Shenzhen Huatongwei International Inspection Co., Ltd.
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TEST REPORT

Report Reference No. ..... :	**TRE17080049** R/C…….: 76152
FCC ID ..... :	**2AMXI-WT-1002**
Applicant's name ..... :	**Ningbo Zhonghai Electrical Appliance Co.,Ltd**
Address.....:	Jishan Industrial District, Xidian Town, Ninghai, Ningbo, 315613 China
Manufacturer.....:	Ningbo Zhonghai Electrical Appliance Co.,Ltd
Address.....:	Jishan Industrial District, Xidian Town, Ninghai, Ningbo, 315613 China
Test item description ..... :	**Walkie Talkies**
Trade Mark .....:	-
Model/Type reference.....:	WT-1002
Listed Model(s) .....:	-
Standard ..... :	**FCC Part 95**
Date of receipt of test sample…….:	Aug. 09, 2017
Date of testing……...:	Aug. 10, 2017 - Aug. 22, 2017
Date of issue……:	Aug. 22, 2017
Result……...:	**PASS**

Compiled by (position+printed name+signature)..:	File administrators Shayne Zhu	Shayne Zhu
Supervised by (position+printed name+signature)..:	Project Engineer Cary Luo	Cary Luo
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

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:
FCC Rules Part 95 PERSONAL RADIO SERVICES
TIA/EIA 603 D: June 2010 Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
FCC Part 2 Frequency allocations and radio treaty matters, general rules and regulations.

1.2. Report version

Version No.	Date of issue	Description
00	Aug. 22, 2017	Original

2. Test Description

Transmitter Requirement			
Test item	Standards requirement	Result	
		Pass	N/A
Maximum Transmitter Power	FCC Part 95.639(a)&(d)	☒	
Modulation Limit	FCC Part 95.637(a)	☒	
Audio Frequency Response	FCC Part 95.637(a)	☒	
Audio Low Pass Filter Response	FCC Part 95.637(b)	☒	
Emission Bandwidth	FCC Part 95.633(a)&(c)	☒	
Emission Mask	FCC Part 95.635(b)(1)(3)(7)	☒	
Transmitter Radiated Spurious Emission	FCC Part 95.635(b)(7)	☒	
Spurious Emission On Antenna Port	FCC Part 95.635(b)(7)		☒
Frequency Stability	FCC Part 95.626(b)	☒	

Note:
The test measurements were made in accordance with the above-mentioned departmental standard(s), and the equipment identified in this application has been subject to all the applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met.

3. SUMMARY

3.1. Client Information

Applicant:	Ningbo Zhonghai Electrical Appliance Co.,Ltd
Address:	Jishan Industrial District, Xidian Town, Ninghai, Ningbo, 315613 China
Manufacturer:	Ningbo Zhonghai Electrical Appliance Co.,Ltd
Address:	Jishan Industrial District, Xidian Town, Ninghai, Ningbo, 315613 China

3.2. Product Description

Name of EUT:	Walkie Talkies	
Trade mark:	-	
Model/Type reference:	WT-1002	
Listed mode(s):	-	
Power supply:	DC 6V	
Battery information:	-	
Charger information:	-	
Adapter information:	-	
Operation Frequency Range:	GMRS/FRS:	462.5625MHz~462.7125MHz
	FRS:	467.5625MHz~467.7125MHz
	GMRS:	462.5500MHz~462.7250MHz
Rated Output Power:	GMRS/FRS:	0.5W(27dBm)
	FRS:	0.5W(27dBm)
	GMRS:	0.5W(27dBm)
Modulation Type:	GMRS/FRS:	FM
	FRS:	
	GMRS:	
Channel Separation:	GMRS/FRS:	25kHz
	FRS:	
	GMRS:	
Emission Designator:	GMRS/FRS:	5K15F3E
	FRS:	5K19F3E
	GMRS:	5K20F3E
Maximum Transmitter Power (ERP):	GMRS/FRS:	24.54dBm
	FRS:	24.83dBm
	GMRS:	24.37dBm
Antenna Type:	Integral	

Note:

1. The device only supports voice communication.
2. The device has no gain and vertically polarized antenna.

3.3. Test frequency list

Operation Mode	Modulation	Channel Separation (kHz	Operation Frequency Range (MHz)	Test Channel	Test Frequency (MHz)
GMRS/FRS	FM	25	462.5625~462.7125	CH_{L1}	462.5625(CH1)
				CH_{M1}	462.6375(CH4)
				CH_{H1}	462.7125(CH7)
FRS	FM	25	467.5625~467.7125	CH_{L2}	467.5625(CH8)
				CH_{M2}	467.6375(CH11)
				CH_{H2}	467.7125(CH14)
GMRS	FM	25	462.5500~462.7250	CH_{L3}	462.5500(CH15)
				CH_{M3}	462.6500(CH19)
				CH_{H3}	462.7250(CH22)

The Product channel frequency table:

Channel	Frequency	Description	Channel	Frequency	Description
1	462.5625 MHz	GMRS/FRS	12	467.6625 MHz	FRS
2	462.5875 MHz	GMRS/FRS	13	467.6875 MHz	FRS
3	462.6125 MHz	GMRS/FRS	14	467.7125 MHz	FRS
4	462.6375 MHz	GMRS/FRS	15	462.5500 MHz	GMRS
5	462.6625 MHz	GMRS/FRS	16	462.5750 MHz	GMRS
6	462.6875 MHz	GMRS/FRS	17	462.6000 MHz	GMRS
7	462.7125 MHz	GMRS/FRS	18	462.6250 MHz	GMRS
8	467.5625 MHz	FRS	19	462.6500 MHz	GMRS
9	467.5875 MHz	FRS	20	462.6750 MHz	GMRS
10	467.6125 MHz	FRS	21	462.7000 MHz	GMRS
11	467.6375 MHz	FRS	22	462.7250 MHz	GMRS

3.4. EUT operation mode

Test mode	Transmitting	GMRS/FRS	FRS	GMRS
TX1	√	√		
TX2	√		√	
TX3	√			√

√: 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. Registration 762235.

IC-Registration No.: 5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered byCertification 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:	20 % to 75 %.
Air Pressure:	950~1050mba
Voltage:	DC 6.0V

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 Radiated	2.20 dB	(1)
Radiated Emission 30~1000MHz	4.65 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)

(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

Modulation Characteristic				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	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

Maximum Transmitter Power & 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
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

Emission 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
Spectrum Analzyer	Rohde&Schwarz	FSP40	1164.4391.40	2016/11/13

The calibration interval was one year.

5. TEST CONDITIONS AND RESULTS

5.1. Maximum Transmitter Power (Effective Radiated Power)

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

LIMIT

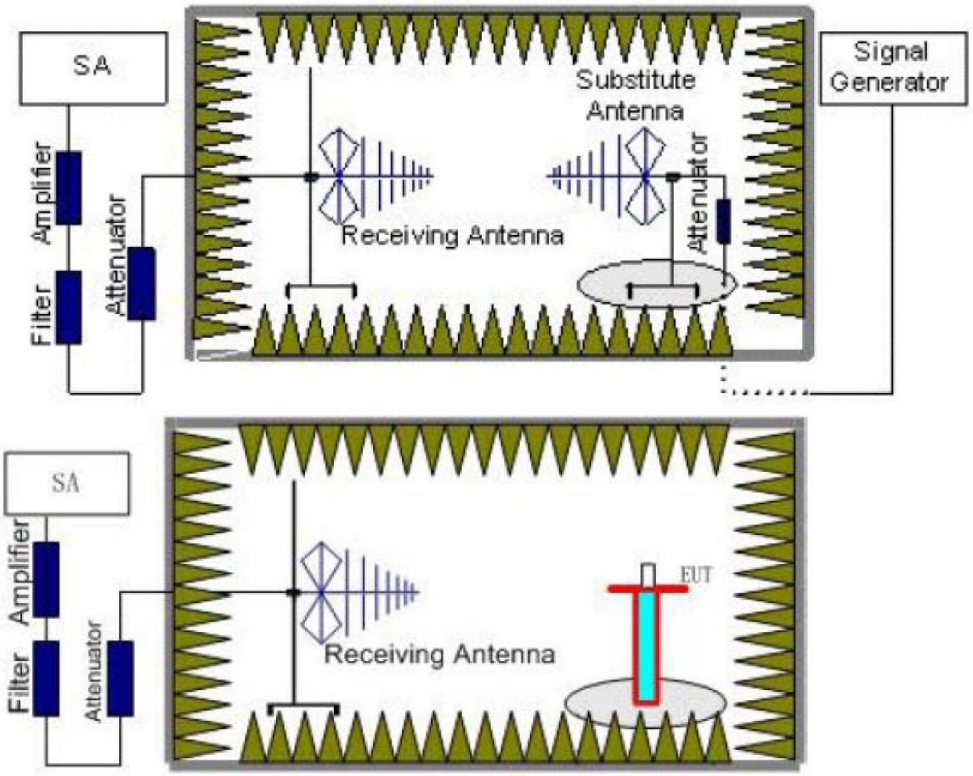
FCC Part 95.639(d):
FRS: The maximum permissible transmitter output power under any operating conditions is 0.5 W effective radiated power (e.r.p.). The radio shall be equipped with an integral antenna.

A GMRS transmitter may transmit with a maximum power of 5W e.r.p.

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=100kHz,VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
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 (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.
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 (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
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, ERP = EIRP-2.15dBi.

TEST CONFIGURATION



TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Operation Mode	Test Channel	Measured ERP (dBm)	Difference (dB)	Limit (dBm)	Result
TX1	CH_{L1}	24.54	-12.46	37.00	Pass
	CH_{M1}	24.80	-12.20	37.00	
	CH_{H1}	23.68	-13.32	37.00	
TX2	CH_{L2}	24.65	-2.35	27.00	Pass
	CH_{M2}	24.98	-2.02	27.00	
	CH_{H2}	24.83	-2.17	27.00	
TX3	CH_{L3}	24.37	-12.63	37.00	Pass
	CH_{M3}	24.75	-12.25	37.00	
	CH_{H3}	23.78	-13.22	37.00	

5.2. Emission Bandwidth

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

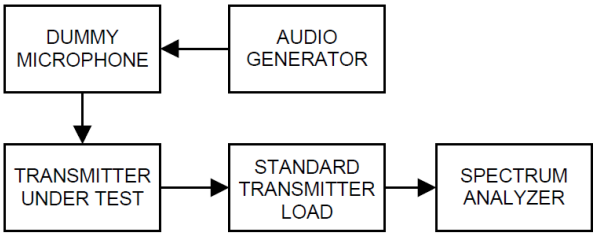
LIMIT

FCC Part 95.633(c):
FRS:
The authorized bandwidth for an FRS unit is 12.5 kHz.

FCC Part 95.633(a):
GMRS:

The authorized bandwidth for emission types H1D, J1D, R1D, H3E, J3E and R3E is 4 kHz; for emission types A1D and A3E, it is 8 kHz; and for emission types F1D, G1D, F3E, G3E and F2D, it is 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 16dB greater than that necessary to produce 50% of rated system deviation.
Rated system deviation is 2.5kHz and 5kHz).
2 Spectrum set as follow:
Centre frequency = fundamental frequency,span=50kHz,
RBW=100Hz, VBW=300Hz, 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:

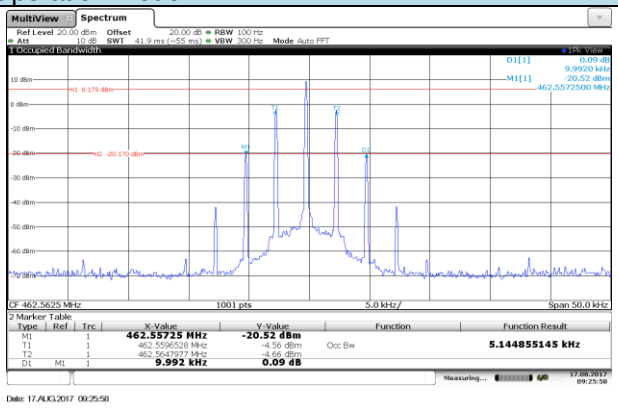
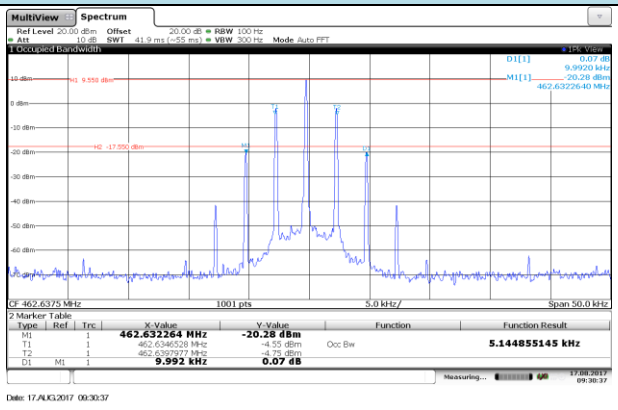
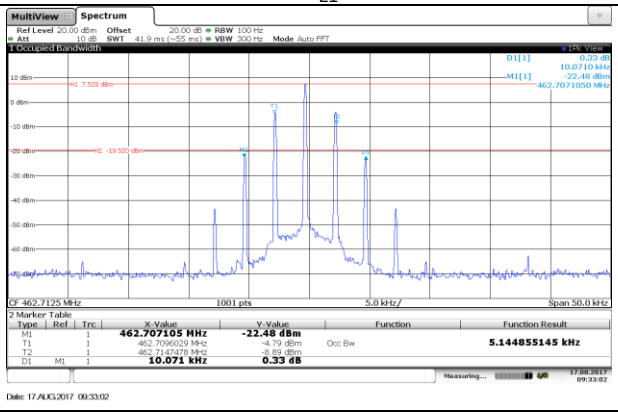
Please reference to the section 3.4

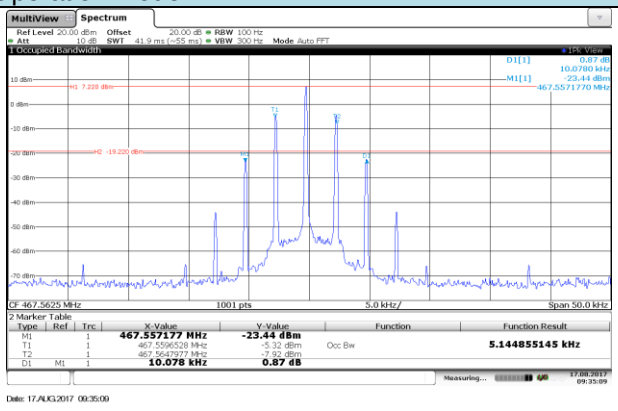
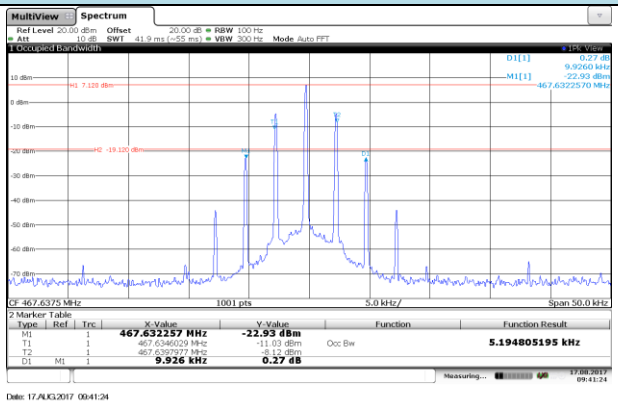
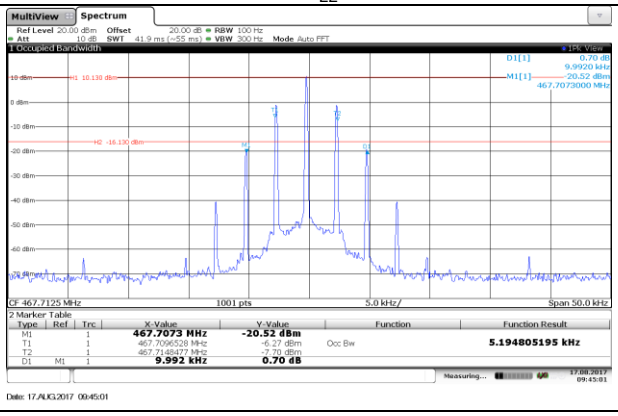
TEST RESULTS

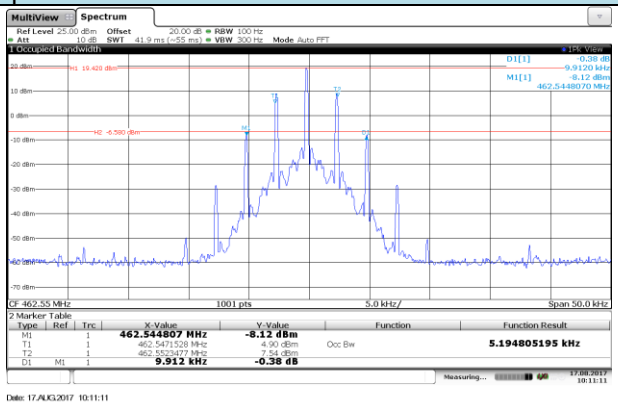
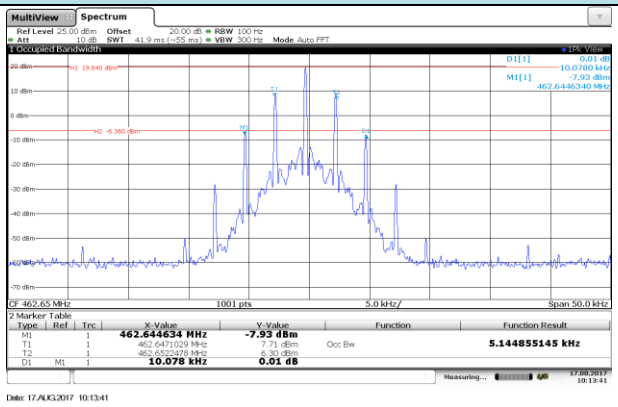
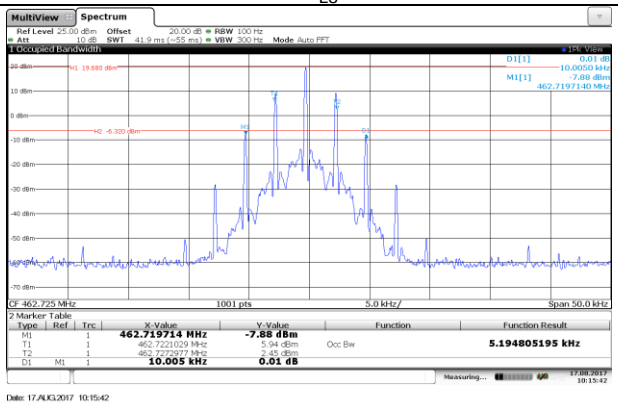
☒ **Passed** ☐ **Not Applicable**

Operation Mode	Test Channel	Occupied Bandwidth		Limit(kHz)	Result
		99%	26dB		
TX1	CH_{L1}	5.14	9.99	⩽12.5	Pass
	CH_{M1}	5.15	9.99	⩽12.5	
	CH_{H1}	5.14	10.07	⩽12.5	
TX2	CH_{L2}	5.15	10.08	⩽12.5	Pass
	CH_{M2}	5.19	9.93	⩽12.5	
	CH_{H2}	5.19	9.99	⩽12.5	
TX3	CH_{L3}	5.20	9.91	⩽20	Pass
	CH_{M3}	5.14	10.08	⩽20	
	CH_{H3}	5.19	10.01	⩽20	

Test plot as follows:

Operation Mode	TX1
	
CH_{L1}	CH_{M1}
	No Plot
CH_{H1}	-

Operation Mode	TX2
	
CH_{L2}	CH_{M2}
	No Plot
CH_{H2}	-

Operation Mode	TX3
	
CH_{L3}	CH_{M3}
	No Plot
CH_{H3}	-

5.3. Emission Mask

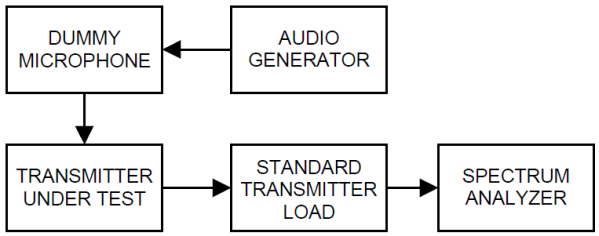
Transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section.

LIMIT

FCC Part 95.635 (b)(1)(3)(7):
FRS&GMRS:
Unwanted emissions shall be attenuated below the unmodulated carrier power in accordance with the following:

(1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.
(3) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.
(7) At least 43 + 10 $\log_{10}$ (T) dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

TEST CONFIGURATION



TEST PROCEDURE

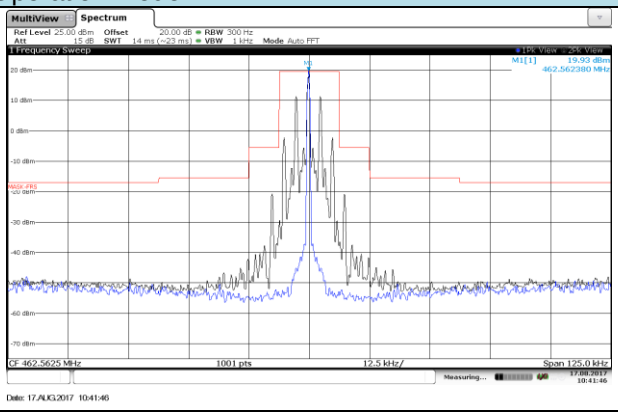
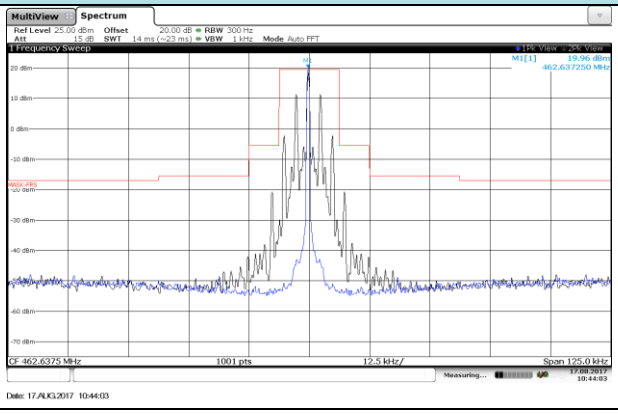
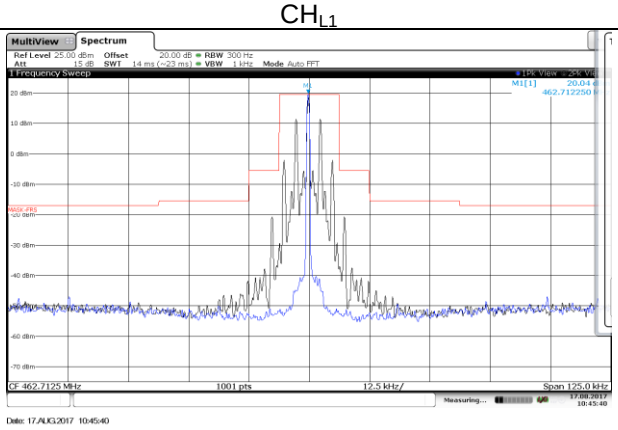
1 Connect the equipment as illustrated.
2 Spectrum set as follow:
Centre frequency = fundamental frequency, span=125kHz for 12.5kHz channel spacing,
RBW=300Hz, VBW=1000Hz, Sweep = auto,
Detector function = peak, Trace = max hold
3 Key the transmitter, and set the level of the unmodulated carrier to a 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 2.5 kHz for 12.5kHz channel spacing). 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.

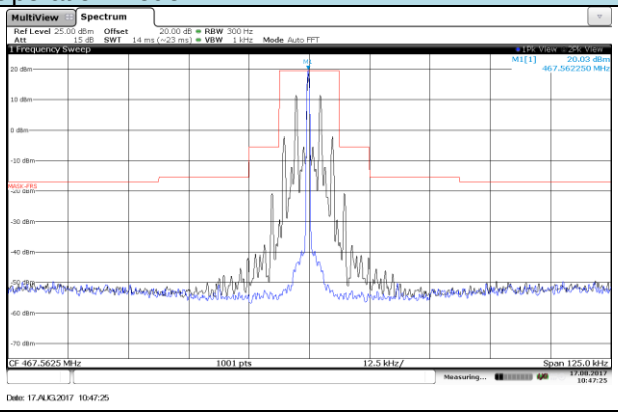
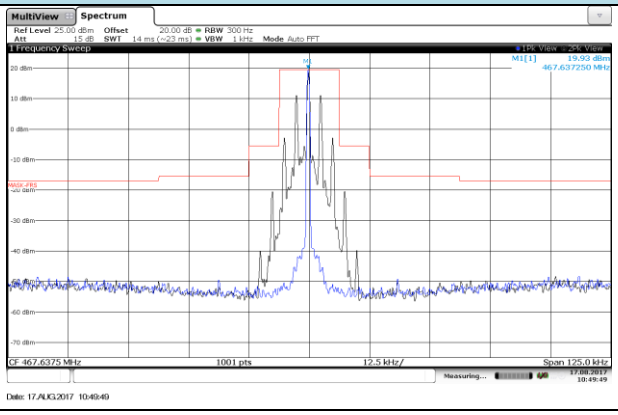
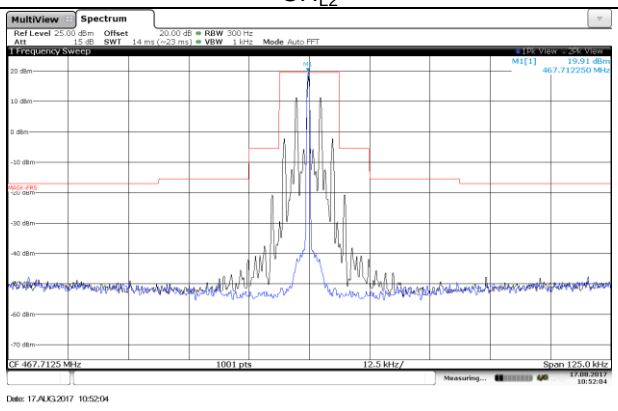
TEST MODE:

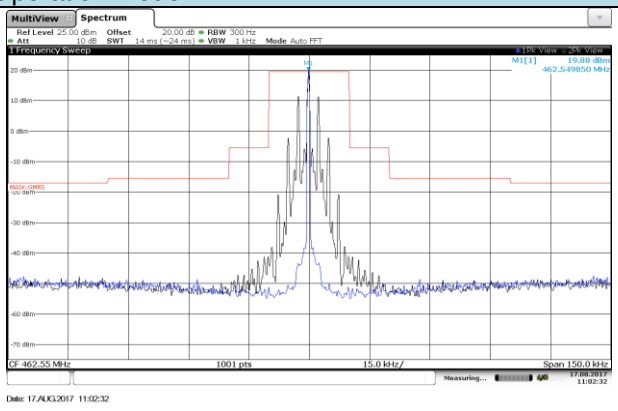
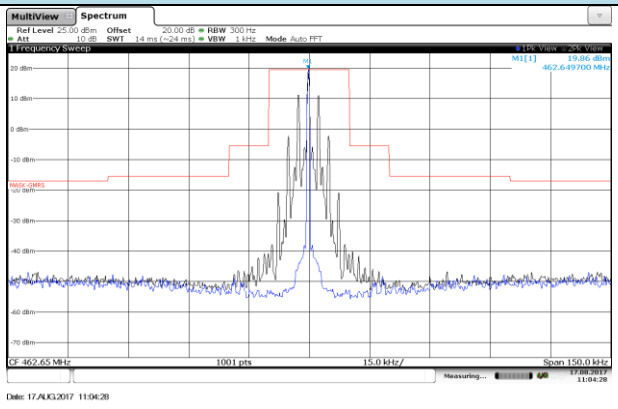
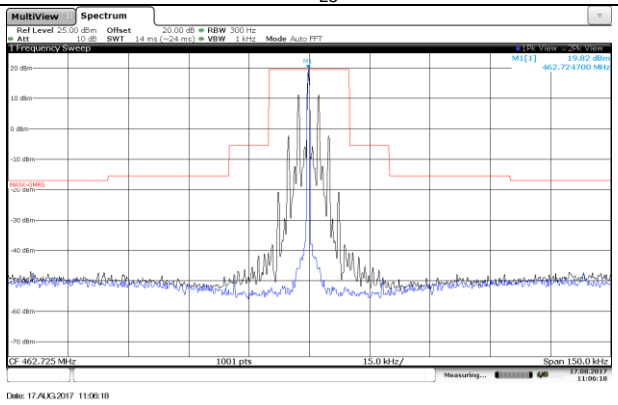
Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Operation Mode	TX1
	
CH_{L1}	CH_{M1}
	No Plot
CH_{H1}	-

Operation Mode	TX2
	
CH_{L2}	CH_{M2}
	No Plot
CH_{H2}	-

Operation Mode	TX3
	
CH_{L3}	CH_{M3}
	No Plot
CH_{H3}	-

5.4. 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 95.635(b)(7):

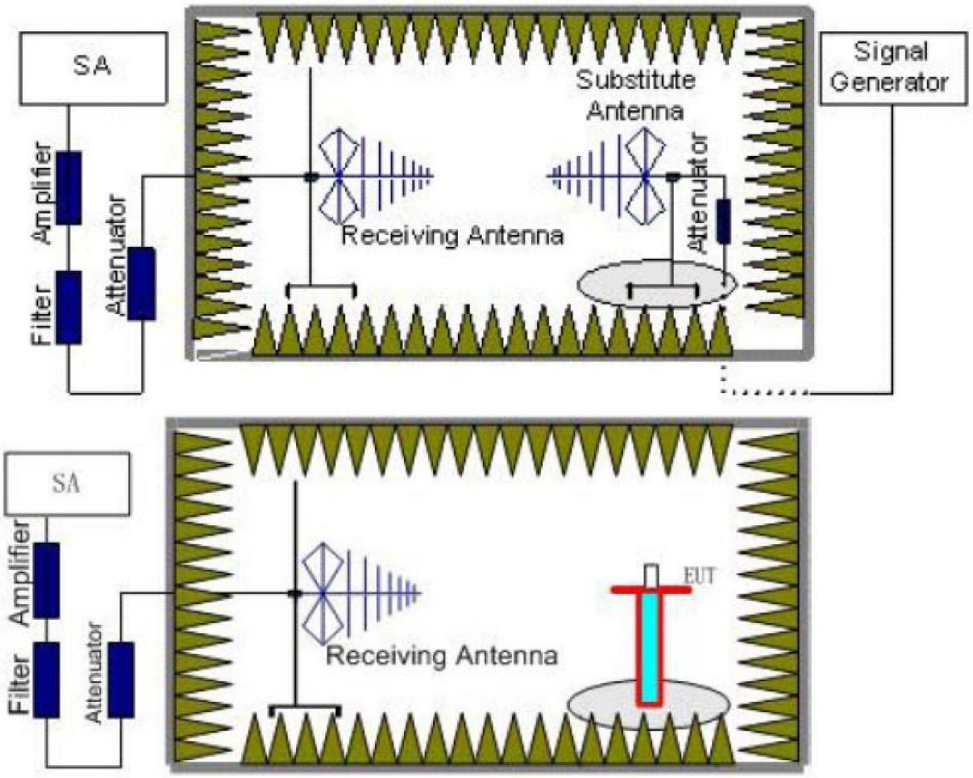
43 + 10 log (Pwatts)

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

Notes: 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) = -13 dBm

TEST CONFIGURATION



TEST PROCEDURE

1. EUT was placed on a 1.5 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 and RBW=100kHz,VBW=300kHz for 30MHz to 1GHz, 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:
   Power(EIRP)=P_{Mea}- P_{Ag} - P_{cl} - G_a
   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)=P_{Mea}- P_{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, ERP = EIRP-2.15dBi.

TEST MODE:

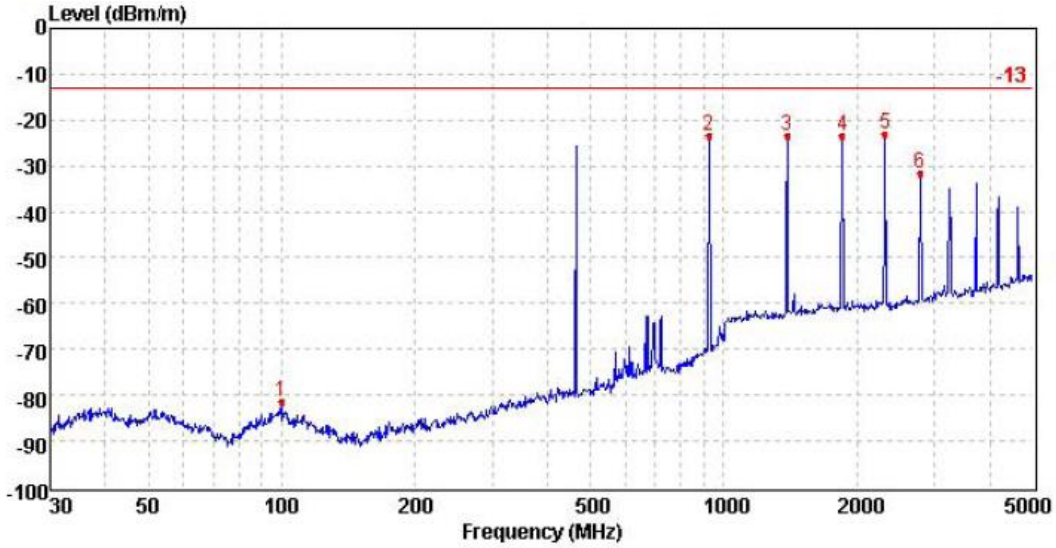
Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

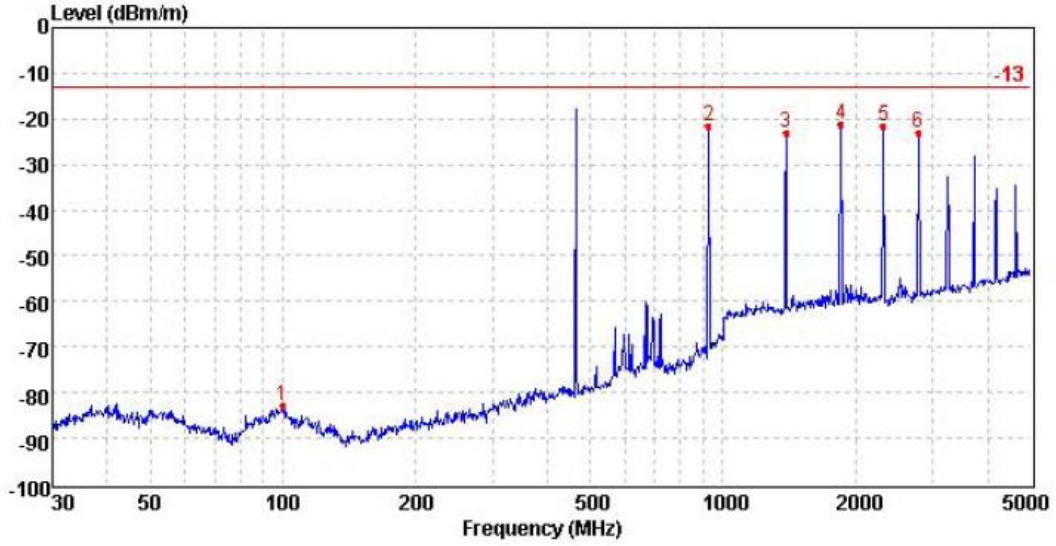
Note:
1. In general, the worse case attenuation requirement shown above was applied.
2. The measurement frequency range from 30 MHz to 5 GHz.
3. Absolute Level=SG Level-Cable loss+Antenna Gain, Margin=Limit-Absulute Level

TX1			
Test Frequency:	CH_{L1}	Polarity:	Horizontal



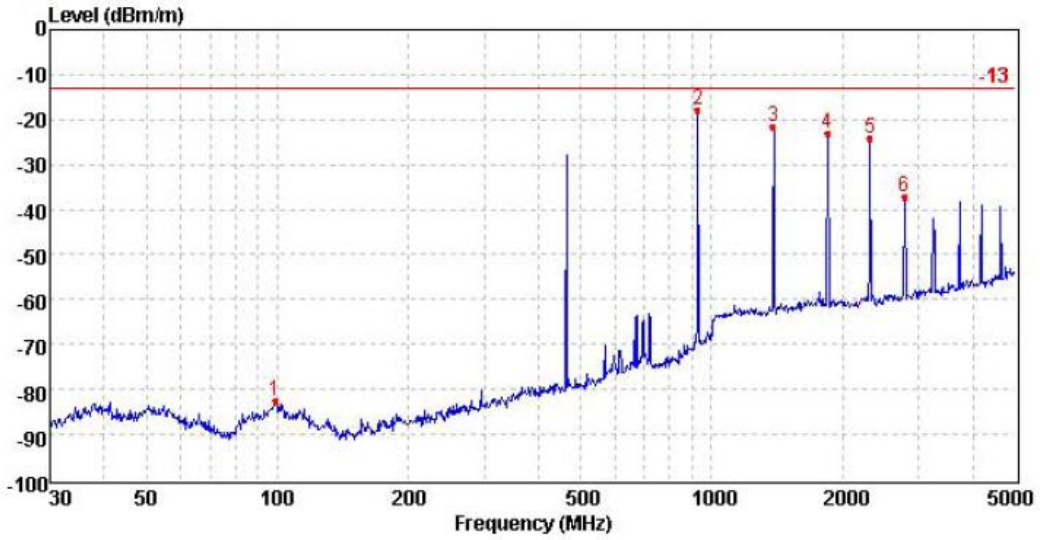
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.83	-79.61	26.00	1.14	29.10	-81.57	-13.00	-68.57	Peak
2	924.19	-35.42	36.08	3.77	28.03	-23.60	-13.00	-10.60	Peak
3	1391.58	-39.41	39.73	4.71	28.43	-23.40	-13.00	-10.40	Peak
4	1853.24	-41.65	40.77	5.69	28.40	-23.59	-13.00	-10.59	Peak
5	2321.09	-43.17	41.94	6.40	28.04	-22.87	-13.00	-9.87	Peak
6	2776.24	-54.54	42.90	7.78	27.71	-31.57	-13.00	-18.57	Peak

Test Frequency:	CH_{L1}	Polarity:	Vertical



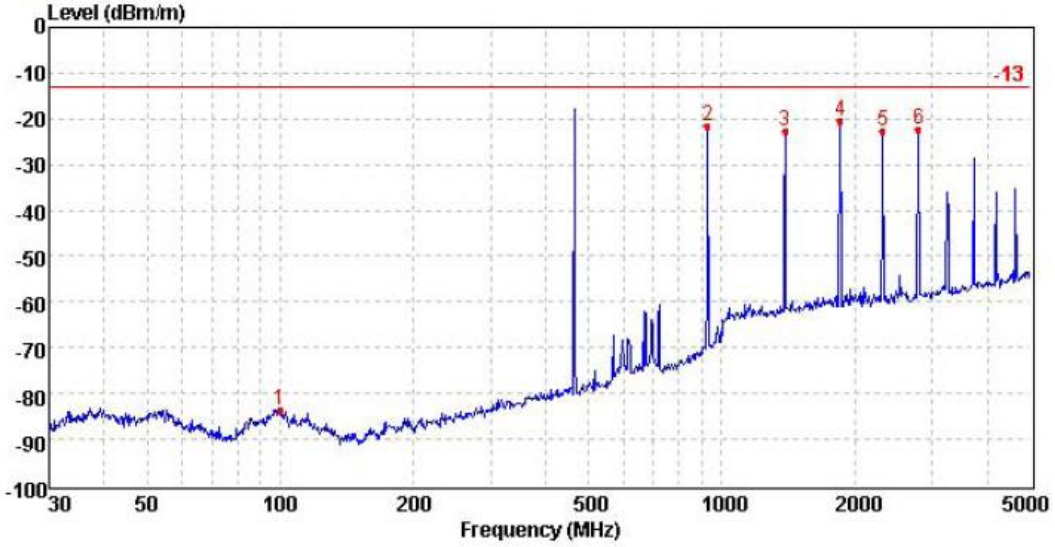
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.83	-81.12	26.00	1.14	29.10	-83.08	-13.00	-70.08	Peak
2	928.93	-33.15	36.08	3.77	28.11	-21.41	-13.00	-8.41	Peak
3	1391.58	-38.92	39.73	4.71	28.43	-22.91	-13.00	-9.91	Peak
4	1853.24	-39.36	40.77	5.69	28.40	-21.30	-13.00	-8.30	Peak
5	2321.09	-42.03	41.94	6.40	28.04	-21.73	-13.00	-8.73	Peak
6	2776.24	-46.20	42.90	7.78	27.71	-23.23	-13.00	-10.23	Peak

TX1			
Test Frequency:	CH_{M1}	Polarity:	Horizontal



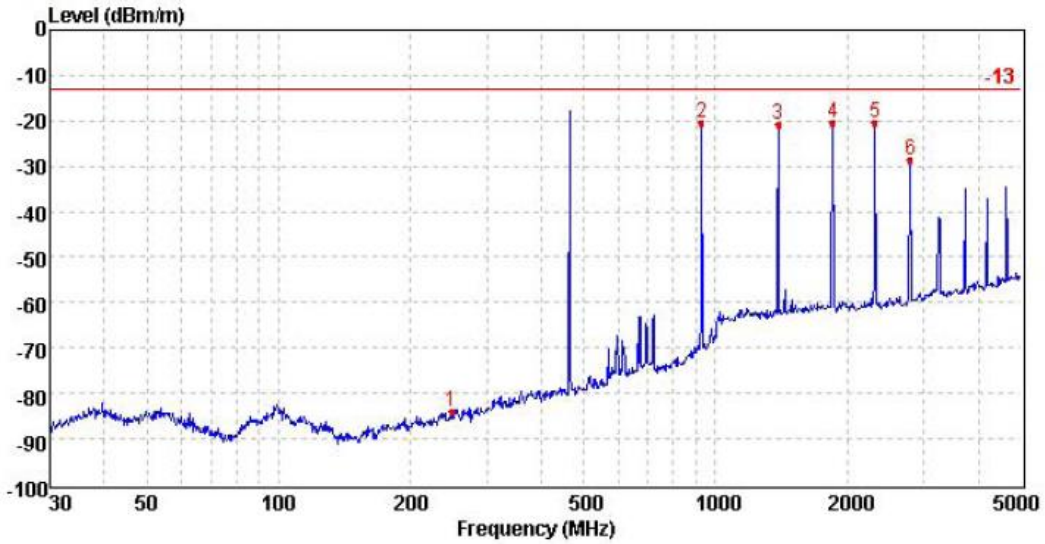
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.17	-80.65	25.92	1.14	29.10	-82.69	-13.00	-69.69	Peak
2	928.26	-29.54	36.08	3.77	28.10	-17.79	-13.00	-4.79	Peak
3	1386.41	-29.91	39.71	4.98	36.47	-21.69	-13.00	-8.69	Peak
4	1849.30	-32.54	40.77	6.04	37.18	-22.91	-13.00	-9.91	Peak
5	2312.94	-34.86	41.90	6.63	37.66	-23.99	-13.00	-10.99	Peak
6	2778.73	-49.22	42.90	7.32	38.30	-37.30	-13.00	-24.30	Peak

Test Frequency:	CH_{M1}	Polarity:	Vertical



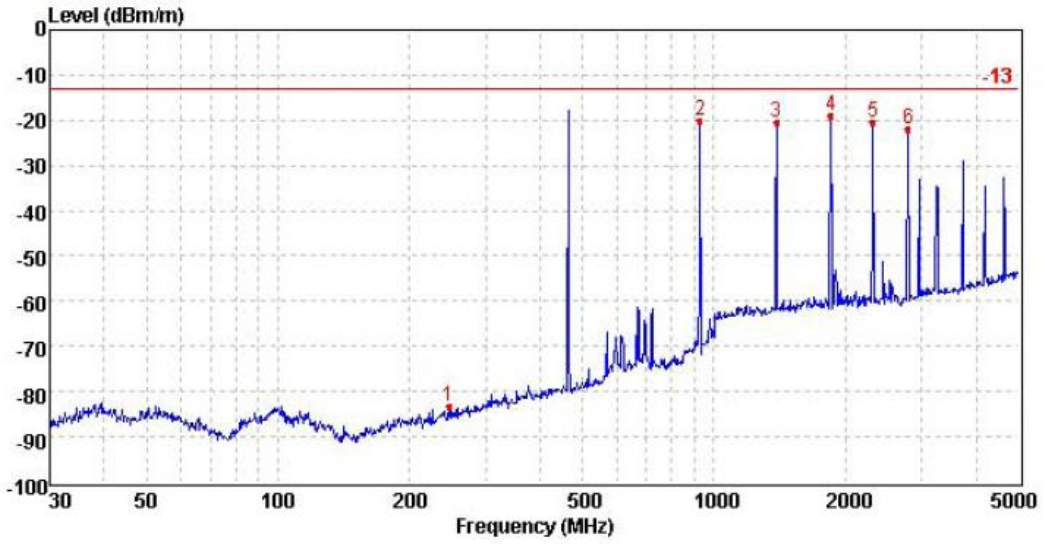
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.83	-81.55	26.00	1.14	29.10	-83.51	-13.00	-70.51	Peak
2	928.93	-33.27	36.08	3.77	28.11	-21.53	-13.00	-8.53	Peak
3	1391.58	-38.73	39.73	4.71	28.43	-22.72	-13.00	-9.72	Peak
4	1853.24	-38.57	40.77	5.69	28.40	-20.51	-13.00	-7.51	Peak
5	2321.09	-42.80	41.94	6.40	28.04	-22.50	-13.00	-9.50	Peak
6	2790.48	-45.56	42.93	7.86	27.71	-22.48	-13.00	-9.48	Peak

TX1			
Test Frequency:	CH_{H1}	Polarity:	Horizontal



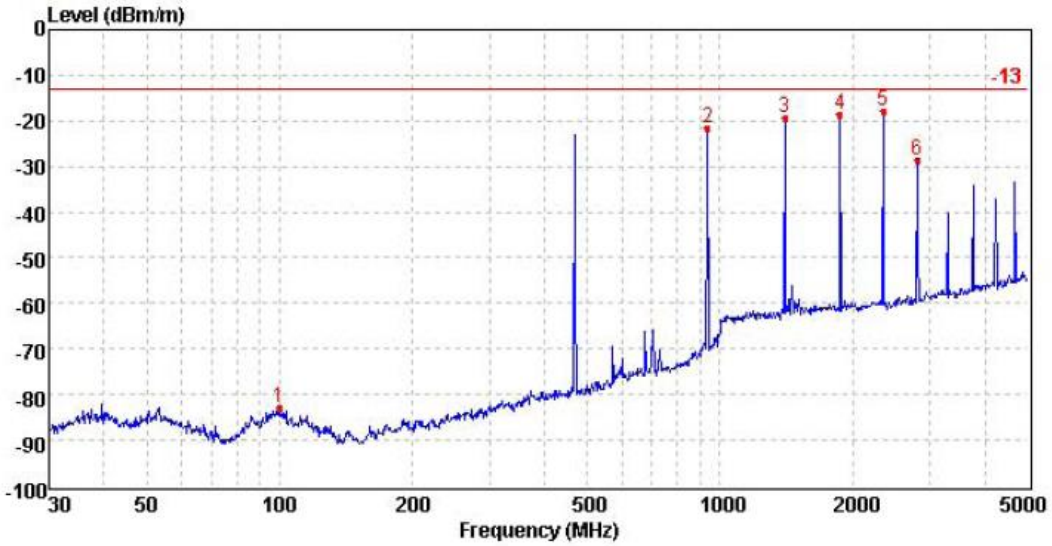
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	249.44	-81.79	25.00	1.82	29.19	-84.16	-13.00	-71.16	Peak
2	928.93	-32.08	36.08	3.77	28.11	-20.34	-13.00	-7.34	Peak
3	1391.58	-36.96	39.73	4.71	28.43	-20.95	-13.00	-7.95	Peak
4	1853.24	-38.56	40.77	5.69	28.40	-20.50	-13.00	-7.50	Peak
5	2321.09	-40.84	41.94	6.40	28.04	-20.54	-13.00	-7.54	Peak
6	2790.48	-51.87	42.93	7.86	27.71	-28.79	-13.00	-15.79	Peak

Test Frequency:	CH_{H1}	Polarity:	Vertical



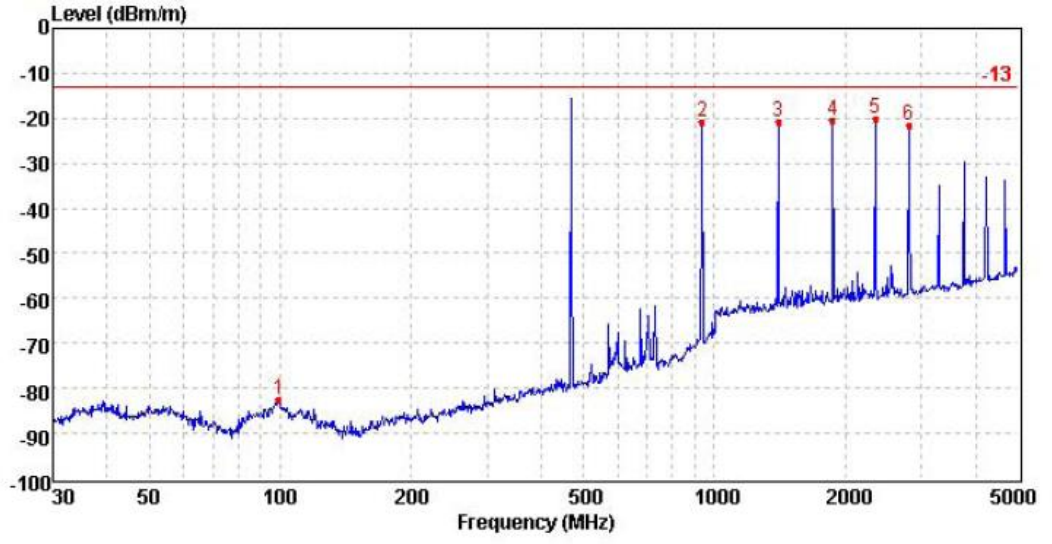
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	246.90	-80.73	24.92	1.80	29.18	-83.19	-13.00	-70.19	Peak
2	928.93	-31.78	36.08	3.77	28.11	-20.04	-13.00	-7.04	Peak
3	1391.58	-36.30	39.73	4.71	28.43	-20.29	-13.00	-7.29	Peak
4	1853.24	-37.10	40.77	5.69	28.40	-19.04	-13.00	-6.04	Peak
5	2321.09	-40.81	41.94	6.40	28.04	-20.51	-13.00	-7.51	Peak
6	2790.48	-44.98	42.93	7.86	27.71	-21.90	-13.00	-8.90	Peak

TX2			
Test Frequency:	CH_{L2}	Polarity:	Horizontal



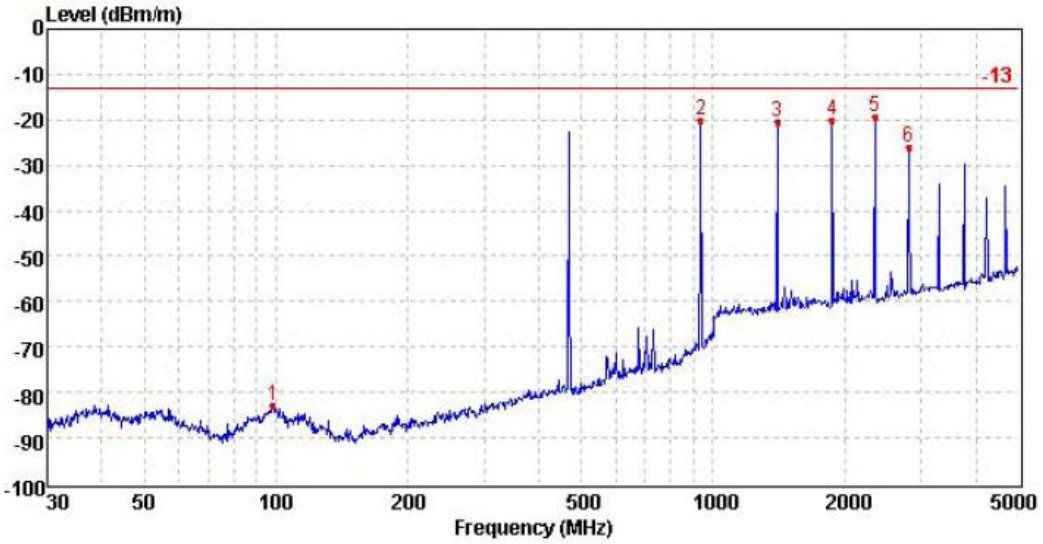
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.83	-80.94	26.00	1.14	29.10	-82.90	-13.00	-69.90	Peak
2	938.48	-33.42	36.45	3.78	28.28	-21.47	-13.00	-8.47	Peak
3	1405.89	-35.33	39.76	4.75	28.45	-19.27	-13.00	-6.27	Peak
4	1872.30	-36.55	40.82	5.75	28.49	-18.47	-13.00	-5.47	Peak
5	2344.97	-38.28	41.98	6.47	27.99	-17.82	-13.00	-4.82	Peak
6	2804.80	-51.73	42.93	8.04	27.71	-28.47	-13.00	-15.47	Peak

Test Frequency:	CH_{L2}	Polarity:	Vertical



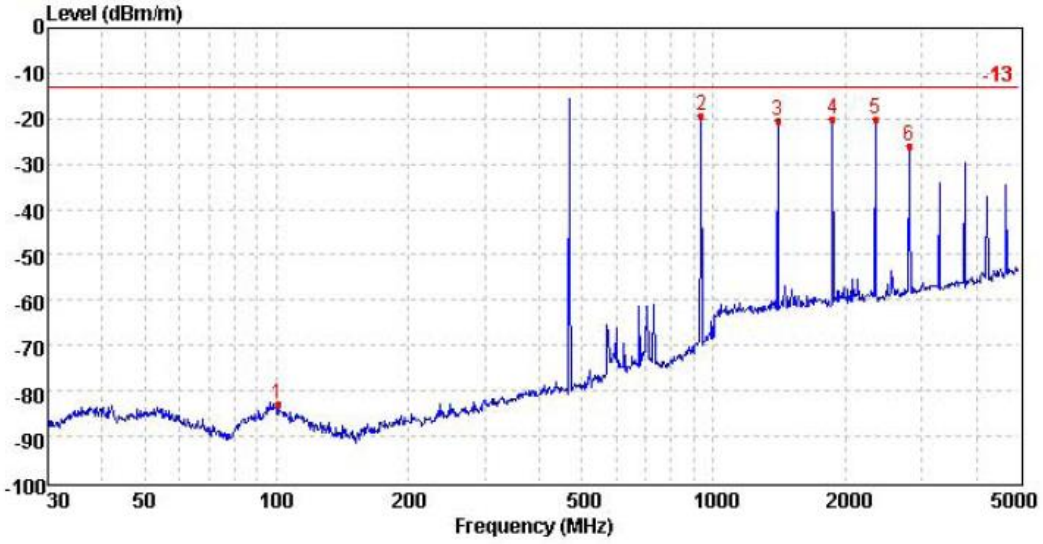
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.32	-80.65	26.00	1.14	29.10	-82.61	-13.00	-69.61	Peak
2	938.48	-32.58	36.45	3.78	28.28	-20.63	-13.00	-7.63	Peak
3	1405.89	-36.78	39.76	4.75	28.45	-20.72	-13.00	-7.72	Peak
4	1872.30	-38.59	40.82	5.75	28.49	-20.51	-13.00	-7.51	Peak
5	2344.97	-40.50	41.98	6.47	27.99	-20.04	-13.00	-7.04	Peak
6	2804.80	-44.96	42.93	8.04	27.71	-21.70	-13.00	-8.70	Peak

TX2			
Test Frequency:	CH_{M2}	Polarity:	Horizontal



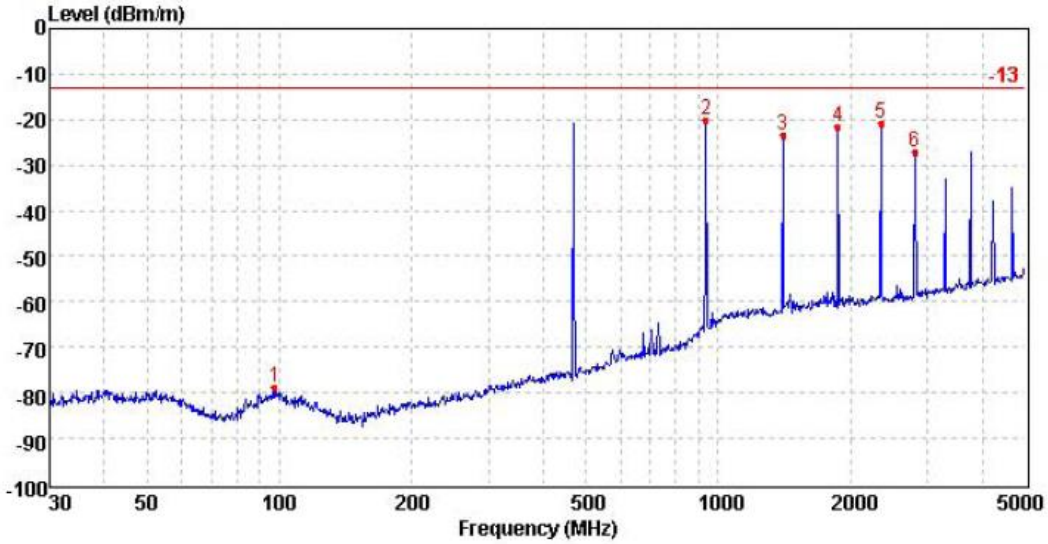
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	98.81	-81.01	25.92	1.14	29.09	-83.04	-13.00	-70.04	Peak
2	938.48	-31.94	36.45	3.78	28.28	-19.99	-13.00	-6.99	Peak
3	1405.89	-36.55	39.76	4.75	28.45	-20.49	-13.00	-7.49	Peak
4	1872.30	-38.03	40.82	5.75	28.49	-19.95	-13.00	-6.95	Peak
5	2344.97	-39.65	41.98	6.47	27.99	-19.19	-13.00	-6.19	Peak
6	2804.80	-49.33	42.93	8.04	27.71	-26.07	-13.00	-13.07	Peak

Test Frequency:	CH_{M2}	Polarity:	Vertical



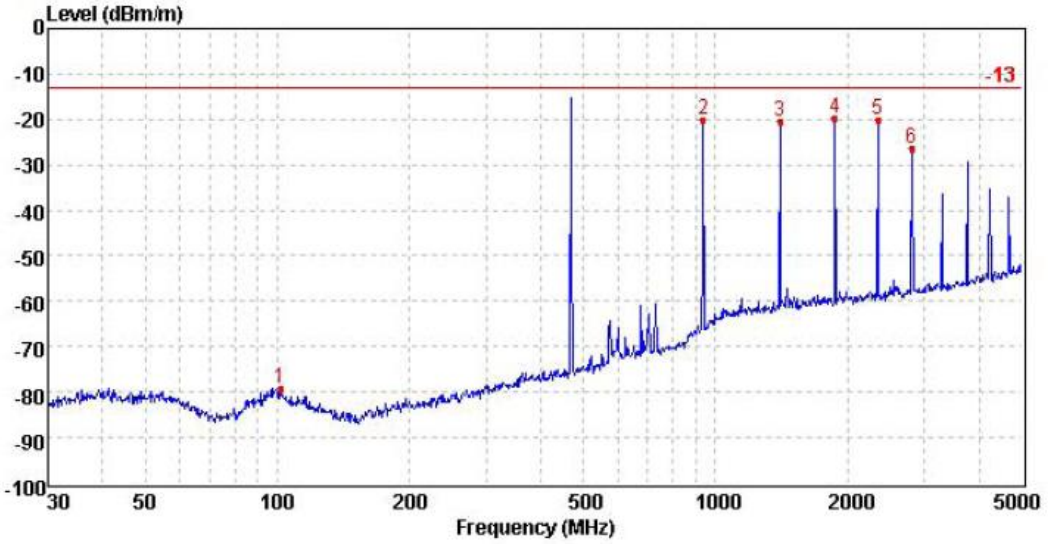
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	100.86	-80.90	26.00	1.14	29.10	-82.86	-13.00	-69.86	Peak
2	938.48	-31.21	36.45	3.78	28.28	-19.26	-13.00	-6.26	Peak
3	1405.89	-36.55	39.76	4.75	28.45	-20.49	-13.00	-7.49	Peak
4	1872.30	-38.03	40.82	5.75	28.49	-19.95	-13.00	-6.95	Peak
5	2344.97	-40.65	41.98	6.47	27.99	-20.19	-13.00	-7.19	Peak
6	2804.80	-49.33	42.93	8.04	27.71	-26.07	-13.00	-13.07	Peak

TX2			
Test Frequency:	CH_{H2}	Polarity:	Horizontal



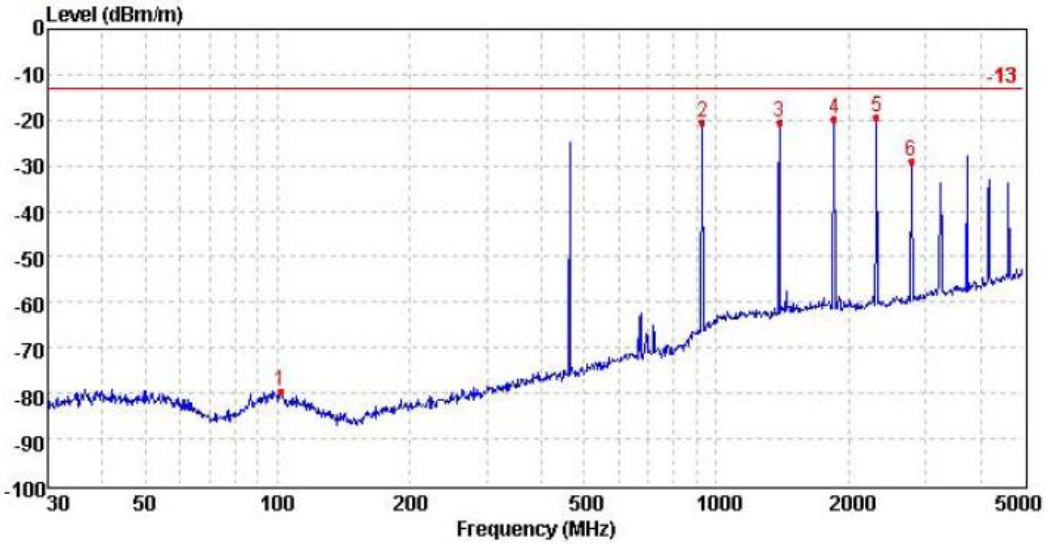
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	97.81	-76.74	25.76	1.14	29.09	-78.93	-13.00	-65.93	Peak
2	938.48	-32.11	36.45	3.78	28.28	-20.16	-13.00	-7.16	Peak
3	1405.89	-39.50	39.76	4.75	28.45	-23.44	-13.00	-10.44	Peak
4	1872.30	-39.52	40.82	5.75	28.49	-21.44	-13.00	-8.44	Peak
5	2344.97	-41.15	41.98	6.47	27.99	-20.69	-13.00	-7.69	Peak
6	2804.80	-50.50	42.93	8.04	27.71	-27.24	-13.00	-14.24	Peak

Test Frequency:	CH_{H2}	Polarity:	Vertical



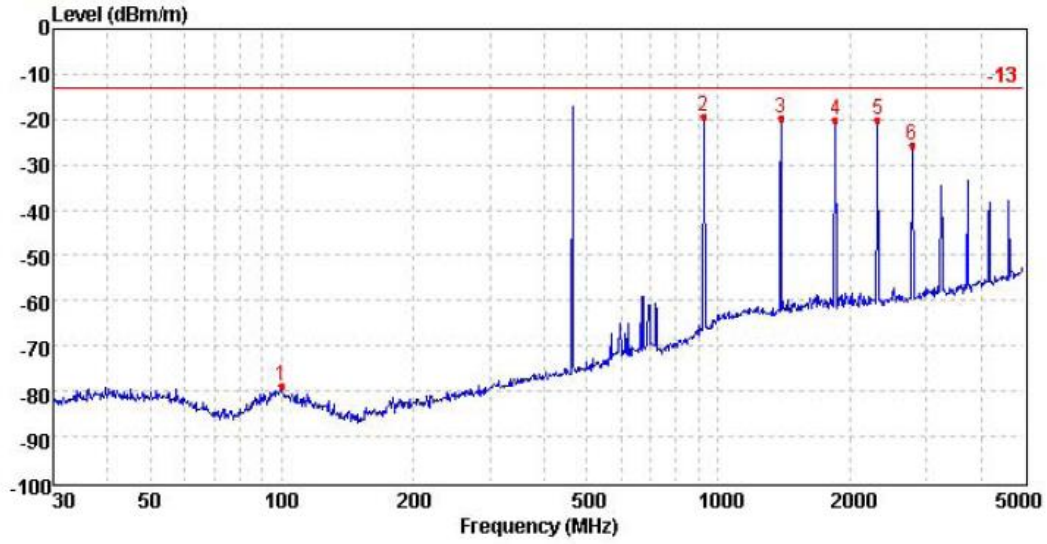
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	101.89	-77.10	25.84	1.15	29.10	-79.21	-13.00	-66.21	Peak
2	938.48	-32.12	36.45	3.78	28.28	-20.17	-13.00	-7.17	Peak
3	1405.89	-36.40	39.76	4.75	28.45	-20.34	-13.00	-7.34	Peak
4	1872.30	-37.79	40.82	5.75	28.49	-19.71	-13.00	-6.71	Peak
5	2344.97	-40.59	41.98	6.47	27.99	-20.13	-13.00	-7.13	Peak
6	2804.80	-49.72	42.93	8.04	27.71	-26.46	-13.00	-13.46	Peak

TX3			
Test Frequency:	CH_{L3}	Polarity:	Horizontal



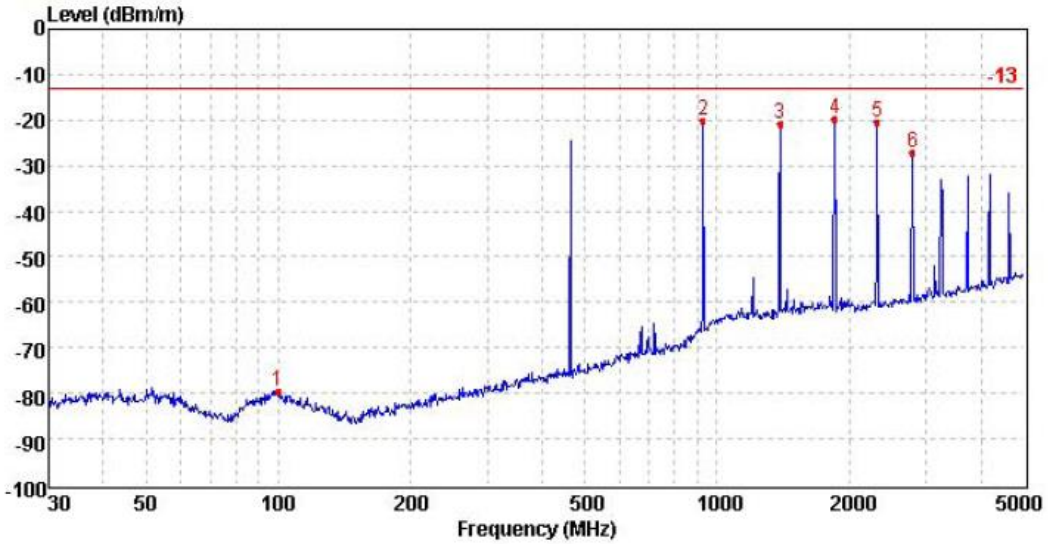
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	101.89	-77.39	25.84	1.15	29.10	-79.50	-13.00	-66.50	Peak
2	928.93	-32.13	36.08	3.77	28.11	-20.39	-13.00	-7.39	Peak
3	1391.58	-36.41	39.73	4.71	28.43	-20.40	-13.00	-7.40	Peak
4	1853.24	-37.79	40.77	5.69	28.40	-19.73	-13.00	-6.73	Peak
5	2321.09	-39.45	41.94	6.40	28.04	-19.15	-13.00	-6.15	Peak
6	2776.24	-52.09	42.90	7.78	27.71	-29.12	-13.00	-16.12	Peak

Test Frequency:	CH_{L3}	Polarity:	Vertical



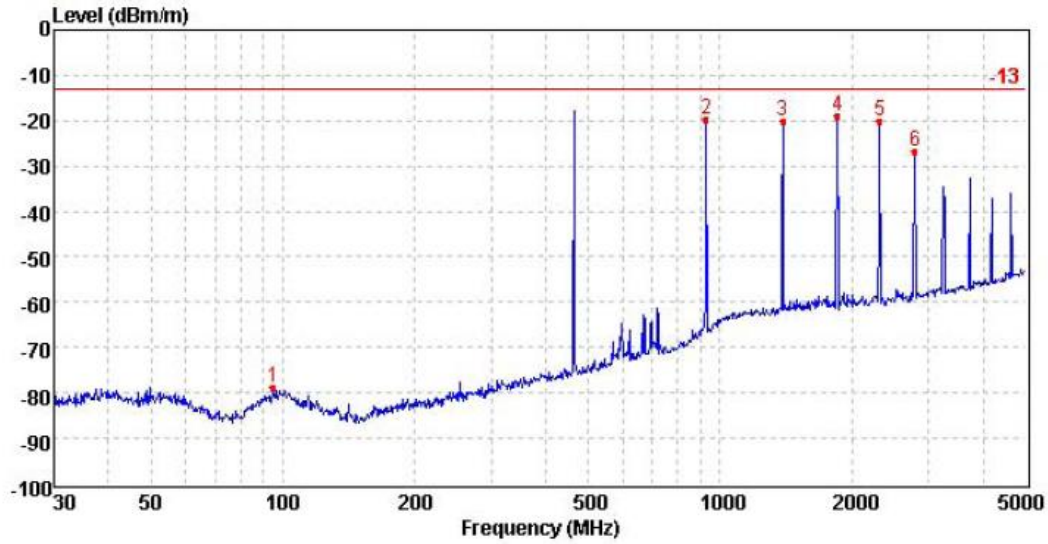
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.83	-77.02	26.00	1.14	29.10	-78.98	-13.00	-65.98	Peak
2	924.19	-31.23	36.08	3.77	28.03	-19.41	-13.00	-6.41	Peak
3	1391.58	-35.89	39.73	4.71	28.43	-19.88	-13.00	-6.88	Peak
4	1853.24	-38.14	40.77	5.69	28.40	-20.08	-13.00	-7.08	Peak
5	2321.09	-40.49	41.94	6.40	28.04	-20.19	-13.00	-7.19	Peak
6	2776.24	-48.75	42.90	7.78	27.71	-25.78	-13.00	-12.78	Peak

TX3			
Test Frequency:	CH_{M3}	Polarity:	Horizontal



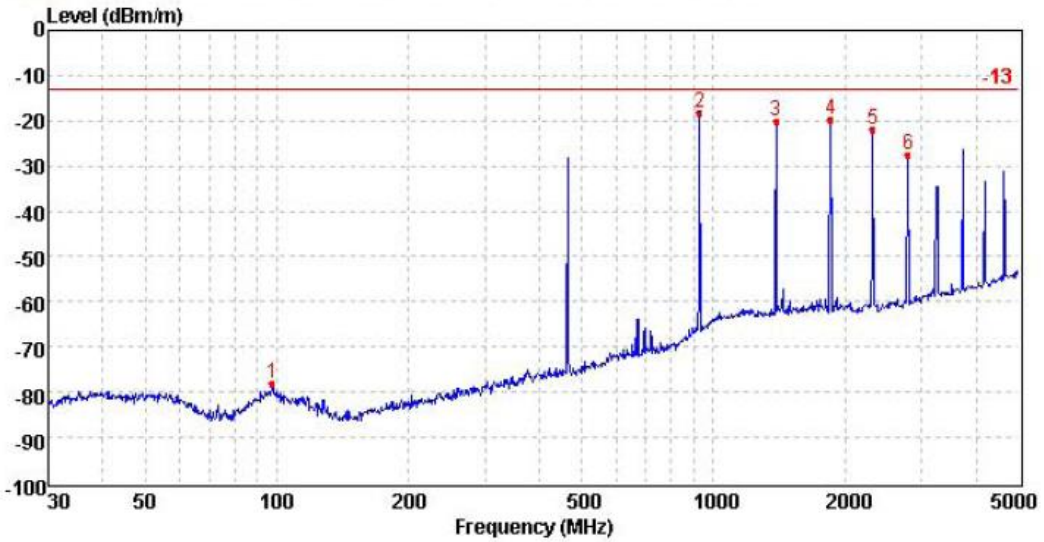
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.83	-77.53	26.00	1.14	29.10	-79.49	-13.00	-66.49	Peak
2	928.93	-31.86	36.08	3.77	28.11	-20.12	-13.00	-7.12	Peak
3	1391.58	-36.66	39.73	4.71	28.43	-20.65	-13.00	-7.65	Peak
4	1853.24	-37.84	40.77	5.69	28.40	-19.78	-13.00	-6.78	Peak
5	2321.09	-40.61	41.94	6.40	28.04	-20.31	-13.00	-7.31	Peak
6	2790.48	-50.34	42.93	7.86	27.71	-27.26	-13.00	-14.26	Peak

Test Frequency:	CH_{M3}	Polarity:	Vertical



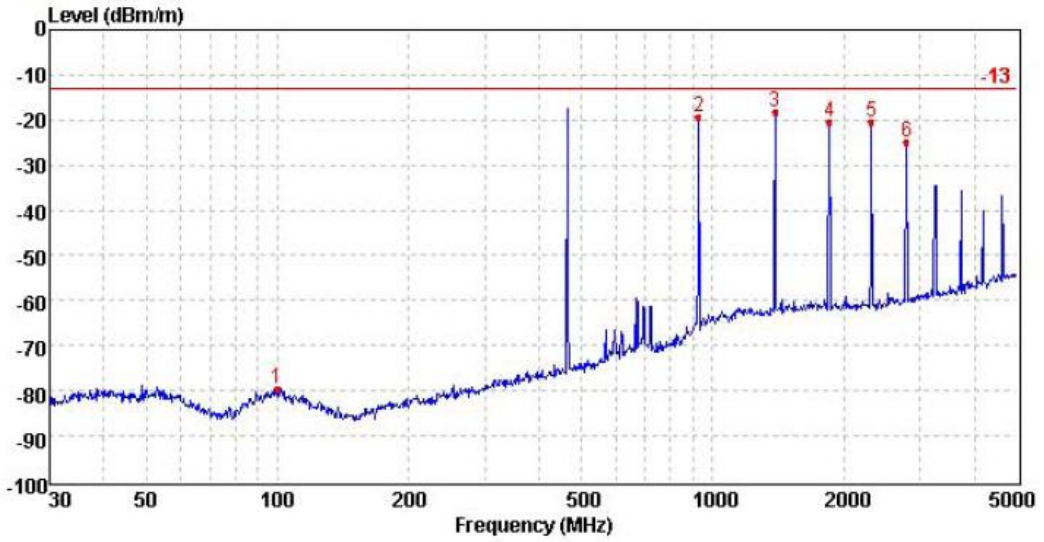
Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	95.34	-76.26	25.45	1.13	29.07	-78.75	-13.00	-65.75	Peak
2	928.93	-31.31	36.08	3.77	28.11	-19.57	-13.00	-6.57	Peak
3	1391.58	-36.01	39.73	4.71	28.43	-20.00	-13.00	-7.00	Peak
4	1853.24	-37.16	40.77	5.69	28.40	-19.10	-13.00	-6.10	Peak
5	2321.09	-40.45	41.94	6.40	28.04	-20.15	-13.00	-7.15	Peak
6	2790.48	-49.67	42.93	7.86	27.71	-26.59	-13.00	-13.59	Peak

TX3			
Test Frequency:	CH_{H3}	Polarity:	Horizontal



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	97.81	-76.03	25.76	1.14	29.09	-78.22	-13.00	-65.22	Peak
2	928.93	-29.90	36.08	3.77	28.11	-18.16	-13.00	-5.16	Peak
3	1391.58	-36.05	39.73	4.71	28.43	-20.04	-13.00	-7.04	Peak
4	1853.24	-37.84	40.77	5.69	28.40	-19.78	-13.00	-6.78	Peak
5	2321.09	-42.12	41.94	6.40	28.04	-21.82	-13.00	-8.82	Peak
6	2790.48	-50.74	42.93	7.86	27.71	-27.66	-13.00	-14.66	Peak

Test Frequency:	CH_{H3}	Polarity:	Vertical



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	99.83	-77.63	26.00	1.14	29.10	-79.59	-13.00	-66.59	Peak
2	928.93	-31.04	36.08	3.77	28.11	-19.30	-13.00	-6.30	Peak
3	1391.58	-34.23	39.73	4.71	28.43	-18.22	-13.00	-5.22	Peak
4	1853.24	-38.57	40.77	5.69	28.40	-20.51	-13.00	-7.51	Peak
5	2321.09	-40.70	41.94	6.40	28.04	-20.40	-13.00	-7.40	Peak
6	2790.48	-48.10	42.93	7.86	27.71	-25.02	-13.00	-12.02	Peak

5.5. 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 95.635(b)(7) :

43 + 10 log (Pwatts)

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

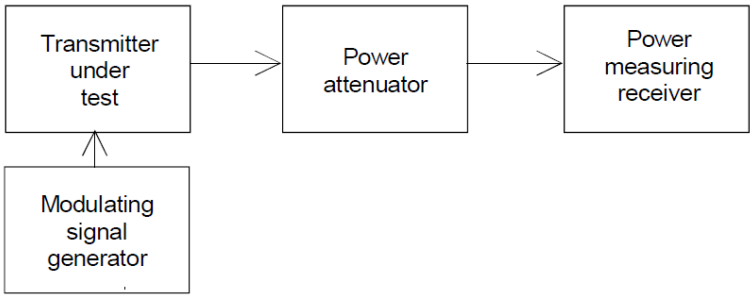
Notes: EL is the emission level of the Output Power expressed in dBm,
In this application, the EL is P(dBm).

Limit (dBm) = P(dBm)-43-10 log (Pwatts) = -13 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 3.4

TEST RESULTS

☐ **Passed** ☒ **Not Applicable**

This equipment is integral antenna.

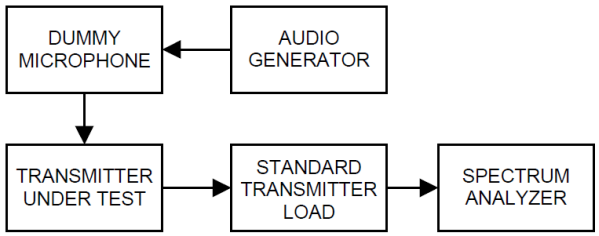
5.6. Modulation Limit

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 95.637(a), FCC Part 2.1047(b)
2.5 kHz for FRS
5kHz for GMRS

TEST CONFIGURATION



TEST PROCEDURE

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 MODE:

Please reference to the section 3.4

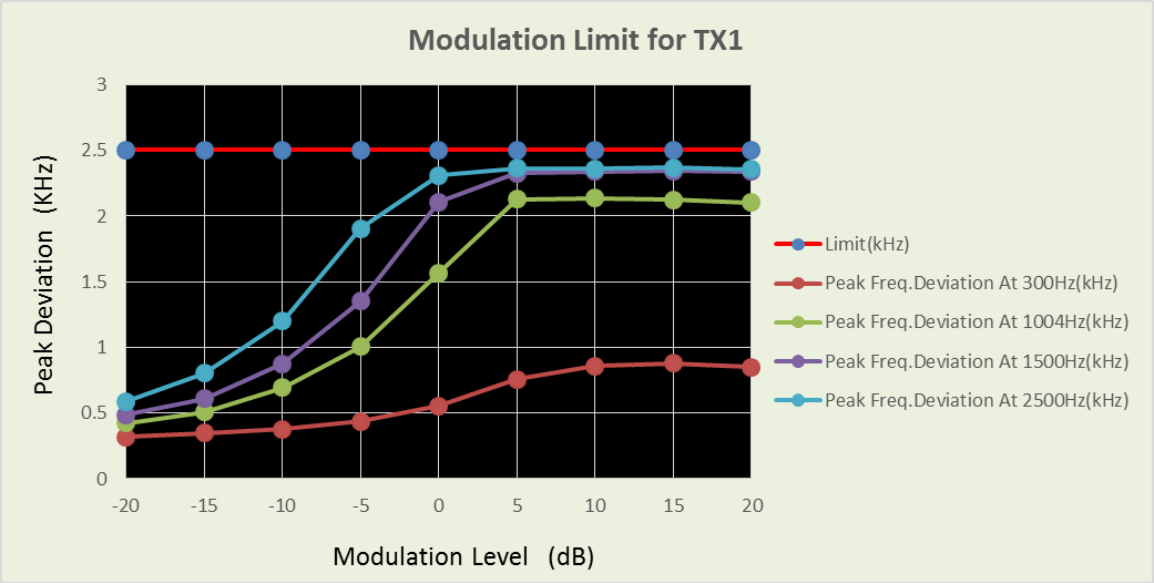
TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note: have pre-tested all test frequency, record the worst case mode CH_{M1},CH_{M2} and CH_{M3} on the report.

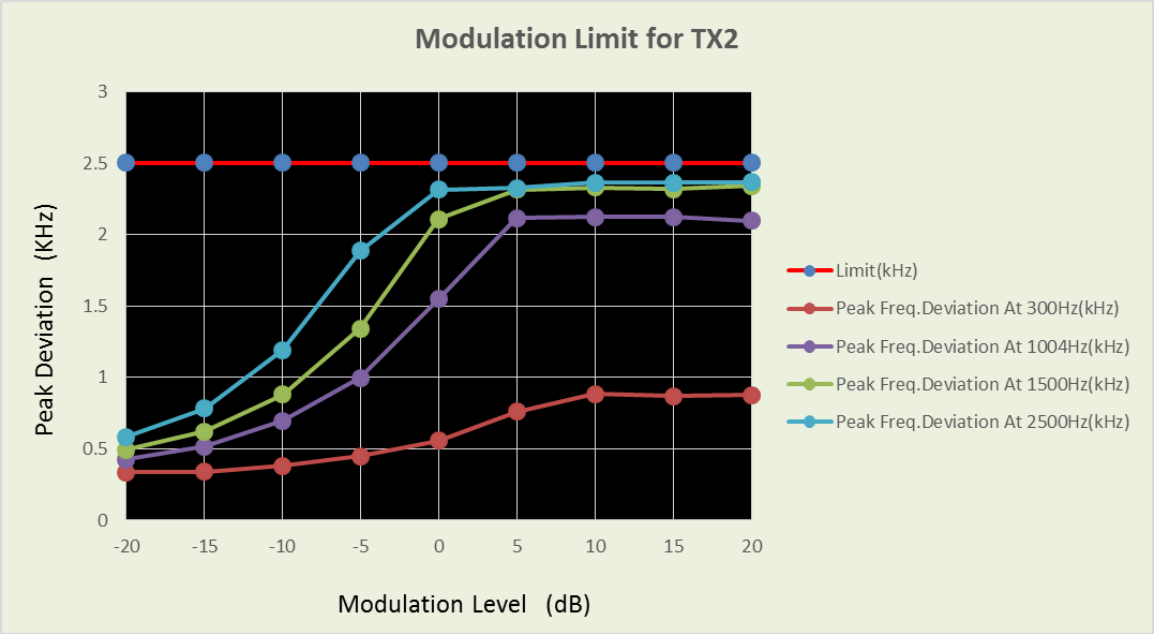
TX1: CH_{M1}						
Modulation Level (dB)	Peak frequency deviation (kHz)				Limit (kHz)	Result
	300Hz	1004Hz	1500Hz	2500 Hz		
-20	0.317	0.425	0.486	0.586	2.5	Pass
-15	0.347	0.508	0.609	0.802		
-10	0.375	0.694	0.873	1.197		
-5	0.437	1.005	1.351	1.901		
0	0.553	1.567	2.105	2.306		
5	0.755	2.125	2.323	2.361		
10	0.857	2.134	2.338	2.358		
15	0.877	2.12	2.341	2.367		
20	0.851	2.099	2.335	2.356		

Test plot as follows:



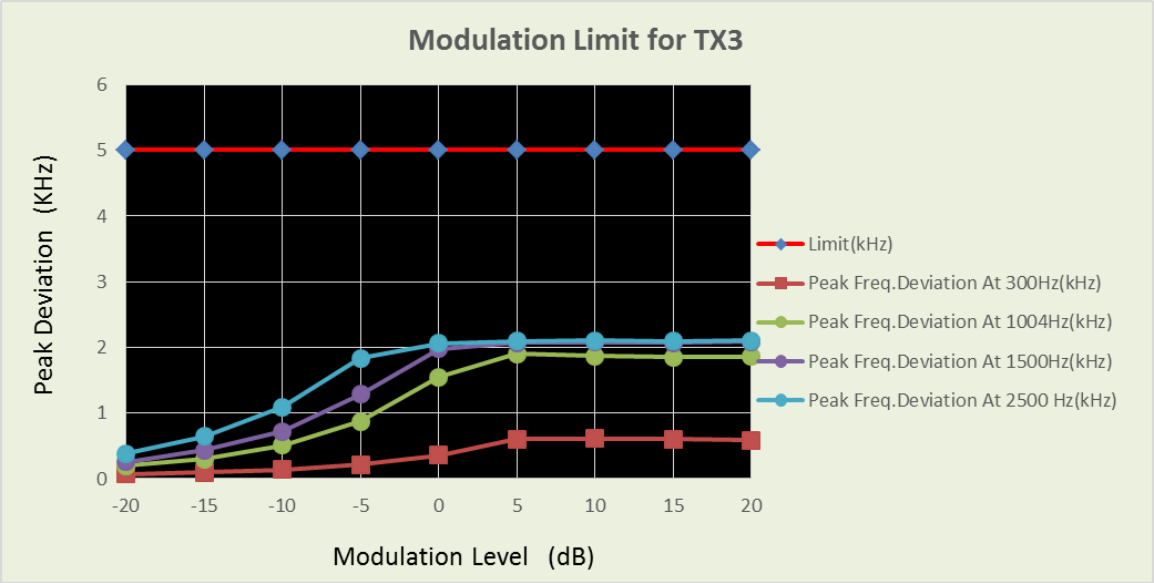
TX2: CH_{M2}						
Modulation Level (dB)	Peak frequency deviation (kHz)				Limit (kHz)	Result
	300Hz	1004Hz	1500Hz	2500 Hz		
-20	0.332	0.423	0.49	0.583	2.5	Pass
-15	0.338	0.515	0.618	0.781		
-10	0.378	0.694	0.879	1.192		
-5	0.445	0.996	1.34	1.885		
0	0.554	1.547	2.106	2.313		
5	0.757	2.115	2.312	2.326		
10	0.882	2.121	2.329	2.362		
15	0.868	2.121	2.318	2.362		
20	0.876	2.096	2.338	2.365		

Test plot as follows:



TX3: CH_{M3}						
Modulation Level (dB)	Peak frequency deviation (kHz)				Limit (kHz)	Result
	300Hz	1004Hz	1500Hz	2500 Hz		
-20	0.067	0.199	0.255	0.379	5.0	Pass
-15	0.098	0.302	0.436	0.645		
-10	0.139	0.506	0.717	1.095		
-5	0.213	0.873	1.281	1.832		
0	0.358	1.547	1.973	2.059		
5	0.605	1.898	2.071	2.096		
10	0.613	1.867	2.074	2.103		
15	0.604	1.849	2.073	2.096		
20	0.586	1.855	2.088	2.103		

Test plot as follows:



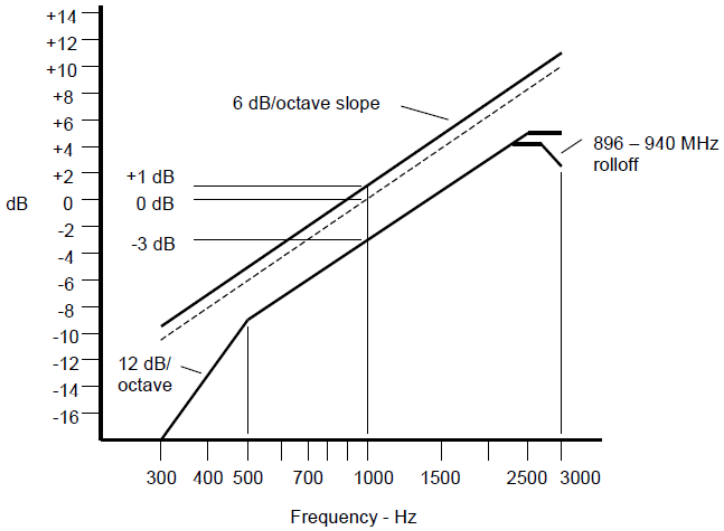
5.7. Audio Frequency Response

The audio frequency response is the degree of closeness to which the frequency deviation of the transmitter follows a prescribed characteristic.

LIMIT

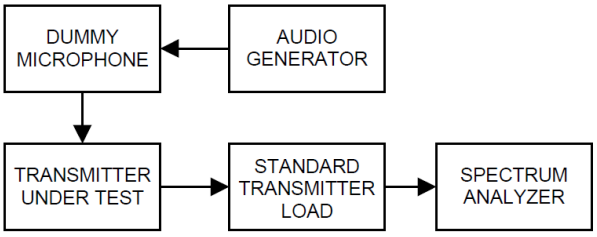
FCC Part 95.637(a),FCC Part 2.1047(a):

Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.



An additional 6 dB per octave attenuation is allowed from 2500 Hz to 3000 Hz in equipment operating in the 25 MHz to 869 MHz range.

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

TEST MODE:

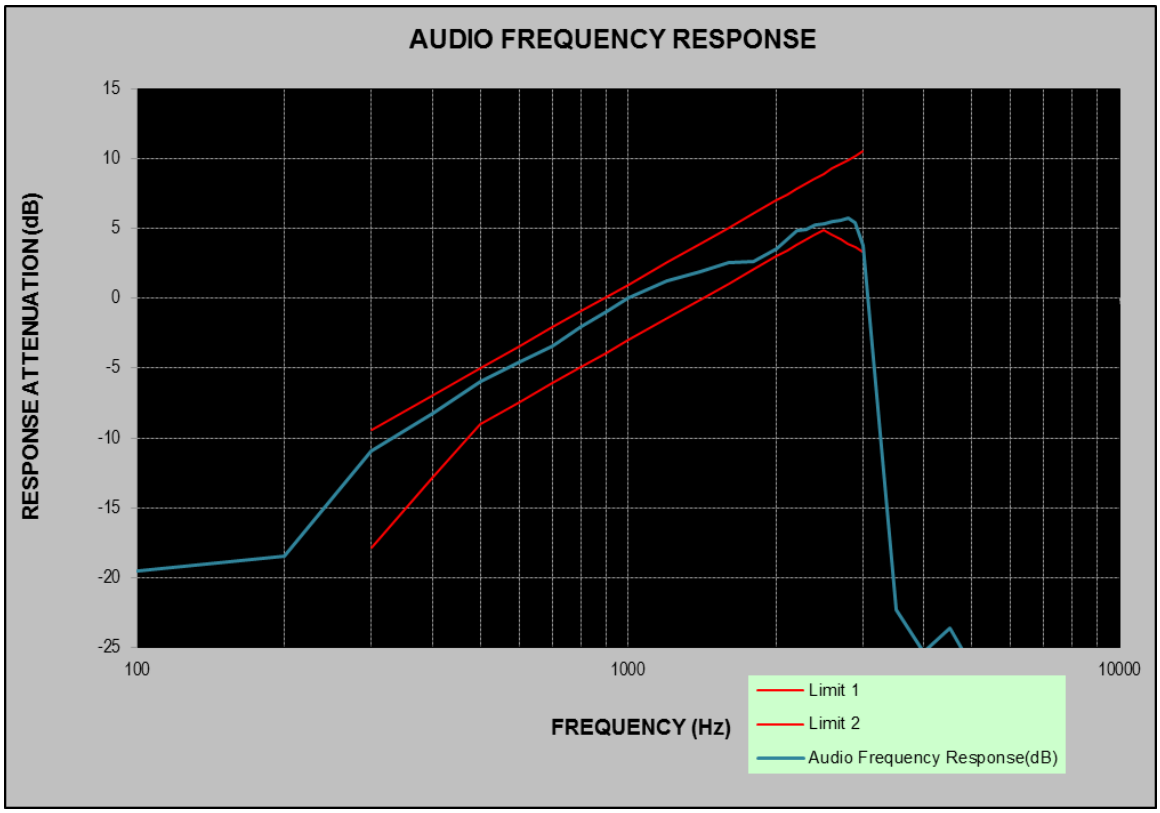
Please reference to the section 3.4

TEST RESULTS

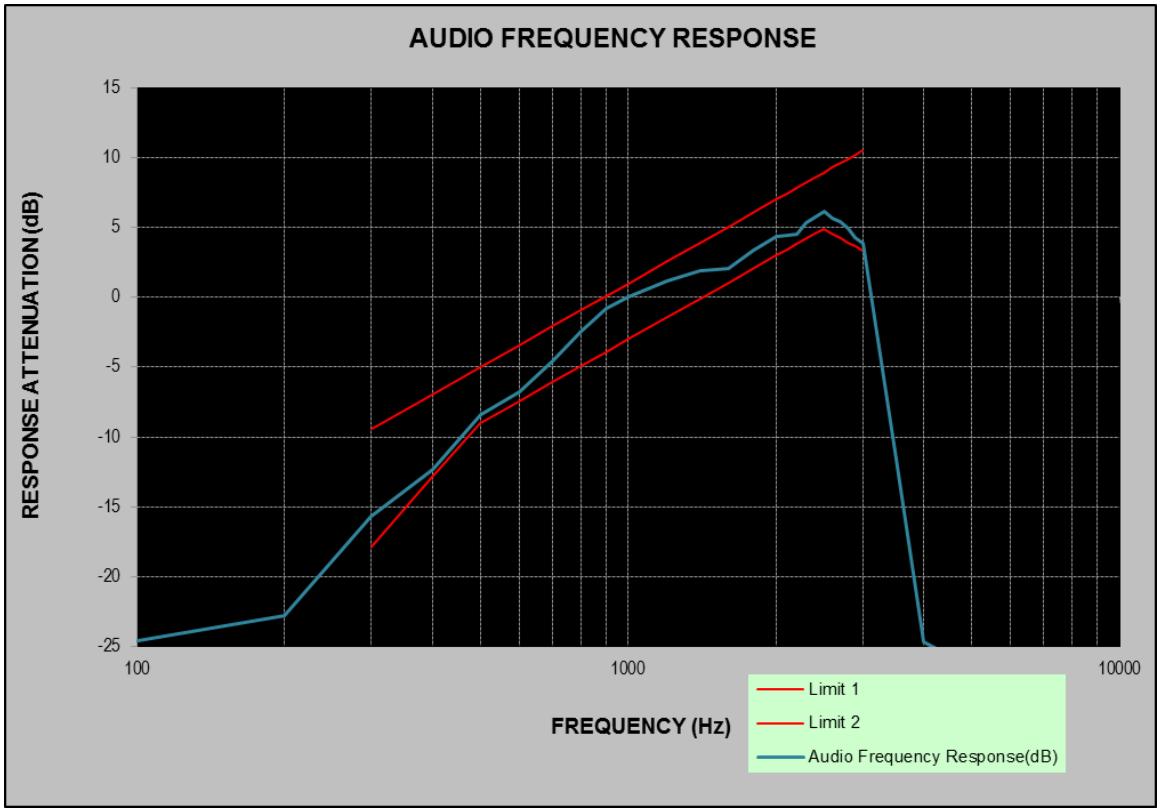
☒ **Passed** ☐ **Not Applicable**

Note: have pre-tested all test frequency , record the worst case mode CH_{M1},CH_{M2} and CH_{M3} on the report.

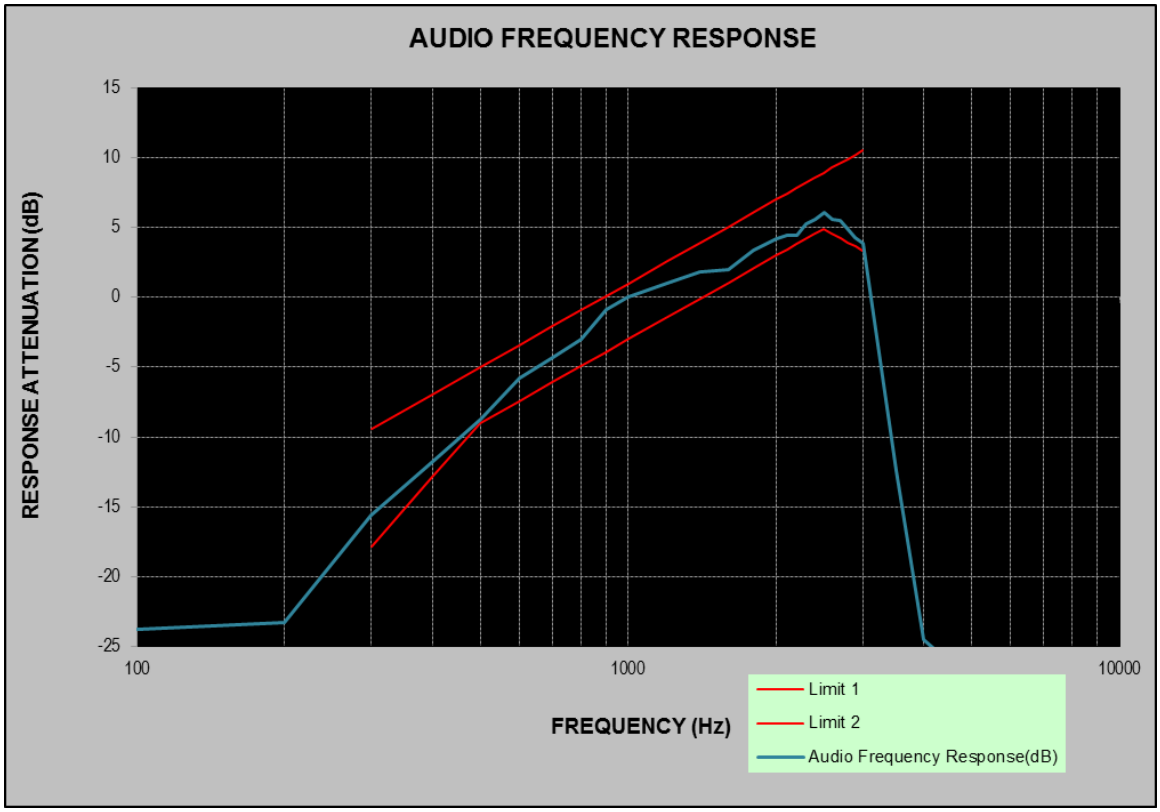
TX1: CH_{M1}			
Audio Frequency (Hz)	Audio Frequency Response (dB)	Audio Frequency (Hz)	Audio Frequency Response (dB)
100	-19.49	2100	4.18
200	-18.43	2200	4.82
300	-10.91	2300	4.96
400	-8.20	2400	5.29
500	-5.94	2500	5.37
600	-4.56	2600	5.48
700	-3.38	2700	5.61
800	-2.01	2800	5.79
900	-0.96	2900	5.45
1000	0.00	3000	3.76
1200	1.27	3500	-22.31
1400	1.93	4000	-25.30
1600	2.55	4500	-23.60
1800	2.67	5000	-26.32
2000	3.54	-	-



TX2: CH_{M2}			
Audio Frequency (Hz)	Audio Frequency Response (dB)	Audio Frequency (Hz)	Audio Frequency Response (dB)
100	-24.61	2100	4.41
200	-22.79	2200	4.51
300	-15.67	2300	5.36
400	-12.35	2400	5.73
500	-8.44	2500	6.12
600	-6.73	2600	5.66
700	-4.55	2700	5.46
800	-2.46	2800	4.90
900	-0.82	2900	4.29
1000	0.00	3000	3.88
1200	1.16	3500	-11.61
1400	1.89	4000	-24.68
1600	2.08	4500	-25.67
1800	3.36	5000	-27.93
2000	4.34	-	-



TX3: CH_{M3}			
Audio Frequency (Hz)	Audio Frequency Response (dB)	Audio Frequency (Hz)	Audio Frequency Response (dB)
100	-23.82	2100	4.41
200	-23.30	2200	4.42
300	-15.60	2300	5.27
400	-11.77	2400	5.59
500	-8.75	2500	6.04
600	-5.79	2600	5.56
700	-4.30	2700	5.49
800	-3.01	2800	4.82
900	-0.87	2900	4.31
1000	0.00	3000	3.84
1200	0.99	3500	-12.39
1400	1.83	4000	-24.55
1600	1.98	4500	-26.19
1800	3.36	5000	-29.32
2000	4.22	-	-

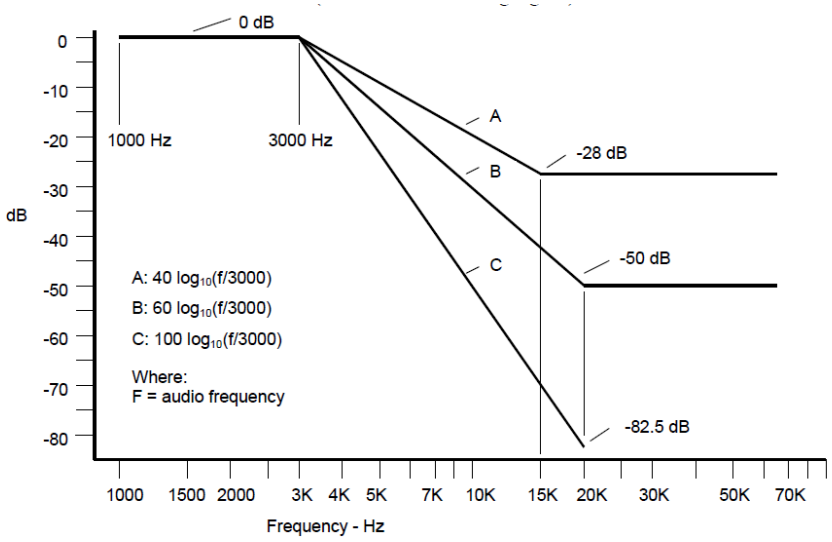


5.8. Audio Low Pass Filter Response

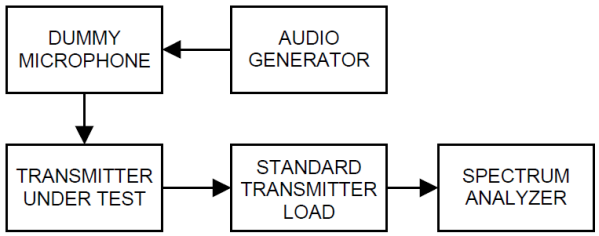
The audio low pass filter response is the frequency response of the post limiter low pass filter circuit above 3000 Hz.

LIMIT

FCC Part 95.637(b):
The filter must be between the modulation limiter and the modulated stage of the transmitter. At any frequency (f in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least 60 log10 (f/3) dB greater than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB greater than the attenuation at 1 kHz.



TEST CONFIGURATION



TEST PROCEDURE

1) Configure the EUT as shown in figure .
2) Apply a 1000 Hz tone from the audio signal generator and adjust the level per manufacturer's specifications. Record the dB level of the 1000 Hz tone as LEV_{REF}.
3) Set the audio signal generator to the desired test frequency between 3000 Hz and the upper low pass filter limit. Record the dB level at the test frequency as $LEV_{FREQ.}$
4) Calculate the audio frequency response at the test frequency as:
low pass filter response = LEV_{FREQ} - LEV_{REF}

TEST MODE:

Please reference to the section 3.4

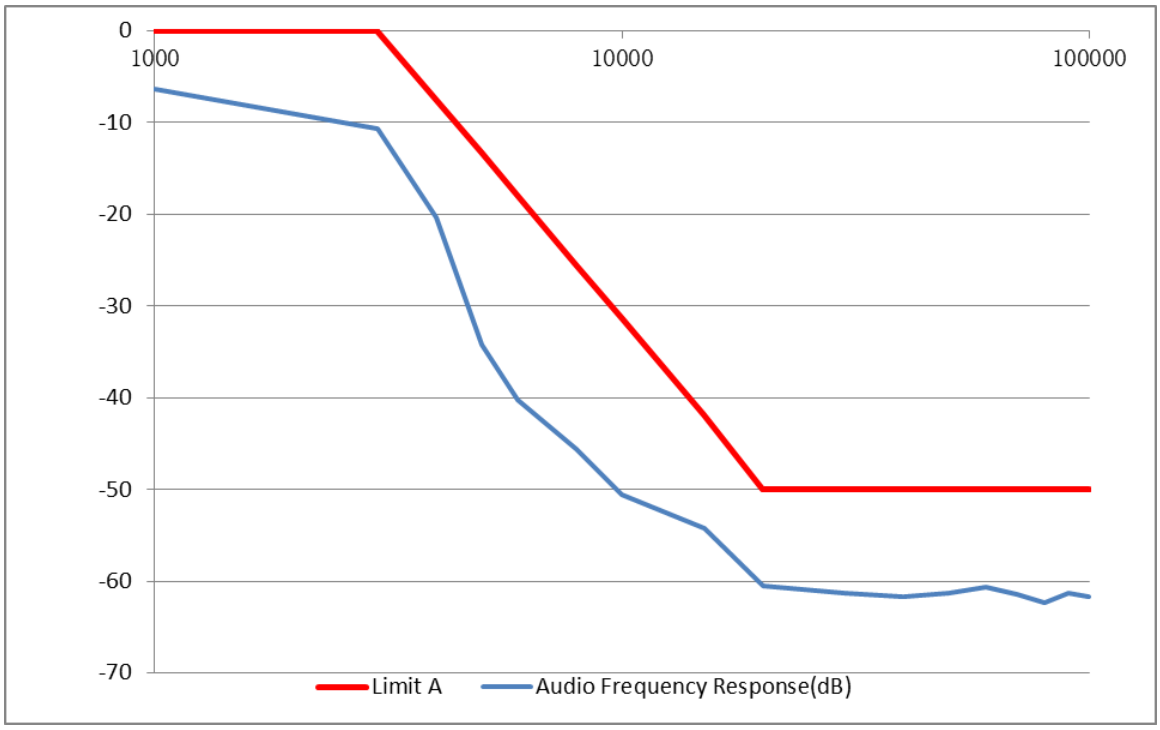
TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note: We have pre-tested all test frequency, recorded the worst case mode at CH_{M1} and CH_{M3} on the report.

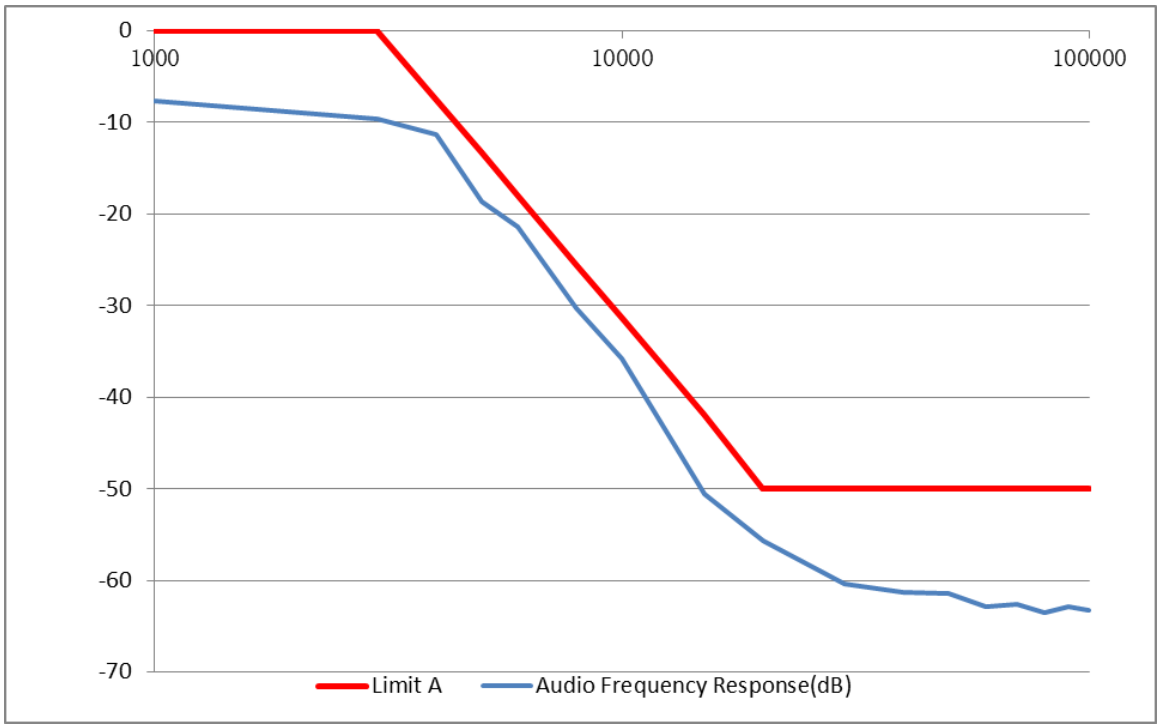
Operation Mode	Audio Frequency (Hz)	Response Attenuation (dB)	Limit	Result
TX1: CH_{M1}	1000	-6.35	0	Pass
	3000	-10.62	0	
	4000	-20.32	-7.5	
	5000	-34.27	-13.3	
	6000	-40.26	-18.1	
	8000	-45.62	-25.6	
	10000	-50.62	-31.4	
	15000	-54.26	-41.9	
	20000	-60.52	-50	
	30000	-61.23	-50	
	40000	-61.65	-50	
	50000	-61.35	-50	
	60000	-60.58	-50	
	70000	-61.45	-50	
	80000	-62.34	-50	
	90000	-61.25	-50	
	100000	-61.69	-50	

Test plot as follows:



Operation Mode	Audio Frequency (Hz)	Response Attenuation (dB)	Limit	Result
TX3: CH_{M3}	1000	-7.62	0	Pass
	3000	-9.62	0	
	4000	-11.32	-7.5	
	5000	-18.67	-13.3	
	6000	-21.35	-18.1	
	8000	-30.24	-25.6	
	10000	-35.74	-31.4	
	15000	-50.62	-41.9	
	20000	-55.67	-50	
	30000	-60.32	-50	
	40000	-61.35	-50	
	50000	-61.36	-50	
	60000	-62.87	-50	
	70000	-62.57	-50	
	80000	-63.57	-50	
	90000	-62.87	-50	
	100000	-63.24	-50	

Test plot as follows:



5.9. Frequency Stability

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

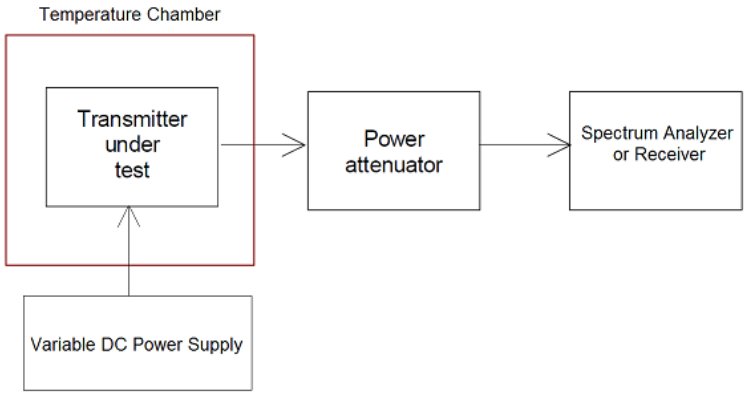
LIMIT

FCC Part 95.626(b):
FRS:
The carrier frequency tolerance shall be better than ±2.5 ppm.
GMRS:
The carrier frequency tolerance shall be better than ±5 ppm.

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℃ centigrade.
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 from 5.1V to 6.9V.
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 CONFIGURATION



TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

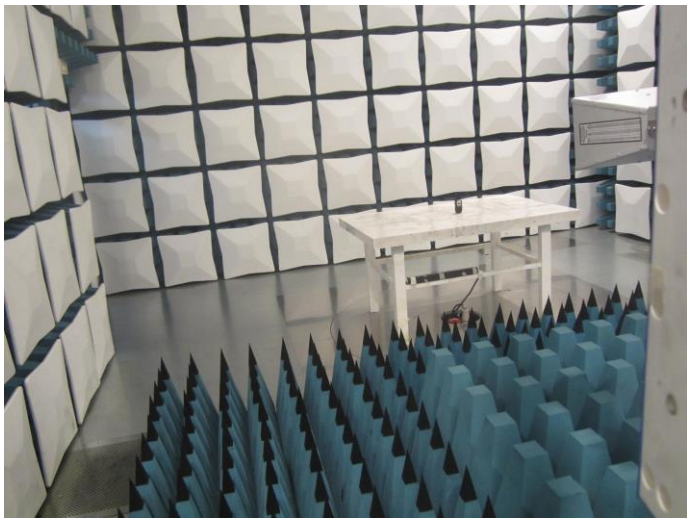
TX1						
Test conditions		Frequency error (ppm)			Limit (ppm)	Result
Voltage(V)	Temp(℃)	CH_{L1}	CH_{M1}	CH_{H1}		
6.0	-30	-0.25	-0.13	-0.17	±5	Pass
	-20	-0.25	-0.13	-0.16		
	-10	-0.25	-0.13	-0.16		
	0	-0.25	-0.14	-0.16		
	10	-0.25	-0.14	-0.16		
	20	-0.24	-0.14	-0.15		
	30	-0.24	-0.14	-0.15		
	40	-0.24	-0.15	-0.15		
	50	-0.24	-0.16	-0.15		
5.1	20	-0.24	-0.15	-0.15		
6.9	20	-0.24	-0.15	-0.16		

TX2						
Test conditions		Frequency error (ppm)			Limit (ppm)	Result
Voltage(V)	Temp(℃)	CH_{L2}	CH_{M2}	CH_{H2}		
6.0	-30	-0.19	-0.14	-0.16	±2.5	Pass
	-20	-0.19	-0.15	-0.14		
	-10	-0.20	-0.16	-0.14		
	0	-0.19	-0.15	-0.14		
	10	-0.18	-0.16	-0.14		
	20	-0.19	-0.15	-0.15		
	30	-0.19	-0.14	-0.14		
	40	-0.18	-0.15	-0.14		
	50	-0.19	-0.15	-0.14		
5.1	20	-0.19	-0.15	-0.14		
6.9	20	-0.19	-0.15	-0.15		

TX3						
Test conditions		Frequency error (ppm)			Limit (ppm)	Result
Voltage(V)	Temp(℃)	CH_{L3}	CH_{M3}	CH_{H3}		
6.0	-30	-0.16	-0.16	-0.14	±5	Pass
	-20	-0.17	-0.16	-0.14		
	-10	-0.17	-0.15	-0.15		
	0	-0.17	-0.16	-0.14		
	10	-0.17	-0.16	-0.13		
	20	-0.17	-0.16	-0.14		
	30	-0.17	-0.15	-0.14		
	40	-0.18	-0.16	-0.13		
	50	-0.17	-0.16	-0.14		
5.1	20	-0.18	-0.15	-0.14		
6.9	20	-0.17	-0.15	-0.14		

6. Test Setup Photos of the EUT

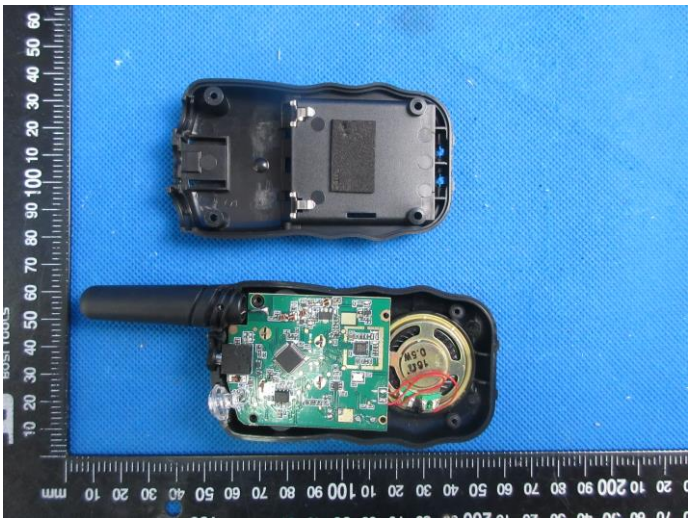
Transmitter Radiated Spurious Emission:

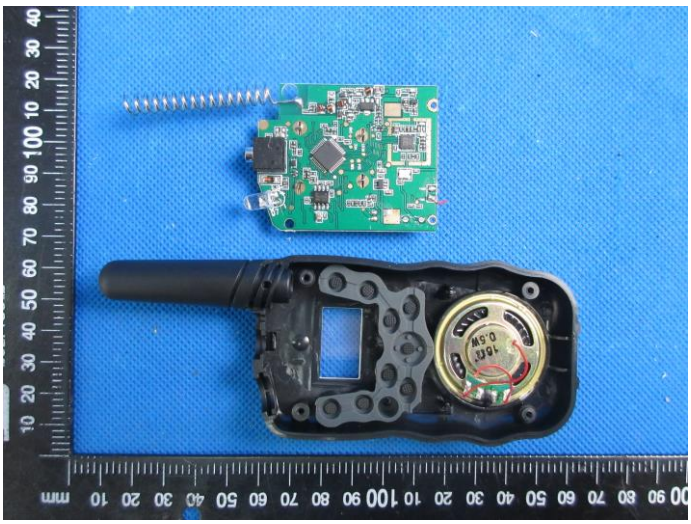


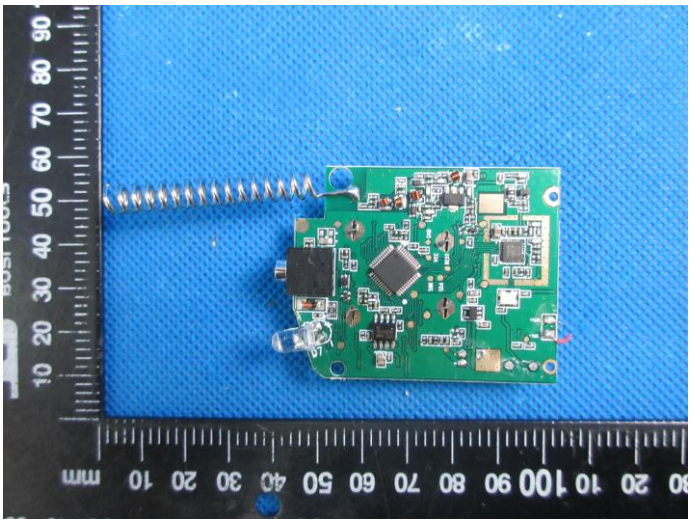
7. External and Internal Photos of the EUT

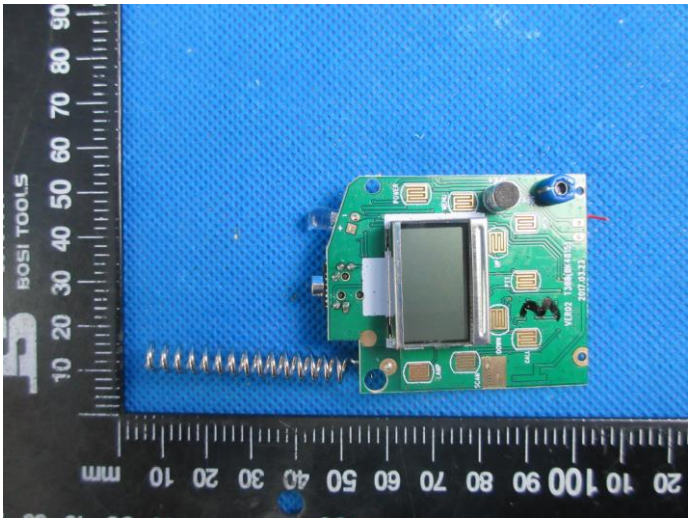
External photos of the EUT

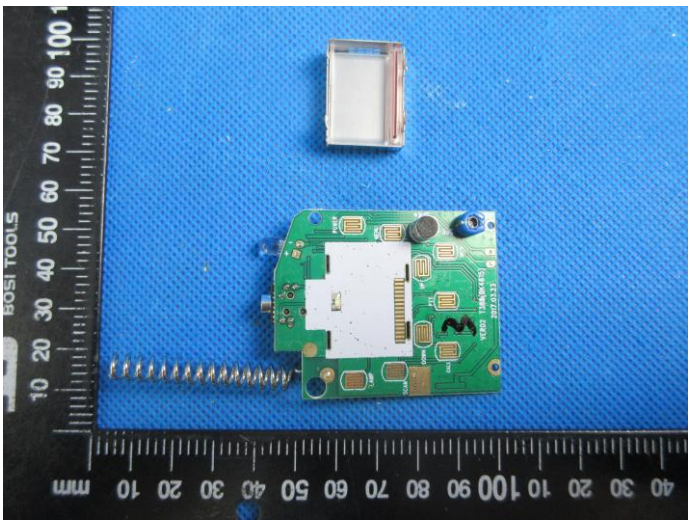
Internal photos of the EUT

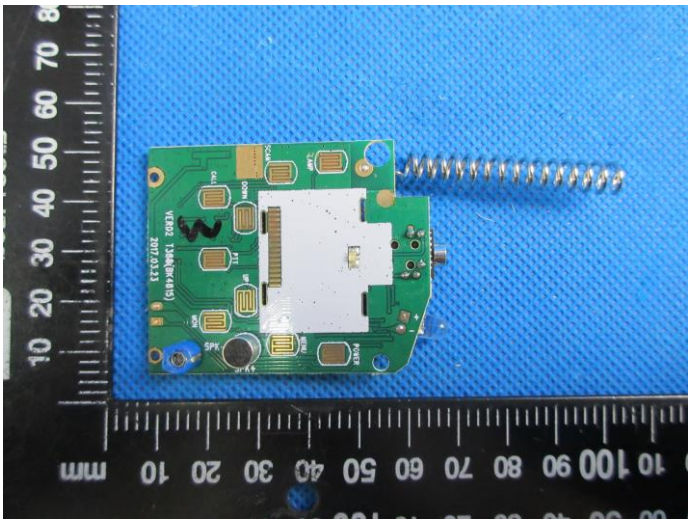


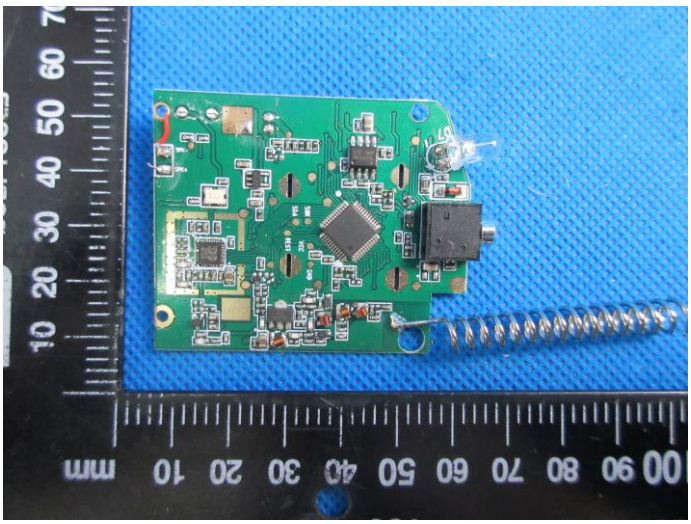





BOSI TOOLS







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