FCC/IC - TEST REPORT

Report Number	:	**68.960.17.017.01** Date of Issue: **January 12, 2017**
Model	:	**MRHH600, MRHH600W**
Product Type	:	MR HH600 GPS BT
Applicant	:	Cobra Electronics Corporation
Address	:	6500 West Cortland Street, Chicago, IL
Manufacturer	:	XIN XING GREAT SUCCESS PLASTIC PRODUCTS LIMITED
Address	:	Building A, District 1, B2-02, Xincheng Industrial Park, Xinxing, YunFu, Guangdong, P.R.C
Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	**50**

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1 Test Standard

Test Standards	
FCC Rules Part 80	Stations In The Maritime Services
TIA/EIA 603 D	Land Mobile FM Or FM Communications EquiFMent Measurement And Performance Standards
47 CFR FCC Part 15 Subpart B	Unintentional Radiators
FCC Part 2	Frequency Alloca-Tions And Radio Treaty Mat-Ters; General Rules And Reg-Ulations
RSS-Gen Issue 4 December 2014	General Requirements and Information for the Certification of Radio Apparatus
RSS-182 Issue 5 January 2012	RSS-182 —Maritime Radio Transmitters and Receivers in the Band 156-162.5 MHz

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2 Details about the Test Laboratory

Details about the Test Laboratory

Test Site 1

Company name:	TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch Building 12&13, Zhiheng Wisdomland Business Park, Nantou Checkpoint Road 2, Nanshan District, Shenzhen City, 518052, P. R. China
FCC Registration No.:	502708
IC Registration No:	10320A-1
Telephone:	86 755 8828 6998
Fax:	86 755 8828 5299

Test Site 2

Company name:	Shenzhen Huatongwei International Inspection Co., Ltd. 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
FCC Registration No.:	317478
IC Registration No:	5377A&5377B
Telephone:	+86-755-2674 8019
Fax:	+86-755-2674 8089

3 SUMMARY

3.1 Product Description

Product:	MR HH600 GPS BT
Model no.:	MRHH600, MRHH600W
FCC ID:	BBOMRHH600
IC:	906A-MRHH600
Brand Name:	Cobra MARINE
Options and accessories:	NIL
Rating:	7.4Vdc Li-ion rechargeable battery
Adapter information:	Model: K12S120100U Input: 100-240Va.c., 50/60Hz, 0.45A Output:12Vd.c.,1.0A
RF Transmission Frequency:	156.050-157.425MHz
No. of Operated Channel:	88
Modulation:	Analog Voice: FM Digital Data: FSK
Emission Designator	Analog Voice: 16K0G3E,Digital Data: 16K0G2B
Channel Separation	Analog Voice: 25KHz, Digital Data: 25KHz
Rated Output Power:	5 Watts(37.00dBm)/1Watts(30.0dBm)
Antenna Type:	External (Marine Antenna vertically polarized on board ship)
Description of the EUT:	The Equipment Under Test (EUT) is a VHF transceiver for the maritime mobile service with buletooth and GPS receive function.

Remark 1: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
Remark 2: As per Client Declaration, MRHH600 and MRHH600W are identical, only the cosmetics have different color, so we use MRHH600 as a representative to perform all testing.

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3.2 Test frequency list

Mode	Modulation	Operation Frequency Range (MHz)	Test Frequency (MHz)	
Analog	FM	156.05-157.425	CH_L	156.05(CH1)
			CH_M	156.8(CH16)
			CH_H	157.425(CH88)

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.

3.3 EUT operation mode

Test mode	Transmitting	Receiving	Power level		Analog Voice/FM
			High	Low	25kHz
TX1	√		√		√
TX2	√			√	√
RX1		√			√

√ : is operation mode.

3.4 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Item	Required
Ambient temperature	15°C～35°C
Relative humidity	25%～75%
Atmospheric pressure	86 kPa～106kPa

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4 General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: BBOMRHH600 and IC: 906A-MRHH600 complies with the FCC Part 80, Subpart E Rules and RSS-Gen and RSS-182.

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

☐ - **Does not** fulfill the general approval requirements.

Sample Received Date: November 24, 2016

Testing Start Date: November 25, 2016

Testing End Date: January 9, 2017

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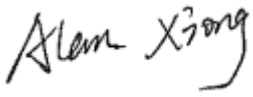
Reviewed by:

John Zhi
Section Manager

Prepared by:



Alan Xiong
Project Engineer

5 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 equiFMent and facilities. The measurement uncertainty was alculated 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.

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	---------	(1)
Emission Mask	---------	(1)
Modulation Characteristic	---------	(1)

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

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6 Summary of Test Results

FCC Rules	IC Rules	Description of Test	Test Result	Test Site
§ 15.107	RSS-Gen clause 7.2.4 RSS-182 clause 3.1	Conducted Emission	N/A	N/A
	RSS-Gen clause 7.2.5 RSS-182 clause 7.11	Receiver Radiated Spurious Emssion	Complies	Site 2
	RSS-Gen clause 7.2.5 RSS-182 clause 7.11	Receiver Conducted Spurious Emssion	Complies	Site 2
§ 80.215	RSS-182 clause 5.2	Maximum Transmitter Power	Complies	Site 2
§ 80.213	RSS-182 clause 7.3	Modulation Characteristic	Complies	Site 2
§ 80.205	RSS-Gen A7.2.4 RSS-182 clause 3.1	Occupied Bandwidth	Complies	Site 2
§ 80.211(f)	RSS-Gen clause 7.2.5 RSS-182 clause 7.9	Emission Mask	Complies	Site 2
§ 80.209	RSS-Gen clause 7.2.6 RSS-182 clause 5.1	Frequency Stability	Complies	Site 2
§ 80.211(f)(3)	RSS-Gen clause 7.2.5 RSS-182 clause 7.9	Transmitter Radiated Spurious Emssion	Complies	Site 2
§ 80.211(f)(3)	RSS-Gen clause 7.2.5 RSS-182 clause 7.9	Spurious Emssion On Antenna Port	Complies	Site 2

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7 Equipments Used during the Test

AC&DC Power Conducted Emission				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Artificial Mains	Rohde&Schwarz	ESH2-Z5	100028	11/13/2016
EMI Test Receiver	Rohde&Schwarz	ESCS 30	100038	11/13/2016
Pulse Limiter	Rohde&Schwarz	ESHSZ2	100044	11/13/2016
EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	N/A
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	11/13/2016

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

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

Transmitter Radiated Spurious Emssion				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Ultra-Broadband Antenna	Rohde&Schwarz	HL562	100015	11/13/2016
EMI Test Receiver	Rohde&Schwarz	ESI 26	100009	11/13/2016
RF Test Panel	Rohde&Schwarz	TS / RSP	335015/ 0017	N/A
HORN ANTENNA	Rohde&Schwarz	HF906	100039	11/13/2016
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	11/13/2016
Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	11/13/2016
Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	11/13/2016
HORN ANTENNA	ShwarzBeck	9120D	1012	11/13/2016
HORN ANTENNA	ShwarzBeck	9120D	1011	11/13/2016
TURNTABLE	MATURO	TT2.0	----	N/A
ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A

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Maximum Transmitter Power & Spurious Emssion On Antenna Port & Occupied Bandwidth & Emission Mask				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Receiver	Rohde&Schwarz	ESI 26	100009	2015/12/2
Attenuator	R&S	ESH3-22	100449	2015/12/2
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2015/12/2
High-Pass Filter	Anritsu	MP526B	6220875256	2015/12/2
High-Pass Filter	Anritsu	MP526D	6220878392	2015/12/2
Spectrum Analzyer	Aglient	E4407B	MY44210775	2015/12/2
Spectrum Analzyer	Rohde&Schwarz	FSP40	1164.4391.40	2015/12/2
SPECTRUM ANALYZER	Agilent	E4407B	MY44210775	2015/12/2

Transient Frequency Behavior				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Signal Generator	Rohde&Schwarz	SMT03	100059	2015/12/2
Storage Oscilloscope	Tektronix	TDS3054B	B033027	2015/12/2
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2015/12/2

The calibration interval was one year.

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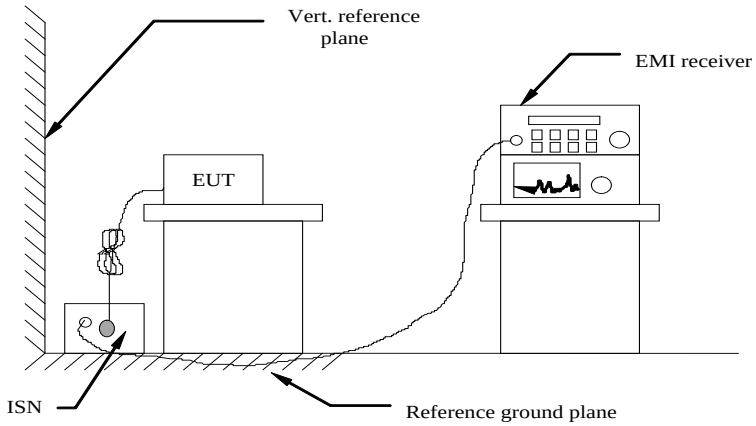
8 TEST CONDITIONS AND RESULTS

8.1 Conducted Emissions Test

Test applicable

The EUT was tested according to ANSI C63.4 - 2009. 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 - 2009. Cables and peripherals were moved to find the maximum emission levels for each frequency.

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 tabletTX1system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4-2009.
2 Support equipment, if needed, was placed as per ANSI C63.4-2009.
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4-2009.
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.

Conducted Power Line Emission Limit

For intentional device, according to § 15.207(a) and RSS-Gen for Conducted Emission Limits is as following:

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

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) and RSS-Gen Line Conducted Emission Limit is same as above table.

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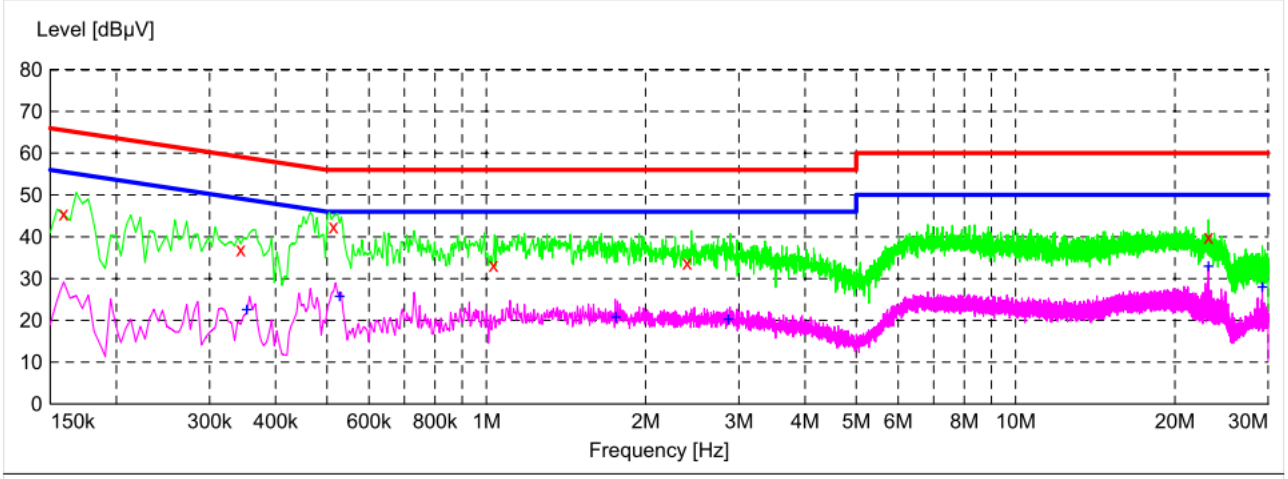
Test results

Remark: we tested and recorded all RX1.

Test mode:	RX1:156.05MHz	Polarization	L1



MEASUREMENT RESULT: "GM1612165025_fin"

12/16/2016 2:07PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.159000	45.60	10.4	66	19.9	QP	N	GND
0.343500	37.00	10.2	59	22.1	QP	N	GND
0.514500	42.50	10.2	56	13.5	QP	N	GND
1.032000	33.30	10.2	56	22.7	QP	N	GND
2.395500	33.80	10.2	56	22.2	QP	N	GND
23.131500	40.00	10.7	60	20.0	QP	N	GND

MEASUREMENT RESULT: "GM1612165025_fin2"

12/16/2016 2:07PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.352500	22.50	10.2	49	26.4	AV	N	GND
0.528000	25.70	10.2	46	20.3	AV	N	GND
1.756500	20.70	10.2	46	25.3	AV	N	GND
2.863500	20.20	10.2	46	25.8	AV	N	GND
23.131500	32.90	10.7	50	17.1	AV	N	GND
29.238000	27.90	10.8	50	22.1	AV	N	GND

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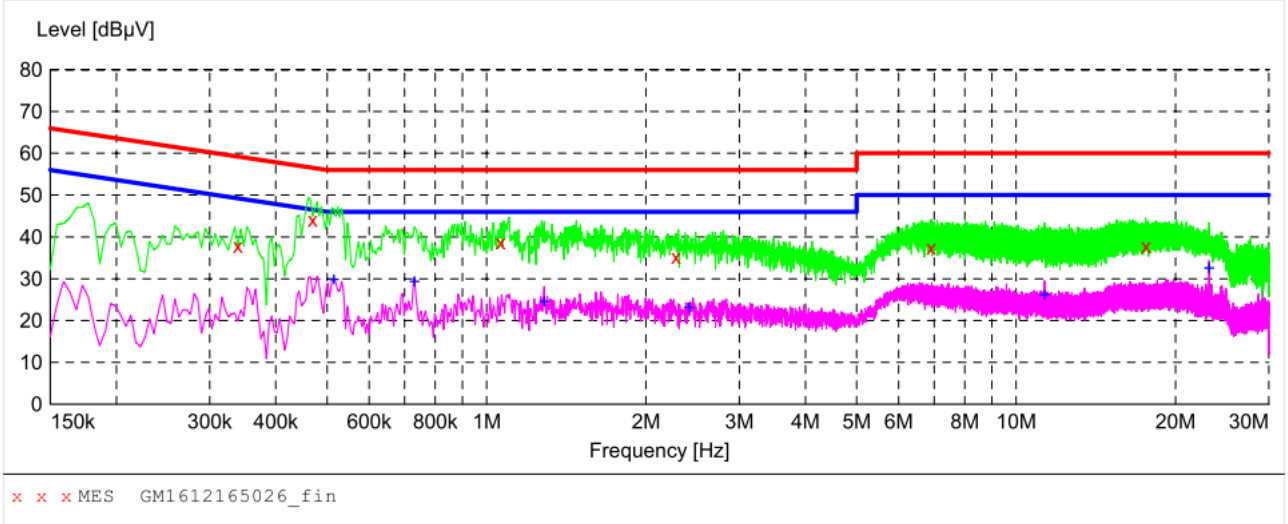
Test mode:	RX1:156.05MHz	Polarization	N



MEASUREMENT RESULT: "GM1612165026_fin"

12/16/2016 2:10PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.339000	37.90	10.2	59	21.3	QP	L1	GND
0.469500	44.10	10.2	57	12.4	QP	L1	GND
1.063500	38.70	10.2	56	17.3	QP	L1	GND
2.278500	35.20	10.2	56	20.8	QP	L1	GND
6.913500	37.40	10.3	60	22.6	QP	L1	GND
17.587500	37.80	10.5	60	22.2	QP	L1	GND

MEASUREMENT RESULT: "GM1612165026_fin2"

12/16/2016 2:10PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.514500	29.80	10.2	46	16.2	AV	L1	GND
0.730500	29.30	10.2	46	16.7	AV	L1	GND
1.284000	24.50	10.2	46	21.5	AV	L1	GND
2.409000	23.10	10.2	46	22.9	AV	L1	GND
11.314500	26.10	10.6	50	23.9	AV	L1	GND
23.131500	32.50	10.7	50	17.5	AV	L1	GND

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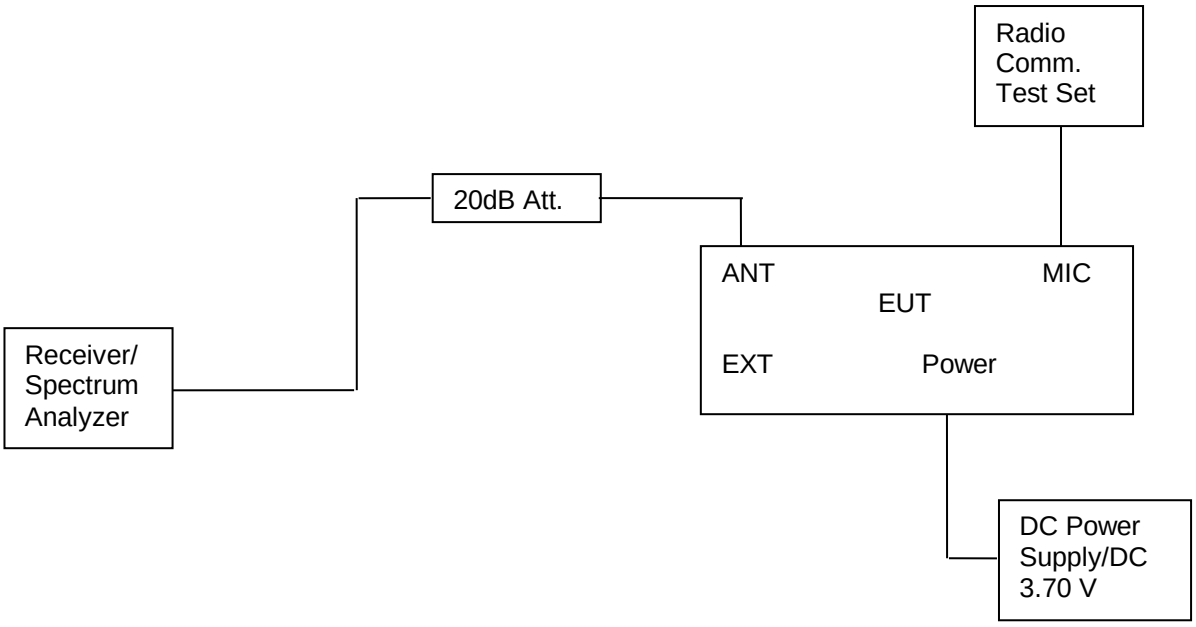
8.2 Occupied Bandwidth

TEST APPLICABLE

Occupied Bandwidth: The EUT was connected to the audio signal generator and the spectrum analyzer via the main RF connector, and through an appropriate attenuator. The EUT was controlled to transmit its maximum power. Then the bandwidth of 99% power can be measured by the spectrum analyzer.

TEST CONFIGURATION



TEST PROCEDURE

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

TEST RESULTS

Remark: We tested and reocrded TX1 to TX2.

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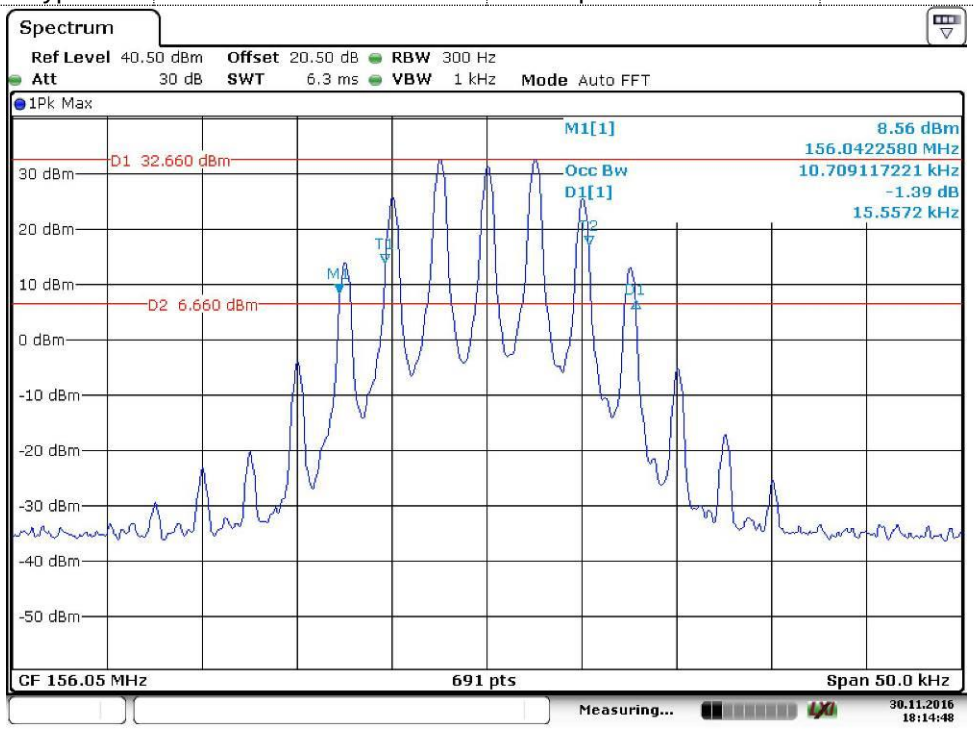
Operation Mode	Test Frequency (MHz)	Occupied Bandwidth (kHz)		Limit (kHz)	Result
		99%	26dB		
TX1	156.05	10.71	15.56	≤20.0	Pass
	156.8	10.78	15.56		
	157.425	12.59	15.63		
TX2	156.05	10.71	15.63	≤20.0	Pass
	156.8	10.78	15.70		
	157.425	12.66	15.70		

Test plot as follows:

Modulation Type	FM	Operation Mode	TX1



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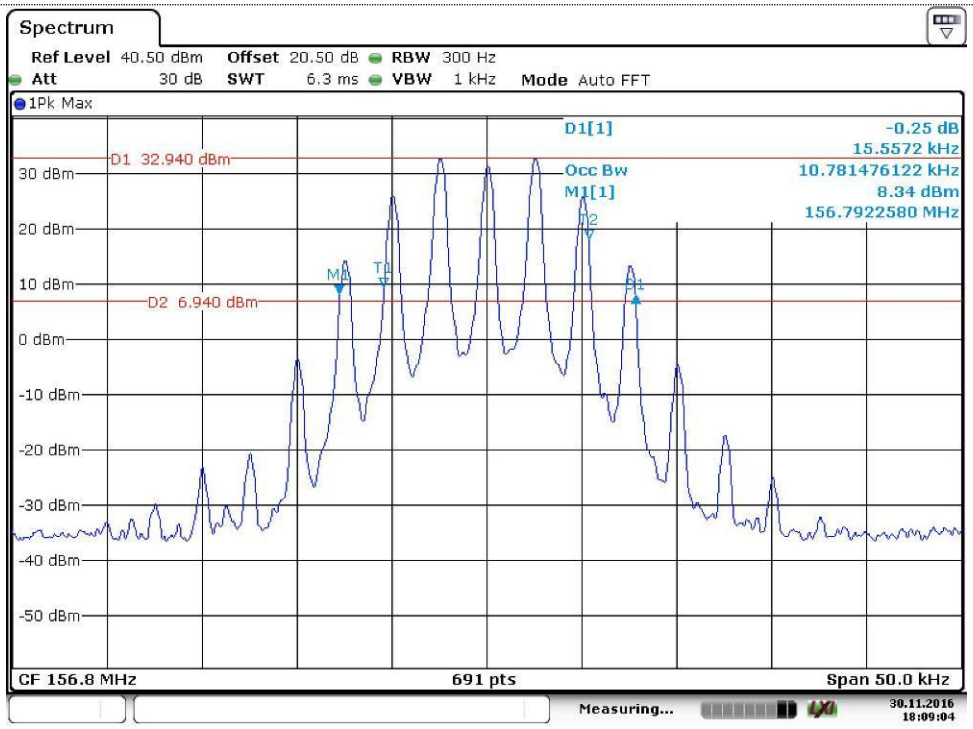

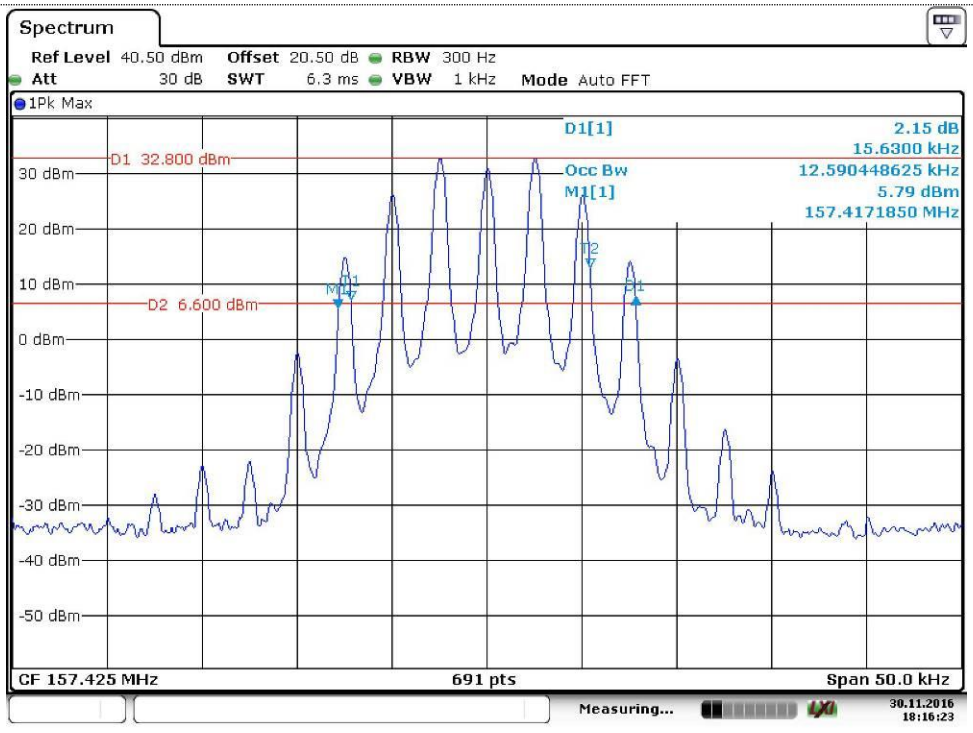

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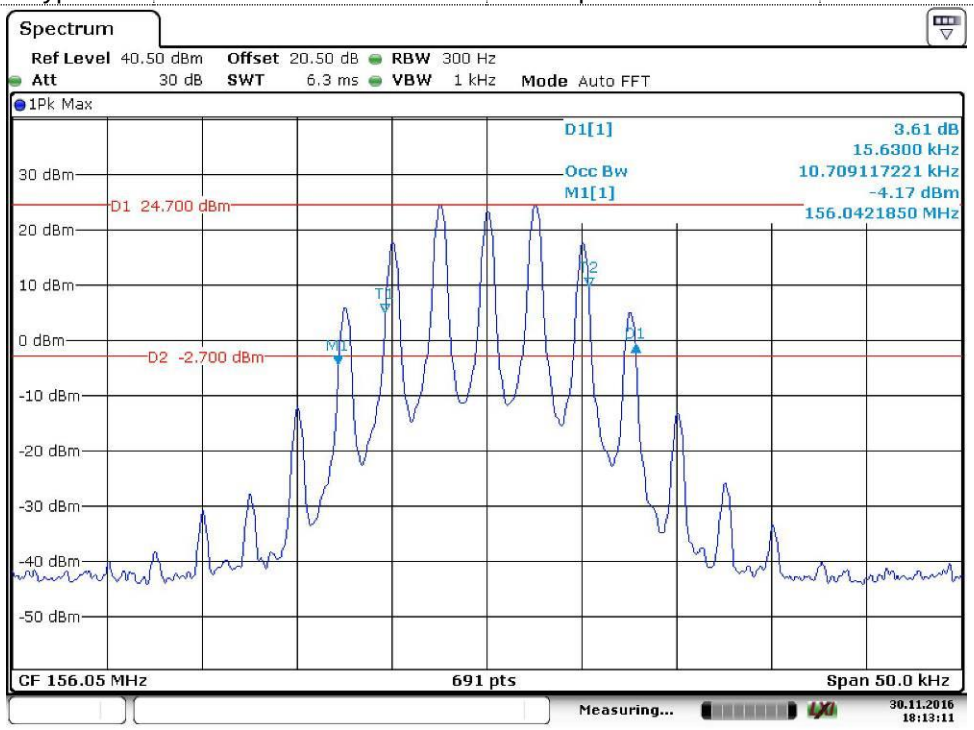
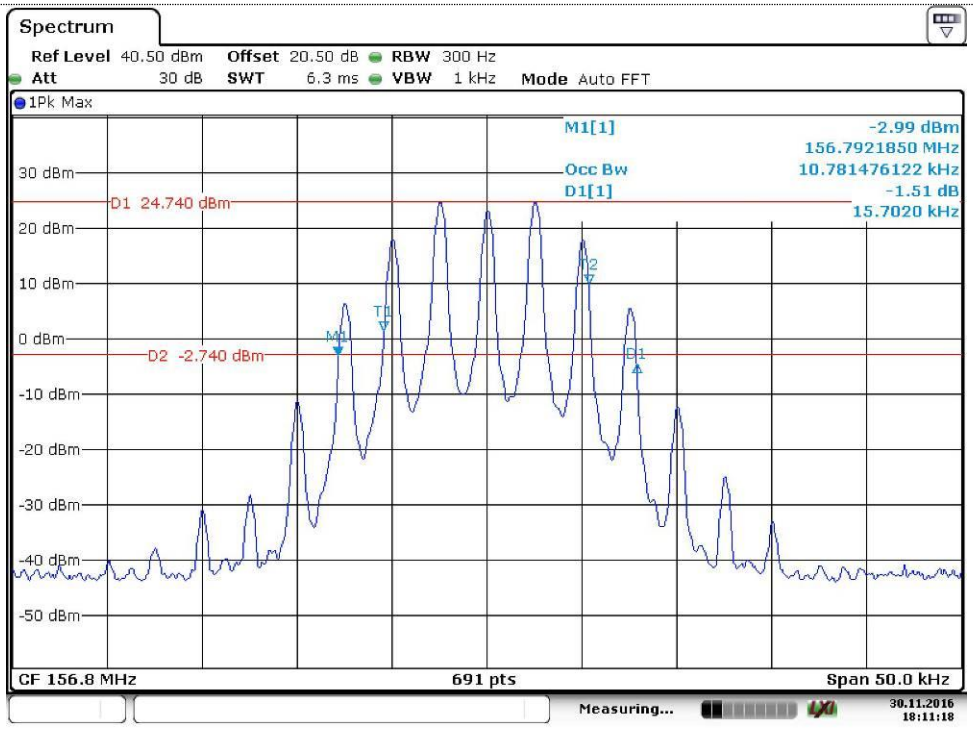
Modulation Type	FM	Operation Mode	TX2





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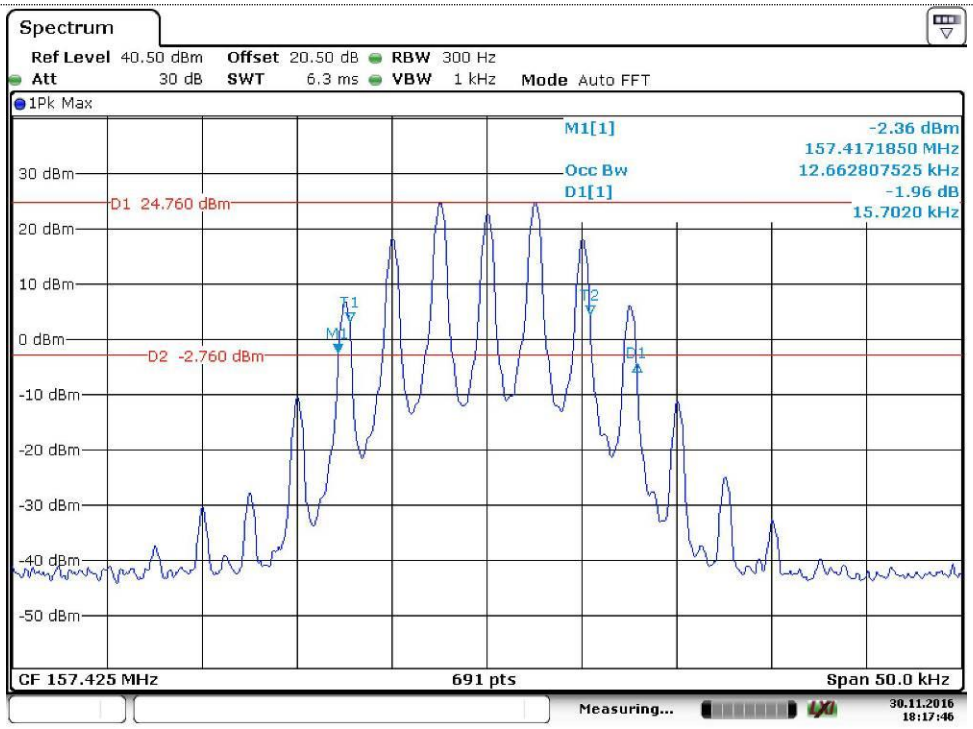

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8.3 Emission Mask

TEST APPLICABLE

According to §80.211

(a). Emission Mask B: For transmitters that are equipped with an audio low-pass filter pursuant to §80.211(f), the power of any emission must be below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

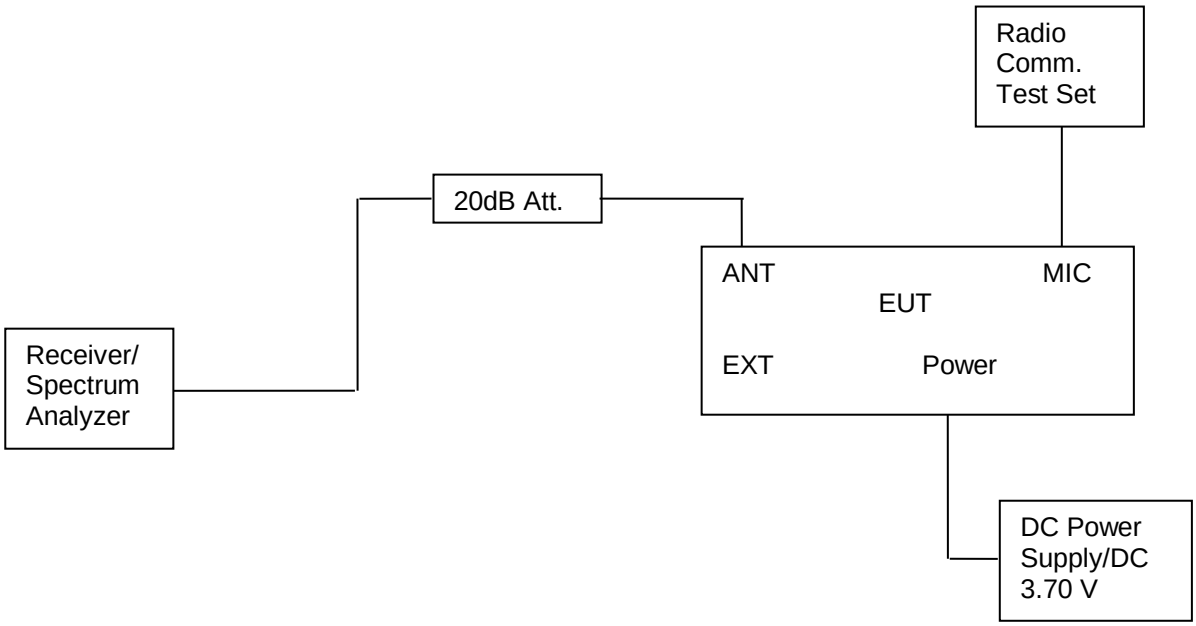
(b). Emission Mask D:12.5 kHz channel bandwidth equipment: For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

(1) On any frequency from the center of the authorized bandwidth f_0 to 5.625 kHz removed from f_0: Zero dB.

(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(f_d -2.88 kHz) dB.

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

TEST CONFIGURATION



TEST PROCEDURE

1.The EUT was modulated by 2.5kHz Sine wave audio signal; the level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz (12.5kHz channel spacing) and 5kHz (25 kHz channel spacing).

2.Set EUT as normal operation.

1)Set SPA Center Frequency = fundamental frequency, RBW=100Hz, VBW=300Hz,span=50kHz for 12.5KHz channel spacing.

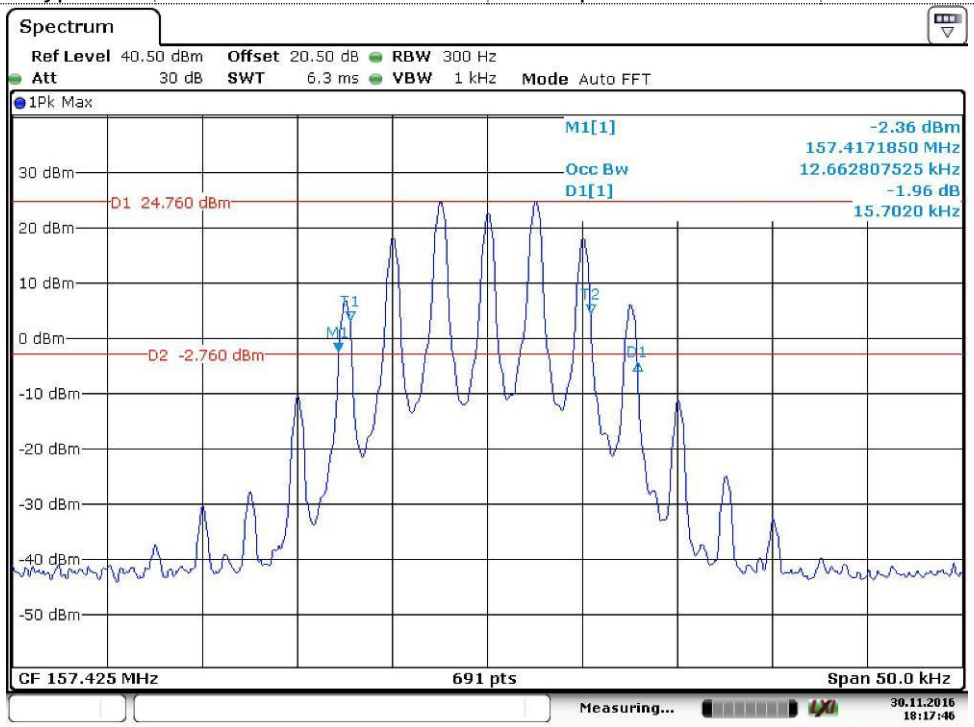
2)Set SPA Center Frequency = fundamental frequency, RBW=300Hz, VBW=1kHz,span=120kHz for 25KHz channel spacing.

TEST RESULTS

Operation Mode	Test Frequency (MHz)	RBW (Hz)	Applicable Mask	Result
TX1	156.05	300.00	B	Pass
	156.8			
	157.425			
TX2	156.05	300.00	B	Pass
	156.8			
	157.425			

Test plot as follows:

Modulation Type	FM	Operation Mode	TX1



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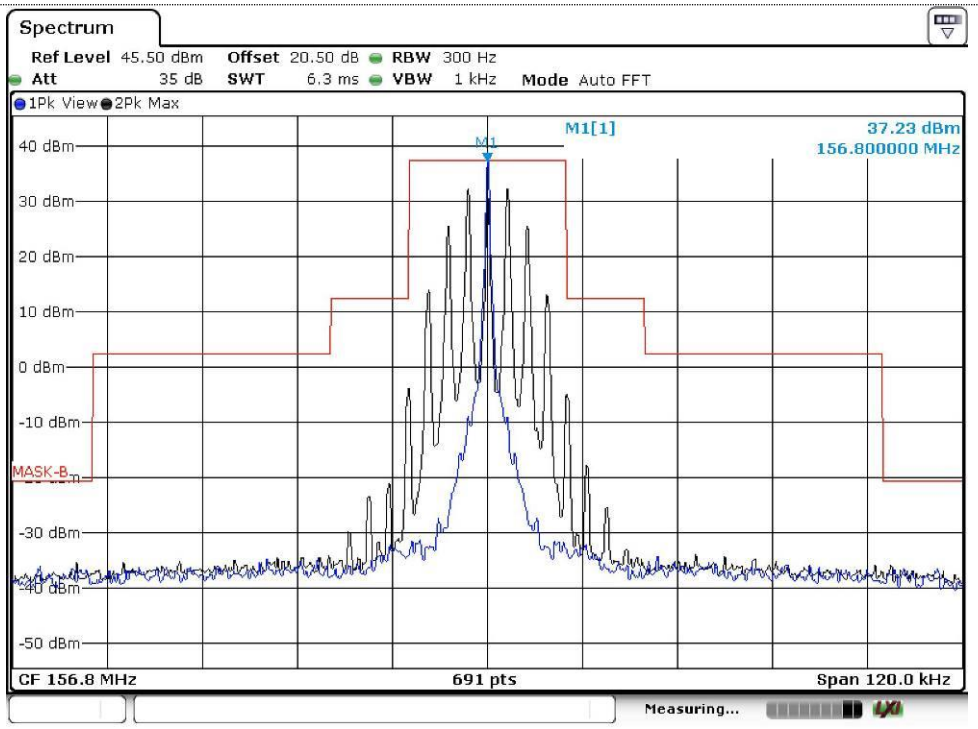

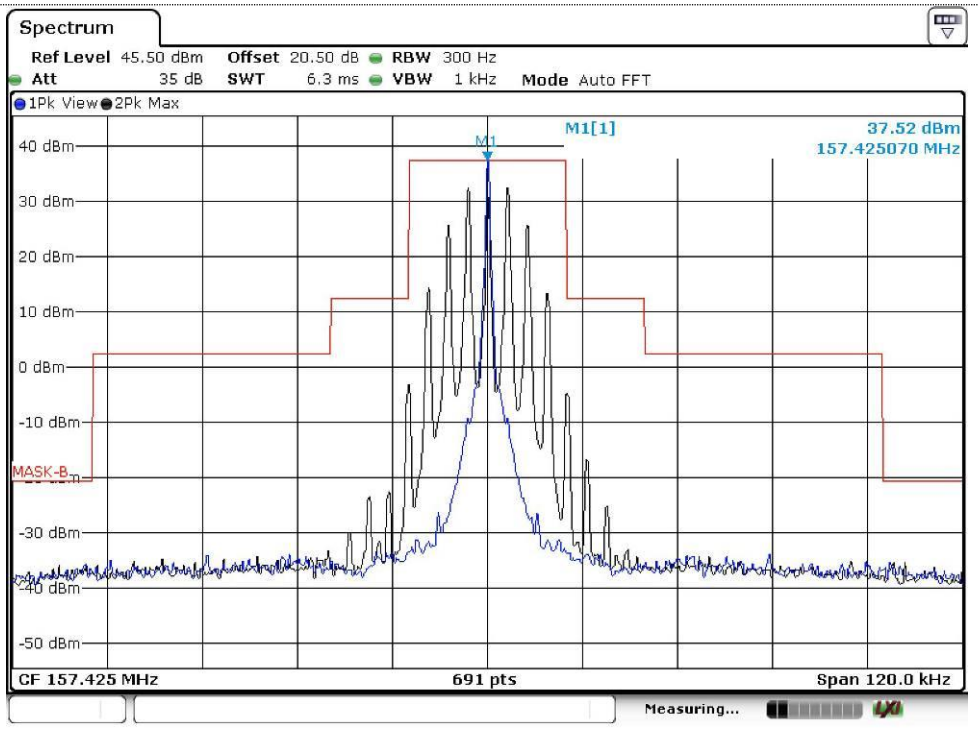

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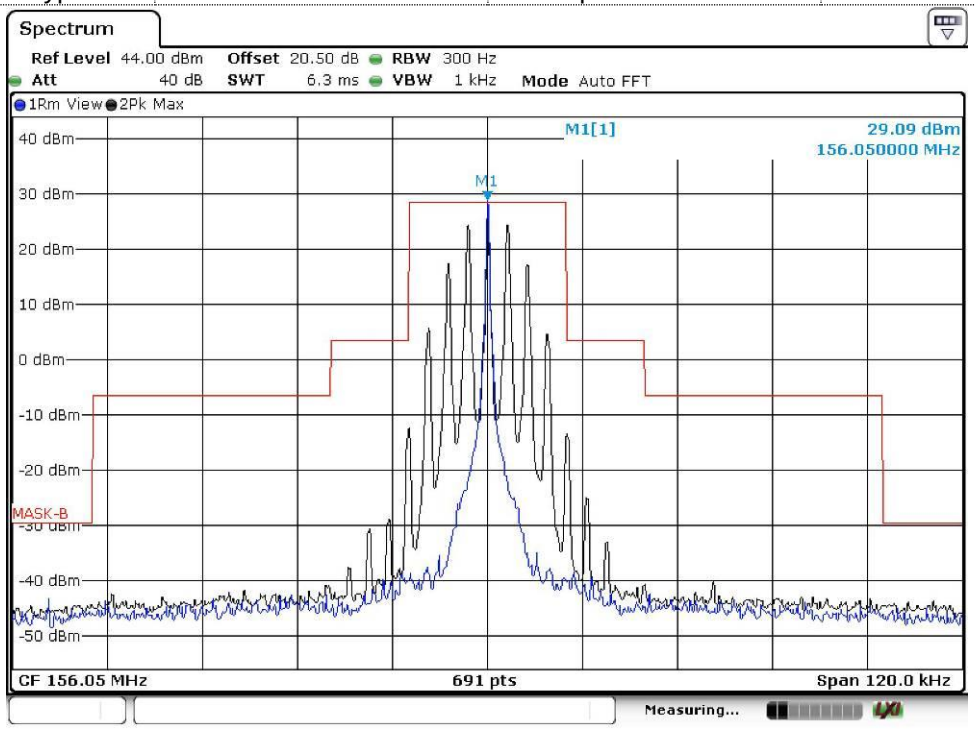
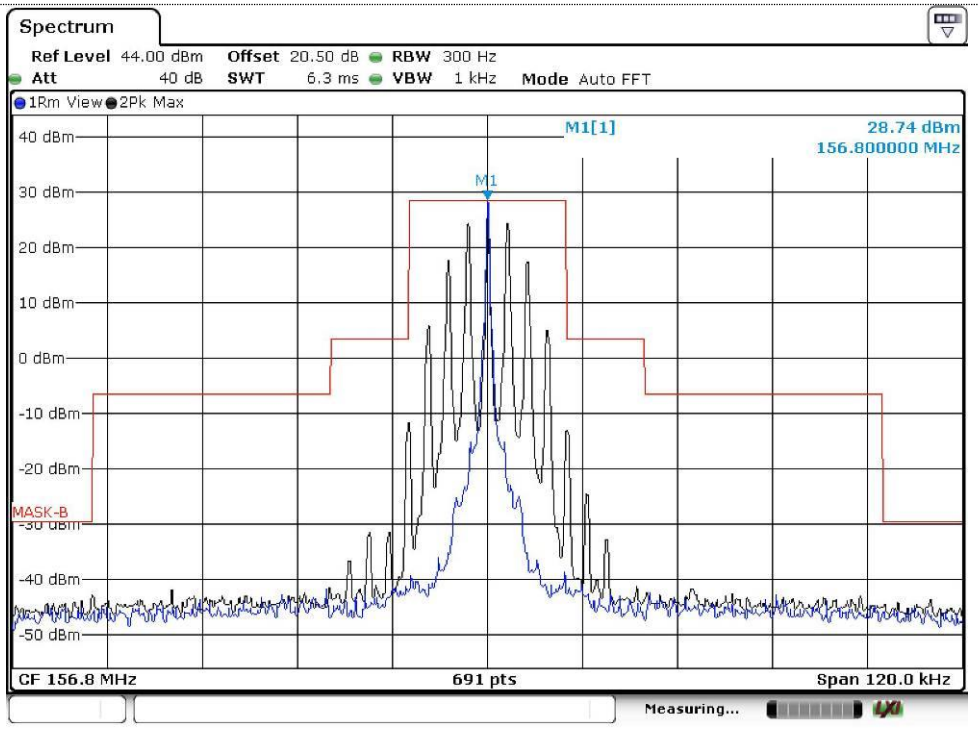
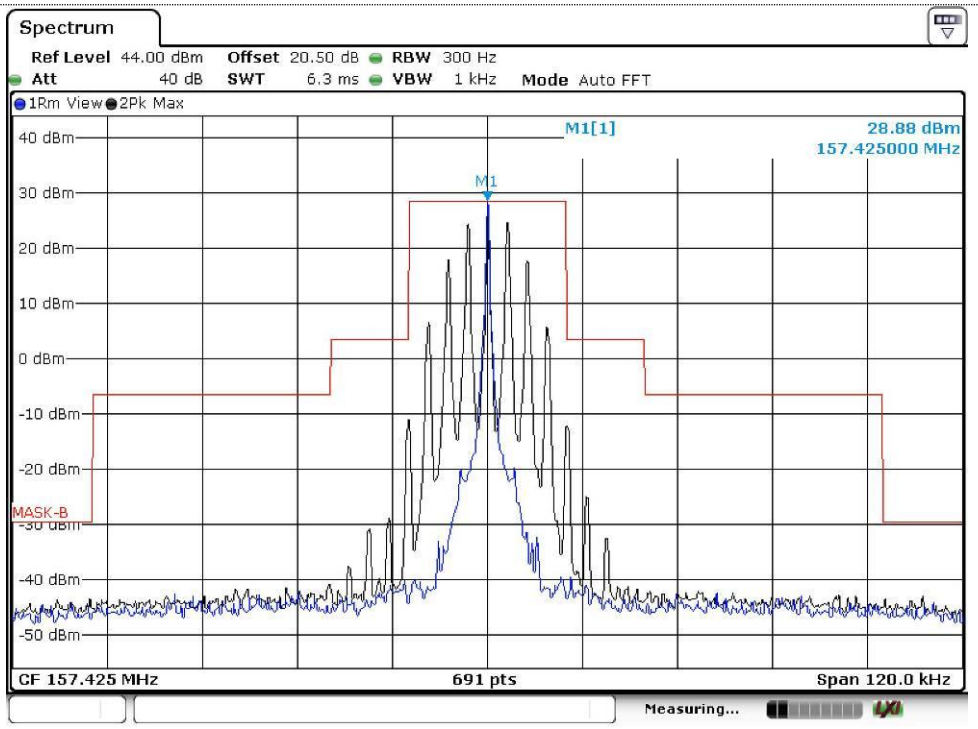
Modulation Type	FM	Operation Mode	TX2







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8.4 Transmitter Radiated Spurious Emission

Test applicable

According to the TIA/EIA 603 test method, and according to Section 80.211, the power of each unwanted emission shall be less than Transmitted Power as specified below for transmitters designed to operate with 25 KHz channel bandwidth:

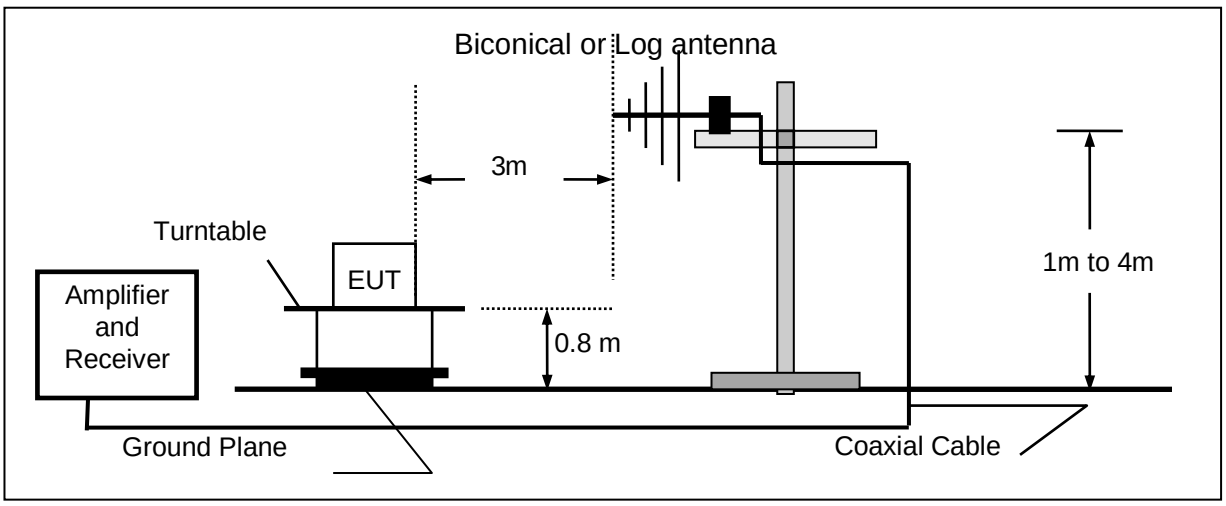
1 On any frequency removed from the center of the authorized bandwidth fo to 5.625 KHz removed from fo: Zero dB
2 On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in KHz) fo of more than 5.625 KHz but no more than 25 KHz: At least 7.27dB
3 On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in KHz) fo of more than 25 KHz: At least 50+10 log (P) dB or 70 dB, which ever is lesser attenuation.

For transmitters designed to transmit with 25 KHz channel separation and equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as following:

1 On any frequency removed from the assigned frequency by more than 50 percent, but no more than 100 percent of the authorized bandwidth: At least 25 dB.
2 On any frequency removed from the assigned frequency by more than 100 percent, but no more than 250 percent of the authorized bandwidth: At least 35 dB.
3 On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43+10Log (P) dB.

Test configuration

Below 1GHz



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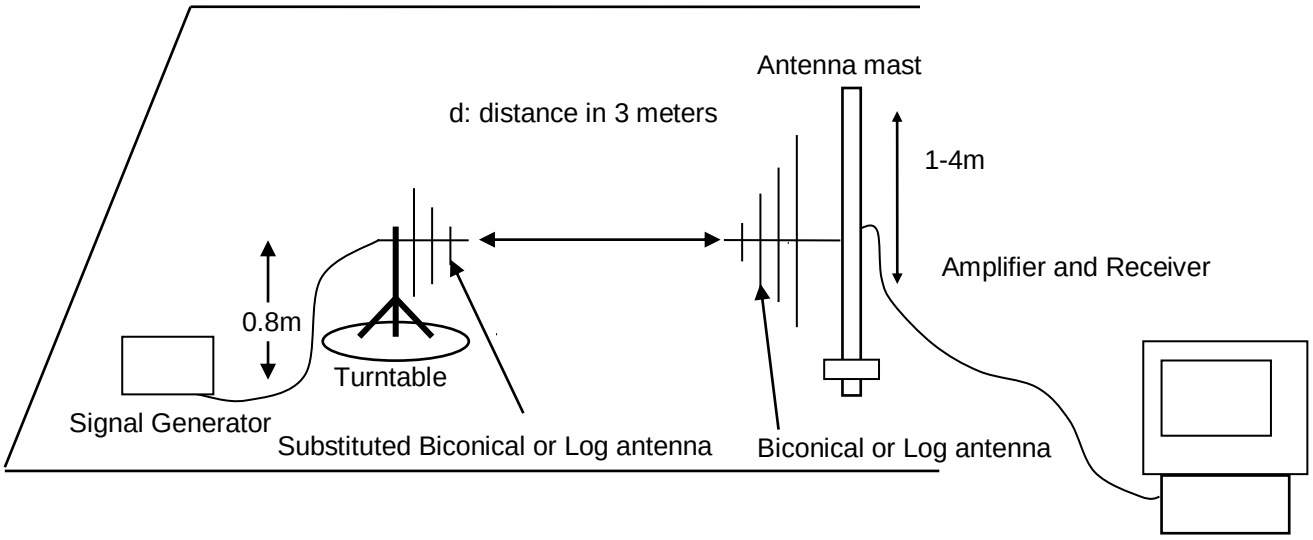
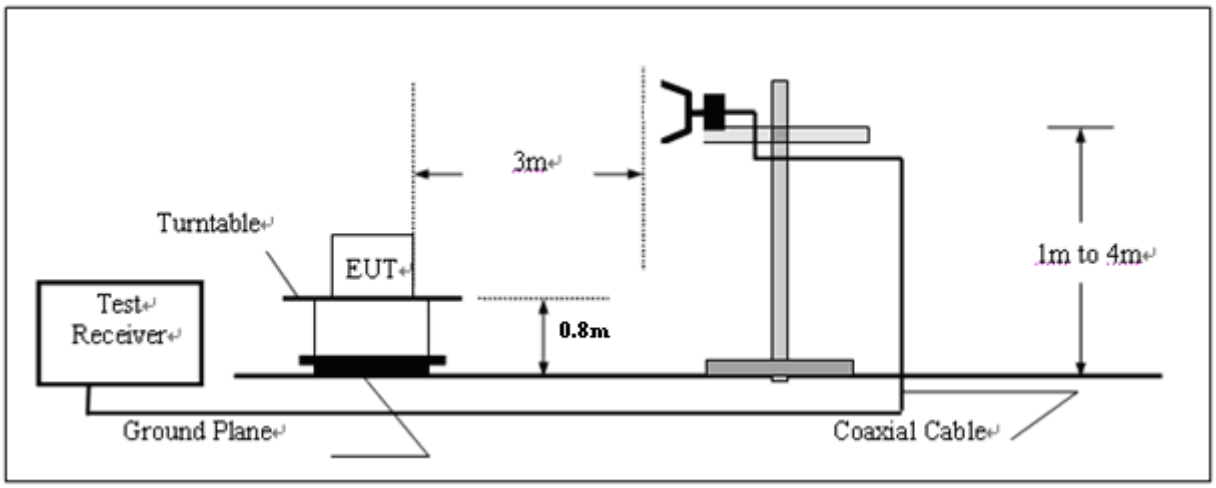
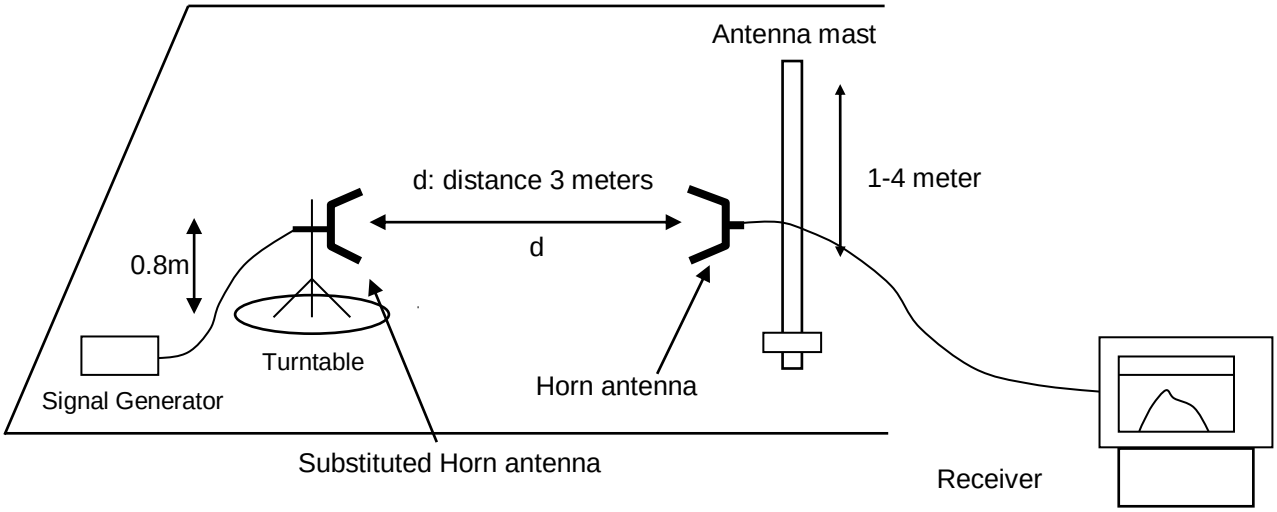


Above 1GHz





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Test procedure

1 Set the EMI Receiver (for measuring E-Field) and Receiver (for measuring EIRP) as follows:
Center Frequency: equal to the signal source
Resolution BW: 100 KHz
Video BW: VBW > RBW
Detector Mode: positive
Average: off
Span: 3 x the signal bandwidth

2 Load an appropriate correction factors file in EMI Receiver for correcting the field strength reading level
Total Correction Factor recorded in the EMI Receiver = Cable Loss + Antenna Factor+Amplifier Gain
E (dBuV/m) = Reading (dBuV) + Total Correction Factor (dB)

3 The transmitter under test was placed at the specified height on a non-conducting turntable (80 cm height)

4 Substitute the EUT by a signal generator and one of the following transmitting antenna (substitution antenna):
DIPOLE antenna for frequency from 30-1000 MHz or
HORN antenna for frequency above 1 GHz}.

5 Mount the transmitting antenna at 1.0 meter high from the ground plane.

6 Use one of the following antenna as a receiving antenna:
DIPOLE antenna for frequency from 30-1000 MHz or
HORN antenna for frequency above 1 GHz}.

7 If the DIPOLE antenna is used, tune it's elements to the frequency as specified in the calibration manual.

8 Adjust both transmitting and receiving antenna in a VERTICAL polarization.

9 Tune the EMI Receivers to the test frequency.

10 Lower or raise the test antenna from 1 to 4 meters until the maximum signal level was detected.

11 The transmitter was rotated through 360o about a vertical axis until a higher maximum signal was received.

12 Lower or raise the test antenna from 1 to 4 meters until the maximum signal level was detected.

13 Adjust input signal to the substitution antenna until an equal or a known related level to that detected from the transmitter was obtained in the test receiver.

14 Record the power level read from the Average Power Meter and calculate the ERP/EIRP as follows:
$P = P_1 - L_1 = (P_2 + L_2) – L_1 = P_3 + A + L_2 - L_1$
$EIRP = P + G1 = P_3 + L_2 - L_1 + A + G_1$
$ERP = EIRP – 2.15\ dB$
Total Correction factor in EMI Receiver = $L_2 – L_1 + G_1$

Where:
P: Actual RF Power fed into the substitution antenna port after corrected.
P_1: Power output from the signal generator
P_2: Power measured at attenuator A input
P_3: Power reading on the Average Power Meter
EIRP: EIRP after correction
ERP: ERP after correction

15 Adjust both transmitting and receiving antenna in a Horizontal polarization, then repeat step (11) to (14).

16 Repeat step (4) to (16) for different test frequency

17 Repeat steps (3) to (12) with the substitution antenna oriented in horizontal polarization.

18 Actual gain of the EUT's antenna is the difference of the measured EIRP and measured RF power at the RF port. Correct the antenna gain if necessary.

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Limit

The Transmitter Radiated Spurious Emssion was performed to the Rated high power (25Watt) and Rated low power (1Watt) the datum that reported below is the **worst** case (Rated high power) of the two rated power conditions.

Modulation Type: FM

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (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:
Low: 43 + 10 log (Pwatts) = 43 + 10 log (4.67) =49.69 dB
High: 43 + 10 log (Pwatts) = 43 + 10 log (4.48) =49.51 dB
Note: In general, the worse case attenuation requirement shown above was applied.
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 36.69 dBm.
Limit (dBm) =36.69-43-10log10 (4.67) = -13 dBm

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. ******* means that the emission level is too low to be measured or at least 20 dB down than the limit.

TEST RESULTS

Remark:We tested TX1 to TX2.recorded worst case at TX1.

Note: 1. In general, the worse case attenuation requirement shown above was applied.
2. The measurement frequency range from 30 MHz to 2 GHz.

Test plot as follows:

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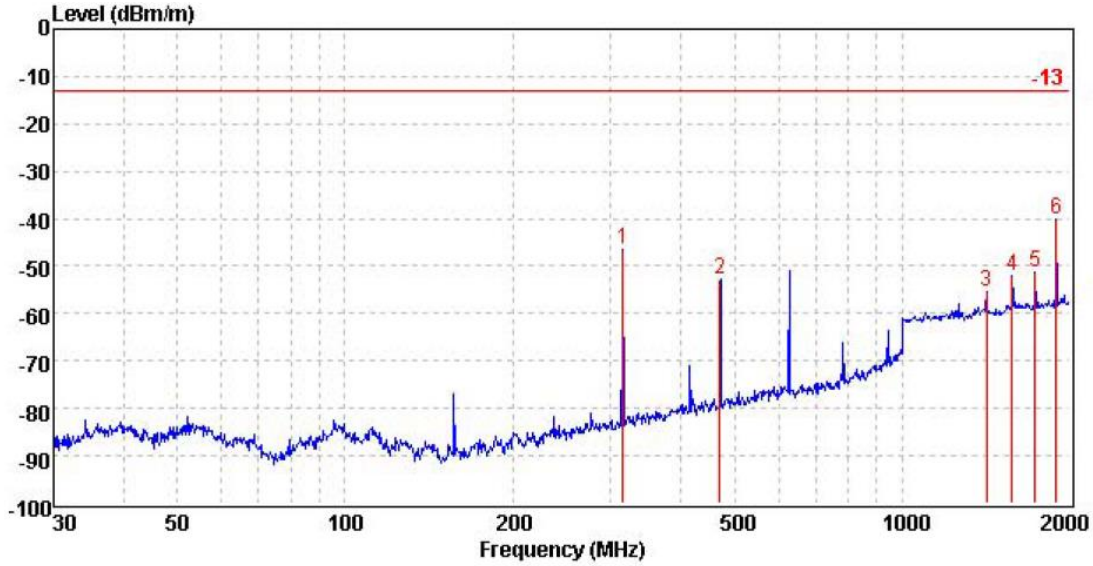
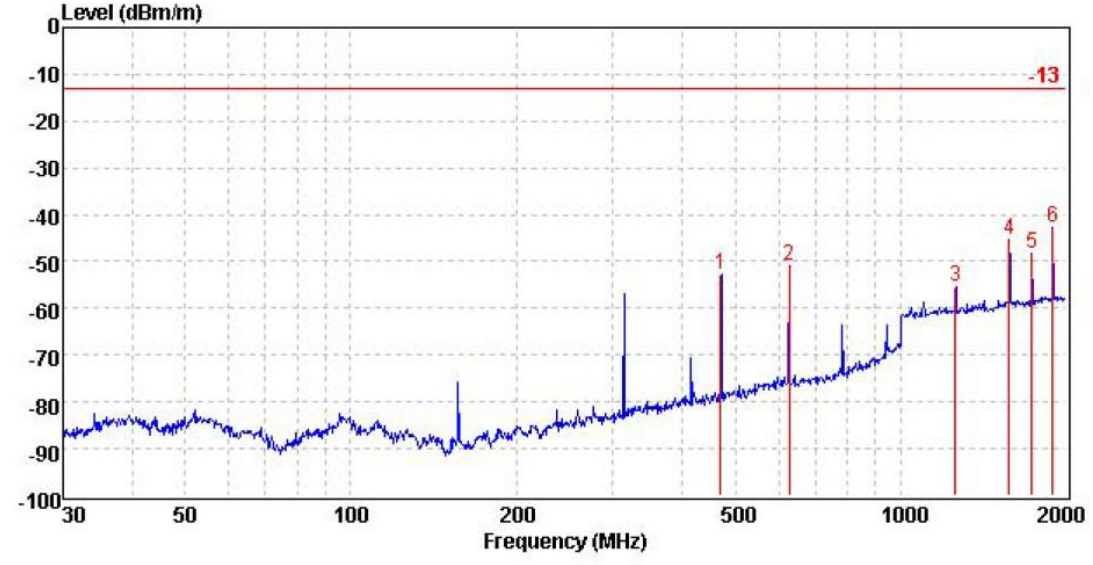
TX1			
Test Frequency:	156.05 MHz	Polarity:	Horizontal



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	315.37	-44.68	26.55	2.03	30.29	-46.39	-13.00	-33.39	Peak
2	470.89	-54.50	29.34	2.54	30.13	-52.75	-13.00	-39.75	Peak
3	1416.18	-63.96	39.82	5.05	36.48	-55.57	-13.00	-42.57	Peak
4	1574.62	-61.09	40.22	5.50	36.69	-52.06	-13.00	-39.06	Peak
5	1732.67	-60.56	40.54	5.83	37.00	-51.19	-13.00	-38.19	Peak
6	1889.49	-49.89	40.84	6.10	37.21	-40.16	-13.00	-27.16	Peak

Test Frequency:	156.05MHz	Polarity:	Vertical



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	470.89	-54.50	29.34	2.54	30.13	-52.75	-13.00	-39.75	Peak
2	628.27	-55.87	31.76	3.02	29.81	-50.90	-13.00	-37.90	Peak
3	1259.63	-62.79	39.32	4.76	36.54	-55.25	-13.00	-42.25	Peak
4	1574.62	-54.53	40.22	5.50	36.69	-45.50	-13.00	-32.50	Peak
5	1732.67	-57.59	40.54	5.83	37.00	-48.22	-13.00	-35.22	Peak
6	1889.49	-52.35	40.84	6.10	37.21	-42.62	-13.00	-29.62	Peak

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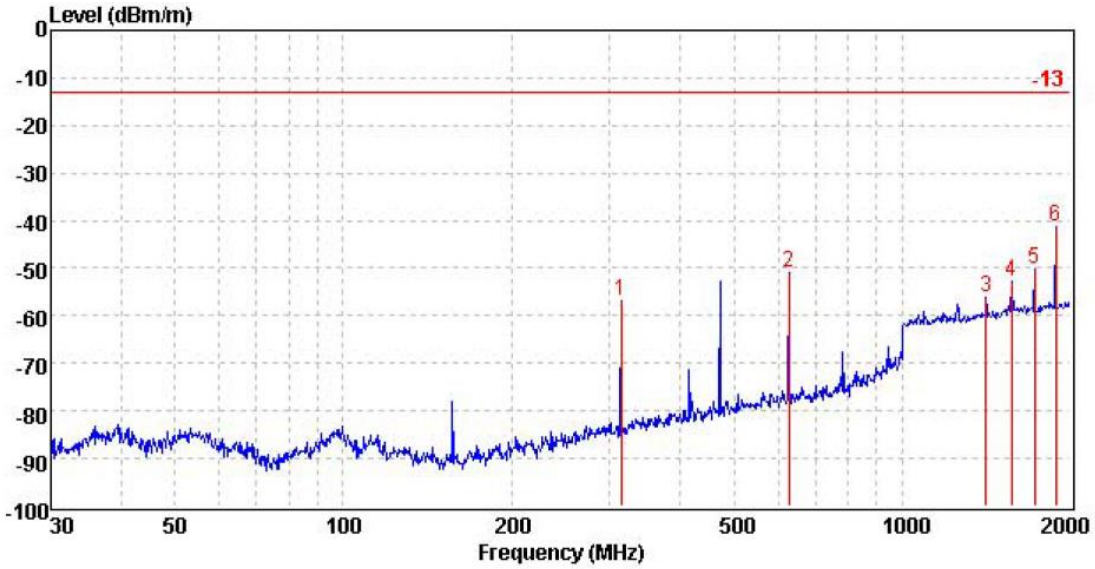
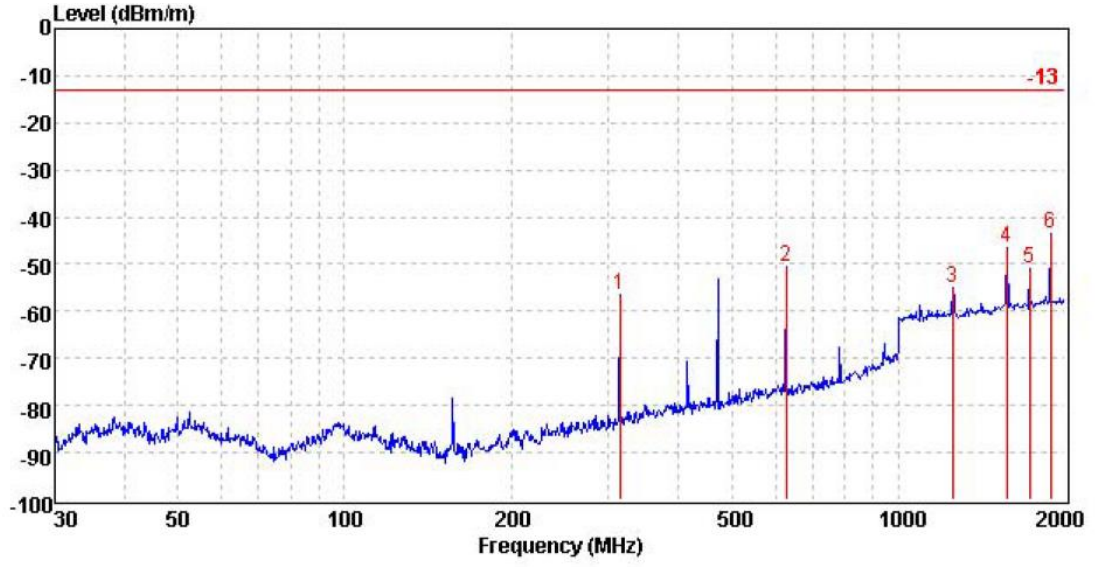
TX1			
Test Frequency:	156.8 MHz	Polarity:	*Horizontal*



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	314.26	-55.00	26.55	2.03	30.29	-56.71	-13.00	-43.71	Peak
2	628.27	-55.87	31.76	3.02	29.81	-50.90	-13.00	-37.90	Peak
3	1411.28	-64.38	39.79	5.03	36.47	-56.03	-13.00	-43.03	Peak
4	1568.08	-61.80	40.20	5.48	36.68	-52.80	-13.00	-39.80	Peak
5	1725.48	-59.67	40.54	5.81	36.98	-50.30	-13.00	-37.30	Peak
6	1881.65	-51.00	40.84	6.09	37.21	-41.28	-13.00	-28.28	Peak

Test Frequency:	156.8MHz	Polarity:	Vertical



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	314.26	-54.74	26.55	2.03	30.29	-56.45	-13.00	-43.45	Peak
2	628.27	-55.39	31.76	3.02	29.81	-50.42	-13.00	-37.42	Peak
3	1254.40	-62.70	39.29	4.75	36.54	-55.20	-13.00	-42.20	Peak
4	1568.08	-55.50	40.20	5.48	36.68	-46.50	-13.00	-33.50	Peak
5	1725.48	-60.15	40.54	5.81	36.98	-50.78	-13.00	-37.78	Peak
6	1881.65	-53.22	40.84	6.09	37.21	-43.50	-13.00	-30.50	Peak

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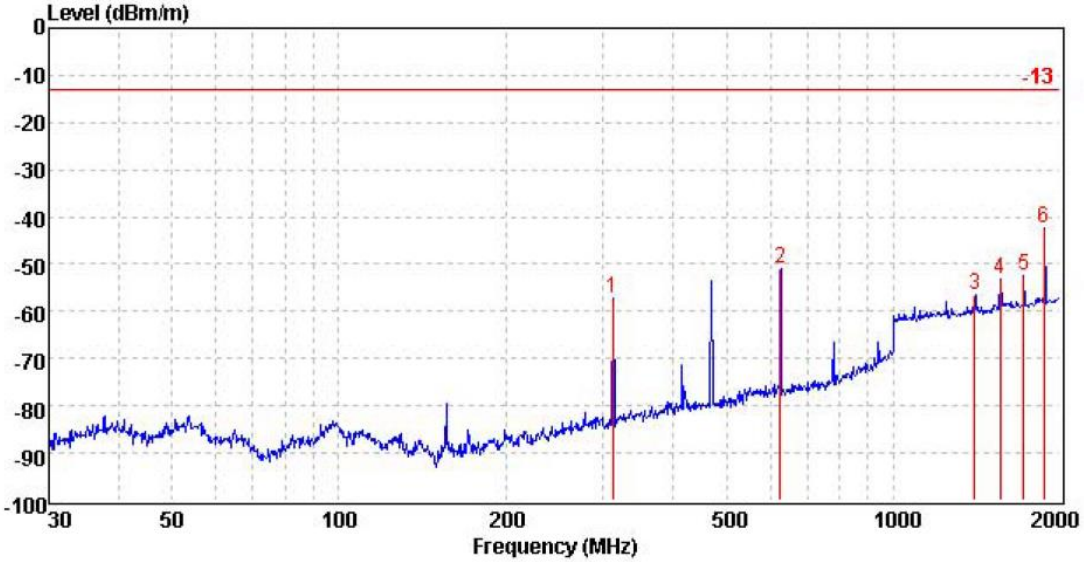
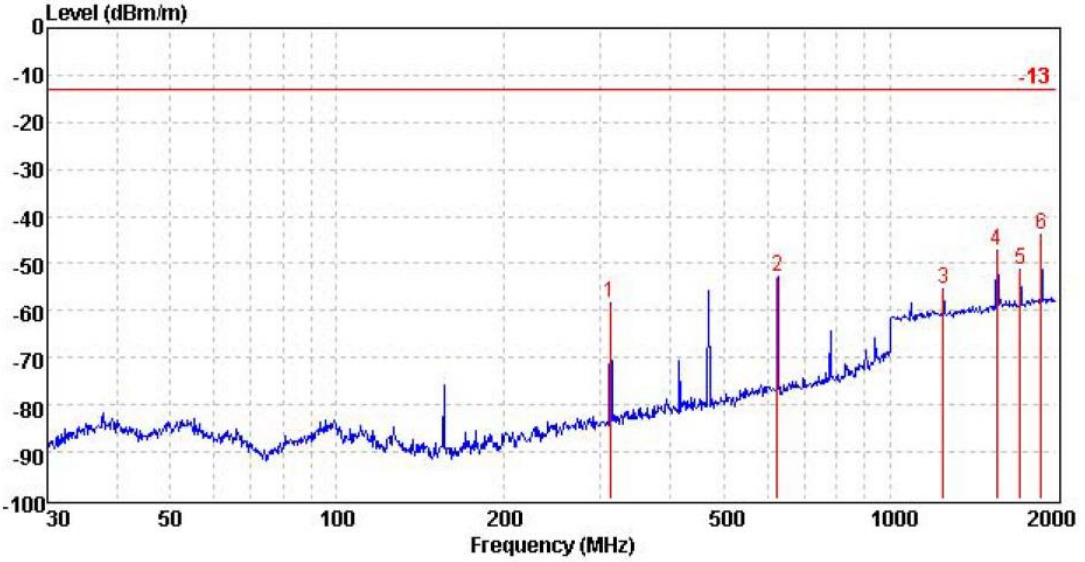
TX1			
Test Frequency:	157.425 MHz	Polarity:	*Horizontal*



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	312.06	-55.41	26.50	2.02	30.29	-57.18	-13.00	-44.18	Peak
2	626.07	-55.71	31.76	3.01	29.81	-50.75	-13.00	-37.75	Peak
3	1404.45	-64.79	39.76	5.01	36.47	-56.49	-13.00	-43.49	Peak
4	1560.49	-62.23	40.18	5.46	36.67	-53.26	-13.00	-40.26	Peak
5	1717.13	-61.66	40.52	5.80	36.97	-52.31	-13.00	-39.31	Peak
6	1872.55	-52.10	40.82	6.07	37.20	-42.41	-13.00	-29.41	Peak

Test Frequency:	157.425MHz	Polarity:	Vertical



Mark	Frequency MHz	Reading dBm	Antenna dB	Cable dB	Preamp dB	Level dBm	Limit dBm	Over limit	Remark
1	312.06	-56.64	26.50	2.02	30.29	-58.41	-13.00	-45.41	Peak
2	626.07	-57.79	31.76	3.01	29.81	-52.83	-13.00	-39.83	Peak
3	1248.33	-62.92	39.26	4.74	36.54	-55.46	-13.00	-42.46	Peak
4	1560.49	-56.13	40.18	5.46	36.67	-47.16	-13.00	-34.16	Peak
5	1717.13	-60.78	40.52	5.80	36.97	-51.43	-13.00	-38.43	Peak
6	1873.84	-53.55	40.82	6.07	37.20	-43.86	-13.00	-30.86	Peak

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8.5 Spurious Emssion on Antenna Port

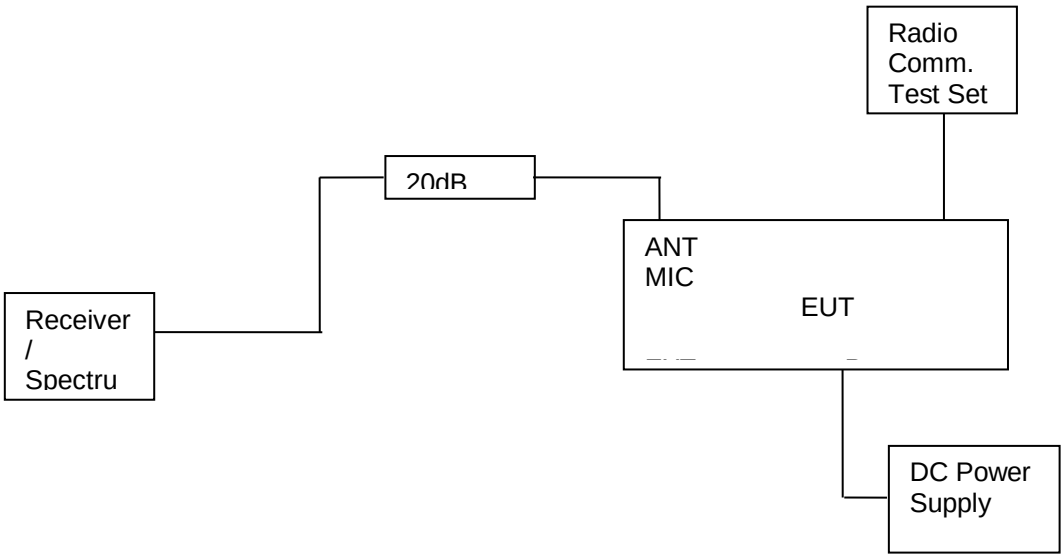
Test applicable

The same as Section 4.3

Test procedure

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. 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. The audio input was set to 0 to get the unmodulated carrier, the resulting picture is print out for each channel separation.

Test configuration



Limit

Modulation Type: FM

FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 11 (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:
Low: 43 + 10 log (Pwatts) = 43 + 10 log (4.67) =49.69 dB
High: 43 + 10 log (Pwatts) = 43 + 10 log (4.48) =49.51 dB
Note: In general, the worse case attenuation requirement shown above was applied.
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 36.69 dBm.
Limit (dBm) =36.69-43-10log10 (4.67) = -13 dBm

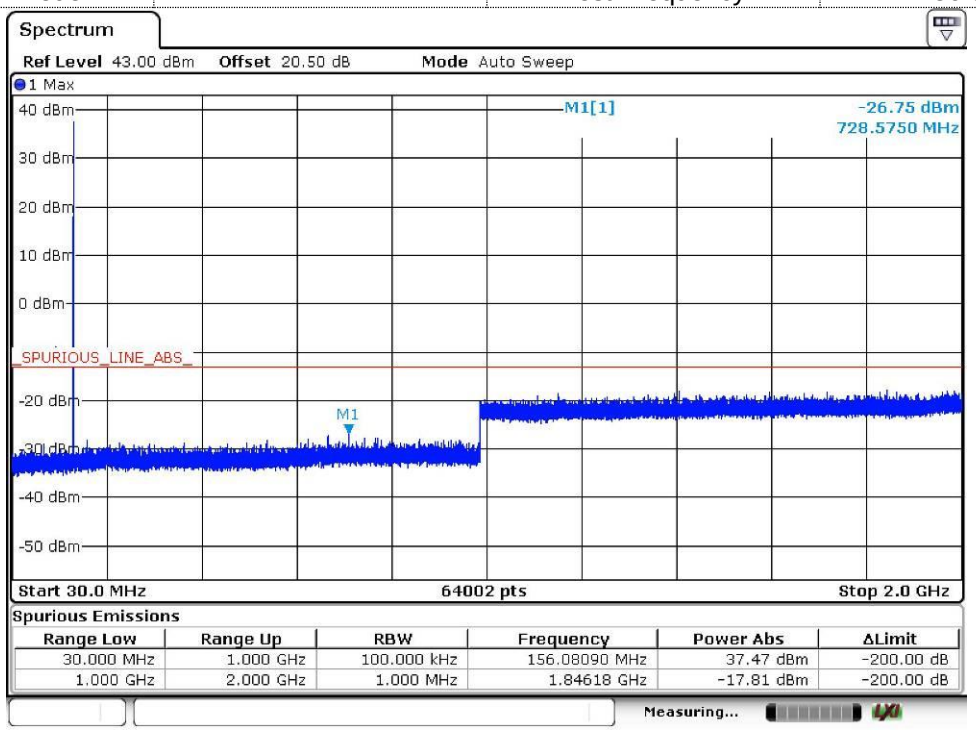
TEST RESULTS

Remark:We tested TX1 to TX2.recorded worst case at TX1.

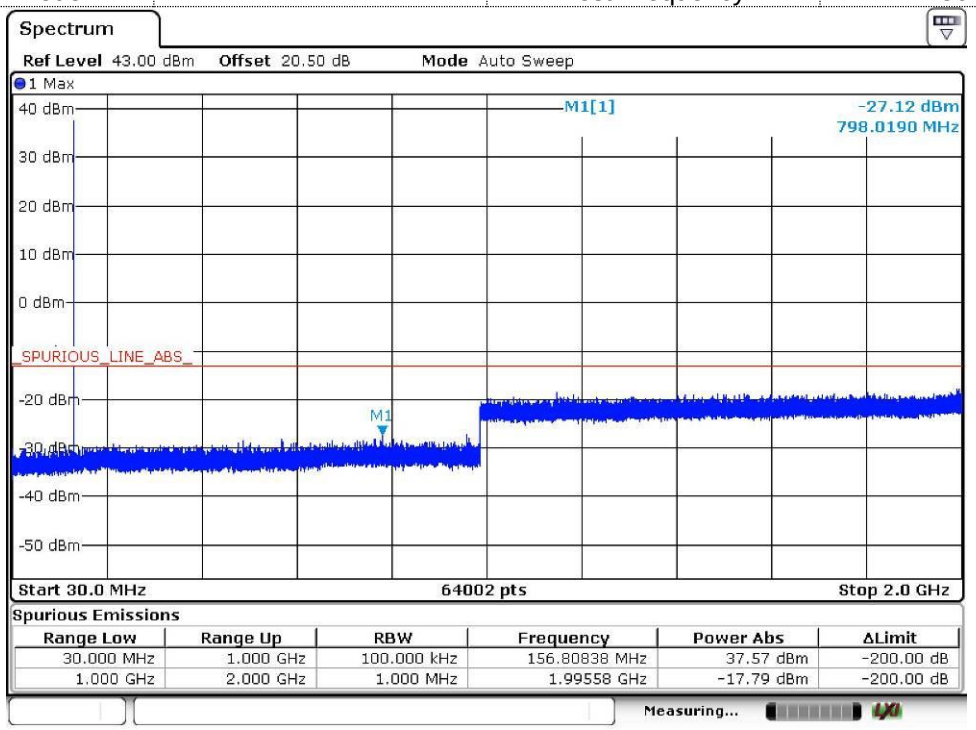
Note:
1. In general, the worse case attenuation requirement shown above was applied.
2. The measurement frequency range from 30 MHz to 2GHz.

Test plot as follows:

Operation Mode	TX1	Test Frequency	156.05MHz



Operation Mode	TX1	Test Frequency	156.8MHz



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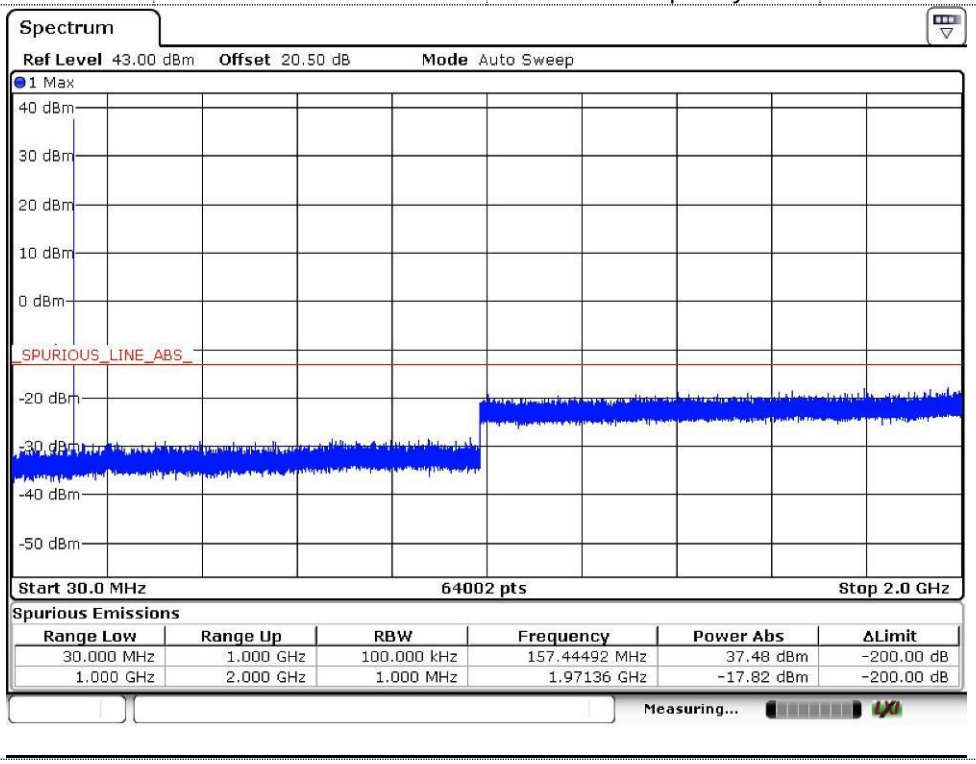
Operation Mode	TX1	Test Frequency	157.425MHz



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8.6 Modulation Charcateristics

Test applicable

According toCFR47 section 2.1047(a), for Voice Modulation Communication EquiFMent, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.

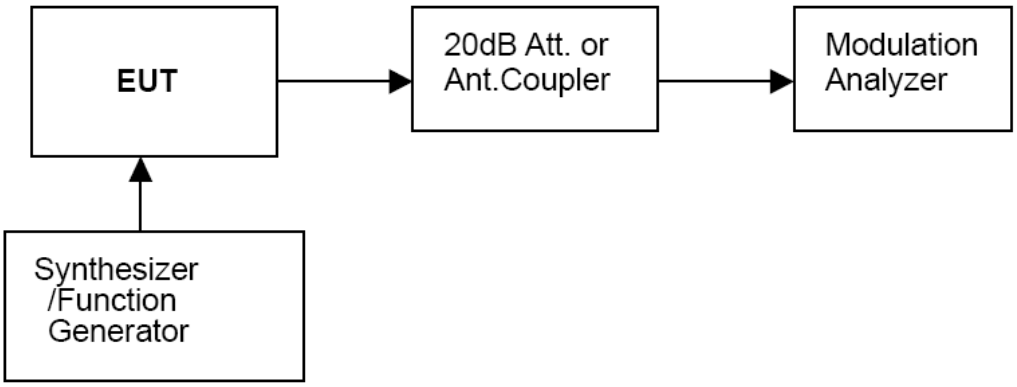
Test Limit

1 Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1 KHz using this level as a reference (0dB) and vary the input level from –20 to +20dB. Record the frequency deviation obtained as a function of the input level.
2 Repeat step 1 with input frequency changing to 300, 1000, 1500 and 2500Hz in sequence.

Test procedure

1 Configure the EUT as shown.
2 Adjust the audio input for 20% of rated system deviation at 1 KHz using this level as a reference (0dB).
3 Vary the Audio frequency from 100 Hz to 3 KHz and record the frequency deviation.
4 Audio Frequency Response =20log10 (Deviation of test frequency/Deviation of 1 KHz reference).

TEST CONFIGURATION

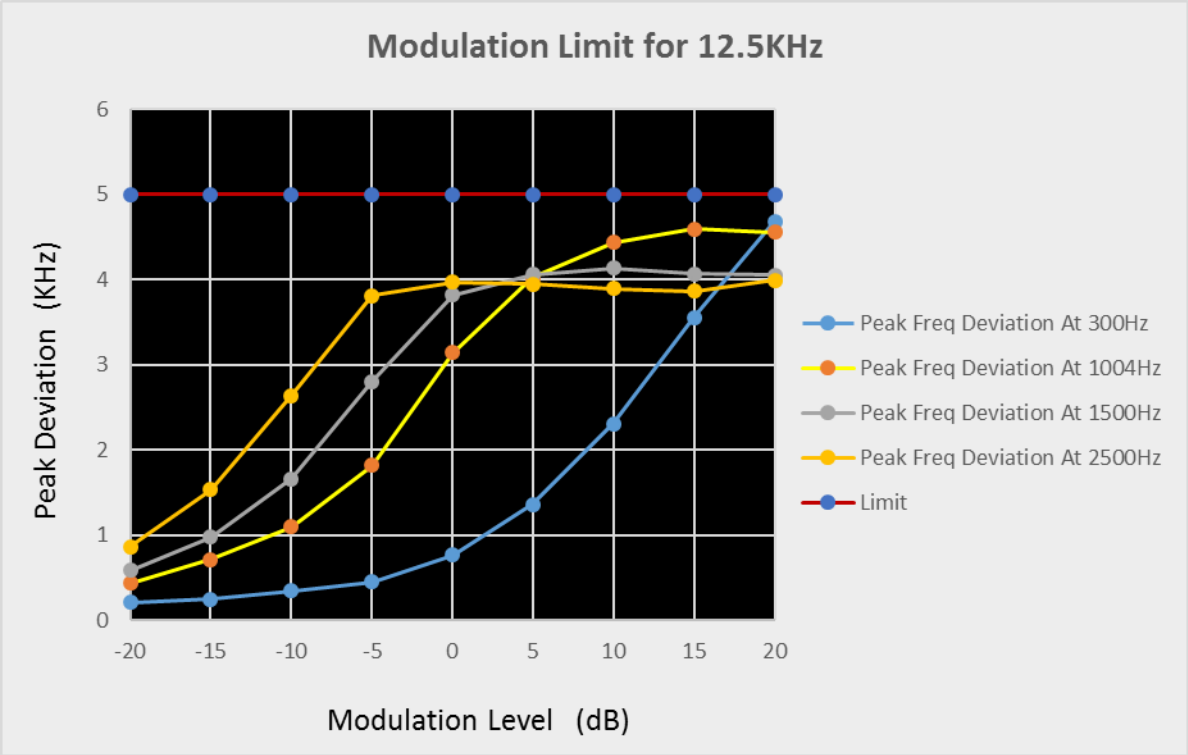


Test results

Modulation Type: FM

25 KHz Channel Separation

Modulation Level(dB)	Peak Freq. Deviation At 300 Hz(KHz)	Peak Freq. Deviation At 1000 H(KHz)	Peak Freq. Deviation At 1500 Hz(KHz)	Peak Freq. Deviation At 2500 Hz(KHz)
-20	0.211	0.436	0.585	0.864
-15	0.245	0.711	0.976	1.53
-10	0.347	1.093	1.663	2.636
-5	0.448	1.818	2.803	3.808
0	0.766	3.145	3.822	3.971
+5	1.356	4.023	4.061	3.949
+10	2.31	4.437	4.131	3.896
+15	3.553	4.595	4.069	3.863
+20	4.686	4.554	4.049	3.994



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8.7 Audio Frequency Response

Rule Part No.: Part 2.1407(a) (b)

Method of Measurement

The audio frequency response was measured in accordance with TIA/EIA Specification 603 with no exception. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 300-3000Hz shall be submitted and Audio Post Limiter Low Pass Filter Response from 3.0 KHz to 50KHz.However, the audio frequency response should test from 100Hz to 5.0 KHz according to FCC Part 80.

Modulation Type: FM

The audio frequency response curve is show below.and

Test Audio Level (1 KHz and 20% maximum deviation) is 2.70mv for 25 KHz channel separation.

Note:

1 Not applicable to new standard. However, tests are conducted under FCC's recommendation.
2 The Audio Frequency Response is identical for 25 KHz channel separation

25 KHz Channel Separation

Frequency (KHz)	Frequency Deviation (KHz)	1KHz Refenerce Deviation (KHz)	Audio Frequency Response (dB)
0.1	0.145	1.00	-16.88
0.2	0.219	1.00	-13.30
0.3	0.308	1.00	-10.34
0.4	0.417	1.00	-7.71
0.5	0.510	1.00	-5.96
0.6	0.591	1.00	-4.68
0.7	0.709	1.00	-3.10
0.8	0.814	1.00	-1.90
0.9	0.894	1.00	-1.09
1.0	1.010	1.00	0.00
1.2	1.228	1.00	1.67
1.4	1.421	1.00	2.94
1.6	1.637	1.00	4.17
1.8	1.834	1.00	5.16
2.0	2.035	1.00	6.06
2.1	2.163	1.00	6.59
2.2	2.254	1.00	6.95
2.3	2.336	1.00	7.26
2.4	2.423	1.00	7.57
2.5	2.501	1.00	7.85
2.6	2.558	1.00	8.05
2.7	2.613	1.00	8.23
2.8	2.684	1.00	8.46
2.9	2.719	1.00	8.58
3.0	2.743	1.00	8.65
3.5	2.694	1.00	8.50
4.0	2.395	1.00	5.80
4.5	1.877	1.00	2.42
5.0	1.433	1.00	-1.16

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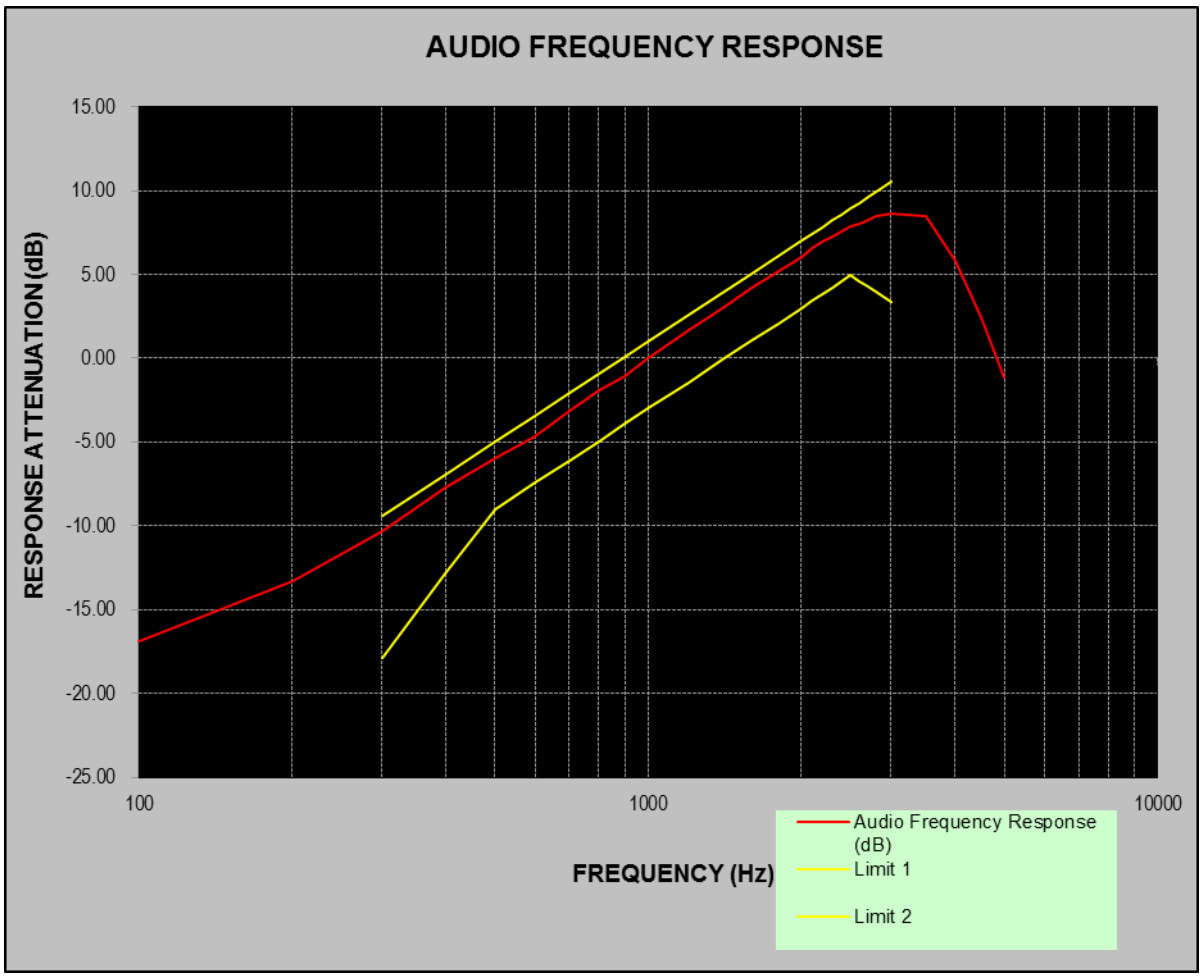

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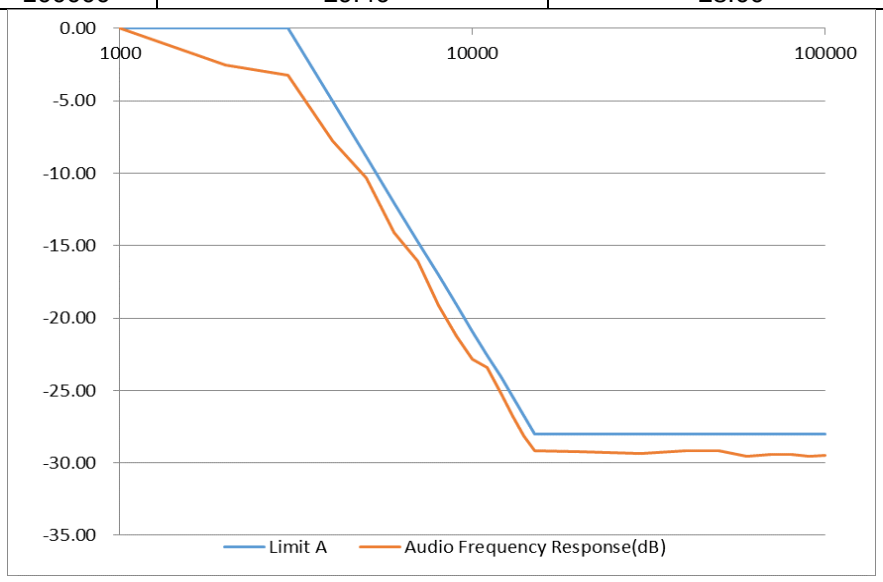
8.8 The Audio Low Pass Filter

TEST APPLICABLE

80.213 (e) 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 RESULTS

Frequency (Hz)	1KHz Refenerce attenuation (dB)	Limit (dB)
1000	0.00	0.00
2000	-2.54	0.00
3000	-3.25	0.00
4000	-7.79	-5.00
5000	-10.34	-8.87
6000	-14.11	-12.04
7000	-16.08	-14.72
8000	-19.14	-17.04
9000	-21.26	-19.08
10000	-22.82	-20.92
11000	-23.44	-22.57
12000	-25.19	-24.08
13000	-26.77	-25.47
14000	-28.15	-26.76
15000	-29.15	-28.00
20000	-29.22	-28.00
30000	-29.35	-28.00
40000	-29.14	-28.00
50000	-29.18	-28.00
60000	-29.54	-28.00
70000	-29.43	-28.00
80000	-29.41	-28.00
90000	-29.55	-28.00
100000	-29.46	-28.00



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8.9 Frequency Stability Test

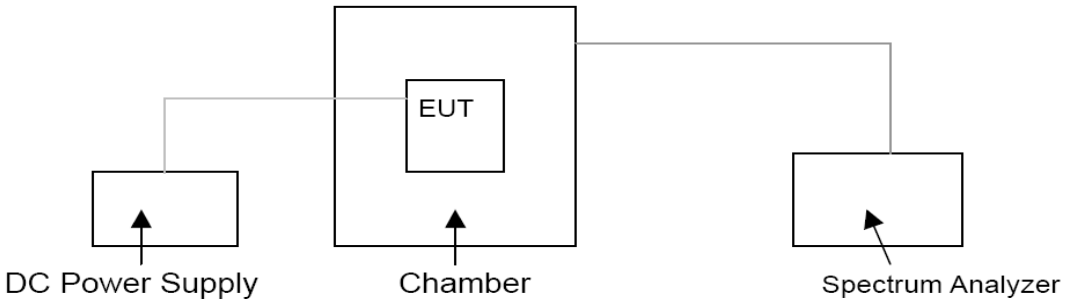
TEST APPLICABLE

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 (a) (2), for battery powered equiFMent, 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 85 to 115 percent of the nominal value for other than hand carried battery equiFMent and the end voltage point was 6.67V.
4 According to §90.213, the frequency stability limit is 2.5 pFM for 25 KHz channel separation

TEST PROCEDURE

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 ESI 26. 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 LIMITS

According to 80.209, Transmitters used must have minimum frequency stability as specified in the following table.

Frequency Band	Coast stations		Ship stations
	Below 3W	3 to 100W	
156-162 MHz	10pFM	5[1] pFM	10[2] pFM

1 For transmitters operated at private coast stations with antenna heights less than 6 meters (20 feet) above ground and output power of 25 Watts or less the frequency tolerance is 10 parts in 10^6

2 For transmitters in the radiolocation and associated telecommand service operating on 154.585 MHz, 159.480 MHz, 160.725 MHz and 160.785 MHz the frequency tolerance is 15 parts in 10^6

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TEST RESULTS

TX1:

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(℃)	156.050MHz	156.800 MHz	157.425MHz
Analog/FM	25 KHz	7.4	-30	0.39	0.20	0.18
			-20	0.39	0.20	0.19
			-10	0.39	0.20	0.19
			0	0.38	0.21	0.18
			10	0.41	0.21	0.19
			20	0.41	0.22	0.19
			30	0.44	0.24	0.20
			40	0.46	0.25	0.22
			50	0.49	0.26	0.22
		6.29(85% Rated)	20	0.37	0.21	0.19
		8.51(115% Rated)	20	0.43	0.24	0.21
Limit			2.5 ppm			
Conclusion			Complies			

TX2:

Modulation Type	Channel Separation	Test conditions		Frequency error (ppm)		
		Voltage(V)	Temp(℃)	156.050MHz	156.800 MHz	157.425MHz
Analog/FM	25 KHz	7.4	-30	0.32	0.17	0.25
			-20	0.31	0.17	0.27
			-10	0.30	0.17	0.25
			0	0.29	0.17	0.27
			10	0.30	0.17	0.24
			20	0.32	0.18	0.27
			30	0.32	0.19	0.27
			40	0.33	0.19	0.28
			50	0.33	0.21	0.29
		6.29(85% Rated)	20	0.30	0.18	0.26
		8.51(115% Rated)	20	0.33	0.18	0.27
Limit			2.5 ppm			
Conclusion			Complies			

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8.10 Maximum Transmitter Power

TEST APPLICABLE

80.215(e)(1) Ship stations 156–162 MHz - 25W[1,2]
Marine utility stations and hand-held portable transmitters: 156–162 MHz -10W

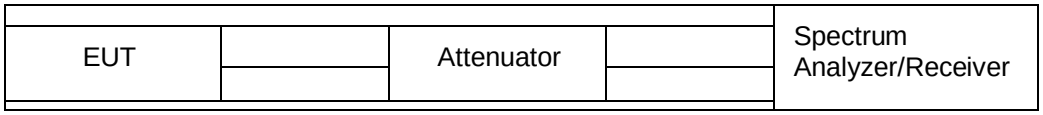
1 Reducible to 1 watt or less, except for transmitters limited to public correspondence channels and used in an automated system.

2 The frequencies 156.775 and 156.825 MHz are available for navigation-related port operations or ship movement only, and all precautions must be taken to avoid harmful interference to channel 16. Transmitter output power is limited to 1 watt for ship stations, and 10 watts for coast stations.

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.
The EUT connect to the Receiver through 20 dB attenuator.
Measurement with Spectrum Analyzer FSP40 conducted, external power supply with 7.4 V stabilized supply voltage.

TEST CONFIGURATION



The EUT was directly connected to a RF Communication Test set by a 20 dB attenuator

TEST RESULTS

Modulation Type	Channel Separation	Test Channel	Test Frequency	Maximum Transmitter Power at Rated High Power Level(dBm)	Maximum Transmitter Power at Rated Low Power Level(dBm)
Analog/FM	25 KHz	Low	156.0500 MHz	37.26	29.27
		Middle	156.8000 MHz	37.16	29.33
		High	157.4250 MHz	37.34	29.31
Limit		High rating power 25W, Low rating power 1W			
Test Results		Complicance			

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8.11 Receiver Radiated Spurious Emssion

TEST APPLICABLE

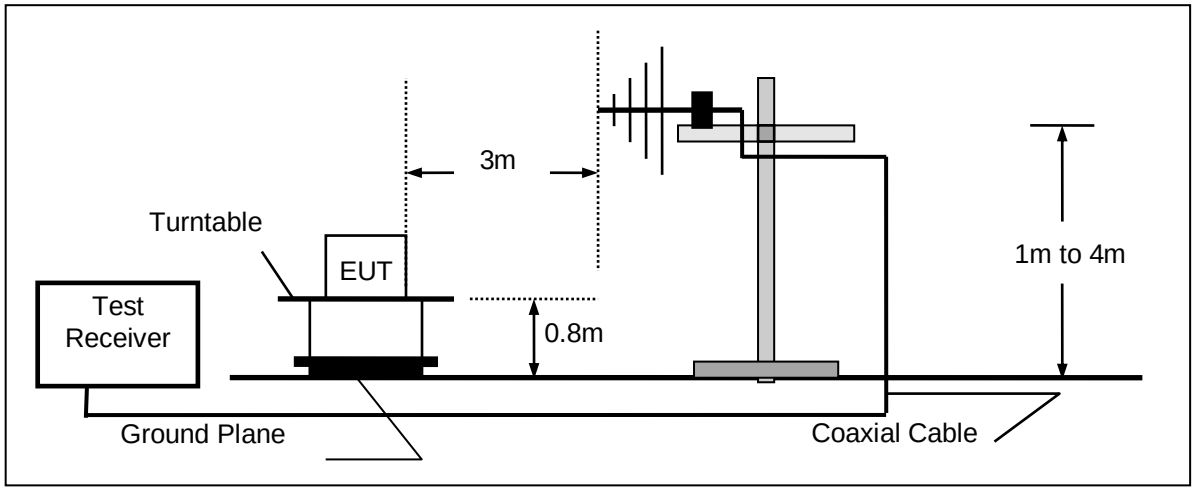
The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL – AG

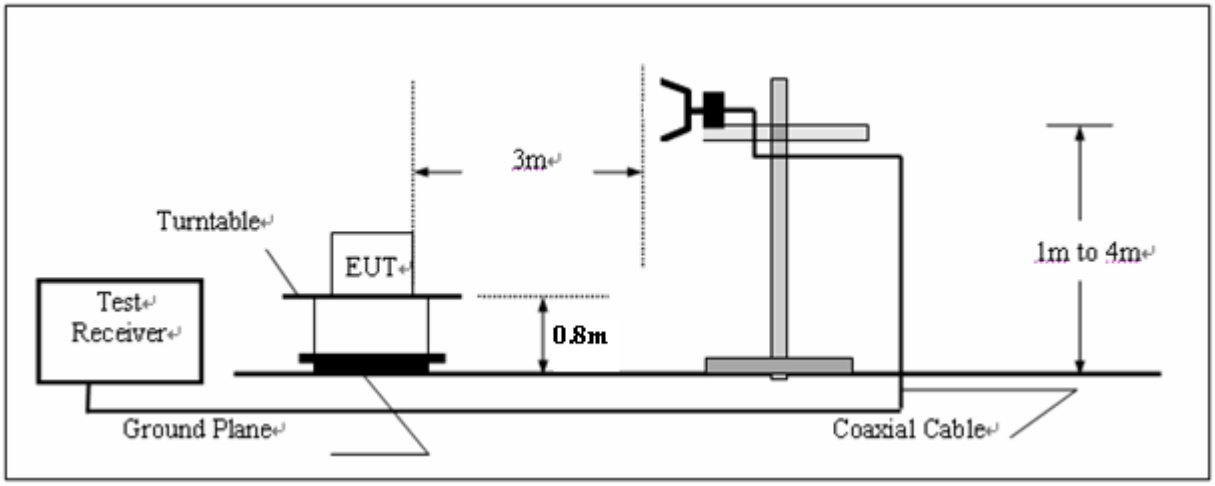
Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

TEST CONFIGURATION

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



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



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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.

RECEIVER RADIATED SPOUIOUS LIMIT

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

Frequency (MHz)	Distance (Meters)	Radiated (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 RESULTS

The Radiated Measurement are performed to the six channels including High Power (the top channel, the middle channel and the bottom channel) and Low Power (the top channel, the middle channel and the bottom channel) the datum recorded below is the worst case for each channel separation; and the EUT shall be scanned from 30 MHz to the 5th harmonic of the highest oscillator frequency in the digital devices or 1GHz whichever is higher.

We test AC mode and DC mode, only the worse case recorded in the report.

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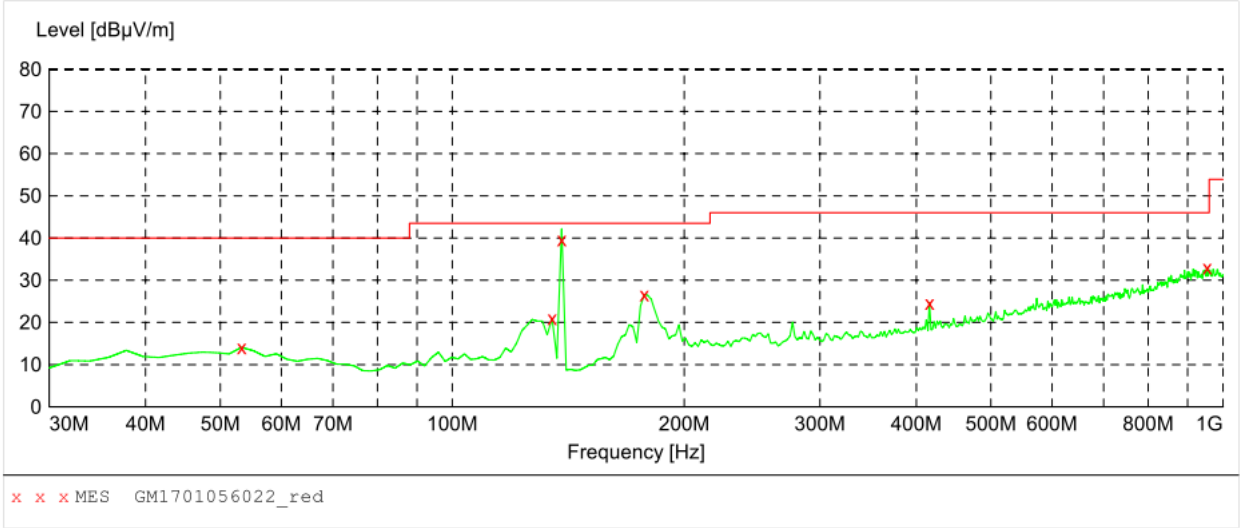
RX1			
Test Frequency	30MHz-1GHz	Polarity:	*Horizontal*

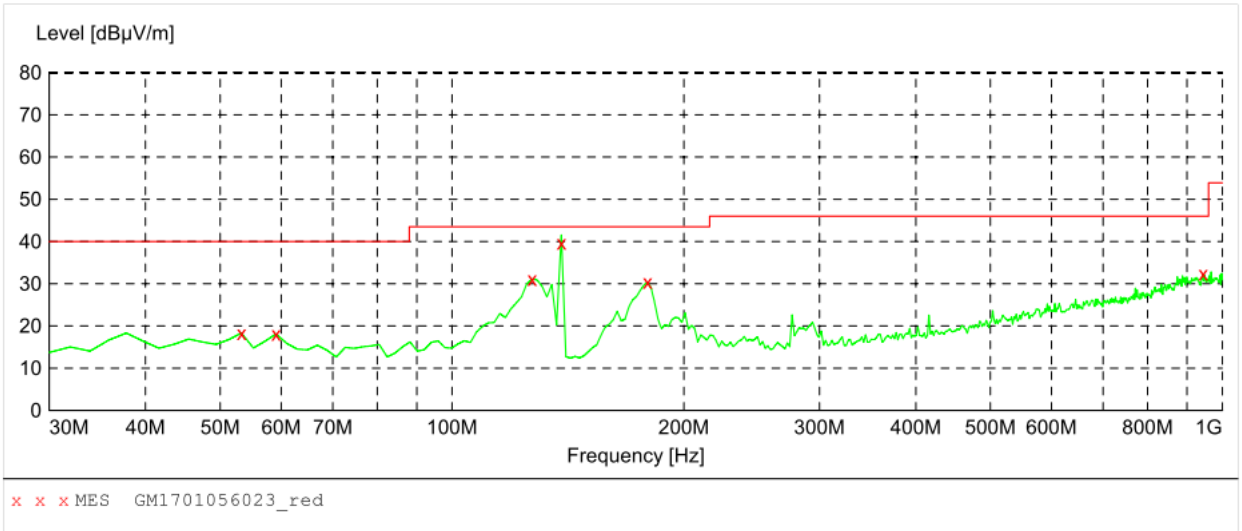


MEASUREMENT RESULT: "GM1701056022_red"

1/5/2017 10:34AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.280000	14.10	-16.5	40.0	25.9	QP	300.0	101.00	HORIZONTAL
134.760000	21.00	-19.9	43.5	22.5	QP	300.0	13.00	HORIZONTAL
138.640000	39.20	-20.3	43.5	4.3	QP	300.0	279.00	HORIZONTAL
177.440000	26.60	-18.6	43.5	16.9	QP	100.0	177.00	HORIZONTAL
416.060000	24.60	-10.2	46.0	21.4	QP	100.0	216.00	HORIZONTAL
953.440000	33.00	1.6	46.0	13.0	QP	300.0	239.00	HORIZONTAL

Test Frequency	30MHz-1GHz	Polarity:	Vertical



MEASUREMENT RESULT: "GM1701056023_red"

1/5/2017 10:37AM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.280000	18.30	-16.5	40.0	21.7	QP	100.0	52.00	VERTICAL
59.100000	18.10	-17.1	40.0	21.9	QP	100.0	247.00	VERTICAL
127.000000	31.10	-19.1	43.5	12.4	QP	100.0	159.00	VERTICAL
138.640000	38.60	-20.3	43.5	4.9	QP	100.0	142.00	VERTICAL
179.380000	30.40	-18.5	43.5	13.1	QP	100.0	359.00	VERTICAL
943.740000	32.40	1.5	46.0	13.6	QP	100.0	68.00	VERTICAL

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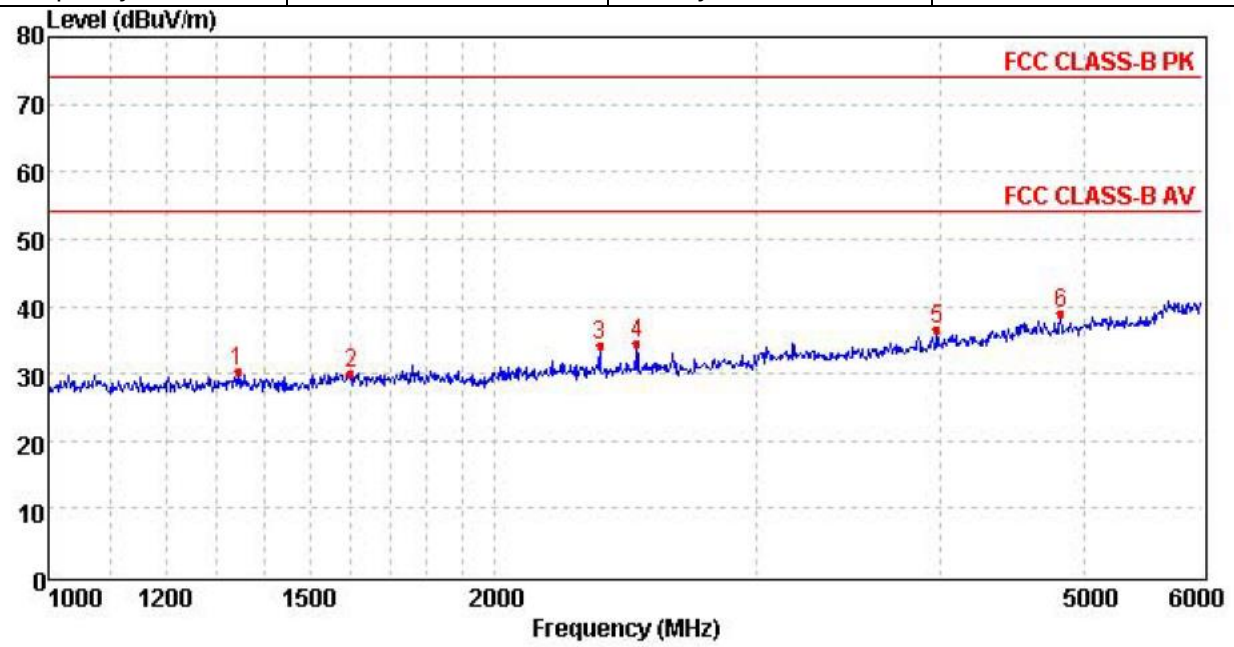
RX1			
Test Frequency	30MHz-1GHz	Polarity:	*Horizontal*



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1341.58	37.43	24.56	4.90	36.49	30.40	74.00	-43.60	Peak
2	1599.10	36.20	25.01	5.57	36.72	30.06	74.00	-43.94	Peak
3	2354.81	37.86	27.41	6.70	37.77	34.20	74.00	-39.80	Peak
4	2493.77	37.59	27.88	6.84	37.87	34.44	74.00	-39.56	Peak
5	3973.53	36.64	29.45	8.74	38.13	36.70	74.00	-37.30	Peak
6	4813.25	35.18	31.09	9.55	36.92	38.90	74.00	-35.10	Peak

Test Frequency	30MHz-1GHz	Polarity:	Vertical

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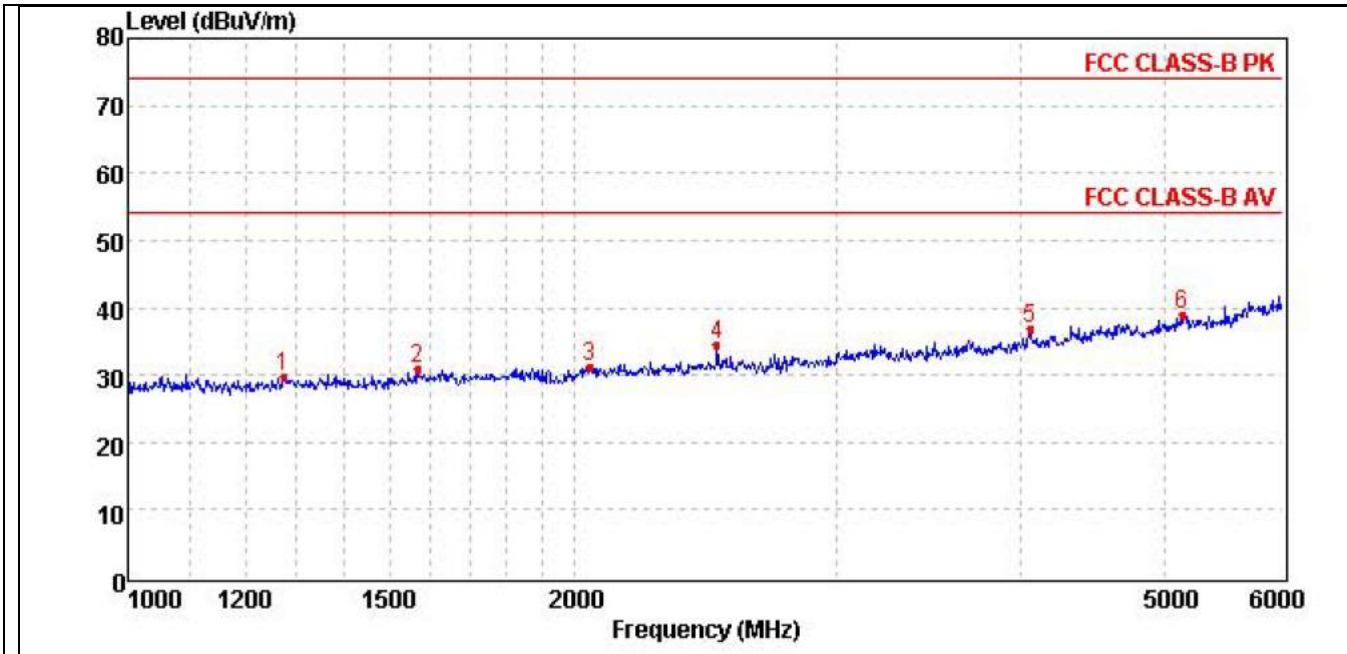

Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1273.65	36.84	24.50	4.79	36.53	29.60	74.00	-44.40	Peak
2	1567.89	37.21	24.92	5.48	36.68	30.93	74.00	-43.07	Peak
3	2047.67	35.88	26.29	6.31	37.31	31.17	74.00	-42.83	Peak
4	2493.77	37.74	27.88	6.84	37.87	34.59	74.00	-39.41	Peak
5	4052.62	36.50	29.64	8.82	37.99	36.97	74.00	-37.03	Peak
6	5133.96	33.80	31.53	9.78	36.27	38.84	74.00	-35.16	Peak

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8.12 Receiver Conducted Spurious Emssion

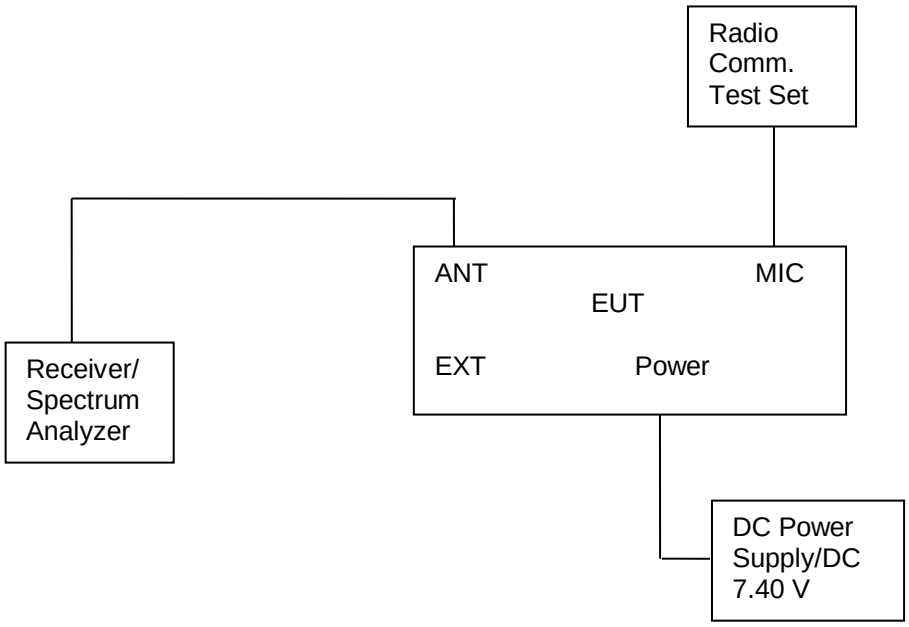
TEST APPLICABLE

The same as Section 4.3

TEST PROCEDURE

The spectrum analyzer was connected to the RF output power of the EUT, the EUT was setup in receiving mode; The RBW of the spectrum analyzer was set to 100 kHz and the VBW set to 300 KHz below the test frequency 1GHz. While the RBW of the spectrum analyzer was set to the 1MHz and VBW set to the 3MHz from 1GHz to the 10^{th} harmonic.

TEST CONFIGURATION



LIMIT

The power at the antenna terminal shall not exceed 2.0 nanowatts (-57dBm).

TEST RESULTS

The Receiver Conducted Spurious Emssions Measurement is performed to the five channels (the top channel, the middle channel and the bottom channel), the datums recorded below were for the five channels; and the EUT shall be scanned from 30 MHz to the 2 GHz.

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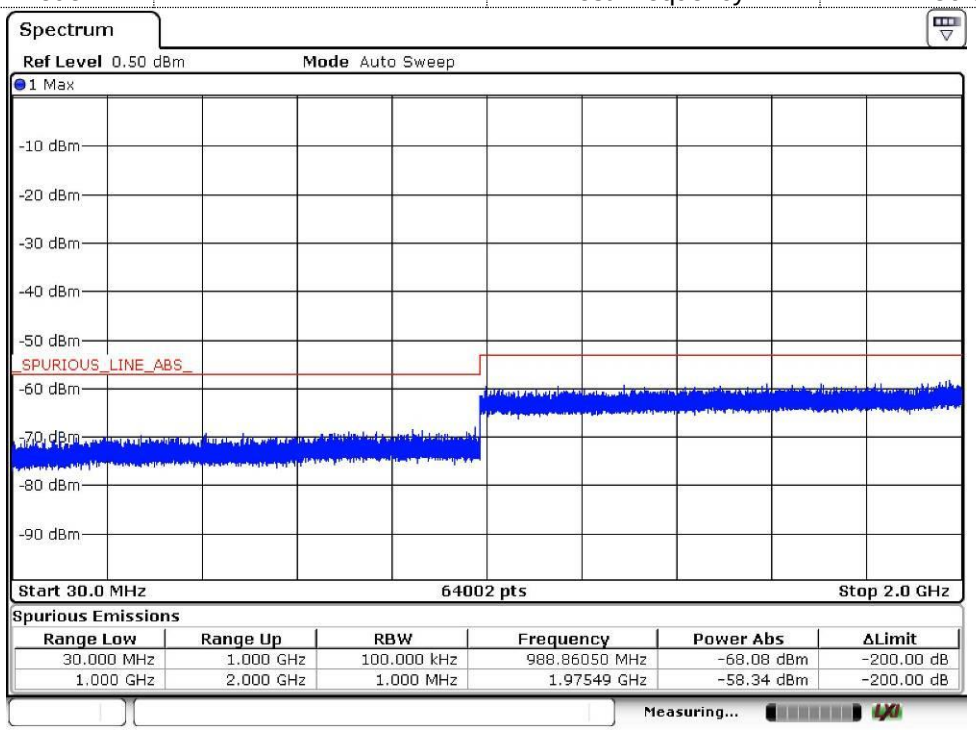
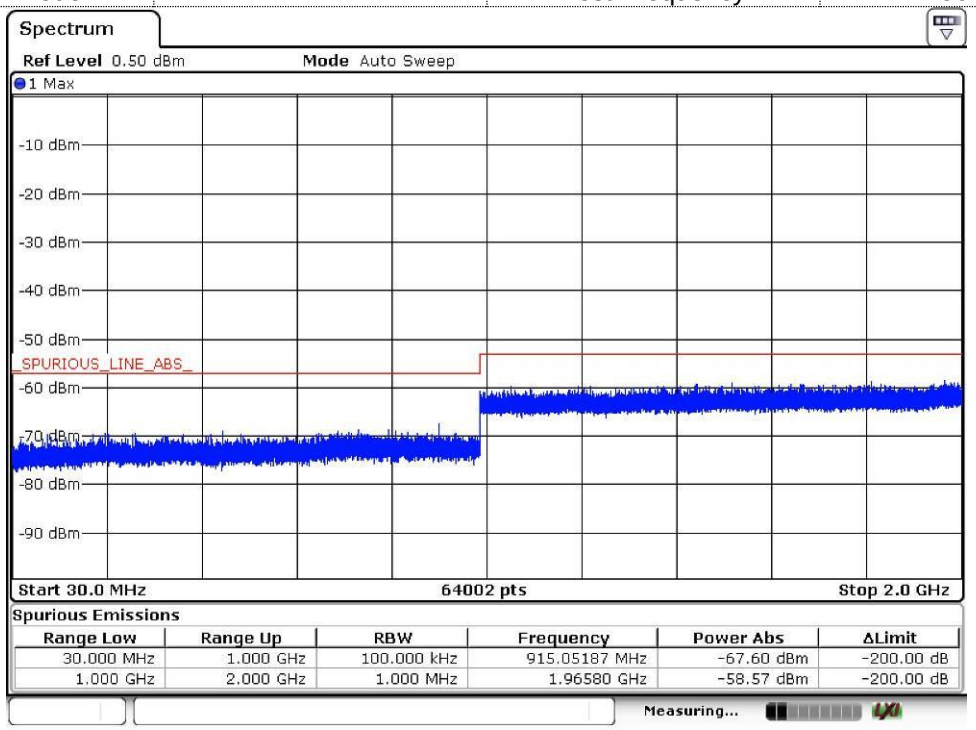
Test plot as follows:

Operation Mode	RX1	Test Frequency	156.05MHz



Operation Mode	RX1	Test Frequency	156.8MHz



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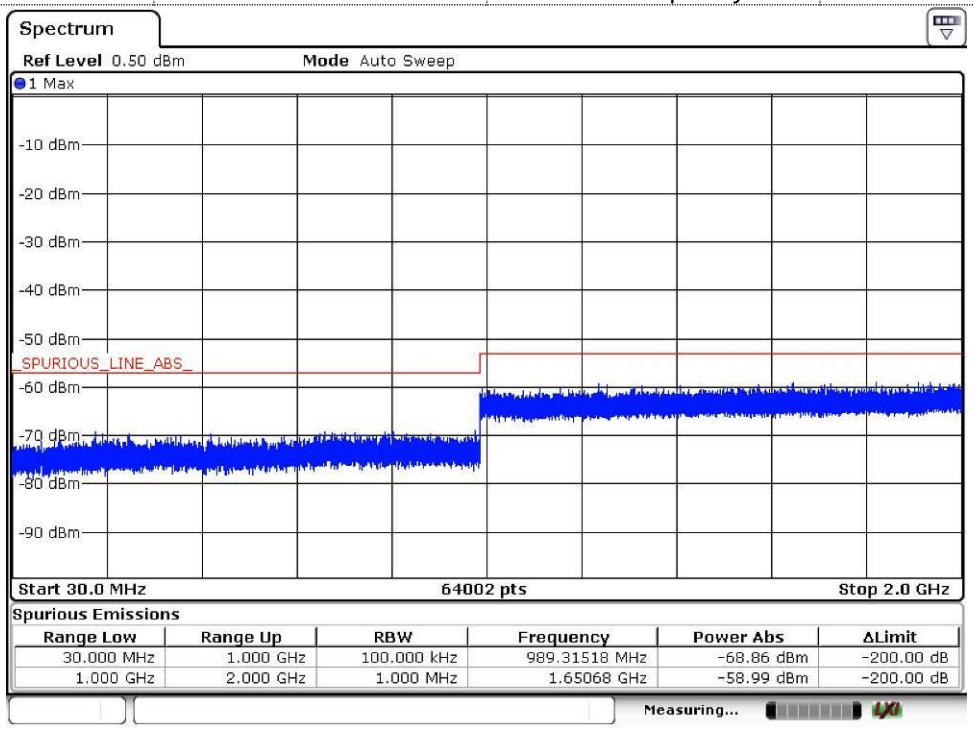
Operation Mode	RX1	Test Frequency	157.425MHz



THE END

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