Certification Test Report

FCC ID: AZ489FT4932
IC: 109U-89FT4932

FCC Rule Part: Part 95 Subpart A and Subpart B
ISED Canada Radio Standards Specification: RSS-210

Report Number: 17-2012.W06.1B

Applicant: Motorola Solutions Malaysia SDN BHD

Model(s): PMUE5066B

Test Begin Date: **February 8, 2017**
Test End Date: **April 11, 2017**

Report Issue Date: July 13, 2017

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER AT-1533

This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, ANSI, or any agency of the Federal Government.

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This report contains 30 pages

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1 GENERAL

1.1 Purpose

The purpose of this report is to demonstrate compliance with Part 95 Subpart A and Subpart B of the FCC's Code of Federal Regulations and Innovation, Science and Economic Development Canada Radio Standards Specifications RSS-210 for the tests documented herein.

1.2 Manufacturer Information

Motorola Solutions Malaysia SBD BHD
No. 2A, Medan Bayan Lepas, Bayan Lepas Technoplex Industrial Park
Mukim 12, S.W.D., 11900 Bayan Lepas
Penang, Malaysia

1.3 Product Description

The Motorola Solutions Malaysia SDN BHD model PMUE5066B is a FRS/GMRS analog FM Consumer Portable Two-Way Radio

Frequency of Operation:	462.55 MHz - 462.725 MHz & 467.5625 MHz - 467.7125 MHz
Antenna / Gain:	Helical Antenna / 2.15 dBi (0 dBd)
Channel Spacing:	12.5 kHz
Modulation	Analog FM
Number of Channels:	22
Power:	4.5 VDC (AAA Batteries)

Test Sample Serial Numbers:

RF Conducted Measurements	6904SW0005, 6904SW0010
Radiated Emissions	6904SW0007

Test Sample Condition: The EUT was in good condition without any physical damages.

1.4 Test Methodology

1.4.1 Configurations and Justification

The EUT was evaluated for radiated and RF conducted measurements. No significant differences were observed between the FRS and GMRS modes for the 462 MHz frequency range. The data provided is representative of both modes. Where applicable the most stringent limit was used.

For the radiated emissions evaluation, preliminary measurements were taken for the EUT set in three orthogonal orientations. The final measurements were collected using the orientation leading to the highest emissions.

RF conducted measurements were performed on samples modified to provide an RF connector at the antenna port. One of the RF conducted samples was modified to provide an additional input port for the for the tests requiring an audio input signal.

The equipment was also evaluated for unintentional emissions and the results are documented in a separate test report.

Test Software Power Setting: The power setting was not configurable

1.4.2 In-Band Testing Methodology

The EUT band of operation is provided in the table below.

CFR Title 47 Rule Part	Frequency Band of Operation (MHz)	Description
95	462.5625 – 462.7125	GMRS/FRS
95	467.5625 – 467.7125	FRS
95	462.55 – 462.725	GMRS

Based on the requirements set forth in accordance 47 CFR 2.1046-2.1057 as stated above, the methodology in selecting the places to test in the available bands of operation is outlined in the following table.

CFR Title 47 Rule Part	Frequency Band of Operation (MHz)	Location in the Range of Operation	Approx. Test Freq. (MHz)
95	462.55 – 462.725 / 462.5625 – 462.7125	Middle	462.6375
95	467.5625 – 467.7125	Middle	467.6375

1.5 Emission Designators

The PMUE5066B transmitter produces 1 distinct modulation format. The emissions designator for the modulation type used by the PMUE5066B transmitter as calculated by the manufacturer is as follows:

EMISSIONS DESIGNATORS: 9K84F3E

2 TEST FACILITIES

2.1 Location

Unless otherwise noted, the radiated and conducted emissions test sites are located at the following addresses.

TÜV SÜD America, Inc.
3998 FAU Blvd, Suite 310
Boca Raton, Florida 33431
Phone: (561) 961-5585
Fax: (561) 961-5587
http://www.tuv-sud-america.com

2.2 Laboratory Accreditations/Recognitions/Certifications

TÜV SÜD America, Inc. is accredited to ISO/IEC 17025 by ANSI-ASQ National Accreditation Board under their ANAB program and has been issued certificate number AT-1533 in recognition of this accreditation. Unless otherwise specified, all test methods described within this report are covered under the ISO/IEC 17025 scope of accreditation.

FCC Test Firm Registration #: 475089
Innovation, Science and Economic Development Canada Lab Code: 4175C

2.3 Radiated & Conducted Emissions Test Site Description

2.3.1 Semi-Anechoic Chamber Test Site

The EMC radiated test facility consists of an RF-shielded enclosure. The interior dimensions of the indoor semi-anechoic chamber are approximately 48 feet (14.6 m) long by 36 feet (10.8 m) wide by 24 feet (7.3 m) high and consist of rigid, 1/8 inch (0.32 cm) steel-clad, wood core modular panels with steel framing. In the shielded enclosure, the faces of the panels are galvanized and the chamber is self-supporting. 8-foot RF absorbing cones are installed on 4 walls and the ceiling. The steel-clad ground plane is covered with vinyl flooring.

The turntable is driven by pneumatic motor, which can support a 2000 lb. load. The turntable is flush with the chamber floor which it is connected to, around its circumference, with a continuous metallic loaded spring. An EMCO Model 1060 Multi-device controller controls the turntable position.

A pneumatic motor is used to control antenna polarizations and height relative to the ground. The height information is displayed on the control unit EMCO Model 1050.

The control room is an RF shielded enclosure attached to the semi-anechoic chamber with two bulkhead panels for connecting RF, and control cables. The dimension of the room is 7.3 m x 4.9 m x 3 m high and the entrance doors of both control and conducted rooms are 3 feet (0.91 m) by 7 feet (2.13 m).

A diagram of the Semi-Anechoic Chamber Test Site is shown in Figure 2.3.1-1 below:

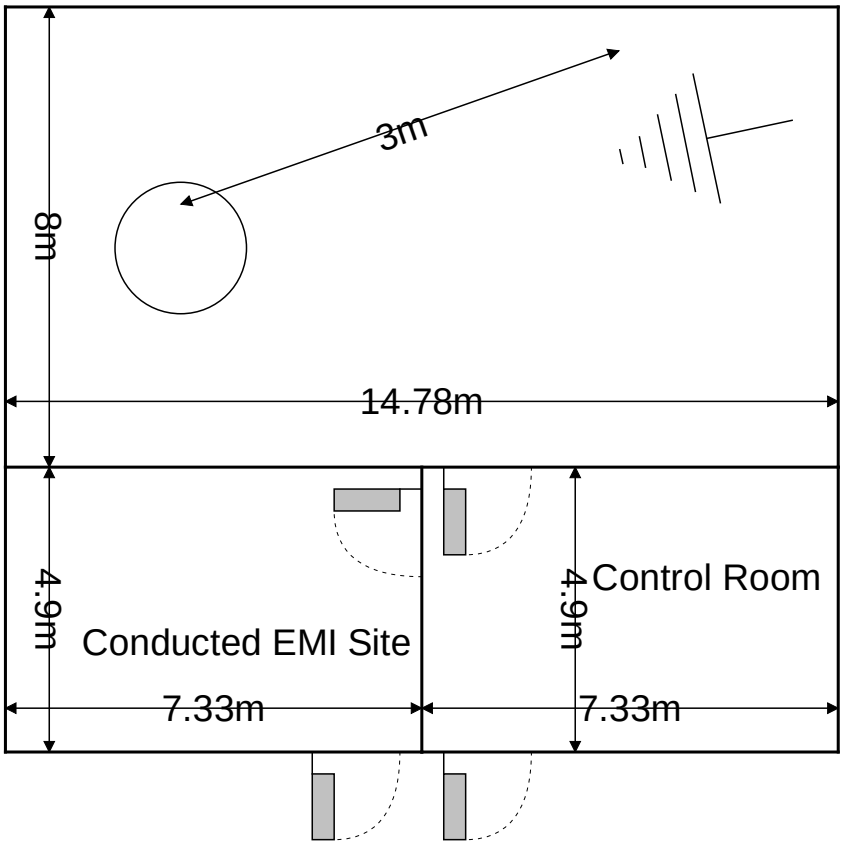

Figure 2.3.1-1: Semi-Anechoic Chamber Test Site

2.3.2 Conducted Emissions Test Site Description

The dimensions of the shielded conducted room are 7.3 x 4.9 x 3 m^3. The power line conducted emission site includes two LISNs: a Solar Model 8028-50 50 Ω/50 µH and an EMCO Model 3825/2R, which are installed as shown in the figure below. For evaluations requiring 230 V, 50 Hz AC input, a Polarad LISN (S/N 879341/048) is used in conjunction with a California Instruments signal generator Model 2001RP-OP1.

A diagram of the room is shown below in figure 2.3.2-1:

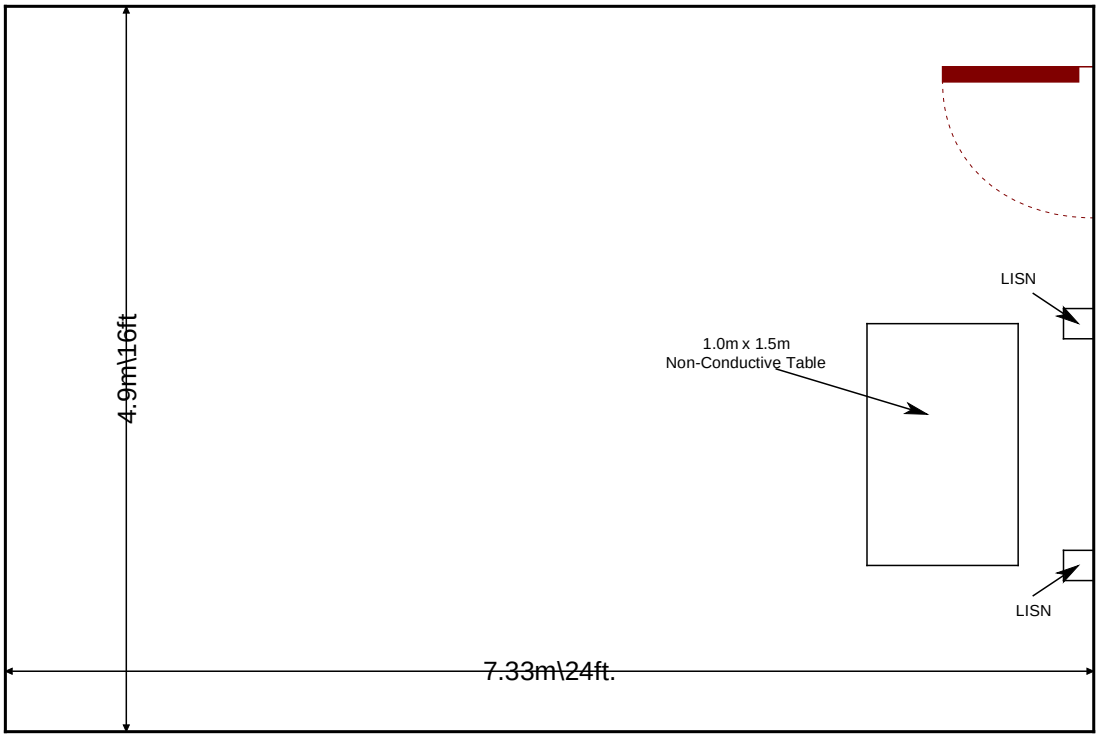

Figure 2.3.2-1: AC Mains Conducted EMI Site

3 APPLICABLE STANDARD REFERENCES

The following standards were used:

1 - ANSI C63.4-2014: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9 kHz to 40 GHz.
2 - US Code of Federal Regulations (CFR): Title 47, Part 2, Subpart J: Equipment Authorization Procedures - 2017
3 - US Code of Federal Regulations (CFR): Title 47, Part 95 Subpart A: General Mobile Radio Service (GMRS) – 2017
4 - US Code of Federal Regulations (CFR): Title 47, Part 95 Subpart B: Family Radio Service (FRS) – 2017
5 – TIA-603-C: Land Mobile FM or PM - Communications Equipment - Measurement and Performance Standards – 2004
6 – ANSI C63.26: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services – December 2015
7 – Innovation, Science and Economic Development Canada Radio Standards Specification: RSS-210 — Licence-Exempt Radio Apparatus: Category I Equipment, Issue 9, August 2016
8 – Innovation, Science and Economic Development Canada Radio Standards Specification: RSS-GEN – General Requirements for Compliance of Radio Apparatus, Issue 4, November 2014.

4 LIST OF TEST EQUIPMENT

The calibration interval of test equipment is annually or the manufacturer's recommendations. Where the calibration interval deviates from the annual cycle based on the instrument manufacturer's recommendations, it shall be stated below.

Table 4-1: TÜV SÜD America Test Equipment

AssetID	Manufacturer	Model #	Equipment Type	Serial #	Last Calibration Date	Calibration Due Date
283	Rohde & Schwarz	FSP40	Spectrum Analyzers	1000033	7/21/2016	7/21/2018
469	Hewlett Packard	HP8470B	RF Detector	1853	12/2/2016	12/2/2017
523	Agilent	E7405	Spectrum Analyzers	MY45103293	12/9/2016	12/9/2018
776	Hewlett Packard	8903B	Analyzers	3011A08564	NCR	NCR
2002	EMCO	3108	Antennas	2147	11/19/2015	11/19/2017
2003	EMCO	3108	Antennas	2148	2/29/2016	2/28/2018
2004	EMCO	3146	Antennas	1385	11/19/2015	11/19/2017
2005	FAU EMI R&D Lab	Lazarus	Antennas	EM001	2/16/2016	2/16/2018
2006	EMCO	3115	Antennas	2573	4/14/2015	4/14/2017
2007	EMCO	3115	Antennas	2419	1/28/2016	1/28/2018
2011	Hewlett-Packard	HP 8447D	Amplifiers	2443A03952	11/2/2016	11/2/2017
2031	Hewlett Packard	8647A	Signal Generators	3819UD1929	NCR	NCR
2061	Weinschel Engineering	1506A	Power Splitter	FW183	11/1/2016	11/1/2017
2073	Mini Circuits	NHP-800	Filter	10247	12/1/2016	12/1/2017
2075	Hewlett Packard	8495B	Attenuators	2626A11012	11/1/2016	11/1/2017
2080	Weinschel Engineering	1506A	Power Splitter	FW202	11/1/2016	11/1/2017
2086	Merrimac	FAN-6-10K	Attenuators	23148-83-1	11/2/2016	11/2/2017
2089	Agilent Technologies, Inc.	83017A	Amplifiers	3123A00214	12/2/2016	12/2/2017
2093	Merrimac	FAN-6-10K	Attenuators	23148-83-18	11/2/2016	11/2/2017
2094	Mini Circuits	SHP-1000+	Filter	R UU27401137	3/25/2016	3/25/2017
2094	Mini Circuits	SHP-1000+	Filter	R UU27401137	2/27/2017	2/27/2018
2095	ETS Lindgren	TILE4! - Version 4.2.A	Software	85242	NCR	NCR
2098	Agilent Technologies	8901B	Modulation Analyzer	2806A01599	6/29/2016	6/29/2017
2102	Test Equity	115	Environmental Chamber	150892	NCR	NCR
2103	Tektronix	TDS7154B	Oscilloscope	B010024	7/22/2016	7/22/2017
3013	Agilent	53132A	Meters	MY40007729	1/11/2017	1/11/2018
2112	Teledyne Storm Products	921-0101-036	Cables	12-06-698	11/2/2016	11/2/2017
2121	ACS Boca	Radiated Cable Set	Cable Set	2121	8/1/2016	8/1/2017
2122	ACS Boca	Radiated Cable Set	Cable Set	2122	8/4/2016	8/4/2017
2124	Fluke	51II	Digital Thermometer	97060019	5/31/2016	5/31/2017
RE563	Hewlett Packard	8673D	Signal Generators	3034A01078	4/8/2016	4/8/2018
RE587	Fairview Microwave Inc.	SA3N511-15	Attenuators	RE587	3/25/2016	3/25/2017
RE587	Fairview Microwave Inc.	SA3N511-15	Attenuators	RE587	2/27/2017	2/27/2018

Notes:
NCR = No Calibration Required

5 SUPPORT EQUIPMENT

Table 5-1: Support Equipment

Item #	Type Device	Manufacturer	Model/Part #	Serial #
1	EUT	Motorola Solutions Malaysia SDN BHD	PMUE5066B	6904SW0007

Table 5-2: Cable Description

Cable #	Cable Type	Length	Shield	Termination
	The EUT is Standalone without any provision for connection to accessory equipment.			

6 EQUIPMENT UNDER TEST SETUP AND BLOCK DIAGRAM

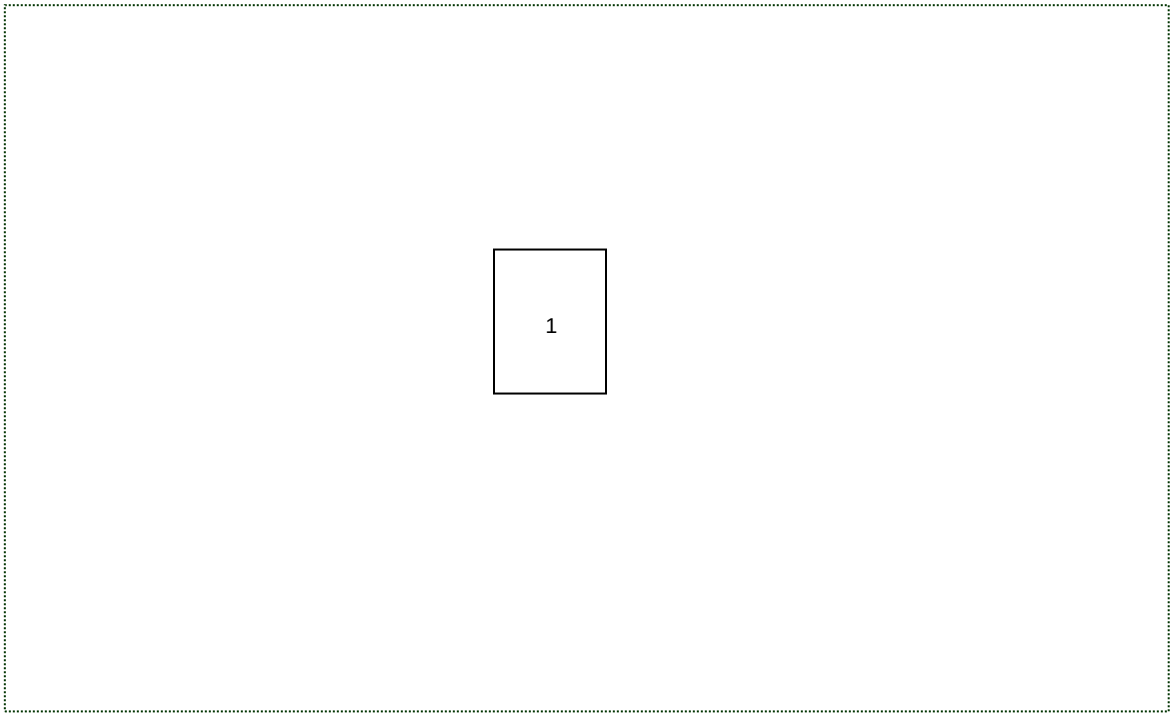

Figure 6-1: EUT Test Setup

7 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

Table 7-1: Test Results Summary

Test Parameter	Test Summary
RF Power Output	Pass
Occupied Bandwidth (Emissions Limits)	Pass
Spurious Emissions at Antenna Terminals	Pass
Field Strength of Spurious Emissions	Pass
Frequency Stability	Pass
Transient Frequency Behavior	Pass
Modulation Limiting	Pass
Audio Frequency Response	Pass
Audio Low Pass Filter Response	N.T.

7.1 RF Power Output

7.1.1 Measurement Procedure

The RF output of the equipment under test was directly connected to the input of the Spectrum Analyzer through 25 dB of passive attenuation. The resolution and video bandwidths of the spectrum analyzer were set at sufficient levels, >> signal bandwidth, to produce accurate results. The internal correction factors of the spectrum analyzer were employed to correct for any cable or attenuator losses. Results are shown below.

7.1.2 Measurement Results

Performed by: Thierry Jean-Charles

FCC Section 95.639(a), 95.639(d) / ISED Canada RSS-210 E.2.4, E.3.5

Table 7.1.2-1: Peak Output Power

Frequency (MHz)	Output Power (dBm)
462.6375	25.88
467.6375	25.80

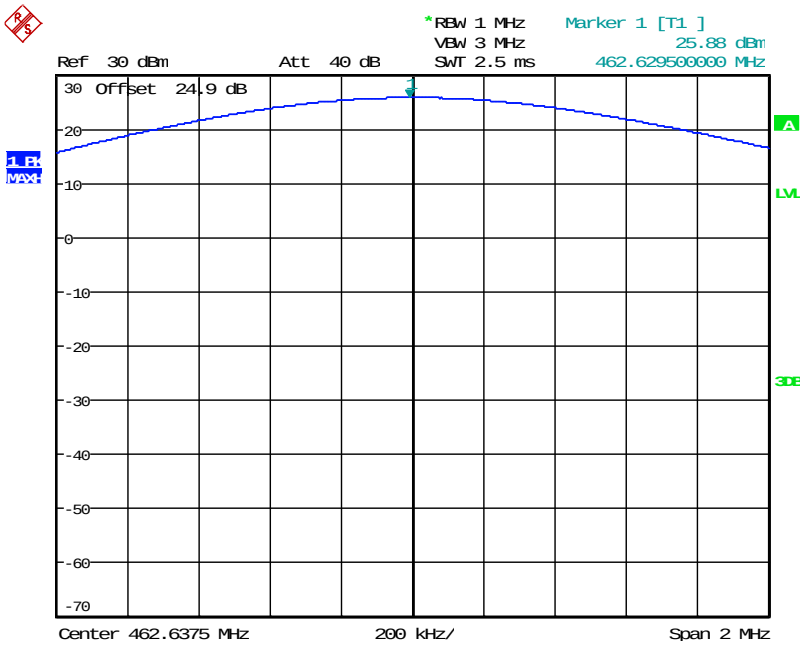

Figure 7.1.2-1: Peak Output Power – 462.6375 MHz

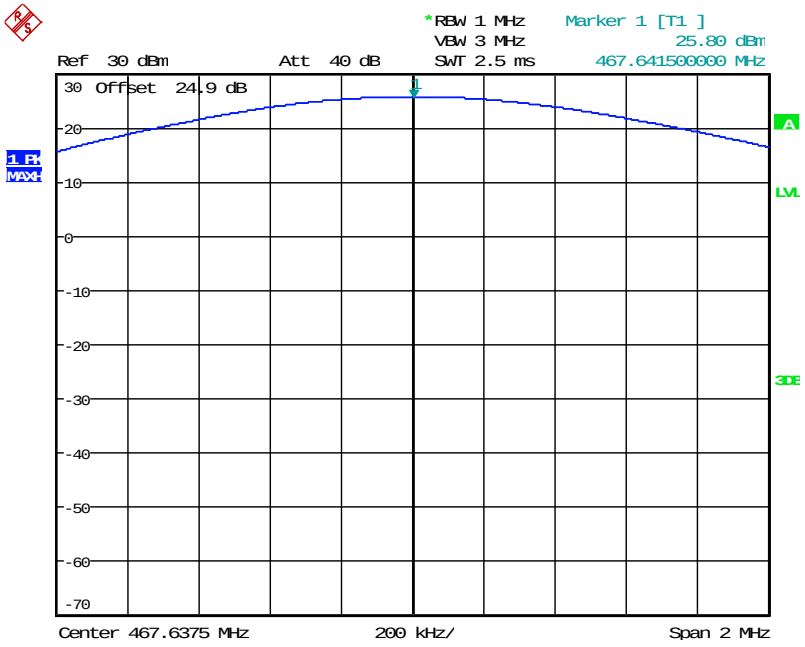

Figure 7.1.2-2: Peak Output Power – 467.6375 MHz

7.2 Occupied Bandwidth (Emission Limits)

7.2.1 Measurement Procedure

26 dB Bandwidth

The RF output of the equipment under test was directly connected to the input of the spectrum analyzer through 25 dB of passive attenuation. The spectrum analyzer center frequency was set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts. The nominal IF filter 3 dB bandwidth (RBW) was set in the range of 1% to 5% of the anticipated OBW, and the VBW to ≥ 3 × RBW. The bandwidth was measured using the delta marker function of the spectrum analyzer set 26 dB down from the maximum peak signal and a peak detector.

99% Bandwidth

The RF output of the equipment under test was directly connected to the input of the Spectrum Analyzer through 25 dB of passive attenuation. The spectrum analyzer center frequency was set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts. The nominal IF filter 3 dB bandwidth (RBW) was set in the range of 1% to 5% of the anticipated OBW, and the VBW to ≥ 3 × RBW. The bandwidth was measured using the bandwidth equipment function of the spectrum analyzer and a peak detector.

7.2.2 Measurement Results

Performed by: Thierry Jean-Charles

FCC Section 95.633(a), 95.633(c); ISED Canada RSS-210 Section E.2.3, E.3.4

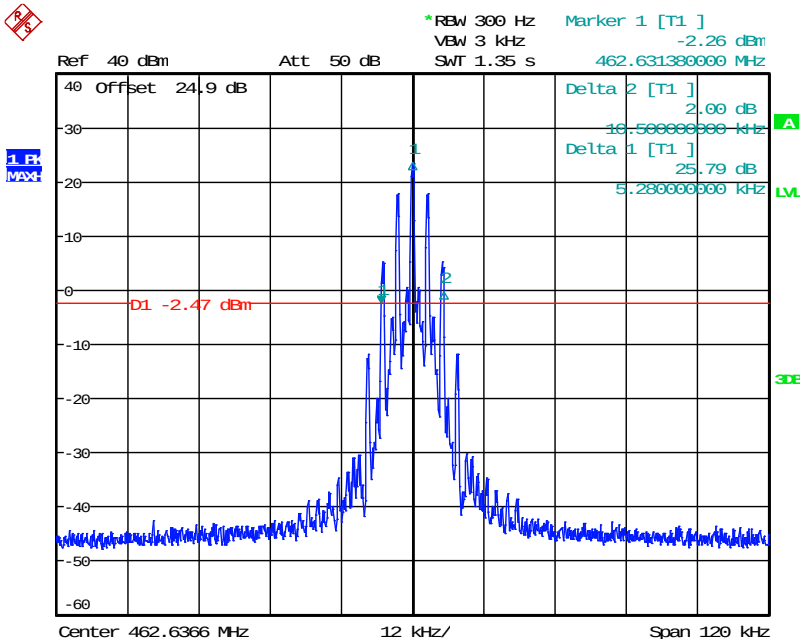

Figure 7.2.2-1: 26 dB Bandwidth 462.6375 MHz

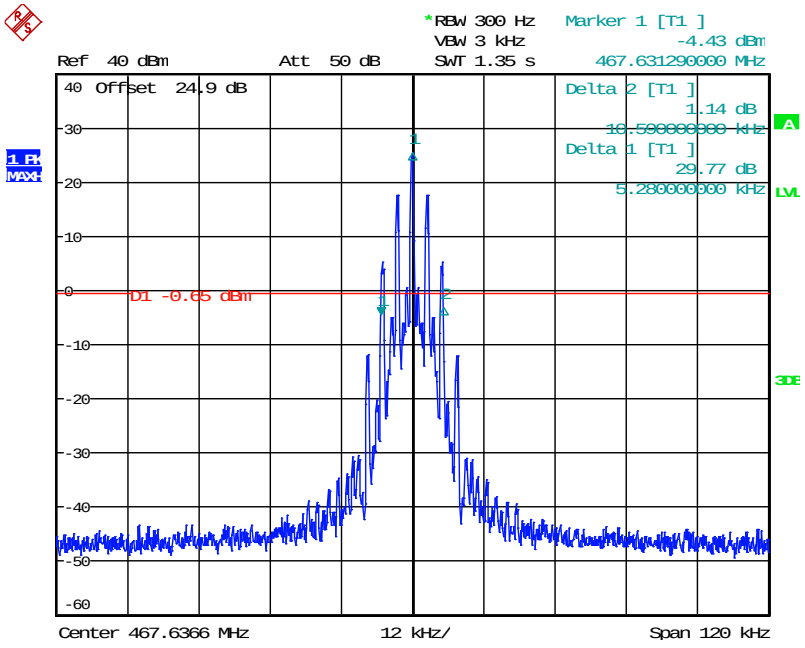

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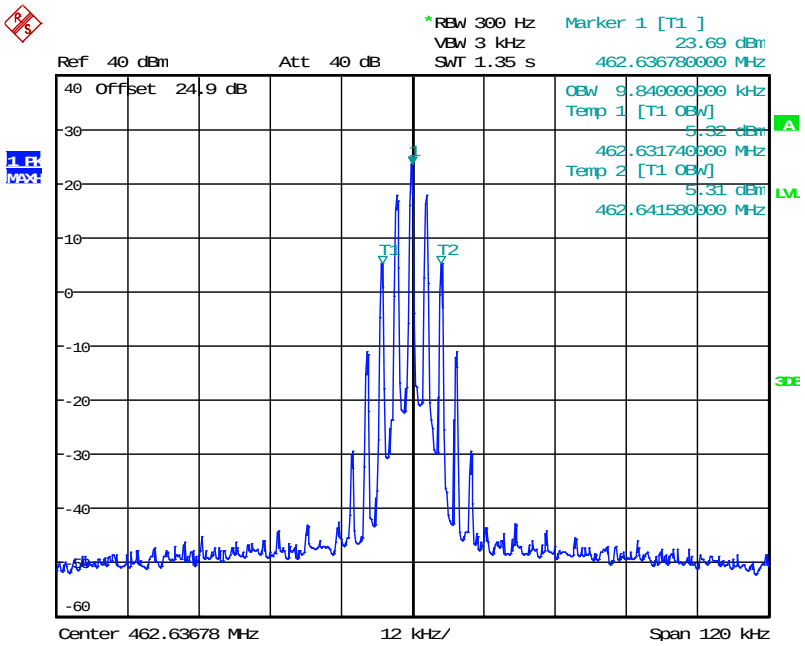
Figure 7.2.2-2: 26 dB Bandwidth 467.6375 MHz



Date: 7.MAR.2017 12:34:18

Figure 7.2.2-3: 99% Bandwidth 462.6375 MHz

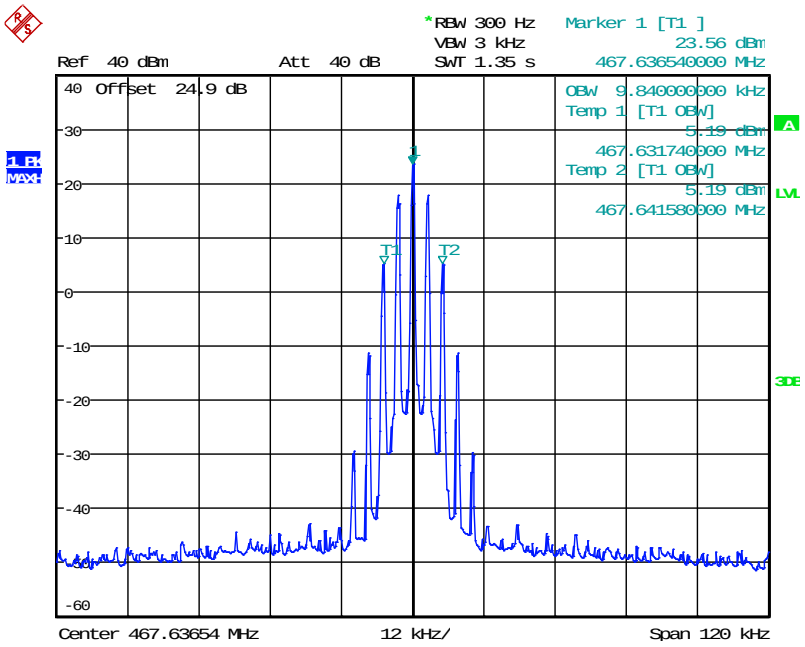


Figure 7.2.2-4: 99% Bandwidth 467.6375 MHz

7.3 Emission Limits

7.3.1 Measurement Procedure

The RF output of the equipment under test was directly connected to the input of the Spectrum Analyzer through 25 dB of passive attenuation. The spectrum analyzer resolution and video bandwidths were set to 300 Hz and 3000 Hz respectively. The internal correction factors of the spectrum analyzer were employed to correct for any cable or attenuator losses. Results of the test are shown below for all modes of operation.

7.3.2 Measurement Results

Performed by: Thierry Jean-Charles

FCC Section 95.635(b); ISED Canada RSS-210 E.2.5, E.3.6

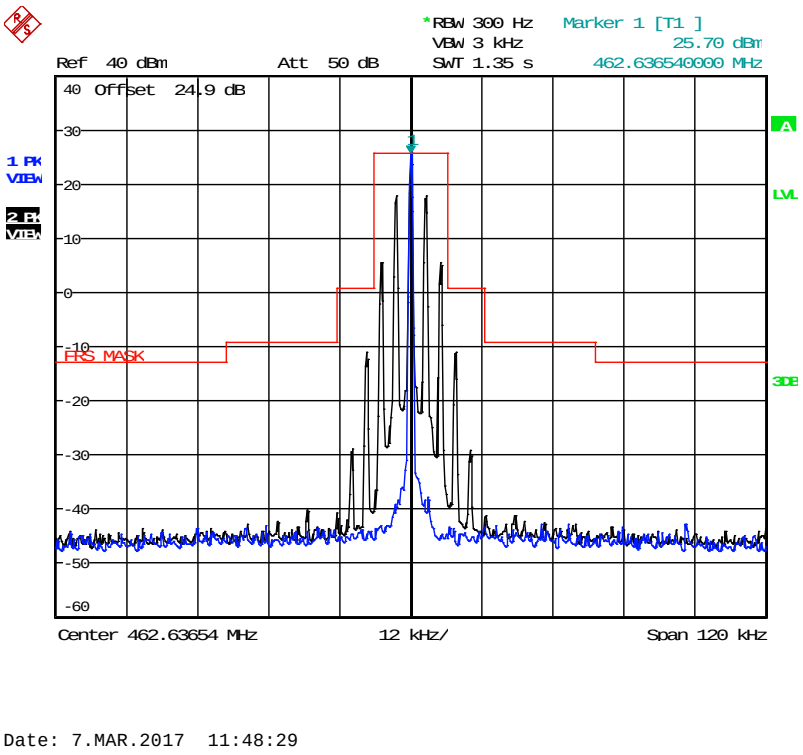


Figure 7.3.2-1: Emissions Limits 462.6375 MHz - FRS

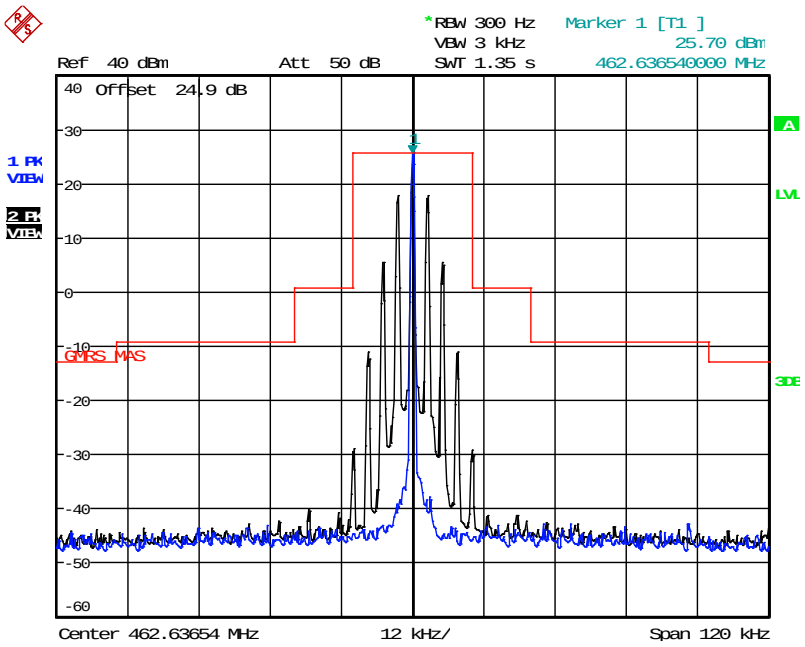


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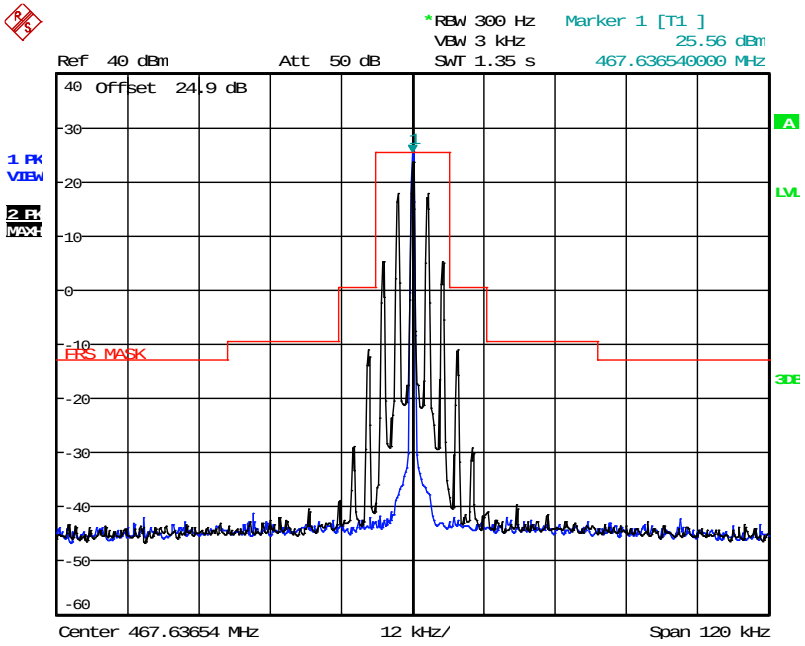
Figure 7.3.2-2: Emissions Limits 462.6375 MHz - GMRS



Date: 7.MAR.2017 11:24:53

Figure 7.3.2-3: Emissions Limits 467.6375 MHz - FRS

7.4 Spurious Emissions at Antenna Terminals

7.4.1 Measurement Procedure

The RF output of the equipment under test was directly connected to the input of the Spectrum Analyzer through 25 dB of passive attenuation. The spectrum analyzer resolution bandwidth was set to 100 kHz below 1000 MHz and 1 MHz above 1000 MHz. The internal correction factors of the spectrum analyzer were employed to correct for any cable, attenuator or filter losses. The spectrum was investigated in accordance to CFR 47 Part 2.1057. Results are shown below.

7.4.2 Measurement Results

Performed by: Thierry Jean-Charles

FCC Section 95.635 (b); ISED Canada RSS-210 E.2.5, E.3.6

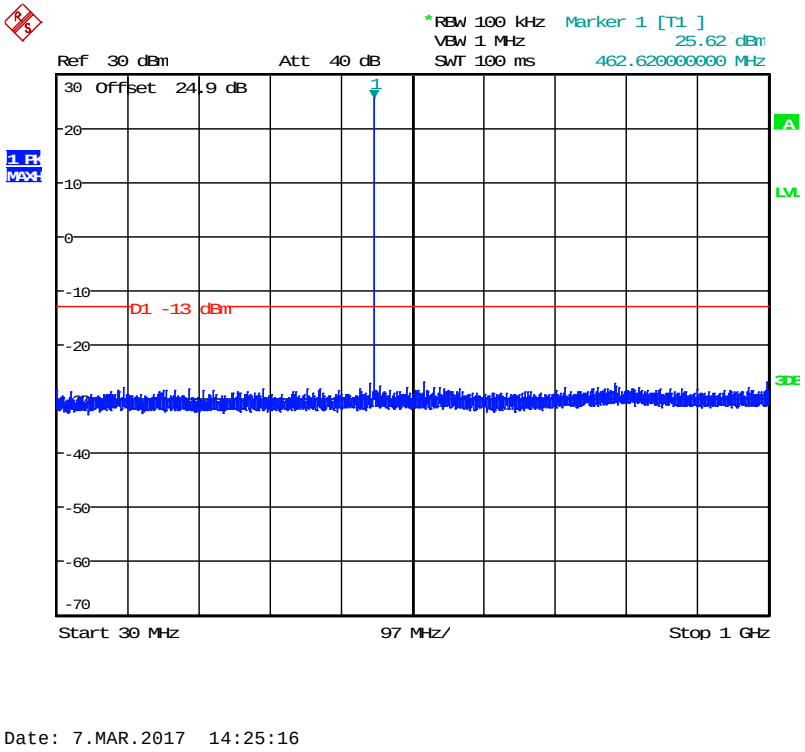


Figure 7.4.2-1 : Spurious Emissions 462.6375 MHz – 30MHz to 1GHz

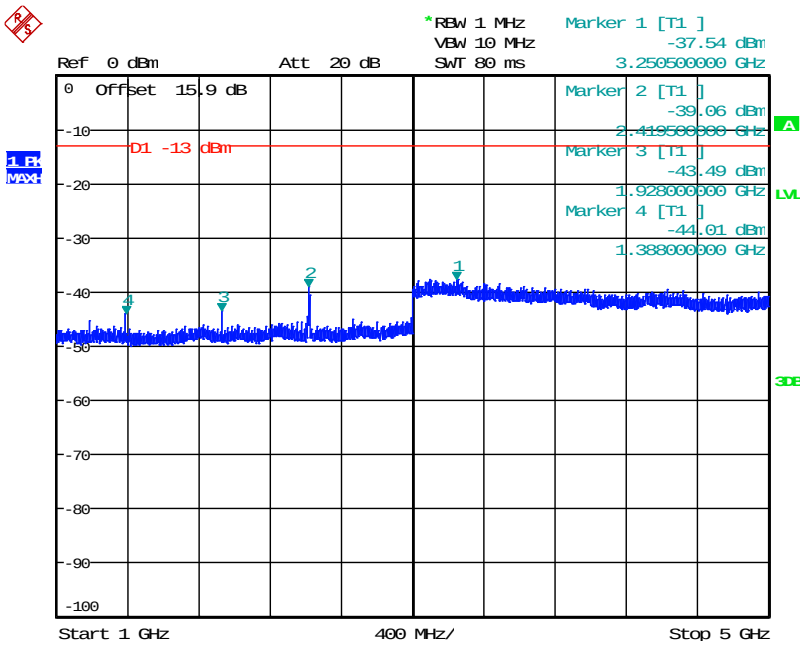


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Figure 7.4.2-2: Spurious Emissions 462.6375 MHz – 1GHz to 5GHz

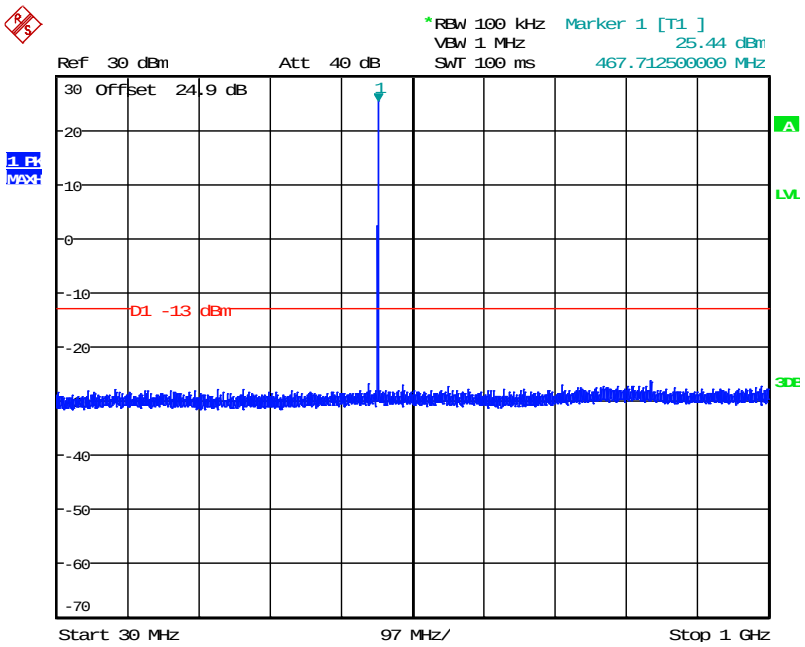

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Figure 7.4.2-3 : Spurious Emissions 467.6375 MHz – 30MHz to 1GHz

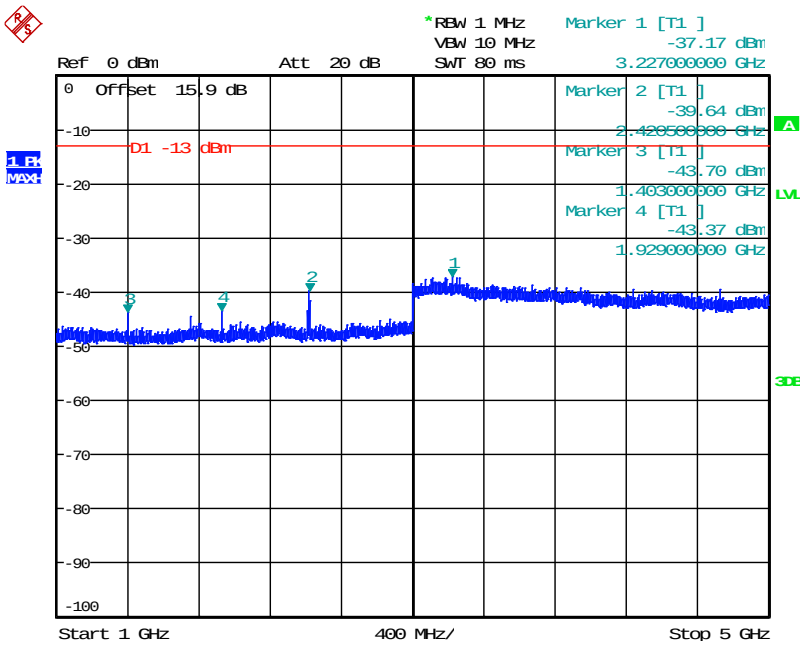

Figure 7.4.2-4: Spurious Emissions 4567.6375 MHz – 1GHz to 5GHz

7.5 Field Strength of Spurious Emissions

7.5.1 Measurement Procedure

The equipment under test is placed in the Semi-Anechoic Chamber (described in section 2.3.1) on a RF transparent table at the turntable center. For each spurious emission, the antenna mast is raised and lowered from one (1) to four (4) meters and the turntable is rotated 360º and the maximum reading on the spectrum analyzer is recorded. This was repeated for both horizontal and vertical polarizations of the receive antenna.

The equipment under test is then replaced with a substitution antenna fed by a signal generator. The signal generator's frequency is set to that of the spurious emission recorded from the equipment under test. The antenna mast is raised and lowered from one (1) to four (4) meters to obtain a maximum reading on the spectrum analyzer. The output of the signal generator is then adjusted until the reading on the spectrum analyzer matches that obtained from the equipment under test. The signal generator level is recorded. The power in dBm of each spurious emission is calculated by correcting the signal generator level for the cable loss and gain of the substitution antenna referenced to a dipole. The spectrum was investigated in accordance to CFR 47 Part 2.1057.

The magnitude of all spurious emissions not reported were attenuated below the noise floor of the measurement system and therefore not specified in this report. Results are shown below.

7.5.2 Measurement Results

Performed by: Jean N. Rene

FCC Section 95.635; ISED Canada RSS-210 E.2.5, E.3.6

Table 7.5.2-1: Field Strength of Spurious Emissions – 462.6375 MHz

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
925.275	-60.87	H	-58.57	-13.00	45.57
1387.9125	-54.88	H	-61.75	-13.00	48.75
1850.55	-58.39	H	-63.25	-13.00	50.25
2313.1875	-59.83	H	-67.18	-13.00	54.18
2775.825	-60.67	H	-65.56	-13.00	52.56
3238.4625	-61.79	H	-65.68	-13.00	52.68
3701.1	-55.88	H	-49.63	-13.00	36.63
4163.7375	-62.07	H	-59.82	-13.00	46.82
4626.375	-62.32	H	-57.05	-13.00	44.05
925.275	-63.28	V	-62.06	-13.00	49.06
1387.9125	-56.39	V	-64.66	-13.00	51.66
1850.55	-58.57	V	-63.32	-13.00	50.32
2313.1875	-59.97	V	-65.53	-13.00	52.53
3238.4625	-61.25	V	-64.66	-13.00	51.66
3701.1	-58.02	V	-53.72	-13.00	40.72
4163.7375	-60.76	V	-56.34	-13.00	43.34
4626.375	-58.98	V	-51.87	-13.00	38.87
925.275	-63.28	V	-62.06	-13.00	49.06

NOTE: All frequencies not listed were below the noise floor of the spectrum analyzer.

Table 7.5.2-2: Field Strength of Spurious Emissions – 467.6375 MHz

Frequency (MHz)	Spectrum Analyzer Level (dBm)	Antenna Polarity (H/V)	Spurious ERP (dBm)	Limit (dBm)	Margin (dB)
935.275	-65.71	H	-62.28	-13.00	49.28
1402.9125	-54.92	H	-61.37	-13.00	48.37
1870.55	-57.45	H	-62.75	-13.00	49.75
2338.1875	-59.39	H	-66.12	-13.00	53.12
2805.825	-60.00	H	-65.57	-13.00	52.57
3273.4625	-60.31	H	-62.38	-13.00	49.38
3741.1	-56.25	H	-50.07	-13.00	37.07
4208.7375	-61.12	H	-56.77	-13.00	43.77
4676.375	-62.49	H	-57.01	-13.00	44.01
935.275	-68.08	V	-64.67	-13.00	51.67
1402.9125	-56.87	V	-64.90	-13.00	51.90
1870.55	-58.12	V	-64.25	-13.00	51.25
2338.1875	-59.38	V	-65.63	-13.00	52.63
3273.4625	-60.71	V	-62.85	-13.00	49.85
3741.1	-57.69	V	-51.58	-13.00	38.58
4208.7375	-60.78	V	-55.64	-13.00	42.64
4676.375	-60.74	V	-54.00	-13.00	41.00
935.275	-68.08	V	-64.67	-13.00	51.67

NOTE: All frequencies not listed were below the noise floor of the spectrum analyzer.

7.6 Frequency Stability

7.6.1 Measurement Procedure

The equipment under test is placed inside an environmental chamber. The RF output is directly coupled to the input of the measurement equipment and a power supply is attached to the primary supply voltage.

Frequency measurements were made at the extremes of the of temperature range -30º C to +50º C and at intervals of 10º C at normal supply voltage. A period of time sufficient to stabilize all components of the equipment was allowed at each frequency measurement. At a temperature 20º C the measurements were performed at the nominal and the end point voltages. The maximum variation of frequency was recorded.

7.6.2 Measurement Results

Performed by: Thierry Jean-Charles

FCC Section 95.621, 95.626 / ISED Canada RSS-210 E.2.6, E.3.7

Frequency Stability

Frequency (MHz): 462.6375
Deviation Limit (PPM): 2.5

Temperature	Frequency	Frequency Error	Voltage	Voltage
C	MHz	(PPM)	(%)	(VDC)
-30 C	**462.636466**	**-2.235**	100%	4.50
-20 C	**462.637283**	**-0.469**	100%	4.50
-10 C	**462.637455**	**-0.097**	100%	4.50
0 C	**462.637542**	**0.091**	100%	4.50
10 C	**462.637366**	**-0.290**	100%	4.50
20 C	**462.636732**	**-1.660**	100%	4.50
30 C	**462.636382**	**-2.417**	100%	4.50
40 C	**462.636717**	**-1.692**	100%	4.50
50 C	**462.636967**	**-1.152**	100%	4.50
20 C	**462.636944**	**-1.202**	Endpoint	3.50

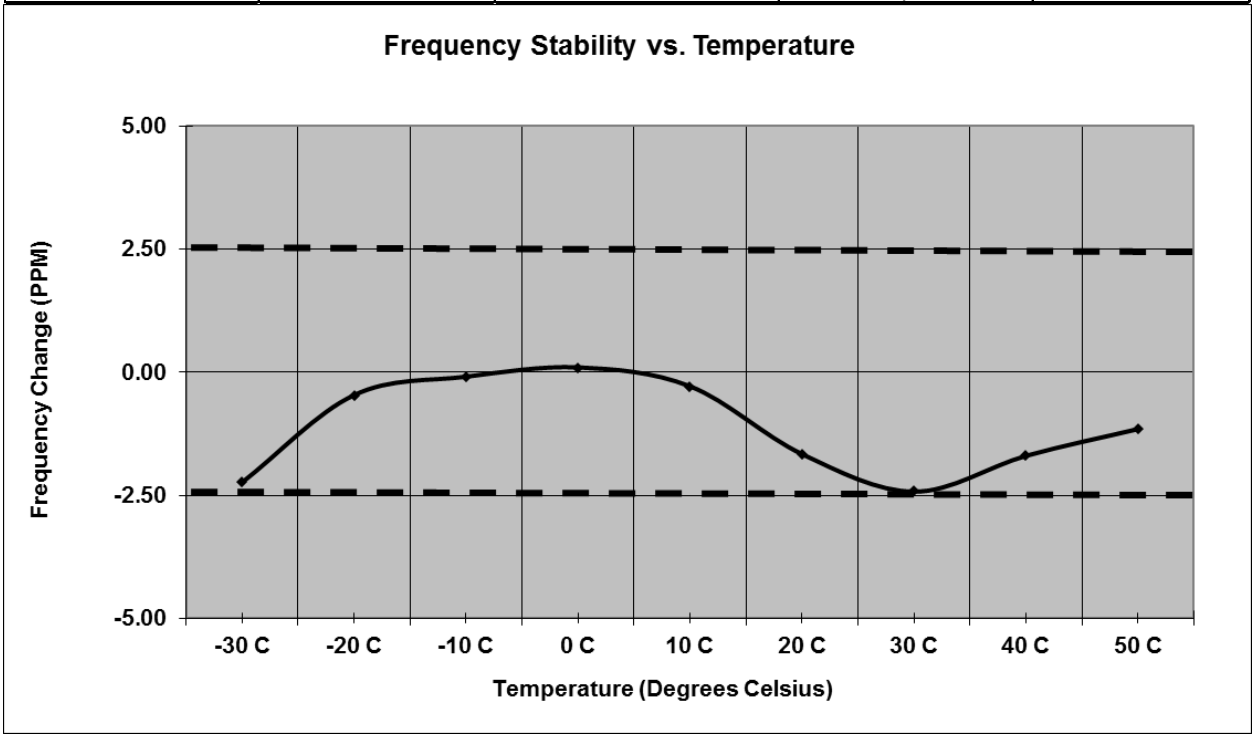

Figure 7.6.2-1: Frequency Stability – 462.6375 MHz

Frequency Stability

Frequency (MHz): 467.6375

Deviation Limit (PPM): 2.5

Temperature	Frequency	Frequency Error	Voltage	Voltage
C	MHz	(PPM)	(%)	(VDC)
-30 C	**467.636430**	**-2.288**	100%	4.50
-20 C	**467.636778**	**-1.544**	100%	4.50
-10 C	**467.637380**	**-0.257**	100%	4.50
0 C	**467.637518**	**0.038**	100%	4.50
10 C	**467.637287**	**-0.455**	100%	4.50
20 C	**467.636671**	**-1.773**	100%	4.50
30 C	**467.636350**	**-2.459**	100%	4.50
40 C	**467.636674**	**-1.766**	100%	4.50
50 C	**467.637219**	**-0.601**	100%	4.50
20 C	**467.636885**	**-1.315**	End Point	3.50

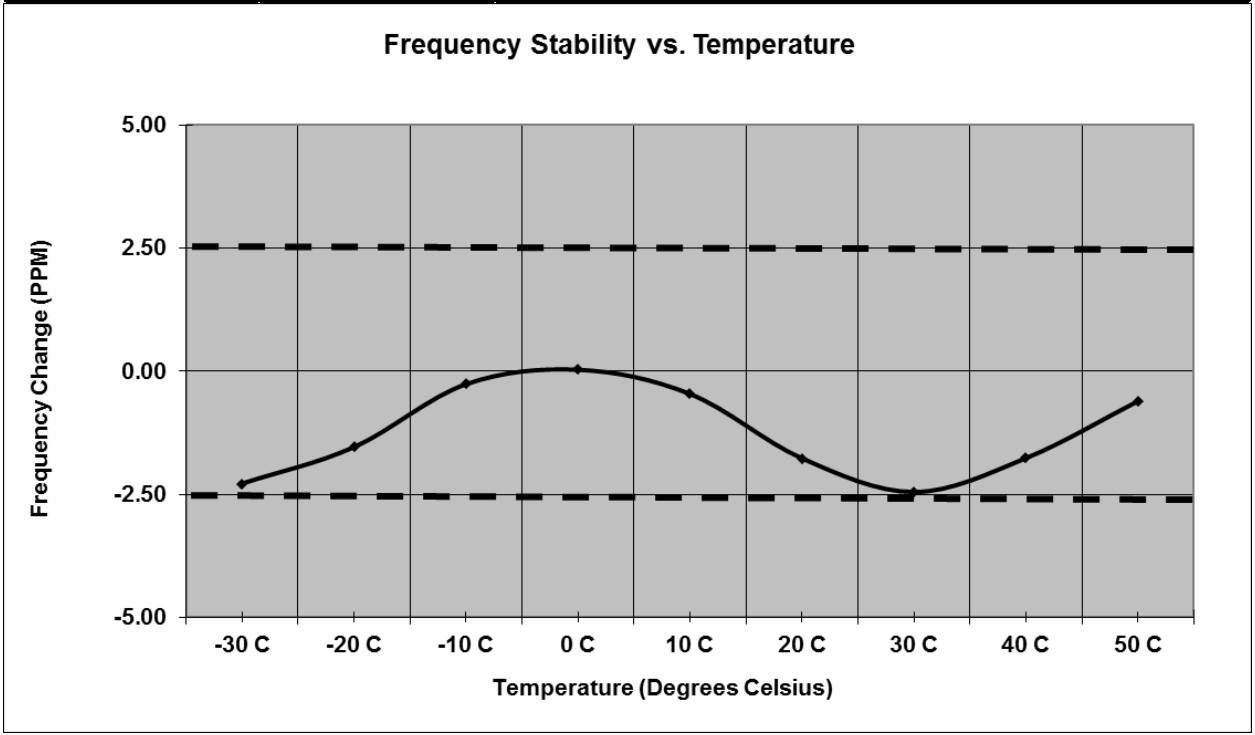

Figure 7.6.2-2: Frequency Stability – 467.6375 MHz

7.7 Modulation Limiting

7.7.1 Measurement Procedure

The measurements were performed using a test receiver. The transmitter was set for full rated system deviation. The test receiver audio bandwidth was set for ≤ 0.25 Hz to ≥ 15000 Hz with the de-emphasis function off. A 1000 Hz modulating signal at 60% of the full rated system deviation was applied to the transmitter. The level of the audio generator was varied in 5 dB increment and the peak positive and negative deviation was recorded.

7.7.2 Measurement Results

Performed by: Thierry Jean-Charles

FCC Section 95.637; ISED Canada RSS-210 E.2.2, E.3.2

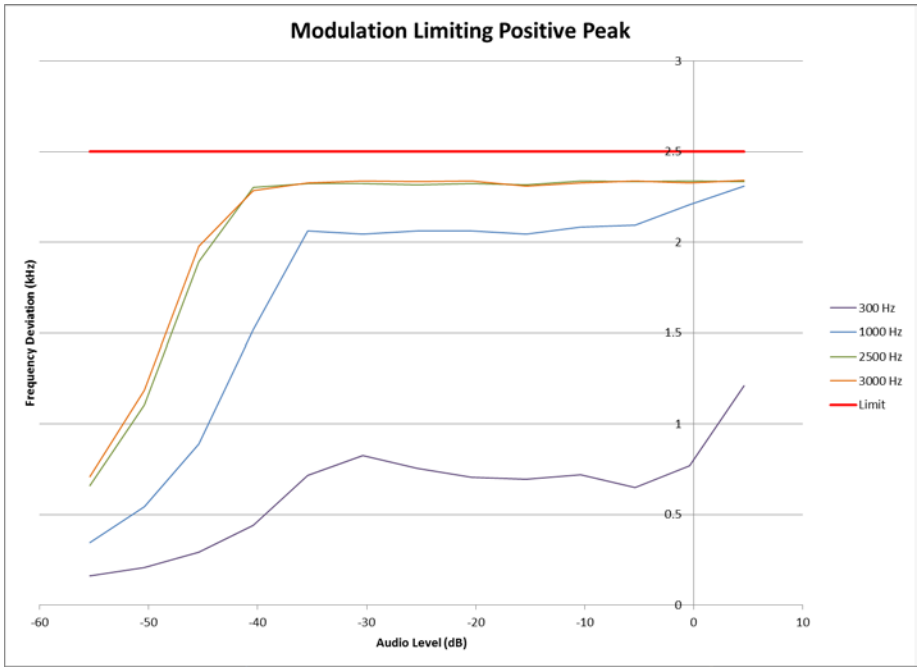

Figure 7.7.2-1: Modulation Limiting – Positive Peak

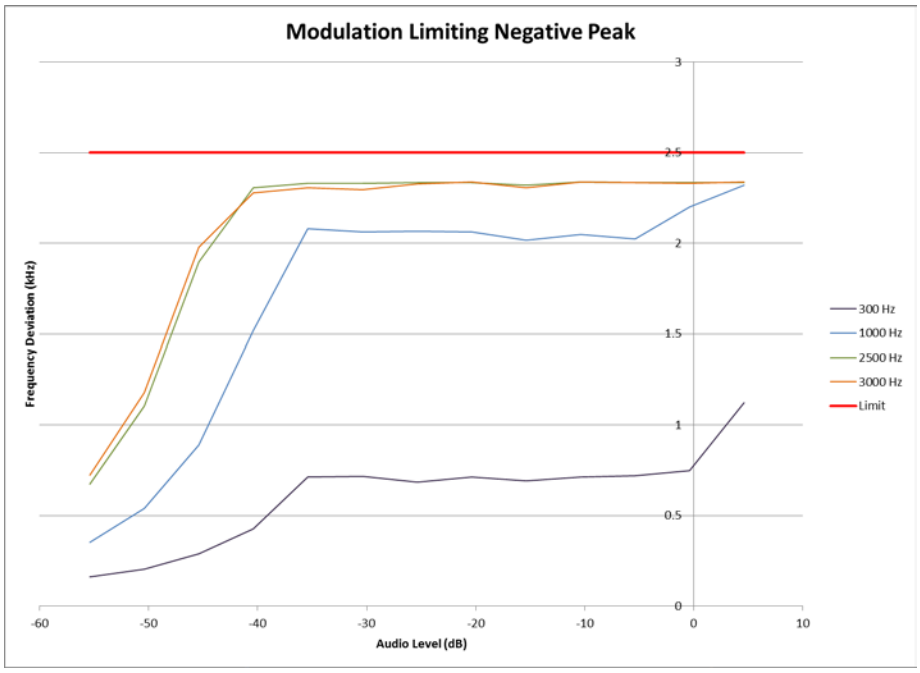

Figure 7.7.2-2: Modulation Limiting – Negative Peak

7.8 Audio Frequency Response

7.8.1 Measurement Procedure

The measurements were performed using a test receiver. The receiver audio bandwidth was set for ≤ 0.25 Hz to ≥ 15000 Hz with the de-emphasis function off. A 1000 Hz modulating signal at 20% of the full rated system deviation was applied to the transmitter. The receiver was set to measure RMS deviation positive and negative deviation of the desired test frequency between 300 Hz and 3000 Hz was recorded.

7.8.2 Measurement Results

Performed by: Thierry Jean-Charles

FCC Section 95.637; ISED Canada RSS-210 E.2.2, E.3.2

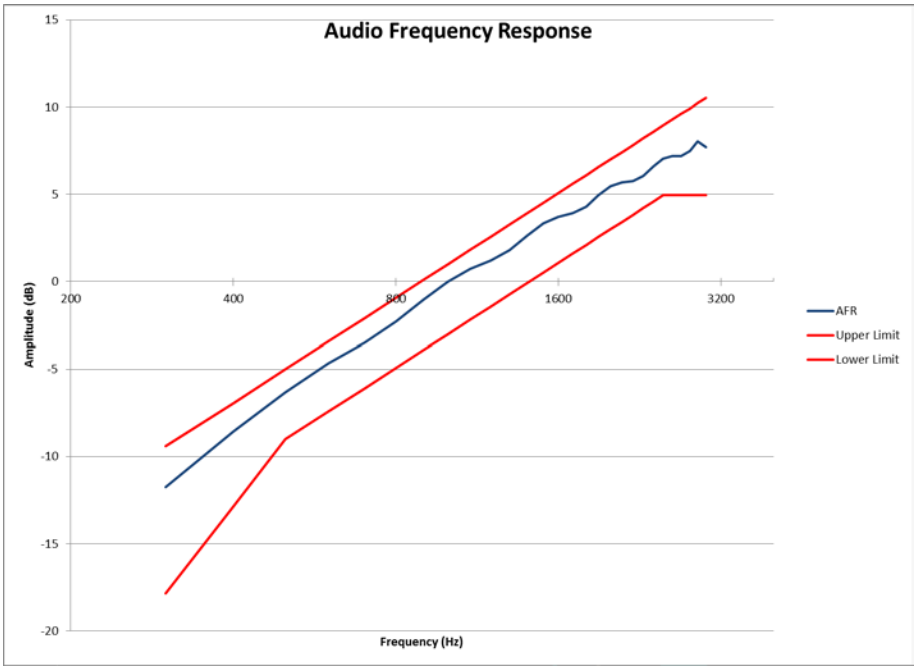

Figure 7.8.2-1: Audio Frequency Response

7.9 Audio Low Pass Filter Response

7.9.1 Measurement Procedure

The EUT uses an internal IC low pass filter. The audio low pass filter response is not measurable per the filter manufacturer. Compliance to the requirements will be demonstrated using the manufacturer's filter specifications as described in the equipment Theory of Operation.

8 MEASUREMENT UNCERTAINTIES

The expanded laboratory measurement uncertainty figures (U_{Lab}) provided below correspond to an expansion factor (coverage factor) k = 1.96 which provide confidence levels of 95%.

Parameter	U_{lab}
Occupied Channel Bandwidth	± 0.009 %
RF Conducted Output Power	± 0.349 dB
Power Spectral Density	± 0.372 dB
Antenna Port Conducted Emissions	± 1.264 dB
Radiated Emissions ≤ 1GHz	± 3.93 dB
Radiated Emissions > 1GHz	± 5.814 dB
Temperature	± 0.860 °C
Radio Frequency	$\pm 2.832 \times 10^{-8}$
AC Power Line Conducted Emissions	±2.93

9 CONCLUSION

In the opinion of TÜV SÜD America, Inc. the model PMUE5066B, manufactured by Motorola Solutions Malaysia SDN BHD, meets all the requirements of FCC Part 95 Subpart A and Subpart B and Innovation, Science, Economic Development Canada Radio Specification Standards RSS-210, where applicable.

End Report