

HAC VOLUME CONTROL

TEST REPORT

Applicant: Shenzhen Tinno Mobile Technology Corp.
27-001, South Side of Tianlong Mobile
Address: Headquarters Building, Tongfa South Road, Xili
Community, Xili Street, Nanshan District, Shenzhen,
PRC
Equipment Type: Smart phone
Model Name: U662AC
Brand Name: N/A
FCC ID: XD6U662AC
Test Standard: 47 CFR Part 20.19
(refer section 3.1)
HAC Compliance: PASS
Sample Arrival Date: May 27, 2026
Test Date: May 29, 2026 - Jul. 06, 2026
Date of Issue: Jul 07, 2026

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

**Tested by:** Zhang Jiwei**Checked by:** Xu Rui**Approved by:** Liao Jianming
(Technical Director)*Zhang Jiwei**Xu Rui**Jim Liao*

Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Jul. 07, 2026</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION	4
1.1	Test Laboratory	4
1.2	Test Location	4
1.3	Test Environment Condition	4
2	PRODUCT INFORMATION	5
2.1	Applicant Information	5
2.2	Manufacturer Information	5
2.3	General Description for Equipment under Test (EUT)	5
2.4	Ancillary Equipment	5
2.5	Technical Information	6
2.6	EUT Air Interface description	8
3	SUMMARY OF TEST RESULTS	9
3.1	Test Standards	9
3.2	Lowest Conversational Gain for Volume Control Test	9
3.3	Volume Control Test Requirement	10
3.4	HAC Test Uncertainty	13
4	MEASUREMENT SYSTEM	14
4.1	Test Arrangement	14
5	Volume Control Measurement Procedure	15
5.1	Conversational Gain Performance	15
5.2	Receive Distortion and Noise Performance	15
5.3	Receive Acoustic Frequency Response Performance	16
6	Device Support Codec	17
6.1	Support Codec	17
7	Volume Control Test Results	19
7.1	Test Results for KDB 285076 D05 2.a	20

7.2 Test Results for KDB 285076 D05 2.b28

8 TEST EQUIPMENTS LIST48

ANNEX A HAC VOLUME CONTROL TEST RESULT.....49

ANNEX B TEST SETUP PHOTO.....49

ANNEX C EUT EXTERNAL PHOTO.....49

1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	601, Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen, Guangdong
	☒ 1/F., Building B, Ganghongji High-Tech Intelligent Industrial Park, No.1008, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

1.3 Test Environment Condition

Ambient Temperature	22.5°C
Ambient Relative Humidity	57.3%
Ambient noise	28 dBA

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Shenzhen Tinno Mobile Technology Corp.
Address	27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen, PRC

2.2 Manufacturer Information

Manufacturer	Shenzhen Tinno Mobile Technology Corp.
Address	27-001, South Side of Tianlong Mobile Headquarters Building, Tongfa South Road, Xili Community, Xili Street, Nanshan District, Shenzhen, PRC

2.3 General Description for Equipment under Test (EUT)

EUT Name	Smart phone
Model Name Under Test	U662AC
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	V1.0
Software Version	U662ACV01.01.10
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A
EUT ID	CC26050242-001: S20, S23, S30
SN or IMEI Number	CC26050242-001-S20: IEMI1:866797080003340; IEMI2:866797080006848
	CC26050242-001-S23: IEMI1:866797080009263; IEMI2:866797080009669
	CC26050242-001-S30: IEMI1:866797080004165; IEMI2:866797080007663

2.4 Ancillary Equipment

Ancillary Equipment 1	USB Cable 1	
	Brand Name	N/A
	Model No.	HX-TL-03
	Length (Approx.)	1 m
	Manufacturer	HUIZHOU WASHIN ELECTRONICS CO.,LTD

2.5 Technical Information

Network and Wireless connectivity	3G Network WCDMA/HSDPA/HSUPA Band 1/2/4/5/8 4G Network LTE FDD Band 2/3/4/5/7/12/14/20/29/30/66 LTE CA Uplink (UL) CA_2A-5A, CA_2A-12A, CA_12A-30A, CA_5A-30A, CA_5A-66A, CA_12A-66A, CA_2A-14A, CA_14A-66A, CA_14A-30A LTE CA Downlink (DL):CA_2A-5A, CA_2A-12A, CA_2A-29A, CA_12A-30A, CA_2A-30A, CA_5A-30A, CA_29A-30A, CA_5A-66A, CA_12A-66A, CA_2A-66A, CA_30A-66A, CA_66A-66A, CA_29A-66A, CA_2A-14A, CA_14A-66A, CA_14A-30A, CA_66B, CA_66C, CA_2A-2A 5G Network SA: NR n2/n5/n14/n30/n66/n70/n71/n77 NSA(EN-DC): DC_2A_n5A, DC_30A_n5A, DC_66A_n5A, DC_2A_n66A, DC_12A_n66A, DC_30A_n66A, DC_5A_n2A, DC_12A_n2A, DC_30A_n2A, DC_66A_n2A, DC_2A_n77A, DC_5A_n77A, DC_66A_n77A, DC_30A_n77A, DC_12A_n77A, DC_14A_n77A, DC_14A_n66A, DC_14A_n2A, DC_2A-2A_n5A, DC_2A-30A_n5A, DC_2A-66A_n5A, DC_30A-66A_n5A, DC_66A-66A_n5A, DC_2A-12A_n66A, DC_2A-29A_n66A, DC_2A-30A_n66A, DC_2A-2A_n66A, DC_12A-30A_n66A, DC_5A-30A_n2A, DC_12A-30A_n2A, DC_29A-30A_n2A, DC_5A-66A_n2A, DC_12A-66A_n2A, DC_29A-66A_n2A, DC_30A-66A_n2A, DC_29A-30A_n66A, DC_2A-66A_n66A, DC_12A-66A_n66A, DC_30A-66A_n66A, DC_2A-5A_n2A, DC_2A-12A_n2A, DC_2A-30A_n2A, DC_2A-66A_n2A, DC_2A-2A_n77A, DC_66A-66A_n77A, DC_14A-30A_n66A, DC_14A-66A_n66A, DC_14A-30A_n2A, DC_14A-66A_n2A, DC_2A-14A_n2A, DC_2A-14A_n66A NR CA Downlink (DL):CA_n2A-n66A, CA_n5A-n66A, CA_n2A-n5A, CA_n2(2A), CA_n66(2A), CA_n30A-n66A, CA_n2A-n30A, CA_n5A-n30A, CA_n2A-n77A, CA_n5A-n77A, CA_n66A-n77A, CA_n30A-n77A, CA_n2A-n71A, CA_n66A-n71A, CA_n71A-n77A, CA_n70A-n71A, CA_n66A-n70A, CA_n14A-n66A, CA_n2A-n14A, CA_n14A-n30A, CA_n14A-n77A Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) NFC, GPS
Note : The EUT is a mobile phone, which supports dual SIM card under the same transceiver. Each SIM supports GSM, and both SIM share the same transmitting electro circuit, NV parameters, so only SIM1 was tested in this report.	

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	WCDMA, LTE, NR, WLAN, Bluetooth		
Frequency Range	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 2	TX: 1850~1910 MHz	RX: 1930~1990 MHz
	LTE Band 4	TX: 1710~1755 MHz	RX: 2110~2115 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE Band 12	TX: 699-716 MHz	RX: 729~746 MHz
	LTE Band 14	TX: 788-798 MHz	RX: 758~768 MHz
	LTE Band 30	TX: 2305~2315 MHz	RX: 2350~2360 MHz
	LTE Band 66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2200 MHz
	n2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	n5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	n14	TX: 788 ~ 798 MHz	RX: 758 ~ 768 MHz
	n30	TX: 2305~2315 MHz	RX: 2350~2360 MHz
	n66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2200 MHz
	n70	TX: 1695 ~ 1710 MHz	RX: 1995 ~ 2010 MHz
	n71	TX: 663 ~ 698 MHz	RX: 617 ~ 652 MHz
	n77	TX: 3300 ~ 4200 MHz	RX: 3300 ~ 4200 MHz
	802.11b/g/n(HT20)	2412 ~ 2462 MHz	
	802.11a/ /n(HT20/HT40) /ac(VHT20/VHT40 /VHT80)	5150 ~ 5250 MHz	
		5250 ~ 5350 MHz	
		5470 ~ 5725 MHz	
		5725 ~ 5850 MHz	
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	FPC Antenna		
VoLTE Mode	Support		
VoWi-Fi Mode	Support		
VoIP Mode	Support		
Exposure Category	General Population/Uncontrolled exposure		
Product Type	Portable Device		
EUT Type	☒ Production unit		☐ Identical prototype

2.6 EUT Air Interface description

Air Interface	Bands	Type	C63.19	Simultaneous	Name of Voice Service	Power Mode
			Tested	Transmitter		
UMTS	Band2	VO	Yes	WLAN, BT	CMRS Voice	Pmax; Off
	Band4			WLAN, BT		
	Band5			WLAN, BT		
	HSPA	VD	Yes	WLAN, BT	Google Meet	
LTE(FDD)	Band2	VD	Yes	NR, WLAN, BT	VoLTE/GoogleMeet	Pmax; Off
	Band4			NR, WLAN, BT		
	Band5			NR, WLAN, BT		
	Band7			NR, WLAN, BT		
	Band12			NR, WLAN, BT		
	Band14			NR, WLAN, BT		
	Band30			NR, WLAN, BT		
	Band66			NR, WLAN, BT		
NR(FDD)	n2	VD	Yes	LTE, WLAN, BT	VoNR/GoogleMeet	Pmax; Off
	n5			LTE, WLAN, BT		
	n14			LTE, WLAN, BT		
	n30			LTE, WLAN, BT		
	n66			LTE, WLAN, BT		
	N70			LTE, WLAN, BT		
	n71			LTE, WLAN, BT		
NR(TDD)	n77	VD	Yes	LTE, WLAN, BT	VoNR/GoogleMeet	
WIFI	2450	VD	Yes	GSM, UMTS, LTE, or NR	VoWIFI/ Google Meet	Pmax; Off
	5200(U-NII-1)			GSM, UMTS, LTE, or NR		
	5300(U-NII-2A)			GSM, UMTS, LTE, or NR		
	5500(U-NII-2C)			GSM, UMTS, LTE, or NR		
	5800(U-NII-3)			GSM, UMTS, LTE, or NR		
BT	2450	DT	No	GSM, UMTS, LTE, or NR, WIFI	N/A	N/A

Type Transport:

VO: Voice Only

DT: Digital Transport only (no voice)

VD: CMRS and/or IP Voice Service over Digital Transport

Note1: According to FCC guidance and Waiver DA 23-914 only requires conversational gain compliance for CMRS narrowband and CMRS wideband voice codecs as stated below. All other codecs either part of 3GPP set such as full-band and super-wideband codecs or OTT codecs are to be documented in the test report but not required to comply with the TIA 5050 Volume Control Standard.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 20.19	Hearing aid-compatible mobile handsets.
2	ANSI C63.19-2019	American National Standard Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids
3	ANSI/TIA-5050-2018	Receive Volume Control Requirements for Wireless (Mobile) Devices
4	KDB 285076 D01 HAC Guidance v06r04	Provides equipment authorization guidance for mobile handsets subject to the requirements of Section 20.19 for hearing aid compatibility
5	KDB 285076 D04 Volume Control v02	Guidance for Performing Volume Control Measurements on Mobile Handsets
6	KDB 285076 D05 CG Interim Waiver DA 23-914 v01	HAC Compliance Under Waiver DA 23-914

3.2 Lowest Conversational Gain for Volume Control Test

Mounting Force	Lowest Conversational Gain(dB)
2N	10.40
8N	14.52
Note1: Please refer to Section 7 for detailed test results.	

3.3 Volume Control Test Requirement

3.3.1 Conversational Gain Performance

1. According to KDB 285076D05, for the 2N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a Conversational gain of > 6 dB for all voice services, bands of operation and air interfaces over which it operates using one codec bit rate of the applicant's choosing.
2. According to KDB 285076D05, for the 8N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a Conversational gain of > 6 dB for all voice services, bands of operation and air interfaces over which they operate but is not required to meet or exceed the full 18 dB of Conversational gain specified in section 5.1.1 of the TIA 5050 Volume Control Standard using one codec bit rate of the applicant's choosing.
3. Calculate the Conversational Gain by subtracting 70 dB from the measured dB SPL. That is Monoaural Conversational Gain = (Measured dB SPL - 70 dB SPL) dB.

3.3.2 Receive Distortion and Noise Performance

With a mounting force of 8N and 2N, the ratio of the stimulus signal power to the 100 Hz to 8000 Hz total A-weighted distortion and noise power shall be ≥ 20 dB when tested over the range of 1/3 octave band center frequencies:

1. Narrowband transmission mode: Each 1/3 octave band center frequency from 400 Hz to 3150 Hz.
2. Wideband transmission mode: Each 1/3 octave band center frequency from 250 Hz to 5000 Hz.
3. According to KDB 285076 D05, choosing one narrowband and one wideband for all voice services, bands of operation and air interfaces over which it operates using one codec bit rate of the applicant's choosing to meet Receive Distortion and Noise requirement.

3.3.3 Receive Acoustic Frequency Response Performance

The receive acoustic frequency response is required to be met when tested with a handset mounting force of 2N and 8N. For a hearing device, a 2N force is used to simulate usage of the handset by a person with a hearing device in the microphone (acoustic) mode.

The receive frequency response is the ratio of the output sound pressure at the listener reference point (LRP) (FF or DF) to the voltage input to the reference codec, or digital bit stream equivalent, as shown in Eq 1 for each frequency or frequency band (f_i):

$$S_{JE} = 20 \log_{10}(P_E/V_R) \text{ dB re } 1 \text{ Pa/V} \quad \text{Eq 1}$$

Where

S_{JE} = Receive Sensitivity, Junction to Ear, at f_i .

P_E = LRP sound pressure measured by ear simulator at DRP and translated to the FF or DF (see Annex B), at f_i .

V_R = RMS input voltage to the reference codec, or digital bit stream equivalent, at f_i .

For the volume control settings determined in section 5.1.1 of ANSI/TIA-5050 with a mounting force of 8N and 2N, the receive frequency response shall be measured at the DRP in 1/12 octave bands. After translation to the FF or DF, it shall fall between the applicable upper and lower limits.

The exact limit values at any 1/12 octave band center frequency falling between two consecutive points specified in the table may be calculated using the formula given in Eq 2 below:

$$X_f = X_1 + (X_2 - X_1) * \left(\frac{\log_{10} f - \log_{10} f_1}{\log_{10} f_2 - \log_{10} f_1} \right) \quad \text{Eq 2}$$

Where

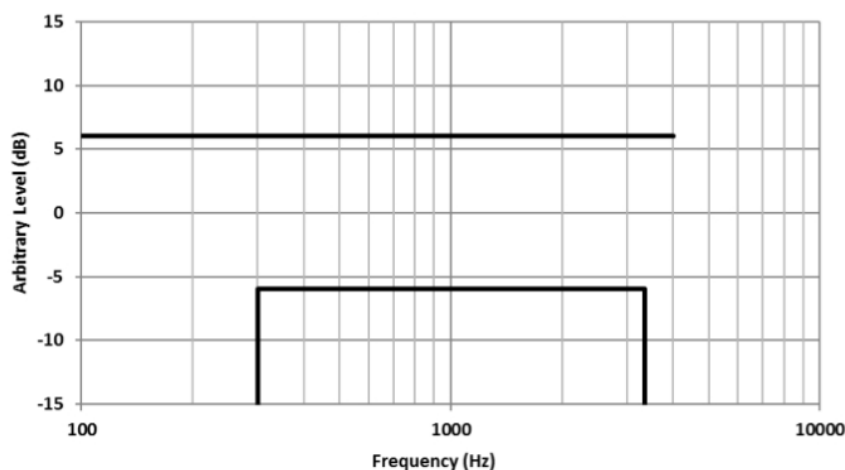
X_f = limit value at frequency f

X_1 = limit value at frequency f_1 as given in table

X_2 = limit value at frequency f_2 as given in table

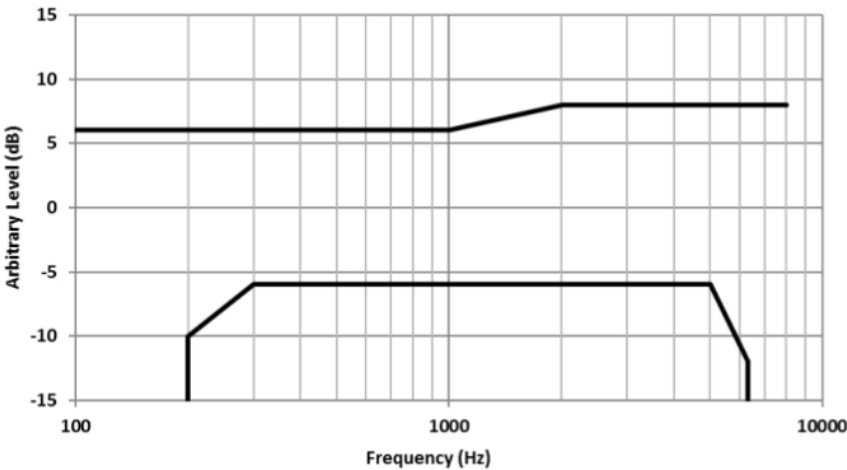
1. Narrowband: The 1/12 octave band frequency response after translation to the FF or DF shall fall between the upper and lower limits below.

Lower Limit Frequency (Hz)	Lower Limit (dB)	Upper Limit Frequency (Hz)	Upper Limit (dB)
300	-6	100	+6
3400	-6	4000	+6



2. Wideband: The 1/12 octave band frequency response after translation to the FF or DF shall fall between the upper and lower limits below.

Lower Limit Frequency (Hz)	Lower Limit (dB)	Upper Limit Frequency (Hz)	Upper Limit (dB)
200	-10	100	+6
300	-6	1000	+6
5000	-6	2000	+8
6300	-12	8000	+8



3.4 HAC Test Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in ANSI C 63.19:2019. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Component	Standard uncertainty (dB)	U^2 (%)
Generator Accuracy To enable harmonic distortion measurements to 0.1%, the generator distortion must be <0.05%. This is equivalent to a standard uncertainty of 0.043 dB.	0.043	0.25
Ear Simulator Pressure Sensitivity (incl. Measurement Mic.) The uncertainty of the ear simulator as per the standards and quoted on its calibration certificate is 0.3 dB with a coverage factor of $k = 2$. This is equivalent to a standard uncertainty of $0.3/2 = 0.15$ dB.	0.15	2.98
Microphone Preamplifier The manufacturer quotes the preamp to be within ± 0.02 dB with a 95% probability or 2σ . This is equivalent to a standard uncertainty of $0.02/2 = 0.01$ dB.	0.01	0.01
Analysis System / RMS Detector Typical measurement system detector accuracy is 0.1 dB with a coverage factor of $k = 2$. This is equivalent to a standard uncertainty of $0.1/2 = 0.05$ dB.	0.05	0.33
Effect of Positioning on Mid-Band Sensitivity For a handset, with the HATS positioning jig, the typical standard deviation estimated from a statistically significant number of measurements is ± 1.2 dB. This is equivalent to a standard uncertainty of 1.2 dB.	1.2	190.87
Time Varying Effects of the Mouth Simulator for Send & Sidetone For a receive measurement on a handset, the mouth simulator is not used (its uncertainty is zero), The standard uncertainty of 0 dB	0	0
Total Standard Uncertainty (%)	13.94	
UMAX ($k = 2$) (%)	27.89	
UMAX ($k = 2$) (dB)	1.07	

4 MEASUREMENT SYSTEM

4.1 Test Arrangement

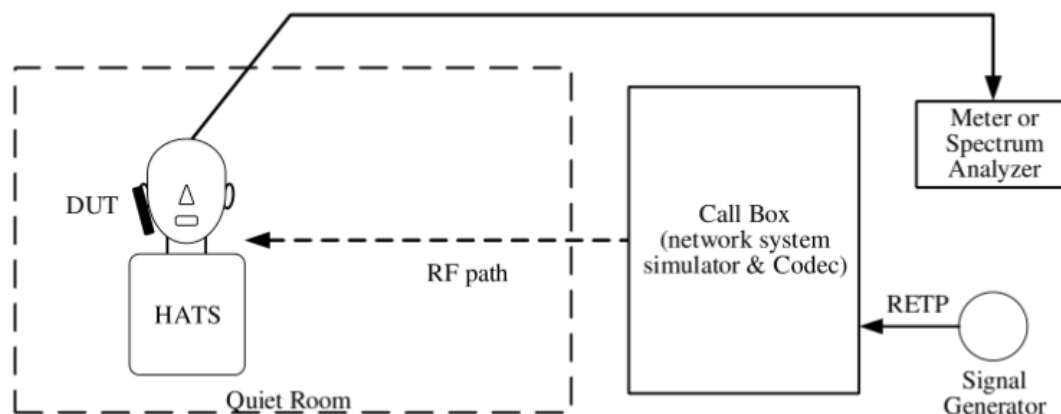


Figure 3.1 Test Arrangement

1. The Call Box passes the voice channel stream to the DUT without modification. There is no gain or loss in the voice channel stream due to the Call Box interface,
2. The RETP (receive electrical test point) is the point in the device test arrangement where signals are applied to the DUT in the receive direction.
3. A room with background noise no greater than 40 dBA.
4. The callbox of CMW500 or CMX 500 is used to GSM, UMTS, VoLTE, Vo NR over IMS and Vo-WiFi over IMS Volume Control measurement, the data application unit of the CMW500 or CMX 500 was used to simulate the IP multimedia subsystem server. And the CMW500 or CMX500 can be manually configured to ensure and control the speech input level result is -20dBm0 for GSM/UMTS/VoLTE/VoNR and VoWiFi when the device during the IMS connection.
5. Pre KDB 285076 D04 the procedures for the receive volume control performance can be found in section 5.1 of TIA-5050. An ITU-T P 58compliant Head and Torso Simulator (HATS) is required for all testing. irrespective of codec or air interface tested the test signal must be used in accordance with IEEE standard 269 based on the uncompressed real male speech with an active speech level (ASL) of -20 dBm0.

5 Volume Control Measurement Procedure

5.1 Conversational Gain Performance

1. Configure the DUT with a mounting force of 8N and test equipment as shown in Figure 1 in an active call state with the applicable codec for the transmission mode under test.
2. Set the DUT volume control to the maximum setting.
3. If the DUT has an adjustable tone control feature, a tone control setting that meets the frequency response requirements in ANSI/TIA-5050 section 5.3.1 shall be used.
4. The ACQUA system is apply the real speech test signal at a level of -20 dBm0 at the RETP and measure the acoustic output at the Drum Reference Point (DRP) over one complete sequence of the test signal.
5. Translate the measurement made at the DRP to the Free Field (FF) using the translation data in Annex B of ANSI/TIA-5050.
6. Over the applicable frequency band, determine the ASL in dB SPL for the resulting sound pressure level in accordance with Method B of ITU-T Recommendation P.56:
 - a) Narrowband 100 Hz through 4000 Hz.
 - b) Wideband 100 Hz through 7720 Hz.
7. Calculate the Conversational Gain by subtracting 70 dB from the measured dBSPL.
[Conversational Gain = (Measured dB SPL Level - 70 dB SPL) dB]
8. Measure the output distortion per clause 5.2. If a distortion failure occurs at the maximum volume control setting, reduce the volume control setting and repeat the measurement to determine if a setting can be found for which the conversational gain requirement is met without a distortion failure.
9. Repeat steps 2-8 with a mounting force of 2N.

5.2 Receive Distortion and Noise Performance

1. Configure the DUT with a mounting force of 8N and test equipment as shown in Figure 1 in an active call state with the applicable codec for the transmission mode under test with the volume control at the setting determined in 5.1.1 of ANSI/TIA-5050.
2. Receive distortion and noise is measured using the PN-SDNR procedure as described in Annex A of ANSI/TIA-5050.
3. To ensure DUT activation, ACQUA system is apply the real speech test signal at a level of -20 dBm0 followed immediately by the initial 1/3 octave center frequency PN test signal in Table A.1 of ANSI/TIA-5050 based on the narrowband or wideband operating mode. Measure the acoustic output at the DRP over the complete sequence of the PN test signal.
4. Translate the measurement made at the DRP to the FF using the translation data in Annex B of ANSI/TIA-5050.
5. Calculate the acoustic output unweighted total signal power of the stimulus measurement band as described in A.2 of ANSI/TIA-5050.
6. Calculate the notched A-weighting distortion and noise components as described in A.3 of ANSI/TIA-5050. Calculate the ratio of the signal power to the total A-weighted distortion and noise power using Eq A-1 of ANSI/TIA-5050.
7. Repeat for each of the remaining 1/3 octave center frequencies in Table A.1 of ANSI/TIA-5050 based on the narrowband or wideband operating mode.
10. Repeat steps 2-8 with a mounting force of 2N.

5.3 Receive Acoustic Frequency Response Performance

1. Configure the DUT with a mounting force of 8N and test equipment as shown in Figure 1 in an active call state with the applicable codec for the transmission mode under test with the volume control at the setting determined in 5.1.1 of ANSI/TIA-5050.
2. If the DUT has an adjustable tone control feature the initial measurement is to be performed with the default tone control setting.
3. The ACQUA system is apply the real speech test signal with a level of -20 dBm0 at the RETP.
4. Capture the frequency spectrum at the DRP of the HATS using real-time analysis with 1/12 octave bands over the frequency range from 100 Hz to 4000 Hz for narrowband measurements, or over the frequency range from 100 Hz to 8000 Hz for wideband measurements, averaged over the entire duration of the test signal.
5. Transform the DRP frequency spectrum measurement to the FF or DF (see Annex B of ANSI/TIA-5050).
6. Divide the 1/12 octave measurement data by the 1/12 octave frequency spectrum of the test signal at the RETP and present the measurement in terms of dB (Pa/V).
7. Apply the applicable frequency response limits to determine compliance.
8. If the default tone control setting does not meet the requirement, repeat the above steps for other tone control settings to determine a tone control setting that meets the requirements.
9. Repeat with a mounting force of 2N

6 Device Support Codec

General Guidance

1. According to KDB 285076 D04, it's not required that every combination of codec, codec data rate, air interface, band, band channel, bandwidth, modulation data rate, subcarrier spacings, and resource blocks to be documented in a test report. However, it is expected to investigate and document only the worst-case test conditions and results. Each submitted test report shall document the codec type (i.e., NB, WB, EVS, etc.), every air interface (i.e., LTE, 5G NR, WI-FI), and band supported for the worst-case codec bit rate, band channel, bandwidth, air interface bit rate, subcarrier spacings, and resource blocks.
2. According to KDB 285076 D05 only CMRS narrowband and CMRS wideband voice codecs are required to comply with the volume control requirements of the ANSI/TIA 5050 Volume Control Standard. Other codecs out of 3GPP such as full-band and super-wideband codec or OTT VoIP codecs should be documented in the test report but not required to comply with the requirements of ANSI/TIA 5050, therefore 5G NR for the Google Meet is not required.

6.1 Support Codec

W-CDMA Support Codec

Codec/Bitrates (kbps)	
AMR NB	AMR WB
4.75	6.6
5.15	8.85
5.9	12.65
6.7	14.25
7.4	15.85
7.95	18.25
10.2	19.85
12.2	23.05
/	23.85

VoLTE/VoNR/VoWi-Fi Support Codec

Codec/Bitrates (kbps)				
AMR NB	AMR WB	EVS NB	EVS WB	EVS SWB
4.75	6.6	5.9	5.9	9.6
5.15	8.85	7.2	7.2	13.2
5.9	12.65	8	8	16.4
6.7	14.25	9.6	9.6	24.4
7.4	15.85	13.2	13.2	/
7.95	18.25	16.4	16.4	/
10.2	19.85	24.4	24.4	/
12.2	23.05	/	/	/
/	23.85	/	/	/
/	/	/	/	/
/	/	/	/	/
/	/	/	/	/

VoIP Support Codec

Google Meet Codec/Bitrates (kbps)	
OPUS	
	6
	40
	75

7 Volume Control Test Results

General Note:

1. Per KDB 285076 D05, in section 2 addresses the technical testing requirements for the conversational gain, distortion, and frequency response tests that amends KDB 285076 D04 Volume Control under the conditions of the limited-term waiver DA 23-914, as follows:
 - a. Under the waiver, only CMRS narrowband and CMRS wideband voice codecs are required to comply with the volume control requirements of the TIA 5050-2018 Volume Control Standard as amended as follows:
 - a) For the 2N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a conversational gain of ≥ 6 dB for all voice services, bands of operation and air interfaces over which it operates using one codec bit rate of the applicant's choosing
 - b) For the 8N mounting force test, one narrowband and one wideband voice codec embedded with the handset must pass with at least one volume control setting with a conversational gain of ≥ 6 dB for all voice services, bands of operation and air interfaces over which they operate but is not required to meet or exceed the full 18 dB of conversational gain specified in section 5.1.1 of the TIA 5050 Volume Control Standard using one codec bit rate of the applicant's choosing
 - b. For all other narrowband and wideband codecs not evaluated in 2.a. above, TIA 5050-2018 Receive Distortion and Noise Performance and Receive Acoustic Frequency Response Performance evaluations are not required; however, these codecs shall be assessed for conversational gain and documented in the test report at the 2N and 8N levels with a gain of ≥ 6 dB for all voice services, bands of operation and air interfaces over which they operate. The handset volume setting used to comply with 2.a. shall be used for these other CMRS codec evaluations.
 - c. Any other codec for voice services embedded in the handset, not identified in 2.a. and 2.b. above, is not required to comply or demonstrate in the test reports for conversational gain.
2. All Volume Control measurements were performed with maximum setting.
3. The product is tested in the quiet room and ambient noise is less than 40dBA.
4. Conversational Gain = (measured dBSPL Level – 70 dBSPL) dB
5. Through Internal radio configuration investigation (e.g. bandwidth, modulation data rate, subcarrier spacing, and resource blocks) that the worst radio configuration was documented as below table.
6. According to KDB 285076 D05 and document of DA 23-914 item 30, the manufacturer only perform EVS codec to meet distortion/noise and frequency response tests at the 2N and 8N force levels.

7.1 Test Results for KDB 285076 D05 2.a

Confirm the lowest configuration:

Mode	RF Bandwidth (MHz)	Radio Configuration	Channel	HAC Mode	Mounting Force (N)	Audio Codec Codec (Kbps)	Codec Bandwidth	Codec Bitrate(kbps)	Measured dB SPL Level	Conversational Gain (CG) (dB)	FCC CGLimit (dB)	CG Margin (dB)	Verdict
LTE Band2	20	BW 20 QPSK/1RB/0RB	18900	On	2	AMR	NB	4.75	82.55	12.55	6	6.55	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	AMR	NB	7.4	82.80	12.80	6	6.80	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	AMR	NB	12.2	83.09	13.09	6	7.09	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	AMR	WB	6.6	81.34	11.34	6	5.34	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	AMR	WB	15.85	81.97	11.97	6	5.97	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	AMR	WB	23.85	82.03	12.03	6	6.03	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	NB	5.9	82.53	12.53	6	6.53	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	NB	9.6	82.82	12.82	6	6.82	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	NB	24.4	83.12	11.15	6	5.15	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	WB	5.9	80.82	10.82	6	4.82	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	WB	9.6	81.26	11.26	6	5.26	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	WB	24.4	80.44	10.44	6	4.44	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	SWB	9.6	81.07	11.07	6	5.07	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	SWB	13.2	81.59	11.59	6	5.59	Pass
	20	BW 20 QPSK/1RB/0RB	18900	On	2	EVS	SWB	24.4	82.38	12.38	6	6.38	Pass
	20	QPSK/1RB/0RB	18900	On	2	EVS	WB	24.4	81.88	11.88	6	5.88	Pass
	20	QPSK/50RB/0RB	18900	On	2	EVS	WB	24.4	80.91	10.91	6	4.91	Pass
	20	QPSK/100RB/0RB	18900	On	2	EVS	WB	24.4	82.10	12.10	6	6.10	Pass
	20	16QAM/1RB/0RB	18900	On	2	EVS	WB	24.4	82.16	12.16	6	6.16	Pass
	20	64QAM/1RB/0RB	18900	On	2	EVS	WB	24.4	82.31	12.31	6	6.31	Pass
	20	256QAM/1RB/0RB	18900	On	2	EVS	WB	24.4	82.25	12.25	6	6.25	Pass
	20	256QAM/1RB/0RB	18900	On	2	EVS	WB	24.4	82.16	12.16	6	6.16	Pass
	15	QPSK/1RB/0RB	18900	On	2	EVS	WB	24.4	82.34	12.34	6	6.34	Pass
	10	QPSK/1RB/0RB	18900	On	2	EVS	WB	24.4	82.35	12.35	6	6.35	Pass
	5	QPSK/1RB/0RB	18900	On	2	EVS	WB	24.4	82.46	12.46	6	6.46	Pass

Note:

- 1.Phone Condition: Phone Condition: Mute off; Backlight off; Max Contrast
- 2.Test Signal: IEEE Std 269 uncompressed real male speech
- 3.Hearing Aid Mode was set according to the following menu path: (Phone Call Settings>Accessibility>Hearing aids) was set to ON for HAC compliance.
- 4.Bluetooth and WIFI were disabled while testing 3G/4G/5G modes.
- 5.WD was evaluated with one volume notch down from MAX volume setting for HAC compliance.
- 6.The FCC Margin from Limit column indicates a margin from the FCC limit for compliance

7.1.1 LTE Test Results

Volume Control Test Results					Conversational Gain Performance					Distortion and Noise Performance				Frequency Response Performance		Plots Num.
Air Interface	Radio Configuration	Channel	Mounting Force (N)	Audio Codec (Kbps)	Meas. dB SPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	Minimum PN- SDNR (dB)	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	Free Field (FF)	Pass/ Fail	
Band2	20M/QPSK/1RB/0	18900	2	EVS-NB 5.9	80.75	10.75	≥6	4.75	Pass	26.62	≥20	6.62	Pass	0.96	Pass	1#
Band2	20M/QPSK/1RB/0	18900	2	EVS-WB 24.4	81.07	11.07	≥6	5.07	Pass	29.82	≥20	9.82	Pass	0.39	Pass	/
Band2	20M/QPSK/1RB/0	18900	8	EVS-NB 5.9	85.80	15.80	≥6	9.80	Pass	26.64	≥20	6.64	Pass	0.59	Pass	/
Band2	20M/QPSK/1RB/0	18900	8	EVS-WB 24.4	84.52	14.52	≥6	8.52	Pass	25.65	≥20	5.65	Pass	0.92	Pass	2#
Band4	20M/QPSK/1RB/0	20175	2	EVS-NB 5.9	80.40	10.40	≥6	4.40	Pass	21.75	≥20	1.75	Pass	0.90	Pass	3#
Band4	20M/QPSK/1RB/0	20175	2	EVS-WB 24.4	81.07	11.07	≥6	5.07	Pass	30.91	≥20	10.91	Pass	0.49	Pass	/
Band4	20M/QPSK/1RB/0	20175	8	EVS-NB 5.9	85.79	15.79	≥6	9.79	Pass	25.73	≥20	5.73	Pass	0.52	Pass	/
Band4	20M/QPSK/1RB/0	20175	8	EVS-WB 24.4	84.93	14.93	≥6	8.93	Pass	31.89	≥20	11.89	Pass	0.83	Pass	4#
Band5	10M/QPSK/1RB/0	20525	2	EVS-NB 5.9	80.75	10.75	≥6	4.75	Pass	26.84	≥20	6.84	Pass	1.08	Pass	5#
Band5	10M/QPSK/1RB/0	20525	2	EVS-WB 24.4	80.83	10.83	≥6	4.83	Pass	31.98	≥20	11.98	Pass	0.45	Pass	/
Band5	10M/QPSK/1RB/0	20525	8	EVS-NB 5.9	85.72	15.72	≥6	9.72	Pass	27.07	≥20	7.07	Pass	0.46	Pass	/
Band5	10M/QPSK/1RB/0	20525	8	EVS-WB 24.4	84.83	14.83	≥6	8.83	Pass	31.46	≥20	11.46	Pass	0.76	Pass	6#
Band7	20M/QPSK/1RB/0	21100	2	EVS-NB 5.9	80.49	10.49	≥6	4.49	Pass	27.21	≥20	7.21	Pass	1.37	Pass	7#
Band7	20M/QPSK/1RB/0	21100	2	EVS-WB 24.4	80.74	10.74	≥6	4.74	Pass	31.70	≥20	11.70	Pass	0.49	Pass	/
Band7	20M/QPSK/1RB/0	21100	8	EVS-NB 5.9	85.56	15.56	≥6	9.56	Pass	21.99	≥20	1.99	Pass	0.44	Pass	/
Band7	20M/QPSK/1RB/0	21100	8	EVS-WB 24.4	84.72	14.72	≥6	8.72	Pass	22.60	≥20	2.60	Pass	0.75	Pass	8#
Band12	10M/QPSK/1RB/0	23095	2	EVS-NB 5.9	80.54	10.54	≥6	4.54	Pass	27.32	≥20	7.32	Pass	1.25	Pass	9#
Band12	10M/QPSK/1RB/0	23095	2	EVS-WB 24.4	80.83	10.83	≥6	4.83	Pass	32.00	≥20	12.00	Pass	0.53	Pass	/
Band12	10M/QPSK/1RB/0	23095	8	EVS-NB 5.9	85.64	15.64	≥6	9.64	Pass	21.76	≥20	1.76	Pass	0.43	Pass	/

Band12	10M/QPSK/1RB/0	23095	8	EVS-WB 24.4	85.07	15.07	≥6	9.07	Pass	31.93	≥20	11.93	Pass	0.81	Pass	10#
Band14	10M/QPSK/1RB/0	23330	2	EVS-NB 5.9	80.68	10.68	≥6	4.68	Pass	30.58	≥20	10.58	Pass	0.98	Pass	11#
Band14	10M/QPSK/1RB/0	23330	2	EVS-WB 24.4	81.06	11.06	≥6	5.06	Pass	31.99	≥20	11.99	Pass	0.50	Pass	/
Band14	10M/QPSK/1RB/0	23330	8	EVS-NB 5.9	85.64	15.64	≥6	9.64	Pass	28.46	≥20	8.46	Pass	0.55	Pass	/
Band14	10M/QPSK/1RB/0	23330	8	EVS-WB 24.4	84.93	14.93	≥6	8.93	Pass	31.62	≥20	11.62	Pass	0.88	Pass	12#
Band30	10M/QPSK/1RB/0	27710	2	EVS-NB 5.9	80.56	10.56	≥6	4.56	Pass	26.50	≥20	6.50	Pass	1.14	Pass	13#
Band30	10M/QPSK/1RB/0	27710	2	EVS-WB 24.4	81.01	11.01	≥6	5.01	Pass	31.95	≥20	11.95	Pass	0.80	Pass	/
Band30	10M/QPSK/1RB/0	27710	8	EVS-NB 5.9	85.60	15.60	≥6	9.60	Pass	24.30	≥20	4.30	Pass	0.49	Pass	/
Band30	10M/QPSK/1RB/0	27710	8	EVS-WB 24.4	84.89	14.89	≥6	8.89	Pass	31.58	≥20	11.58	Pass	1.07	Pass	14#
Band66	20M/QPSK/1RB/0	132322	2	EVS-NB 5.9	80.50	10.50	≥6	4.50	Pass	27.17	≥20	7.17	Pass	1.29	Pass	15#
Band66	20M/QPSK/1RB/0	132322	2	EVS-WB 24.4	80.95	10.95	≥6	4.95	Pass	31.86	≥20	11.86	Pass	0.79	Pass	/
Band66	20M/QPSK/1RB/0	132322	8	EVS-NB 5.9	85.65	15.65	≥6	9.65	Pass	26.50	≥20	6.50	Pass	0.54	Pass	/
Band66	20M/QPSK/1RB/0	132322	8	EVS-WB 24.4	85.13	15.13	≥6	9.13	Pass	31.83	≥20	11.83	Pass	0.92	Pass	16#

7.1.2 NR Test Results

Volume Control Test Results					Conversational Gain Performance					Distortion and Noise Performance				Frequency Response Performance		Plots Num.
Air Interface	Radio Configuration	Channel	Mounting Force (N)	Audio Codec (Kbps)	Meas. dB SPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	Minimum PN- SDNR (dB)	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	Free Field (FF)	Pass/ Fail	
n2	20M/DFT-s-OFDM/1RB/0	376000	2	EVS-NB 5.9	89.11	19.11	≥6	13.11	Pass	28.26	≥20	8.26	Pass	0.38	Pass	/
n2	20M/DFT-s-OFDM/1RB/0	376000	2	EVS-WB 24.4	86.48	16.48	≥6	10.48	Pass	27.11	≥20	7.11	Pass	1.45	Pass	17#
n2	20M/DFT-s-OFDM/1RB/0	376000	8	EVS-NB 5.9	92.90	22.90	≥6	16.90	Pass	27.28	≥20	7.28	Pass	0.38	Pass	/
n2	20M/DFT-s-OFDM/1RB/0	376000	8	EVS-WB 24.4	91.60	21.60	≥6	15.60	Pass	22.32	≥20	2.32	Pass	1.74	Pass	18#
n5	20M/DFT-s-OFDM/1RB/0	167300	2	EVS-NB 5.9	88.98	18.98	≥6	12.98	Pass	27.27	≥20	7.27	Pass	0.49	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	2	EVS-WB 24.4	86.84	16.84	≥6	10.84	Pass	20.94	≥20	0.94	Pass	1.38	Pass	19#
n5	20M/DFT-s-OFDM/1RB/0	167300	8	EVS-NB 5.9	92.83	22.83	≥6	16.83	Pass	26.37	≥20	6.37	Pass	0.23	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	8	EVS-WB 24.4	91.69	21.69	≥6	15.69	Pass	25.11	≥20	5.11	Pass	1.77	Pass	20#
n14	10M/DFT-s-OFDM/1RB/0	158600	2	EVS-NB 5.9	89.39	19.39	≥6	13.39	Pass	27.99	≥20	7.99	Pass	0.37	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	2	EVS-WB 24.4	86.45	16.45	≥6	10.45	Pass	26.19	≥20	6.19	Pass	1.42	Pass	21#
n14	10M/DFT-s-OFDM/1RB/0	158600	8	EVS-NB 5.9	92.88	22.88	≥6	16.88	Pass	27.00	≥20	7.00	Pass	0.22	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	8	EVS-WB 24.4	91.66	21.66	≥6	15.66	Pass	26.28	≥20	6.28	Pass	1.74	Pass	22#
n30	10M/DFT-s-OFDM/1RB/0	462000	2	EVS-NB 5.9	89.43	19.43	≥6	13.43	Pass	27.53	≥20	7.53	Pass	0.55	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	2	EVS-WB 24.4	86.51	16.51	≥6	10.51	Pass	26.07	≥20	6.07	Pass	1.51	Pass	23#
n30	10M/DFT-s-OFDM/1RB/0	462000	8	EVS-NB 5.9	92.92	22.92	≥6	16.92	Pass	27.13	≥20	7.13	Pass	0.44	Pass	/

n30	10M/DFT-s-OFDM/1RB/0	462000	8	EVS-WB 24.4	91.67	21.67	≥6	15.67	Pass	26.54	≥20	6.54	Pass	1.70	Pass	24#
n66	40M/DFT-s-OFDM/1RB/0	349000	2	EVS-NB 5.9	89.39	19.39	≥6	13.39	Pass	28.08	≥20	8.08	Pass	0.53	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	2	EVS-WB 24.4	86.49	16.49	≥6	10.49	Pass	25.99	≥20	5.99	Pass	1.57	Pass	25#
n66	40M/DFT-s-OFDM/1RB/0	349000	8	EVS-NB 5.9	92.86	22.86	≥6	16.86	Pass	28.31	≥20	8.31	Pass	0.34	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	8	EVS-WB 24.4	91.57	21.57	≥6	15.57	Pass	23.28	≥20	3.28	Pass	1.72	Pass	26#
n70	15M/DFT-s-OFDM/1RB/0	340500	2	EVS-NB 5.9	87.03	17.03	≥6	11.03	Pass	31.09	≥20	11.09	Pass	1.59	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	340500	2	EVS-WB 24.4	86.09	16.09	≥6	10.09	Pass	25.87	≥20	5.87	Pass	1.77	Pass	27#
n70	15M/DFT-s-OFDM/1RB/0	340500	8	EVS-NB 5.9	92.91	22.91	≥6	16.91	Pass	27.07	≥20	7.07	Pass	0.24	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	340500	8	EVS-WB 24.4	91.84	21.84	≥6	15.84	Pass	25.49	≥20	5.49	Pass	1.22	Pass	28#
n71	20M/DFT-s-OFDM/1RB/0	136100	2	EVS-NB 5.9	89.59	19.59	≥6	13.59	Pass	27.84	≥20	7.84	Pass	0.42	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	2	EVS-WB 24.4	86.53	16.53	≥6	10.53	Pass	25.91	≥20	5.91	Pass	1.52	Pass	29#
n71	20M/DFT-s-OFDM/1RB/0	136100	8	EVS-NB 5.9	92.76	22.76	≥6	16.76	Pass	27.28	≥20	7.28	Pass	0.28	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	8	EVS-WB 24.4	91.56	21.56	≥6	15.56	Pass	25.17	≥20	5.17	Pass	1.72	Pass	30#
n77	100M/DFT-s-OFDM/1RB/0	633334	2	EVS-NB 5.9	87.21	17.21	≥6	11.21	Pass	28.02	≥20	8.02	Pass	1.38	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	2	EVS-WB 24.4	86.80	16.80	≥6	10.80	Pass	25.23	≥20	5.23	Pass	1.50	Pass	31#
n77	100M/DFT-s-OFDM/1RB/0	633334	8	EVS-NB 5.9	91.89	21.89	≥6	15.89	Pass	27.87	≥20	7.87	Pass	0.65	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	8	EVS-WB 24.4	91.62	21.62	≥6	15.62	Pass	23.91	≥20	3.91	Pass	1.75	Pass	32#

7.1.3 WIFI Test Results

Volume Control Test Results					Conversational Gain Performance					Distortion and Noise Performance				Frequency Response Performance		Plots Num.
Air Interface	Radio Configuration	Channel	Mounting Force (N)	Audio Codec (Kbps)	Meas. dB SPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	Minimum PN- SDNR (dB)	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	Free Field (FF)	Pass/ Fail	
2.4G WLAN	802.11b 1Mbps	6	2	EVS- NB 5.9	85.40	15.40	≥6	9.40	Pass	26.58	≥20	6.58	Pass	0.99	Pass	/
2.4G WLAN	802.11b 1Mbps	6	2	EVS- WB 24.4	83.99	13.99	≥6	7.99	Pass	24.75	≥20	4.75	Pass	0.88	Pass	33#
2.4G WLAN	802.11b 1Mbps	6	8	EVS- NB 5.9	88.63	18.63	≥6	12.63	Pass	22.92	≥20	2.92	Pass	0.66	Pass	34#
2.4G WLAN	802.11b 1Mbps	6	8	EVS- WB 24.4	88.95	18.95	≥6	12.95	Pass	27.72	≥20	7.72	Pass	0.99	Pass	/
5.2G WLAN	802.11a 6Mbps	44	2	EVS- NB 5.9	87.03	17.03	≥6	11.03	Pass	27.27	≥20	7.27	Pass	0.37	Pass	/
5.2G WLAN	802.11a 6Mbps	44	2	EVS- WB 24.4	85.36	15.36	≥6	9.36	Pass	22.03	≥20	2.03	Pass	1.11	Pass	35#
5.2G WLAN	802.11a 6Mbps	44	8	EVS- NB 5.9	92.09	22.09	≥6	16.09	Pass	29.13	≥20	9.13	Pass	0.72	Pass	/
5.2G WLAN	802.11a 6Mbps	44	8	EVS- WB 24.4	90.08	20.08	≥6	14.08	Pass	26.81	≥20	6.81	Pass	1.46	Pass	36#
5.3G WLAN	802.11a 6Mbps	60	2	EVS- NB 5.9	87.32	17.32	≥6	11.32	Pass	28.00	≥20	8.00	Pass	0.62	Pass	/
5.3G WLAN	802.11a 6Mbps	60	2	EVS- WB 24.4	85.25	15.25	≥6	9.25	Pass	30.88	≥20	10.88	Pass	1.10	Pass	37#
5.3G WLAN	802.11a 6Mbps	60	8	EVS- NB 5.9	91.80	21.80	≥6	15.80	Pass	26.49	≥20	6.49	Pass	0.64	Pass	/
5.3G WLAN	802.11a 6Mbps	60	8	EVS- WB 24.4	89.73	19.73	≥6	13.73	Pass	30.63	≥20	10.63	Pass	1.47	Pass	38#
5.6G WLAN	802.11a 6Mbps	116	2	EVS- NB 5.9	87.41	17.41	≥6	11.41	Pass	30.25	≥20	10.25	Pass	0.66	Pass	/
5.6G WLAN	802.11a 6Mbps	116	2	EVS- WB 24.4	85.30	15.30	≥6	9.30	Pass	31.20	≥20	11.20	Pass	1.15	Pass	39#
5.6G WLAN	802.11a 6Mbps	116	8	EVS- NB 5.9	92.06	22.06	≥6	16.06	Pass	28.58	≥20	8.58	Pass	0.79	Pass	/

5.6G WLAN	802.11a 6Mbps	116	8	EVS- WB 24.4	90.18	20.18	≥6	14.18	Pass	28.89	≥20	8.89	Pass	1.50	Pass	40#
5.8G WLAN	802.11a 6Mbps	157	2	EVS- NB 5.9	87.34	17.34	≥6	11.34	Pass	29.53	≥20	9.53	Pass	0.66	Pass	/
5.8G WLAN	802.11a 6Mbps	157	2	EVS- WB 24.4	85.32	15.32	≥6	9.32	Pass	30.53	≥20	10.53	Pass	0.99	Pass	41#
5.8G WLAN	802.11a 6Mbps	157	8	EVS- NB 5.9	92.21	22.21	≥6	16.21	Pass	28.77	≥20	8.77	Pass	0.67	Pass	/
5.8G WLAN	802.11a 6Mbps	157	8	EVS- WB 24.4	89.03	19.03	≥6	13.03	Pass	22.72	≥20	2.72	Pass	1.43	Pass	42#

7.2 Test Results for KDB 285076 D05 2.b

7.2.1 WCDMA Test Results

Volume Control Test Results					Conversational Gain Performance					Plots Num.
Air Interface	Radio Configuration	Channel	Audio Codec (Kbps)	Moutig Force (N)	Meas. dB SPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	
Band2	Voice	9400	AMR NB 4.75kbps	2	86.83	16.83	≥6	10.83	Pass	/
Band2	Voice	9400	AMR NB 12.2kbps	2	87.78	17.78	≥6	11.78	Pass	/
Band2	Voice	9400	AMR WB 6.60kbps	2	85.93	15.93	≥6	9.93	Pass	43#
Band2	Voice	9400	AMR WB 23.85kbps	2	86.63	16.63	≥6	10.63	Pass	/
Band2	Voice	9400	AMR NB 4.75kbps	8	89.22	19.22	≥6	13.22	Pass	/
Band2	Voice	9400	AMR NB 12.2kbps	8	89.95	19.95	≥6	13.95	Pass	44#
Band2	Voice	9400	AMR WB 6.60kbps	8	88.52	18.52	≥6	12.52	Pass	/
Band2	Voice	9400	AMR WB 23.85kbps	8	89.00	19.00	≥6	13.00	Pass	/
Band4	Voice	1413	AMR NB 4.75kbps	2	86.27	16.27	≥6	10.27	Pass	/
Band4	Voice	1413	AMR NB 12.2kbps	2	87.80	17.80	≥6	11.80	Pass	/
Band4	Voice	1413	AMR WB 6.60kbps	2	85.98	15.98	≥6	9.98	Pass	45#
Band4	Voice	1413	AMR WB 23.85kbps	2	86.79	16.79	≥6	10.79	Pass	/
Band4	Voice	1413	AMR NB 4.75kbps	8	89.21	19.21	≥6	13.21	Pass	/
Band4	Voice	1413	AMR NB 12.2kbps	8	90.13	20.13	≥6	14.13	Pass	/
Band4	Voice	1413	AMR WB 6.60kbps	8	88.07	18.07	≥6	12.07	Pass	/
Band4	Voice	1413	AMR WB 23.85kbps	8	87.98	17.98	≥6	11.98	Pass	46#
Band5	Voice	4182	AMR NB 4.75kbps	2	87.20	17.20	≥6	11.20	Pass	/
Band5	Voice	4182	AMR NB 12.2kbps	2	87.98	17.98	≥6	11.98	Pass	/
Band5	Voice	4182	AMR WB 6.60kbps	2	86.07	16.07	≥6	10.07	Pass	47#
Band5	Voice	4182	AMR WB 23.85kbps	2	86.83	16.83	≥6	10.83	Pass	/
Band5	Voice	4182	AMR NB 4.75kbps	8	89.04	19.04	≥6	13.04	Pass	48#
Band5	Voice	4182	AMR NB 12.2kbps	8	89.99	19.99	≥6	13.99	Pass	/
Band5	Voice	4182	AMR WB 6.60kbps	8	88.18	18.18	≥6	12.18	Pass	/
Band5	Voice	4182	AMR WB 23.85kbps	8	88.92	18.92	≥6	12.92	Pass	/

7.2.2 LTE Test Results

Volume Control Test Results					Conversational Gain Performance					Plots Num.
Air Interface	Radio Configuration	Channel	Audio Codec (Kbps)	Moutig Force (N)	Meas. dB SPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	
Band2	20M/QPSK/1RB/0	18900	AMR NB 4.75kbps	2	86.93	16.93	≥6	10.93	Pass	/
Band2	20M/QPSK/1RB/0	18900	AMR NB 12.2kbps	2	87.57	17.57	≥6	11.57	Pass	/
Band2	20M/QPSK/1RB/0	18900	AMR WB 6.60kbps	2	85.97	15.97	≥6	9.97	Pass	/
Band2	20M/QPSK/1RB/0	18900	AMR WB 23.85kbps	2	86.61	16.61	≥6	10.61	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS NB 5.9kbps	2	86.92	16.92	≥6	10.92	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS NB 24.4kbps	2	87.65	17.65	≥6	11.65	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS WB 5.9kbps	2	85.82	15.82	≥6	9.82	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS WB 24.4kbps	2	86.74	16.74	≥6	10.74	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS SWB 9.6kbps	2	85.14	15.14	≥6	9.14	Pass	49#
Band2	20M/QPSK/1RB/0	18900	EVS SWB 24.4kbps	2	86.00	16.00	≥6	10.00	Pass	/
Band2	20M/QPSK/1RB/0	18900	AMR NB 4.75kbps	8	89.08	19.08	≥6	13.08	Pass	/
Band2	20M/QPSK/1RB/0	18900	AMR NB 12.2kbps	8	89.90	19.90	≥6	13.90	Pass	/
Band2	20M/QPSK/1RB/0	18900	AMR WB 6.60kbps	8	88.23	18.23	≥6	12.23	Pass	/
Band2	20M/QPSK/1RB/0	18900	AMR WB 23.85kbps	8	88.90	18.90	≥6	12.90	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS NB 5.9kbps	8	89.34	19.34	≥6	13.34	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS NB 24.4kbps	8	89.92	19.92	≥6	13.92	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS WB 5.9kbps	8	88.19	18.19	≥6	12.19	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS WB 24.4kbps	8	89.17	19.17	≥6	13.17	Pass	/
Band2	20M/QPSK/1RB/0	18900	EVS SWB 9.6kbps	8	87.20	17.20	≥6	11.20	Pass	50#
Band2	20M/QPSK/1RB/0	18900	EVS SWB 24.4kbps	8	88.08	18.08	≥6	12.08	Pass	/
Band4	20M/QPSK/1RB/0	20175	AMR NB 4.75kbps	2	87.31	17.31	≥6	11.31	Pass	/
Band4	20M/QPSK/1RB/0	20175	AMR NB 12.2kbps	2	88.09	18.09	≥6	12.09	Pass	/
Band4	20M/QPSK/1RB/0	20175	AMR WB 6.60kbps	2	86.31	16.31	≥6	10.31	Pass	/

Band4	20M/QPSK/1RB/0	20175	AMR WB 23.85kbps	2	86.74	16.74	≥6	10.74	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS NB 5.9kbps	2	87.31	17.31	≥6	11.31	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS NB 24.4kbps	2	87.98	17.98	≥6	11.98	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS WB 5.9kbps	2	86.05	16.05	≥6	10.05	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS WB 24.4kbps	2	87.16	17.16	≥6	11.16	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS SWB 9.6kbps	2	85.26	15.26	≥6	9.26	Pass	51#
Band4	20M/QPSK/1RB/0	20175	EVS SWB 24.4kbps	2	86.51	16.51	≥6	10.51	Pass	/
Band4	20M/QPSK/1RB/0	20175	AMR NB 4.75kbps	8	87.83	17.83	≥6	11.83	Pass	/
Band4	20M/QPSK/1RB/0	20175	AMR NB 12.2kbps	8	88.59	18.59	≥6	12.59	Pass	/
Band4	20M/QPSK/1RB/0	20175	AMR WB 6.60kbps	8	86.83	16.83	≥6	10.83	Pass	/
Band4	20M/QPSK/1RB/0	20175	AMR WB 23.85kbps	8	87.62	17.62	≥6	11.62	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS NB 5.9kbps	8	87.85	17.85	≥6	11.85	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS NB 24.4kbps	8	88.59	18.59	≥6	12.59	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS WB 5.9kbps	8	86.52	16.52	≥6	10.52	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS WB 24.4kbps	8	87.89	17.89	≥6	11.89	Pass	/
Band4	20M/QPSK/1RB/0	20175	EVS SWB 9.6kbps	8	86.13	16.13	≥6	10.13	Pass	52#
Band4	20M/QPSK/1RB/0	20175	EVS SWB 24.4kbps	8	87.10	17.10	≥6	11.10	Pass	/
Band5	10M/QPSK/1RB/0	20525	AMR NB 4.75kbps	2	86.96	16.96	≥6	10.96	Pass	/
Band5	10M/QPSK/1RB/0	20525	AMR NB 12.2kbps	2	87.90	17.90	≥6	11.90	Pass	/
Band5	10M/QPSK/1RB/0	20525	AMR WB 6.60kbps	2	87.16	17.16	≥6	11.16	Pass	/
Band5	10M/QPSK/1RB/0	20525	AMR WB 23.85kbps	2	86.83	16.83	≥6	10.83	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS NB 5.9kbps	2	87.06	17.06	≥6	11.06	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS NB 24.4kbps	2	87.87	17.87	≥6	11.87	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS WB 5.9kbps	2	85.82	15.82	≥6	9.82	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS WB 24.4kbps	2	87.40	17.40	≥6	11.40	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS SWB 9.6kbps	2	85.33	15.33	≥6	9.33	Pass	53#
Band5	10M/QPSK/1RB/0	20525	EVS SWB 24.4kbps	2	86.20	16.20	≥6	10.20	Pass	/
Band5	10M/QPSK/1RB/0	20525	AMR NB 4.75kbps	8	87.89	17.89	≥6	11.89	Pass	/

Band5	10M/QPSK/1RB/0	20525	AMR NB 12.2kbps	8	88.63	18.63	≥6	12.63	Pass	/
Band5	10M/QPSK/1RB/0	20525	AMR WB 6.60kbps	8	86.87	16.87	≥6	10.87	Pass	/
Band5	10M/QPSK/1RB/0	20525	AMR WB 23.85kbps	8	87.30	17.30	≥6	11.30	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS NB 5.9kbps	8	88.02	18.02	≥6	12.02	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS NB 24.4kbps	8	88.63	18.63	≥6	12.63	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS WB 5.9kbps	8	86.71	16.71	≥6	10.71	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS WB 24.4kbps	8	88.07	18.07	≥6	12.07	Pass	/
Band5	10M/QPSK/1RB/0	20525	EVS SWB 9.6kbps	8	85.86	15.86	≥6	9.86	Pass	54#
Band5	10M/QPSK/1RB/0	20525	EVS SWB 24.4kbps	8	87.37	17.37	≥6	11.37	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR NB 4.75kbps	2	87.04	17.04	≥6	11.04	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR NB 12.2kbps	2	88.02	18.02	≥6	12.02	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR WB 6.60kbps	2	86.32	16.32	≥6	10.32	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR WB 23.85kbps	2	86.90	16.90	≥6	10.90	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS NB 5.9kbps	2	87.30	17.30	≥6	11.30	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS NB 24.4kbps	2	87.88	17.88	≥6	11.88	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS WB 5.9kbps	2	86.03	16.03	≥6	10.03	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS WB 24.4kbps	2	87.17	17.17	≥6	11.17	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS SWB 9.6kbps	2	85.19	15.19	≥6	9.19	Pass	55#
Band7	20M/QPSK/1RB/0	21100	EVS SWB 24.4kbps	2	86.35	16.35	≥6	10.35	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR NB 4.75kbps	8	87.87	17.87	≥6	11.87	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR NB 12.2kbps	8	88.73	18.73	≥6	12.73	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR WB 6.60kbps	8	86.84	16.84	≥6	10.84	Pass	/
Band7	20M/QPSK/1RB/0	21100	AMR WB 23.85kbps	8	87.41	17.41	≥6	11.41	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS NB 5.9kbps	8	87.99	17.99	≥6	11.99	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS NB 24.4kbps	8	88.41	18.41	≥6	12.41	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS WB 5.9kbps	8	86.67	16.67	≥6	10.67	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS WB 24.4kbps	8	87.79	17.79	≥6	11.79	Pass	/
Band7	20M/QPSK/1RB/0	21100	EVS SWB 9.6kbps	8	86.24	16.24	≥6	10.24	Pass	56#

Band7	20M/QPSK/1RB/0	21100	EVS SWB 24.4kbps	8	86.83	16.83	≥6	10.83	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR NB 4.75kbps	2	86.23	16.23	≥6	10.23	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR NB 12.2kbps	2	87.03	17.03	≥6	11.03	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR WB 6.60kbps	2	85.42	15.42	≥6	9.42	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR WB 23.85kbps	2	85.99	15.99	≥6	9.99	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS NB 5.9kbps	2	86.29	16.29	≥6	10.29	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS NB 24.4kbps	2	86.88	16.88	≥6	10.88	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS WB 5.9kbps	2	84.94	14.94	≥6	8.94	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS WB 24.4kbps	2	83.03	13.03	≥6	7.03	Pass	57#
Band12	10M/QPSK/1RB/0	23095	EVS SWB 9.6kbps	2	84.82	14.82	≥6	8.82	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS SWB 24.4kbps	2	85.40	15.40	≥6	9.40	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR NB 4.75kbps	8	90.53	20.53	≥6	14.53	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR NB 12.2kbps	8	91.29	21.29	≥6	15.29	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR WB 6.60kbps	8	89.78	19.78	≥6	13.78	Pass	/
Band12	10M/QPSK/1RB/0	23095	AMR WB 23.85kbps	8	90.34	20.34	≥6	14.34	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS NB 5.9kbps	8	90.82	20.82	≥6	14.82	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS NB 24.4kbps	8	91.28	21.28	≥6	15.28	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS WB 5.9kbps	8	89.59	19.59	≥6	13.59	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS WB 24.4kbps	8	90.67	20.67	≥6	14.67	Pass	/
Band12	10M/QPSK/1RB/0	23095	EVS SWB 9.6kbps	8	89.27	19.27	≥6	13.27	Pass	58#
Band12	10M/QPSK/1RB/0	23095	EVS SWB 24.4kbps	8	90.14	20.14	≥6	14.14	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR NB 4.75kbps	2	86.40	16.40	≥6	10.40	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR NB 12.2kbps	2	87.23	17.23	≥6	11.23	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR WB 6.60kbps	2	85.81	15.81	≥6	9.81	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR WB 23.85kbps	2	86.28	16.28	≥6	10.28	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS NB 5.9kbps	2	86.69	16.69	≥6	10.69	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS NB 24.4kbps	2	87.23	17.23	≥6	11.23	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS WB 5.9kbps	2	85.31	15.31	≥6	9.31	Pass	/

Band14	10M/QPSK/1RB/0	23330	EVS WB 24.4kbps	2	86.39	16.39	≥6	10.39	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS SWB 9.6kbps	2	85.04	15.04	≥6	9.04	Pass	59#
Band14	10M/QPSK/1RB/0	23330	EVS SWB 24.4kbps	2	85.89	15.89	≥6	9.89	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR NB 4.75kbps	8	90.60	20.60	≥6	14.60	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR NB 12.2kbps	8	91.27	21.27	≥6	15.27	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR WB 6.60kbps	8	89.67	19.67	≥6	13.67	Pass	/
Band14	10M/QPSK/1RB/0	23330	AMR WB 23.85kbps	8	90.30	20.30	≥6	14.30	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS NB 5.9kbps	8	90.78	20.78	≥6	14.78	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS NB 24.4kbps	8	91.22	21.22	≥6	15.22	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS WB 5.9kbps	8	89.56	19.56	≥6	13.56	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS WB 24.4kbps	8	90.51	20.51	≥6	14.51	Pass	/
Band14	10M/QPSK/1RB/0	23330	EVS SWB 9.6kbps	8	88.74	18.74	≥6	12.74	Pass	60#
Band14	10M/QPSK/1RB/0	23330	EVS SWB 24.4kbps	8	90.07	20.07	≥6	14.07	Pass	/
Band30	10M/QPSK/1RB/0	27710	AMR NB 4.75kbps	2	86.37	16.37	≥6	10.37	Pass	/
Band30	10M/QPSK/1RB/0	27710	AMR NB 12.2kbps	2	87.17	17.17	≥6	11.17	Pass	/
Band30	10M/QPSK/1RB/0	27710	AMR WB 6.60kbps	2	85.90	15.90	≥6	9.90	Pass	/
Band30	10M/QPSK/1RB/0	27710	AMR WB 23.85kbps	2	86.20	16.20	≥6	10.20	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS NB 5.9kbps	2	86.56	16.56	≥6	10.56	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS NB 24.4kbps	2	87.00	17.00	≥6	11.00	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS WB 5.9kbps	2	85.27	15.27	≥6	9.27	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS WB 24.4kbps	2	86.27	16.27	≥6	10.27	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS SWB 9.6kbps	2	84.93	14.93	≥6	8.93	Pass	61#
Band30	10M/QPSK/1RB/0	27710	EVS SWB 24.4kbps	2	85.62	15.62	≥6	9.62	Pass	/
Band30	10M/QPSK/1RB/0	27710	AMR NB 4.75kbps	8	90.52	20.52	≥6	14.52	Pass	/
Band30	10M/QPSK/1RB/0	27710	AMR NB 12.2kbps	8	91.20	21.20	≥6	15.20	Pass	/
Band30	10M/QPSK/1RB/0	27710	AMR WB 6.60kbps	8	89.53	19.53	≥6	13.53	Pass	/

Band30	10M/QPSK/1RB/0	27710	AMR WB 23.85kbps	8	90.24	20.24	≥6	14.24	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS NB 5.9kbps	8	90.28	20.28	≥6	14.28	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS NB 24.4kbps	8	91.15	21.15	≥6	15.15	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS WB 5.9kbps	8	89.55	19.55	≥6	13.55	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS WB 24.4kbps	8	90.52	20.52	≥6	14.52	Pass	/
Band30	10M/QPSK/1RB/0	27710	EVS SWB 9.6kbps	8	88.91	18.91	≥6	12.91	Pass	62#
Band30	10M/QPSK/1RB/0	27710	EVS SWB 24.4kbps	8	90.07	20.07	≥6	14.07	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR NB 4.75kbps	2	86.33	16.33	≥6	10.33	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR NB 12.2kbps	2	87.23	17.23	≥6	11.23	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR WB 6.60kbps	2	85.72	15.72	≥6	9.72	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR WB 23.85kbps	2	86.21	16.21	≥6	10.21	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS NB 5.9kbps	2	86.71	16.71	≥6	10.71	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS NB 24.4kbps	2	87.17	17.17	≥6	11.17	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS WB 5.9kbps	2	85.16	15.16	≥6	9.16	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS WB 24.4kbps	2	86.58	16.58	≥6	10.58	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS SWB 9.6kbps	2	85.03	15.03	≥6	9.03	Pass	63#
Band66	20M/QPSK/1RB/0	132322	EVS SWB 24.4kbps	2	85.67	15.67	≥6	9.67	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR NB 4.75kbps	8	90.42	20.42	≥6	14.42	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR NB 12.2kbps	8	91.22	21.22	≥6	15.22	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR WB 6.60kbps	8	89.76	19.76	≥6	13.76	Pass	/
Band66	20M/QPSK/1RB/0	132322	AMR WB 23.85kbps	8	90.24	20.24	≥6	14.24	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS NB 5.9kbps	8	90.69	20.69	≥6	14.69	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS NB 24.4kbps	8	91.13	21.13	≥6	15.13	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS WB 5.9kbps	8	89.27	19.27	≥6	13.27	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS WB 24.4kbps	8	90.47	20.47	≥6	14.47	Pass	/
Band66	20M/QPSK/1RB/0	132322	EVS SWB 9.6kbps	8	89.03	19.03	≥6	13.03	Pass	64#
Band66	20M/QPSK/1RB/0	132322	EVS SWB 24.4kbps	8	90.07	20.07	≥6	14.07	Pass	/

7.2.3 NR Test Results

Volume Control Test Results					Conversational Gain Performance					Plots Num.
Air Interface	Radio Configuration	Channel	Audio Codec (Kbps)	Moutig Force (N)	Meas. dB SPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR NB 4.75kbps	2	88.84	18.84	≥6	12.84	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR NB 12.2kbps	2	89.42	19.42	≥6	13.42	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR WB 6.60kbps	2	87.97	17.97	≥6	11.97	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR WB 23.85kbps	2	88.48	18.48	≥6	12.48	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS NB 5.9kbps	2	88.87	18.87	≥6	12.87	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS NB 24.4kbps	2	89.35	19.35	≥6	13.35	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS WB 5.9kbps	2	88.02	18.02	≥6	12.02	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS WB 24.4kbps	2	86.54	16.54	≥6	10.54	Pass	65#
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS SWB 9.6kbps	2	89.99	19.99	≥6	13.99	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS SWB 24.4kbps	2	88.28	18.28	≥6	12.28	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR NB 4.75kbps	8	92.29	22.29	≥6	16.29	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR NB 12.2kbps	8	93.11	23.11	≥6	17.11	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR WB 6.60kbps	8	91.65	21.65	≥6	15.65	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	AMR WB 23.85kbps	8	92.12	22.12	≥6	16.12	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS NB 5.9kbps	8	92.53	22.53	≥6	16.53	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS NB 24.4kbps	8	92.81	22.81	≥6	16.81	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS WB 5.9kbps	8	91.47	21.47	≥6	15.47	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS WB 24.4kbps	8	90.86	20.86	≥6	14.86	Pass	66#
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS SWB 9.6kbps	8	93.37	23.37	≥6	17.37	Pass	/
n2	40M/DFT-s-OFDM/1RB/0	376000	EVS SWB 24.4kbps	8	92.75	22.75	≥6	16.75	Pass	/

n5	20M/DFT-s-OFDM/1RB/0	167300	AMR NB 4.75kbps	2	88.66	18.66	≥6	12.66	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	AMR NB 12.2kbps	2	89.48	19.48	≥6	13.48	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	AMR WB 6.60kbps	2	87.74	17.74	≥6	11.74	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	AMR WB 23.85kbps	2	88.47	18.47	≥6	12.47	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS NB 5.9kbps	2	88.87	18.87	≥6	12.87	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS NB 24.4kbps	2	89.22	19.22	≥6	13.22	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS WB 5.9kbps	2	87.70	17.70	≥6	11.70	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS WB 24.4kbps	2	86.32	16.32	≥6	10.32	Pass	67#
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS SWB 9.6kbps	2	89.87	19.87	≥6	13.87	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS SWB 24.4kbps	2	88.50	18.50	≥6	12.50	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	AMR NB 4.75kbps	8	92.35	22.35	≥6	16.35	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	AMR NB 12.2kbps	8	93.06	23.06	≥6	17.06	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	AMR WB 6.60kbps	8	91.65	21.65	≥6	15.65	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	AMR WB 23.85kbps	8	92.03	22.03	≥6	16.03	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS NB 5.9kbps	8	92.49	22.49	≥6	16.49	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS NB 24.4kbps	8	92.81	22.81	≥6	16.81	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS WB 5.9kbps	8	91.50	21.50	≥6	15.50	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS WB 24.4kbps	8	90.55	20.55	≥6	14.55	Pass	68#
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS SWB 9.6kbps	8	96.39	26.39	≥6	20.39	Pass	/
n5	20M/DFT-s-OFDM/1RB/0	167300	EVS SWB 24.4kbps	8	92.58	22.58	≥6	16.58	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	AMR NB 4.75kbps	2	88.83	18.83	≥6	12.83	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	AMR NB 12.2kbps	2	89.43	19.43	≥6	13.43	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	AMR WB 6.60kbps	2	89.61	19.61	≥6	13.61	Pass	/

n14	10M/DFT-s-OFDM/1RB/0	158600	AMR WB 23.85kbps	2	89.56	19.56	≥6	13.56	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS NB 5.9kbps	2	87.87	17.87	≥6	11.87	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS NB 24.4kbps	2	88.95	18.95	≥6	12.95	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS WB 5.9kbps	2	87.41	17.41	≥6	11.41	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS WB 24.4kbps	2	86.25	16.25	≥6	10.25	Pass	69#
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS SWB 9.6kbps	2	89.64	19.64	≥6	13.64	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS SWB 24.4kbps	2	88.49	18.49	≥6	12.49	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	AMR NB 4.75kbps	8	92.15	22.15	≥6	16.15	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	AMR NB 12.2kbps	8	93.03	23.03	≥6	17.03	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	AMR WB 6.60kbps	8	91.54	21.54	≥6	15.54	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	AMR WB 23.85kbps	8	92.18	22.18	≥6	16.18	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS NB 5.9kbps	8	92.32	22.32	≥6	16.32	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS NB 24.4kbps	8	92.84	22.84	≥6	16.84	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS WB 5.9kbps	8	91.61	21.61	≥6	15.61	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS WB 24.4kbps	8	90.82	20.82	≥6	14.82	Pass	70#
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS SWB 9.6kbps	8	93.23	23.23	≥6	17.23	Pass	/
n14	10M/DFT-s-OFDM/1RB/0	158600	EVS SWB 24.4kbps	8	92.74	22.74	≥6	16.74	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR NB 4.75kbps	2	88.28	18.28	≥6	12.28	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR NB 12.2kbps	2	89.18	19.18	≥6	13.18	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR WB 6.60kbps	2	87.67	17.67	≥6	11.67	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR WB 23.85kbps	2	88.16	18.16	≥6	12.16	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS NB 5.9kbps	2	88.40	18.40	≥6	12.40	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS NB 24.4kbps	2	88.94	18.94	≥6	12.94	Pass	/

n30	10M/DFT-s-OFDM/1RB/0	462000	EVS WB 5.9kbps	2	87.41	17.41	≥6	11.41	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS WB 24.4kbps	2	86.56	16.56	≥6	10.56	Pass	71#
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS SWB 9.6kbps	2	89.68	19.68	≥6	13.68	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS SWB 24.4kbps	2	88.47	18.47	≥6	12.47	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR NB 4.75kbps	8	92.34	22.34	≥6	16.34	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR NB 12.2kbps	8	93.06	23.06	≥6	17.06	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR WB 6.60kbps	8	92.09	22.09	≥6	16.09	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	AMR WB 23.85kbps	8	92.10	22.10	≥6	16.10	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS NB 5.9kbps	8	92.58	22.58	≥6	16.58	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS NB 24.4kbps	8	92.81	22.81	≥6	16.81	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS WB 5.9kbps	8	91.44	21.44	≥6	15.44	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS WB 24.4kbps	8	90.64	20.64	≥6	14.64	Pass	72#
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS SWB 9.6kbps	8	93.28	23.28	≥6	17.28	Pass	/
n30	10M/DFT-s-OFDM/1RB/0	462000	EVS SWB 24.4kbps	8	92.57	22.57	≥6	16.57	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR NB 4.75kbps	2	87.31	17.31	≥6	11.31	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR NB 12.2kbps	2	87.79	17.79	≥6	11.79	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR WB 6.60kbps	2	86.51	16.51	≥6	10.51	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR WB 23.85kbps	2	86.91	16.91	≥6	10.91	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS NB 5.9kbps	2	87.24	17.24	≥6	11.24	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS NB 24.4kbps	2	87.63	17.63	≥6	11.63	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS WB 5.9kbps	2	86.44	16.44	≥6	10.44	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS WB 24.4kbps	2	86.22	16.22	≥6	10.22	Pass	73#
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS SWB 9.6kbps	2	88.46	18.46	≥6	12.46	Pass	/

n66	40M/DFT-s-OFDM/1RB/0	349000	EVS SWB 24.4kbps	2	88.38	18.38	≥6	12.38	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR NB 4.75kbps	8	91.52	21.52	≥6	15.52	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR NB 12.2kbps	8	92.24	22.24	≥6	16.24	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR WB 6.60kbps	8	90.67	20.67	≥6	14.67	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	AMR WB 23.85kbps	8	91.35	21.35	≥6	15.35	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS NB 5.9kbps	8	91.65	21.65	≥6	15.65	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS NB 24.4kbps	8	92.01	22.01	≥6	16.01	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS WB 5.9kbps	8	90.94	20.94	≥6	14.94	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS WB 24.4kbps	8	90.57	20.57	≥6	14.57	Pass	74#
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS SWB 9.6kbps	8	92.77	22.77	≥6	16.77	Pass	/
n66	40M/DFT-s-OFDM/1RB/0	349000	EVS SWB 24.4kbps	8	92.59	22.59	≥6	16.59	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	AMR NB 4.75kbps	2	86.85	16.85	≥6	10.85	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	AMR NB 12.2kbps	2	87.55	17.55	≥6	11.55	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	AMR WB 6.60kbps	2	86.11	16.11	≥6	10.11	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	AMR WB 23.85kbps	2	86.67	16.67	≥6	10.67	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS NB 5.9kbps	2	87.04	17.04	≥6	11.04	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS NB 24.4kbps	2	87.28	17.28	≥6	11.28	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS WB 5.9kbps	2	85.90	15.90	≥6	9.90	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS WB 24.4kbps	2	86.44	16.44	≥6	10.44	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS SWB 9.6kbps	2	88.10	18.10	≥6	12.10	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS SWB 24.4kbps	2	85.87	15.87	≥6	9.87	Pass	75#
n70	15M/DFT-s-OFDM/1RB/0	349000	AMR NB 4.75kbps	8	93.01	23.01	≥6	17.01	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	AMR NB 12.2kbps	8	93.01	23.01	≥6	17.01	Pass	/

n70	15M/DFT-s-OFDM/1RB/0	349000	AMR WB 6.60kbps	8	91.76	21.76	≥6	15.76	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	AMR WB 23.85kbps	8	92.19	22.19	≥6	16.19	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS NB 5.9kbps	8	92.48	22.48	≥6	16.48	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS NB 24.4kbps	8	92.81	22.81	≥6	16.81	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS WB 5.9kbps	8	91.55	21.55	≥6	15.55	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS WB 24.4kbps	8	91.94	21.94	≥6	15.94	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS SWB 9.6kbps	8	93.58	23.58	≥6	17.58	Pass	/
n70	15M/DFT-s-OFDM/1RB/0	349000	EVS SWB 24.4kbps	8	91.42	21.42	≥6	15.42	Pass	76#
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR NB 4.75kbps	2	87.07	17.07	≥6	11.07	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR NB 12.2kbps	2	87.98	17.98	≥6	11.98	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR WB 6.60kbps	2	86.44	16.44	≥6	10.44	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR WB 23.85kbps	2	86.87	16.87	≥6	10.87	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS NB 5.9kbps	2	87.53	17.53	≥6	11.53	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS NB 24.4kbps	2	87.88	17.88	≥6	11.88	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS WB 5.9kbps	2	86.46	16.46	≥6	10.46	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS WB 24.4kbps	2	86.12	16.12	≥6	10.12	Pass	77#
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS SWB 9.6kbps	2	88.32	18.32	≥6	12.32	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS SWB 24.4kbps	2	88.43	18.43	≥6	12.43	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR NB 4.75kbps	8	91.39	21.39	≥6	15.39	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR NB 12.2kbps	8	92.14	22.14	≥6	16.14	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR WB 6.60kbps	8	91.44	21.44	≥6	15.44	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	AMR WB 23.85kbps	8	91.37	21.37	≥6	15.37	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS NB 5.9kbps	8	91.83	21.83	≥6	15.83	Pass	/

n71	20M/DFT-s-OFDM/1RB/0	136100	EVS NB 24.4kbps	8	92.02	22.02	≥6	16.02	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS WB 5.9kbps	8	90.84	20.84	≥6	14.84	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS WB 24.4kbps	8	90.72	20.72	≥6	14.72	Pass	78#
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS SWB 9.6kbps	8	92.71	22.71	≥6	16.71	Pass	/
n71	20M/DFT-s-OFDM/1RB/0	136100	EVS SWB 24.4kbps	8	92.63	22.63	≥6	16.63	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR NB 4.75kbps	2	86.92	16.92	≥6	10.92	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR NB 12.2kbps	2	87.80	17.80	≥6	11.80	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR WB 6.60kbps	2	86.55	16.55	≥6	10.55	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR WB 23.85kbps	2	86.83	16.83	≥6	10.83	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS NB 5.9kbps	2	87.21	17.21	≥6	11.21	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS NB 24.4kbps	2	87.62	17.62	≥6	11.62	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS WB 5.9kbps	2	86.31	16.31	≥6	10.31	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS WB 24.4kbps	2	86.07	16.07	≥6	10.07	Pass	79#
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS SWB 9.6kbps	2	88.42	18.42	≥6	12.42	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS SWB 24.4kbps	2	88.36	18.36	≥6	12.36	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR NB 4.75kbps	8	91.42	21.42	≥6	15.42	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR NB 12.2kbps	8	92.23	22.23	≥6	16.23	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR WB 6.60kbps	8	90.82	20.82	≥6	14.82	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	AMR WB 23.85kbps	8	91.40	21.40	≥6	15.40	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS NB 5.9kbps	8	91.51	21.51	≥6	15.51	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS NB 24.4kbps	8	92.04	22.04	≥6	16.04	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS WB 5.9kbps	8	90.71	20.71	≥6	14.71	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS WB 24.4kbps	8	90.61	20.61	≥6	14.61	Pass	80#

n77	100M/DFT-s-OFDM/1RB/0	633334	EVS SWB 9.6kbps	8	92.72	22.72	≥6	16.72	Pass	/
n77	100M/DFT-s-OFDM/1RB/0	633334	EVS SWB 24.4kbps	8	92.75	22.75	≥6	16.75	Pass	/

7.2.4 WIFI Test Results

Volume Control Test Results					Conversational Gain Performance					Plots Num.
Air Interface	Radio Configuration	Channel	Audio Codec (Kbps)	Moutig Force (N)	Measured dBSPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/Fail	
2.4G WLAN	802.11b 1Mbps	6	AMR NB 4.75kbps	2	87.04	17.04	≥6	11.04	Pass	/
2.4G WLAN	802.11b 1Mbps	6	AMR NB 12.2kbps	2	87.02	17.02	≥6	11.02	Pass	/
2.4G WLAN	802.11b 1Mbps	6	AMR WB 6.60kbps	2	86.18	16.18	≥6	10.18	Pass	81#
2.4G WLAN	802.11b 1Mbps	6	AMR WB 23.85kbps	2	86.81	16.81	≥6	10.81	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS NB 5.9kbps	2	87.10	17.10	≥6	11.10	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS NB 24.4kbps	2	87.11	17.11	≥6	11.11	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS WB 5.9kbps	2	86.22	16.22	≥6	10.22	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS WB 24.4kbps	2	86.95	16.95	≥6	10.95	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS SWB 9.6kbps	2	88.30	18.30	≥6	12.30	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS SWB 24.4kbps	2	89.03	19.03	≥6	13.03	Pass	/
2.4G WLAN	802.11b 1Mbps	6	AMR NB 4.75kbps	8	89.11	19.11	≥6	13.11	Pass	/
2.4G WLAN	802.11b 1Mbps	6	AMR NB 12.2kbps	8	90.02	20.02	≥6	14.02	Pass	/
2.4G WLAN	802.11b 1Mbps	6	AMR WB 6.60kbps	8	88.54	18.54	≥6	12.54	Pass	/
2.4G WLAN	802.11b 1Mbps	6	AMR WB 23.85kbps	8	88.99	18.99	≥6	12.99	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS NB 5.9kbps	8	89.54	19.54	≥6	13.54	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS NB 24.4kbps	8	89.74	19.74	≥6	13.74	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS WB 5.9kbps	8	88.27	18.27	≥6	12.27	Pass	82#
2.4G WLAN	802.11b 1Mbps	6	EVS WB 24.4kbps	8	88.70	18.70	≥6	12.70	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS SWB 9.6kbps	8	90.47	20.47	≥6	14.47	Pass	/
2.4G WLAN	802.11b 1Mbps	6	EVS SWB 24.4kbps	8	90.75	20.75	≥6	14.75	Pass	/
5.2G WLAN	802.11a 6Mbps	44	AMR NB 4.75kbps	2	87.08	17.08	≥6	11.08	Pass	/
5.2G WLAN	802.11a 6Mbps	44	AMR NB 12.2kbps	2	87.19	17.19	≥6	11.19	Pass	/
5.2G WLAN	802.11a 6Mbps	44	AMR WB 6.60kbps	2	86.61	16.61	≥6	10.61	Pass	/

5.2G WLAN	802.11a 6Mbps	44	AMR WB 23.85kbps	2	87.24	17.24	≥6	11.24	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS NB 5.9kbps	2	87.18	17.18	≥6	11.18	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS NB 24.4kbps	2	87.02	17.02	≥6	11.02	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS WB 5.9kbps	2	86.49	16.49	≥6	10.49	Pass	83#
5.2G WLAN	802.11a 6Mbps	44	EVS WB 24.4kbps	2	87.25	17.25	≥6	11.25	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS SWB 9.6kbps	2	88.62	18.62	≥6	12.62	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS SWB 24.4kbps	2	88.90	18.90	≥6	12.90	Pass	/
5.2G WLAN	802.11a 6Mbps	44	AMR NB 4.75kbps	8	89.14	19.14	≥6	13.14	Pass	/
5.2G WLAN	802.11a 6Mbps	44	AMR NB 12.2kbps	8	89.99	19.99	≥6	13.99	Pass	/
5.2G WLAN	802.11a 6Mbps	44	AMR WB 6.60kbps	8	88.49	18.49	≥6	12.49	Pass	/
5.2G WLAN	802.11a 6Mbps	44	AMR WB 23.85kbps	8	89.01	19.01	≥6	13.01	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS NB 5.9kbps	8	89.33	19.33	≥6	13.33	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS NB 24.4kbps	8	89.84	19.84	≥6	13.84	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS WB 5.9kbps	8	88.36	18.36	≥6	12.36	Pass	84#
5.2G WLAN	802.11a 6Mbps	44	EVS WB 24.4kbps	8	88.67	18.67	≥6	12.67	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS SWB 9.6kbps	8	90.56	20.56	≥6	14.56	Pass	/
5.2G WLAN	802.11a 6Mbps	44	EVS SWB 24.4kbps	8	90.85	20.85	≥6	14.85	Pass	/
5.3G WLAN	802.11a 6Mbps	60	AMR NB 4.75kbps	2	87.21	17.21	≥6	11.21	Pass	/
5.3G WLAN	802.11a 6Mbps	60	AMR NB 12.2kbps	2	87.22	17.22	≥6	11.22	Pass	/
5.3G WLAN	802.11a 6Mbps	60	AMR WB 6.60kbps	2	86.64	16.64	≥6	10.64	Pass	/
5.3G WLAN	802.11a 6Mbps	60	AMR WB 23.85kbps	2	87.16	17.16	≥6	11.16	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS NB 5.9kbps	2	87.03	17.03	≥6	11.03	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS NB 24.4kbps	2	87.19	17.19	≥6	11.19	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS WB 5.9kbps	2	86.35	16.35	≥6	10.35	Pass	85#
5.3G WLAN	802.11a 6Mbps	60	EVS WB 24.4kbps	2	86.52	16.52	≥6	10.52	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS SWB 9.6kbps	2	88.66	18.66	≥6	12.66	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS SWB 24.4kbps	2	88.96	18.96	≥6	12.96	Pass	/
5.3G WLAN	802.11a 6Mbps	60	AMR NB 4.75kbps	8	89.33	19.33	≥6	13.33	Pass	/

5.3G WLAN	802.11a 6Mbps	60	AMR NB 12.2kbps	8	89.98	19.98	≥6	13.98	Pass	/
5.3G WLAN	802.11a 6Mbps	60	AMR WB 6.60kbps	8	88.62	18.62	≥6	12.62	Pass	/
5.3G WLAN	802.11a 6Mbps	60	AMR WB 23.85kbps	8	89.08	19.08	≥6	13.08	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS NB 5.9kbps	8	89.48	19.48	≥6	13.48	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS NB 24.4kbps	8	89.82	19.82	≥6	13.82	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS WB 5.9kbps	8	88.48	18.48	≥6	12.48	Pass	86#
5.3G WLAN	802.11a 6Mbps	60	EVS WB 24.4kbps	8	88.75	18.75	≥6	12.75	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS SWB 9.6kbps	8	90.40	20.40	≥6	14.40	Pass	/
5.3G WLAN	802.11a 6Mbps	60	EVS SWB 24.4kbps	8	90.56	20.56	≥6	14.56	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR NB 4.75kbps	2	87.15	17.15	≥6	11.15	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR NB 12.2kbps	2	87.18	17.18	≥6	11.18	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR WB 6.60kbps	2	86.68	16.68	≥6	10.68	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR WB 23.85kbps	2	87.14	17.14	≥6	11.14	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS NB 5.9kbps	2	86.90	16.90	≥6	10.90	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS NB 24.4kbps	2	86.78	16.78	≥6	10.78	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS WB 5.9kbps	2	86.32	16.32	≥6	10.32	Pass	87#
5.6G WLAN	802.11a 6Mbps	116	EVS WB 24.4kbps	2	86.35	16.35	≥6	10.35	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS SWB 9.6kbps	2	88.76	18.76	≥6	12.76	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS SWB 24.4kbps	2	88.81	18.81	≥6	12.81	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR NB 4.75kbps	8	89.17	19.17	≥6	13.17	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR NB 12.2kbps	8	89.99	19.99	≥6	13.99	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR WB 6.60kbps	8	88.52	18.52	≥6	12.52	Pass	/
5.6G WLAN	802.11a 6Mbps	116	AMR WB 23.85kbps	8	89.03	19.03	≥6	13.03	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS NB 5.9kbps	8	89.59	19.59	≥6	13.59	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS NB 24.4kbps	8	89.76	19.76	≥6	13.76	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS WB 5.9kbps	8	88.13	18.13	≥6	12.13	Pass	88#
5.6G WLAN	802.11a 6Mbps	116	EVS WB 24.4kbps	8	88.63	18.63	≥6	12.63	Pass	/
5.6G WLAN	802.11a 6Mbps	116	EVS SWB 9.6kbps	8	90.57	20.57	≥6	14.57	Pass	/

5.6G WLAN	802.11a 6Mbps	116	EVS SWB 24.4kbps	8	90.80	20.80	≥6	14.80	Pass	/
5.8G WLAN	802.11a 6Mbps	157	AMR NB 4.75kbps	2	87.17	17.17	≥6	11.17	Pass	/
5.8G WLAN	802.11a 6Mbps	157	AMR NB 12.2kbps	2	87.18	17.18	≥6	11.18	Pass	/
5.8G WLAN	802.11a 6Mbps	157	AMR WB 6.60kbps	2	86.67	16.67	≥6	10.67	Pass	89#
5.8G WLAN	802.11a 6Mbps	157	AMR WB 23.85kbps	2	87.19	17.19	≥6	11.19	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS NB 5.9kbps	2	86.99	16.99	≥6	10.99	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS NB 24.4kbps	2	87.13	17.13	≥6	11.13	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS WB 5.9kbps	2	86.59	16.59	≥6	10.59	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS WB 24.4kbps	2	86.90	16.90	≥6	10.90	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS SWB 9.6kbps	2	88.63	18.63	≥6	12.63	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS SWB 24.4kbps	2	89.11	19.11	≥6	13.11	Pass	/
5.8G WLAN	802.11a 6Mbps	157	AMR NB 4.75kbps	8	89.09	19.09	≥6	13.09	Pass	/
5.8G WLAN	802.11a 6Mbps	157	AMR NB 12.2kbps	8	89.94	19.94	≥6	13.94	Pass	/
5.8G WLAN	802.11a 6Mbps	157	AMR WB 6.60kbps	8	88.59	18.59	≥6	12.59	Pass	/
5.8G WLAN	802.11a 6Mbps	157	AMR WB 23.85kbps	8	89.00	19.00	≥6	13.00	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS NB 5.9kbps	8	89.23	19.23	≥6	13.23	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS NB 24.4kbps	8	89.77	19.77	≥6	13.77	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS WB 5.9kbps	8	88.22	18.22	≥6	12.22	Pass	90#
5.8G WLAN	802.11a 6Mbps	157	EVS WB 24.4kbps	8	88.54	18.54	≥6	12.54	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS SWB 9.6kbps	8	90.46	20.46	≥6	14.46	Pass	/
5.8G WLAN	802.11a 6Mbps	157	EVS SWB 24.4kbps	8	90.64	20.64	≥6	14.64	Pass	/

7.2.5 Worst Case

Volume Control Test Results					Conversational Gain Performance					Plots Num.
Air Interface	Radio Configuration	Channel	Mounting Force (N)	Audio Codec (Kbps)	Meas. dBSPL Level	Conversational Gain Level	Limit (dB)	Margin to Limit (dB)	Pass/ Fail	
Band2	20M/QPSK/1RB/0	18900	8	EVS-WB 24.4	86.84	16.84	≥6	10.84	Pass	91#
Band4	20M/QPSK/1RB/0	20175	2	EVS-NB 5.9	80.82	10.82	≥6	4.82	Pass	92#

8 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
Test Software	HEAD acoustics GmbH	HEAD Analyzer ACQUA	6.2.100	N/A	N/A
Artificial head	HEAD acoustics GmbH	HMS II.3	12306434	N/A	N/A
Audio Analyzer	HEAD acoustics GmbH	MFE VI.1	64626530	2025/07/22	2026/07/21
Wireless Communication Test Set	R&S	CMW500	167190	2026/03/24	2027/03/23
Wireless Communication Test Set	Keysight	E7515B	MY59321617	2025/07/15	2026/07/14
Sound Calibrator	CEM	DT-815	2505307604	2026/04/01	2027/03/31
Thermometer	Elitech	RC-4HC	EF7216002985	2025/10/30	2026/10/29

ANNEX A HAC VOLUME CONTROL TEST RESULT

Please refer the document "Ti-CC26050303-VCTD.pdf".

ANNEX B TEST SETUP PHOTO

Please refer the document "Ti-CC26050303-AS-3.pdf".

ANNEX C EUT EXTERNAL PHOTO

Please refer the document "Ti-CC26050303-AW.pdf".

--END OF REPORT--