

FCC PART 15.249
MEASUREMENT AND TEST REPORT
FOR

KINGSTAR CO., LTD

No. 46, Liofu Rd., Luzhu Shiang, Taoyuan Hsien, Taiwan

FCC ID: ZL4-KST-HXGT2

| | |
|--|---|
| Report Concerns: Original Report | Equipment Type: 2.4G Radio Control |
| Model: | <u>RZ 2.4G PROZ</u> |
| Report No.: | <u>STR11058041I</u> |
| Test Date: | <u>2011-05-07 to 2011-05-26</u> |
| Issue Date: | <u>2011-05-28</u> |
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: KINGSTAR CO., LTD
Address of applicant: No. 46, Liofu Rd., Luzhu Shiang, Taoyuan Hsien, Taiwan

Manufacturer: DongGuan Flysky RC. Model Technology Co., Ltd.
Address of manufacturer: West building 3, HuangJiangYuan Ind Park QiaoLi North Gate ChangPing Town Dongguan China

General Description of E.U.T

| Items | Description |
|---|--------------------|
| EUT Description: | 2.4G Radio Control |
| Trade Name: | / |
| Model No.: | RZ 2.4G PROZ |
| Rated Voltage: | 6V DC |
| Frequency Range: | 2401.8-2479.8 MHz |
| Antenna Type: | Integral Antenna |
| Antenna Gain: | 2 dBi |
| Size: | 19.5X14.6X7.0 cm |
| For more information refer to the circuit diagram form and the user's manual. | |

The test data is gathered from a production sample, provided by the manufacturer.

1.2 Test Standards

The following report is prepared on behalf of the KINGSTAR CO., 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 Federal Communication Commissions 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 Federal Communication Commissions 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 C63.4-2009, 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.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the Operating Instructions and let the EUT keep transmitting.

1.4 Test Facility

- **FCC – Registration No.: 994117**

SEM.Test Compliance Services Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Exercise Software

The EUT exercise program used during the testing was designed to exercise the system components. The test software is started while the whole system is on.

1.6 Accessories Equipment List and Details

| Description | Manufacturer | Model | Serial Number |
|-------------|--------------|-------|---------------|
| / | / | / | / |

1.7 EUT Cable List and Details

| Cable Description | Length (M) | Shielded/Unshielded | With Core/Without Core |
|-------------------|------------|---------------------|------------------------|
| / | / | / | / |

2. SUMMARY OF TEST RESULTS

| FCC RULES | DESCRIPTION OF TEST | RESULT |
|-------------|------------------------------|-----------|
| §15.203 | Antenna Requirement | Compliant |
| §15.207 (a) | Conducted Emission | Compliant |
| §15.205 | Restricted Band of Operation | Compliant |
| §15.209 | Radiated Emission | Compliant |
| §15.249(a) | Field Strength | Compliant |
| §15.249(d) | Out of Band Emission | Compliant |

3. §15.203 - ANTENNA REQUIREMENT

3.1 Standard Applicable

According to FCC 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 an integral antenna, fulfill the requirement of this section.

4. §15.207 (a) CONDUCTED EMISSION

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

4.2 Test Equipment List and Details

| Description | Manufacturer | Model | Serial Number | Cal. Date | Due. Date |
|-------------------|-----------------|----------|---------------|------------|------------|
| EMI Test Receiver | Rohde & Schwarz | ESPI | 101611 | 2010-12-20 | 2011-12-19 |
| L.I.S.N | Schwarz beck | NSLK8126 | 8126-224 | 2010-12-20 | 2011-12-19 |
| Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100911 | 2010-12-20 | 2011-12-19 |

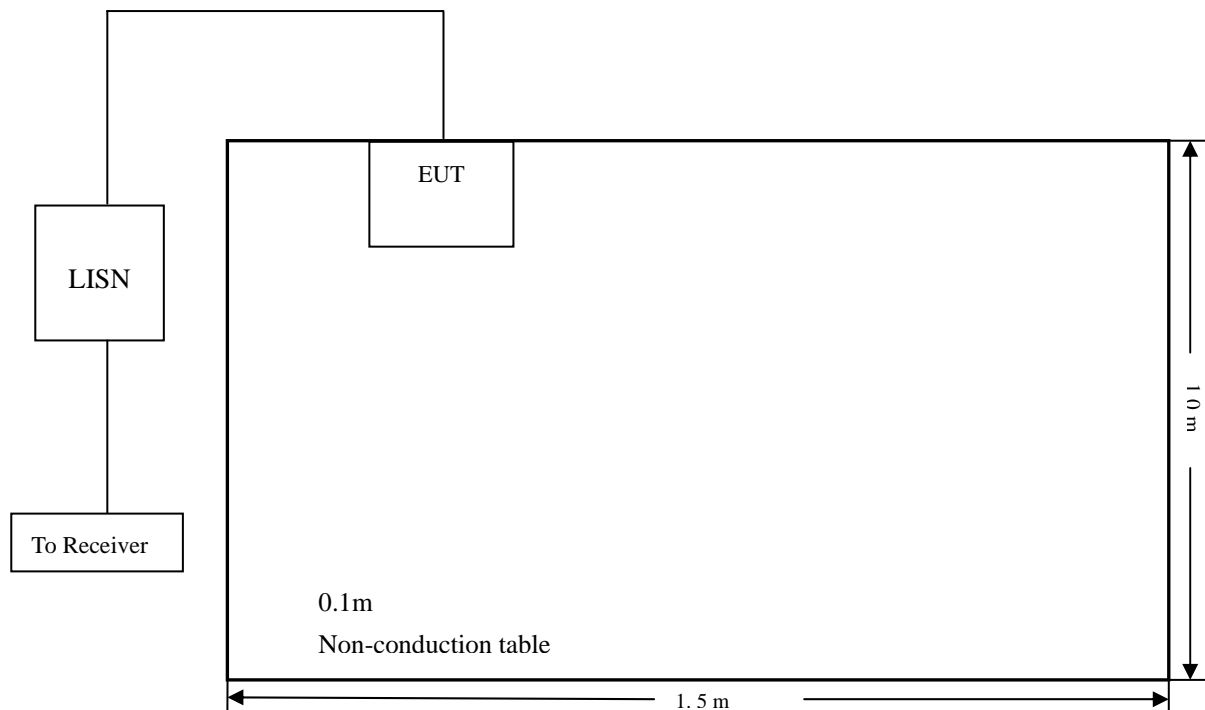
4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 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.

4.4 Basic Test Setup Block Diagram



4.5 Environmental Conditions

| | |
|--------------------|-----------|
| Temperature: | 25 °C |
| Relative Humidity: | 52% |
| ATM Pressure: | 1012 mbar |

4.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency 150 kHz
Stop Frequency..... 30 MHz
Sweep Speed Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth 9 kHz
Quasi-Peak Adapter Mode Normal

4.7 Summary of Test Results/Plots

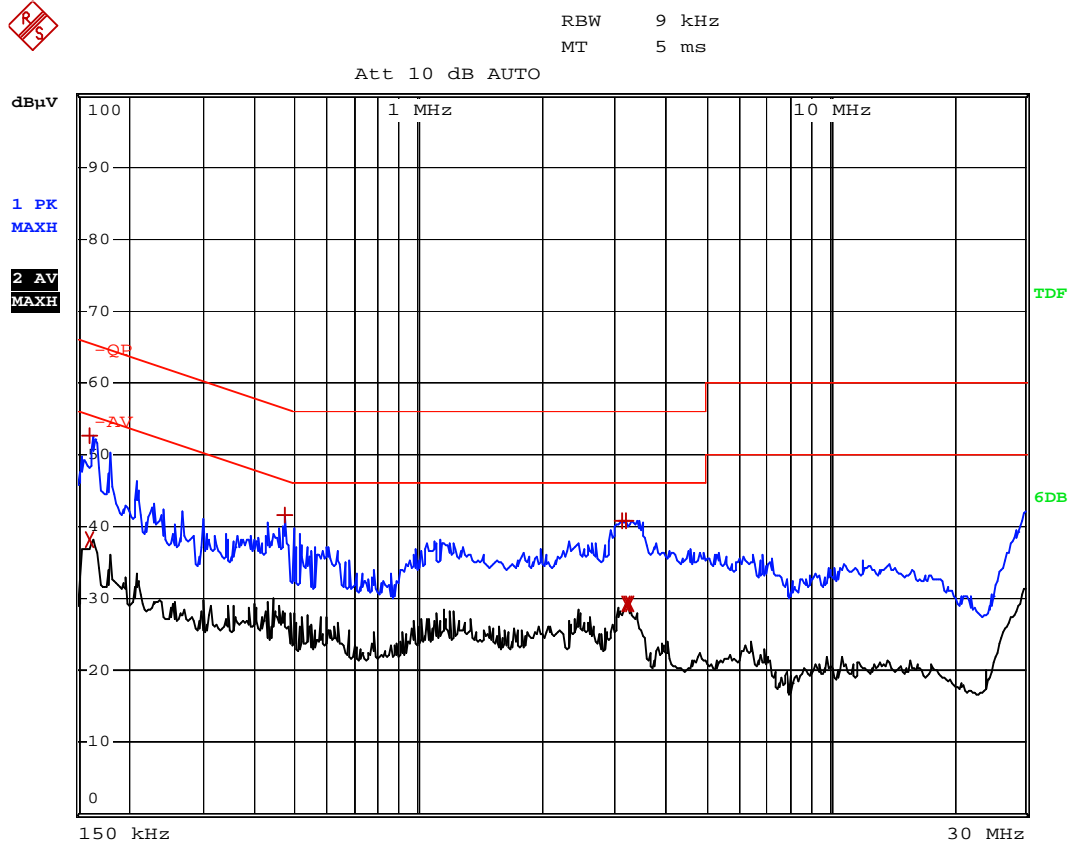
According to the data in section 3.8, the EUT complied with the FCC 15.207 Conducted margin for a Class B device, with the *worst* margin reading of:

-11.06 dB μ V at **0.158 MHz** in the **Line** mode, **Peak** detector, 0.15-30MHz

4.8 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

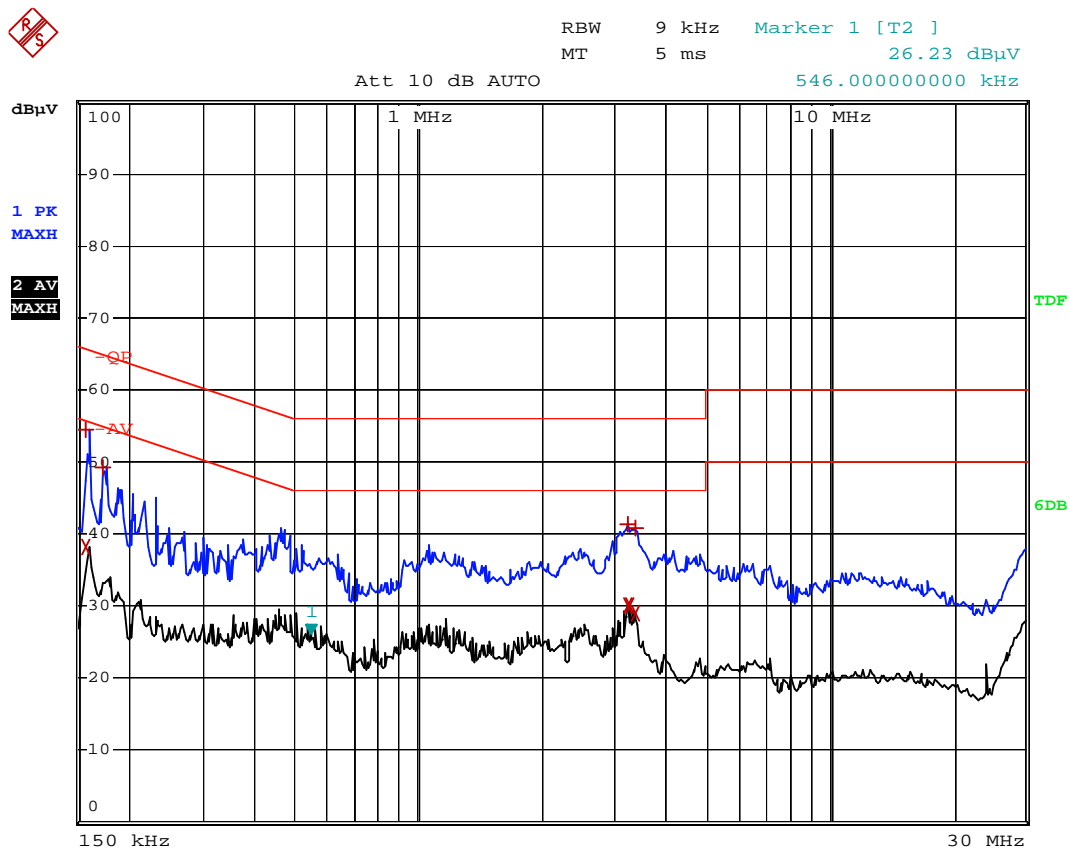
Conducted Disturbance
EUT: 2.4G Radio Control
M/N: RZ 2.4G PROZ
Operating Condition: Operating with power adapter
Test Specification: N
Comment: AC 120V/60Hz



| EDIT PEAK LIST (Prescan Results) | | | |
|----------------------------------|-----------|------------|----------------|
| Trace1: | -QP | | |
| Trace2: | -AV | | |
| Trace3: | --- | | |
| TRACE | FREQUENCY | LEVEL dBµV | DELTA LIMIT dB |
| 1 Max Peak | 162 kHz | 52.56 | -12.80 |
| 2 Average | 162 kHz | 38.31 | -17.05 |
| 1 Max Peak | 470 kHz | 41.62 | -14.89 |
| 1 Max Peak | 3.138 MHz | 40.85 | -15.14 |
| 1 Max Peak | 3.198 MHz | 40.83 | -15.16 |
| 2 Average | 3.198 MHz | 29.30 | -16.69 |
| 2 Average | 3.242 MHz | 29.27 | -16.72 |
| 2 Average | 3.286 MHz | 29.21 | -16.79 |

Plot of Conducted Emissions Test Data

Conducted Disturbance
EUT: 2.4G Radio Control
M/N: RZ 2.4G PROZ
Operating Condition: Operating with power adapter
Test Specification: L
Comment: AC 120V/60Hz



| EDIT PEAK LIST (Prescan Results) | | | |
|----------------------------------|-----------|------------|----------------|
| Trace1: | -QP | | |
| Trace2: | -AV | | |
| Trace3: | --- | | |
| TRACE | FREQUENCY | LEVEL dBμV | DELTA LIMIT dB |
| 1 Max Peak | 158 kHz | 54.50 | -11.06 |
| 2 Average | 158 kHz | 38.31 | -17.25 |
| 1 Max Peak | 174 kHz | 49.26 | -15.49 |
| 1 Max Peak | 3.242 MHz | 41.23 | -14.76 |
| 2 Average | 3.242 MHz | 30.08 | -15.91 |
| 2 Average | 3.286 MHz | 30.05 | -15.94 |
| 1 Max Peak | 3.374 MHz | 40.89 | -15.10 |
| 2 Average | 3.374 MHz | 29.04 | -16.95 |

5. §15.205, §15.209, §15.249 (a)- RADIATED EMISSION

5.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 5.10 dB.

5.2 Standard Applicable

According to §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 fundamental (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 |

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.

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 20 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209,WHICHEVER IS THE LESSER ATTENUATION.

Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

5.3 Test Equipment List and Details

| Description | Manufacturer | Model | Serial Number | Cal. Date | Due. Date |
|--------------------------|----------------------|----------|---------------|------------|------------|
| Spectrum Analyzer | R&S | FSP | 836079/035 | 2010-12-20 | 2011-12-19 |
| EMI Test Receiver | R&S | ESVB | 825471/005 | 2010-12-20 | 2011-12-19 |
| Positioning Controller | C&C | CC-C-1F | N/A | 2010-12-20 | 2011-12-19 |
| RF Switch | EM | EMSW18 | SW060023 | 2010-12-20 | 2011-12-19 |
| Pre-amplifier | Agilent | 8447F | 3113A06717 | 2010-12-20 | 2011-12-19 |
| Pre-amplifier | Compliance Direction | PAP-0118 | 24002 | 2010-12-20 | 2011-12-19 |
| Trilog Broadband Antenna | SCHWARZBECK | VULB9163 | 9163-333 | 2011-01-09 | 2012-01-08 |
| Horn Antenna | ETS | 3117 | 00086197 | 2011-01-09 | 2012-01-08 |

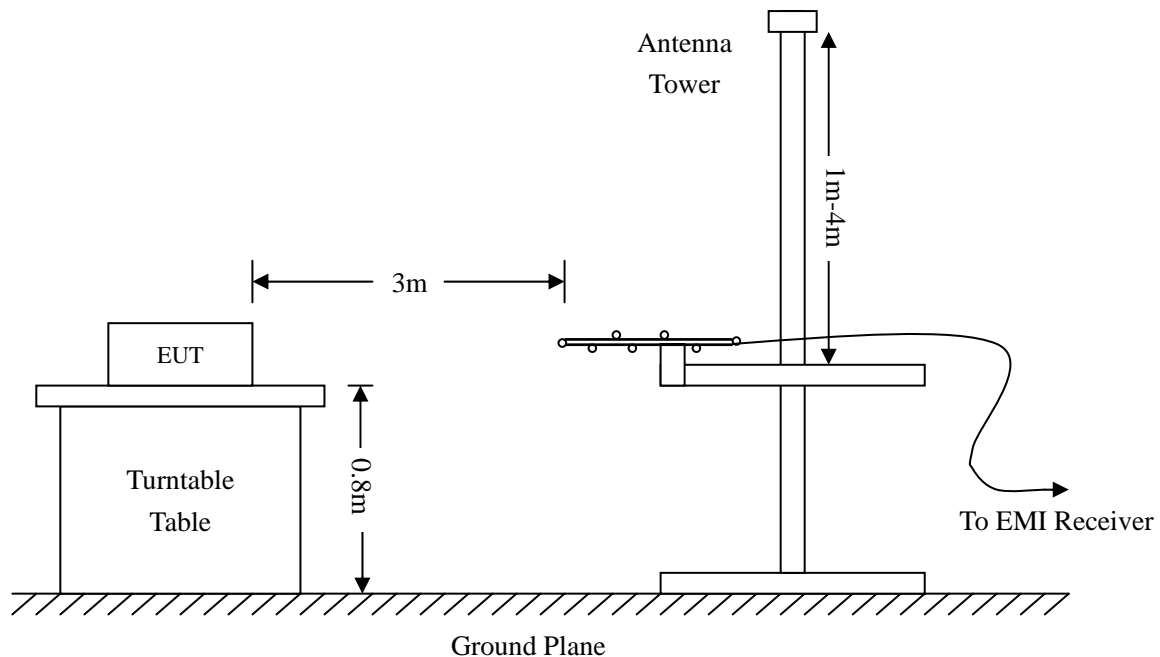
Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

5.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.205 15.247(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.



5.5 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 for Class B. The equation for margin calculation is as follows:

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

5.6 Environmental Conditions

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

5.7 Summary of Test Results/Plots

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

-0.90 dBμV at 4883.600 MHz in the Horizontal polarization, 30 MHz to 25 GHz, 3Meters

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

Plot of Radiation Emissions Test

Radiated Disturbance

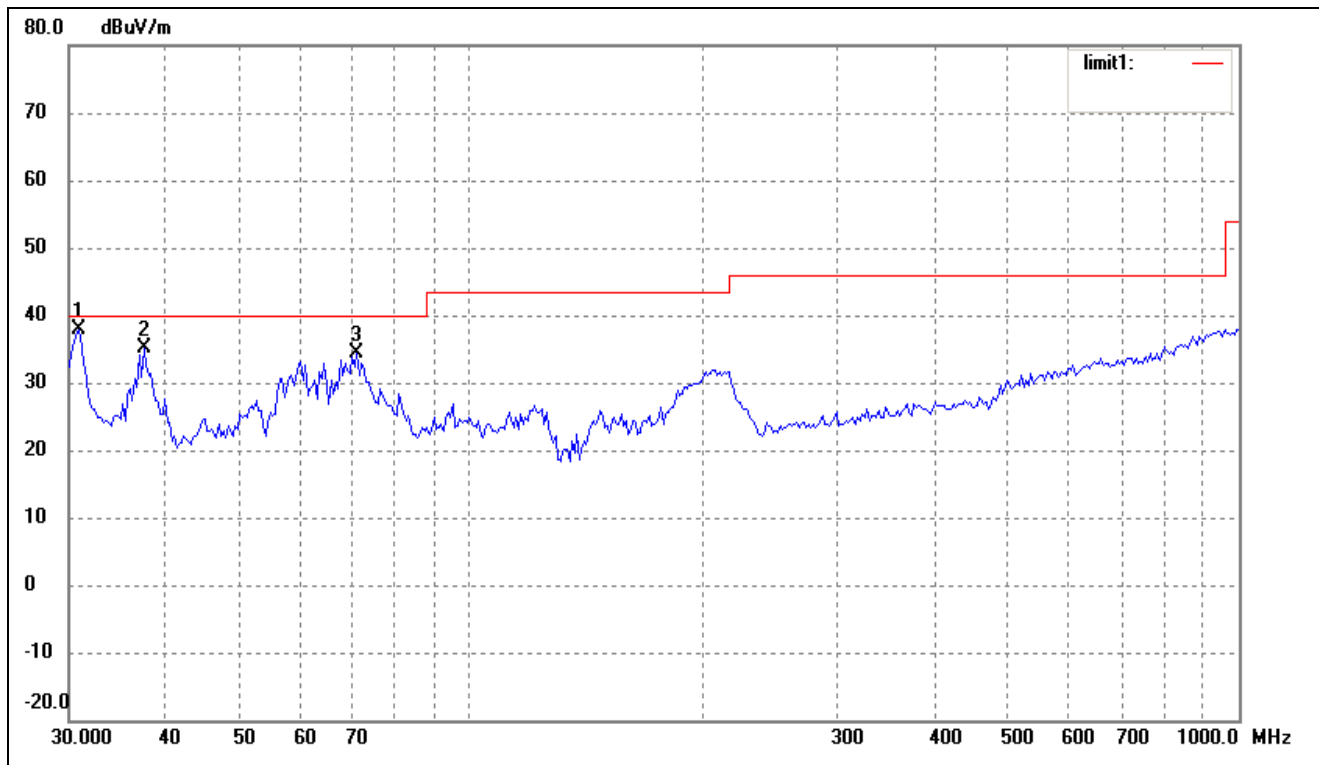
EUT: 2.4G Radio Control

M/N: RZ 2.4G PROZ

Operating Condition: Operating with power adapter

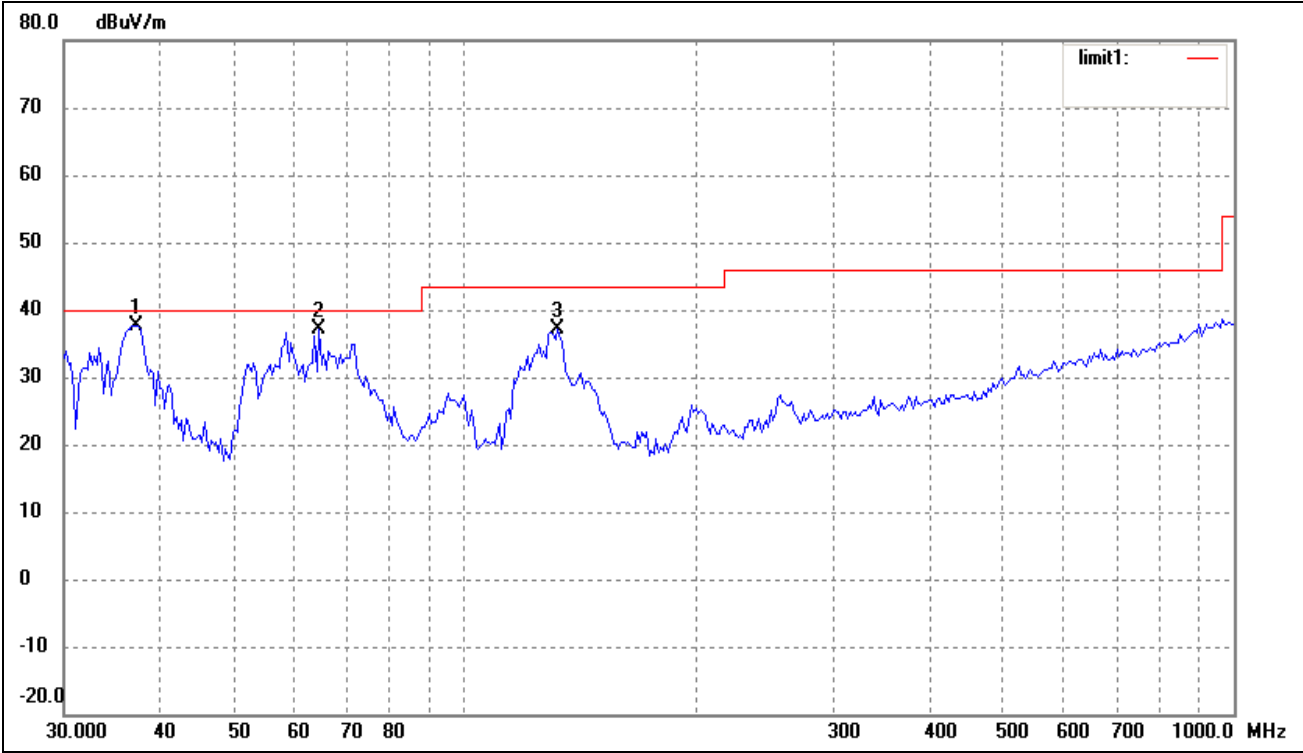
Test Specification: Horizontal & Vertical

Horizontal:



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | (°) | (cm) | |
| 1 | 30.8535 | 31.01 | 6.77 | 37.78 | 40.00 | -2.22 | 360 | 100 | peak |
| 2 | 37.5479 | 27.77 | 7.47 | 35.24 | 40.00 | -4.76 | 360 | 100 | peak |
| 3 | 71.0803 | 30.93 | 3.45 | 34.38 | 40.00 | -5.62 | 360 | 100 | peak |

Vertical:



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | (°) | (cm) | |
| 1 | 37.2855 | 30.24 | 7.40 | 37.64 | 40.00 | -2.36 | 360 | 100 | peak |
| 2 | 64.4331 | 31.20 | 5.81 | 37.01 | 40.00 | -2.99 | 360 | 100 | peak |
| 3 | 131.7577 | 32.55 | 4.46 | 37.01 | 43.50 | -6.49 | 360 | 100 | peak |

Plot of Radiation Emissions Test

Radiated Disturbance

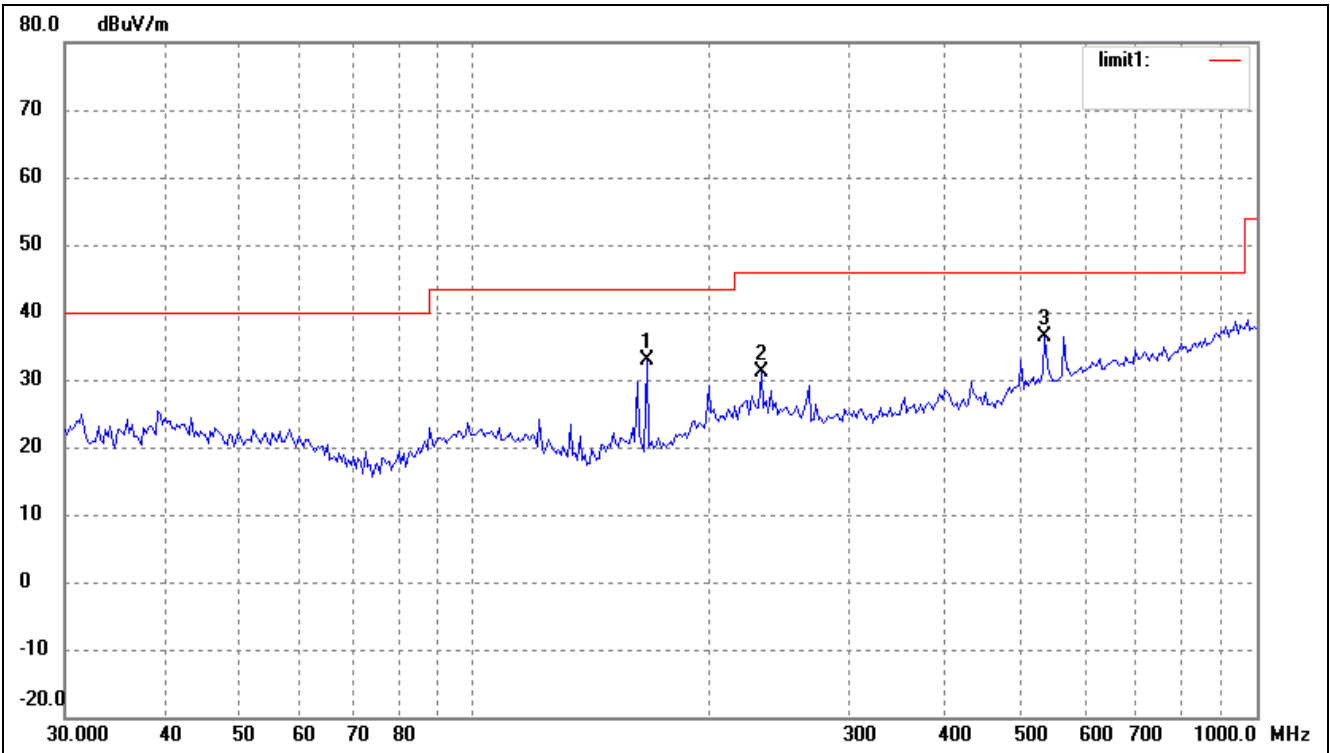
EUT: 2.4G Radio Control

M/N: RZ 2.4G PROZ

Operating Condition: Transmitting below 1GHz (Low CH)

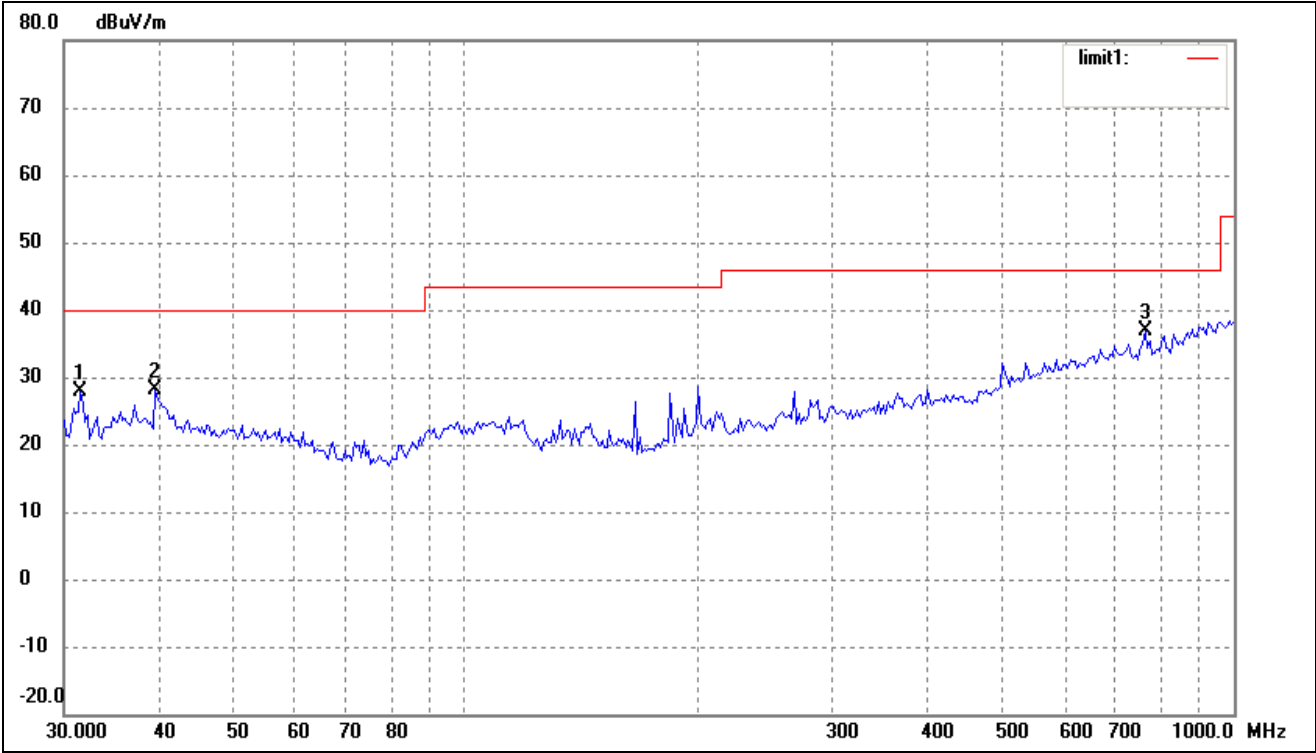
Test Specification: Horizontal & Vertical

Horizontal:

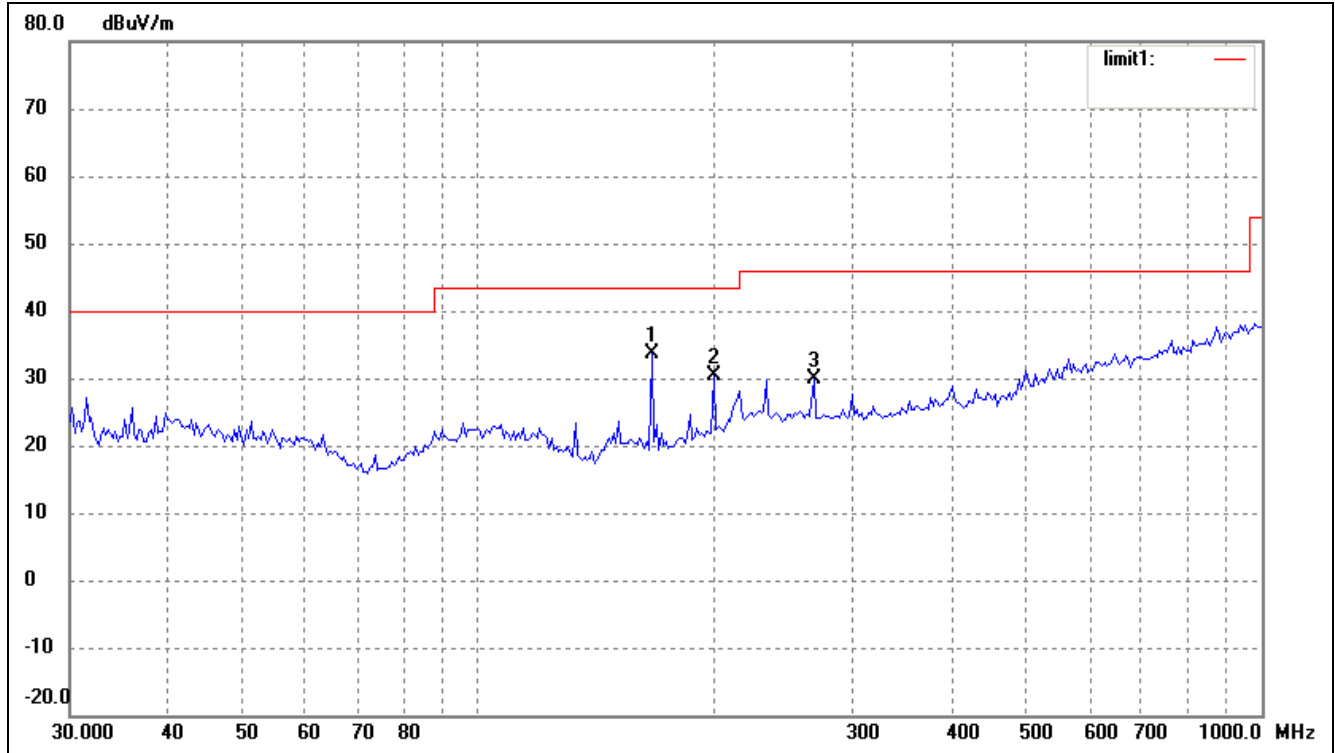


| No. | Frequency | Reading | Correct | Result | Limit | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | (°) | (cm) | |
| 1 | 166.0680 | 28.05 | 4.75 | 32.80 | 43.50 | -10.70 | 306 | 100 | peak |
| 2 | 232.5318 | 23.09 | 8.01 | 31.10 | 46.00 | -14.90 | 154 | 100 | peak |
| 3 | 535.7073 | 21.24 | 15.21 | 36.45 | 46.00 | -9.55 | 11 | 100 | peak |

Vertical:

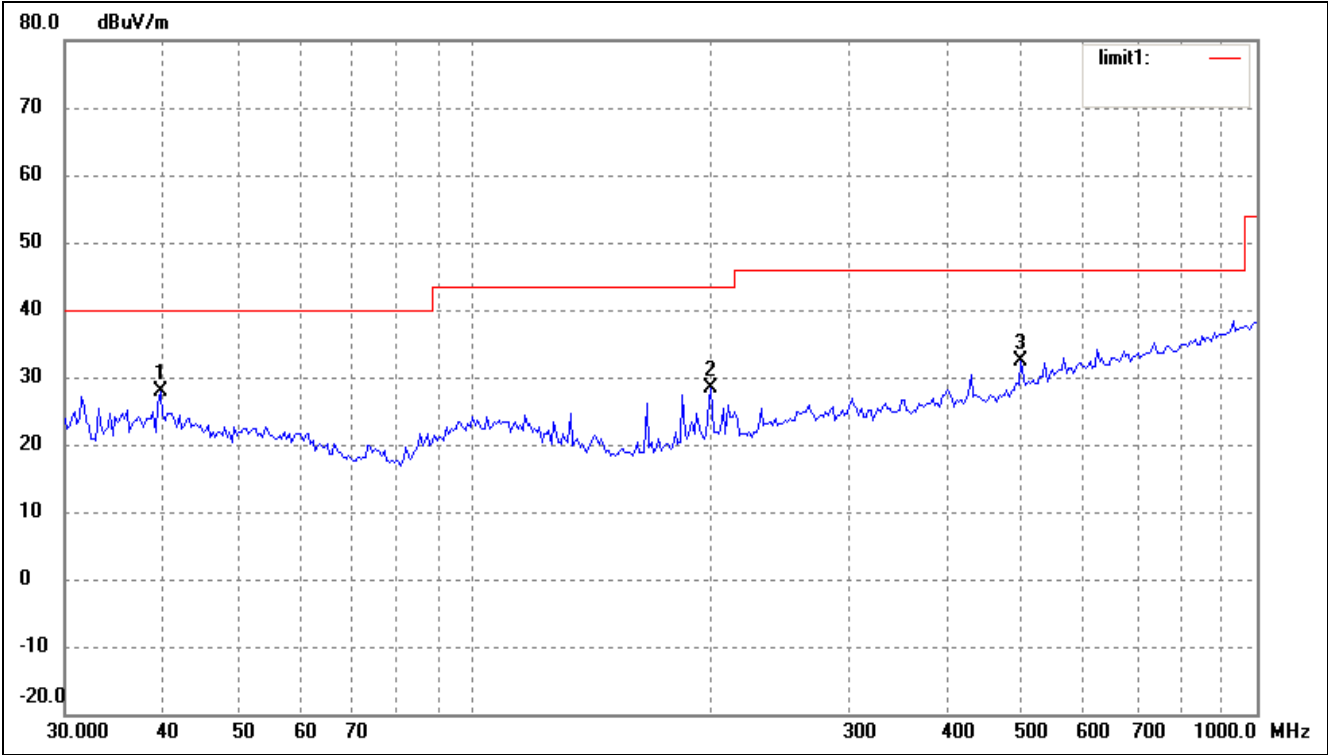


| No. | Frequency | Reading | Correct | Result | Limit | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | (°) | (cm) | |
| 1 | 31.5095 | 21.16 | 6.77 | 27.93 | 40.00 | -12.07 | 325 | 100 | peak |
| 2 | 39.4372 | 20.24 | 7.99 | 28.23 | 40.00 | -11.77 | 24 | 100 | peak |
| 3 | 766.0572 | 18.34 | 18.51 | 36.85 | 46.00 | -9.15 | 18 | 100 | peak |

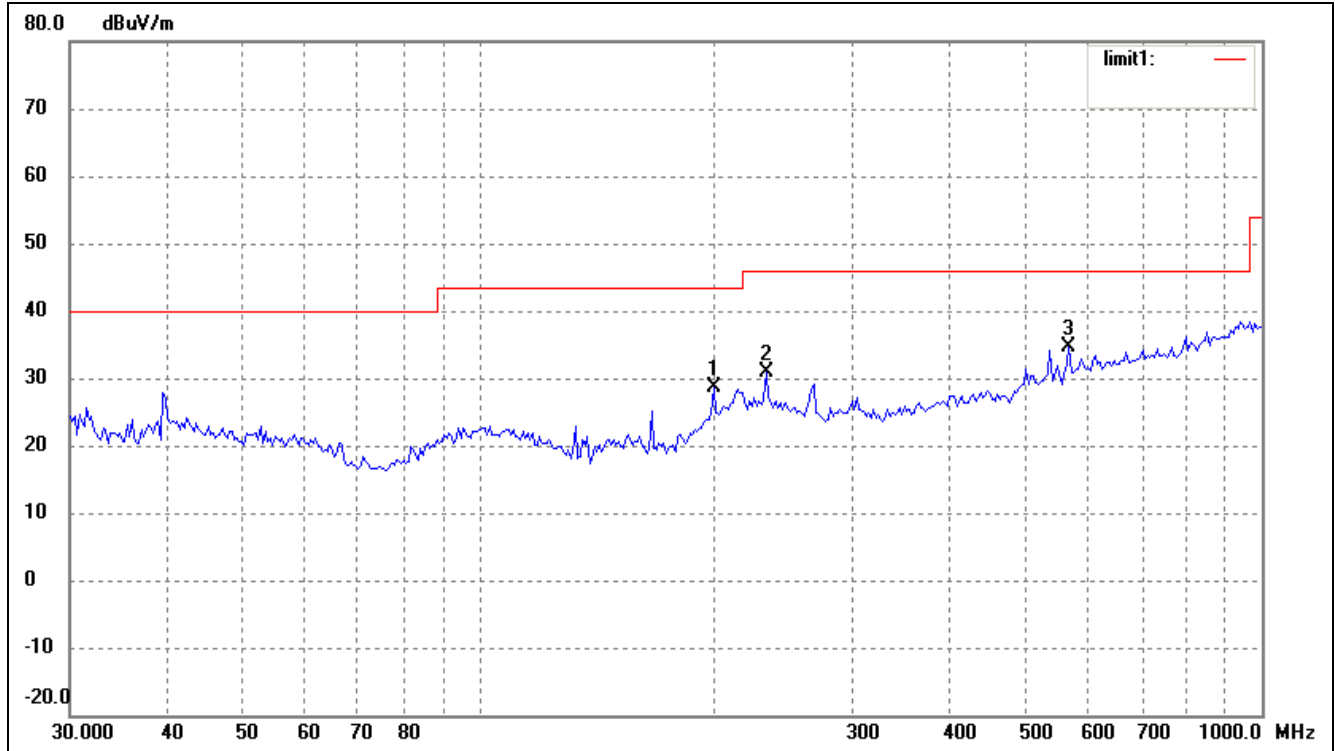
*Radiated Disturbance**EUT: 2.4G Radio Control**M/N: RZ 2.4G PROZ**Operating Condition: Transmitting below 1GHz (Middle CH)**Test Specification: Horizontal & Vertical**Horizontal:*

| No. | Frequency | Reading | Correct | Result | Limit | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | (°) | (cm) | |
| 1 | 166.0680 | 28.83 | 4.75 | 33.58 | 43.50 | -9.92 | 335 | 100 | peak |
| 2 | 199.2855 | 23.83 | 6.58 | 30.41 | 43.50 | -13.09 | 14 | 100 | peak |
| 3 | 267.5455 | 20.74 | 9.17 | 29.91 | 46.00 | -16.09 | 55 | 100 | peak |

Vertical

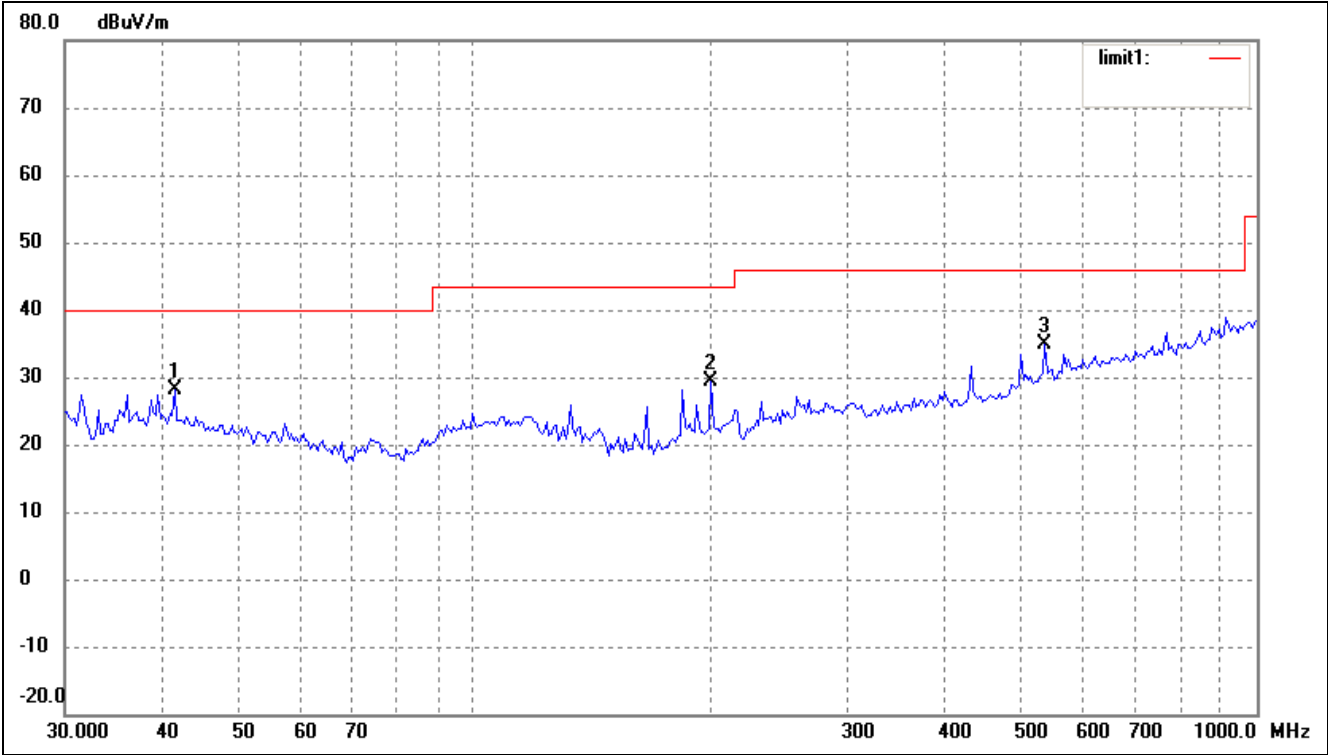


| No. | Frequency | Reading | Correct | Result | Limit | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | (°) | (cm) | |
| 1 | 39.7147 | 19.88 | 8.07 | 27.95 | 40.00 | -12.05 | 292 | 100 | peak |
| 2 | 200.6881 | 21.85 | 6.60 | 28.45 | 43.50 | -15.05 | 21 | 100 | peak |
| 3 | 499.4247 | 17.93 | 14.36 | 32.29 | 46.00 | -13.71 | 64 | 100 | peak |

*Radiated Disturbance**EUT: 2.4G Radio Control**M/N: RZ 2.4G PROZ**Operating Condition: Transmitting below 1GHz (High CH)**Test Specification: Horizontal & Vertical**Horizontal:*

| No. | Frequency (MHz) | Reading (dBuV/m) | Correct dB/m | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Degree (°) | Height (cm) | Remark |
|-----|--------------------|---------------------|-----------------|--------------------|-------------------|----------------|-----------------|----------------|--------|
| 1 | 199.2855 | 22.03 | 6.58 | 28.61 | 43.50 | -14.89 | 223 | 100 | peak |
| 2 | 232.5318 | 22.94 | 8.01 | 30.95 | 46.00 | -15.05 | 64 | 100 | peak |
| 3 | 566.6223 | 18.83 | 15.91 | 34.74 | 46.00 | -11.26 | 97 | 100 | peak |

Vertical



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Degree | Height | Remark |
|-----|-----------|----------|---------|----------|----------|--------|--------|--------|--------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | (°) | (cm) | |
| 1 | 41.4215 | 19.88 | 8.17 | 28.05 | 40.00 | -11.95 | 25 | 100 | peak |
| 2 | 200.6881 | 22.71 | 6.60 | 29.31 | 43.50 | -14.19 | 36 | 100 | peak |
| 3 | 535.7073 | 19.57 | 15.21 | 34.78 | 46.00 | -11.22 | 241 | 100 | peak |

Spurious Emission Above 1GHz

| Frequency MHz | Detector | Meter Reading dBuV | Direction Degree | Polar H / V | Antenna Loss dB | Cable loss dB | Amplifier dB | Correction Amplitude dBuV/m | Limit dBuV/m | Margin dB |
|------------------|----------|--------------------------|---------------------|----------------|-----------------------|------------------|-----------------|-----------------------------------|-----------------|--------------|
| Low CH | | | | | | | | | | |
| 4803.6 | AV | 44.4 | 24 | V | 34.1 | 5.2 | 33 | 50.71 | 54 | -3.3 |
| 4803.6 | AV | 46.7 | 341 | H | 34.1 | 5.2 | 33 | 53.01 | 54 | -1.0 |
| 4803.6 | PK | 44.9 | 24 | V | 34.1 | 5.2 | 33 | 51.15 | 74 | -22.9 |
| 4803.6 | PK | 48.3 | 341 | H | 34.1 | 5.2 | 33 | 54.59 | 74 | -19.4 |
| 7205.4 | AV | 39.4 | 325 | V | 37.4 | 6.1 | 33.5 | 49.42 | 54 | -4.6 |
| 7205.4 | AV | 36.6 | 91 | H | 37.4 | 6.1 | 33.5 | 46.56 | 54 | -7.4 |
| 7205.4 | PK | 40.8 | 325 | V | 37.4 | 6.1 | 33.5 | 50.82 | 74 | -23.2 |
| 7205.4 | PK | 37.3 | 91 | H | 37.4 | 6.1 | 33.5 | 47.33 | 74 | -26.7 |
| 2401.8 | AV | 83.8 | 33 | V | 29.1 | 3.7 | 34 | 82.57 | 94 | -11.4 |
| 2401.8 | AV | 95.1 | 34 | H | 29.1 | 3.7 | 34 | 93.89 | 94 | -0.1 |
| 2401.8 | PK | 82.7 | 33 | V | 29.1 | 3.7 | 34 | 81.54 | 114 | -32.5 |
| 2401.85 | PK | 93.5 | 34 | H | 29.1 | 3.7 | 34 | 92.34 | 114 | -21.7 |
| | | | | | | | | | | |
| 4883.6 | AV | 43.8 | 69 | V | 34.1 | 5.2 | 33 | 50.13 | 54 | -3.9 |
| 4883.6 | AV | 46.8 | 15 | H | 34.1 | 5.2 | 33 | 53.07 | 54 | -0.9 |
| 4883.6 | PK | 45.1 | 69 | V | 34.1 | 5.2 | 33 | 51.37 | 74 | -22.6 |
| 4883.6 | PK | 48.4 | 15 | H | 34.1 | 5.2 | 33 | 54.69 | 74 | -19.3 |
| 7325.4 | AV | 38.7 | 110 | V | 37.4 | 6.1 | 33.5 | 48.67 | 54 | -5.3 |
| 7325.4 | AV | 36.8 | 51 | H | 37.4 | 6.1 | 33.5 | 46.75 | 54 | -7.3 |
| 7325.4 | PK | 39.8 | 110 | V | 37.4 | 6.1 | 33.5 | 49.82 | 74 | -24.2 |
| 7325.4 | PK | 37.0 | 51 | H | 37.4 | 6.1 | 33.5 | 47.02 | 74 | -27.0 |
| 2441.8 | AV | 81.4 | 59 | V | 29.1 | 3.7 | 34 | 80.21 | 94 | -13.8 |
| 2441.8 | AV | 92.1 | 113 | H | 29.1 | 3.7 | 34 | 90.89 | 94 | -3.1 |
| 2441.8 | PK | 82.1 | 59 | V | 29.1 | 3.7 | 34 | 80.88 | 114 | -33.1 |
| 2441.8 | PK | 92.8 | 113 | H | 29.1 | 3.7 | 34 | 91.57 | 114 | -22.4 |
| | | | | | | | | | | |
| 4959.6 | AV | 43.9 | 63 | V | 34.1 | 5.2 | 33 | 50.20 | 54 | -3.8 |
| 4959.6 | AV | 46.7 | 159 | H | 34.1 | 5.2 | 33 | 53.03 | 54 | -1.0 |
| 4959.6 | PK | 44.9 | 63 | V | 34.1 | 5.2 | 33 | 51.15 | 74 | -22.9 |
| 4959.6 | PK | 48.3 | 159 | H | 34.1 | 5.2 | 33 | 54.59 | 74 | -19.4 |
| 7439.4 | AV | 39.4 | 330 | V | 37.4 | 6.1 | 33.5 | 49.42 | 54 | -4.6 |
| 7439.4 | AV | 36.6 | 258 | H | 37.4 | 6.1 | 33.5 | 46.56 | 54 | -7.4 |
| 7439.4 | PK | 40.8 | 330 | V | 37.4 | 6.1 | 33.5 | 50.82 | 74 | -23.2 |
| 7439.4 | PK | 37.3 | 258 | H | 37.4 | 6.1 | 33.5 | 47.33 | 74 | -26.7 |

| | | | | | | | | | | |
|--------|----|------|----|---|------|-----|----|-------|-----|-------|
| 2479.8 | AV | 81.2 | 36 | V | 29.1 | 3.7 | 34 | 80.03 | 94 | -14.0 |
| 2479.8 | AV | 92.1 | 97 | H | 29.1 | 3.7 | 34 | 90.89 | 94 | -3.1 |
| 2479.8 | PK | 80.7 | 36 | V | 29.1 | 3.7 | 34 | 79.53 | 114 | -34.5 |
| 2479.8 | PK | 91.4 | 97 | H | 29.1 | 3.7 | 34 | 90.15 | 114 | -23.9 |

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 5th Harmonics is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4. Emissions 20dB lower than the limit are not reported.

6. §15.249(b) OUT OF BAND EMISSIONS

6.1 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.

6.2 Test Equipment List and Details

| Description | Manufacturer | Model | Serial Number | Cal. Date | Due. Date |
|--------------------------|----------------------|----------|---------------|------------|------------|
| Spectrum Analyzer | R&S | FSP | 836079/035 | 2010-12-20 | 2011-12-19 |
| EMI Test Receiver | R&S | ESVB | 825471/005 | 2010-12-20 | 2011-12-19 |
| Positioning Controller | C&C | CC-C-1F | N/A | 2010-12-20 | 2011-12-19 |
| RF Switch | EM | EMSW18 | SW060023 | 2010-12-20 | 2011-12-19 |
| Pre-amplifier | Agilent | 8447F | 3113A06717 | 2010-12-20 | 2011-12-19 |
| Pre-amplifier | Compliance Direction | PAP-0118 | 24002 | 2010-12-20 | 2011-12-19 |
| Trilog Broadband Antenna | SCHWARZBECK | VULB9163 | 9163-333 | 2011-01-09 | 2012-01-08 |
| Horn Antenna | ETS | 3117 | 00086197 | 2011-01-09 | 2012-01-08 |

Statement of Traceability: All calibrations have been performed per the NVLAP requirements traceable to the NIST.

6.3 Test Procedure

As the radiation test, set the Lowest and Highest Transmitting Channel, observed the outside band of 2400MHz to 2438.5MHz, than mark the higher-level emission for comparing with the FCC rules.

6.4 Environmental Conditions

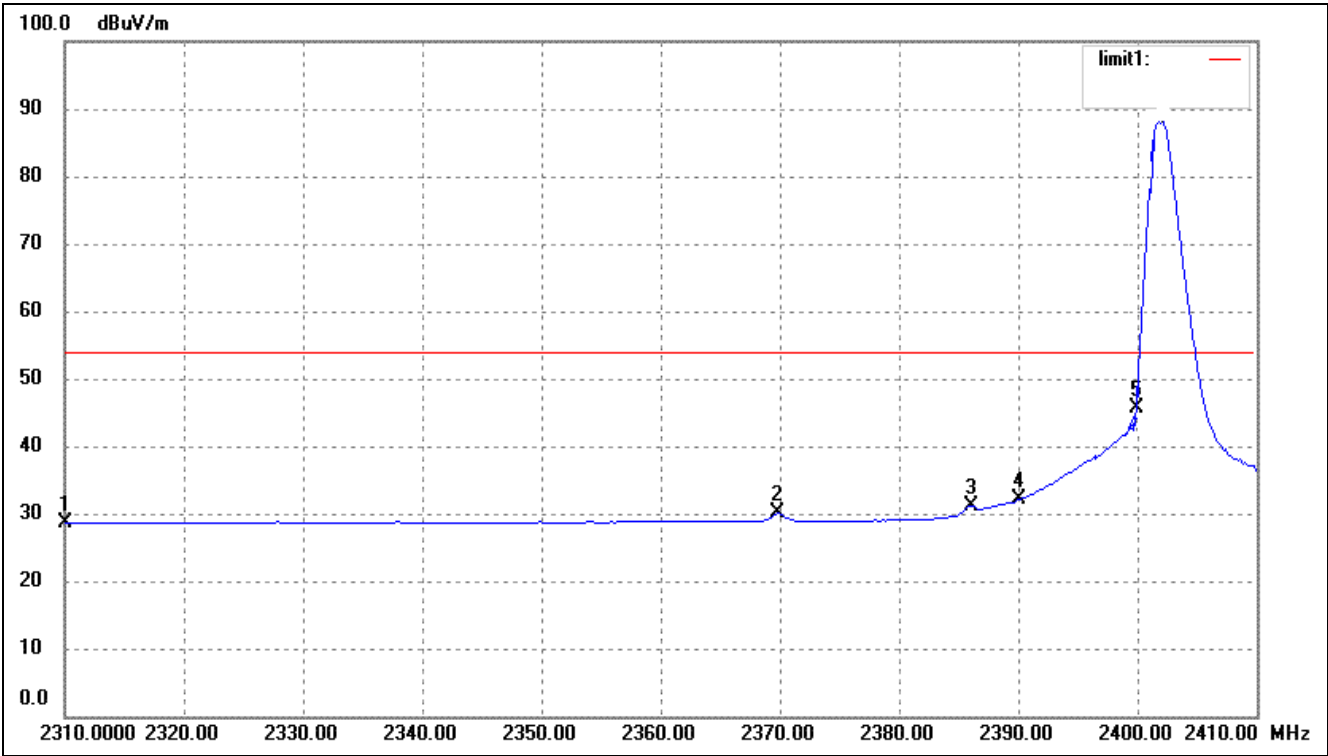
| | |
|--------------------|-----------|
| Temperature: | 24 °C |
| Relative Humidity: | 60 % |
| ATM Pressure: | 1012 mbar |

6.5 Summary of Test Results/Plots

| Frequency MHz | Limit dBuV | Result |
|---------------|------------|--------|
| Low Edge | <54 | Pass |
| High Edge | <54 | Pass |

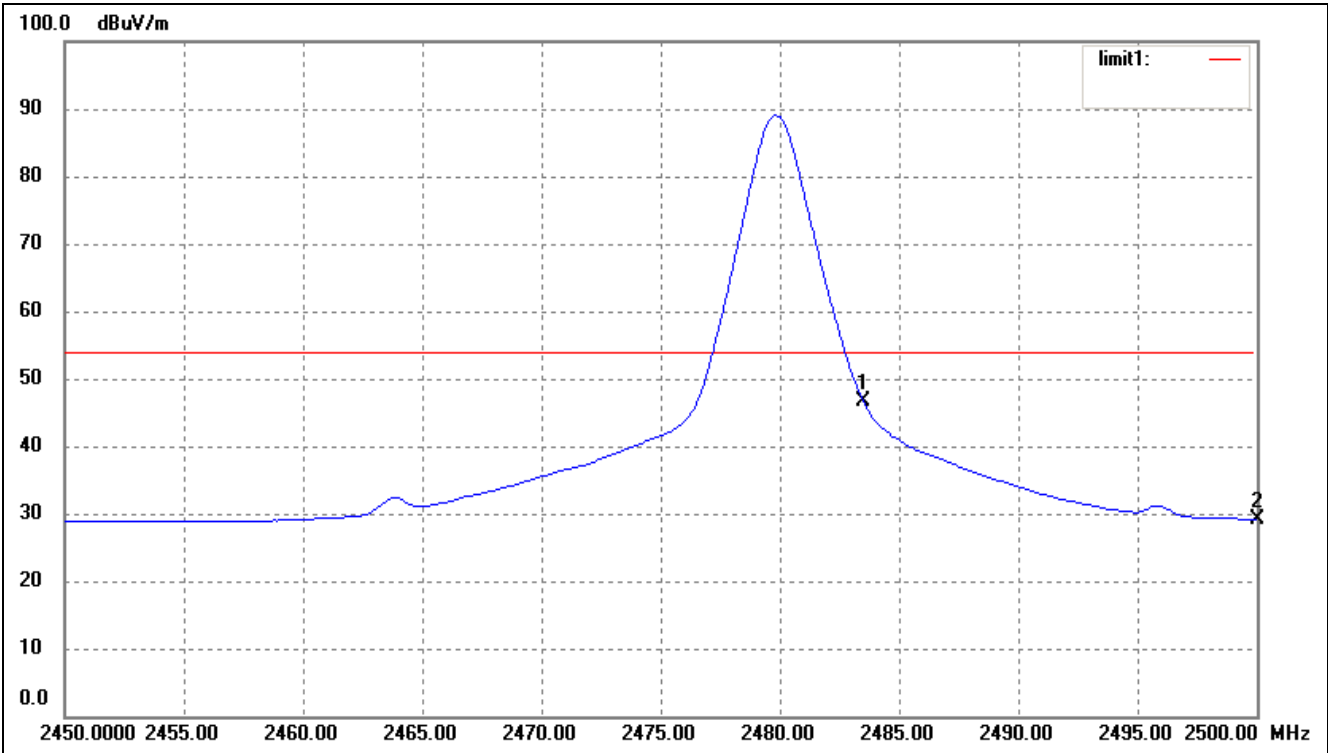
The edge emissions are below the FCC 15.209 Limits. Please refer to the test plots below.

Lowest Bandedge



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|-----|-----------|----------|---------|----------|----------|--------|---------------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2310.000 | 36.12 | -7.51 | 28.61 | 54.00 | -25.39 | Ave Detector |
| | 2310.000 | 44.79 | -7.51 | 37.28 | 74.00 | -36.72 | Peak Detector |
| 2 | 2369.800 | 37.40 | -7.38 | 30.02 | 54.00 | -23.98 | Ave Detector |
| | 2369.800 | 46.99 | -7.38 | 39.61 | 74.00 | -34.39 | Peak Detector |
| 3 | 2386.000 | 38.44 | -7.34 | 31.10 | 54.00 | -22.90 | Ave Detector |
| | 2386.000 | 48.40 | -7.34 | 41.06 | 74.00 | -32.94 | Peak Detector |
| 4 | 2390.000 | 39.36 | -7.34 | 32.02 | 54.00 | -21.98 | Ave Detector |
| | 2390.000 | 49.45 | -7.34 | 42.11 | 74.00 | -31.89 | Peak Detector |
| 5 | 2400.000 | 72.80 | -7.31 | 45.49 | 54.00 | -8.51 | Ave Detector |
| | 2400.000 | 53.26 | -7.31 | 45.95 | 74.00 | -28.05 | Peak Detector |

Highest Bandedge



| No. | Frequency | Reading | Correct | Result | Limit | Margin | Remark |
|-----|-----------|----------|---------|----------|----------|--------|---------------|
| | (MHz) | (dBuV/m) | dB/m | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2483.500 | 53.68 | -7.13 | 46.55 | 54.00 | -7.45 | Ave Detector |
| | 2483.500 | 48.73 | -7.13 | 55.86 | 74.00 | -18.14 | Peak Detector |
| 2 | 2500.000 | 36.18 | -7.08 | 29.10 | 54.00 | -24.90 | Ave Detector |
| | 2500.000 | 45.22 | -7.08 | 38.14 | 74.00 | -35.86 | Peak Detector |

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