Page C108 of C123

# 5.2 RCV Distortion and Noise - 2000 Hz 8N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 23.92 dB (6.37%) Ok

#### Ok

2025-02-07 上午 11:04 ACQUA 6.1.100

Limits

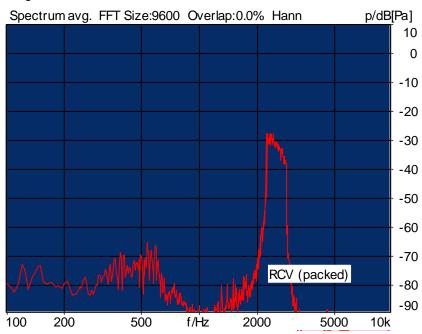
lower 20.00 dB

Form version: 231017 Page C109 of C123

## 5.2 RCV Distortion and Noise - 2500 Hz 8N NB

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

Report No.: HA4N0917C



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

#### Ok

2025-02-07 上午 11:04 ACQUA 6.1.100

#### Limits

lower 20.00 dB

Form version: 231017 Page C110 of C123

## 5.2 RCV Distortion and Noise - 3150 Hz 8N NB

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



Distortion (Noise) RCV (packed): 39.62 dB (1.04%) Ok

#### Ok

2025-02-07 上午 11:05 ACQUA 6.1.100

#### Limits

lower 20.00 dB

Form version: 231017 Page C111 of C123

# 5.2 RCV Distortion and Noise - 400 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 32.71 dB (2.32%) Ok

#### Ok

2025-02-07 上午 11:07 ACQUA 6.1.100

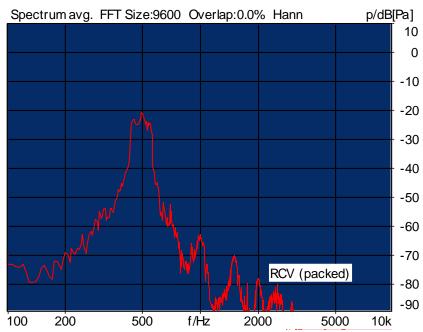
Limits

lower 20.00 dB

Form version: 231017 Page C112 of C123

## 5.2 RCV Distortion and Noise - 500 Hz 2N NB

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



Distortion (Noise) RCV (packed): 28.36 dB (3.82%) Ok

#### Ok

2025-02-07 上午 11:08 ACQUA 6.1.100

#### Limits

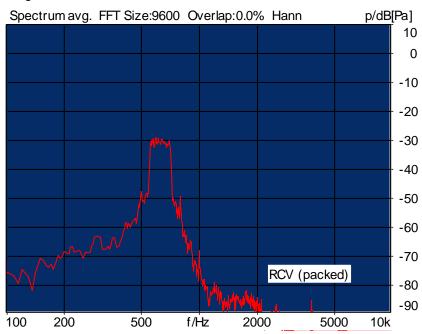
lower 20.00 dB

Form version: 231017 Page C113 of C123

# 5.2 RCV Distortion and Noise - 630 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 24.45 dB (5.99%) Ok

#### Ok

2025-02-07 上午 11:19 ACQUA 6.1.100

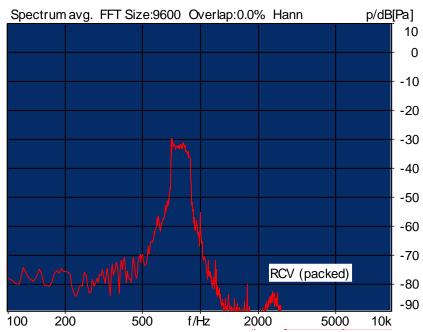
Limits

lower 20.00 dB

Form version: 231017 Page C114 of C123

## 5.2 RCV Distortion and Noise - 800 Hz 2N NB

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



Distortion (Noise) RCV (packed): 26.77 dB (4.59%) Ok

#### Ok

2025-02-07 上午 11:09 ACQUA 6.1.100

#### Limits

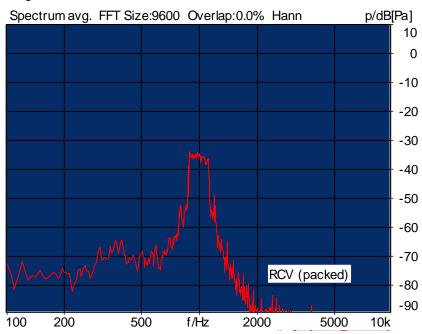
lower 20.00 dB

Form version: 231017 Page C115 of C123

## 5.2 RCV Distortion and Noise - 1000 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 20.73 dB (9.20%) Ok

#### Ok

2025-02-07 上午 11:20 ACQUA 6.1.100

Limits

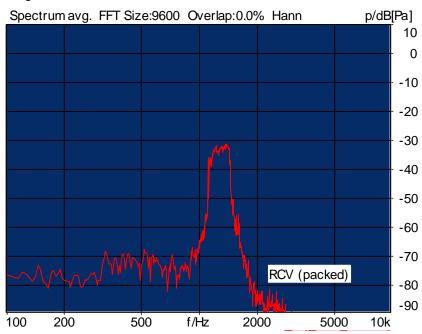
lower 20.00 dB

Form version: 231017 Page C116 of C123

# 5.2 RCV Distortion and Noise - 1250 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 22.41 dB (7.57%) Ok

#### Ok

2025-02-07 上午 11:10 ACQUA 6.1.100

#### Limits

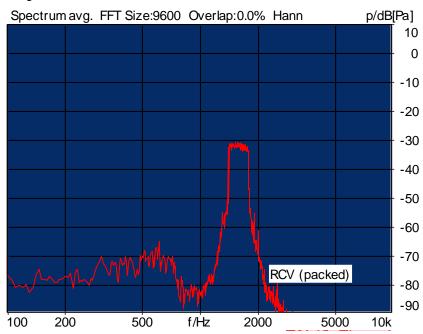
lower 20.00 dB

Form version: 231017 Page C117 of C123

# 5.2 RCV Distortion and Noise - 1600 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 27.15 dB (4.39%) Ok

#### Ok

2025-02-07 上午 11:11 ACQUA 6.1.100

Limits

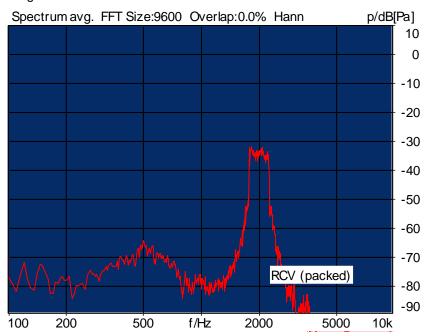
lower 20.00 dB

Form version: 231017 Page C118 of C123

# 5.2 RCV Distortion and Noise - 2000 Hz 2N NB

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

Report No.: HA4N0917C



Distortion (Noise) RCV (packed): 23.43 dB (6.73%) Ok

#### Ok

2025-02-07 上午 11:11 ACQUA 6.1.100

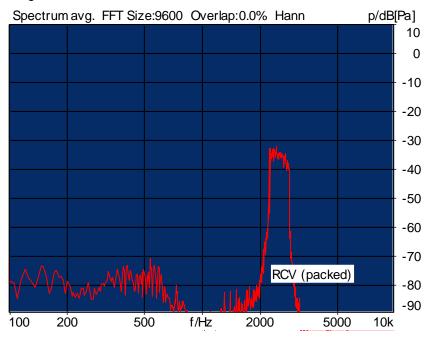
Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 2500 Hz 2N NB

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



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

#### Ok

2025-02-07 上午 11:12 ACQUA 6.1.100

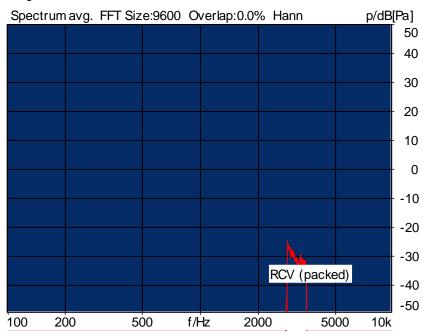
#### Limits

lower 20.00 dB

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## 5.2 RCV Distortion and Noise - 3150 Hz 2N NB

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



Distortion (Noise) RCV (packed): 41.11 dB (0.88%) Ok

#### Ok

2025-02-07 上午 11:12 ACQUA 6.1.100

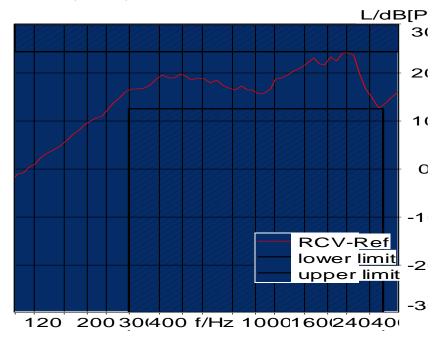
#### Limits

lower 20.00 dB

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## 5.3 Frequency Response 8N DF HANB

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



Absolute minimal distance 0.30 dB at 2432.3 Hz Ok

#### Ok

2025-02-07 上午 11:05 ACQUA 6.1.100

#### Limits

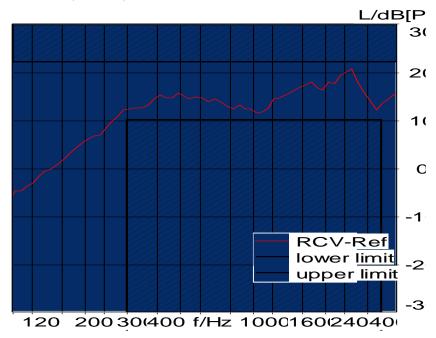
lower

Fit into tolerance

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## 5.3 Frequency Response 2N DF HANB

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



Absolute minimal distance 1.45 dB at 1028.7 Hz Ok

#### Ok

2025-02-07 上午 11:13 ACQUA 6.1.100

#### Limits

lower

Fit into tolerance

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