



TEST REPORT

Report Reference No. : **TRE18110197** R/C.....: 68830

IC : **906A-MRHH150**

Applicant's name : **Cobra Electronics Corporation**

Address : 6500 West Cortland Street Chicago, IL 60707, USA

Manufacturer : Cobra Electronics Corporation

Address : 6500 West Cortland Street Chicago, IL 60707, USA

Test item description : **VHF Marine Radio**

Trade Mark : Cobra

Model/Type reference : MRHH150FLT

Listed Model(s) : -

Standard : **RSS-182/RSS-Gen Issue 5**

Date of receipt of test sample : Nov. 26, 2018

Date of testing : Nov. 26, 2018- Dec.09, 2018

Date of issue : Dec.10, 2018

Result : **PASS**

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Testing Laboratory Name : **Shenzhen Huatongwei International Inspection Co., Ltd**

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The test report merely corresponds to the test sample.

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1. TEST STANDARDS AND TEST DESCRIPTION

1.1. Test Standards

The tests were performed according to following standards:

[RSS-182 Issue 5 January 2012](#): Maritime Radio Transmitters and Receivers in the Band 156-162.5 MHz

[RSS-Gen Issue 5, April 2018](#): General Requirements for compliance of Radio Apparatus

[TIA/EIA 603 D:June 2010](#) Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

1.2. Report version

Revised No.	Date of issue	Description
N/A	2018-12-10	Original

2. Test Description

Transmitter Requirement			
Test item	Standards requirement	Result	Test Engineer
Frequency Plan and Channel Spacing	RSS-182 § 7.1	PASS	Gaosheng Pan
Required Operating Frequencies	RSS-182 § 7.2	PASS	Gaosheng Pan
Types of Modulation and Equipment Characteristics	RSS-182 § 7.3	PASS	Gaosheng Pan
Frequency Stability Test V.S. Temperature Frequency Stability Test V.S. Voltage	RSS-182 § 7.4	PASS	Gaosheng Pan
Transmitter Output Powers	RSS-182 § 7.5	PASS	Gaosheng Pan
Transport Canada Specifications	RSS-182 § 7.6	PASS	Gaosheng Pan
VHF AIS Transponders	RSS-182 § 7.7	PASS	Gaosheng Pan
FM Modulation Limiting and Audio Low-Pass Filter for Coast Station Equipment (Voice Modulation)	RSS-182 § 7.8	PASS	Gaosheng Pan
Transmitter Radiated Spurious Emission	RSS-182 § 7.9	PASS	Gaosheng Pan
Spurious Emission On Antenna Port	RSS-182 § 7.9	PASS	Gaosheng Pan
Emission Mask	RSS-182 § 7.9	PASS	Shower Dai
Receiver Requirement			
Test item	Standards requirement	Result	Test Engineer
Radiated Emission	RSS-Gen	PASS	Shower Dai
Conducted Emission	RSS-Gen	N/A	N/A

Note:

N/A means not applicable

3. SUMMARY

3.1. Client Information

Applicant:	Cobra Electronics Corporation
Address:	6500 West Cortland Street Chicago, IL 60707, USA
Manufacturer:	Cobra Electronics Corporation
Address:	6500 West Cortland Street Chicago, IL 60707, USA

3.2. Product Description

Name of EUT:	VHF Marine Radio	
Trade mark:	Cobra	
Mode No.:	MRHH150FLT	
Listed Model(s):	-	
Power supply:	DC 6.0V	
Hardware Version:	V1.2	
Software Version:	V0.28	
Radio Specification		
Operation Frequency Range:	TX: 156.025MHz to 157.425MHz	
	RX: 156.05MHz to 162MHz	
Rated Output Power:	☒ High Power: 3W (43.98dBm) ☒ Low Power 0.5W (30.00dBm)	
Modulation Type:	Analog Voice:	FM
Channel Separation:	Analog Voice:	☐ 12.5kHz ☒ 25kHz
Emission Designator:	Analog Voice:	☐ 12.5kHz Channel Separation: ☒ 25kHz Channel Separation: 16K0G3E
Antenna Type:	External	

3.3. Test frequency list

Mode	Modulation	Operation Frequency Range	Test Frequency (MHz)	
Analog	PM	Tx: 156.025MHz to 157.425MHz Rx: 156.05MHz to 162MHz	CH _L	Tx: 156.025(CH60) Rx: 160.625(CH60)
			CH _{M2}	Tx: 156.8(CH16) Rx: 156.8(CH16)
			CH _H	Tx: 157.425(CH88) Rx: 157.425(CH88)

Note:

In section RSS-Gen Table1, regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the above listed frequency for testing.

Tx means transmitting mode, Rx means receiving mode.

3.4. EUT operation mode

Test mode	Transmitting	Receiving	Power level		Analog Voice/FM
			High	Low	25kHz
TX-AWH-	√		√		√
TX-AWL	√			√	√
RX-AW		√			√

√ : is operation mode.

Modulation Type	Description
UM	Un-modulation
AM2	Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
AM6	Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level to obtain 60% of full rated system deviation, then increase the level from the audio generator by 20 dB
AM5	Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of rated system deviation.
DM	A 511 bit binary pseudo-random bit sequence based on ITU-T Rec. O.153

Pre-scan above all test mode, found below test mode which it was worse case mode, so only show the test data for worse case mode on the test report.

Test item	Modulation Type	Test mode (Worse case mode)
Conducted Output Power	UM	TX-AWH, TX-AWL
99% Occupied Bandwidth & 26dB bandwidth	AM6	TX-AWH, TX-AWL
Emission Mask	AM5	TX-AWH, TX-AWL
Modulation Limit	AM6	TX-AWH
Audio Frequency Response	AM2	TX-AWH
Audio Frequency Response	AM2	TX-AWH
Frequency Stability VS Temperature	UM	TX-AWH, TX-AWL
Frequency Stability VS Voltage	UM	TX-AWH, TX-AWL
Transmit Conducted Spurious Emission	AM5	TX-AWH
Transmit Radiated Spurious Emission	AM5	TX-AWH
AC Power Line Conducted Emission	-	RX-GPS
Radiated Emission	-	RX-GPS

3.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

●	DC Power Cable	Length (m) :	/
		Shield :	Unshielded
		Detachable :	Undetachable
○	Multimeter	Manufacturer :	/
		Model No. :	/

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.

Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Phone: 86-755-26748019 Fax: 86-755-26748089

4.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 762235

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 762235.

IC-Registration No.: 5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B-1.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

4.3. Environmental conditions

Normal Condition	
Relative humidity:	25 % to 75 %.
Air Pressure:	86~106kPa
Ambient temperature :	15℃~35℃

4.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Frequency stability & Occupied Bandwidth	18Hz for <1GHz 69Hz for >1GHz	(1)
Conducted Output Power	0.63dB	(1)
ERP / EIRP / RSE	2.38dB for <1GHz 3.45dB for >1GHz	(1)
Conducted Emission 9KHz-30MHz	3.35 dB	(1)
Radiated Emission 30~1000MHz	4.80 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
FM deviation	25 Hz	(1)
Audio level	0.62 dB	(1)
Low Pass Filter Response	0.76 dB	(1)
Modulation Limiting	0.42 %	(1)
Transient Frequency Behavior	6.8 %	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

4.5. Equipments Used during the Test

● Conducted Emission						
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	ESCI	101247	2018/10/27	2019/10/26
●	Artificial Mains	SCHWARZBECK	NNLK 8121	573	2018/10/27	2019/10/26
●	Pulse Limiter	R&S	ESH3-Z2	100499	2018/10/27	2019/10/26
●	RF Connection Cable	HUBER+SUHNER	EF400	N/A	2018/11/15	2019/11/14
●	Test Software	R&S	ES-K1	N/A	N/A	N/A
○	Single Balanced Telecom Pair ISN	FCC	FCC-TLISN-T2-02	20371	2018/10/28	2019/10/27
○	Two Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T4-02	20373	2018/10/28	2019/10/27
○	Four Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T8-02	20375	2018/10/28	2019/10/27
○	V-Network	R&S	ESH3-Z6	100211	2018/10/27	2019/10/26
○	V-Network	R&S	ESH3-Z6	100210	2018/10/27	2019/10/26
○	2-Line V-Network	R&S	ESH3-Z5	100049	2018/10/27	2019/10/26

● Radiated Emission-6th test site						
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	SAC-3m-02	N/A	2018/09/30	2021/09/29
●	EMI Test Receiver	R&S	ESCI	100900	2018/10/28	2019/10/27
○	Loop Antenna	R&S	HFH2-Z2	100020	2017/11/20	2020/11/19
●	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	546	2017/04/05	2020/04/04
●	Pre-Amplifier	SCHWARZBECK	BBV 9742	N/A	2018/11/15	2019/11/14
●	RF Connection Cable	HUBER+SUHNER	N/A	N/A	2018/09/28	2019/09/27
●	RF Connection Cable	HUBER+SUHNER	SUCOFLEX104	501184/4	2018/09/28	2019/09/27
●	Test Software	R&S	ES-K1	N/A	N/A	N/A
●	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
●	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A

● TS8613 Test system						
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Spectrum Analyzer	Agilent	N9020A	MY50510187	2018/09/29	2019/09/28
●	Signal & Spectrum Analyzer	R&S	FSW26	103440	2018/10/28	2019/10/27
●	RF Communication Test Set	HP	8920A	3813A10206	2018/10/28	2019/10/27
●	Digital intercom communication tester	Aeroflex	3920B	1001682041	2018/10/28	2019/10/27
●	Signal Generator	R&S	SML02	100507	2018/10/27	2019/10/26
●	Signal Generator	IFR	2032	203002\100	2018/11/11	2019/11/10
●	RF Control Unit	Tonscend	JS0806-2	N/A	N/A	N/A
●	Fliter-VHF	Microwave	N26460M1	498702	2018/03/19	2019/03/18

○	Fliter-UHF	Microwave	N25155M2	498704	2018/03/19	2019/03/18
○	Power Divider	Microwave	OPD1040-N-4	N/A	2018/11/15	2019/11/14
○	Attenuator	JFW	50FH-030-100	N/A	2018/11/15	2019/11/14
○	Attenuator	JFW	50-A-MFN-20	0322	2018/11/15	2019/11/14
●	Test software	HTW	Radio ATE	N/A	N/A	N/A

● Auxiliary Equipment

Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Climate chamber	ESPEC	GPL-2	N/A	2018/11/08	2019/11/07
●	DC Power Supply	Gwinstek	SPS-2415	GER835793	2018/10/28	2019/10/27

● Radiated Spurious Emission

Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	SAC-3m-01	N/A	2018/09/30	2021/09/29
●	Spectrum Analyzer	R&S	FSP40	100597	2018/10/27	2019/10/26
●	Loop Antenna	R&S	HFH2-Z2	100020	2017/11/20	2020/11/19
●	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	538	2017/04/05	2020/04/04
●	Horn Antenna	SCHWARZBECK	9120D	1011	2017/04/01	2020/03/31
○	Horn Antenna	SCHWARZBECK	BBHA9170	25841	2017/03/27	2020/03/26
○	Pre-amplifier	BONN	BLWA0160-2M	1811887	2018/11/14	2019/11/13
●	Pre-amplifier	CD	PAP-0102	12004	2018/11/14	2019/11/13
●	Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-248	2018/04/28	2019/04/27
●	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	2018/11/15	2019/11/14
●	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	2018/11/15	2019/11/14
●	EMI Test Software	Audix	E3	N/A	N/A	N/A
●	Turntable	MATURO	TT2.0	N/A	N/A	N/A
●	Antenna Mast	MATURO	TAM-4.0-P	N/A	N/A	N/A

● Auxiliary Equipment

Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
○	Radio communication tester	R&S	CMW500	137688-Lv	2018/09/29	2019/09/28
○	Universal Radio Communication	R&S	CMU200	112012	2018/10/28	2019/10/27
○	High pass filter	Wainwright	WHKX3.0/18G-10SS	38	2018/11/14	2019/11/13
○	Band rejection filter	Microwave	N/A	N/A	2018/11/14	2019/11/13

5. TEST CONDITIONS AND RESULTS

5.1. Frequency Plan and Channel Spacing

According to RSS-182 Section 7.1

The channel spacing for maritime VHF radio communication is 25 kHz. However, equipment with a spacing of 12.5 kHz is permitted provided that the equipment has a mode which can inter-operate with the 25 kHz standard channel spacing and that the equipment complies with all technical requirements of this RSS.

The channel frequency plan for Canadian maritime radiocommunications, based on the 25 kHz channel spacing, is set forth in RBR-2 and the frequency plan for international maritime radiocommunications is set forth in Appendix 18 of the ITU's Radio Regulations.

Result: Complies

5.2. Required Operating Frequencies

According to RSS-182 Section 7.2

Equipment for radiotelephony used in survival craft stations shall be able to transmit and receive standard IMO class G3E emissions on the 156.8 MHz (channel 16, distress) frequency and at least one other frequency in the band 156- 162.5 MHz.

Equipment for radiotelephony used in ships other than survival craft shall be able to transmit and receive standard IMO class G3E emissions on the 156.8 MHz (channel 16, distress), 156.3 MHz (channel 6, inter-ship safety) and 156.65 MHz (channel 13, bridge-to-bridge) frequencies, as well as on all the frequencies necessary for their service.

VHF radiotelephone equipment designated with a "D" shall be able to transmit and receive standard IMO class G3E/F3E emissions on the 156.8 MHz (channel 16, distress), 156.3 MHz (channel 6, inter-ship safety) and 156.65 MHz (channel 13, bridge-to-bridge) frequencies, as well as on all the frequencies necessary for their service.

DSC equipment shall be able to transmit and receive standard IMO class G2B emissions on the 156.525 MHz (channel 70) frequency.

Result: Complies

5.3. Transmitter Output Powers

The conducted carrier power output rating for a transmitter is the power available at the output terminals of the transmitter when the output terminals are connected to the standard transmitter load.

LIMIT

RSS-182 Section 7.5

The output power shall be within ± 1.0 dB of the manufacturer's rated power and not exceed the limits listed in Table 3, unless indicated otherwise.

Table 3 lists typical transmitter output powers for equipment certified under this standard.

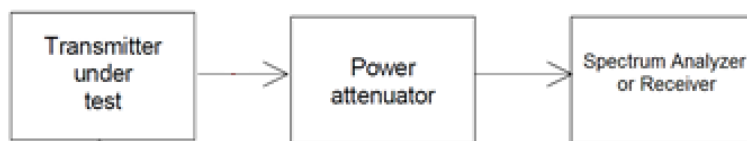
Table 3 — Transmitter Power	
Stations	Typical Power
Coast stations	50 W
Ship stations	
Minimum	6 W
Maximum	25 W
Hand-held portable transmitters	5 W
Survival two-way radiotelephones	Should have a minimum <u>e.i.r.p.</u> of 0.25 watts

TEST PROCEDURE

Measurements shall be made to establish the radio frequency power delivered by the transmitter the standard output termination. The power output shall be monitored and recorded and no adjustment shall be made to the transmitter after the test has begun, except as noted below:

If the power output is adjustable, measurements shall be made for the highest and lowest power levels. Connect the equipment as illustrated.

TEST CONFIGURATION



TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☒ Passed ☐ Not Applicable

Please refer to appendix A on the section 8 appendix report

5.4. Types of Modulation and Equipment Characteristics

VHF radiocommunication shall employ G3E or F3E modulation for voice communication and G2B for DSC signals.

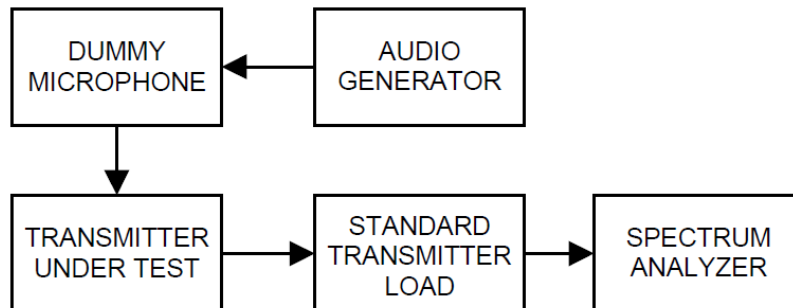
LIMIT

RSS-182 Section 7.3

Maritime VHF transceivers shall have the following characteristics:

- (a) 25 kHz channel spacing;
- (b) frequency modulation with a pre-emphasis of 6 dB/octave (phase modulation (PM)) shall be used;
- (c) the frequency deviation corresponding to 100% modulation shall approach ± 5 kHz as nearly as practicable and in no event shall the frequency deviation exceed ± 5 kHz;
- (d) the audio-frequency band shall be 3000 Hz;
- (e) the authorized channel bandwidth for voice shall be 16 kHz; and
- (f) the authorized channel bandwidth for data shall be 20 kHz.

TEST CONFIGURATION



TEST PROCEDURE

- 1 The EUT was modulated by 2.5kHz Sine wave audio signal; the level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz (12.5kHz channel spacing) and 5 kHz (25 kHz channel spacing).
- 2 Set EUT as normal operation.
 - 1)Set SPA Center Frequency = fundamental frequency, RBW=100Hz, VBW=300Hz,span=50kHz for 12.5kHz channel spacing.
 - 2)Set SPA Center Frequency = fundamental frequency, RBW=300Hz, VBW=1kHz,span=50kHz for 25kHz channel spacing.
- 3 Set SPA Max hold. Mark peak, Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth.
- 4 Set SPA Center Frequency=fundamental frequency, set =100Hz, VBW=300Hz, span=50kHz for 12.5kHz channel spacing.
Set SPA Center Frequency=fundamental frequency, set =300Hz,VBW=1kHz,span=50kHz for 25kHz channel spacing.

TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☒ Passed ☐ Not Applicable

Please refer to appendix B on the section 8 appendix report

5.5. Emission Mask

Transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section.

LIMIT

RSS-182 Section 7.9.1 and 7.9.2

Emission Mask B for Equipment with 25 kHz Channel Spacing

This mask is for FM or PM modulation equipment with 25 kHz channel spacing, an authorized bandwidth of 16 kHz for voice or 20 kHz for data, and equipped with or without an audio low-pass filter. The power of any emission shall be attenuated below the transmitter output power (P, in dBW) as follows:

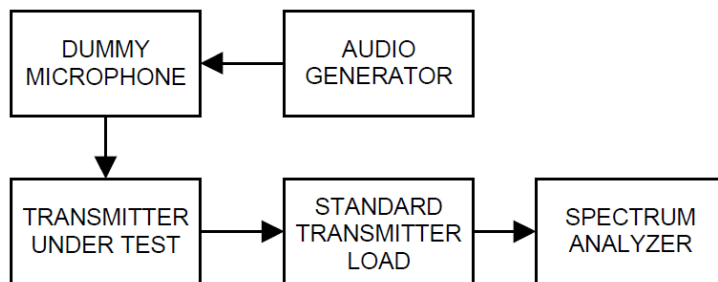
- (a) on any frequency removed from the carrier frequency by more than 50%, but not more than 100% of the authorized bandwidth: at least 25 dB, measured with a bandwidth of 300 Hz;
- (b) on any frequency removed from the carrier frequency by more than 100%, but not more than 250% of the authorized bandwidth: at least 35 dB, measured with a bandwidth of 300 Hz; and
- (c) on any frequency removed from the carrier frequency by more than 250% of the authorized bandwidth: at least $43 + 10 \log_{10} p(\text{watts})$ dB, measured with a bandwidth of 30 kHz.

Emission Mask C for equipment with 12.5 kHz Channel Spacing

This mask is for equipment with channel spacing of 12.5 kHz, an authorized bandwidth of 11.25 kHz, equipped with or without an audio low-pass filter. The power of any emission shall be attenuated below the transmitter power (P, in dBW) as follows:

- (a) on any frequency removed from the carrier frequency f_c up to a displacement frequency of 5.625 kHz: 0 dB, measured with a bandwidth of 100 Hz;
- (b) on any frequency removed from the carrier frequency by a displacement frequency (f_d in kHz) of more than 5.625 kHz, but no more than 12.5 kHz: at least $7.27 (f_d - 2.88 \text{ kHz})$ dB, measured with a bandwidth of 100 Hz; and
- (c) on any frequency removed from the carrier frequency by a displacement frequency (f_d in kHz) of more than 12.5 kHz: at least $50 + 10 \log_{10} p(\text{watts})$ dB or 70 dB, whichever is the lesser attenuation, measured with a bandwidth of 100 Hz for a displacement frequency of more than 12.5 kHz, but no more than 50 kHz, and measured with a bandwidth of 10 kHz for a displacement frequency of more than 50 kHz.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was modulated by 2.5kHz Sine wave audio signal; the level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz (12.5kHz channel spacing) and 5kHz (25 kHz channel spacing).
2. Set EUT as normal operation.
 - 1)Set SPA Center Frequency = fundamental frequency, RBW=100Hz, VBW=300Hz,span=120kHz for 12.5kHz channel spacing.
 - 2)Set SPA Center Frequency = fundamental frequency, RBW=300Hz, VBW=1kHz,span=150kHz for 25kHz channel spacing.

TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Please refer to appendix C on the section 8 appendix report

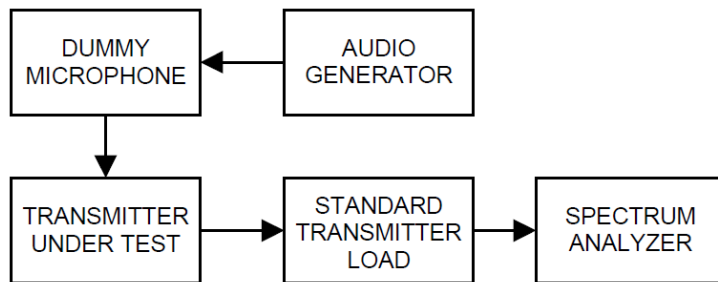
5.6. FM Modulation Limiting and Audio Low-Pass Filter for Coast Station Equipment

LIMIT

RSS-182 Section 7.8

Coast station transmitters shall be equipped with a limiter followed by an audio low-pass filter. A 6 dB pre-emphasis network is required; it is to be connected before the deviation limiter in the transmit path

TEST CONFIGURATION



TEST PROCEDURE

- 1) Configure the EUT as shown in figure .
- 2) Adjust the audio input for 20% of rated system deviation at 1kHz using this level as a reference.
- 3) Vary the Audio frequency from 300Hz to 3 kHz and record the frequency deviation.
- 4) Audio Frequency Response = $20\log_{10} (VFREQ/VREF)$.

TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☒ Passed ☐ Not Applicable

Please refer to appendix D on the section 8 appendix report

5.7. Frequency Stability Test VS Temperature

The carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

LIMIT

RSS-182 Section 7.4

With the exception of DSC emissions, the RF carrier frequency shall not depart from the reference frequency in excess of the limits listed in Table 2.

Table 2 — Frequency Stability Limits	
Type of Equipment	Frequency Stability Limit
Coast stations	± 10.0 ppm for transmitter power less than 3 watts ± 5.0 ppm for transmitter power between 3 and 100 watts ± 2.5 ppm for transmitter power exceeding 100 watts
Ship stations	± 10 ppm

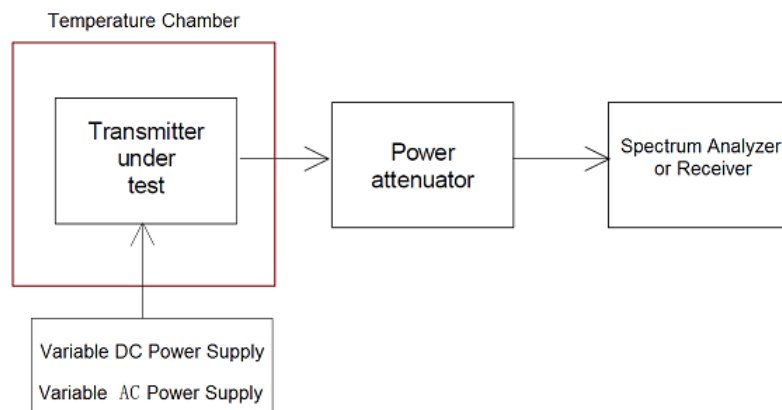
TEST PROCEDURE

According to RSS-182 Section 5.1

In addition to the measurement method described in RSS-Gen, the equipment's unmodulated carrier frequency shall be measured under the conditions specified in Table 1. A sufficient stabilization period at each temperature shall be used prior to each frequency measurement.

Table 1 — Environmental Conditions for Frequency Stability Test			
Equipment Type	Voltage Conditions		
	$V_{nom}-10\%$	nominal voltage (V_{nom})	$V_{nom}+10\%$
Type G protected from weather	-15°C	$+20^{\circ}\text{C}$	$+55^{\circ}\text{C}$
Type G portable equipment	-20°C	$+20^{\circ}\text{C}$	$+55^{\circ}\text{C}$
Type G exposed to weather	-25°C	$+20^{\circ}\text{C}$	$+55^{\circ}\text{C}$
Type D equipment	$+20^{\circ}\text{C}$	$-15^{\circ}\text{C}, +20^{\circ}\text{C}, +55^{\circ}\text{C}$	$+20^{\circ}\text{C}$

TEST CONFIGURATION



TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Please refer to appendix E on the section 8 appendix report

5.8. Frequency Stability Test VS Voltage

The carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

LIMIT

RSS-182 Section 7.4

With the exception of DSC emissions, the RF carrier frequency shall not depart from the reference frequency in excess of the limits listed in Table 2.

Table 2 — Frequency Stability Limits	
Type of Equipment	Frequency Stability Limit
Coast stations	± 10.0 ppm for transmitter power less than 3 watts ± 5.0 ppm for transmitter power between 3 and 100 watts ± 2.5 ppm for transmitter power exceeding 100 watts
Ship stations	± 10 ppm

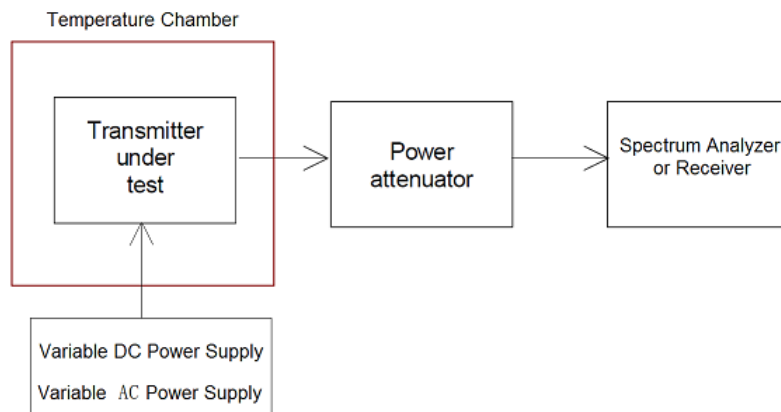
TEST PROCEDURE

According to RSS-182 Section 5.1

In addition to the measurement method described in RSS-Gen, the equipment's unmodulated carrier frequency shall be measured under the conditions specified in Table 1. A sufficient stabilization period at each temperature shall be used prior to each frequency measurement.

Table 1 — Environmental Conditions for Frequency Stability Test			
Equipment Type	Voltage Conditions		
	$V_{nom}-10\%$	nominal voltage (V_{nom})	$V_{nom}+10\%$
Type G protected from weather	-15°C	$+20^{\circ}\text{C}$	$+55^{\circ}\text{C}$
Type G portable equipment	-20°C	$+20^{\circ}\text{C}$	$+55^{\circ}\text{C}$
Type G exposed to weather	-25°C	$+20^{\circ}\text{C}$	$+55^{\circ}\text{C}$
Type D equipment	$+20^{\circ}\text{C}$	$-15^{\circ}\text{C}, +20^{\circ}\text{C}, +55^{\circ}\text{C}$	$+20^{\circ}\text{C}$

TEST CONFIGURATION



TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Please refer to appendix F on the section 8 appendix report

5.9. Spurious Emission on Antenna Port

Conducted spurious emissions are emissions at the antenna terminals on a frequency or frequencies that are outside a band sufficient to ensure transmission of information of required quality for the class of communication desired

LIMIT

RSS Gen, (12.5 kHz bandwidth only): On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz at least:

$$50 + 10 \log (P_{\text{watts}})$$

Note: In general, the worse case attenuation requirement shown above was applied.

$$\text{Calculation: Limit (dBm)} = \text{EL} - 50 - 10 \log_{10} (\text{TP})$$

Notes: EL is the emission level of the Output Power expressed in dBm,
In this application, the EL is P (dBm).

$$\text{Limit (dBm)} = P (\text{dBm}) - 50 - 10 \log (P_{\text{watts}}) = -20 \text{ dBm}$$

RSS Gen, (25 kHz bandwidth only):

On any frequency removed from the center of the assigned channel by more than 250 percent at least:

$$43 + 10 \log (P_{\text{watts}})$$

$$\text{Calculation: Limit (dBm)} = \text{EL} - 43 - 10 \log_{10} (\text{TP})$$

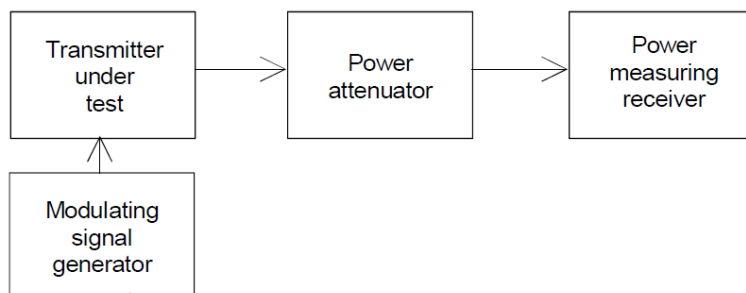
Notes: EL is the emission level of the Output Power expressed in dBm,
In this application, the EL is P (dBm).

$$\text{Limit (dBm)} = P (\text{dBm}) - 43 - 10 \log (P_{\text{watts}}) = -13 \text{ dBm}$$

TEST PROCEDURE

1. The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set to 100 kHz. Sufficient scans were taken to show any out of band emission up to 10th. Harmonic for the lower and the highest frequency range. Set RBW 100 kHz, VBW 300 kHz in the frequency band 30MHz to 1GHz, while set RBW=1MHz. VBW=3MHz from the 1GHz to 10th Harmonic.
3. The audio input was set to 0 to get the unmodulated carrier, the resulting picture is print out for each channel separation.

TEST CONFIGURATION



TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☒ Passed ☐ Not Applicable

Please refer to appendix G on the section 8 appendix report

5.10. Transmitter Radiated Spurious Emission

Conducted spurious emissions are emissions at the antenna terminals on a frequency or frequencies that are outside a band sufficient to ensure transmission of information of required quality for the class of communication desired

LIMIT

RSS Gen, (12.5 kHz bandwidth only): On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz at least:

$$50 + 10 \log (P_{\text{watts}})$$

Note: In general, the worse case attenuation requirement shown above was applied.

$$\text{Calculation: Limit (dBm)} = \text{EL} - 50 - 10 \log_{10} (\text{TP})$$

Notes: EL is the emission level of the Output Power expressed in dBm,
In this application, the EL is P (dBm).

$$\text{Limit (dBm)} = P (\text{dBm}) - 50 - 10 \log (P_{\text{watts}}) = -20 \text{ dBm}$$

RSS Gen, (25 kHz bandwidth only):

On any frequency removed from the center of the assigned channel by more than 250 percent at least:

$$43 + 10 \log (P_{\text{watts}})$$

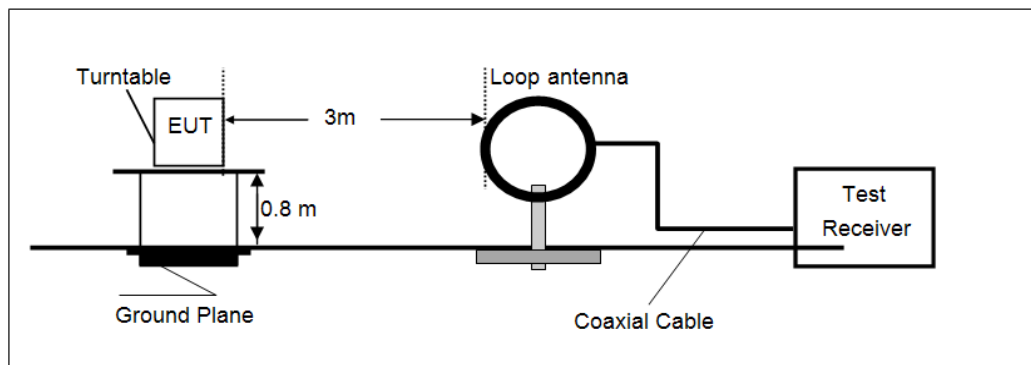
$$\text{Calculation: Limit (dBm)} = \text{EL} - 43 - 10 \log_{10} (\text{TP})$$

Notes: EL is the emission level of the Output Power expressed in dBm,
In this application, the EL is P (dBm).

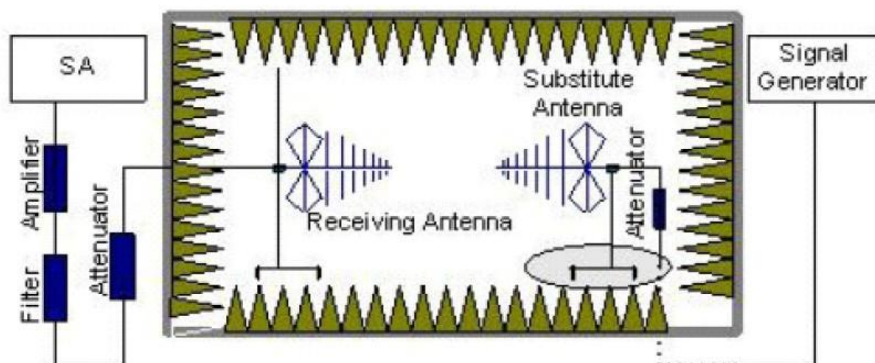
$$\text{Limit (dBm)} = P (\text{dBm}) - 43 - 10 \log (P_{\text{watts}}) = -13 \text{ dBm}$$

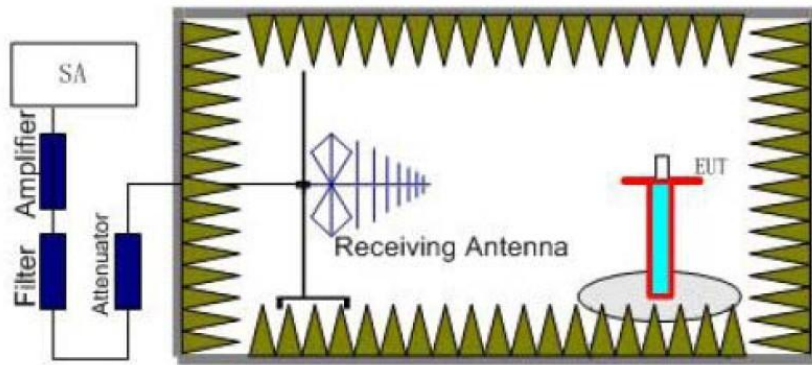
TEST CONFIGURATION

9kHz ~30MHz:

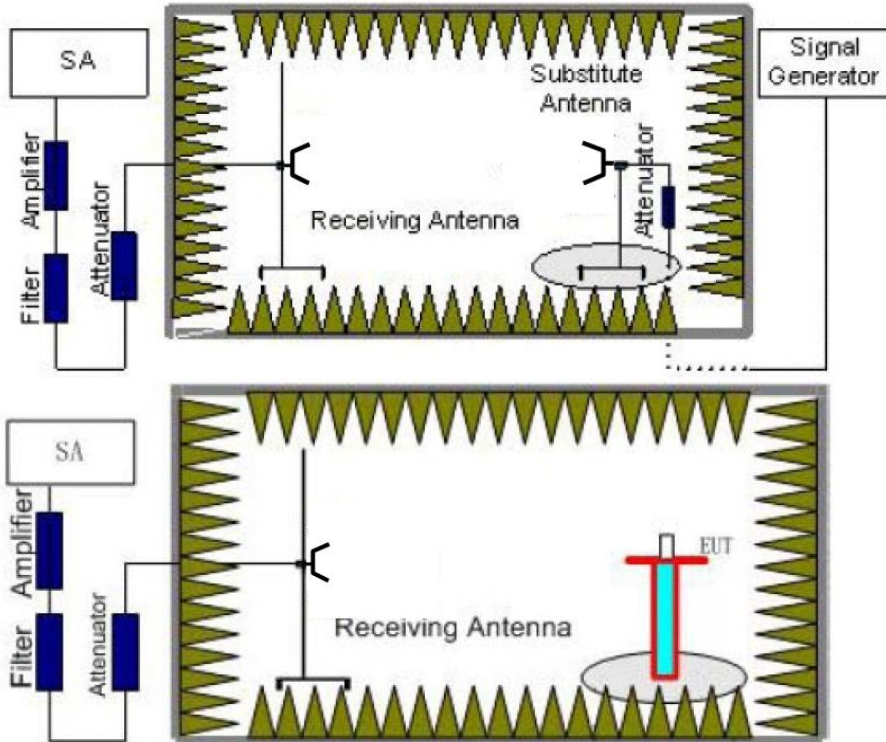


Below 1GHz:





Above 1GHz:



TEST PROCEDURE

1. EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0 m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in six channels were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz for above 1GHz, RBW=100kHz, VBW=300kHz for 30MHz to 1GHz, RBW=1kHz, VBW=3kHz for 9kHz to 150kHz and RBW=10kHz, VBW=30kHz for 150kHz to 30MHz. And the maximum value of the receiver should be recorded as (P_r).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (P_{cl}) ,the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test.

The measurement results are obtained as described below:

$$\text{Power(EIRP)} = P_{\text{Mea}} - P_{\text{Ag}} - P_{\text{cl}} - G_a$$

We used SMF100A microwave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substitution test; The measurement results are amend as described below:

$$\text{Power(EIRP)} = P_{\text{Mea}} - P_{\text{cl}} - G_a$$

6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, $\text{ERP} = \text{EIRP} - 2.15\text{dBi}$.

TEST MODE:

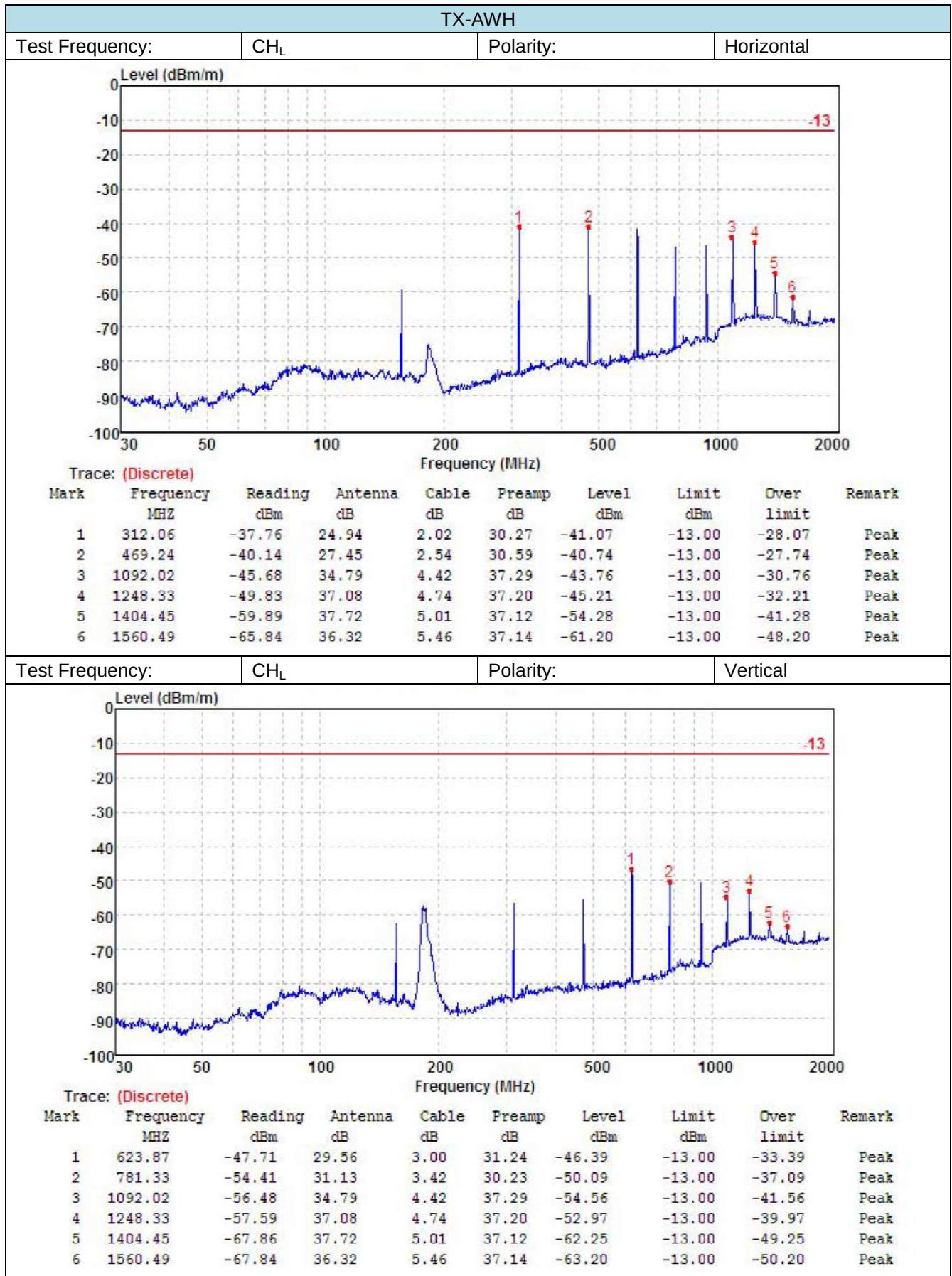
Please reference to the section 2.4

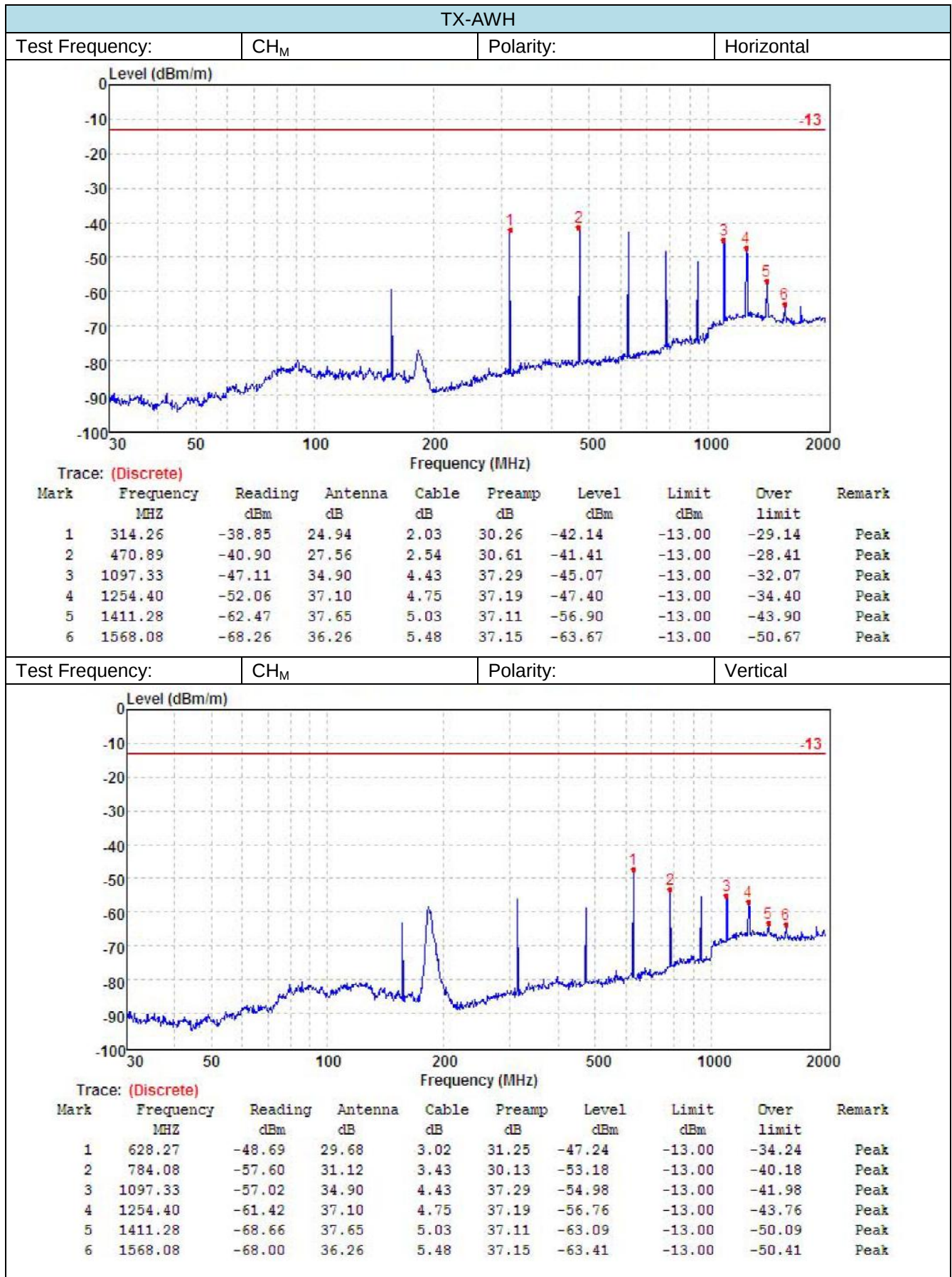
TEST RESULTS

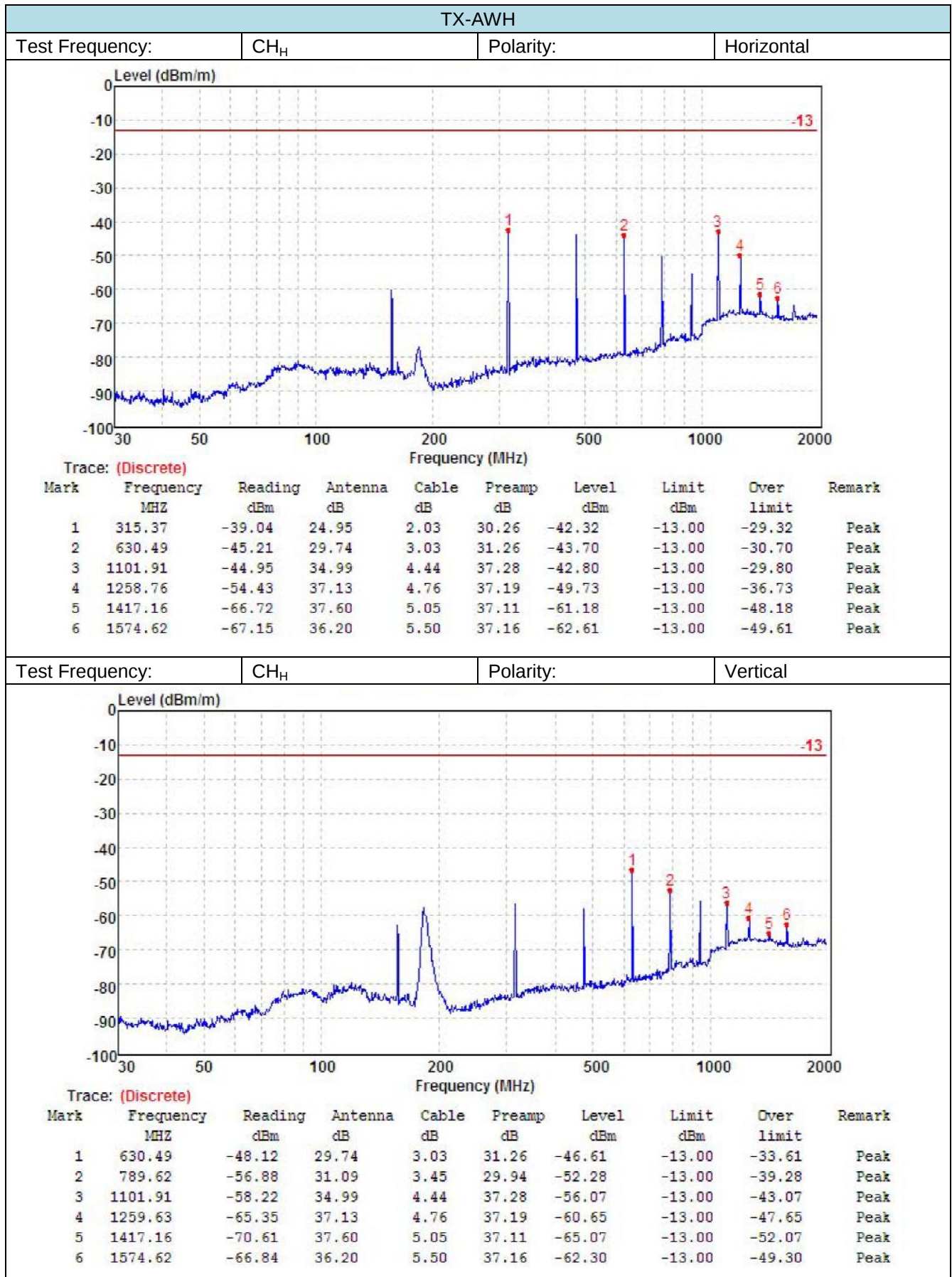
☒ **Passed** ☐ **Not Applicable**

Note:

1. In general, the worse case attenuation requirement shown above was applied.
2. The measurement frequency range from 30MHz to 2 GHz.
3. We tested TX-AWH and TX-AWL, recorded worst case TX-AWH mode.







5.11. Radiated Emission

LIMIT

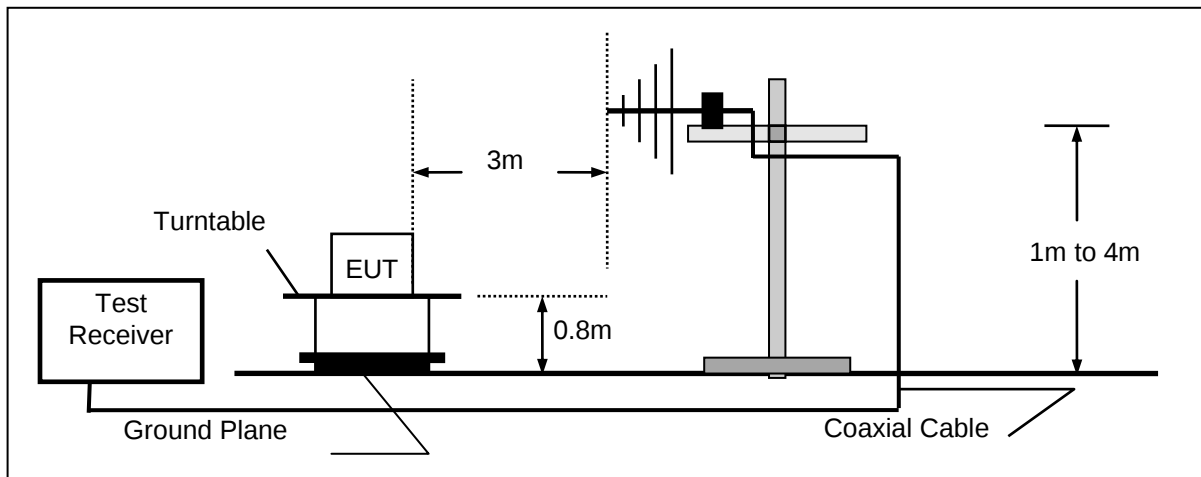
For unintentional device, according to RSS-Gen, except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dB μ V/m)	Radiated (μ V/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

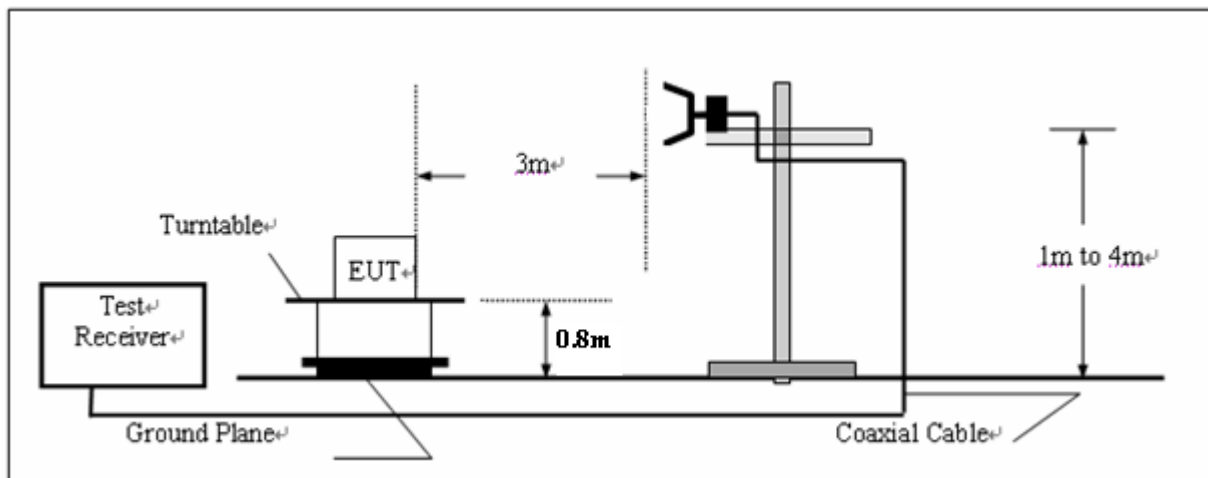
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency below 1000MHz



(B) Radiated Emission Test Set-Up, Frequency above 1000MHz



TEST PROCEDURE

- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
- 2 Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT

- 3 And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 4 Repeat above procedures until all frequency measurements have been completed.

TEST MODE:

Please reference to the section 2.4

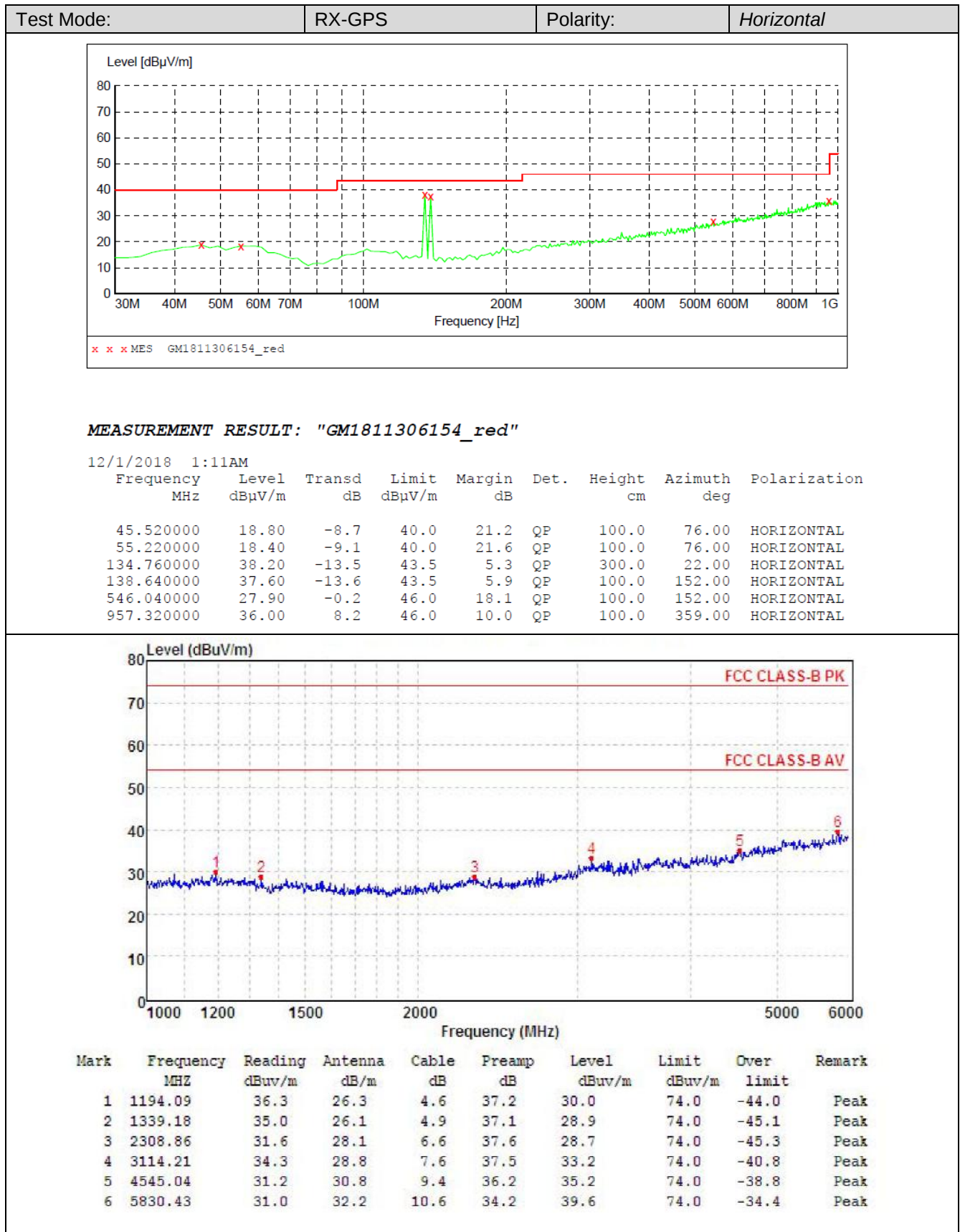
TEST RESULTS

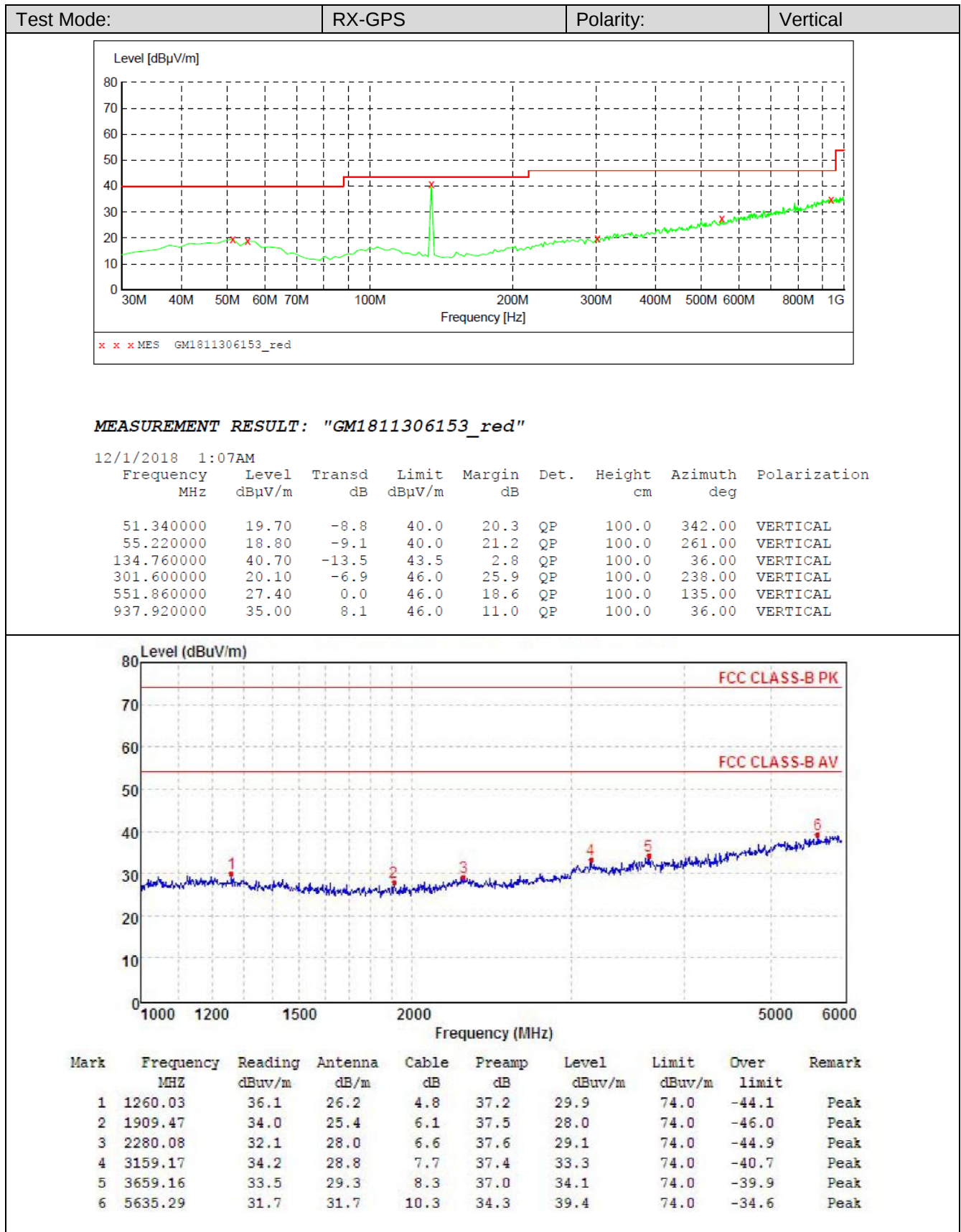
☒ **Passed** ☐ **Not Applicable**

Note:

The Radiated Measurement (Standby mode /Receiver mode) are performed to the three channels (the high channel, the middle channel and the low channel), the datum recorded below is the worst case for each channel separation ;and the EUT shall be scanned from 30 MHz to the 5th harmonic of the highest oscillator frequency in the digital devices or 1 GHz whichever is higher.

Please refer to the below test data:





5.12. Conducted Emissions

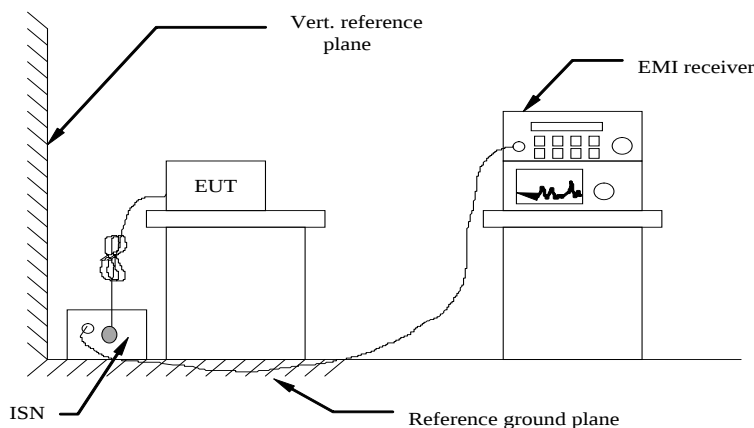
The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 u Henry as specified by section 5.1 of ANSI C63.4-2014. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Limit

RSS-Gen:

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

TEST CONFIGURATION



TEST PROCEDURE

- 1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4-2014.
- 2 Support equipment, if needed, was placed as per ANSI C63.4-2014.
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4-2014.
- 4 If a EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5 All support equipments received AC power from a second LISN, if any
- 6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7 Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8 During the above scans, the emissions were maximized by cable manipulation.

TEST MODE:

Please reference to the section 2.4

TEST RESULTS

☐ Passed ☒ Not Applicable

6. APPENDIX Report

**Appendix A:Maximum Transmitter Power**

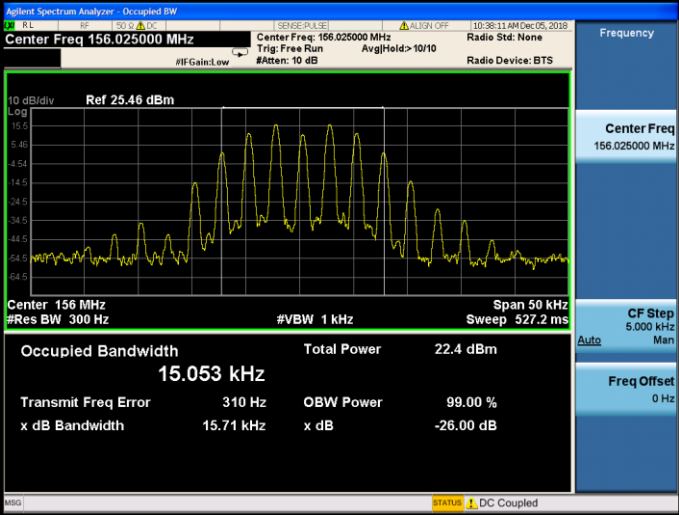
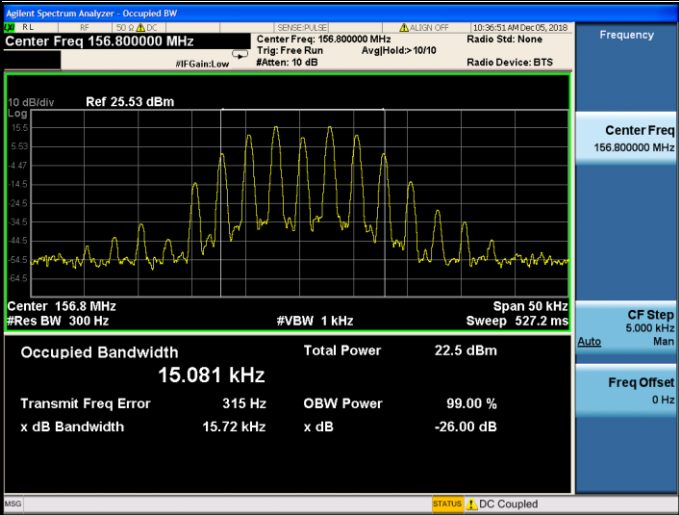
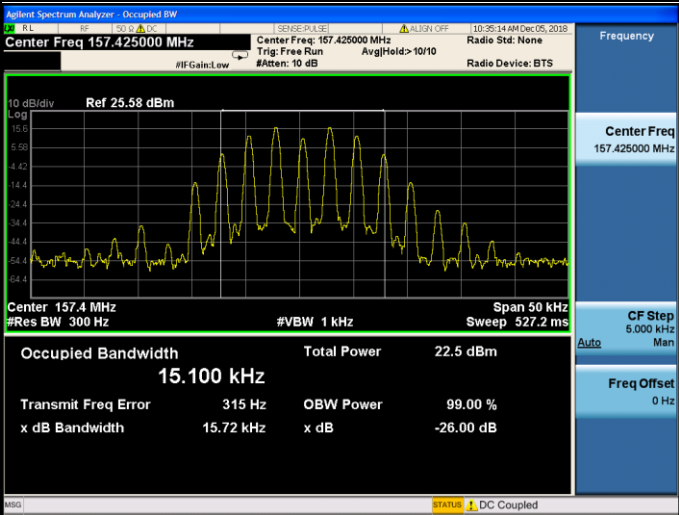
Operation Mode	Modulation Type	Test Channel	Measured Power(dBm)	Rated Power(W)	Difference(dB)	Limit (dB)	Result
TX-AWH	FM	CH _L	34.7	3.00	-0.1	±1	PASS
TX-AWH	FM	CH _M	34.7	3.00	-0.1	±1	PASS
TX-AWH	FM	CH _H	34.7	3.00	-0.1	±1	PASS
TX-AWL	FM	CH _L	27.2	0.50	0.2	±1	PASS
TX-AWL	FM	CH _M	27.0	0.50	0.0	±1	PASS
TX-AWL	FM	CH _H	27.0	0.50	0.0	±1	PASS

**Appendix B:Occupied Bandwidth**

Operation Mode	Modulation Type	Test Channel	Occupied Bandwidth		99% Limit(kHz)	Result
			99%(kHz)	26dB(kHz)		
TX-AWH	FM	CH _L	15.053	15.710	≤20	PASS
TX-AWH	FM	CH _M	15.081	15.710	≤20	PASS
TX-AWH	FM	CH _H	<u>15.100</u>	15.720	≤20	PASS
TX-AWL	FM	CH _L	15.074	15.710	≤20	PASS
TX-AWL	FM	CH _M	15.106	15.730	≤20	PASS
TX-AWL	FM	CH _H	<u>15.126</u>	15.730	≤20	PASS

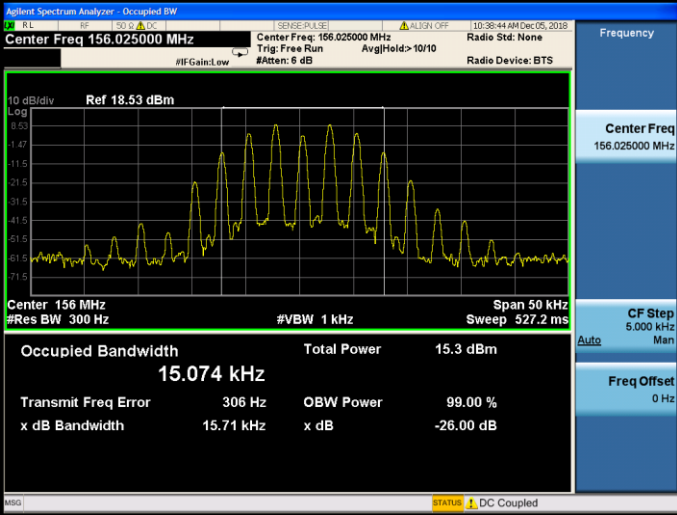
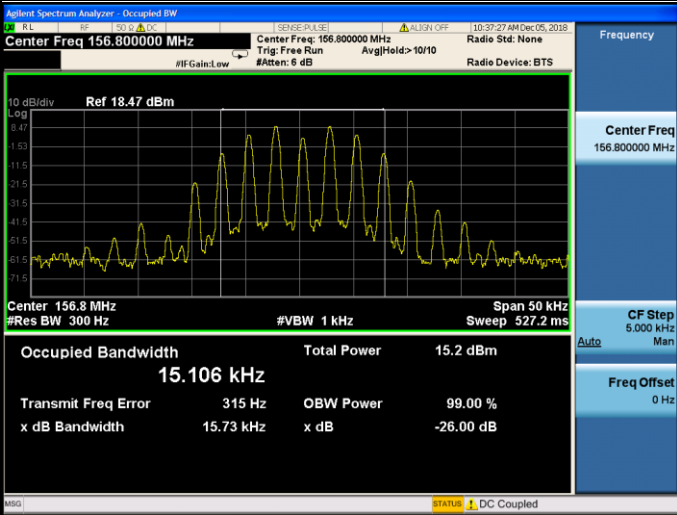
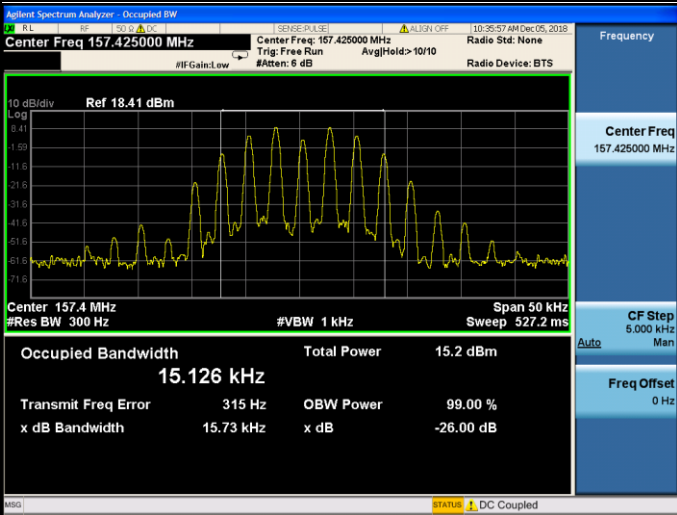


Appendix B:Occupied Bandwidth

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-AWH	FM	CH _L	 Agilent Spectrum Analyzer - Occupied BW Center Freq 156.025000 MHz Center Freq: 156.025000 MHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref 25.46 dBm 10 dB/div Log Center 156 MHz #Res BW 300 Hz #VBW 1 kHz Span 50 kHz Sweep 527.2 ms Occupied Bandwidth 15.053 kHz Total Power 22.4 dBm Transmit Freq Error 310 Hz OBW Power 99.00 % x dB Bandwidth 15.71 kHz x dB -26.00 dB Frequency Center Freq 156.025000 MHz CF Step 5.000 kHz Man Freq Offset 0 Hz Auto STATUS DC Coupled
TX-AWH	FM	CH _M	 Agilent Spectrum Analyzer - Occupied BW Center Freq 156.800000 MHz Center Freq: 156.800000 MHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref 25.53 dBm 10 dB/div Log Center 156.8 MHz #Res BW 300 Hz #VBW 1 kHz Span 50 kHz Sweep 527.2 ms Occupied Bandwidth 15.081 kHz Total Power 22.5 dBm Transmit Freq Error 315 Hz OBW Power 99.00 % x dB Bandwidth 15.72 kHz x dB -26.00 dB Frequency Center Freq 156.800000 MHz CF Step 5.000 kHz Man Freq Offset 0 Hz Auto STATUS DC Coupled
TX-AWH	FM	CH _H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 157.425000 MHz Center Freq: 157.425000 MHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref 25.58 dBm 10 dB/div Log Center 157.4 MHz #Res BW 300 Hz #VBW 1 kHz Span 50 kHz Sweep 527.2 ms Occupied Bandwidth 15.100 kHz Total Power 22.5 dBm Transmit Freq Error 315 Hz OBW Power 99.00 % x dB Bandwidth 15.72 kHz x dB -26.00 dB Frequency Center Freq 157.425000 MHz CF Step 5.000 kHz Man Freq Offset 0 Hz Auto STATUS DC Coupled



Appendix B:Occupied Bandwidth

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-AWL	FM	CH _L	 Agilent Spectrum Analyzer - Occupied BW Center Freq 156.025000 MHz Center Freq: 156.025000 MHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref 18.53 dBm 10 dB/div Log Center 156 MHz #Res BW 300 Hz #VBW 1 kHz Span 50 kHz Sweep 527.2 ms Occupied Bandwidth 15.074 kHz Total Power 15.3 dBm Transmit Freq Error 306 Hz OBW Power 99.00 % x dB Bandwidth 15.71 kHz x dB -26.00 dB Frequency Center Freq 156.025000 MHz CF Step 5.000 kHz Man Freq Offset 0 Hz Auto STATUS DC Coupled
TX-AWL	FM	CH _M	 Agilent Spectrum Analyzer - Occupied BW Center Freq 156.800000 MHz Center Freq: 156.800000 MHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref 18.47 dBm 10 dB/div Log Center 156.8 MHz #Res BW 300 Hz #VBW 1 kHz Span 50 kHz Sweep 527.2 ms Occupied Bandwidth 15.106 kHz Total Power 15.2 dBm Transmit Freq Error 315 Hz OBW Power 99.00 % x dB Bandwidth 15.73 kHz x dB -26.00 dB Frequency Center Freq 156.800000 MHz CF Step 5.000 kHz Man Freq Offset 0 Hz Auto STATUS DC Coupled
TX-AWL	FM	CH _H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 157.425000 MHz Center Freq: 157.425000 MHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref 18.41 dBm 10 dB/div Log Center 157.4 MHz #Res BW 300 Hz #VBW 1 kHz Span 50 kHz Sweep 527.2 ms Occupied Bandwidth 15.126 kHz Total Power 15.2 dBm Transmit Freq Error 315 Hz OBW Power 99.00 % x dB Bandwidth 15.73 kHz x dB -26.00 dB Frequency Center Freq 157.425000 MHz CF Step 5.000 kHz Man Freq Offset 0 Hz Auto STATUS DC Coupled



Appendix C:Emission Mask

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT																																																															
TX-AWH	FM	CH _L	Agilent Spectrum Analyzer - Spectrum Emission Mask Center Freq 156.025000 MHz Center Freq: 156.025000 MHz Radio Std: None PASS IF Gain: Low Atten: 40 dB Ref Offset 26 dB Ref 27.0 dBm 10 dB/div Log 7.0 3.00 23.0 43.0 63.0 Center 156 MHz Span 120 kHz Total Power Ref 21.13 dBm/0.0125 MHz <table><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>-1.321</td><td>(-24.24)</td><td>0.0</td><td>21.50</td><td>(-1.42)</td><td>359.3</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-46.29</td><td>(-42.71)</td><td>-10.00 k</td><td>-43.48</td><td>(-39.90)</td><td>10.90 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-47.73</td><td>(-34.16)</td><td>-20.37 k</td><td>-48.54</td><td>(-34.96)</td><td>21.33 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-53.34</td><td>(-40.34)</td><td>-50.95 k</td><td>-54.97</td><td>(-41.97)</td><td>54.36 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></table> File <MASK B.state> recalled (STATUS) Frequency Center Freq 156.025000 MHz CF Step 12.000 kHz Auto Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	-1.321	(-24.24)	0.0	21.50	(-1.42)	359.3	10.00 kHz	20.00 kHz	300.0 Hz	-46.29	(-42.71)	-10.00 k	-43.48	(-39.90)	10.90 k	20.00 kHz	50.00 kHz	300.0 Hz	-47.73	(-34.16)	-20.37 k	-48.54	(-34.96)	21.33 k	50.00 kHz	60.00 kHz	300.0 Hz	-53.34	(-40.34)	-50.95 k	-54.97	(-41.97)	54.36 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)																																																										
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8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
TX-AWH	FM	CH _L	Agilent Spectrum Analyzer - Spectrum Emission Mask Center Freq 156.025000 MHz Center Freq: 156.025000 MHz Radio Std: None PASS IF Gain: Low Atten: 40 dB Ref Offset 26 dB Ref 27.0 dBm 10 dB/div Log 7.0 3.00 23.0 43.0 63.0 Center 156 MHz Span 120 kHz Total Power Ref 21.10 dBm/0.0125 MHz <table><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>16.72</td><td>(-6.20)</td><td>-2.156 k</td><td>16.65</td><td>(-6.27)</td><td>2.754 k</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-21.71</td><td>(-18.13)</td><td>-10.00 k</td><td>-13.13</td><td>(-9.55)</td><td>10.30 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-51.76</td><td>(-38.18)</td><td>-24.57 k</td><td>-52.53</td><td>(-38.95)</td><td>20.37 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-57.00</td><td>(-44.00)</td><td>-53.23 k</td><td>-57.83</td><td>(-44.83)</td><td>52.57 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></table> File <Temp.png> saved (STATUS) Frequency Center Freq 156.025000 MHz CF Step 12.000 kHz Auto Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	16.72	(-6.20)	-2.156 k	16.65	(-6.27)	2.754 k	10.00 kHz	20.00 kHz	300.0 Hz	-21.71	(-18.13)	-10.00 k	-13.13	(-9.55)	10.30 k	20.00 kHz	50.00 kHz	300.0 Hz	-51.76	(-38.18)	-24.57 k	-52.53	(-38.95)	20.37 k	50.00 kHz	60.00 kHz	300.0 Hz	-57.00	(-44.00)	-53.23 k	-57.83	(-44.83)	52.57 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)																																																										
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20.00 kHz	50.00 kHz	300.0 Hz	-51.76	(-38.18)	-24.57 k	-52.53	(-38.95)	20.37 k																																																										
50.00 kHz	60.00 kHz	300.0 Hz	-57.00	(-44.00)	-53.23 k	-57.83	(-44.83)	52.57 k																																																										
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12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
TX-AWH	FM	CH _M	Agilent Spectrum Analyzer - Spectrum Emission Mask Center Freq 156.800000 MHz Center Freq: 156.800000 MHz Radio Std: None PASS IF Gain: Low Atten: 40 dB Ref Offset 26 dB Ref 27.0 dBm 10 dB/div Log 7.0 3.00 23.0 43.0 63.0 Center 156.8 MHz Span 120 kHz Total Power Ref 21.35 dBm/0.0125 MHz <table><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>-1.036</td><td>(-24.05)</td><td>0.0</td><td>21.51</td><td>(-1.51)</td><td>239.5</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-43.96</td><td>(-40.48)</td><td>-10.96 k</td><td>-46.38</td><td>(-42.89)</td><td>16.29 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-50.20</td><td>(-36.72)</td><td>-20.25 k</td><td>-48.15</td><td>(-34.67)</td><td>21.15 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-55.41</td><td>(-42.41)</td><td>-55.86 k</td><td>-51.79</td><td>(-38.79)</td><td>54.96 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></table> File <MASK B.state> recalled (STATUS) Frequency Center Freq 156.800000 MHz CF Step 12.000 kHz Auto Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	-1.036	(-24.05)	0.0	21.51	(-1.51)	239.5	10.00 kHz	20.00 kHz	300.0 Hz	-43.96	(-40.48)	-10.96 k	-46.38	(-42.89)	16.29 k	20.00 kHz	50.00 kHz	300.0 Hz	-50.20	(-36.72)	-20.25 k	-48.15	(-34.67)	21.15 k	50.00 kHz	60.00 kHz	300.0 Hz	-55.41	(-42.41)	-55.86 k	-51.79	(-38.79)	54.96 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)																																																										
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8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										



Appendix C:Emission Mask

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT																																																															
TX-AWH	FM	CH _M	Agilent Spectrum Analyzer - Spectrum Emission Mask RF 50 dB AC (SENSE:PLUSE) ALIGN OFF 10:09:13 AM Dec 05, 2018 Center Freq 156.800000 MHz Center Freq: 156.800000 MHz Radio Std: None PASS Trig: Free Run #Atten: 40 dB Avg: 100.00% of 10 IF Gain: Low Ref Offset 26 dB Ref 27.0 dBm Center 156.8 MHz Span 120 kHz Total Power Ref 21.18 dBm 0.0125 MHz <table><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>16.78</td><td>(-6.23)</td><td>-2.156 k</td><td>16.77</td><td>(-6.24)</td><td>2.874 k</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-21.38</td><td>(-17.89)</td><td>-10.00 k</td><td>-12.61</td><td>(-9.13)</td><td>10.30 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-52.96</td><td>(-39.49)</td><td>-20.00 k</td><td>-50.49</td><td>(-37.01)</td><td>20.37 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-57.10</td><td>(-44.10)</td><td>-50.77 k</td><td>-56.67</td><td>(-43.67)</td><td>52.93 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></table> File <Temp.png> saved (STATUS) Frequency Center Freq 156.800000 MHz CF Step 12.000 kHz Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	16.78	(-6.23)	-2.156 k	16.77	(-6.24)	2.874 k	10.00 kHz	20.00 kHz	300.0 Hz	-21.38	(-17.89)	-10.00 k	-12.61	(-9.13)	10.30 k	20.00 kHz	50.00 kHz	300.0 Hz	-52.96	(-39.49)	-20.00 k	-50.49	(-37.01)	20.37 k	50.00 kHz	60.00 kHz	300.0 Hz	-57.10	(-44.10)	-50.77 k	-56.67	(-43.67)	52.93 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)																																																										
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20.00 kHz	50.00 kHz	300.0 Hz	-52.96	(-39.49)	-20.00 k	-50.49	(-37.01)	20.37 k																																																										
50.00 kHz	60.00 kHz	300.0 Hz	-57.10	(-44.10)	-50.77 k	-56.67	(-43.67)	52.93 k																																																										
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12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
TX-AWH	FM	CH _H	Agilent Spectrum Analyzer - Spectrum Emission Mask RF 50 dB AC (SENSE:PLUSE) ALIGN OFF 10:23:37 AM Dec 05, 2018 Center Freq 157.425000 MHz Center Freq: 157.425000 MHz Radio Std: None PASS Trig: Free Run #Atten: 40 dB Avg: 100.00% of 10 IF Gain: Low Ref Offset 26 dB Ref 27.0 dBm Center 157.4 MHz Span 120 kHz Total Power Ref 21.32 dBm 0.0125 MHz <table><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>-6.230</td><td>(-29.29)</td><td>0.0</td><td>21.62</td><td>(-1.43)</td><td>359.3</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-48.98</td><td>(-43.53)</td><td>-19.47 k</td><td>-45.82</td><td>(-42.38)</td><td>13.42 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-50.34</td><td>(-36.89)</td><td>-22.05 k</td><td>-49.30</td><td>(-35.86)</td><td>24.75 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-52.03</td><td>(-39.03)</td><td>-57.96 k</td><td>-53.79</td><td>(-40.79)</td><td>55.14 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></table> File <MASK B.state> recalled (STATUS) Frequency Center Freq 157.425000 MHz CF Step 12.000 kHz Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	-6.230	(-29.29)	0.0	21.62	(-1.43)	359.3	10.00 kHz	20.00 kHz	300.0 Hz	-48.98	(-43.53)	-19.47 k	-45.82	(-42.38)	13.42 k	20.00 kHz	50.00 kHz	300.0 Hz	-50.34	(-36.89)	-22.05 k	-49.30	(-35.86)	24.75 k	50.00 kHz	60.00 kHz	300.0 Hz	-52.03	(-39.03)	-57.96 k	-53.79	(-40.79)	55.14 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)																																																										
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12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
TX-AWH	FM	CH _H	Agilent Spectrum Analyzer - Spectrum Emission Mask RF 50 dB AC (SENSE:PLUSE) ALIGN OFF 10:24:26 AM Dec 05, 2018 Center Freq 157.425000 MHz Center Freq: 157.425000 MHz Radio Std: None PASS Trig: Free Run #Atten: 40 dB Avg: 100.00% of 10 IF Gain: Low Ref Offset 26 dB Ref 27.0 dBm Center 157.4 MHz Span 120 kHz Total Power Ref 21.21 dBm 0.0125 MHz <table><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>16.82</td><td>(-6.24)</td><td>-2.156 k</td><td>16.79</td><td>(-6.27)</td><td>2.874 k</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-20.88</td><td>(-17.44)</td><td>-10.00 k</td><td>-12.32</td><td>(-8.88)</td><td>10.30 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-53.33</td><td>(-39.89)</td><td>-20.00 k</td><td>-51.19</td><td>(-37.75)</td><td>20.37 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-56.69</td><td>(-43.69)</td><td>-55.38 k</td><td>-56.47</td><td>(-43.47)</td><td>54.54 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></table> File <Temp.png> saved (STATUS) Frequency Center Freq 157.425000 MHz CF Step 12.000 kHz Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	16.82	(-6.24)	-2.156 k	16.79	(-6.27)	2.874 k	10.00 kHz	20.00 kHz	300.0 Hz	-20.88	(-17.44)	-10.00 k	-12.32	(-8.88)	10.30 k	20.00 kHz	50.00 kHz	300.0 Hz	-53.33	(-39.89)	-20.00 k	-51.19	(-37.75)	20.37 k	50.00 kHz	60.00 kHz	300.0 Hz	-56.69	(-43.69)	-55.38 k	-56.47	(-43.47)	54.54 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)																																																										
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50.00 kHz	60.00 kHz	300.0 Hz	-56.69	(-43.69)	-55.38 k	-56.47	(-43.47)	54.54 k																																																										
8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
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Appendix C:Emission Mask

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT																																																															
TX-AWL	FM	CH _L	Agilent Spectrum Analyzer - Spectrum Emission Mask RL RF SD AC SENSE PULSE ALIGN OFF 10:13:33 AM Dec 05, 2018 Center Freq 156.025000 MHz Center Freq: 156.025000 MHz Radio Std: None PASS IF Gain: Low Trig: Free Run #Atten: 40 dB Radio Device: BTS Ref Offset 26 dB Ref 20.0 dBm 10 dB/div Log 0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 Center 156 MHz Span 120 kHz Total Power Ref 14.08 dBm/0.0125 MHz <table><thead><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr></thead><tbody><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>-9.438</td><td>(-25.53)</td><td>0.0</td><td>14.37</td><td>(-1.72)</td><td>359.3</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-47.98</td><td>(-37.57)</td><td>-10.00 k</td><td>-52.03</td><td>(-41.62)</td><td>13.84 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-52.49</td><td>(-32.08)</td><td>-27.75 k</td><td>-52.26</td><td>(-31.85)</td><td>23.13 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-55.43</td><td>(-42.43)</td><td>-50.53 k</td><td>-54.88</td><td>(-41.88)</td><td>54.96 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></tbody></table> File <MASK B.state> recalled STATUS Frequency Center Freq 156.025000 MHz CF Step 12.000 kHz Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	-9.438	(-25.53)	0.0	14.37	(-1.72)	359.3	10.00 kHz	20.00 kHz	300.0 Hz	-47.98	(-37.57)	-10.00 k	-52.03	(-41.62)	13.84 k	20.00 kHz	50.00 kHz	300.0 Hz	-52.49	(-32.08)	-27.75 k	-52.26	(-31.85)	23.13 k	50.00 kHz	60.00 kHz	300.0 Hz	-55.43	(-42.43)	-50.53 k	-54.88	(-41.88)	54.96 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
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TX-AWL	FM	CH _L	Agilent Spectrum Analyzer - Spectrum Emission Mask RL RF SD AC SENSE PULSE ALIGN OFF 10:14:22 AM Dec 05, 2018 Center Freq 156.025000 MHz Center Freq: 156.025000 MHz Radio Std: None PASS IF Gain: Low Trig: Free Run Avg: 100.00% of 10 #Atten: 40 dB Radio Device: BTS Ref Offset 26 dB Ref 20.0 dBm 10 dB/div Log 0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 Center 156 MHz Span 120 kHz Total Power Ref 14.00 dBm/0.0125 MHz <table><thead><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr></thead><tbody><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>9.650</td><td>(-6.44)</td><td>-2.156 k</td><td>9.580</td><td>(-6.51)</td><td>2.814 k</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-28.23</td><td>(-17.82)</td><td>-10.00 k</td><td>-19.60</td><td>(-9.19)</td><td>10.30 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-58.86</td><td>(-36.45)</td><td>-36.80 k</td><td>-54.63</td><td>(-34.21)</td><td>20.43 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-58.73</td><td>(-45.73)</td><td>-55.26 k</td><td>-58.90</td><td>(-45.90)</td><td>51.49 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></tbody></table> File <Temp.png> saved STATUS Frequency Center Freq 156.025000 MHz CF Step 12.000 kHz Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	9.650	(-6.44)	-2.156 k	9.580	(-6.51)	2.814 k	10.00 kHz	20.00 kHz	300.0 Hz	-28.23	(-17.82)	-10.00 k	-19.60	(-9.19)	10.30 k	20.00 kHz	50.00 kHz	300.0 Hz	-58.86	(-36.45)	-36.80 k	-54.63	(-34.21)	20.43 k	50.00 kHz	60.00 kHz	300.0 Hz	-58.73	(-45.73)	-55.26 k	-58.90	(-45.90)	51.49 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
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TX-AWL	FM	CH _M	Agilent Spectrum Analyzer - Spectrum Emission Mask RL RF SD AC SENSE PULSE ALIGN OFF 10:10:11 AM Dec 05, 2018 Center Freq 156.800000 MHz Center Freq: 156.800000 MHz Radio Std: None PASS IF Gain: Low Trig: Free Run #Atten: 40 dB Radio Device: BTS Ref Offset 26 dB Ref 20.0 dBm 10 dB/div Log 0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 Center 156.8 MHz Span 120 kHz Total Power Ref 14.13 dBm/0.0125 MHz <table><thead><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr></thead><tbody><tr><td>0.0 Hz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>-10.29</td><td>(-26.31)</td><td>0.0</td><td>14.34</td><td>(-1.68)</td><td>359.3</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-52.88</td><td>(-42.40)</td><td>-13.24 k</td><td>-52.00</td><td>(-41.52)</td><td>10.06 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-50.49</td><td>(-30.01)</td><td>-20.97 k</td><td>-54.23</td><td>(-33.75)</td><td>42.01 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-54.69</td><td>(-41.69)</td><td>-52.69 k</td><td>-54.61</td><td>(-41.61)</td><td>51.49 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></tbody></table> File <MASK B.state> recalled STATUS Frequency Center Freq 156.800000 MHz CF Step 12.000 kHz Man Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 Hz	10.00 kHz	300.0 Hz	-10.29	(-26.31)	0.0	14.34	(-1.68)	359.3	10.00 kHz	20.00 kHz	300.0 Hz	-52.88	(-42.40)	-13.24 k	-52.00	(-41.52)	10.06 k	20.00 kHz	50.00 kHz	300.0 Hz	-50.49	(-30.01)	-20.97 k	-54.23	(-33.75)	42.01 k	50.00 kHz	60.00 kHz	300.0 Hz	-54.69	(-41.69)	-52.69 k	-54.61	(-41.61)	51.49 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
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Appendix C:Emission Mask

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT																																																															
TX-AWL	FM	CH _M	Agilent Spectrum Analyzer - Spectrum Emission Mask RLRFSDACSENSE PULSEALIGN OFF10:11:00 AM Dec 05, 2018 Center Freq 156.800000 MHzCenter Freq: 156.800000 MHzRadio Std: None PASSTrig: Free RunAvg: 100.00% of 10Radio Device: BTS If Gain: LowAtten: 40 dB Ref Offset 26 dBRef 20.0 dBm 10 dB/divLog Center 156.8 MHzSpan 120 kHz Total Power Ref 13.94 dBm @ 0.0125 MHz <table><thead><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr></thead><tbody><tr><td>0.0 kHz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>9.560</td><td>(-6.46)</td><td>-2.156 k</td><td>9.498</td><td>(-6.52)</td><td>2.754 k</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-28.23</td><td>(-17.75)</td><td>-10.00 k</td><td>-19.27</td><td>(-8.79)</td><td>10.30 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-57.36</td><td>(-36.88)</td><td>-26.07 k</td><td>-55.48</td><td>(-35.00)</td><td>20.31 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-58.19</td><td>(-45.19)</td><td>-56.52 k</td><td>-58.86</td><td>(-45.86)</td><td>59.76 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></tbody></table> File <Temp.png> savedSTATUS Frequency Center Freq 156.800000 MHz CF Step 12.000 kHz AutoMan Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 kHz	10.00 kHz	300.0 Hz	9.560	(-6.46)	-2.156 k	9.498	(-6.52)	2.754 k	10.00 kHz	20.00 kHz	300.0 Hz	-28.23	(-17.75)	-10.00 k	-19.27	(-8.79)	10.30 k	20.00 kHz	50.00 kHz	300.0 Hz	-57.36	(-36.88)	-26.07 k	-55.48	(-35.00)	20.31 k	50.00 kHz	60.00 kHz	300.0 Hz	-58.19	(-45.19)	-56.52 k	-58.86	(-45.86)	59.76 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
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TX-AWL	FM	CH _H	Agilent Spectrum Analyzer - Spectrum Emission Mask RLRFSDACSENSE PULSEALIGN OFF10:06:20 AM Dec 05, 2018 Center Freq 157.425000 MHzCenter Freq: 157.425000 MHzRadio Std: None PASSTrig: Free RunAvg: 100.00% of 10Radio Device: BTS If Gain: LowAtten: 40 dB Ref Offset 26 dBRef 20.0 dBm 10 dB/divLog Center 157.4 MHzSpan 120 kHz Total Power Ref 13.97 dBm @ 0.0125 MHz <table><thead><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr></thead><tbody><tr><td>0.0 kHz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>-9.786</td><td>(-25.74)</td><td>0.0</td><td>14.39</td><td>(-1.56)</td><td>239.5</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-50.32</td><td>(-39.78)</td><td>-10.36 k</td><td>-51.65</td><td>(-41.11)</td><td>19.83 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-54.80</td><td>(-34.26)</td><td>-27.87 k</td><td>-53.91</td><td>(-33.37)</td><td>41.83 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-55.05</td><td>(-42.05)</td><td>-55.28 k</td><td>-54.28</td><td>(-41.28)</td><td>50.95 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></tbody></table> File <MASK B.state> recalledSTATUS Frequency Center Freq 157.425000 MHz CF Step 12.000 kHz AutoMan Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 kHz	10.00 kHz	300.0 Hz	-9.786	(-25.74)	0.0	14.39	(-1.56)	239.5	10.00 kHz	20.00 kHz	300.0 Hz	-50.32	(-39.78)	-10.36 k	-51.65	(-41.11)	19.83 k	20.00 kHz	50.00 kHz	300.0 Hz	-54.80	(-34.26)	-27.87 k	-53.91	(-33.37)	41.83 k	50.00 kHz	60.00 kHz	300.0 Hz	-55.05	(-42.05)	-55.28 k	-54.28	(-41.28)	50.95 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
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TX-AWL	FM	CH _H	Agilent Spectrum Analyzer - Spectrum Emission Mask RLRFSDACSENSE PULSEALIGN OFF10:07:09 AM Dec 05, 2018 Center Freq 157.425000 MHzCenter Freq: 157.425000 MHzRadio Std: None PASSTrig: Free RunAvg: 100.00% of 10Radio Device: BTS If Gain: LowAtten: 40 dB Ref Offset 26 dBRef 20.0 dBm 10 dB/divLog Center 157.4 MHzSpan 120 kHz Total Power Ref 13.85 dBm @ 0.0125 MHz <table><thead><tr><th>Start Freq</th><th>Stop Freq</th><th>Integ BW</th><th>dBm</th><th>Lower ΔLim(dB)</th><th>Freq (Hz)</th><th>< Peak > dBm</th><th>Upper ΔLim(dB)</th><th>Freq (Hz)</th></tr></thead><tbody><tr><td>0.0 kHz</td><td>10.00 kHz</td><td>300.0 Hz</td><td>9.476</td><td>(-6.48)</td><td>-2.156 k</td><td>9.463</td><td>(-6.49)</td><td>2.874 k</td></tr><tr><td>10.00 kHz</td><td>20.00 kHz</td><td>300.0 Hz</td><td>-28.35</td><td>(-17.80)</td><td>-10.00 k</td><td>-19.09</td><td>(-8.55)</td><td>10.30 k</td></tr><tr><td>20.00 kHz</td><td>50.00 kHz</td><td>300.0 Hz</td><td>-57.08</td><td>(-36.54)</td><td>-24.15 k</td><td>-56.28</td><td>(-35.73)</td><td>21.03 k</td></tr><tr><td>50.00 kHz</td><td>60.00 kHz</td><td>300.0 Hz</td><td>-58.71</td><td>(-45.71)</td><td>-58.56 k</td><td>-58.13</td><td>(-45.13)</td><td>55.92 k</td></tr><tr><td>8.000 MHz</td><td>12.50 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr><tr><td>12.50 MHz</td><td>15.00 MHz</td><td>1.000 MHz</td><td>—</td><td>(—)</td><td>—</td><td>—</td><td>(—)</td><td>—</td></tr></tbody></table> File <Temp.png> savedSTATUS Frequency Center Freq 157.425000 MHz CF Step 12.000 kHz AutoMan Freq Offset 0 Hz	Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)	0.0 kHz	10.00 kHz	300.0 Hz	9.476	(-6.48)	-2.156 k	9.463	(-6.49)	2.874 k	10.00 kHz	20.00 kHz	300.0 Hz	-28.35	(-17.80)	-10.00 k	-19.09	(-8.55)	10.30 k	20.00 kHz	50.00 kHz	300.0 Hz	-57.08	(-36.54)	-24.15 k	-56.28	(-35.73)	21.03 k	50.00 kHz	60.00 kHz	300.0 Hz	-58.71	(-45.71)	-58.56 k	-58.13	(-45.13)	55.92 k	8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—	12.50 MHz	15.00 MHz	1.000 MHz	—	(—)	—	—	(—)	—
Start Freq	Stop Freq	Integ BW	dBm	Lower ΔLim(dB)	Freq (Hz)	< Peak > dBm	Upper ΔLim(dB)	Freq (Hz)																																																										
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8.000 MHz	12.50 MHz	1.000 MHz	—	(—)	—	—	(—)	—																																																										
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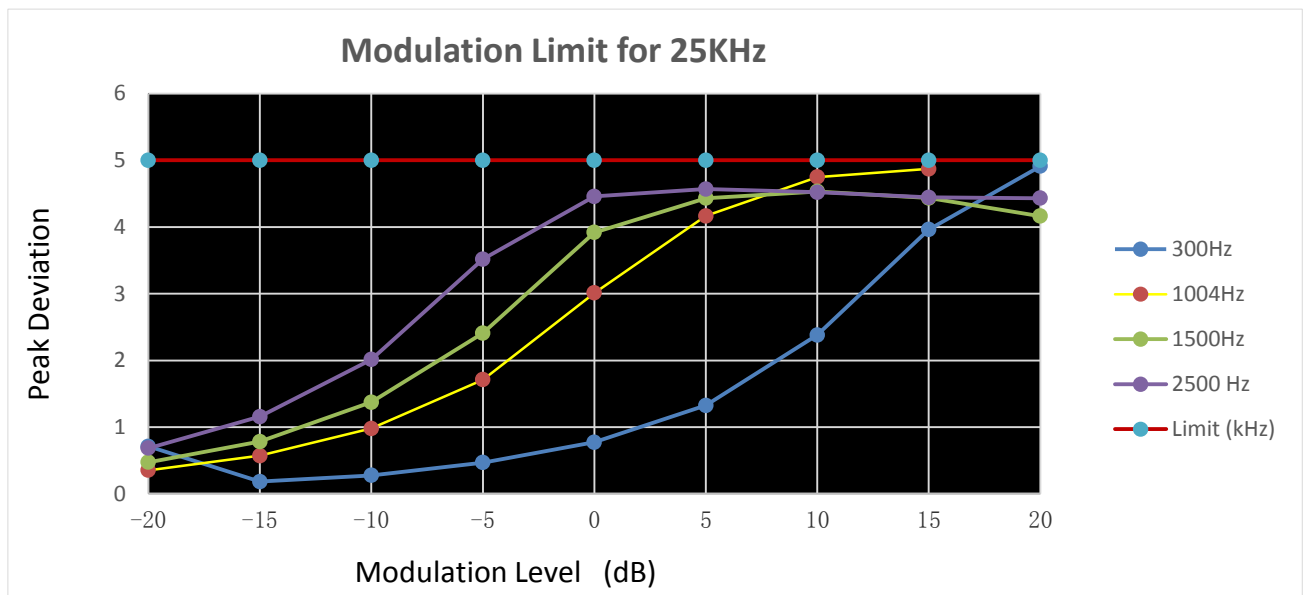
**Appendix D:Modulation Limit**

Operation Mode	Modulation Type	Test Channel	Modulation Level (dB)	Peak frequency deviation (kHz)				Limit (kHz)	Result
				300Hz	1004Hz	1500Hz	2500 Hz		
TX-AWH	FM	CH _M	-20	0.71	0.353	0.473	0.685	5	PASS
TX-AWH	FM	CH _M	-15	0.184	0.571	0.784	1.157	5	PASS
TX-AWH	FM	CH _M	-10	0.276	0.981	1.374	2.015	5	PASS
TX-AWH	FM	CH _M	-5	0.469	1.712	2.41	3.519	5	PASS
TX-AWH	FM	CH _M	0	0.774	3.013	3.918	4.459	5	PASS
TX-AWH	FM	CH _M	5	1.326	4.166	4.432	4.569	5	PASS
TX-AWH	FM	CH _M	10	2.382	4.749	4.534	4.521	5	PASS
TX-AWH	FM	CH _M	15	3.961	4.871	4.434	4.444	5	PASS
TX-AWH	FM	CH _M	20	4.912	4.847	4.163	4.431	5	PASS



Appendix D:Modulation Limit

TEST PLOT RESULT



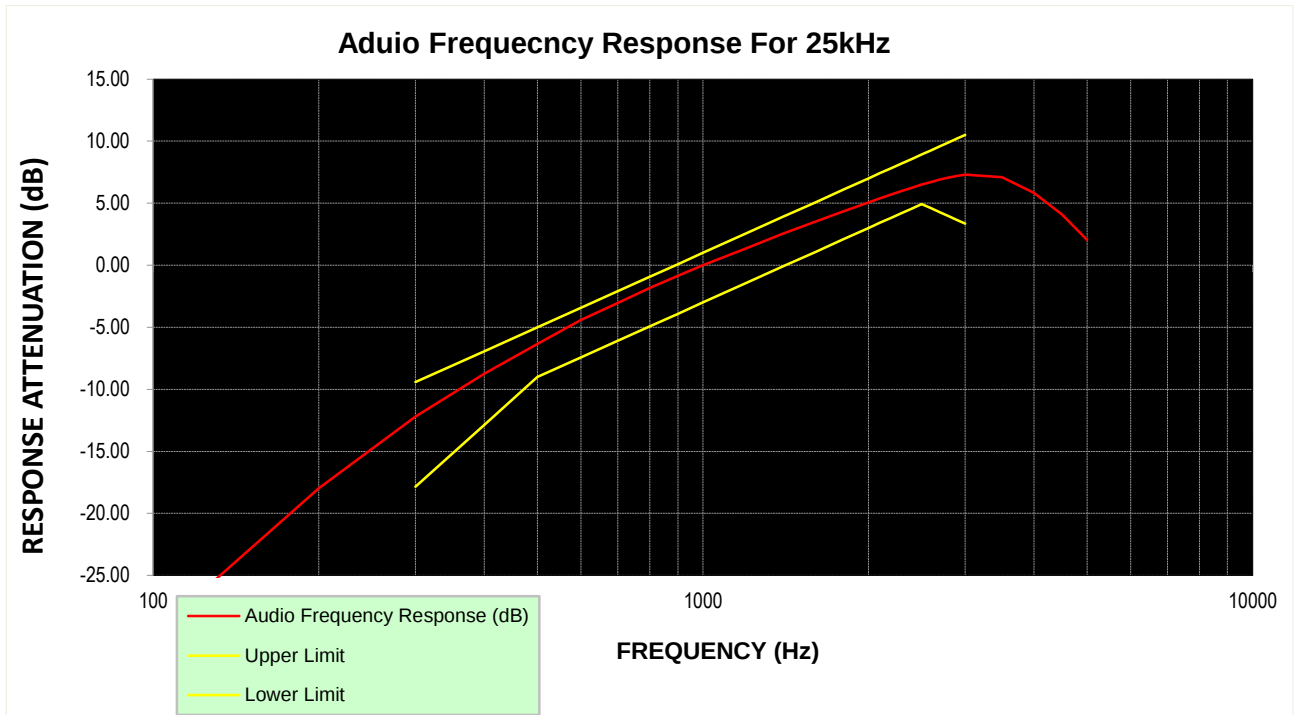
**Appendix E:Aduio Frequency Response**

Operation Mode	Modulation Type	Test Channel	Frequency (Hz)	Audio Frequency Response (dB)	Lower Limit	Upper Limit	Result
TX-AWH	FM	CH _M	100	-29.77			PASS
TX-AWH	FM	CH _M	200	-17.99			PASS
TX-AWH	FM	CH _M	300	-12.19	-17.84	-9.42	PASS
TX-AWH	FM	CH _M	400	-8.74	-12.86	-6.93	PASS
TX-AWH	FM	CH _M	500	-6.36	-9.00	-5.00	PASS
TX-AWH	FM	CH _M	600	-4.42	-7.42	-3.42	PASS
TX-AWH	FM	CH _M	700	-3.05	-6.09	-2.09	PASS
TX-AWH	FM	CH _M	800	-1.82	-4.93	-0.93	PASS
TX-AWH	FM	CH _M	900	-0.86	-3.91	0.09	PASS
TX-AWH	FM	CH _M	1000	0.01	-3.00	1.00	PASS
TX-AWH	FM	CH _M	1200	1.38	-1.42	2.58	PASS
TX-AWH	FM	CH _M	1400	2.55	-0.09	3.91	PASS
TX-AWH	FM	CH _M	1600	3.51	1.07	5.07	PASS
TX-AWH	FM	CH _M	1800	4.33	2.09	6.09	PASS
TX-AWH	FM	CH _M	2000	5.07	3.00	7.00	PASS
TX-AWH	FM	CH _M	2100	5.40	3.42	7.42	PASS
TX-AWH	FM	CH _M	2200	5.70	3.83	7.83	PASS
TX-AWH	FM	CH _M	2300	5.99	4.21	8.21	PASS
TX-AWH	FM	CH _M	2400	6.25	4.58	8.58	PASS
TX-AWH	FM	CH _M	2500	6.50	4.93	8.93	PASS
TX-AWH	FM	CH _M	2600	6.72	4.59	9.27	PASS
TX-AWH	FM	CH _M	2700	6.91	4.27	9.60	PASS
TX-AWH	FM	CH _M	2800	7.07	3.95	9.91	PASS
TX-AWH	FM	CH _M	2900	7.19	3.65	10.22	PASS
TX-AWH	FM	CH _M	3000	7.29	3.35	10.51	PASS
TX-AWH	FM	CH _M	3500	7.09			PASS
TX-AWH	FM	CH _M	4000	5.84			PASS
TX-AWH	FM	CH _M	4500	4.07			PASS
TX-AWH	FM	CH _M	5000	2.04			PASS



Appendix E:Aduio Frequency Response

TEST PLOT RESULT



Note: The highest audio frequency response at 3kHz<3.125kHz, so meet the requirement.

**Appendix F:Audio Low Pass Filter Response**

Operation Mode	Modulation Type	Test Channel	Frequency (KHz)	dB relative to 1 KHz	Limit	Result
TX-AWH	FM	CH _M	1	-16.67	0.00	PASS
TX-AWH	FM	CH _M	3	-24.98	0.00	PASS
TX-AWH	FM	CH _M	4	-38.86	-7.50	PASS
TX-AWH	FM	CH _M	5	-52.74	-13.30	PASS
TX-AWH	FM	CH _M	6	-57.69	-18.10	PASS
TX-AWH	FM	CH _M	8	-58.89	-25.60	PASS
TX-AWH	FM	CH _M	10	-58.82	-31.40	PASS
TX-AWH	FM	CH _M	15	-58.87	-41.90	PASS
TX-AWH	FM	CH _M	20	-58.83	-50.00	PASS
TX-AWH	FM	CH _M	30	-58.79	-50.00	PASS
TX-AWH	FM	CH _M	40	-58.79	-50.00	PASS
TX-AWH	FM	CH _M	50	-58.79	-50.00	PASS
TX-AWH	FM	CH _M	60	-58.79	-50.00	PASS
TX-AWH	FM	CH _M	70	-58.79	-50.00	PASS
TX-AWH	FM	CH _M	80	-58.79	-50.00	PASS
TX-AWH	FM	CH _M	90	-58.79	-50.00	PASS
TX-AWH	FM	CH _M	100	-58.79	-50.00	PASS



Appendix F:Audio Low Pass Filter Response

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT																		
TX-AWH	FM	CH _M	The graph displays the audio low pass filter response for TX-AWH in FM mode on test channel CH_M. The y-axis represents the gain in dB relative to 1 KHz, ranging from -70.00 to 10.00. The x-axis represents the frequency in KHz on a logarithmic scale from 1 to 100. A red line shows the measured response, and a yellow line shows the limit. The measured response starts at -15 dB at 1 KHz, decreases to -25 dB at 2 KHz, then drops sharply to -55 dB at 5 KHz, and remains flat at -55 dB up to 100 KHz. The limit starts at 0 dB at 1 KHz, decreases to -10 dB at 2 KHz, then to -50 dB at 5 KHz, and remains flat at -50 dB up to 100 KHz. <table><tr><th>Frequency (KHz)</th><th>dB relative to 1 KHz (Measured)</th><th>dB relative to 1 KHz (Limit)</th></tr><tr><td>1</td><td>-15.00</td><td>0.00</td></tr><tr><td>2</td><td>-25.00</td><td>-10.00</td></tr><tr><td>5</td><td>-55.00</td><td>-50.00</td></tr><tr><td>10</td><td>-55.00</td><td>-50.00</td></tr><tr><td>100</td><td>-55.00</td><td>-50.00</td></tr></table>	Frequency (KHz)	dB relative to 1 KHz (Measured)	dB relative to 1 KHz (Limit)	1	-15.00	0.00	2	-25.00	-10.00	5	-55.00	-50.00	10	-55.00	-50.00	100	-55.00	-50.00
Frequency (KHz)	dB relative to 1 KHz (Measured)	dB relative to 1 KHz (Limit)																			
1	-15.00	0.00																			
2	-25.00	-10.00																			
5	-55.00	-50.00																			
10	-55.00	-50.00																			
100	-55.00	-50.00																			

**Appendix G:Frequency Stability Test & Temperature**

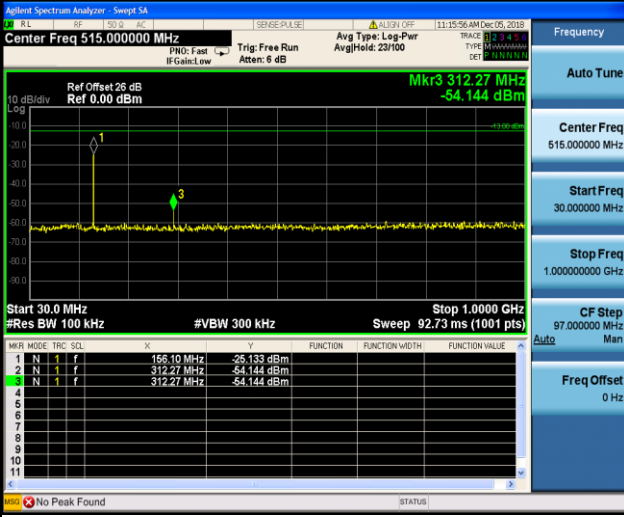
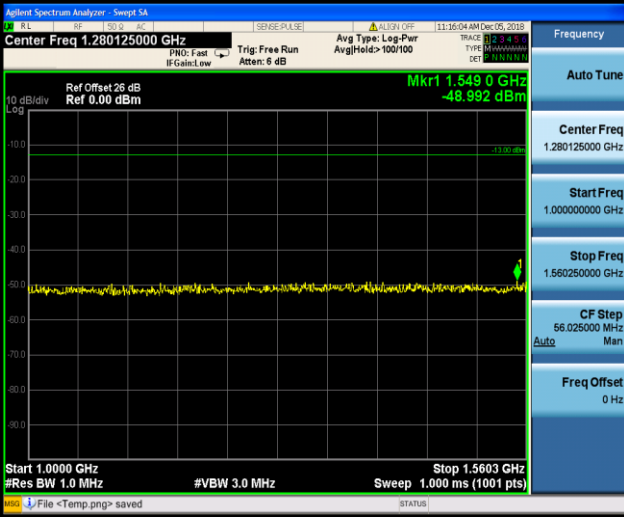
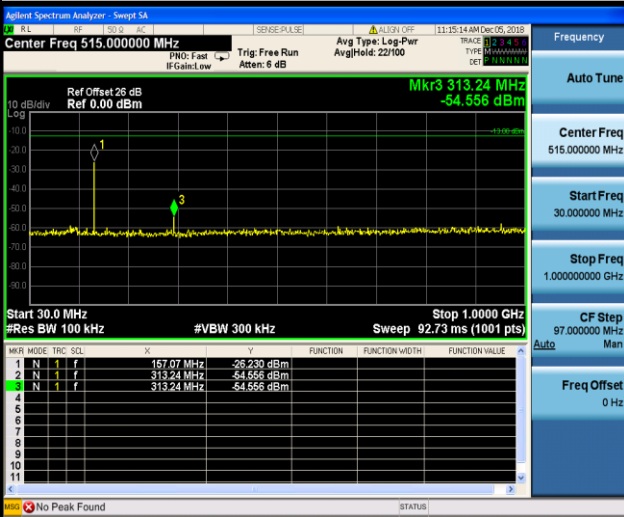
Operation Mode	Modulation Type	Test Conditions		Frequency error (ppm)			Limit (ppm)	Result
		Voltage	Temperature	CH _L	CH _M	CH _H		
TX-AWH	FM	V _N	-30	-1.658	-1.644	<u>-1.740</u>	±10	PASS
TX-AWH	FM	V _N	-20	-1.519	-1.613	-1.602	±10	PASS
TX-AWH	FM	V _N	-10	-1.490	-1.429	-1.570	±10	PASS
TX-AWH	FM	V _N	0	-1.331	-1.307	-1.369	±10	PASS
TX-AWH	FM	V _N	10	-1.182	-1.205	-1.188	±10	PASS
TX-AWH	FM	V _N	20	-0.993	-1.021	-1.061	±10	PASS
TX-AWH	FM	V _N	30	-1.211	-1.174	-1.273	±10	PASS
TX-AWH	FM	V _N	40	-1.271	-1.307	-1.369	±10	PASS
TX-AWH	FM	V _N	55	-1.400	-1.419	-1.454	±10	PASS
TX-AWL	FM	V _N	-30	-1.600	-1.579	-1.592	±10	PASS
TX-AWL	FM	V _N	-20	-1.527	-1.475	-1.486	±10	PASS
TX-AWL	FM	V _N	-10	-1.414	-1.360	-1.412	±10	PASS
TX-AWL	FM	V _N	0	-1.280	-1.255	-1.370	±10	PASS
TX-AWL	FM	V _N	10	-1.218	-1.234	-1.244	±10	PASS
TX-AWL	FM	V _N	20	-1.032	-1.046	-1.054	±10	PASS
TX-AWL	FM	V _N	30	-1.269	-1.213	-1.286	±10	PASS
TX-AWL	FM	V _N	40	-1.311	-1.308	-1.349	±10	PASS
TX-AWL	FM	V _N	55	-1.455	-1.433	-1.476	±10	PASS

**Appendix H:Frequency Stability Test & Voltage**

Operation Mode	Modulation Type	Test Conditions		Frequency error (ppm)			Limit (ppm)	Result
		Voltage	Temperature	CH _L	CH _M	CH _H		
TX-AWH	FM	V _N	T _N	-0.993	-1.021	-1.061	±10	PASS
TX-AWH	FM	V _L	T _N	-1.483	-1.511	<u>-1.521</u>	±10	PASS
TX-AWH	FM	V _H	T _N	-1.223	-1.231	-1.261	±10	PASS
TX-AWL	FM	V _N	T _N	-1.032	-1.046	-1.054	±10	PASS
TX-AWL	FM	V _L	T _N	-1.282	-1.386	-1.404	±10	PASS
TX-AWL	FM	V _H	T _N	-1.212	-1.276	-1.274	±10	PASS

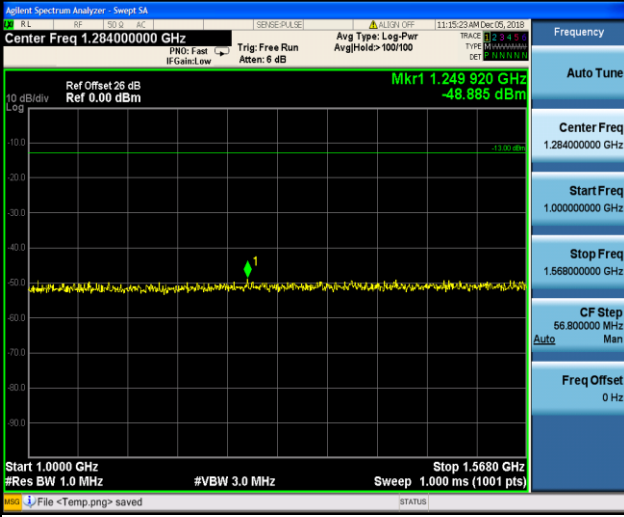
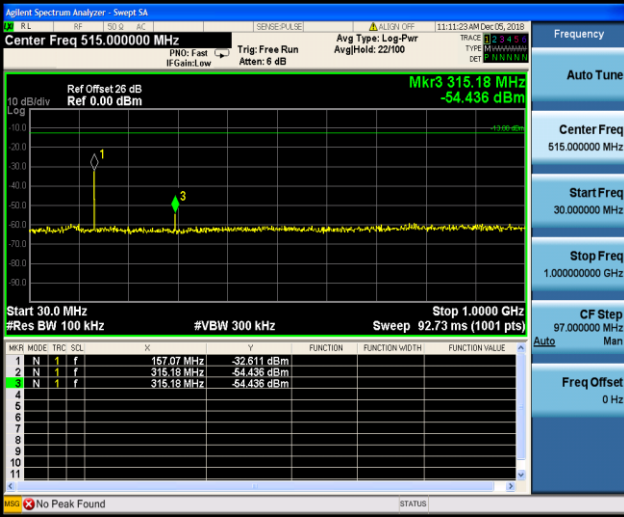
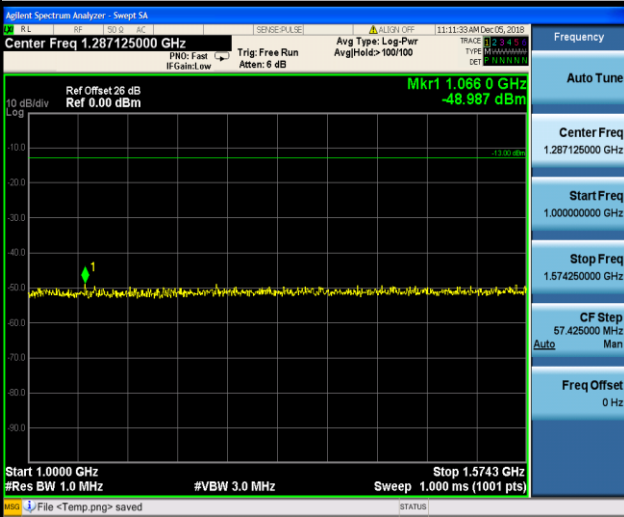


Appendix I:Spurious Emission On Antenna Port

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-AWH	FM	CH _L	 30MHz~1GHz
TX-AWH	FM	CH _L	 1GHz~10th Harmonic
TX-AWH	FM	CH _M	 30MHz~1GHz



Appendix I:Spurious Emission On Antenna Port

Operation Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-AWH	FM	CH _M	 1GHz~10th Harmonic
TX-AWH	FM	CH _H	 30MHz~1GHz
TX-AWH	FM	CH _H	 1GHz~10th Harmonic

----End of Report----