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Test Report

| | |
|--|---|
| Applicant | MTMS (HK) LIMITED |
| Address | ROOM 1701, 17/F., FO TAN INDUSTRIAL CENTRE, NO. 26-28 AU PUI WAN STREET, FO TAN, N.T., HONG KONG |
| FCC ID Number | FCC ID: 2AO3LB1314T24G |
| Tested Brand Name(s) | None |
| Tested Model Number(s)/Item Number(s) | B1314 |
| Product Description | 2.4 GHz Radio Control Controller - TX Portion |
| Operating Frequency | 2410.00-2475.00 MHz |
| Rules/Standards | Part 15.249 of the FCC Rules |
| Received Date | 26th March, 2018 |
| Tested Date | 26th March, 2018 |
| Tested by |  Jason Su (Engineer of Shenzhen SEM Test Technology Co. Ltd) |
| Reviewed by |  Silin Chen (EMC Manager of Shenzhen SEM Test Technology Co. Ltd) |
| Approved by |  Jandy So (Manager of Shenzhen SEM Test Technology Co. Ltd) |
| Verified by | Gilbert Lui (Marketing Manager of Gakkiku Compliance Company Limited) |
| Report Number | GCCL201803260A |
| Test Results | <input checked="" type="checkbox"/> PASSED <input type="checkbox"/> FAILED |

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

| | |
|--------------------------|--|
| Applicant: | MTMS (HK) LIMITED |
| Address of applicant: | ROOM 1701, 17/F., FO TAN INDUSTRIAL CENTRE, NO. 26-28 AU PUI WAN STREET, FO TAN, N.T., HONG KONG |
| Manufacturer: | MTMS (HK) LIMITED |
| Address of manufacturer: | ROOM 1701, 17/F., FO TAN INDUSTRIAL CENTRE, NO. 26-28 AU PUI WAN STREET, FO TAN, N.T., HONG KONG |

| General Description of EUT | |
|--|--|
| Product Description: | 2.4 GHz Radio Control Controller - TX Portion |
| Tested Trade Name: | None |
| Tested Model Number/ Item Number: | B1314 |
| Adding Model Number(s)/ Item Number(s): | Nil [All Adding Brand Name(s) and Model Number(s)/Item Number(s) are same electrically identical as Tested Brand Name and Model Number/Item Number] |
| Power Source: | DC 6.0V (4 units of DC 1.5V AA-Size Battery) |
| Power Adapter Model: | / |

| Technical Characteristics of EUT | |
|--|---|
| Frequency Range: | 2410.00-2475.00 MHz |
| Max. Field Strength/ RF Output Power: | 92.64dBuV/m |
| Type of Modulation: | GFSK |
| Type of Antenna: | Fixed 40mm-long (1.0mm-diameter) black wire antenna |
| Antenna Gain: | 0 dBi |
| Lowest Internal Clock Frequency of EUT: | 16 MHz |

1.2 Test Standards

The following report is prepared on behalf of the Scientific Toys Ltd in accordance with FCC Part 15, Subpart B, Subpart C, and section 15.107, 15.203, 15.205, 15.207, 15.209 and 15.249 of the FCC Rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.107, 15.203, 15.205, 15.207, 15.209 and 15.249 of the FCC Rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which results in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices, and ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

Federal Communications Commission (FCC) - Test Firm Registration Number: 125990

Shenzhen SEM Test Technology Co. Ltd, EMC Laboratory has been notified by National Voluntary Laboratory Accreditation Program that Shenzhen SEM Test Technology Co. Ltd has been accredited as a testing laboratory and fully described in a report filed with the Federal Communications Commission (FCC). All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, 518101, China. The acceptance letter from the FCC is maintained in our files, Designation Number: CN5010 and the Test Firm Registration Number: 125990.

Innovation, Science and Economic Development Canada (ISED) - Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM Test Technology Co. Ltd. has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada (ISED) for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

| Test Mode List | | |
|----------------|---------------------|-------------|
| Test Mode | Description | Remark |
| TM1 | Lowest Channel | 2410.00 MHz |
| TM2 | Near Middle Channel | 2442.00 MHz |
| TM3 | Highest Channel | 2475.00 MHz |

| Special Cable List and Details | | | |
|--------------------------------|------------|-------------------------|--------------------------|
| Cable Description | Length (m) | Shielded/ Unshielded | With/ Without Ferrite |
| / | / | / | / |

| Auxiliary Equipment List and Details | | | | |
|--------------------------------------|--------------|-------|---------------|---|
| Description | Manufacturer | Model | Serial Number | |
| / | / | / | / | / |

1.6 Measurement Uncertainty

| Measurement uncertainty | | |
|--------------------------------|------------|-------------|
| Parameter | Conditions | Uncertainty |
| RF Output Power | Conducted | ±0.42dB |
| Occupied Bandwidth | Conducted | ±1.5% |
| Conducted Spurious Emission | Conducted | ±2.17dB |
| Conducted Emissions | Conducted | ±2.88dB |
| Transmitter Spurious Emissions | Radiated | ±5.1dB |

1.7 Test Equipment List and Details

| No. | Description | Manufacturer | Model | Serial No. | Cal Date | Due Date |
|-----------|-------------------|------------------------|-----------|-------------|------------|------------|
| SEMT-1072 | Spectrum Analyzer | Agilent | E4407B | MY41440400 | 2017-06-12 | 2018-06-11 |
| SEMT-1031 | Spectrum Analyzer | Rohde & Schwarz | FSP30 | 836079/035 | 2017-06-12 | 2018-06-11 |
| SEMT-1007 | EMI Test Receiver | Rohde & Schwarz | ESVB | 825471/005 | 2017-06-12 | 2018-06-11 |
| SEMT-1008 | Amplifier | Agilent | 8447F | 3113Ao6717 | 2017-06-12 | 2018-06-11 |
| SEMT-1043 | Amplifier | C&D | PAP-1G18 | 2002 | 2017-06-12 | 2018-06-11 |
| SEMT-1011 | Broadband Antenna | Schwarz beck | VULB9163 | 9163-333 | 2017-06-08 | 2020-06-07 |
| SEMT-1042 | Horn Antenna | ETS | 3117 | 00086197 | 2017-06-08 | 2020-06-07 |
| SEMT-1069 | Loop Antenna | Schwarz beck | FMZB 1516 | 9773 | 2017-06-08 | 2020-06-07 |
| SEMT-1001 | EMI Test Receiver | Rohde & Schwarz | ESPI | 101611 | 2017-06-12 | 2018-06-11 |
| SEMT-1003 | L.I.S.N | Schwarz beck | NSLK8126 | 8126-224 | 2017-06-12 | 2018-06-11 |
| SEMT-1002 | Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100911 | 2017-06-12 | 2018-06-11 |
| SEMT-1168 | Pre-amplifier | Direction Systems Inc. | PAP-0126 | 14141-12838 | 2017-08-15 | 2018-08-14 |
| SEMT-1169 | Pre-amplifier | Direction Systems Inc. | PAP-2640 | 14145-14153 | 2017-08-15 | 2018-08-14 |
| SEMT-1163 | Spectrum Analyzer | Rohde & Schwarz | FSP40 | 100612 | 2017-06-12 | 2018-06-11 |
| SEMT-1170 | DRG Horn Antenna | A.H. SYSTEMS | SAS-574 | 571 | 2018-03-19 | 2021-03-18 |

2. SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test Item | Result |
|--------------------------|------------------------------|-----------|
| Part 15.203 | Antenna Requirement | Compliant |
| Part 15.205 | Restricted Band of Operation | Compliant |
| Part 15.107(a)/15.207(a) | Conducted Emission | N/A* |
| Part 15.209(a)(f) | Radiated Spurious Emissions | Compliant |
| Part 15.249(a) | Field Strength of Emissions | Compliant |
| Part 15.249(d) | Out of Band Emission | Compliant |
| Part 15.215 (c) | Emission Bandwidth | Compliant |

*Remark:

The AC Line Conducted Emissions testing is exempted because it is powered solely by batteries. Thus, the AC Line Conducted Emissions testing is not applicable.

3. Antenna Requirements

3.1 Standard Applicable

According to FCC Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.2 Test Result

This product has a fixed 40mm-long (1.0mm-diameter) black wire antenna, fulfill the requirement of this section.

4. Radiated Emissions

4.1 Standard Applicable

According to FCC Part 15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Fundamental Frequency | Field strength of fundamental (milli-volts/meter) | Field strength of Harmonics (micro-volts/meter) |
|-----------------------|--|--|
| 902-928 MHz | 50 | 500 |
| 2400-2483.5 MHz | 50 | 500 |
| 5725-5875 MHz | 50 | 500 |
| 24.0-24.25 GHz | 250 | 2500 |

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

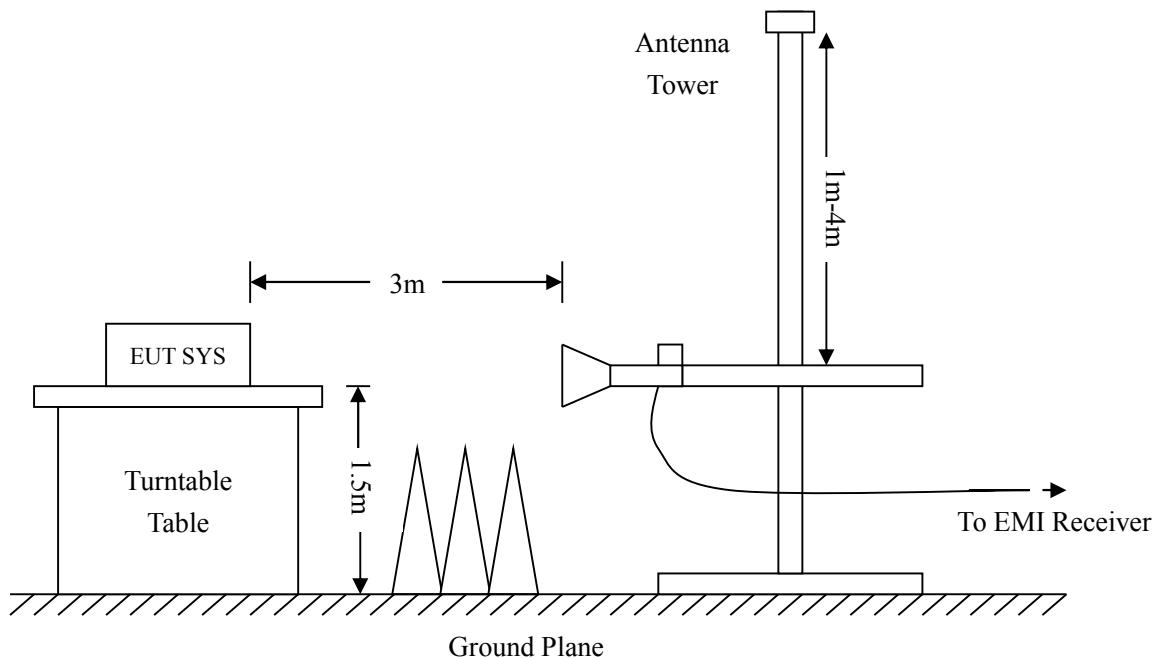
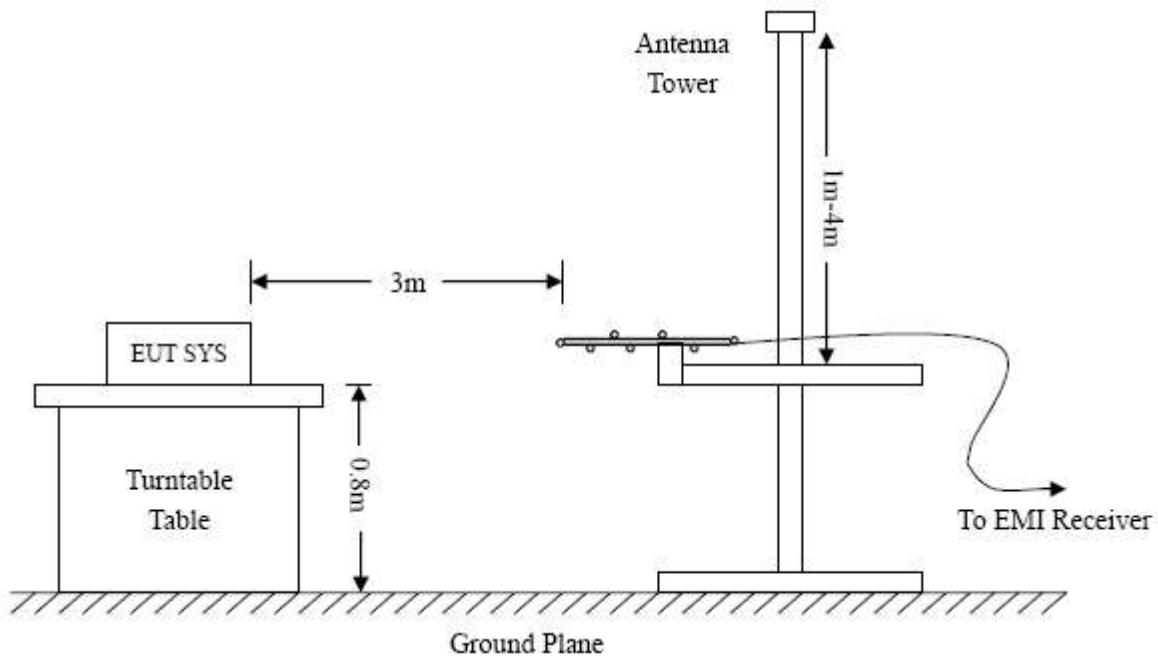
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

4.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205, 15.249(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



Frequency: 9kHz-30MHz

RBW = 10kHz

VBW = 30kHz

Sweep time = Auto

Trace = Max hold

Detector function = Peak

Frequency: 30MHz-1GHz

RBW = 120kHz

VBW = 300kHz

Sweep time = Auto

Trace = Max hold

Detector function = Peak, QP

Frequency: Above 1GHz

RBW = 1MHz

VBW = 3MHz(Peak), 10Hz(AV)

Sweep time = Auto

Trace = Max hold

Detector function = Peak, AV

4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15C Limit}$$

4.4 Environmental Conditions

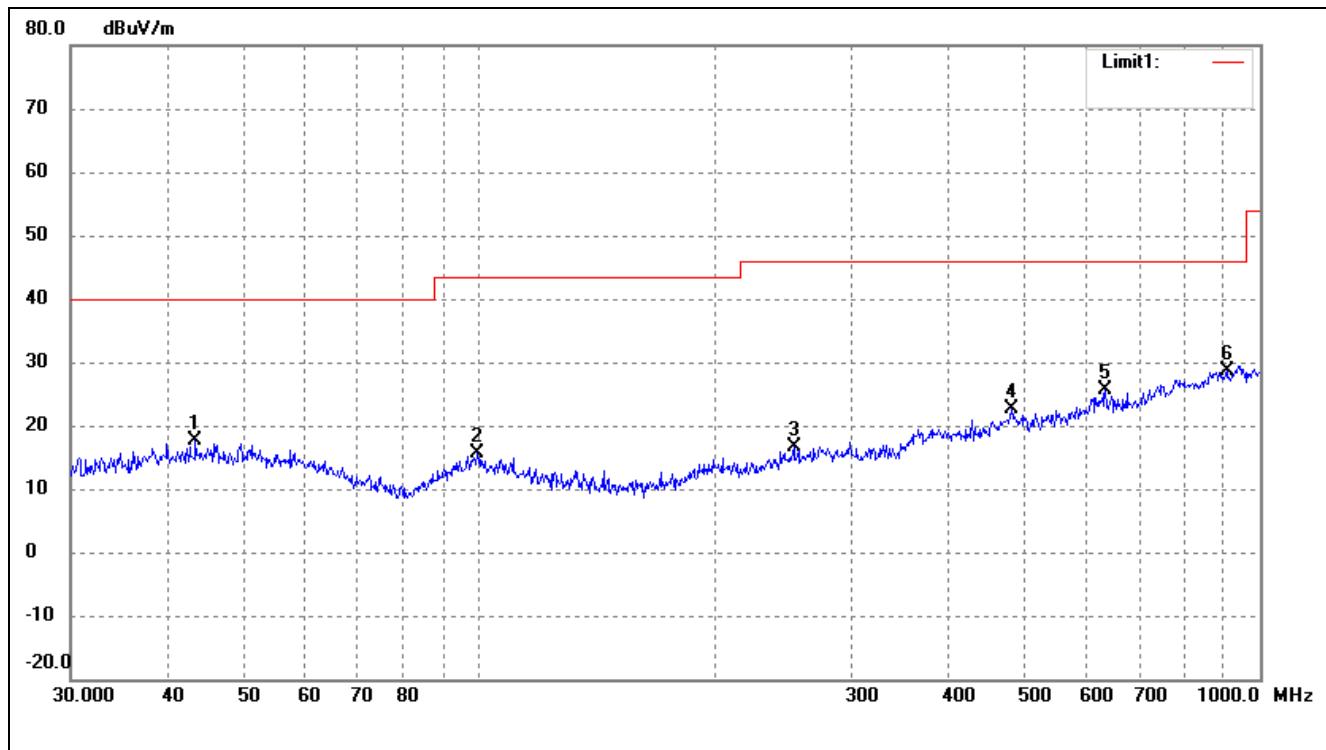
| | |
|--------------------|-----------|
| Temperature: | 24 °C |
| Relative Humidity: | 60 % |
| ATM Pressure: | 1012 mbar |

4.5 Summary of Test Results/Plots

According to the data below, the EUT complied with the standards of FCC Part 15.205, 15.209 and 15.249, and had the worst margin of:

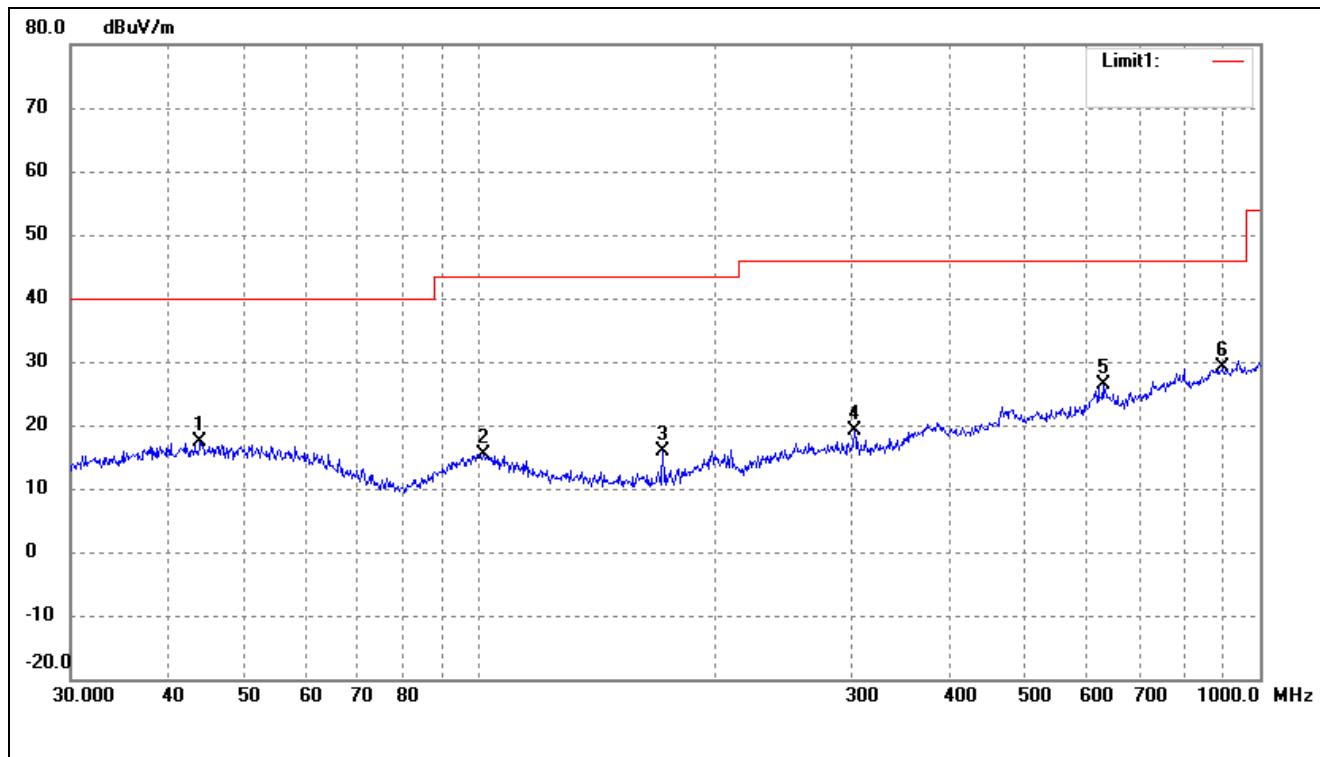
-12.78 dB at 7326 MHz in the *Vertical* polarization, **Middle Channel, 9 kHz to 25 GHz, 3Meters**

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Plot of Radiated Emissions Test Data (30MHz to 1GHz)*Product Description: 2.4 GHz Radio Control Controller - TX Portion**Tested Model**Number/ B1314**Item Number:**Operating Condition: Transmitting (Lowest Channel: 2410.00 MHz)**Power Source: DC 6.0V (4 units of DC 1.5VAA-Size Battery)**Test Specification: Horizontal*

| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (•) | Height (cm) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 43.3534 | 28.05 | -10.53 | 17.52 | 40.00 | -22.48 | 121 | 100 | Peak |
| 2 | 99.5281 | 27.11 | -11.50 | 15.61 | 43.50 | -27.89 | 132 | 100 | Peak |
| 3 | 252.9482 | 26.91 | -10.37 | 16.54 | 46.00 | -29.46 | 214 | 100 | Peak |
| 4 | 480.5276 | 27.99 | -5.36 | 22.63 | 46.00 | -23.37 | 115 | 100 | Peak |
| 5 | 633.9073 | 28.69 | -3.08 | 25.61 | 46.00 | -20.39 | 235 | 100 | Peak |
| 6 | 906.4824 | 27.08 | 1.51 | 28.59 | 46.00 | -17.41 | 216 | 100 | Peak |

Test Specification: Vertical

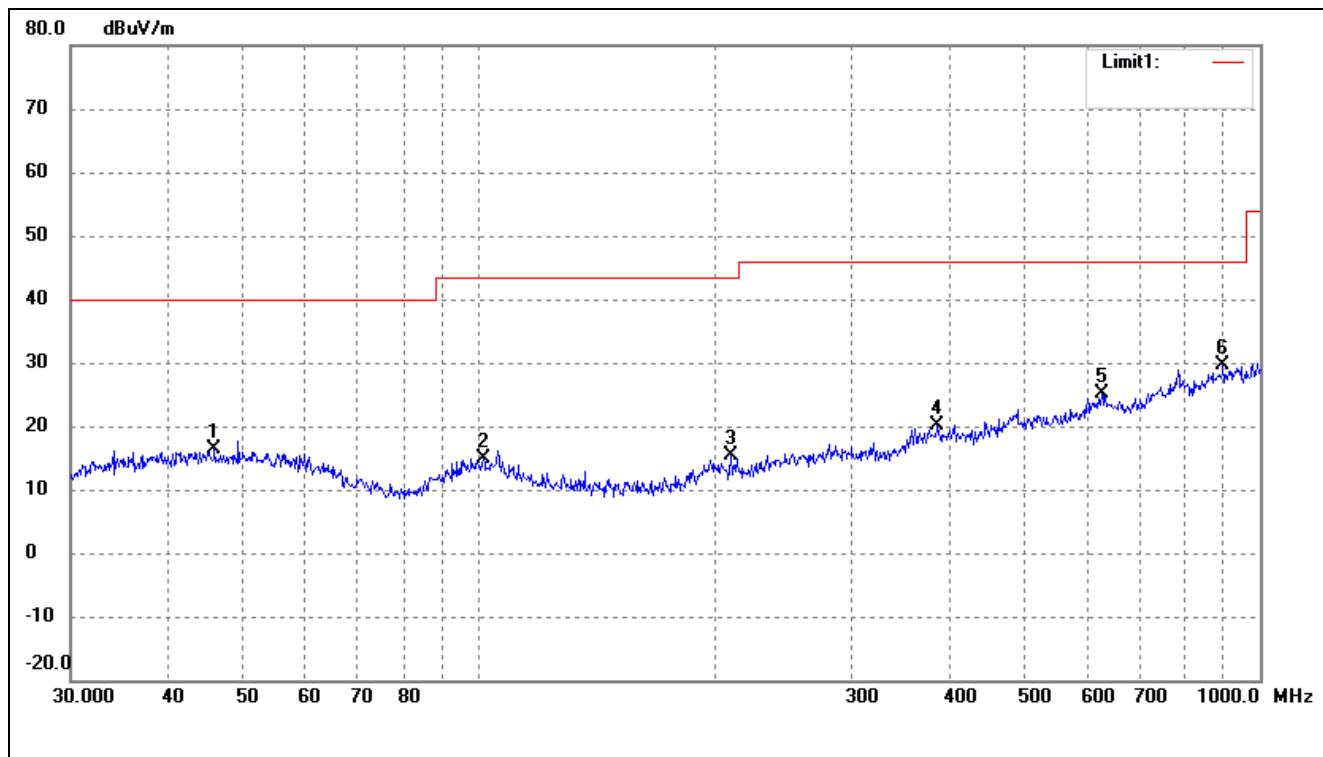


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (.) | Height (cm) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 43.9658 | 27.73 | -10.44 | 17.29 | 40.00 | -22.71 | 126 | 100 | Peak |
| 2 | 101.2885 | 27.00 | -11.55 | 15.45 | 43.50 | -28.05 | 264 | 100 | Peak |
| 3 | 171.9946 | 30.36 | -14.55 | 15.81 | 43.50 | -27.69 | 132 | 100 | Peak |
| 4 | 302.4812 | 28.79 | -9.74 | 19.05 | 46.00 | -26.95 | 308 | 100 | Peak |
| 5 | 629.4772 | 29.32 | -2.99 | 26.33 | 46.00 | -19.67 | 121 | 100 | Peak |
| 6 | 896.9965 | 27.64 | 1.41 | 29.05 | 46.00 | -16.95 | 247 | 100 | Peak |

Operating Condition: Transmitting (Near Middle Channel: 2442.00 MHz)

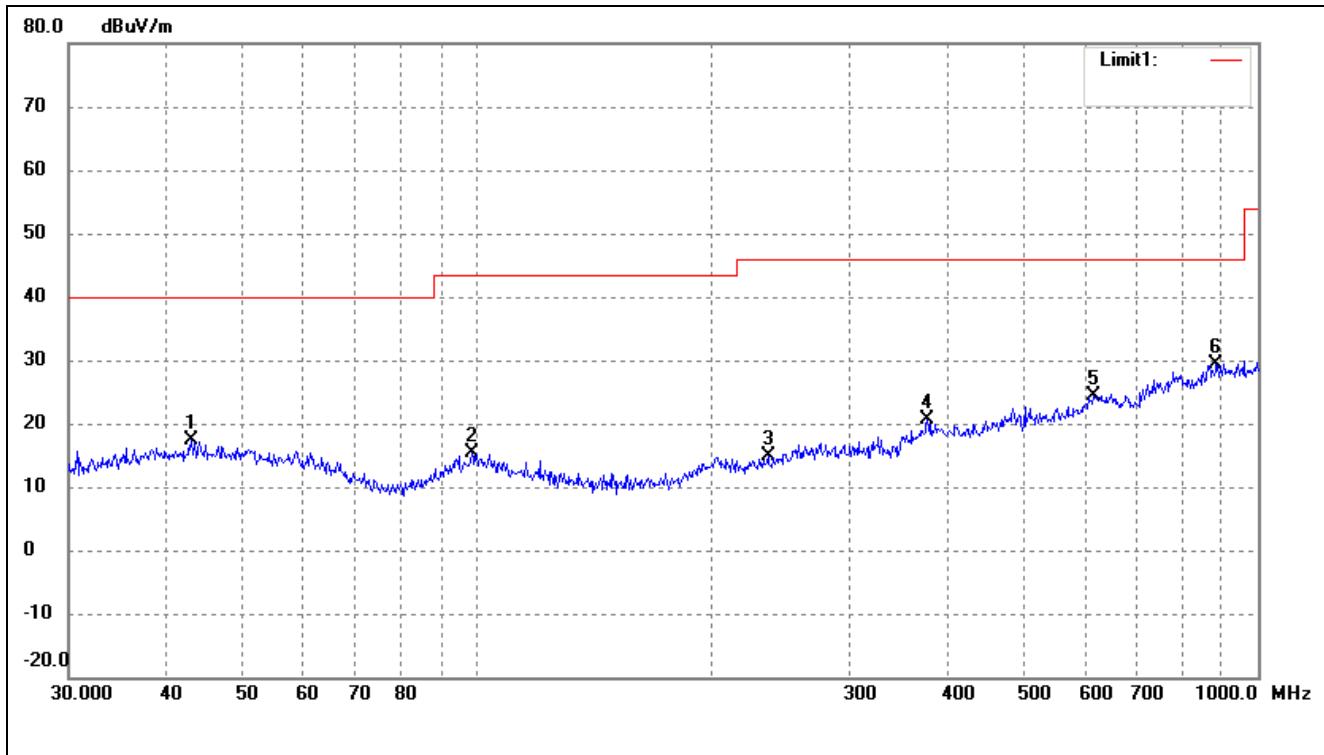
Power Source: DC 6.0V (4 units of DC 1.5V AA-Size Battery)

Test Specification: Horizontal



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (.) | Height (cm) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 45.8553 | 26.98 | -10.62 | 16.36 | 40.00 | -23.64 | 121 | 100 | Peak |
| 2 | 101.2885 | 26.46 | -11.55 | 14.91 | 43.50 | -28.59 | 135 | 100 | Peak |
| 3 | 210.0482 | 27.48 | -12.04 | 15.44 | 43.50 | -28.06 | 100 | 100 | Peak |
| 4 | 386.6338 | 27.34 | -7.20 | 20.14 | 46.00 | -25.86 | 214 | 100 | Peak |
| 5 | 627.2738 | 28.15 | -2.95 | 25.20 | 46.00 | -20.80 | 115 | 100 | Peak |
| 6 | 896.9965 | 28.12 | 1.41 | 29.53 | 46.00 | -16.47 | 235 | 100 | Peak |

Test Specification: Vertical

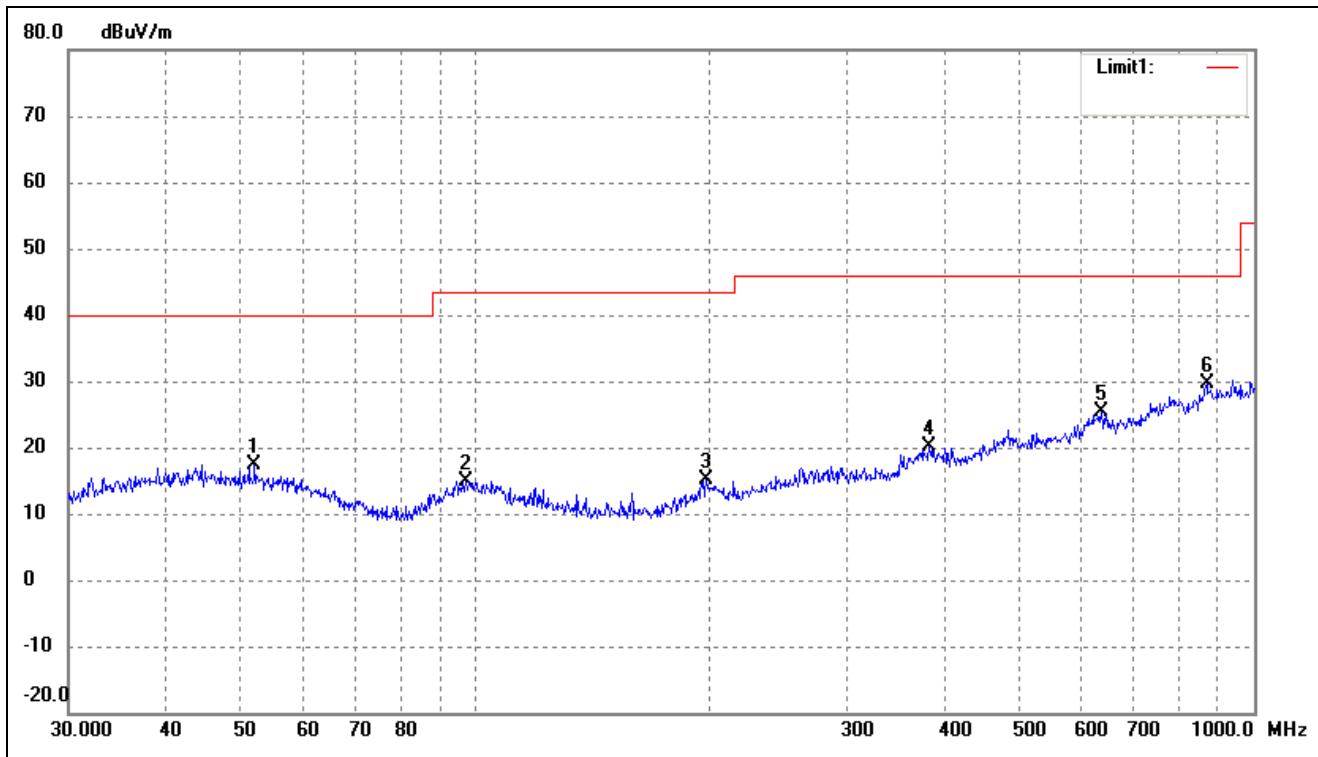


| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (.) | Height (cm) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 43.0505 | 27.70 | -10.43 | 17.27 | 40.00 | -22.73 | 102 | 100 | Peak |
| 2 | 98.4866 | 27.00 | -11.73 | 15.27 | 43.50 | -28.23 | 136 | 100 | Peak |
| 3 | 235.8164 | 26.18 | -11.28 | 14.90 | 46.00 | -31.10 | 125 | 100 | Peak |
| 4 | 377.2591 | 27.64 | -7.13 | 20.51 | 46.00 | -25.49 | 38 | 100 | Peak |
| 5 | 616.3718 | 27.50 | -3.07 | 24.43 | 46.00 | -21.57 | 12 | 100 | Peak |
| 6 | 884.5029 | 28.01 | 1.46 | 29.47 | 46.00 | -16.53 | 136 | 100 | Peak |

Operating Condition: Transmitting (Highest Channel: 2475.00 MHz)

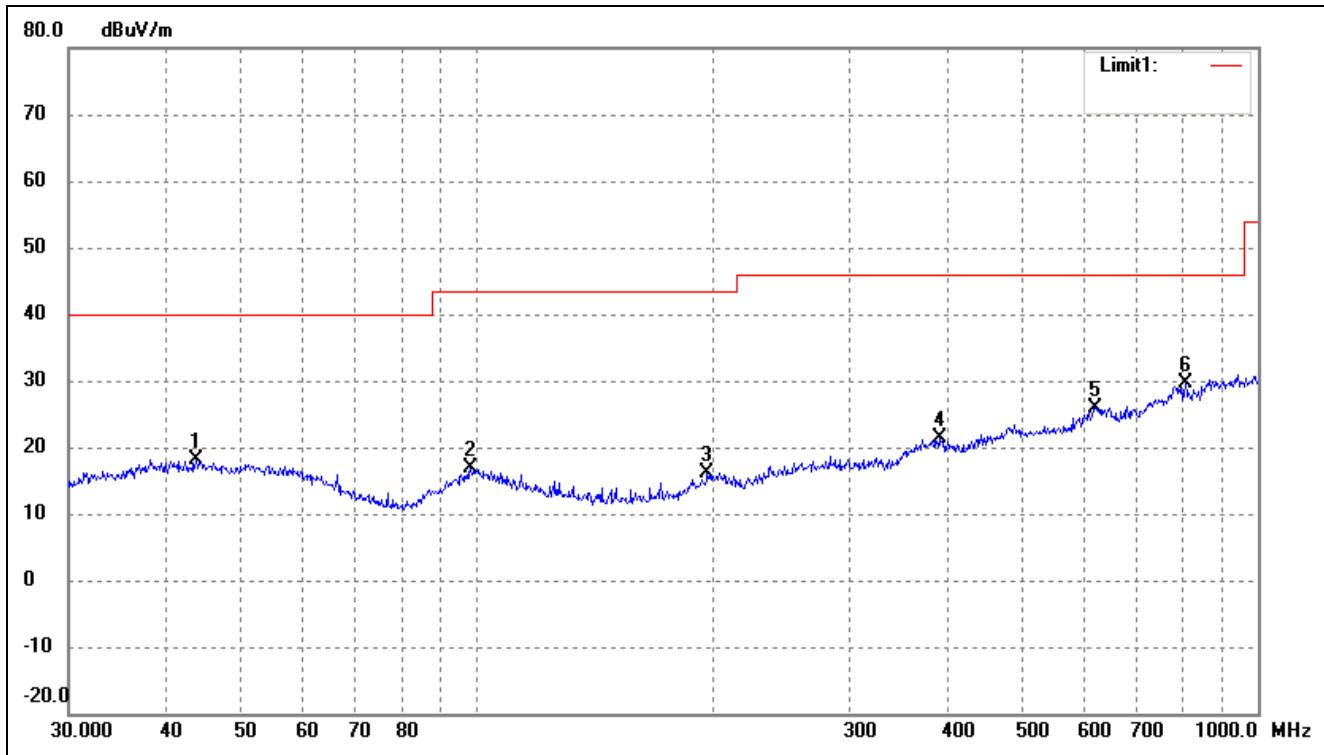
Power Source: DC 6.0V (4 units of DC 1.5V AA-Size Battery)

Test Specification: Horizontal



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (.) | Height (cm) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 52.0251 | 28.37 | -10.92 | 17.45 | 40.00 | -22.55 | 13 | 100 | Peak |
| 2 | 97.1148 | 26.95 | -12.04 | 14.91 | 43.50 | -28.59 | 122 | 100 | Peak |
| 3 | 197.8928 | 26.96 | -11.87 | 15.09 | 43.50 | -28.41 | 168 | 100 | Peak |
| 4 | 382.5879 | 27.20 | -7.07 | 20.13 | 46.00 | -25.87 | 215 | 100 | Peak |
| 5 | 636.1340 | 28.50 | -3.12 | 25.38 | 46.00 | -20.62 | 14 | 100 | Peak |
| 6 | 869.1302 | 28.35 | 1.26 | 29.61 | 46.00 | -16.39 | 223 | 100 | Peak |

Test Specification: Vertical



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (.) | Height (cm) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|---------------|----------------|--------|
| 1 | 43.6585 | 28.47 | -10.44 | 18.03 | 40.00 | -21.97 | 236 | 100 | Peak |
| 2 | 98.1419 | 28.73 | -11.81 | 16.92 | 43.50 | -26.58 | 125 | 100 | Peak |
| 3 | 197.2001 | 28.18 | -11.97 | 16.21 | 43.50 | -27.29 | 18 | 100 | Peak |
| 4 | 390.7226 | 28.63 | -7.32 | 21.31 | 46.00 | -24.69 | 222 | 100 | Peak |
| 5 | 618.5369 | 28.88 | -2.90 | 25.98 | 46.00 | -20.02 | 143 | 100 | Peak |
| 6 | 807.4291 | 29.85 | -0.25 | 29.60 | 46.00 | -16.40 | 152 | 100 | Peak |

Spurious Emissions Above 1 GHz

| Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Polar | Detector |
|----------------------------------|---------------------|-------------------|--------------------|-------------------|----------------|-------|----------|
| Lowest Channel: 2410.00 MHz | | | | | | | |
| 2410 | 94 | -3.59 | 90.41 | 114 | -23.59 | H | Peak |
| 2410 | 93.68 | -3.59 | 90.09 | 94 | -3.91 | H | Average |
| 4820 | 60.99 | -3.59 | 57.4 | 74 | -16.6 | H | Peak |
| 4820 | 40.7 | -3.59 | 37.11 | 54 | -16.89 | H | Average |
| 7230 | 61.06 | -0.52 | 60.54 | 74 | -13.46 | H | Peak |
| 7230 | 39.8 | -0.52 | 39.28 | 54 | -14.72 | H | Average |
| 2410 | 93.01 | -3.59 | 89.42 | 114 | -24.58 | V | Peak |
| 2410 | 92.12 | -3.59 | 88.53 | 94 | -5.47 | V | Average |
| 4820 | 61.27 | -3.59 | 57.68 | 74 | -16.32 | V | Peak |
| 4820 | 39.21 | -3.59 | 35.62 | 54 | -18.38 | V | Average |
| 7230 | 59.34 | -0.52 | 58.82 | 74 | -15.18 | V | Peak |
| 7230 | 41.32 | -0.52 | 40.8 | 54 | -13.2 | V | Average |
| Near Middle Channel: 2442.00 MHz | | | | | | | |
| 2442 | 92.24 | -3.59 | 88.65 | 114 | -25.35 | H | Peak |
| 2442 | 89.87 | -3.59 | 86.28 | 94 | -7.72 | H | Average |
| 4884 | 60.29 | -3.49 | 56.8 | 74 | -17.2 | H | Peak |
| 4884 | 41.03 | -3.49 | 37.54 | 54 | -16.46 | H | Average |
| 7326 | 60.98 | -0.47 | 60.51 | 74 | -13.49 | H | Peak |
| 7326 | 38.33 | -0.47 | 37.86 | 54 | -16.14 | H | Average |
| 2442 | 94.57 | -3.59 | 90.98 | 114 | -23.02 | V | Peak |
| 2442 | 90.21 | -3.59 | 86.62 | 94 | -7.38 | V | Average |
| 4884 | 58.08 | -3.49 | 54.59 | 74 | -19.41 | V | Peak |
| 4884 | 40.95 | -3.49 | 37.46 | 54 | -16.54 | V | Average |
| 7326 | 58.54 | -0.47 | 58.07 | 74 | -15.93 | V | Peak |
| 7326 | 41.69 | -0.47 | 41.22 | 54 | -12.78 | V | Average |

| Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Polar H/V | Detector |
|------------------------------|---------------------|-------------------|--------------------|-------------------|----------------|--------------|----------|
| Highest Channel: 2475.00 MHz | | | | | | | |
| 2475 | 93.82 | -3.59 | 90.23 | 114 | -23.77 | H | Peak |
| 2475 | 92.4 | -3.59 | 88.81 | 94 | -5.19 | H | Average |
| 4950 | 60.3 | -3.41 | 56.89 | 74 | -17.11 | H | Peak |
| 4950 | 39.03 | -3.41 | 35.62 | 54 | -18.38 | H | Average |
| 7425 | 58.23 | -0.42 | 57.81 | 74 | -16.19 | H | Peak |
| 7425 | 40.01 | -0.42 | 39.59 | 54 | -14.41 | H | Average |
| 2475 | 96.23 | -3.59 | 92.64 | 114 | -21.36 | V | Peak |
| 2475 | 93.78 | -3.59 | 90.19 | 94 | -3.81 | V | Average |
| 4950 | 61.7 | -3.41 | 58.29 | 74 | -15.71 | V | Peak |
| 4950 | 40.44 | -3.41 | 37.03 | 54 | -16.97 | V | Average |
| 7425 | 58.45 | -0.42 | 58.03 | 74 | -15.97 | V | Peak |
| 7425 | 39.16 | -0.42 | 38.74 | 54 | -15.26 | V | Average |

Note: Testing is carried out with frequency rang 9 kHz to the 10th harmonic, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Emissions attenuated more than 20 dB below the permissible value are not reported.

5. Out of Band Emissions

5.1 Standard Applicable

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

5.2 Test Procedure

As the radiation test, set the Lowest and Highest Transmitting Channel, observed the outside band of 2400MHz to 2483.5MHz, than mark the higher-level emission for comparing with the FCC Rules.

5.3 Environmental Conditions

| | |
|--------------------|-----------|
| Temperature: | 24 °C |
| Relative Humidity: | 60 % |
| ATM Pressure: | 1012 mbar |

5.4 Summary of Test Results/Plots

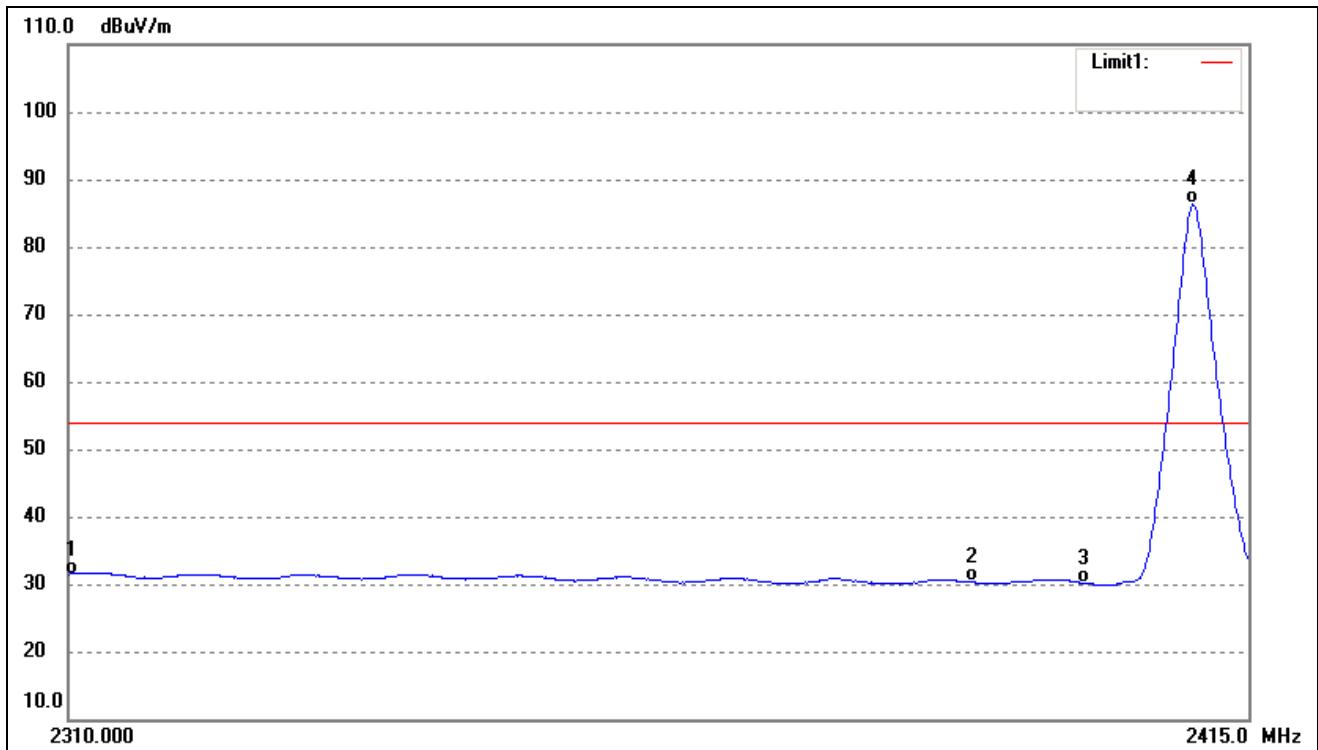
| Test mode | Frequency | Limit | Result |
|-----------|-----------|------------|--------|
| | (MHz) | (dBuV/dBc) | |
| Lowest | 2310.00 | <54 dBuV | Pass |
| | 2390.00 | <54 dBuV | Pass |
| | 2400.00 | <54 dBuV | Pass |
| Highest | 2483.50 | <54 dBuV | Pass |
| | 2500.00 | <54 dBuV | Pass |

The edge emissions are below the FCC Part 15.209 Limits or complies with the FCC Part 15.249 requirements.

Please refer to the following test plots.

Restricted Bandedge (Lowest)

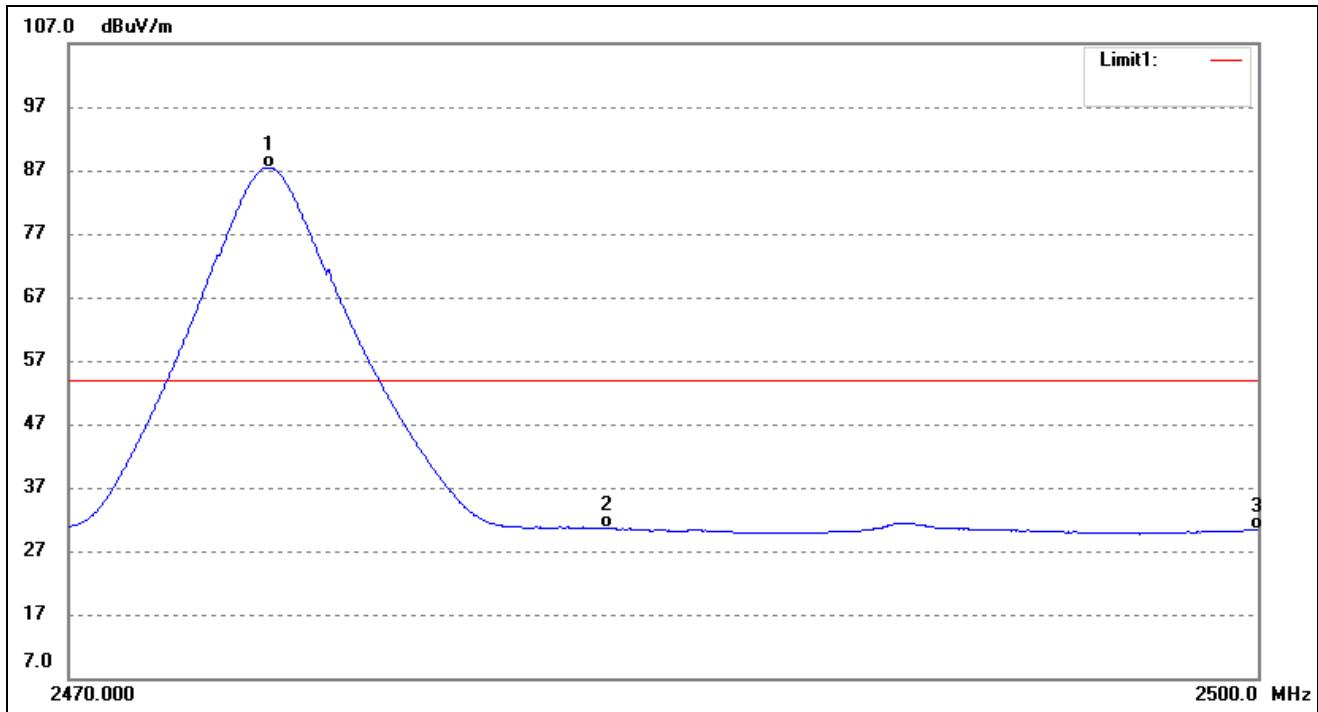
Vertical (Worst case)



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|------------------|
| 1 | 2310.000 | 37.81 | -6.38 | 31.43 | 54.00 | -22.57 | Average Detector |
| | 2310.000 | 50.20 | -6.38 | 43.82 | 74.00 | -30.18 | Peak Detector |
| 2 | 2390.000 | 37.56 | -7.26 | 30.30 | 54.00 | -23.70 | Average Detector |
| | 2390.000 | 49.87 | -7.26 | 42.61 | 74.00 | -31.39 | Peak Detector |
| 3 | 2400.000 | 37.54 | -7.37 | 30.17 | 54.00 | -23.83 | Average Detector |
| | 2400.000 | 50.62 | -7.37 | 43.25 | 74.00 | -30.75 | Peak Detector |
| 4 | 2409.960 | 92.12 | -7.41 | 84.71 | / | / | Average Detector |
| | 2409.960 | 93.01 | -7.41 | 85.60 | / | / | Peak Detector |

Restricted Bandedge (Highest)

Vertical (Worst case)



| No. | Frequency (MHz) | Reading (dBuV/m) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|--------------------|---------------------|-------------------|--------------------|-------------------|----------------|------------------|
| 1 | 2475.015 | 94.79 | -7.29 | 87.50 | / | / | Average Detector |
| | 2474.985 | 96.23 | -7.29 | 88.94 | / | / | Peak Detector |
| 2 | 2483.500 | 37.88 | -7.28 | 30.60 | 54.00 | -23.40 | Average Detector |
| | 2483.500 | 49.62 | -7.28 | 42.34 | 74.00 | -31.66 | Peak Detector |
| 3 | 2500.000 | 37.58 | -7.25 | 30.33 | 54.00 | -23.67 | Average Detector |
| | 2500.000 | 49.86 | -7.25 | 42.61 | 74.00 | -31.39 | Peak Detector |

6. Emission Bandwidth

6.1 Standard Applicable

According to FCC Part 15.215 (c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

6.2 Test Procedure

According to the ANSI 63.10-2013, the emission bandwidth test method as follows:

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

Set span = 1MHz, centered on a transmitting channel

RBW \geq 1% 20dB Bandwidth, VBW \geq RBW

Sweep = Auto

Detector function = Peak

Trace = Max hold

All the trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission, use the marker-delta function to measure and record the 20dB down and 99% bandwidth of the emission.

6.3 Environmental Conditions

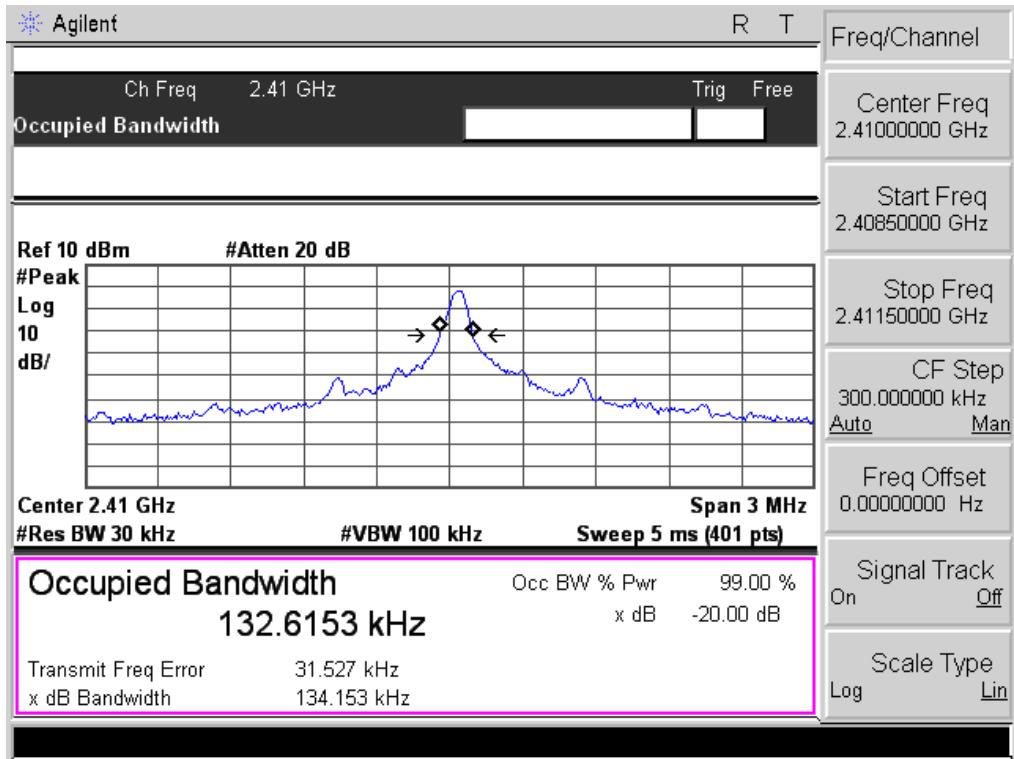
| | |
|--------------------|-----------|
| Temperature: | 25 °C |
| Relative Humidity: | 53% |
| ATM Pressure: | 1018 mbar |

6.4 Summary of Test Results/Plots

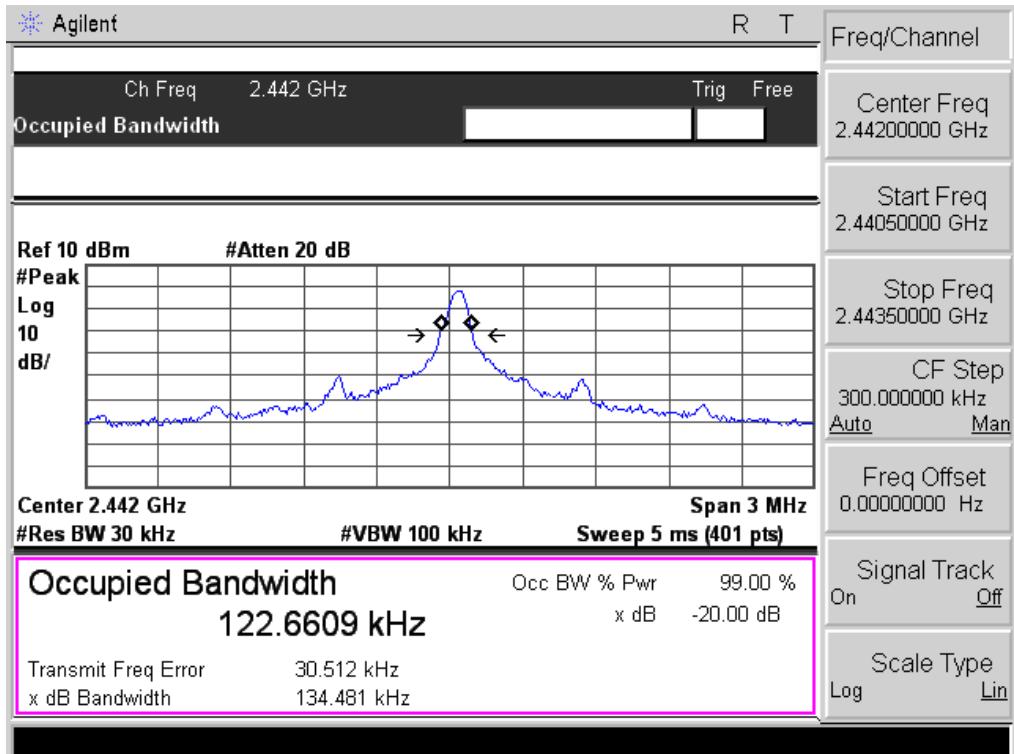
| Channel | Frequency (MHz) | 20dB Bandwidth (kHz) | 99% Bandwidth (kHz) |
|---------------------|-----------------|----------------------|---------------------|
| Lowest Channel | 2410.00 | 134.153 | 132.6153 |
| Near Middle Channel | 2442.00 | 134.481 | 122.6609 |
| Highest Channel | 2475.00 | 132.672 | 125.7481 |

Please refer to the following test plots.

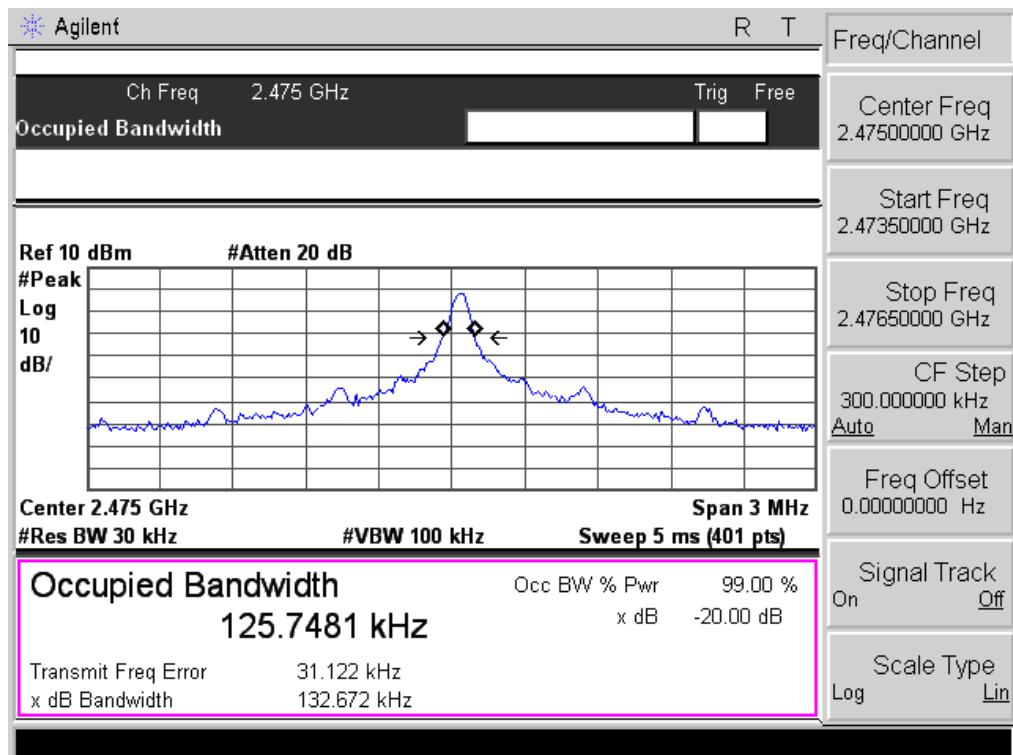
Lowest Channel:



Near Middle Channel:



Highest Channel:



***** END OF REPORT *****