Shenzhen Huatongwei International Inspection Co., Ltd.
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Phone:86-755-26748019 Fax:86-755-26748089 http://www.szhtw.com.cn

TEST REPORT

Report Reference No. ..... :	**TRE1709011502**	R/C…….: 17710
FCC ID ..... :	**AMW70001**	
Applicant's name ..... :	**Uniden America Corporation**	
Address..... :	3001 Gateway Drive Suite 130, Irving, Texas, United States	
Manufacturer.....:	Uniden America Corporation	
Address.....:	3001 Gateway Drive Suite 130, Irving, Texas, United States	
Test item description..... :	**FLOATING VHF MARINE RADIO**	
Trade Mark..... :	UNIDEN, West Marine	
Model/Type reference..... :	MHS335BT	
Listed Model(s) ..... :	VHF470B, VHF470G	
Standard ..... :	**FCC Part 80/FCC Part 2/ FCC Part 15B**	
Date of receipt of test sample……...:	Sept. 15, 2017	
Date of testing……..……:	Sept. 18, 2017 – Oct. 16, 2017	
Date of issue……..…….....:	Oct. 16, 2017	
Result .....……...:	**PASS**	

Compiled by (position+printed name+signature). :	File administrators Shayne Zhu	Shayne Zhu
Supervised by (position+printed name+signature). :	Project Engineer Jerry Wang	Jerry Wang
Approved by (position+printed name+signature). :	RF Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address..... :	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Contents

1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:
FCC Rules Part 80 :2017 Stations In The Maritime Services.
TIA/EIA 603 D: June 2010 Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
FCC Part 15 Subpart B:2017Unintentional Radiators
FCC Part 2: 2017Frequency allocations and radio treaty matters, general rules and regulations

1.2. Report version

Version No.	Date of issue	Description
00	Oct. 16, 2017	Original

2. Test Description

Transmitter Requirement			
Test item	Standards requirement	Result	
		Pass	N/A
Maximum Transmitter Power	FCC Part 80.215， FCC Part 2.1046	☒	
Modulation requirements	FCC Part 80.213， FCC Part 2.1047	☒	
Occupied Bandwidth	FCC Part 80.205， FCC Part 2.1049	☒	
Emission Mask	FCC Part 80.211(f)， FCC Part 2.1049	☒	
Frequency Stability	FCC Part 80.209， FCC Part 2.1055	☒	
Transmitter Radiated Spurious Emission	FCC Part 80. 211(f)(3)， FCC Part 2.1053	☒	
Spurious Emission On Antenna Port	FCC Part 80. 211(f)(3)， FCC Part 2.1051	☒	
Receiver Requirement			
Test item	Standards requirement	Result	
		Pass	N/A
Conducted Emission	FCC Part 15.107	☒	
Radiated Emission	FCC Part 15.109	☒	

3. SUMMARY

3.1. Client Information

Applicant:	Uniden America Corporation
Address:	3001 Gateway Drive Suite 130, Irving, Texas, United States
Manufacturer:	Uniden America Corporation
Address:	3001 Gateway Drive Suite 130, Irving, Texas, United States

3.2. Product Description

Name of EUT:	FLOATING VHF MARINE RADIO	
Trade mark:	UNIDEN, West Marine	
Model/Type reference:	MHS335BT	
Listed model(s):	VHF470B, VHF470G	
Power supply:	DC 7.4V from re-charge Lion battery DC 6.0V from dry battery	
Adapter information:	Model:SAW12-120-1000UD Input:100-240Va.c.,50/60Hz,0.3A Output: 12Vd.c., 1000mA	
Operation Frequency Range:	Tx: 156.05MHz to 157.425MHz Rx: 156.05MHz to 161.6MHz	
Rated Output Power:	High Power: 6W (37.78dBm) Mid Power: 2.5W (33.98dBm) Low Power: 1W (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: 16K0F3E
Antenna Type:	External	
Maximum Transmitter Power:	5.97W for 25kHz Channel Separation	

.Note:
Please refer to User Manual for Channel List and Power Level.
Please refer to TRE1709011504-Uniden-IEC 62238 report for DSC test.

3.3. Test frequency list

Mode	Modulation	Operation Frequency Range	Test Frequency (MHz)	
Analog	FM	Tx: 156.05MHz to 157.425MHz Rx: 156.05MHz to 161.6MHz	CH_L	Tx: 156.05(CH1) Rx: 156.05(CH1)
			CH_M	Tx: 156.8(CH16) Rx: 156.8(CH16)
			CH_H	Tx: 157.425(CH88) Rx: 161.6(CH20)

Note:
In section 15.31(m), 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/FM	GPS on	Adapter
			High	Mid	Low	25kHz		
TX1	√		√			√		
TX2	√			√		√		
TX3	√				√	√		
RX1		√				√	√	√

√: is operation mode.

3.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:
● - supplied by the manufacturer
○ - supplied by the lab

●	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.

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 Conditon	
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	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	1.60 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.65 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	35 Hz	(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				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Artificial Mains	Rohde&Schwarz	ESH2-Z5	100028	2016/11/13
EMI Test Receiver	Rohde&Schwarz	ESCS 30	100038	2016/11/13
Pulse Limiter	Rohde&Schwarz	ESHSZ2	100044	2016/11/13
EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	N/A
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2016/11/13
Artificial Mains	Rohde&Schwarz	ESH3-Z6	100210	2016/11/13
Artificial Mains	Rohde&Schwarz	ESH3-Z6	100211	2016/11/13
Test cable	ENVIROFLEX	3651	1101902	2016/11/13

Modulation Characteristic				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2016/11/13
RF Cable	Chengdu E-Microwave	----	----	2016/11/13

Frequency Stability				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2016/11/13
Signal Generator	Rohde&Schwarz	SMT03	100059	2016/11/13
Climate Chamber	ESPEC	EL-10KA	05107008	2016/11/13
RF Cable	Chengdu E-Microwave	----	----	2016/11/13

Transmitter Radiated Spurious Emission				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Ultra-Broadband Antenna	Rohde&Schwarz	HL562	100015	2016/11/13
EMI Test Receiver	Rohde&Schwarz	ESI 26	100009	2016/11/13
RF Test Panel	Rohde&Schwarz	TS / RSP	335015/ 0017	N/A
HORN ANTENNA	Rohde&Schwarz	HF906	100039	2016/11/13
Turntable	ETS	2088	2149	N/A
Antenna Mast	ETS	2075	2346	N/A
EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	N/A
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2016/11/13
Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2016/11/13
Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	2016/11/13
HORN ANTENNA	ShwarzBeck	9120D	1012	2016/11/13
HORN ANTENNA	ShwarzBeck	9120D	1011	2016/11/13
TURNTABLE	MATURO	TT2.0	----	N/A
ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A
Test cable	Siva Cables Italy	RG 58A/U	W14.02	2016/11/13

Maximum Transmitter Power & Spurious Emission On Antenna Port & Occupied Bandwidth & Emission Mask				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Receiver	Rohde&Schwarz	ESI 26	100009	2016/11/13
Attenuator	R&S	ESH3-22	100449	2016/11/13
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2016/11/13
Digital Radio Test Set	AEROFLEX	3920	299001967	2016/11/13
High-Pass Filter	Anritsu	MP526B	6220875256	2016/11/13
High-Pass Filter	Anritsu	MP526D	6220878392	2016/11/13
Spectrum Analzyer	Aglient	E4407B	MY44210775	2016/11/13
Spectrum Analzyer	Rohde&Schwarz	FSP40	1164.4391.40	2016/11/13
SPECTRUM ANALYZER	Agilent	E4407B	MY44210775	2016/11/13
Attenuator	Chengdu E-Microwave	EMCAXX-10RNZ-3	----	2016/11/13
RF Cable	Chengdu E-Microwave	----	----	2016/11/13
Combiner	Chengdu E-Microwave	EMPD-T-2-180-10-600	----	2016/11/13

Transient Frequency Behavior				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Signal Generator	Rohde&Schwarz	SMT03	100059	2016/11/13
Storage Oscilloscope	Tektronix	TDS3054B	B033027	2016/11/13
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2016/11/13
RF Cable	Chengdu E-Microwave	----	----	2016/11/13

The calibration interval was one year.

5. TEST CONDITIONS AND RESULTS

5.1. Maximum Transmitter Power

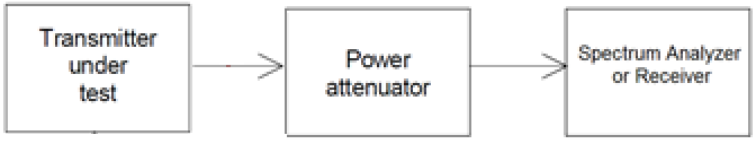
Applicants for licenses must request and use no more power than the actual power necessary for satisfactory operation.

LIMIT

FCC Part 80.215 (c)

(c) Coast station frequencies above 27500 kHz. The maximum power must not exceed the values listed below. Maximum authorized power at the input terminals of the station antenna
(1) Coast stations:
156-162 MHz-50W
(2) Marine utility stations:
156-162 MHz—10W

TEST CONFIGURATION



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

TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Please refer to the below test data:

Operation Mode	Test Channel	Measured power (dBm)	Measured power (W)	Limit (W)	Result
TX1	CH_L	37.76	5.97	＜10	Pass
	CH_M	37.75	5.96		
	CH_H	37.68	5.86		
TX2	CH_L	33.35	2.16		Pass
	CH_M	33.38	2.18		
	CH_H	33.37	2.17		
TX3	CH_L	29.76	0.95		Pass
	CH_M	29.75	0.94		
	CH_H	29.73	0.94		

5.2. Occupied Bandwidth

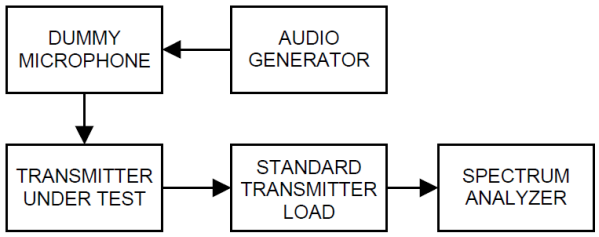
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits.

LIMIT

FCC Part 80.205

Class of emission	Emission designator	Authorized bandwidth (kHz)
A1A	160HA1A	0.4
A1B[1]	160HA1B	0.4
A1D[12]	16K0A1D	20.0
A2A	2K66A2A	2.8
A2B[1]	2K66A2B	2.8
A2D[12]	16K0A2D	20.0
A3E	6K00A3E	8.0
A3N[2]	2K66A3N	2.8
A3X[3]	3K20A3X	25.0
F1B[4]	280HF1B	0.3
F1B[5]	300HF1B	0.5
F1B[6]	16KOF1B	20.0
F1C	2K80F1C	3.0
F1D[12]	16K0F1D	20.0
F2B[6]	16KOF2B	20.0
F2C[7]	16KOF2C	20.0
F2D[12]	16K0F2D	20.0
F3C	2K80F3C	3.0
F3C[7]	16KOF3C	20.0
F3E[8]	16KOF3E	20.0

TEST CONFIGURATION



TEST PROCEDURE

1 The EUT was modulated by 2.5kHz sine wave audio signal; the level of the audio signal employed is 16dB greater than that necessary to produce 50% of rated system deviation.
Rated system deviation is 5 kHz for 25kHz channel spacing).
2 Spectrum set as follow:
Centre frequency = fundamental frequency, span=50kHz for 25kHz channel spacing,
RBW=300Hz, VBW=1kHz, Sweep = auto,
Detector function = peak, Trace = max hold
3 Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth
4 Measure and record the results in the test report.

TEST MODE:

Please reference to the section 3.4

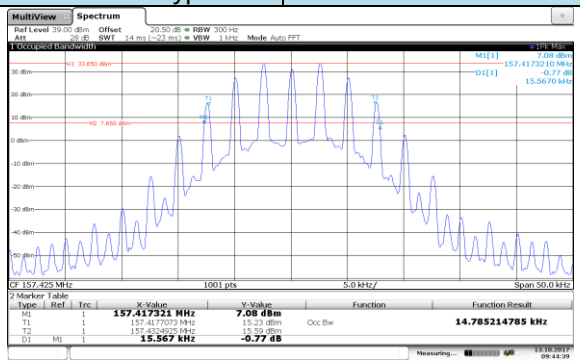
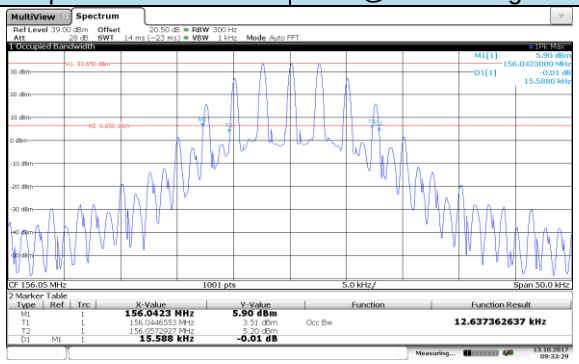
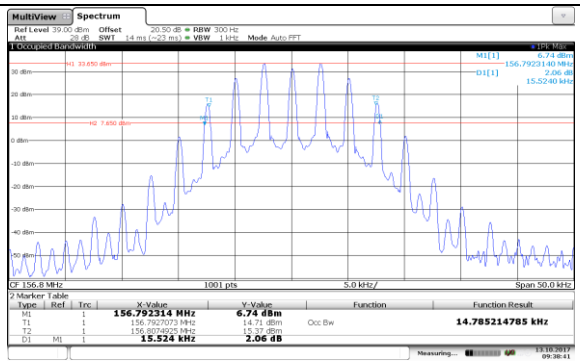
TEST RESULTS

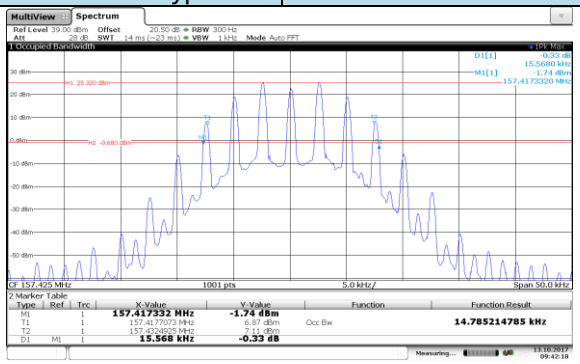
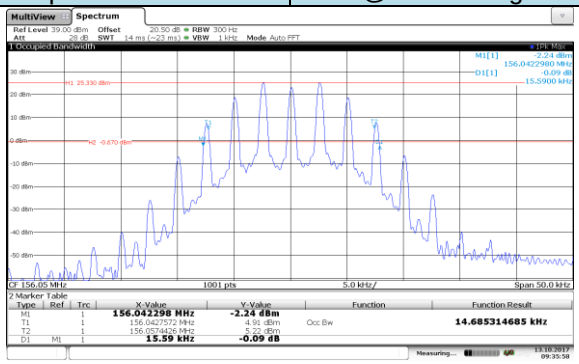
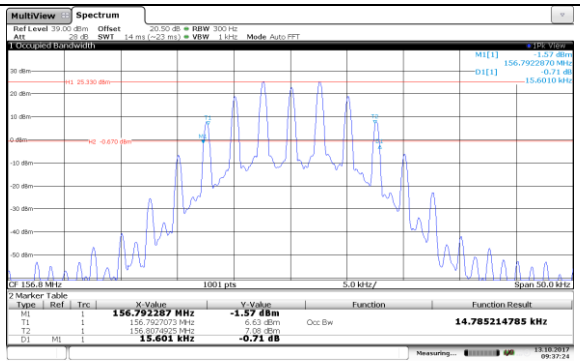
☒ **Passed** ☐ **Not Applicable**

Note: Have pre-tested TX1 to TX3 mode, record the worst case mode TX1 on the report.

Operation Mode	Test Channel	Occupied Bandwidth (kHz)		Limit(kHz)	Result
		99%	26dB		
TX1@ Test Voltage: 7.4 V	CH_L	12.6373	15.5880	⩽20	Pass
	CH_M	14.7852	15.5240		
	CH_H	14.7850	15.5670		
TX1@ Test Voltage: 6.0V	CH_L	14.6853	15.5900		
	CH_M	14.7852	15.6010		
	CH_H	14.7852	15.5680		

Test plot as follows:

Modulation Type	FM	Operation Mode	TX1@Test Voltage:7.4V
			
CH_L		CH_M	
		Not plot	
CH_H		-	

Modulation Type	FM	Operation Mode	TX1@Test Voltage:6.0V
			
CH_L		CH_M	
		Not plot	
CH_H		-	

5.3. Emission Mask

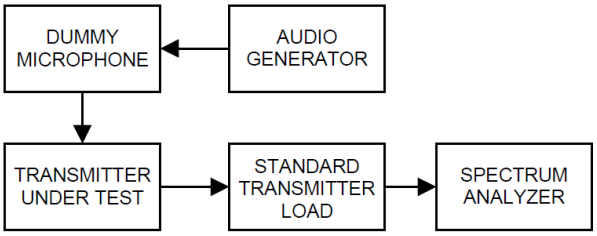
Transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section.

LIMIT

FCC Part 80.211

(f) The mean power when using emissions other than those in paragraphs (a), (b), (c) and (d) of this section:
(1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;
(2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and
(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus 10log10 (mean power in watts) dB.

TEST CONFIGURATION



TEST PROCEDURE

1 Connect the equipment as illustrated.
2 Spectrum set as follow:
Centre frequency = fundamental frequency, span=50kHz for 12.5kHz channel spacing,
RBW=100Hz, VBW=300Hz, Sweep = auto,
Centre frequency = fundamental frequency, span=120kHz for 25kHz channel spacing,
RBW=300Hz, VBW=1000Hz, Sweep = auto,
Detector function = peak, Trace = max hold
3 Key the transmitter, and set the level of the unmodulated carrier to a full scale reference line. This is the 0dB reference for the measurement.
4 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(Rated system deviation is 5 kHz for 25kHz channel spacing,2.5 kHz for 12.5kHz). The input level shall be established at the frequency of maximum response of the audio modulating circuit. Transmitters employing digital modulation techniques that bypass the limiter and the audio low-pass filter shall be modulated as specified by the manufacturer
5 Measure and record the results in the test report.

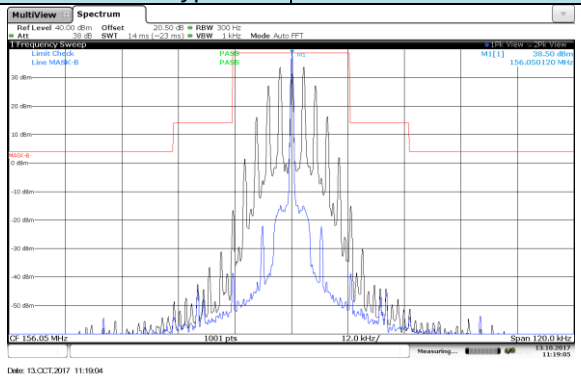
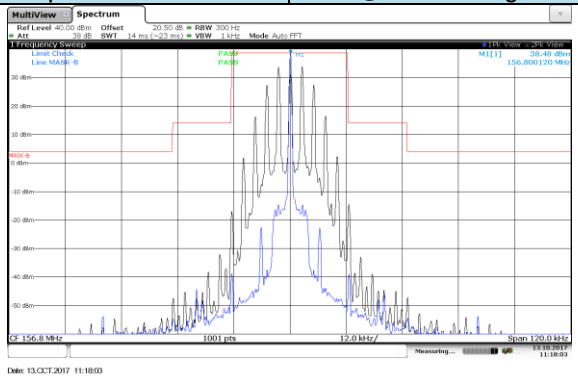
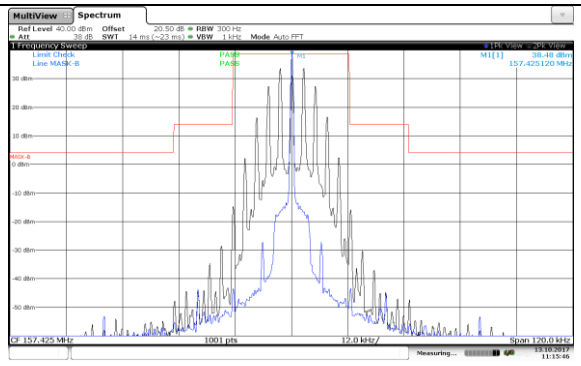
TEST MODE:

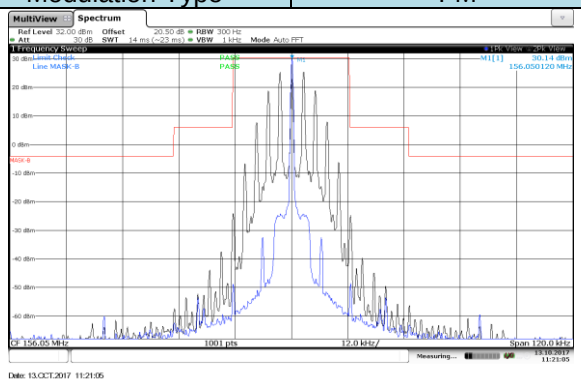
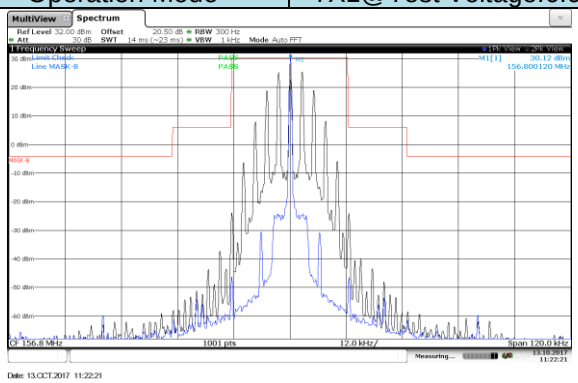
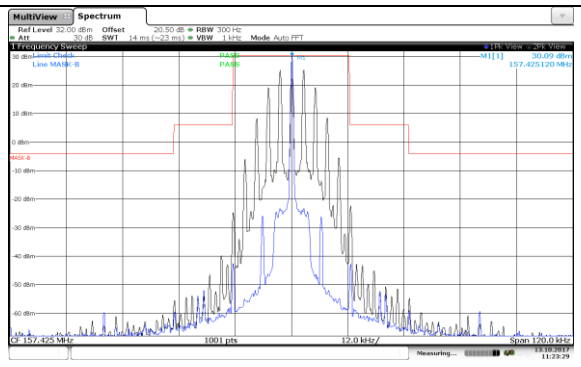
Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note: Have pre-tested TX1 to TX3 mode, record the worst case mode TX1 on the report.

Modulation Type	FM	Operation Mode	TX1@Test Voltage: 7.4V
			
CH_L		CH_M	
		Not plot	
CH_H		-	

Modulation Type	FM	Operation Mode	TX1@Test Voltage:6.0V
			
CH_L		CH_M	
		Not plot	
CH_H		-	

5.4. Modulation requirements

Modulation limiting is the transmitter circuit's ability to limit the transmitter from producing deviations in excess of a rated system deviation.

LIMIT

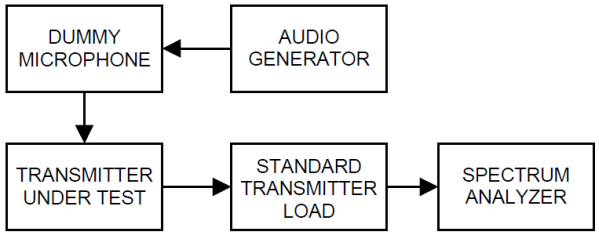
FCC Part 2.1047(b)

FCC Part 80.213(a) and (e)

When phase or frequency modulation is used in the 156-162 MHz band the peak modulation must be maintained between 75 and 100 percent. A frequency deviation of ±5 kHz is defined as 100 percent peak modulation; and

Coast station transmitters operated in the 156-162 MHz band must be equipped with an audio low-pass filter. The filter must be installed between the modulation limiter and the modulated radio frequency stage. At frequencies between 3 kHz and 20 kHz it must have an attenuation greater than at 1 kHz by at least 60log10(f/3) dB where “f” is the audio frequency in kilohertz. At frequencies above 20 kHz the attenuation must be at least 50 dB greater than at 1 kHz.

TEST CONFIGURATION



TEST PROCEDURE

Test procedure for modulation limit:

1) Connect the equipment as illustrated.
2) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
3) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ⩽0.25 Hz to ⩾15,000 Hz. Turn the de-emphasis function off.
4) 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, this level is as a reference (0dB) and vary the input level from –20 to +20dB.
5) Measure both the instantaneous and steady-state deviation at and after the time of increasing the audio input level
6) Repeat step 4-5 with input frequency changing to 300Hz, 1004Hz, 1500Hz and 2500Hz in sequence.

Test procedure for audio frequency response:

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 =$20\log_{10}$ (V_{FREQ}/V_{REF}).

TEST MODE:

Please reference to the section 3.4

TEST RESULTS

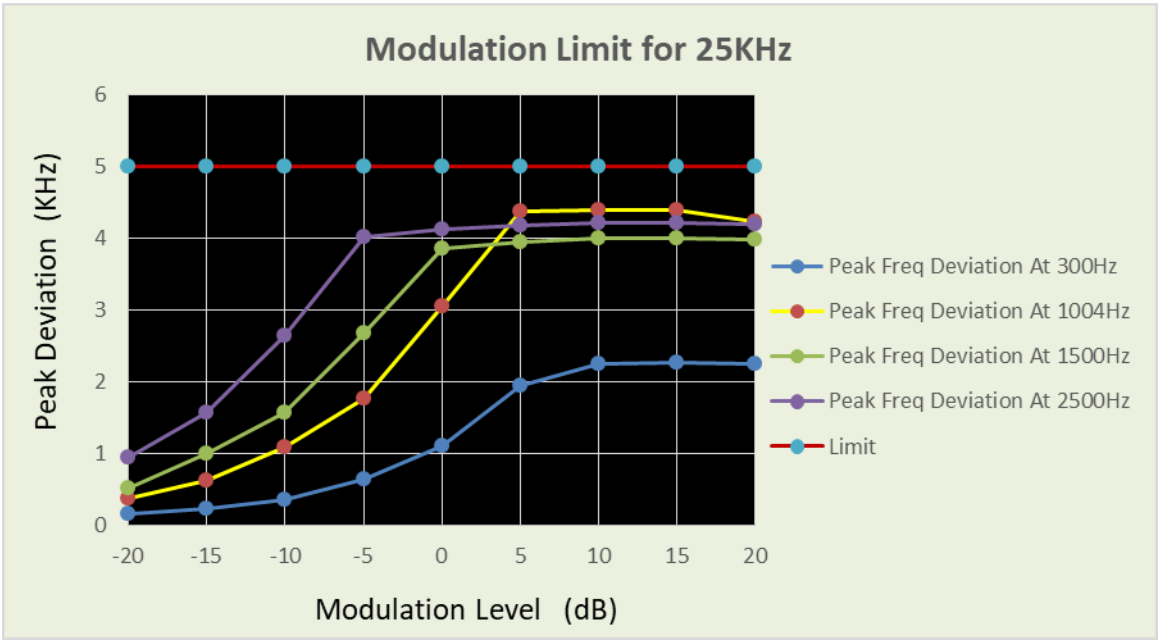
☒ **Passed** ☐ **Not Applicable**

Note: Have pre-tested TX1 to TX3 mode, record the worst case mode TX1 on the report.
Have pre-tested Test Voltage: 7.4V to Test Voltage: 6.0V, only record the worst case Test Voltage: 7.4V on the report.

Test Result for Modulation Limit check:

TX3: CH_H						
Modulation Level (dB)	Peak frequency deviation (kHz)				Limit (kHz)	Result
	300Hz	1004Hz	1500Hz	2500 Hz		
-20	0.163	0.364	0.519	0.953	2.5	Pass
-15	0.237	0.614	0.993	1.573		
-10	0.357	1.084	1.572	2.641		
-5	0.642	1.775	2.679	4.022		
0	1.107	3.061	3.867	4.131		
5	1.948	4.378	3.944	4.185		
10	2.243	4.403	3.996	4.221		
15	2.272	4.394	4.002	4.213		
20	2.249	4.239	3.988	4.204		

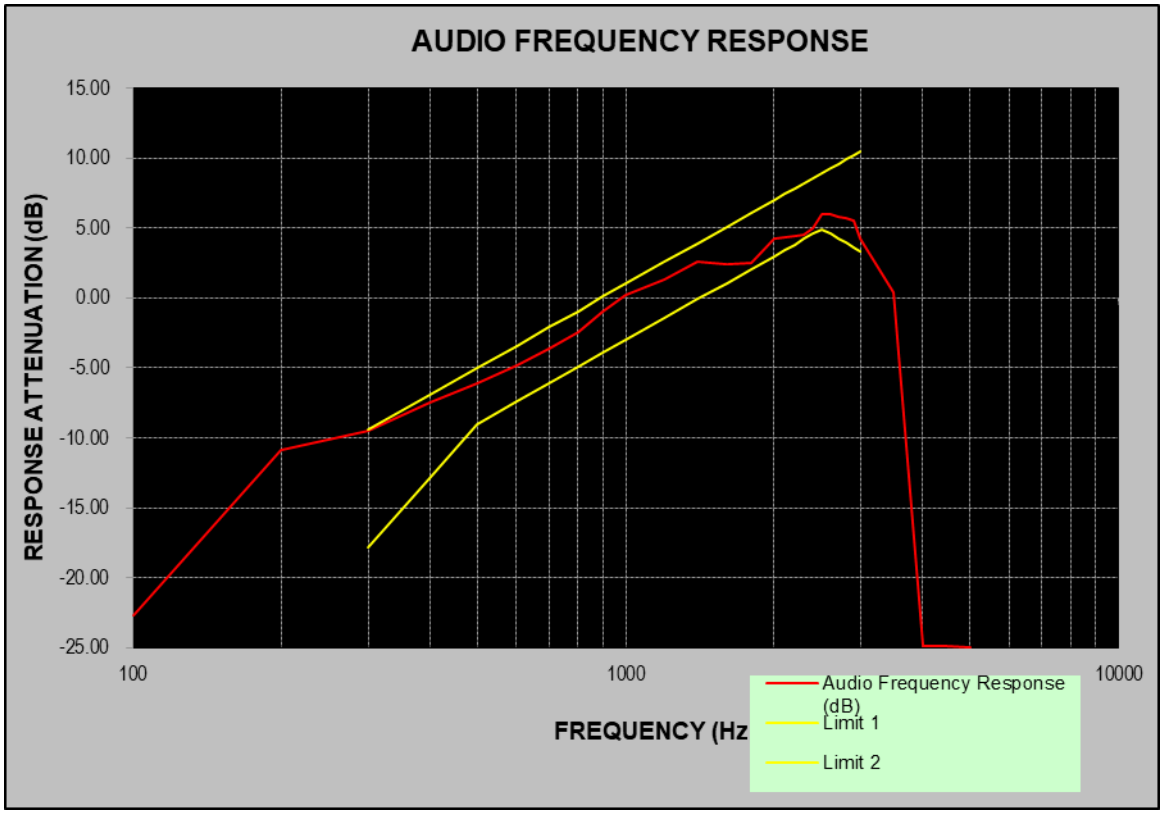
Test plot as follows:



Test result for Audio Frequency Response

TX3: CH_H			
Frequency (Hz)	Audio Frequency Response (dB)	Frequency (Hz)	Audio Frequency Response (dB)
100	-22.71	2100	4.35
200	-10.88	2200	4.44
300	-9.47	2300	4.52
400	-7.50	2400	5.02
500	-6.08	2500	5.99
600	-4.85	2600	5.97
700	-3.59	2700	5.83
800	-2.45	2800	5.68
900	-0.96	2900	5.49
1000	0.18	3000	4.21
1200	1.28	3500	0.44
1400	2.59	4000	-24.85
1600	2.45	4500	-24.86
1800	2.51	5000	-24.95
2000	4.24		

Test plot as follows:



5.5. Frequency Stability Test

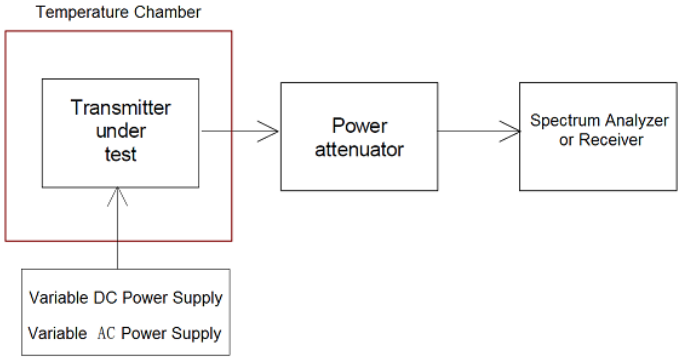
The carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

LIMIT

FCC Part 80.209， FCC Part 2.1055

Ship stations: 10ppm
Coast stations:
For carriers licensed to operate with a carrier power:
Below 3 watts: 10ppm
3 to 100 watts: 5ppm

TEST CONFIGURATION



TEST PROCEDURE

1. According to FCC Part 2 Section 2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30℃ to +50℃.
2. According to FCC Part 2 Section 2.1055 (d) (2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.
3. Vary primary supply voltage.
4. The EUT was set in the climate chamber and connected to an external DC power supply. The RF output was directly connected to Spectrum Analyzer, The coupling loss of the additional cables was recorded and taken in account for all the measurements. After temperature stabilization (approx. 20 min for each stage), the frequency for the lower, the middle and the highest frequency range was recorded. For Frequency stability Vs. Voltage the EUT was connected to a DC power supply and the voltage was adjusted in the required ranges. The result was recorded.

TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note: Have pre-tested TX1 to TX3 mode, record the worst case mode TX1 on the report.

TX1@Test Voltage: 7.4V						
Test conditions		Frequency error (ppm)			Limit (ppm)	Result
Voltage	Temp	CH_L	CH_M	CH_H		
7.40	-30	0.63	0.65	0.68	±2.5	Pass
	-20	0.65	0.67	0.64		
	-10	0.67	0.66	0.65		
	0	0.68	0.65	0.63		
	10	0.68	0.63	0.64		
	20	0.66	0.63	0.62		
	30	0.59	0.64	0.65		
	40	0.61	0.66	0.68		
	50	0.65	0.65	0.64		
6.28	20	0.64	0.68	0.61		
8.51	20	0.63	0.67	0.63		

TX1@Test Voltage: 6.0V						
Test conditions		Frequency error (ppm)			Limit (ppm)	Result
Voltage	Temp	CH_L	CH_M	CH_H		
6.0	-30	0.72	0.75	0.69	±2.5	Pass
	-20	0.76	0.77	0.68		
	-10	0.75	0.73	0.66		
	0	0.69	0.71	0.67		
	10	0.68	0.72	0.63		
	20	0.71	0.71	0.62		
	30	0.68	0.76	0.65		
	40	0.70	0.72	0.65		
	50	0.72	0.73	0.68		
5.1	20	0.71	0.74	0.67		
6.9	20	0.68	0.72	0.70		

5.6. 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

FCC Part 80.211， FCC Part 2.1051 (25 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 25 kHz at least:

43 +10 log (Pwatts)

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

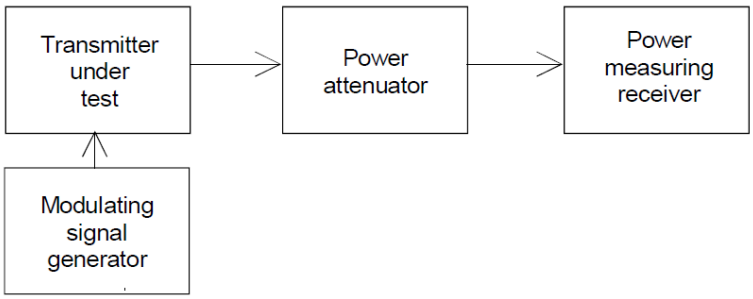
Calculation: Limit (dBm) =EL-43-10log10 (TP)

EL is the emission level of the Output Power expressed in dBm,

In this application, the EL is P(dBm)

Limit (dBm) = P(dBm)-43-10 log (Pwatts) = -13dBm

TEST CONFIGURATION



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.
3. 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.
4. The audio input was set the unmodulated carrier, the resulting picture is print out for each channel separation.

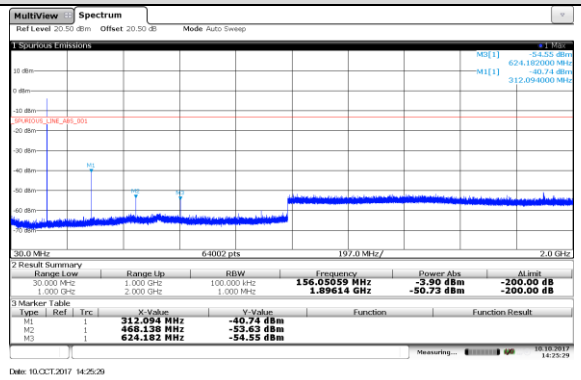
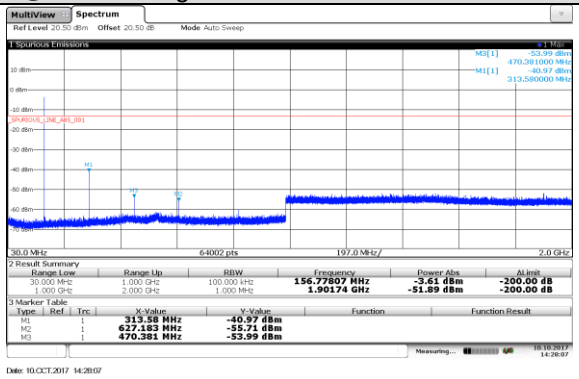
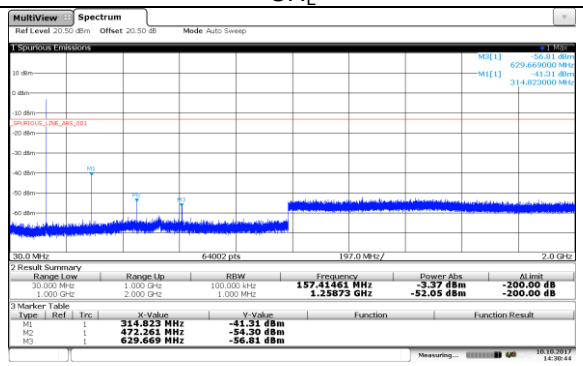
TEST MODE:

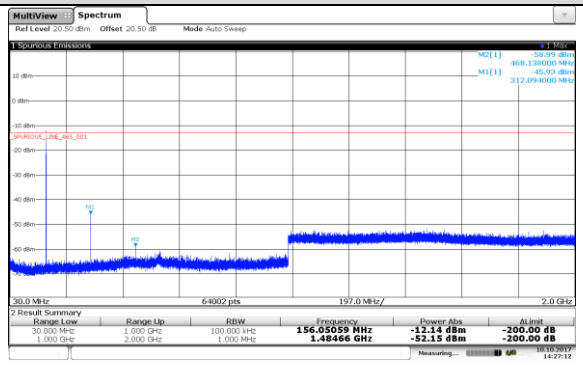
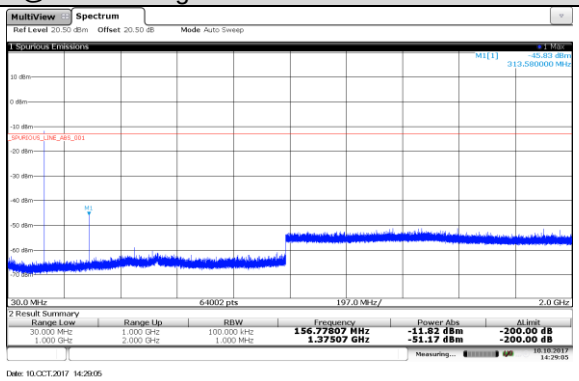
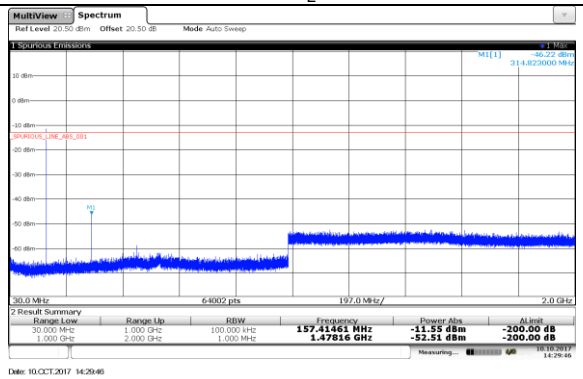
Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

1. The measurement frequency range from 30 MHz to 2 GHz.
2. We tested TX1 to TX3 recorded worst case TX1 mode

Operation Mode	TX1@ Test Voltage: 7.4V
	
CH_L	CH_M
	No plot
CH_H	-

Operation Mode	TX1@ Test Voltage: 6V
	
CH_L	CH_M
	No plot
CH_H	-

5.7. Transmitter Radiated Spurious Emission

Radiated spurious emissions are emissions from the equipment when transmitting into a nonradiating load on a frequency or frequencies that are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

LIMIT

FCC Part 80.211， FCC Part 2.1053 (25 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 25 kHz at least:

43 +10 log (Pwatts)

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

Calculation: Limit (dBm) =EL-43-10log10 (TP)

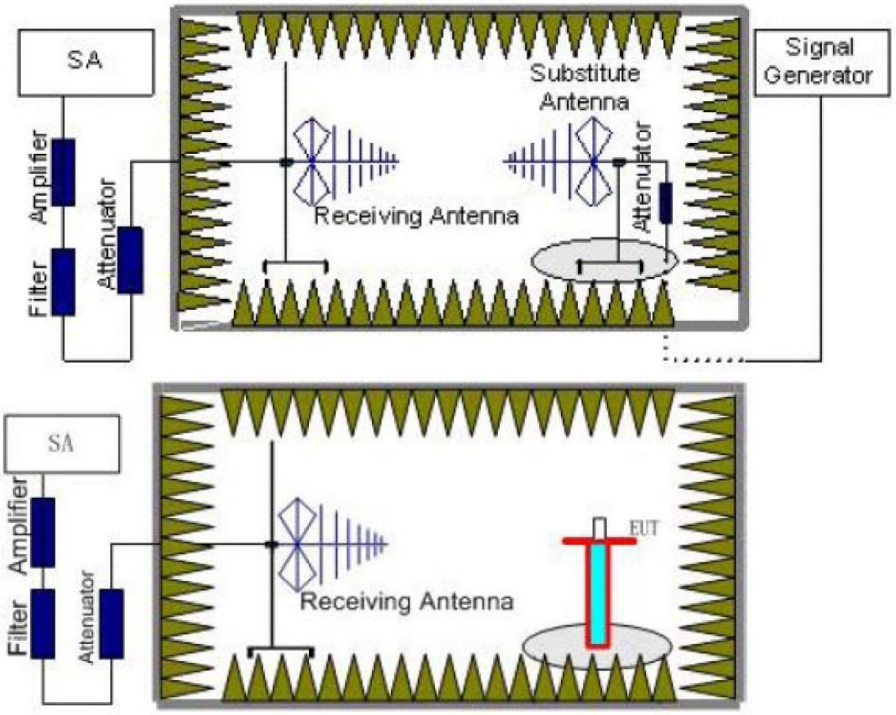
EL is the emission level of the Output Power expressed in dBm,

In this application, the EL is P(dBm)

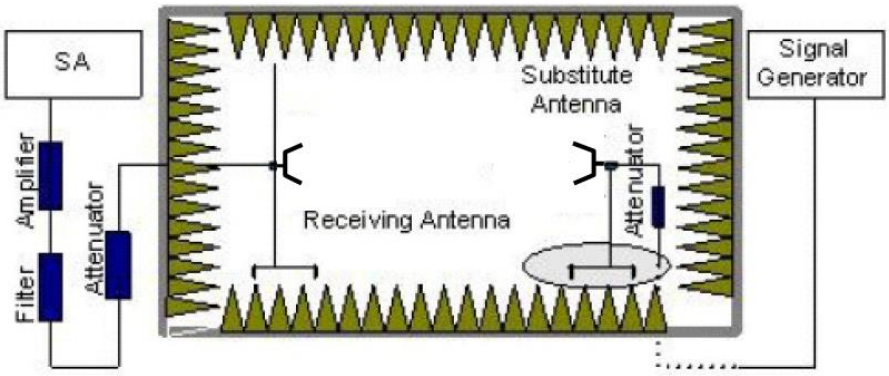
Limit (dBm) = P(dBm)-43-10 log (Pwatts) = -13dBm

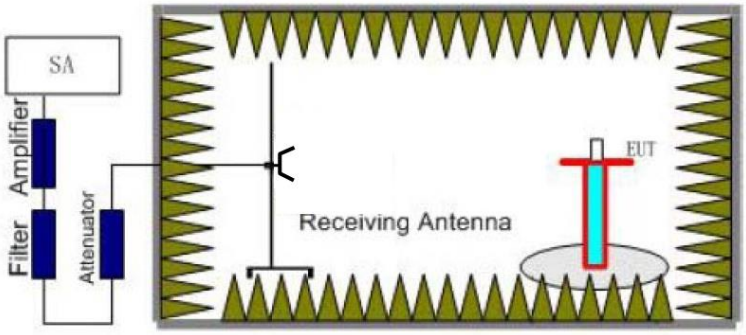
TEST CONFIGURATION

Below 1GHz:



Above 1GHz:





TEST PROCEDURE

1. Standard Transmitter Load with a 50Ω input impedance and an output impedance matched to the test equipment.
2. 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.
3. 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.
4. 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 and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
5. 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 (PMea) 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 (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. 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 (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
   The measurement results are obtained as described below:
   Power(EIRP)=PMea- PAg - Pcl - Ga
   We used SMF100A micowave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substituation test; The measurement results are amend as described below:
   Power(EIRP)=PMea- Pcl - Ga
7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
8. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

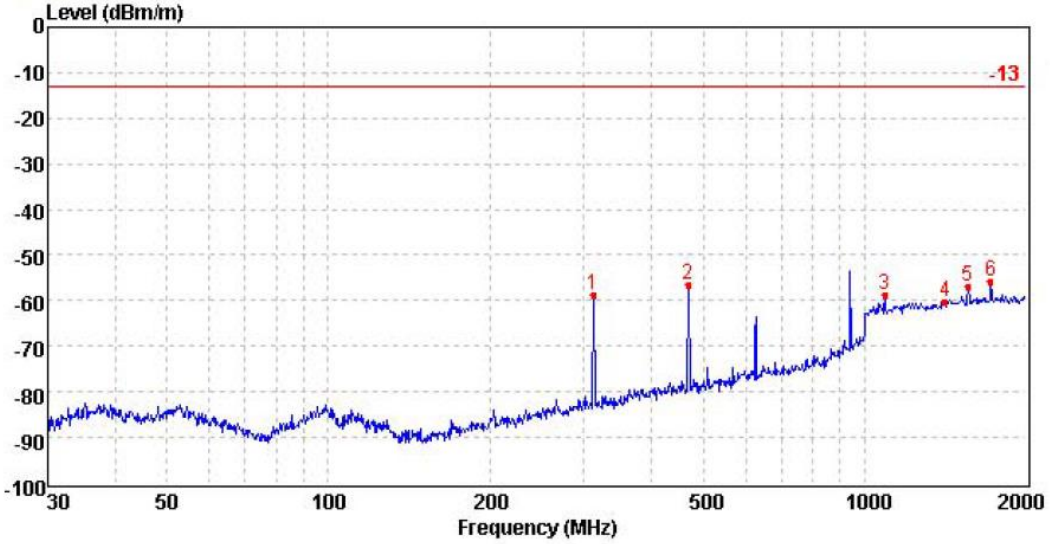
Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

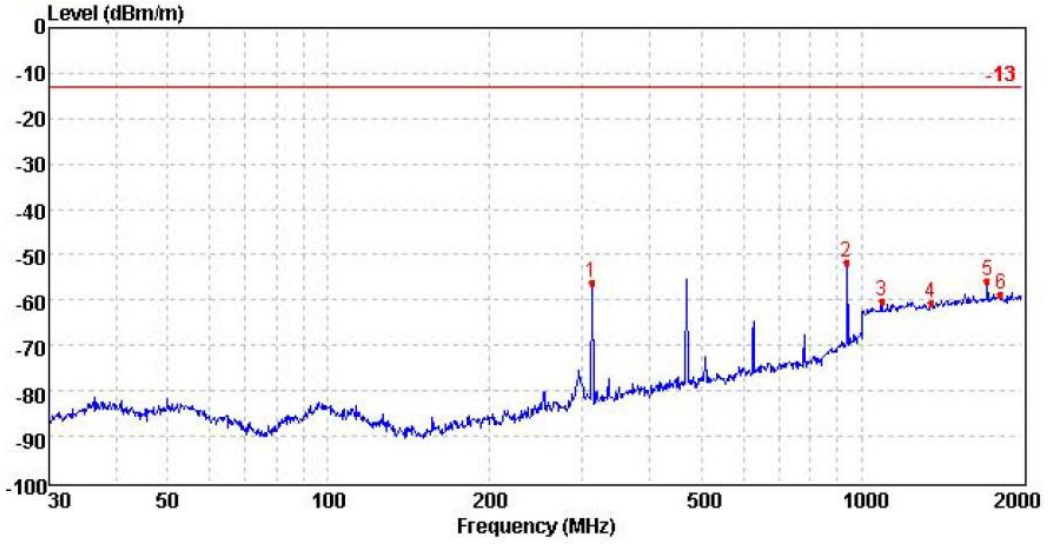
Note:
1. In general, the worse case attenuation requirement shown above was applied.
2. The measurement frequency range from 30 MHz to 2 GHz.
3. We tested TX1 to TX3 recorded worst case TX1 mode.

TX1@ Test Voltage:7.4V			
Test Frequency:	CH_L	Polarity:	Horizontal



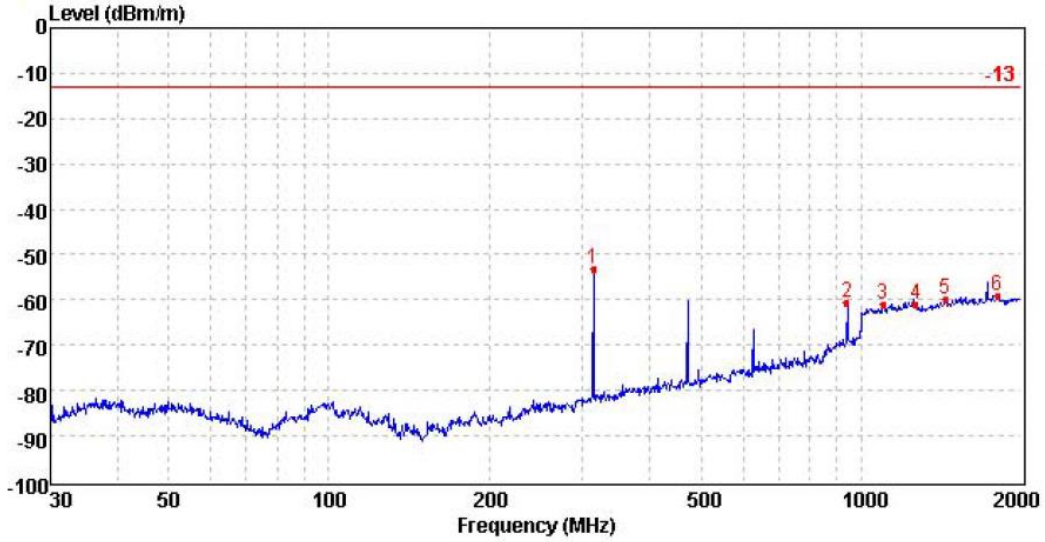
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	312.06	-58.08	26.50	2.02	29.13	-58.69	-13.00	-45.69	Peak
2	469.24	-59.20	29.34	2.54	29.03	-56.35	-13.00	-43.35	Peak
3	1092.02	-65.37	38.70	4.42	36.62	-58.87	-13.00	-45.87	Peak
4	1411.28	-68.58	39.79	5.03	36.47	-60.23	-13.00	-47.23	Peak
5	1560.49	-65.87	40.18	5.46	36.67	-56.90	-13.00	-43.90	Peak
6	1717.13	-65.08	40.52	5.80	36.97	-55.73	-13.00	-42.73	Peak

Test Frequency:	CH_L	Polarity:	Vertical



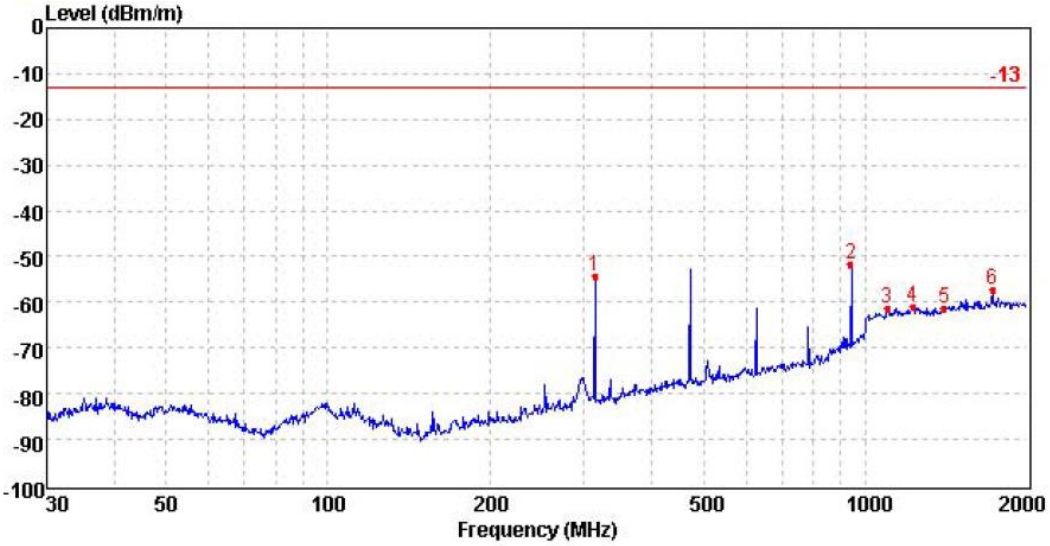
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	312.06	-55.51	26.50	2.02	29.13	-56.12	-13.00	-43.12	Peak
2	938.10	-63.81	36.45	3.78	28.27	-51.85	-13.00	-38.85	Peak
3	1092.02	-66.58	38.70	4.42	36.62	-60.08	-13.00	-47.08	Peak
4	1348.17	-68.73	39.59	4.91	36.49	-60.72	-13.00	-47.72	Peak
5	1717.13	-65.23	40.52	5.80	36.97	-55.88	-13.00	-42.88	Peak
6	1821.34	-68.47	40.73	5.99	37.16	-58.91	-13.00	-45.91	Peak

TX1@ Test Voltage:7.4V			
Test Frequency:	CH_M	Polarity:	Horizontal



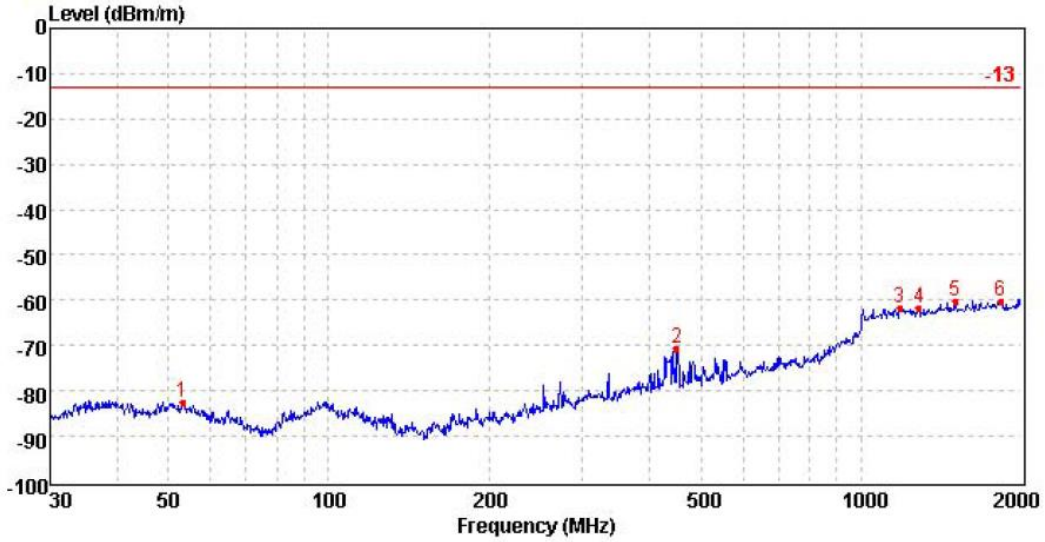
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	314.26	-52.60	26.55	2.03	29.12	-53.14	-13.00	-40.14	Peak
2	941.41	-72.57	36.64	3.78	28.33	-60.48	-13.00	-47.48	Peak
3	1098.09	-67.61	38.73	4.43	36.62	-61.07	-13.00	-48.07	Peak
4	1264.88	-68.57	39.32	4.77	36.53	-61.01	-13.00	-48.01	Peak
5	1440.93	-68.49	39.87	5.12	36.51	-60.01	-13.00	-47.01	Peak
6	1801.25	-68.78	40.68	5.96	37.14	-59.28	-13.00	-46.28	Peak

Test Frequency:	CH_{M1}	Polarity:	Vertical



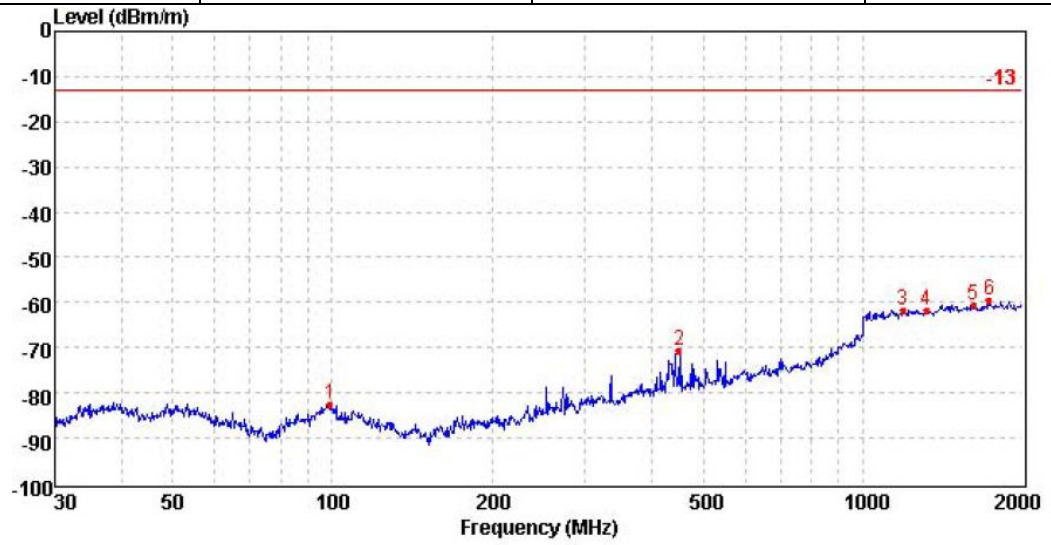
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	314.26	-53.73	26.55	2.03	29.12	-54.27	-13.00	-41.27	Peak
2	941.41	-63.68	36.64	3.78	28.33	-51.59	-13.00	-38.59	Peak
3	1097.33	-67.79	38.73	4.43	36.62	-61.25	-13.00	-48.25	Peak
4	1227.74	-68.48	39.20	4.71	36.55	-61.12	-13.00	-48.12	Peak
5	1403.47	-69.73	39.76	5.01	36.46	-61.42	-13.00	-48.42	Peak
6	1725.48	-66.70	40.54	5.81	36.98	-57.33	-13.00	-44.33	Peak

TX1@ Test Voltage:7.4V			
Test Frequency:	CH_H	Polarity:	Horizontal



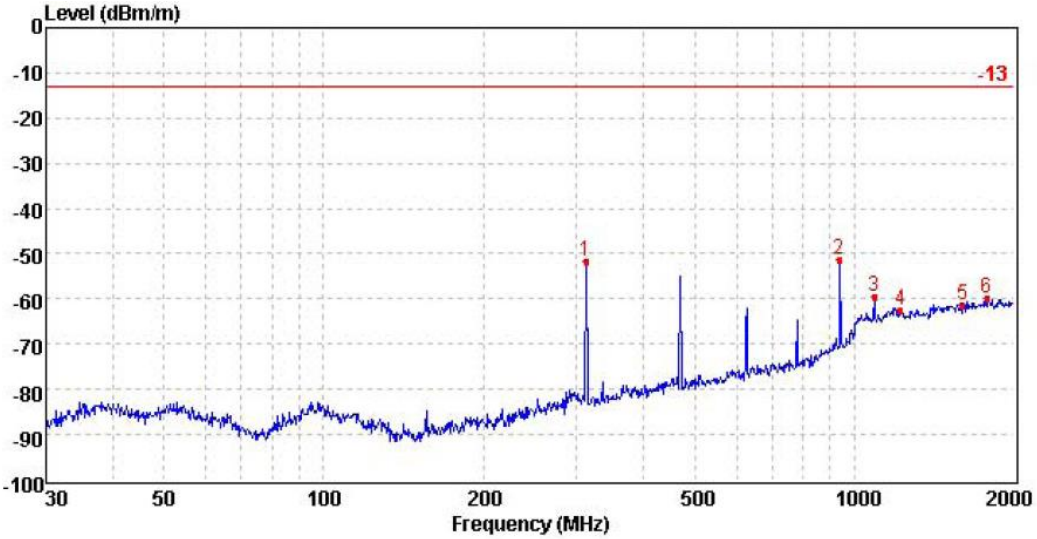
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	53.22	-80.13	25.97	0.86	29.32	-82.62	-13.00	-69.62	Peak
2	451.43	-73.07	29.07	2.49	29.01	-70.52	-13.00	-57.52	Peak
3	1182.63	-68.94	39.04	4.62	36.58	-61.86	-13.00	-48.86	Peak
4	1286.10	-69.36	39.40	4.81	36.52	-61.67	-13.00	-48.67	Peak
5	1503.16	-69.02	40.06	5.29	36.59	-60.26	-13.00	-47.26	Peak
6	1826.40	-69.75	40.73	6.00	37.16	-60.18	-13.00	-47.18	Peak

Test Frequency:	CH_H	Polarity:	Vertical



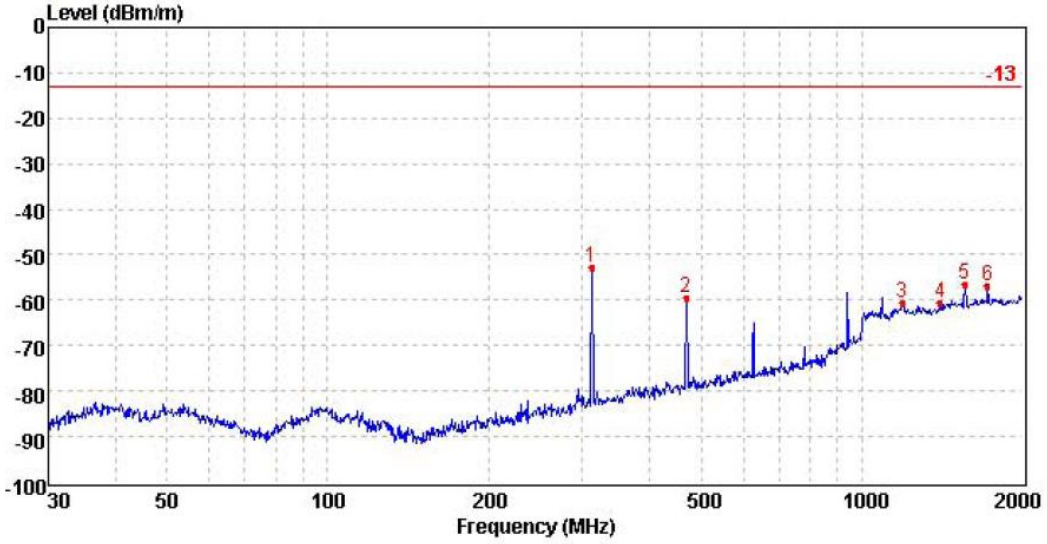
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.17	-80.39	25.92	1.14	29.10	-82.43	-13.00	-69.43	Peak
2	451.43	-73.07	29.07	2.49	29.01	-70.52	-13.00	-57.52	Peak
3	1192.51	-68.86	39.06	4.64	36.57	-61.73	-13.00	-48.73	Peak
4	1318.59	-69.62	39.51	4.86	36.50	-61.75	-13.00	-48.75	Peak
5	1617.76	-69.57	40.32	5.60	36.76	-60.41	-13.00	-47.41	Peak
6	1731.47	-69.03	40.54	5.83	37.00	-59.66	-13.00	-46.66	Peak

TX1@ Test Voltage:6.0V			
Test Frequency:	CH_L	Polarity:	Horizontal



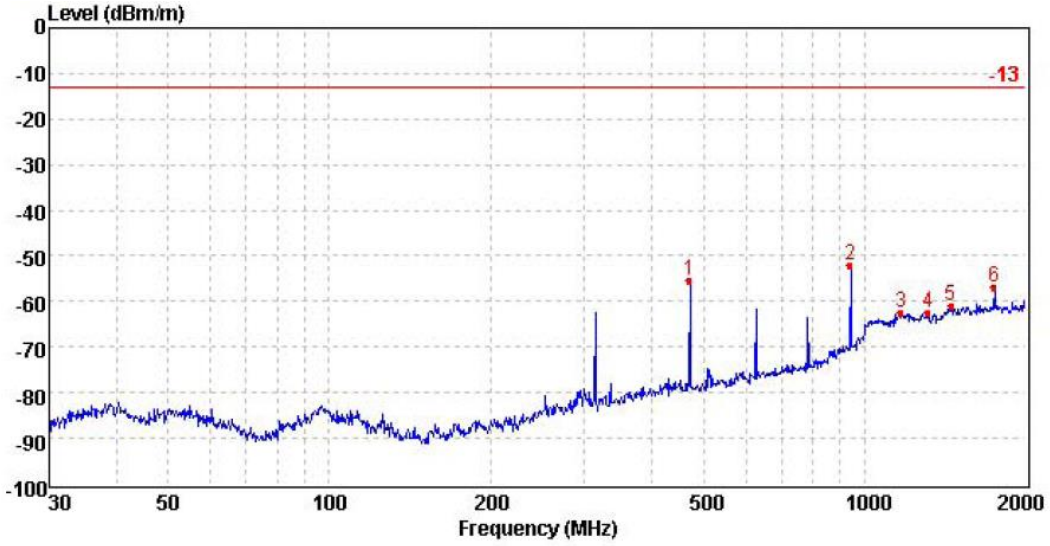
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	312.06	-50.96	26.50	2.02	29.13	-51.57	-13.00	-38.57	Peak
2	938.10	-63.45	36.45	3.78	28.27	-51.49	-13.00	-38.49	Peak
3	1092.02	-65.86	38.70	4.42	36.62	-59.36	-13.00	-46.36	Peak
4	1223.49	-69.74	39.18	4.70	36.56	-62.42	-13.00	-49.42	Peak
5	1598.81	-70.57	40.27	5.57	36.72	-61.45	-13.00	-48.45	Peak
6	1775.22	-69.29	40.64	5.91	37.09	-59.83	-13.00	-46.83	Peak

Test Frequency:	CH_L	Polarity:	Vertical



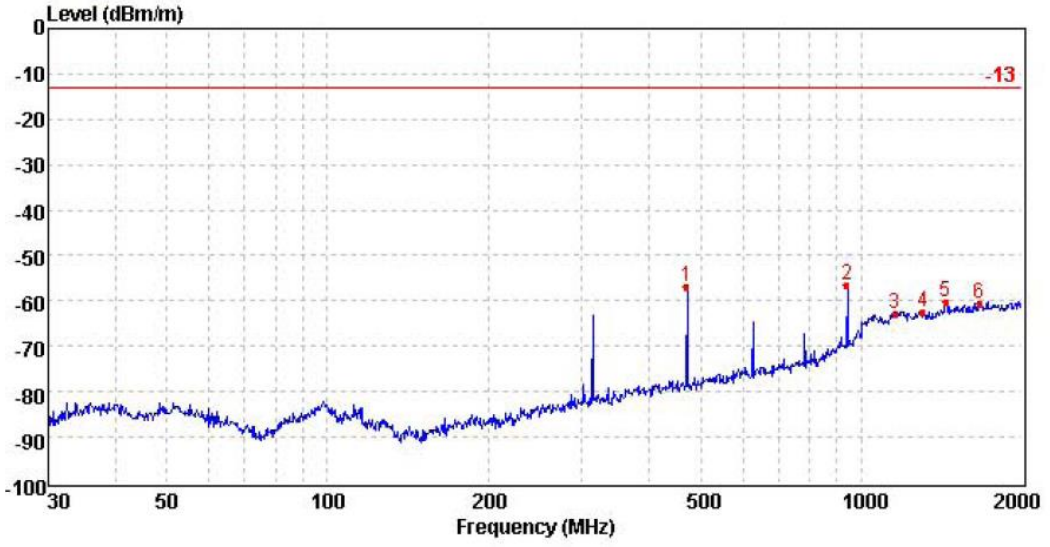
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	312.06	-52.30	26.50	2.02	29.13	-52.91	-13.00	-39.91	Peak
2	469.24	-62.50	29.34	2.54	29.03	-59.65	-13.00	-46.65	Peak
3	1190.03	-67.86	39.06	4.64	36.57	-60.73	-13.00	-47.73	Peak
4	1404.45	-69.07	39.76	5.01	36.47	-60.77	-13.00	-47.77	Peak
5	1560.49	-65.36	40.18	5.46	36.67	-56.39	-13.00	-43.39	Peak
6	1717.13	-66.27	40.52	5.80	36.97	-56.92	-13.00	-43.92	Peak

TX1@ Test Voltage:6.0V			
Test Frequency:	CH_M	Polarity:	Horizontal



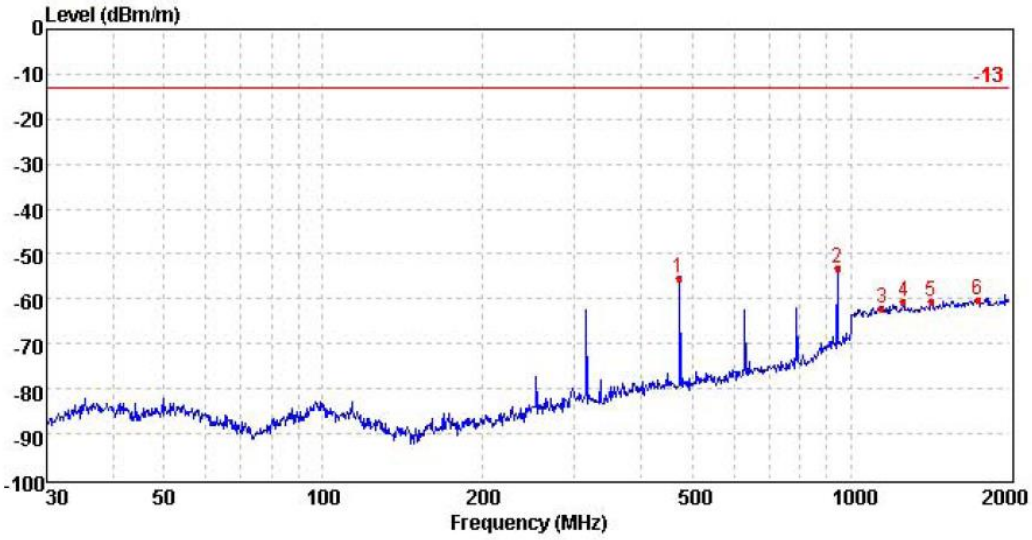
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	470.89	-58.42	29.34	2.54	29.03	-55.57	-13.00	-42.57	Peak
2	941.41	-64.28	36.64	3.78	28.33	-52.19	-13.00	-39.19	Peak
3	1171.21	-69.66	39.01	4.60	36.58	-62.63	-13.00	-49.63	Peak
4	1314.94	-70.10	39.48	4.86	36.51	-62.27	-13.00	-49.27	Peak
5	1448.94	-69.47	39.90	5.14	36.52	-60.95	-13.00	-47.95	Peak
6	1745.94	-66.29	40.57	5.85	37.03	-56.90	-13.00	-43.90	Peak

Test Frequency:	CH_M	Polarity:	Vertical



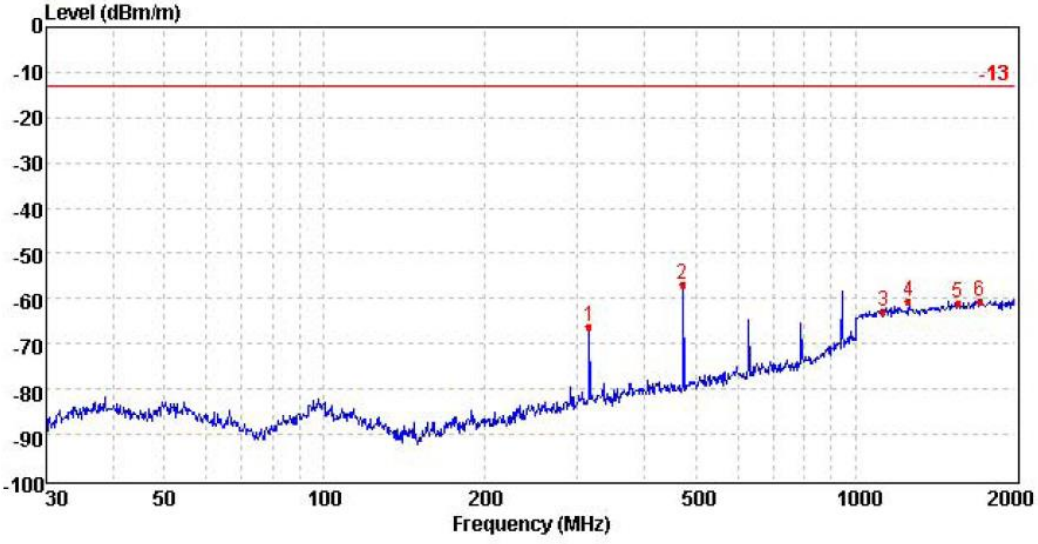
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	470.89	-59.80	29.34	2.54	29.03	-56.95	-13.00	-43.95	Peak
2	941.41	-68.78	36.64	3.78	28.33	-56.69	-13.00	-43.69	Peak
3	1155.89	-69.79	38.95	4.56	36.59	-62.87	-13.00	-49.87	Peak
4	1302.24	-70.15	39.45	4.83	36.51	-62.38	-13.00	-49.38	Peak
5	1437.94	-68.74	39.87	5.11	36.51	-60.27	-13.00	-47.27	Peak
6	1666.71	-70.00	40.41	5.70	36.86	-60.75	-13.00	-47.75	Peak

TX1@ Test Voltage:6.0V			
Test Frequency:	CH_H	Polarity:	Horizontal



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	472.55	-58.37	29.39	2.55	29.03	-55.46	-13.00	-42.46	Peak
2	944.72	-65.26	36.64	3.79	28.39	-53.22	-13.00	-40.22	Peak
3	1143.93	-68.88	38.90	4.53	36.60	-62.05	-13.00	-49.05	Peak
4	1259.63	-68.22	39.32	4.76	36.54	-60.68	-13.00	-47.68	Peak
5	1420.11	-69.08	39.82	5.06	36.49	-60.69	-13.00	-47.69	Peak
6	1739.90	-69.44	40.57	5.84	37.01	-60.04	-13.00	-47.04	Peak

Test Frequency:	CH_H	Polarity:	Vertical



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	315.37	-65.67	26.55	2.03	29.12	-66.21	-13.00	-53.21	Peak
2	472.55	-59.85	29.39	2.55	29.03	-56.94	-13.00	-43.94	Peak
3	1126.62	-69.41	38.84	4.49	36.61	-62.69	-13.00	-49.69	Peak
4	1259.63	-68.22	39.32	4.76	36.54	-60.68	-13.00	-47.68	Peak
5	1558.33	-70.02	40.18	5.45	36.67	-61.06	-13.00	-48.06	Peak
6	1711.19	-69.97	40.50	5.79	36.95	-60.63	-13.00	-47.63	Peak

5.8. Conducted Emissions

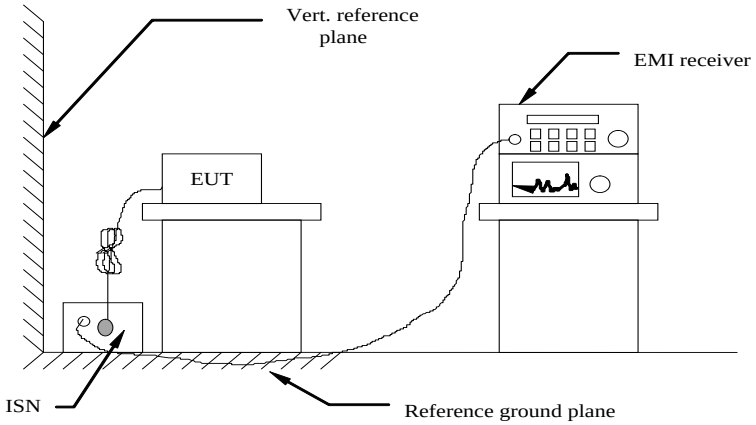
The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 u Henry as specified by section 5.1 of ANSI C63.4-2014. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Limit

FCC part 15.107(a)

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.

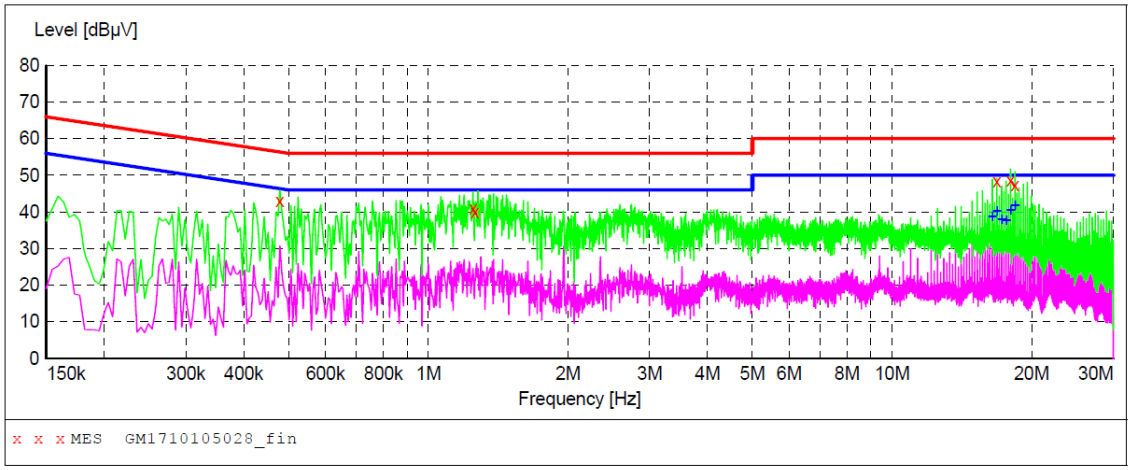
TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

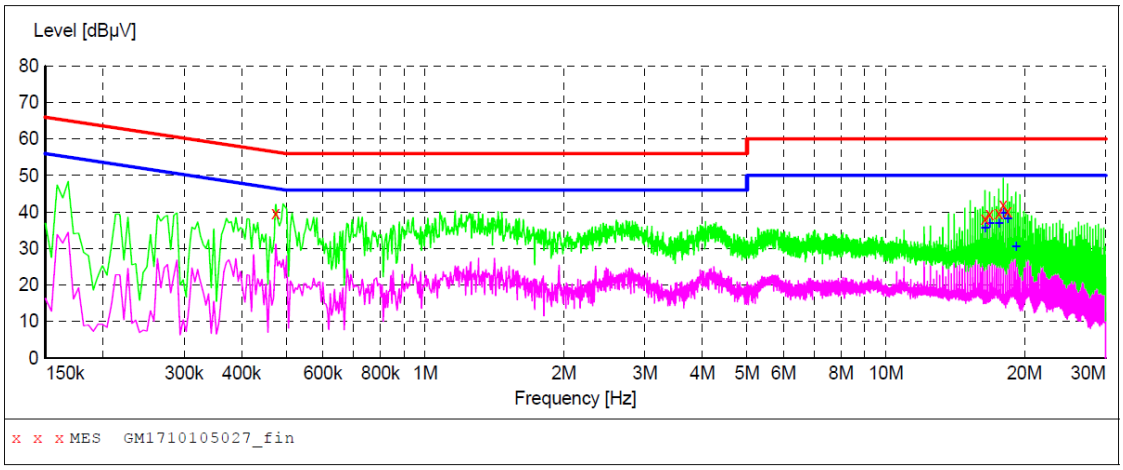
Test mode:	RX1	Polarization	L1



Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.478500	43.00	10.2	56	13.4	QP	L1	GND
1.252500	41.00	10.2	56	15.0	QP	L1	GND
1.261500	40.00	10.2	56	16.0	QP	L1	GND
16.845000	48.50	10.5	60	11.5	QP	L1	GND
18.019500	48.60	10.5	60	11.4	QP	L1	GND
18.411000	47.30	10.5	60	12.7	QP	L1	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
16.453500	38.70	10.5	50	11.3	AV	L1	GND
16.845000	40.30	10.5	50	9.7	AV	L1	GND
17.236500	38.00	10.5	50	12.0	AV	L1	GND
17.628000	37.60	10.5	50	12.4	AV	L1	GND
18.019500	40.50	10.5	50	9.5	AV	L1	GND
18.415500	41.80	10.5	50	8.2	AV	L1	GND

Test mode:	RX1	Polarization	N



Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.474000	39.60	10.2	56	16.8	QP	N	GND
16.426500	38.20	10.5	60	21.8	QP	N	GND
16.818000	39.40	10.5	60	20.6	QP	N	GND
17.601000	39.60	10.5	60	20.4	QP	N	GND
17.992500	42.00	10.5	60	18.0	QP	N	GND
18.384000	40.20	10.5	60	19.8	QP	N	GND

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
16.431000	35.70	10.5	50	14.3	AV	N	GND
16.822500	36.90	10.5	50	13.1	AV	N	GND
17.605500	37.00	10.5	50	13.0	AV	N	GND
17.997000	39.80	10.5	50	10.2	AV	N	GND
18.388500	38.10	10.5	50	11.9	AV	N	GND
19.167000	30.60	10.5	50	19.4	AV	N	GND

5.9. Radiated Emission

LIMIT

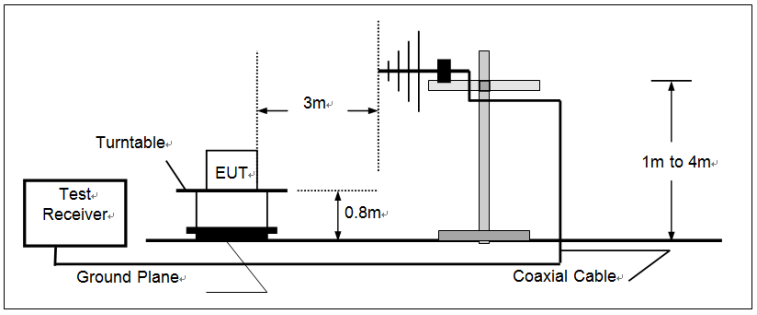
For unintentional device, according to § 15.109(a) except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/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

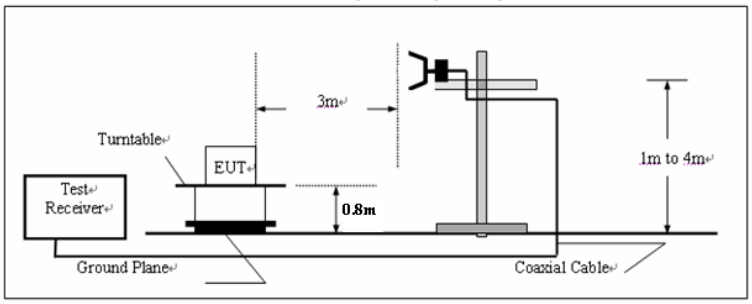
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

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.

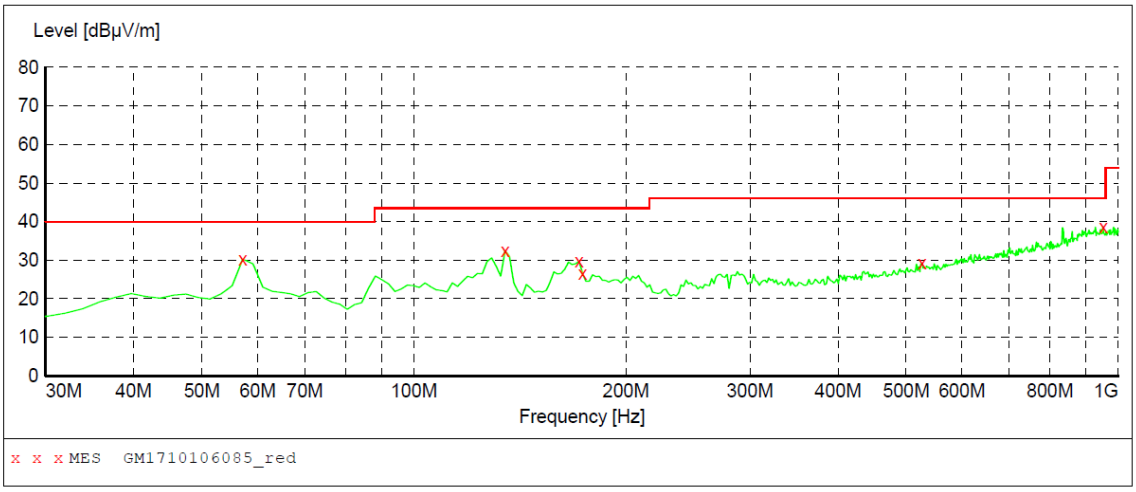
TEST MODE:

Please reference to the section 3.4

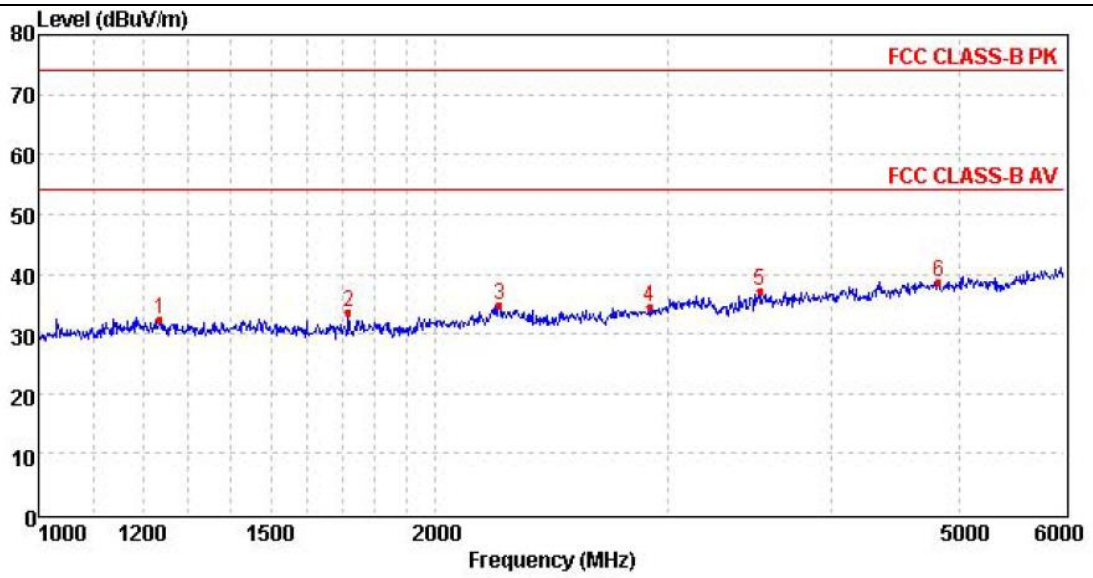
TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Test Mode:	RX1	Polarity:	Horizontal

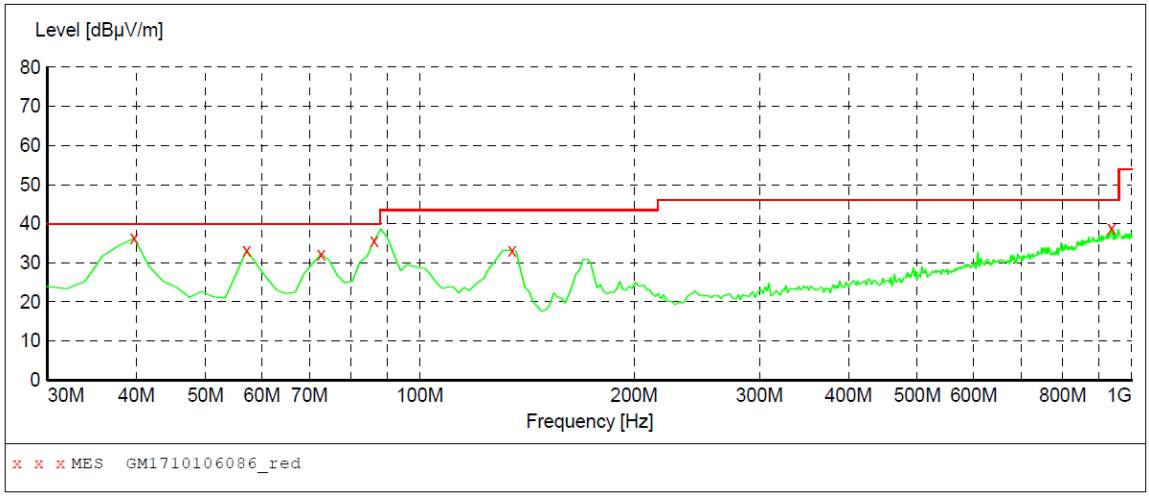


Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
57.160000	30.30	-9.4	40.0	9.7	---	300.0	177.00	HORIZONTAL
134.760000	32.50	-13.7	43.5	11.0	---	300.0	0.00	HORIZONTAL
171.620000	29.70	-12.9	43.5	13.8	---	300.0	56.00	HORIZONTAL
173.560000	26.60	-12.8	43.5	16.9	---	300.0	56.00	HORIZONTAL
526.640000	29.20	-1.2	46.0	16.8	---	300.0	125.00	HORIZONTAL
951.500000	38.70	7.3	46.0	7.3	---	100.0	320.00	HORIZONTAL

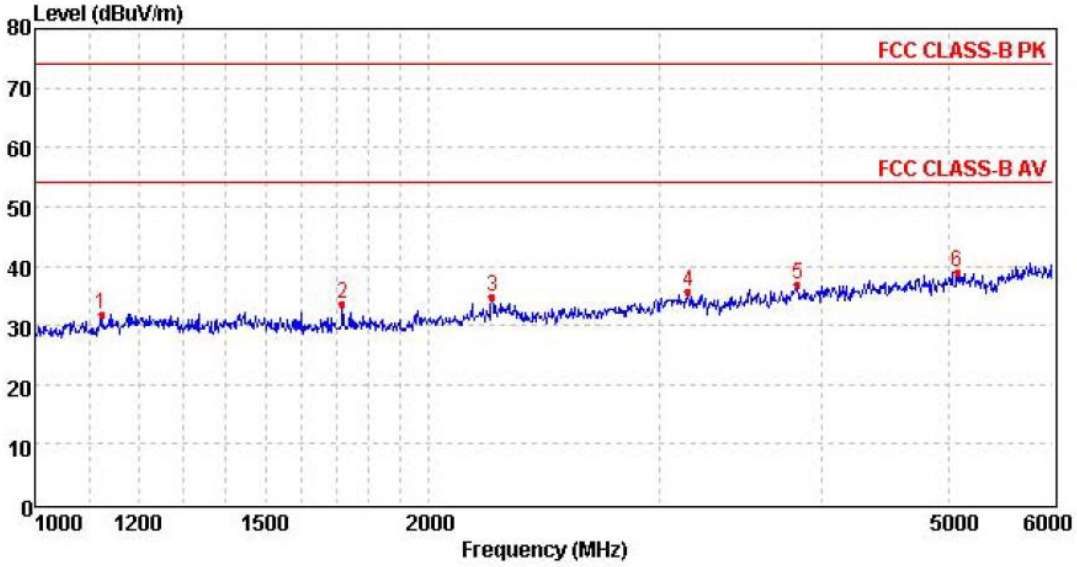


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1235.44	37.96	26.26	4.72	36.55	32.39	74.00	-41.61	Peak
2	1717.92	39.66	25.24	5.80	36.97	33.73	74.00	-40.27	Peak
3	2235.58	37.96	27.72	6.50	37.44	34.74	74.00	-39.26	Peak
4	2909.23	36.95	28.51	7.43	38.29	34.60	74.00	-39.40	Peak
5	3524.04	38.33	29.07	8.15	38.38	37.17	74.00	-36.83	Peak
6	4813.25	34.51	31.57	9.55	36.92	38.71	74.00	-35.29	Peak

Test Mode:	RX1	Polarity:	Vertical



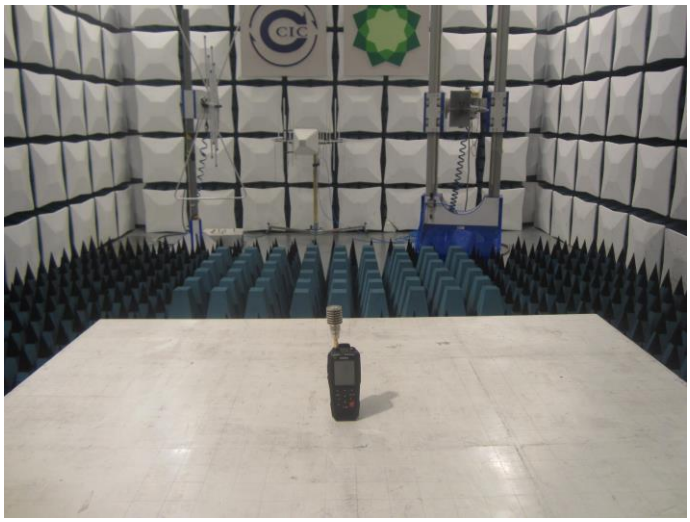
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
39.700000	36.30	-10.1	40.0	3.7	---	100.0	306.00	VERTICAL
57.160000	33.30	-9.4	40.0	6.7	---	100.0	279.00	VERTICAL
72.680000	32.30	-14.1	40.0	7.7	---	100.0	131.00	VERTICAL
86.260000	35.70	-14.1	40.0	4.3	---	100.0	211.00	VERTICAL
134.760000	33.20	-13.7	43.5	10.3	---	100.0	227.00	VERTICAL
935.980000	38.90	7.1	46.0	7.1	---	100.0	267.00	VERTICAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1123.52	38.33	25.69	4.49	36.61	31.90	74.00	-42.10	Peak
2	1717.92	39.66	25.24	5.80	36.97	33.73	74.00	-40.27	Peak
3	2235.58	37.96	27.72	6.50	37.44	34.74	74.00	-39.26	Peak
4	3159.17	37.57	28.80	7.67	38.21	35.83	74.00	-38.17	Peak
5	3826.80	36.92	29.63	8.54	38.21	36.88	74.00	-37.12	Peak
6	5069.97	33.68	31.78	9.73	36.33	38.86	74.00	-35.14	Peak

6. Test Setup Photos of the EUT

Transmitter Radiated Spurious Emission:



Frequency Stability:

Radiated Emission:

Conducted Emission:

7. External and Internal Photos of the EUT

Reference to Test Report No.: TRE1709011501.

----------End of Report----------