MOTOROLA

**PERSONAL COMMUNICATIONS SECTOR**

# PRODUCT SAFETY AND COMPLIANCE EMC LABORATORY

# EMC TEST REPORT - Addendum

**Test Report Number** – 17548-1BT

**Report Date** – January 12, 2006

Revision 2

The test results contained herein relate only to the model(s) identified. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Engineer, I hereby declare that the equipment tested as specified in this report conforms to the requirements indicated.

Signature: Mark Sidlow Name: Mark Sidlow

Title: Senior Electrical Engineer Date : 2006-12-01

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A2LA ACCREDITED

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# Test Report Details

| | |
|---|---|
| Tests Performed By: | Motorola Personal Communications Sector<br>Product Safety and Compliance Group<br>600 North US Hwy 45<br>Libertyville, IL 60048<br>PH (847) 523-6167 Fax (847) 523-4538<br>Motorola PCS FRN: 0004321311<br>FCC Registration Number: 316588<br>Industry Canada Number: IC3908 |
| Radiated Emissions Performed By: | Underwriters Laboratories<br>International EMC Services<br>333 Pfingsten RD<br>Northbrook, IL 60062<br>Contact: Lubomir Madjarov<br>(Tel) 847/664-3957<br>(Fax) 847/313-3957 |
| Tests Requested By: | Motorola Inc.<br>Personal Communications Sector<br>600 North US Hwy 45<br>Libertyville, IL 60048 |
| Product Type: | Cellular Phone |
| Signaling Capability: | GSM 850 & 1900, Bluetooth |
| Model Number: | Vancouver |
| Serial Numbers: | G00V0300DW, G00V0300GV, G00V0300GR |
| Testing Complete Date: | January 6, 2006 |

## Applicable Standards

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

__X__Part 15 Subpart C – Intentional Radiators
_____Part 22 Subpart H - Public Mobile Services
_____Part 24 - Personal Communications Services
_____ Part 90 - Private Land Mobile Radio Service

Applicable Standards: TIA EIA 137-A, TIA EIA 98-C, ANSI 63.4 2001, RSS-118 (AMPS), RSS-128 (TDMA), RSS-129 (CDMA), RSS-133 (PCS)

DA 00-705, “Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems” published by the Federal Communications Commission was also used in the testing of this product.

## Summary of Testing

| Test | Test Name | Pass/Fail |
|---|---|---|
| 1 | Carrier Frequency Separation | Pass |
| 2 | Number of Hopping Frequencies | Pass |
| 3 | Time of Occupancy (Dwell Time) | Pass |
| 4 | 20 dB Bandwidth | Pass |
| 5 | Spurious RF Conducted Emissions | Pass |
| 6 | Field Strength of Spurious Emissions | Pass |
| 7 | Max Power | N/A |
| 8 | Band Edges | See plots |
| 9 | Conducted Spurious Emissions | Pass |

| Test | Test Name | Results |
|---|---|---|
| 1 | Carrier Frequency Separation | 1.0 MHz |
| 2 | Number of Hopping | 79 |
| 3 | Time of Occupancy (Dwell Time) | 2.925 ms |
| 4 | 20 dB Bandwidth | 1.0 MHz |
| 5 | Spurious RF Conducted Emissions | See plots |
| 6 | Field Strength of Spurious Emissions | See plots |
| 7 | Max Power | 15.09 dBm |
| 8 | Band Edges | See plots |
| 9 | Conducted Spurious Emissions | See plots |

The margin with respect to the limit is the minimum margin for all modes and bands. ( ) indicates the margin at which the product exceeds the limit.

## General and Special Conditions

The EUT was tested using a fully charged battery when applicable. Where a battery could not be used due to the need for a controlled variation of input voltage, an external power supply was utilized.

All testing was done in an indoor controlled environment with an average temperature of 22º C and relative humidity of 50%.

# Equipment and Cable Configurations

The EUT was tested in a stand-alone configuration that is representative of typical use.

# Measuring Equipment and Calibration Information

Paste Equipment List Here

| Manufacturer | Equipment Type | Model No. | Serial Number | Cal. Due Date |
|---|---|---|---|---|
| Rohde & Schwarz | Receiver | ESI26 | 838786/010 | 2/7/2006 |
| Hewlett-Packard | EMC Analyzer | 7405 | US39440191 | 1/27/2006 |
| ETS | DRG Horn Antenna | 265 | 2455 | 5/25/2006 |
| ETS | DRG Horn Antenna | 3115 | 6222 | 2/9/2006 |
| ETS | Log-Periodic Antenna | 3148 | 1188 | 6/14/2006 |
| ETS | Biconical Antenna | 3110B | 3370 | 2/16/2006 |
| Attenuator | Weinschel | AS-6 | 6677 | 11/10/2006 |
| Attenuator | Weinschel | AS-3 | 6677 | 11/10/2006 |
| Attenuator | Agilent | 8491A | 36904 | 9/19/2006 |
| Rohde & Schwarz | Mobile Test Set | CMD 80 | DE29008 | N/A |
| Hewlett-Packard | Signal Generator | 83623B | 3844A01195 | 6/20/2006 |
| Thermotron | Environmental Chamber | S-4 | 31580 | 1/17/2006 |
| Agilent | Power Meter | EE4418B | GB40206388 | 6/4/2006 |
| Agilent | Power Sensor | 8447F | 2805A03419 | 2/6/2006 |
| **U.L. Equipment** | | | | |
| Hewlett Packard | QP Adapter | 85650A | 2811A01069 | 1/3/2007 |
| Hewlett Packard | S/A Display | 8566B | 2542A12974 | 1/3/2007 |
| Hewlett Packard | S/A | 8566B | 2637A03376 | 1/3/2007 |
| ANRITSU | Signal Generator | 68369B | 982015 | 1/11/2006 |
| Rhode & Schwartz | S/A | FSEK | DE25315 | 3/15/2006 |
| Chase | Bi-Con Antenna 30-300MHz | VBA6106A | 1246 | 7/22/2006 |
| Chase | Log-Periodic Antenna | UPA6109 | 1060 | 2/23/2006 |
| EMCO | Horn Antenna 1-18GHz | 3115 | 2638 | 7/29/2006 |

All equipment is on a one-year calibration cycle.

# Description of Bluetooth Transmitter

The Vancouver cell phone offers Bluetooth as a feature. The Bluetooth spread-spectrum, frequency hopping transceiver is designed to operate between 2400 and 2483 MHz. The Bluetooth antenna is mounted on the PCB inside of the EUT. The antenna installation is permanent. For a more thorough description of the functionality please refer to Exhibit 12 of this package.

As a Bluetooth transmitter, it is designed operate with other Bluetooth devices as defined by industrial standard. In this application, the device is battery-operated.

The maximum Bluetooth antenna gain is -5 dB.

# Measurement Procedures and Data

## CARRIER FREQUENCY SEPARATION

CFR 47 Part 15.247

## Measurement Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

The Bluetooth transmitter of the V6 had its hopping function enabled. The following spectrum analyzer settings were used:

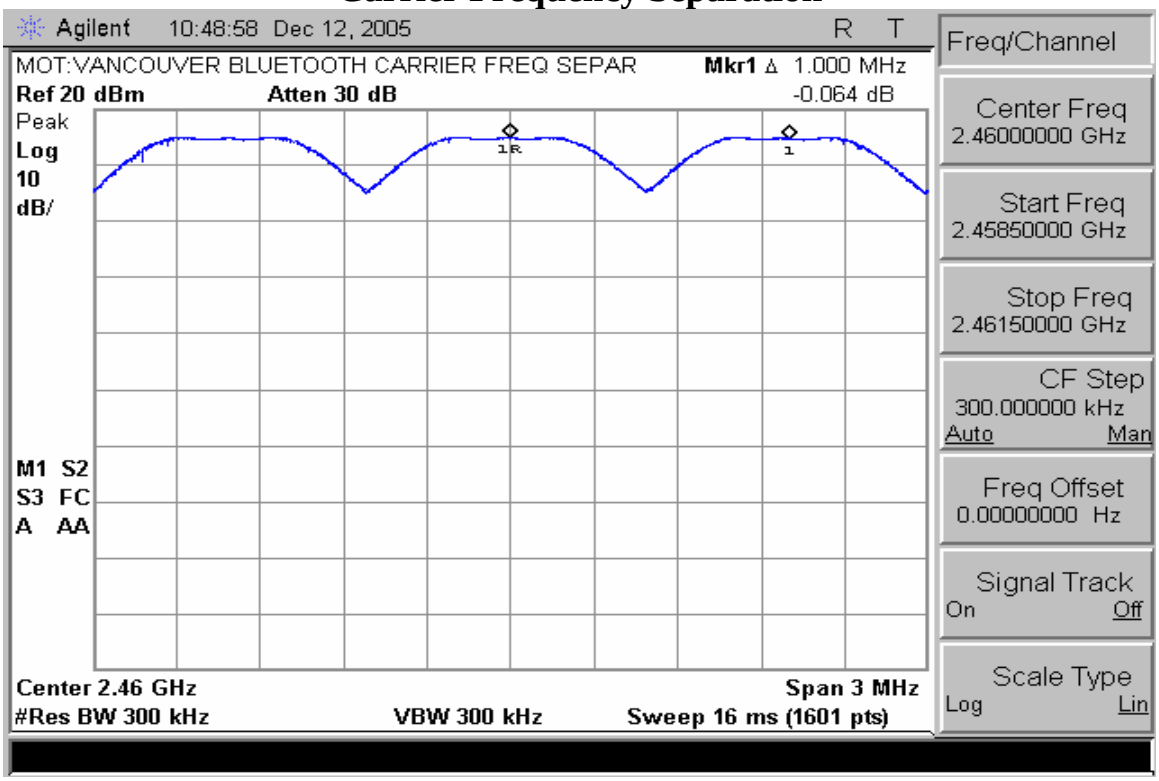
1. Span = wide enough to capture the peaks of two adjacent channels
2. Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
3. Video (or Average) Bandwidth (VBW) ≥ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The marker-delta function was used to determine the separation between the peaks of the adjacent channels.

## Measurement Results

See attached.

## Carrier Frequency Separation



# NUMBER OF HOPPING FREQUENCIES

CFR 47 Part 15.247

## Measurement Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

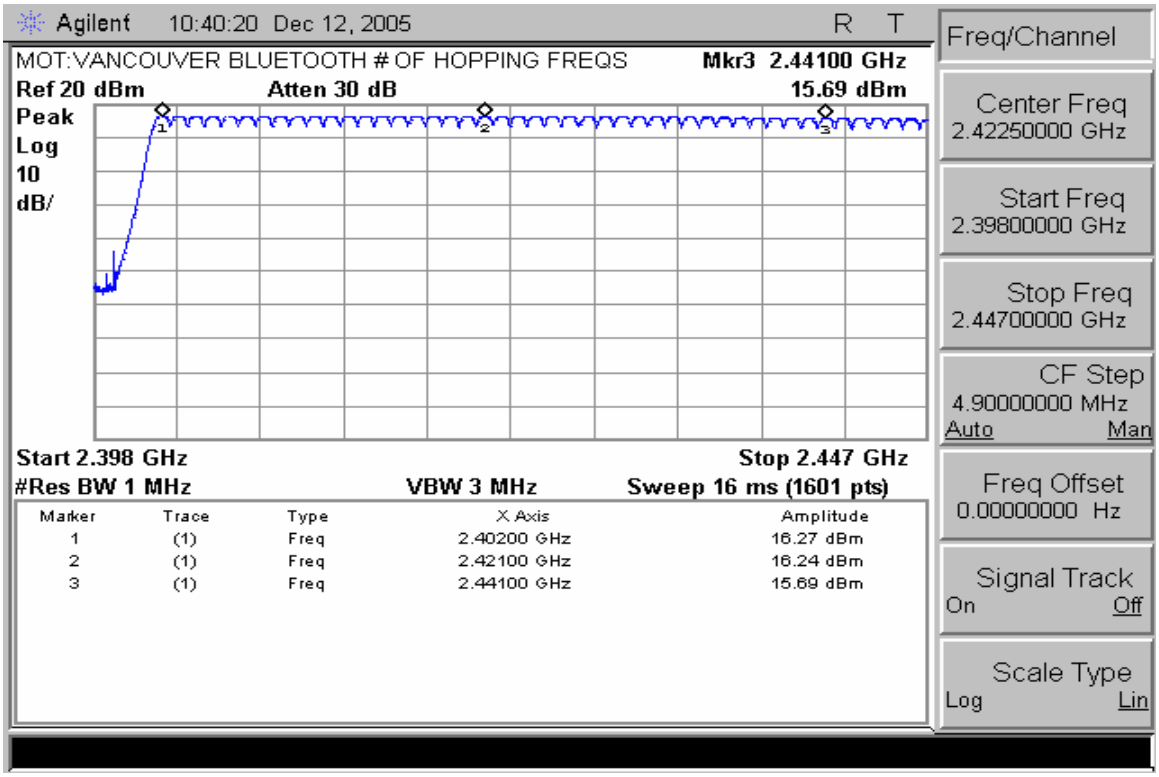
The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = the frequency band of operation
2. RBW ≥ 1% of the span
3. VBW ≥ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

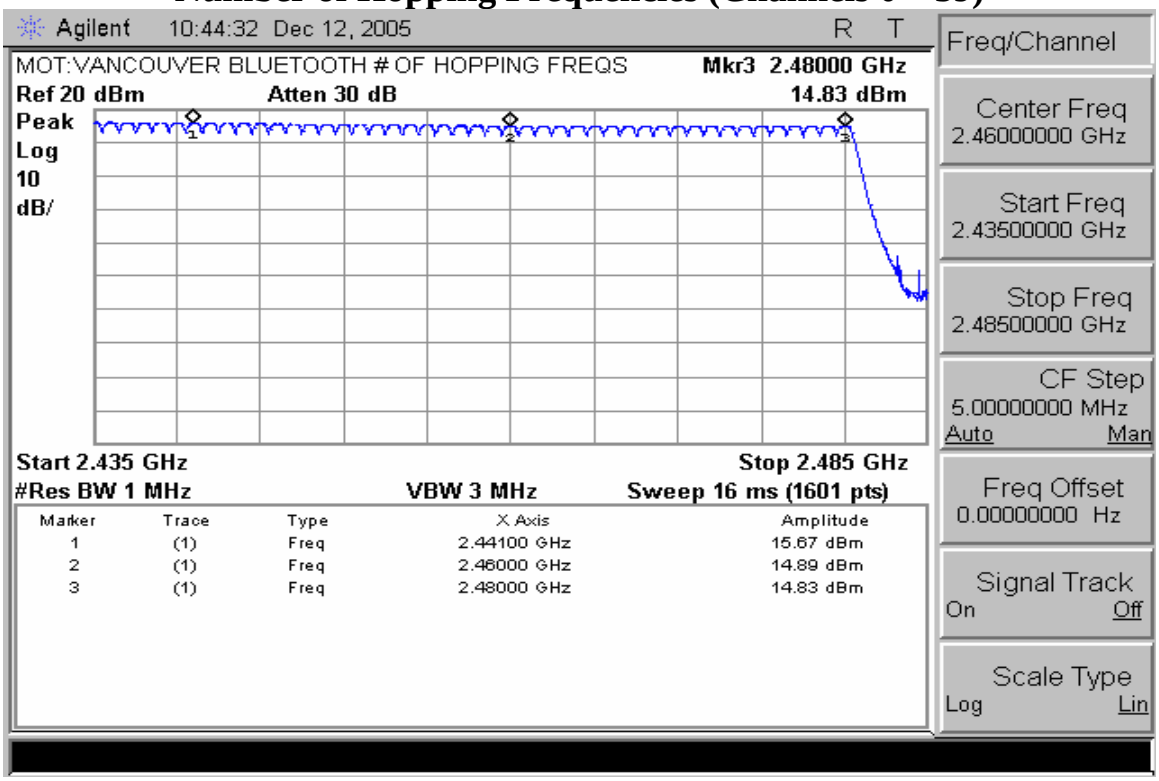
The trace was allowed to stabilize.

## Measurement Results

See attached.




**Number of Hopping Frequencies (Channels 0 – 39)**




**Number of Hopping Frequencies (Channels 39 – 78)**

# TIME OF OCCUPANCY (DWELL TIME)

CFR47 Part 15.247

## Measurement Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

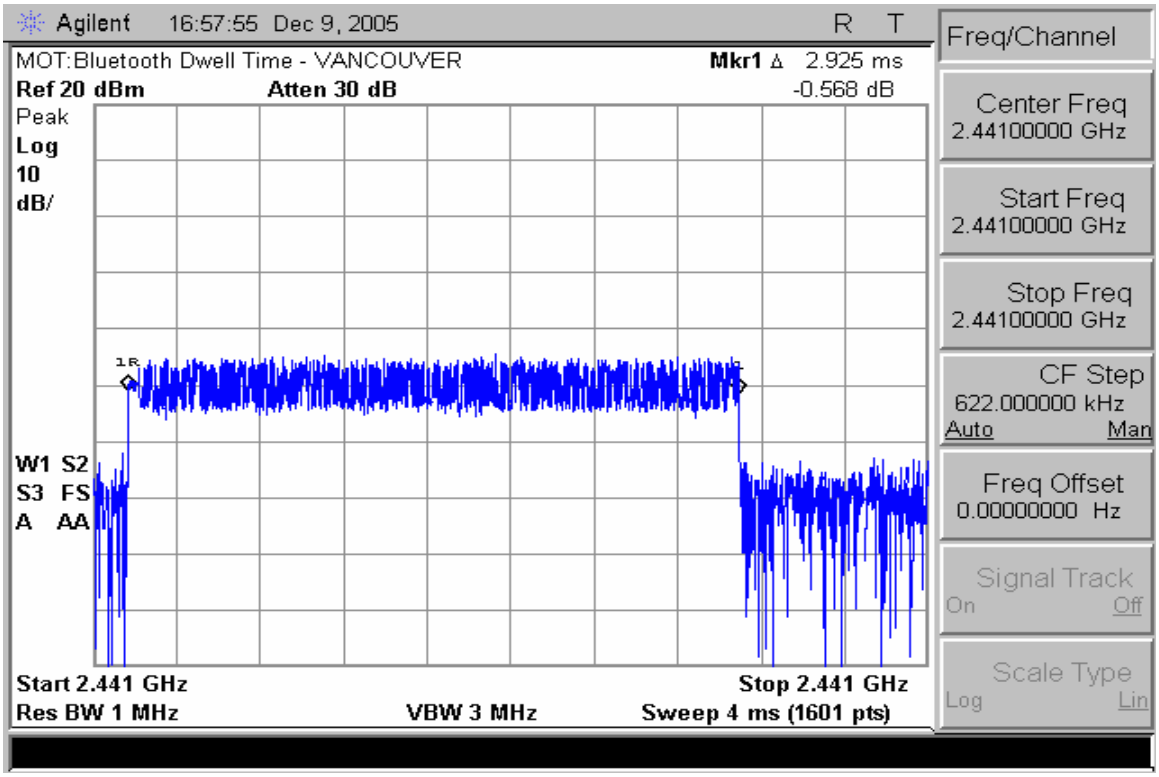
The Bluetooth hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

1. Span = zero span, centered on a hopping channel
2. RBW = 1 MHz
3. VBW ≥ RBW
4. Sweep = as necessary to capture the entire dwell time per hopping channel
5. Detector function = peak
6. Trace = max hold

The marker-delta function was used to determine the dwell time.

## Measurement Results

Attached


Agilent 16:57:55 Dec 9, 2005
R T
MOT:Bluetooth Dwell Time - VANCOUVER
Mkr1 Δ 2.925 ms
Ref 20 dBm
Atten 30 dB
-0.568 dB
Peak
Log
10
dB/
W1 S2
S3 FS
A AA
Start 2.441 GHz
Stop 2.441 GHz
Res BW 1 MHz
VBW 3 MHz
Sweep 4 ms (1601 pts)
Freq/Channel
Center Freq
2.44100000 GHz
Start Freq
2.44100000 GHz
Stop Freq
2.44100000 GHz
CF Step
622.000000 kHz
Auto
Man
Freq Offset
0.00000000 Hz
Signal Track
On
Off
Scale Type
Log
Lin

**Dwell Time**

## 20dB Bandwidth

CFR 47 Part 15.247

## Measurement Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

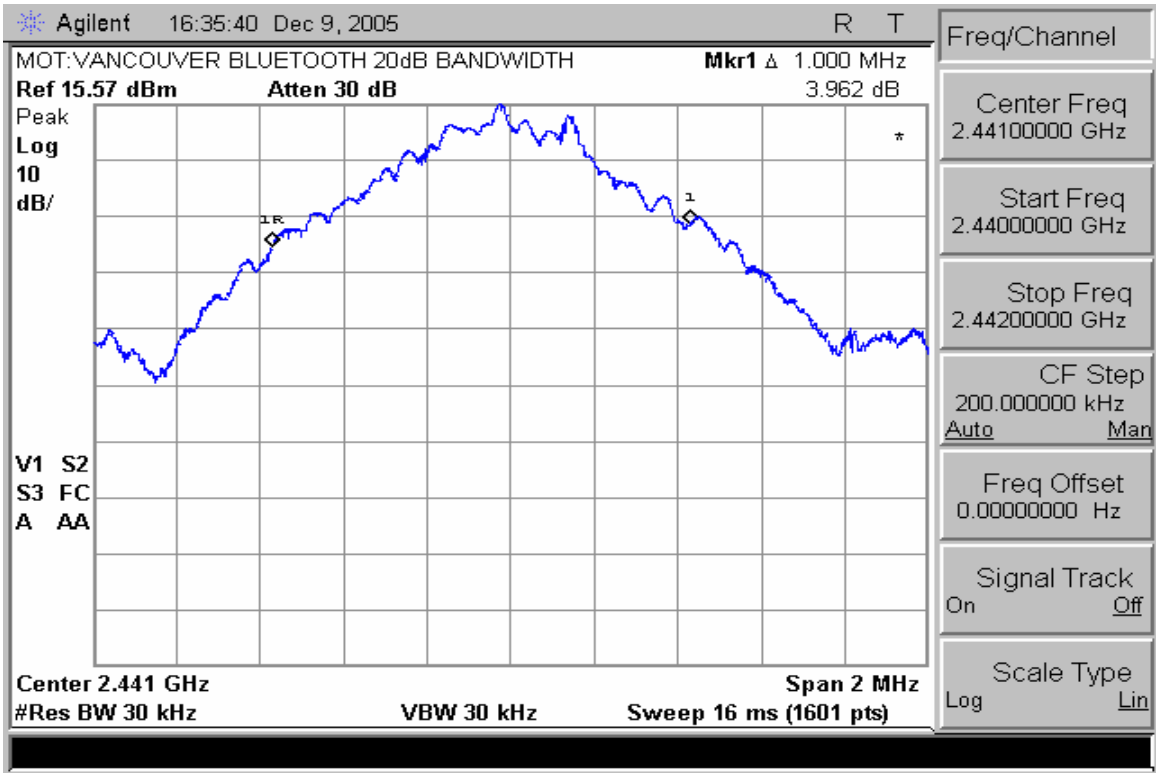
The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = approx. 2 to 3 times the 20dB bandwidth, centered on a hopping frequency
2. RBW ≥ 1% of the 20dB span
3. VBW ≥ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The EUT was transmitting at its maximum data rate. The marker-to-peak function was used to set the marker to the peak of the emission. The marker-delta function was used to measure 20dB down one side of the emission. The marker-delta function and marker was moved to the other side of the emission until it was even with the reference marker. The marker-delta reading at this point was the 20dB bandwidth of the emission.

## Measurement Results

Attached




**20dB Bandwidth**

# FIELD STRENGTH OF SPURIOUS EMISSIONS

CFR Part 2.1053, 15.249

## Measurement Procedure

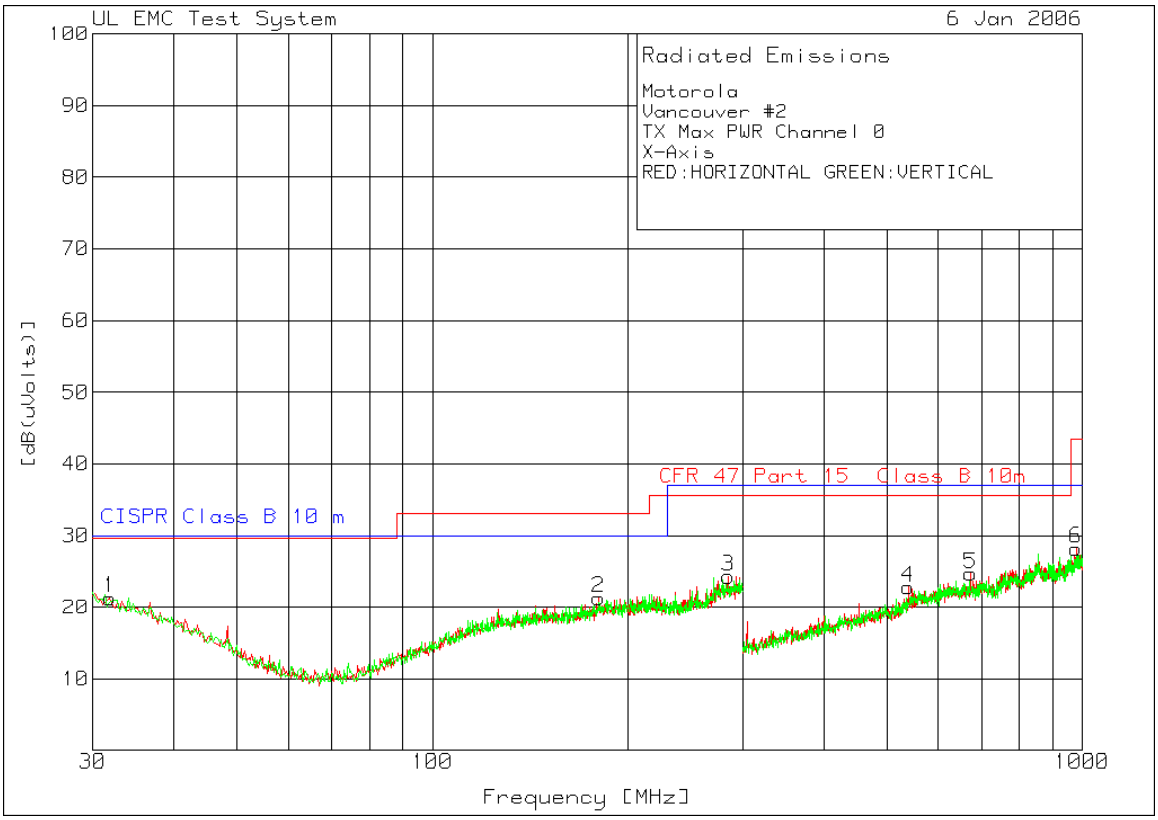
The Equipment-Under-Test is placed inside the semi-anechoic chamber on a wooden table at the turntable center. For each spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum reading on the spectrum analyzer. This is repeated for both horizontal and vertical polarizations of the receive antenna.

Field Strength (dBuV/m) = EMI Receiver Level (dBuV) + Cable Loss (dB) - Amplifier Gain (dB) + Antenna Correction Factor (1/m)

A fully charged battery was used for the supply voltage.

## Measurement Results

Attached

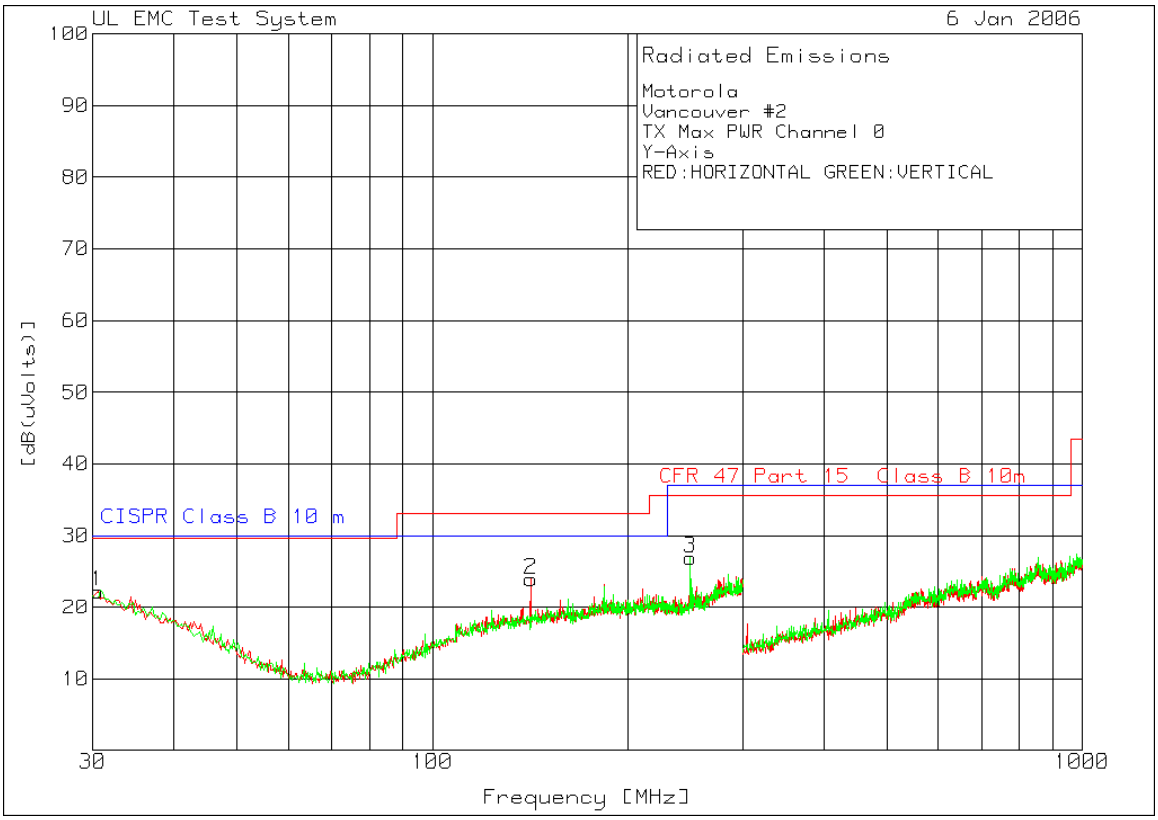



# 30-1000MHz Low Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 0
X-Axis
D:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Azimuth [degs] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | |
| 1 | 31.89 | 34.7 | pk | -30.7 | 17.3 | 21.3 | 29.6 | -8.3 | 30 | -8.7 | 219 |
| 2 | 180.12 | 35.9 | pk | -30.3 | 15.7 | 21.3 | 33.1 | -11.8 | 30 | -8.7 | 106 |
| 3 | 285.15 | 36 | pk | -29.8 | 18.1 | 24.3 | 35.6 | -11.3 | 37 | -12.7 | 219 |
| Range 3 300 - 1000MHz | | | | | | | | | | | |
| 4 | 539.4 | 36.1 | pk | -32 | 18.7 | 22.8 | 35.6 | -12.8 | 37 | -14.2 | 200 |
| 5 | 673.1 | 35.7 | pk | -31.2 | 20.2 | 24.7 | 35.6 | -10.9 | 37 | -12.3 | 313 |
| 6 | 978.3 | 35.9 | pk | -31.3 | 23.6 | 28.2 | 43.5 | -15.3 | 37 | -8.8 | 41 |

T 1: CFR 47 Part 15 Class B 10m

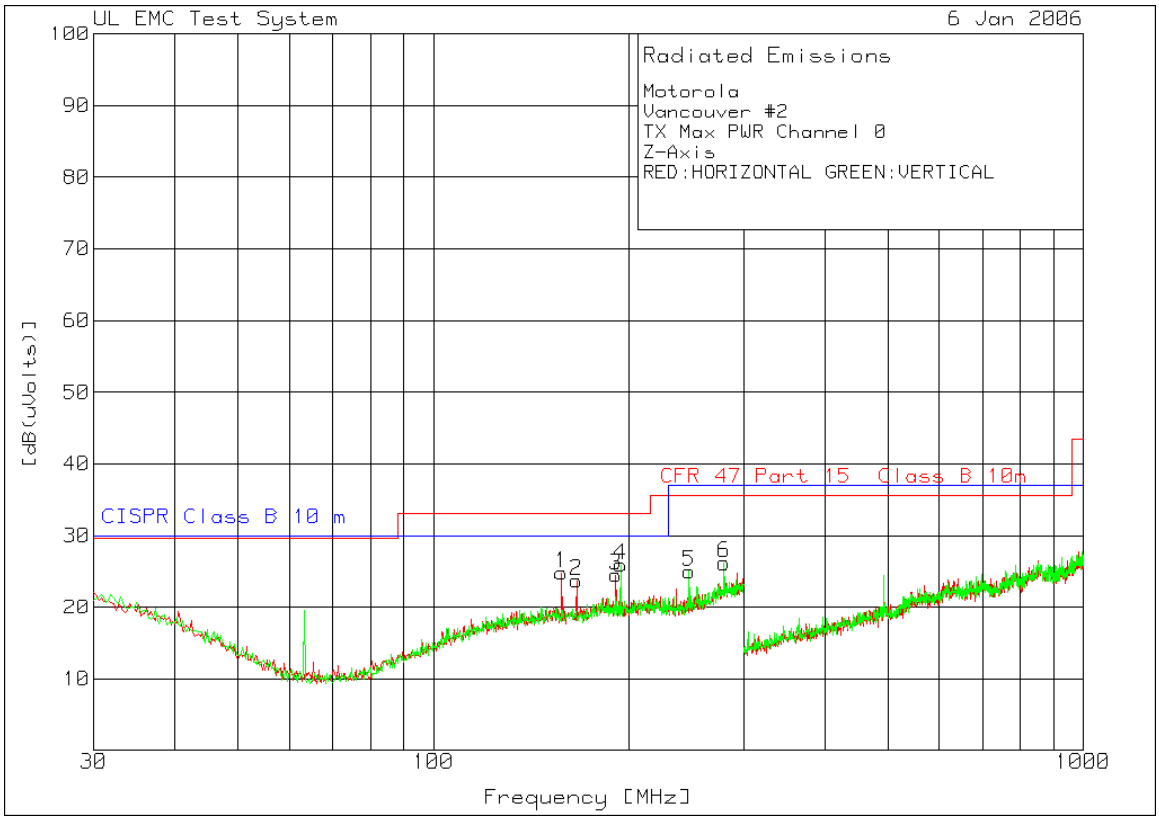



# 30-1000MHz Low Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 0
Y-Axis
RED:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 30.54 | 35 | pk | -30.7 | 17.9 | 22.2 | 29.6 | -7.4 | 30 | -7.8 | 40 | 100 | Horz |
| 2 | 141.78 | 40 | pk | -30.5 | 14.4 | 23.9 | 33.1 | -9.2 | 30 | -6.1 | 256 | 100 | Horz |
| Range 2 30 - 300MHz | | | | | | | | | | | | | |
| 3 | 249.51 | 40.8 | pk | -29.9 | 16 | 26.9 | 35.6 | -8.7 | 37 | -10.1 | 223 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 10m

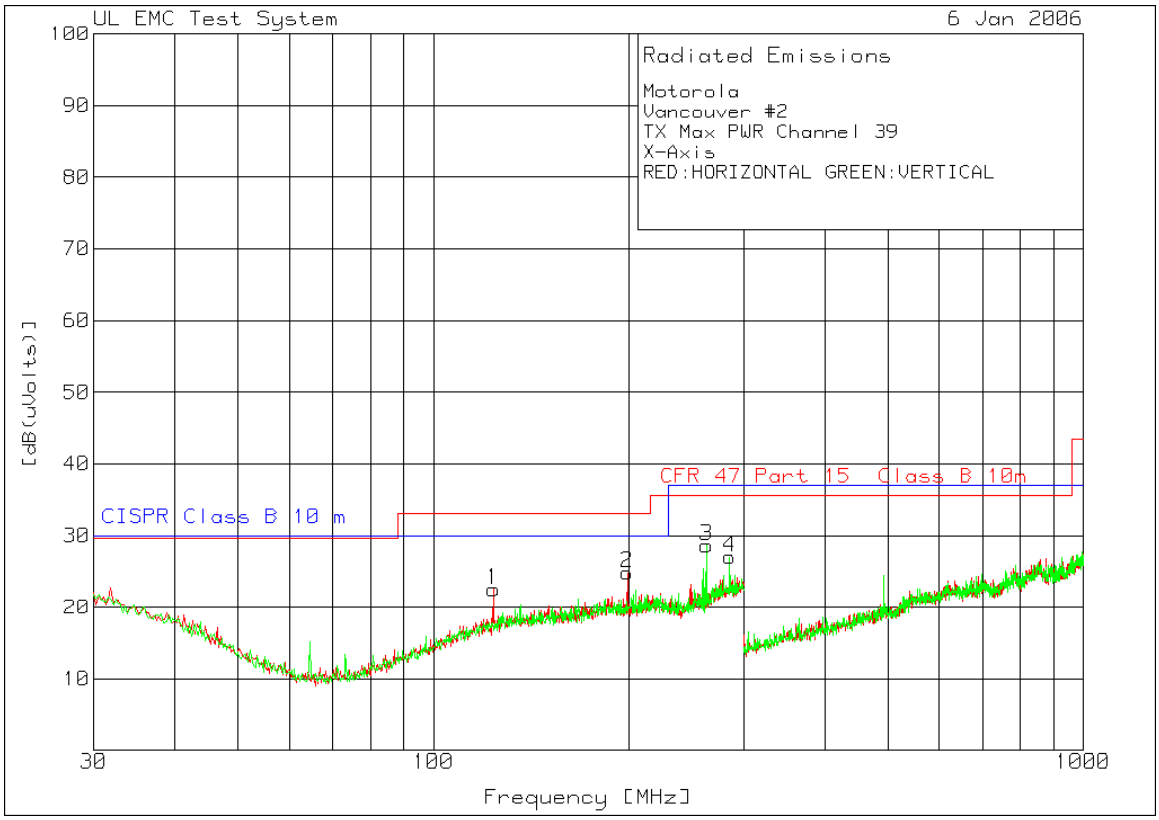



# 30-1000MHz Low Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 0
Z-Axis
RED:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 157.44 | 40.3 | pk | -30.4 | 14.9 | 24.8 | 33.1 | -8.3 | 30 | -5.2 | 288 | 100 | Horz |
| 2 | 166.08 | 39.1 | pk | -30.4 | 15 | 23.7 | 33.1 | -9.4 | 30 | -6.3 | 300 | 100 | Horz |
| 3 | 190.92 | 39 | pk | -30.3 | 15.8 | 24.5 | 33.1 | -8.6 | 30 | -5.5 | 254 | 100 | Horz |
| Range 2 30 - 300MHz | | | | | | | | | | | | | |
| 4 | 194.16 | 40.5 | pk | -30.3 | 15.7 | 25.9 | 33.1 | -7.2 | 30 | -4.1 | 120 | 100 | Vert |
| 5 | 247.35 | 39.2 | pk | -30 | 15.8 | 25 | 35.6 | -10.6 | 37 | -12 | 74 | 100 | Vert |
| 6 | 280.02 | 38 | pk | -29.7 | 17.9 | 26.2 | 35.6 | -9.4 | 37 | -10.8 | 188 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 10m

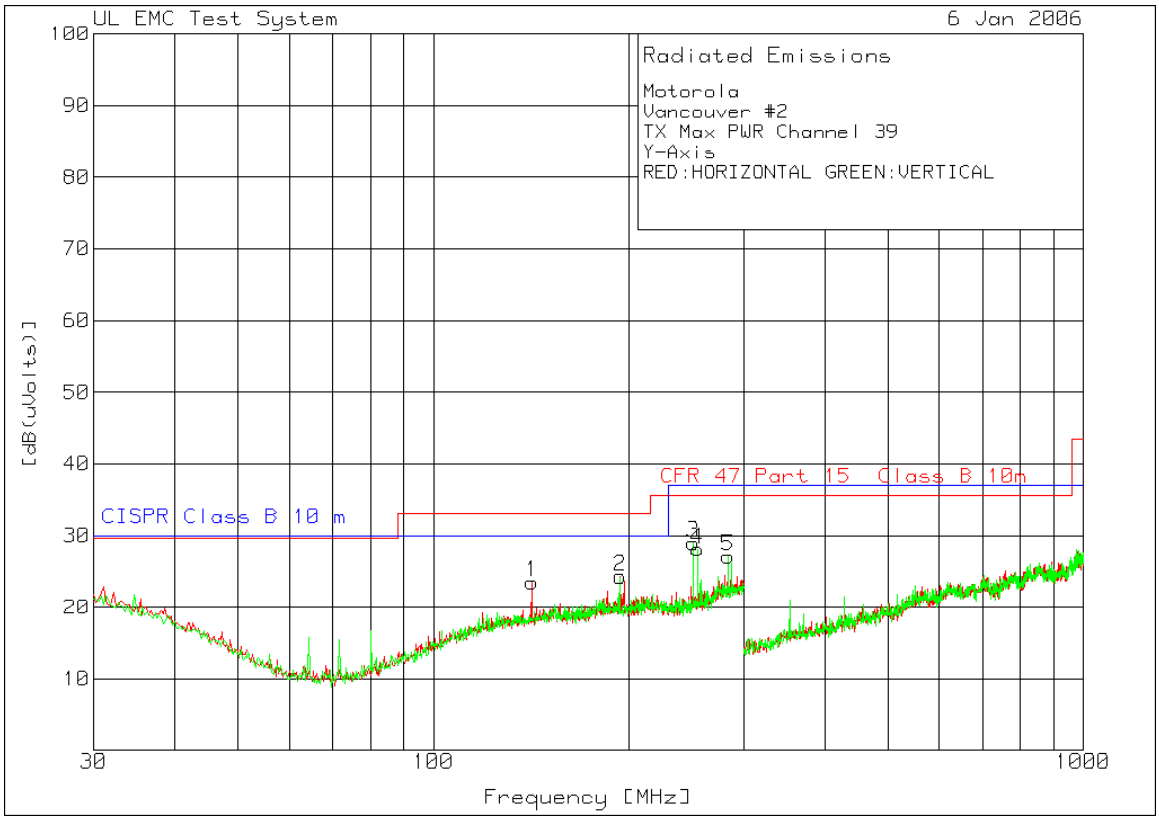



# 30-1000MHz Mid Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 39
X-Axis
RED:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 123.69 | 39.4 | pk | -30.4 | 13.5 | 22.5 | 33.1 | -10.6 | 30 | -7.5 | 106 | 100 | Horz |
| 2 | 198.75 | 39.4 | pk | -30.4 | 15.8 | 24.8 | 33.1 | -8.3 | 30 | -5.2 | 322 | 100 | Horz |
| Range 2 30 - 300MHz | | | | | | | | | | | | | |
| 3 | 263.01 | 42.1 | pk | -30 | 16.5 | 28.6 | 35.6 | -7 | 37 | -8.4 | 315 | 100 | Vert |
| 4 | 285.69 | 38.7 | pk | -29.8 | 18.1 | 27 | 35.6 | -8.6 | 37 | -10 | 349 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 10m

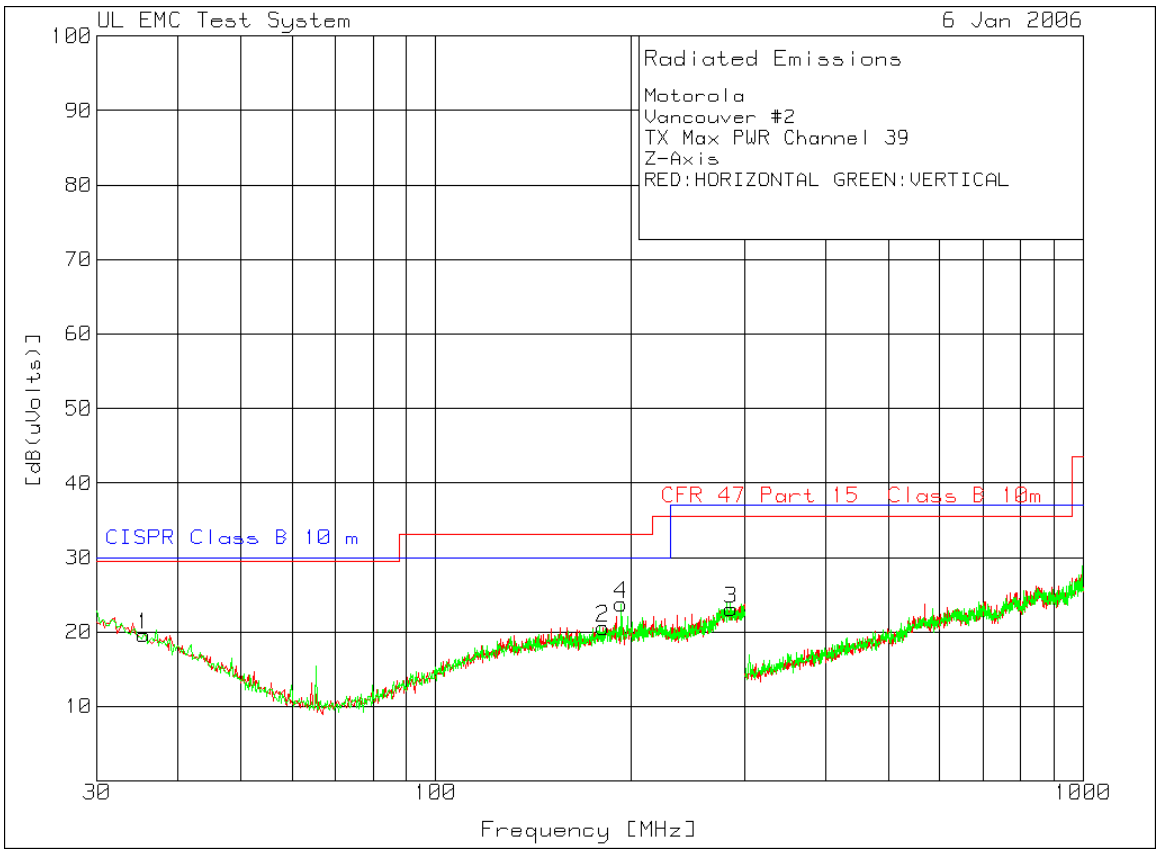



# 30 -1000MHz Mid Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 39
Y-Axis
D:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 141.78 | 39.6 | pk | -30.5 | 14.4 | 23.5 | 33.1 | -9.6 | 30 | -6.5 | 311 | 100 | Horz |
| 2 | 193.89 | 38.9 | pk | -30.3 | 15.7 | 24.3 | 33.1 | -8.8 | 30 | -5.7 | 288 | 100 | Horz |
| Range 2 30 - 300MHz | | | | | | | | | | | | | |
| 3 | 251.13 | 42.9 | pk | -30 | 16.1 | 29 | 35.6 | -6.6 | 37 | -8 | 97 | 100 | Vert |
| 4 | 254.91 | 41.7 | pk | -30 | 16.4 | 28.1 | 35.6 | -7.5 | 37 | -8.9 | 182 | 100 | Vert |
| 5 | 284.07 | 38.9 | pk | -29.8 | 18 | 27.1 | 35.6 | -8.5 | 37 | -9.9 | 239 | 100 | Vert |

IT 1: CFR 47 Part 15 Class B 10m

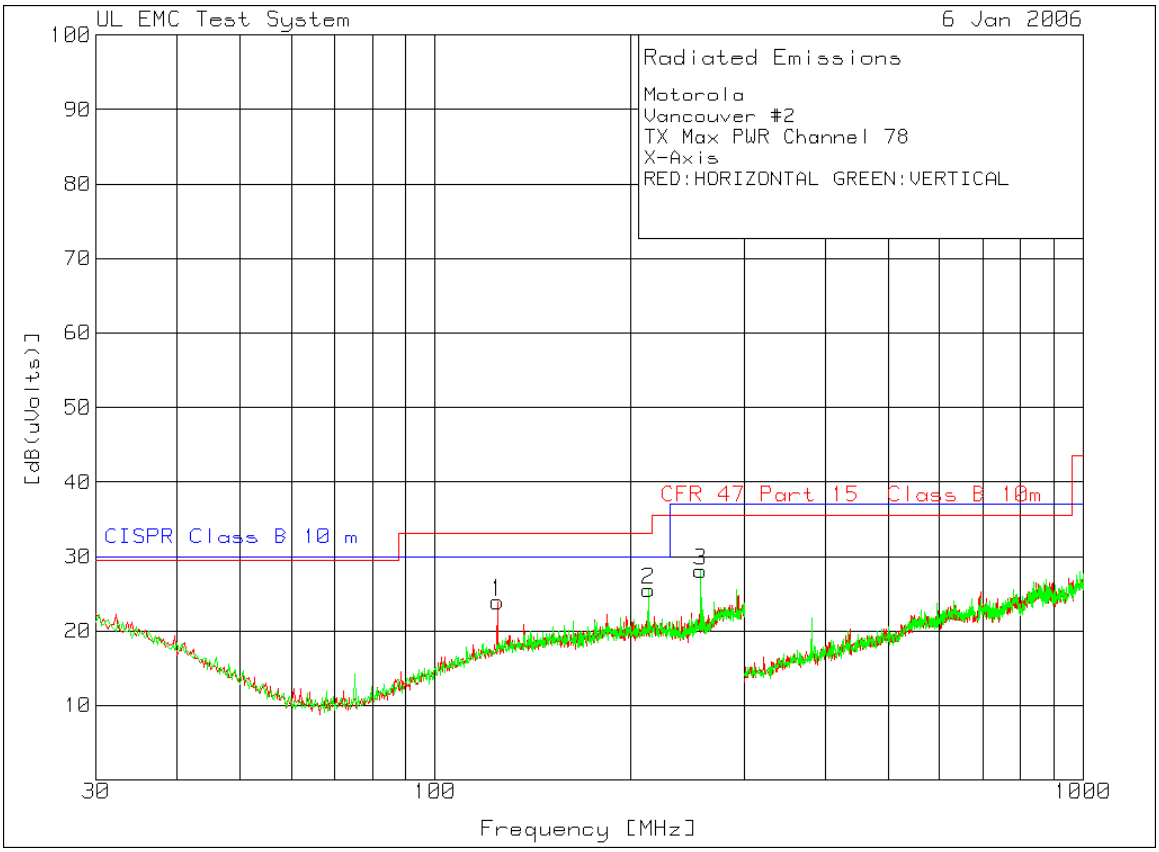



# 30 -1000MHz Mid Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 39
Z-Axis
RED:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 35.4 | 34.2 | pk | -30.7 | 16.1 | 19.6 | 29.6 | -10 | 30 | -10.4 | 135 | 100 | Horz |
| 2 | 181.47 | 35.1 | pk | -30.3 | 15.8 | 20.6 | 33.1 | -12.5 | 30 | -9.4 | 323 | 100 | Horz |
| 3 | 285.69 | 34.8 | pk | -29.8 | 18.1 | 23.1 | 35.6 | -12.5 | 37 | -13.9 | 346 | 100 | Horz |
| Range 2 30 - 300MHz | | | | | | | | | | | | | |
| 4 | 193.62 | 38.4 | pk | -30.3 | 15.7 | 23.8 | 33.1 | -9.3 | 30 | -6.2 | 298 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 10m

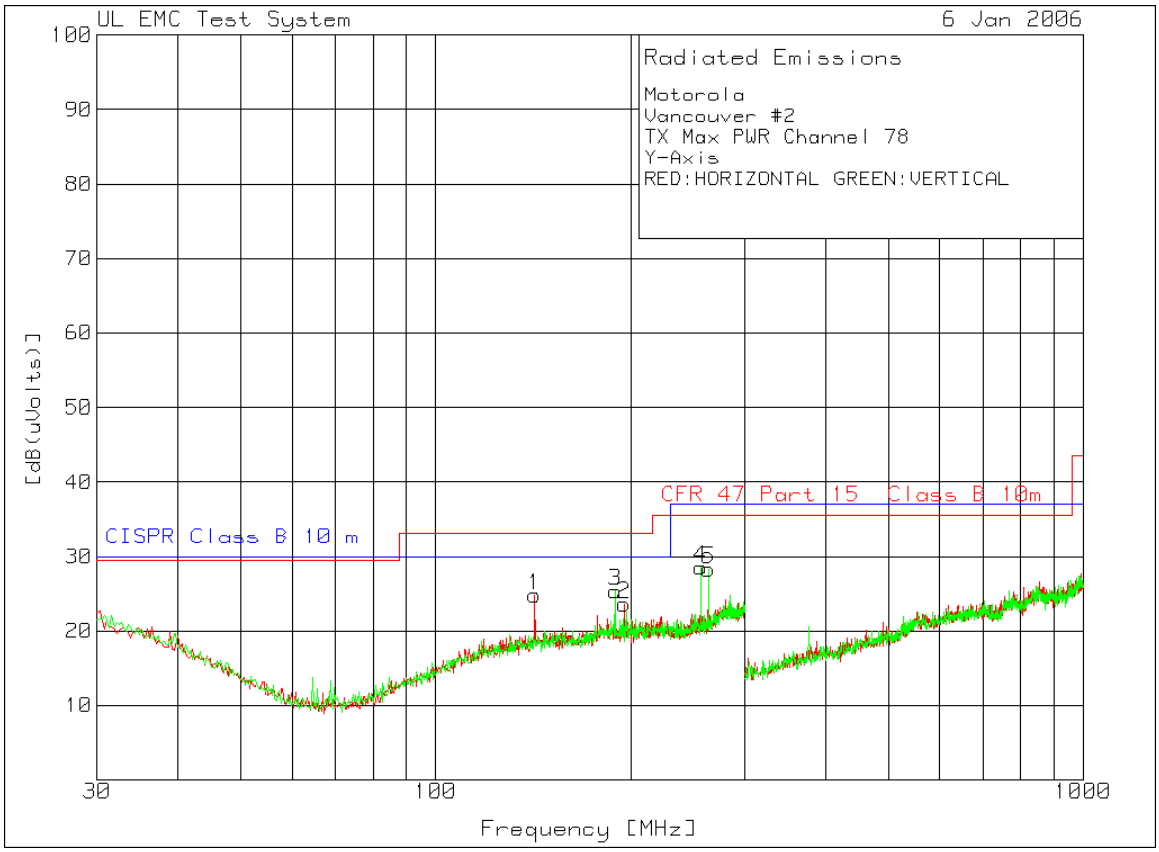



## 30 -1000MHz High Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 78
X-Axis
RED:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 124.77 | 40.7 | pk | -30.4 | 13.6 | 23.9 | 33.1 | -9.2 | 30 | -6.1 | 267 | 100 | Horz |
| Range 2 30 - 300MHz | | | | | | | | | | | | | |
| 2 | 213.33 | 39.7 | pk | -30.1 | 15.9 | 25.5 | 33.1 | -7.6 | 30 | -4.5 | 85 | 100 | Vert |
| 3 | 257.07 | 41.8 | pk | -30 | 16.3 | 28.1 | 35.6 | -7.5 | 37 | -8.9 | 74 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 10m

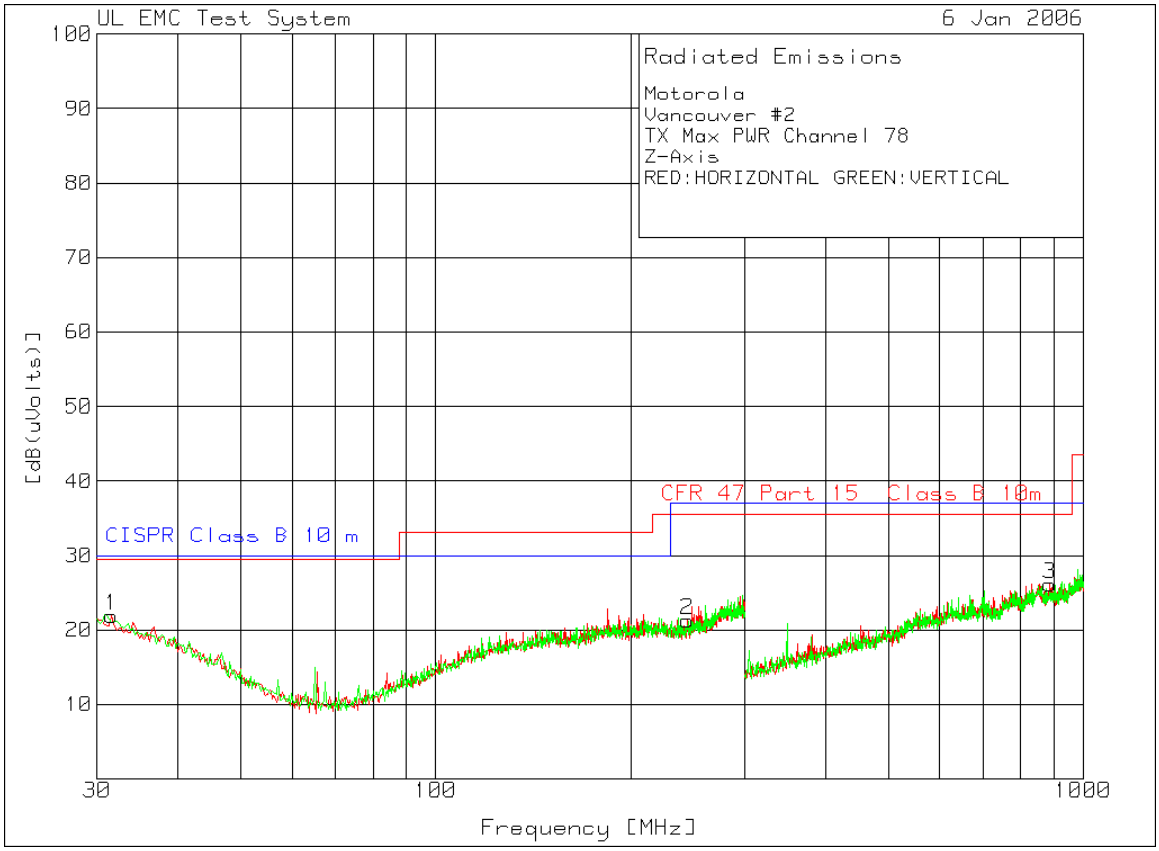



# 30 -1000MHz High Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 78
Y-Axis
RED:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 142.05 | 40.9 | pk | -30.5 | 14.4 | 24.8 | 33.1 | -8.3 | 30 | -5.2 | 18 | 100 | Horz |
| 2 | 195.51 | 38.2 | pk | -30.3 | 15.7 | 23.6 | 33.1 | -9.5 | 30 | -6.4 | 327 | 100 | Horz |
| Range 2 30 - 300MHz | | | | | | | | | | | | | |
| 3 | 189.3 | 39.9 | pk | -30.3 | 15.8 | 25.4 | 33.1 | -7.7 | 30 | -4.6 | 266 | 100 | Vert |
| 4 | 256.53 | 42.2 | pk | -30 | 16.3 | 28.5 | 35.6 | -7.1 | 37 | -8.5 | 191 | 100 | Vert |
| 5 | 263.82 | 41.7 | pk | -30 | 16.6 | 28.3 | 35.6 | -7.3 | 37 | -8.7 | 31 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 10m

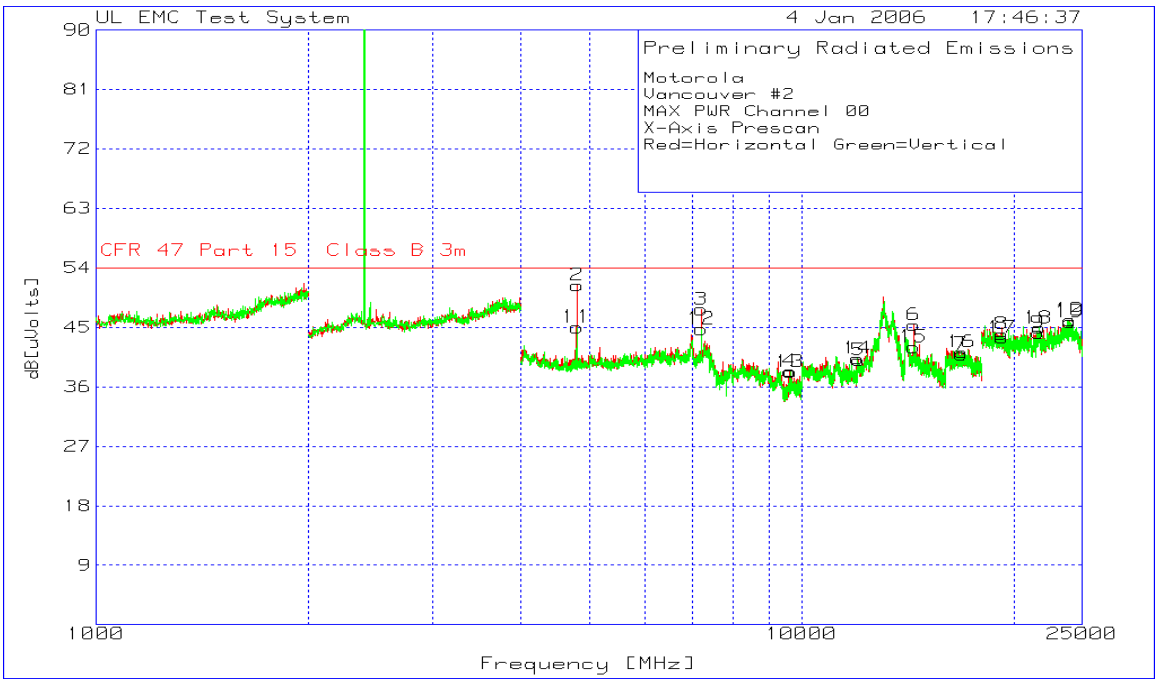



# 30 -1000MHz High Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 78
Z-Axis
RED:HORIZONTAL GREEN:VERTICAL

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level [dB(uVolts)] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Range 1 30 - 300MHz | | | | | | | | | | | | | |
| 1 | 31.62 | 35.2 | pk | -30.7 | 17.4 | 21.9 | 29.6 | -7.7 | 30 | -8.1 | 49 | 100 | Horz |
| 2 | 244.65 | 35.5 | pk | -29.9 | 15.7 | 21.3 | 35.6 | -14.3 | 37 | -15.7 | 303 | 100 | Horz |
| Range 3 300 - 1000MHz | | | | | | | | | | | | | |
| 3 | 888.7 | 35.3 | pk | -31.6 | 22.4 | 26.1 | 35.6 | -9.5 | 37 | -10.9 | 212 | 99 | Horz |

LIMIT 1: CFR 47 Part 15 Class B 10m

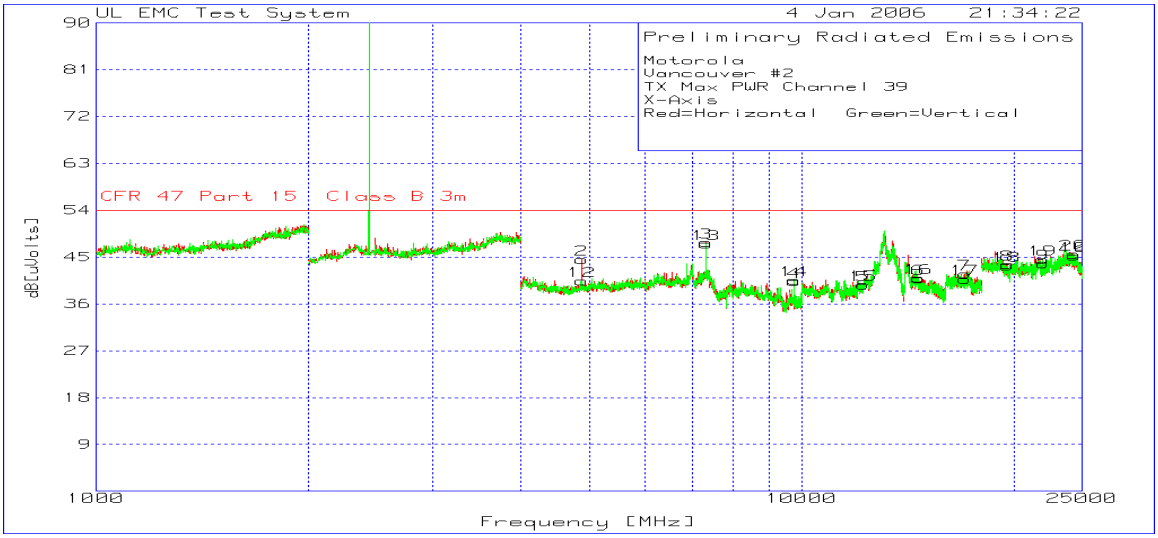



# 1-25 GHz Low Channel Dual Polarization X

Motorola
Vancouver #2
MAX PWR Channel 00
X-Axis Prescan
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transduce Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 1 | 2400.802 | 76.75 | pk | 4.4 | 21.8 | 102.95 | 54 | 48.95 | 100 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 2 | 4804.805 | 74.24 | pk | -50.6 | 27.7 | 51.34 | 54 | -2.66 | 100 | Horz |
| 3 | 7207.207 | 64.81 | pk | -46.9 | 29.8 | 47.71 | 54 | -6.29 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 4 | 9629.63 | 50.74 | pk | -48.8 | 36.4 | 38.34 | 54 | -15.66 | 100 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 5 | 12052.035 | 46.19 | pk | -45.6 | 39.4 | 39.99 | 54 | -14.01 | 100 | Horz |
| 6 | 14413.609 | 46.67 | pk | -41.1 | 39.8 | 45.37 | 54 | -8.63 | 151 | Horz |
| 7 | 16855.237 | 41.42 | pk | -40.7 | 40.2 | 40.92 | 54 | -13.08 | 151 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 8 | 19208.104 | 72.2 | pk | -68.5 | 40.3 | 44 | 54 | -10 | 149 | Horz |
| 9 | 21645.323 | 65.15 | pk | -61.4 | 40.4 | 44.15 | 54 | -9.85 | 100 | Horz |
| 10 | 23998.499 | 64.69 | pk | -58.9 | 40.3 | 46.09 | 54 | -7.91 | 100 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 11 | 4800.801 | 68 | pk | -50.7 | 27.7 | 45 | 54 | -9 | 100 | Vert |
| 12 | 7207.207 | 61.85 | pk | -46.9 | 29.8 | 44.75 | 54 | -9.25 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 13 | 9637.638 | 50.54 | pk | -48.7 | 36.4 | 38.24 | 54 | -15.76 | 100 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 14 | 12008.005 | 46.29 | pk | -45.4 | 39.4 | 40.29 | 54 | -13.71 | 100 | Vert |
| 15 | 14413.609 | 43.3 | pk | -41.1 | 39.8 | 42 | 54 | -12 | 100 | Vert |
| 16 | 16855.237 | 41.75 | pk | -40.7 | 40.2 | 41.25 | 54 | -12.75 | 149 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 17 | 19236.118 | 71.75 | pk | -68.6 | 40.3 | 43.45 | 54 | -10.55 | 99 | Vert |
| 18 | 21687.344 | 65.7 | pk | -61.2 | 40.4 | 44.9 | 54 | -9.1 | 149 | Vert |
| 19 | 24002.001 | 64.41 | pk | -58.9 | 40.3 | 45.81 | 54 | -8.19 | 149 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m




# 1-25 GHz Low Channel Dual Polarization Y

Motorola
Vancouver #2
Max PWR Channel 00
Y-Axis
Red=Horizontal Green=Vertical

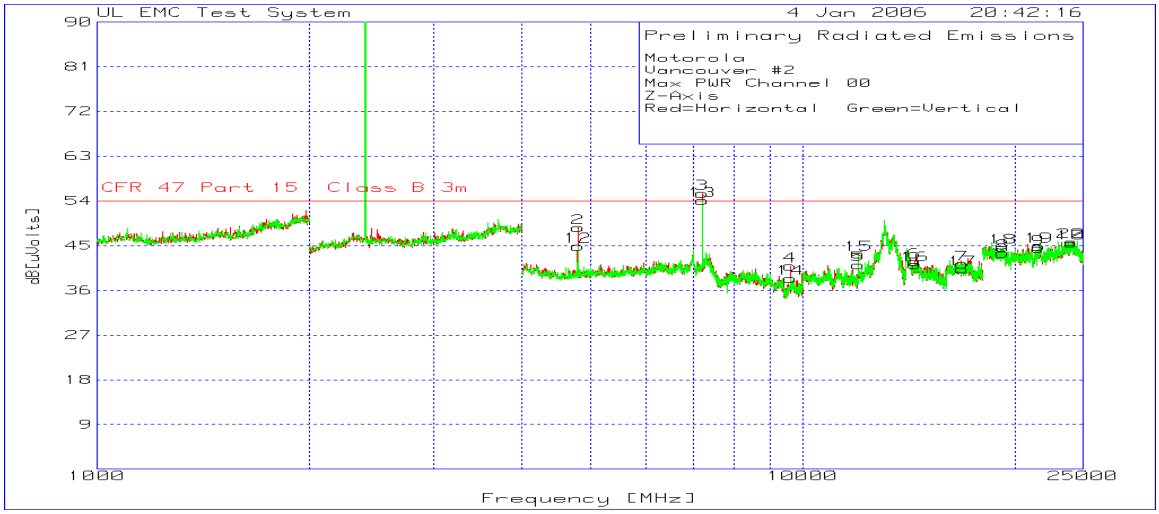
| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 1 | 2400.802 | 75.14 | pk | 4.4 | 21.8 | 101.34 | 54 | 47.34 | 150 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 2 | 4804.805 | 71.81 | pk | -50.6 | 27.7 | 48.91 | 54 | -5.09 | 100 | Horz |
| 3 | 7207.207 | 73.99 | pk | -46.9 | 29.8 | 56.89 | 54 | 2.89 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 4 | 9609.61 | 51.32 | pk | -49 | 36.4 | 38.72 | 54 | -15.28 | 149 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 5 | 12008.005 | 50.26 | pk | -45.4 | 39.4 | 44.26 | 54 | -9.74 | 149 | Horz |
| 6 | 14413.609 | 42.54 | pk | -41.1 | 39.8 | 41.24 | 54 | -12.76 | 149 | Horz |
| 7 | 16815.21 | 42.47 | pk | -41.3 | 40.1 | 41.27 | 54 | -12.73 | 149 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 8 | 19173.087 | 73.07 | pk | -68.5 | 40.3 | 44.87 | 54 | -9.13 | 149 | Horz |
| 9 | 21606.803 | 65.45 | pk | -61.6 | 40.3 | 44.15 | 54 | -9.85 | 100 | Horz |
| 10 | 23994.998 | 64.29 | pk | -58.8 | 40.3 | 45.79 | 54 | -8.21 | 149 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 11 | 2400.802 | 76.83 | pk | 4.4 | 21.8 | 103.03 | 54 | 49.03 | 100 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 12 | 4804.805 | 70.37 | pk | -50.6 | 27.7 | 47.47 | 54 | -6.53 | 149 | Vert |
| 13 | 7207.207 | 63.13 | pk | -46.9 | 29.8 | 46.03 | 54 | -7.97 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 14 | 9609.61 | 52.09 | pk | -49 | 36.4 | 39.49 | 54 | -14.51 | 149 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 15 | 12008.005 | 45.8 | pk | -45.4 | 39.4 | 39.8 | 54 | -14.2 | 149 | Vert |
| 16 | 14405.604 | 43.69 | pk | -41.2 | 39.8 | 42.29 | 54 | -11.71 | 149 | Vert |
| 17 | 16811.207 | 41.61 | pk | -41.3 | 40.1 | 40.41 | 54 | -13.59 | 100 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 18 | 19169.585 | 71.7 | pk | -68.5 | 40.3 | 43.5 | 54 | -10.5 | 149 | Vert |
| 19 | 21613.807 | 65.83 | pk | -61.6 | 40.3 | 44.53 | 54 | -9.47 | 149 | Vert |
| 20 | 23991.496 | 63.37 | pk | -58.8 | 40.3 | 44.87 | 54 | -9.13 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

Motorola
Vancouver #2
TX Max PWR Channel
Axis
Red=Horizontal Green=Vertical

| Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| ch0 Y | | | | | | | | | | |
| 7206 | 50.01 | av | -46.9 | 29.7 | 32.81 | 54 | -21.19 | 41 | 127 | Vert |
| 7206 | 50.14 | av | -46.9 | 29.7 | 32.94 | 54 | -21.06 | 348 | 114 | Horz |

LIMIT 1: CFR 47 Part 15 Class B 3mLIMIT 2: NONE




# 1-25 GHz Low Channel Dual Polarization Z

Motorola
Vancouver #2
Max PWR Channel 00
Z-Axis
Red=Horizontal Green=Vertical

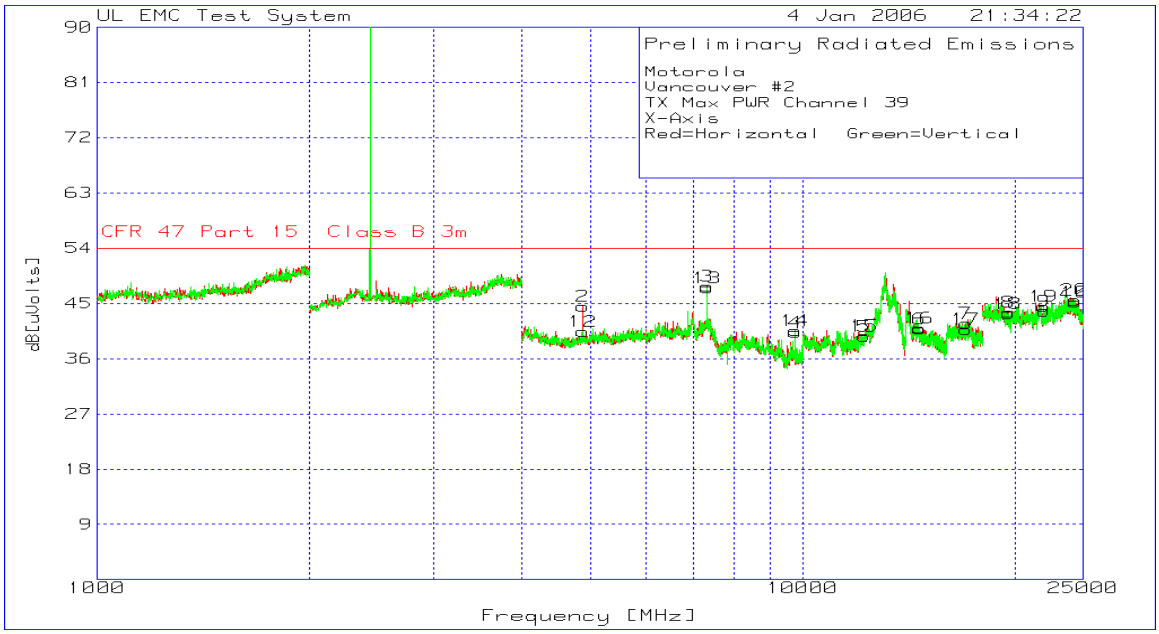
| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 1 | 2400.802 | 78.29 | pk | 4.4 | 21.8 | 104.49 | 54 | 50.49 | 100 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 2 | 4804.805 | 71.49 | pk | -50.6 | 27.7 | 48.59 | 54 | -5.41 | 100 | Horz |
| 3 | 7207.207 | 72.62 | pk | -46.9 | 29.8 | 55.52 | 54 | 1.52 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 4 | 9609.61 | 53.49 | pk | -49 | 36.4 | 40.89 | 54 | -13.11 | 149 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 5 | 12008.01 | 47.09 | pk | -45.4 | 39.4 | 41.09 | 54 | -12.91 | 149 | Horz |
| 6 | 14425.62 | 42.96 | pk | -41 | 39.8 | 41.76 | 54 | -12.24 | 100 | Horz |
| 7 | 16851.23 | 41.68 | pk | -40.6 | 40.2 | 41.28 | 54 | -12.72 | 100 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 8 | 19225.61 | 71.72 | pk | -68.5 | 40.3 | 43.52 | 54 | -10.48 | 149 | Horz |
| 9 | 21599.8 | 65.73 | pk | -61.6 | 40.3 | 44.43 | 54 | -9.57 | 100 | Horz |
| 10 | 24037.02 | 63.88 | pk | -58.7 | 40.3 | 45.48 | 54 | -8.52 | 149 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 11 | 2400.802 | 72.84 | pk | 4.4 | 21.8 | 99.04 | 54 | 45.04 | 100 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 12 | 4804.805 | 67.79 | pk | -50.6 | 27.7 | 44.89 | 54 | -9.11 | 149 | Vert |
| 13 | 7207.207 | 71.15 | pk | -46.9 | 29.8 | 54.05 | 54 | 0.05 | 149 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 14 | 9609.61 | 50.97 | pk | -49 | 36.4 | 38.37 | 54 | -15.63 | 149 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 15 | 12008.01 | 49.26 | pk | -45.4 | 39.4 | 43.26 | 54 | -10.74 | 149 | Vert |
| 16 | 14433.62 | 42.25 | pk | -40.9 | 39.8 | 41.15 | 54 | -12.85 | 100 | Vert |
| 17 | 16859.24 | 40.81 | pk | -40.7 | 40.2 | 40.31 | 54 | -13.69 | 149 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 18 | 19250.13 | 72.94 | pk | -68.6 | 40.3 | 44.64 | 54 | -9.36 | 149 | Vert |
| 19 | 21627.81 | 65.95 | pk | -61.5 | 40.4 | 44.85 | 54 | -9.15 | 149 | Vert |
| 20 | 24037.02 | 64.17 | pk | -58.7 | 40.3 | 45.77 | 54 | -8.23 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

Motorola
Vancouver #2
TX Max PWR Channel
Axis
Red=Horizontal Green=Vertical

| Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| ch0 Z | | | | | | | | | | |
| 7206 | 49.95 | av | -46.9 | 29.7 | 32.75 | 54 | -21.25 | 306 | 104 | Horz |

LIMIT 1: CFR 47 Part 15 Class B 3mLIMIT 2: NONE

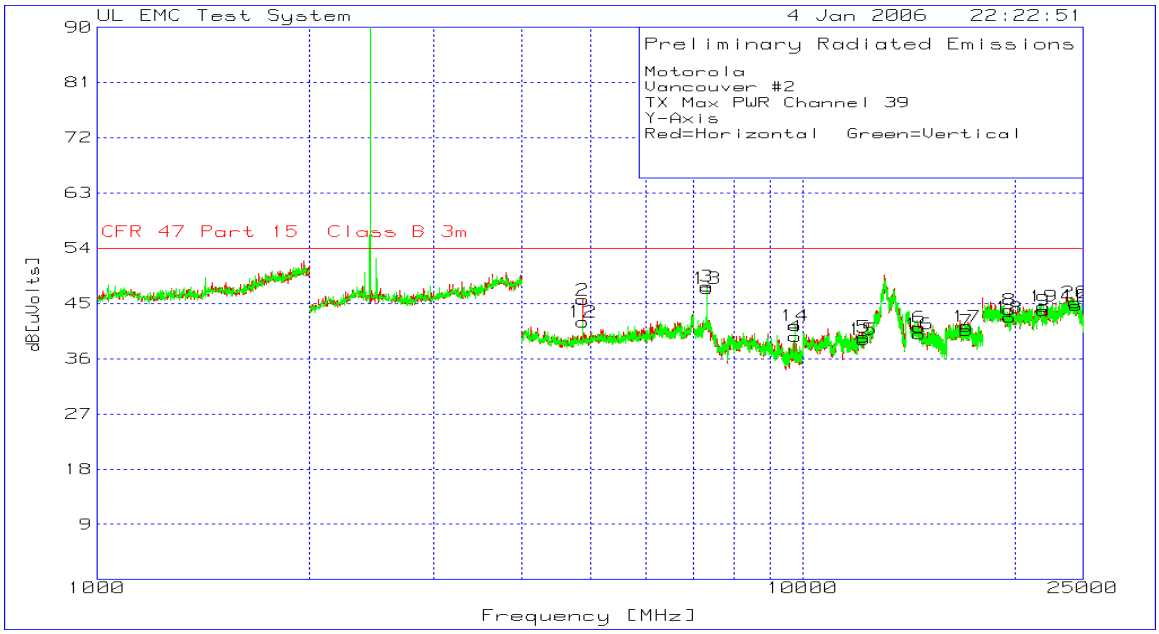



# 1-25 GHz Mid Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 39
X-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 1 | 2440.882 | 77.33 | pk | 4.2 | 21.9 | 103.43 | 54 | 49.43 | 149 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 2 | 4880.881 | 67.35 | pk | -50.5 | 27.7 | 44.55 | 54 | -9.45 | 100 | Horz |
| 3 | 7323.323 | 63.48 | pk | -46.3 | 30.6 | 47.78 | 54 | -6.22 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 4 | 9765.766 | 53.36 | pk | -49.5 | 36.4 | 40.26 | 54 | -13.74 | 149 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 5 | 12224.15 | 46.04 | pk | -45.8 | 39.4 | 39.64 | 54 | -14.36 | 100 | Horz |
| 6 | 14653.77 | 41.93 | pk | -40.9 | 39.8 | 40.83 | 54 | -13.17 | 149 | Horz |
| 7 | 17031.35 | 42.62 | pk | -41.3 | 40.4 | 41.72 | 54 | -12.28 | 149 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 8 | 19561.78 | 72.48 | pk | -69.2 | 40.3 | 43.58 | 54 | -10.42 | 149 | Horz |
| 9 | 21999 | 63.75 | pk | -60.4 | 40.4 | 43.75 | 54 | -10.25 | 149 | Horz |
| 10 | 24341.67 | 65.88 | pk | -61 | 40.3 | 45.18 | 54 | -8.82 | 100 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 11 | 2440.882 | 79.67 | pk | 4.2 | 21.9 | 105.77 | 54 | 51.77 | 100 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 12 | 4880.881 | 63.2 | pk | -50.5 | 27.7 | 40.4 | 54 | -13.6 | 100 | Vert |
| 13 | 7323.323 | 63.2 | pk | -46.3 | 30.6 | 47.5 | 54 | -6.5 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 14 | 9765.766 | 53.64 | pk | -49.5 | 36.4 | 40.54 | 54 | -13.46 | 149 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 15 | 12232.16 | 45.89 | pk | -45.6 | 39.4 | 39.69 | 54 | -14.31 | 100 | Vert |
| 16 | 14641.76 | 41.96 | pk | -40.8 | 39.8 | 40.96 | 54 | -13.04 | 100 | Vert |
| 17 | 17039.36 | 41.87 | pk | -41.5 | 40.4 | 40.77 | 54 | -13.23 | 149 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 18 | 19565.28 | 72.24 | pk | -69.2 | 40.3 | 43.34 | 54 | -10.66 | 149 | Vert |
| 19 | 21949.98 | 64.4 | pk | -60.3 | 40.4 | 44.5 | 54 | -9.5 | 100 | Vert |
| 20 | 24320.66 | 65.94 | pk | -60.7 | 40.3 | 45.54 | 54 | -8.46 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

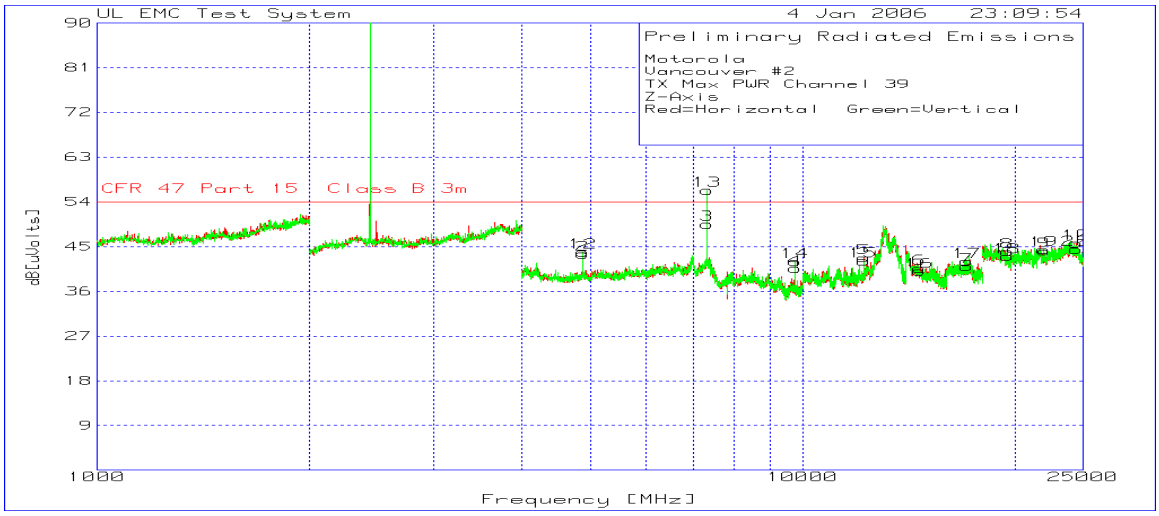



# 1-25 GHz Mid Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 39
Y-Axis
Red=Horizontal Green=Vertical

| Marker Number | | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 1 | 2440.882 | 78.5 | pk | 4.2 | 21.9 | 104.6 | 54 | 50.6 | 149 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 2 | 4880.881 | 68.38 | pk | -50.5 | 27.7 | 45.58 | 54 | -8.42 | 100 | Horz |
| | 3 | 7323.323 | 63.49 | pk | -46.3 | 30.6 | 47.79 | 54 | -6.21 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 4 | 9765.766 | 52.71 | pk | -49.5 | 36.4 | 39.61 | 54 | -14.39 | 149 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | | |
| | 5 | 12204.136 | 46.45 | pk | -46.3 | 39.4 | 39.55 | 54 | -14.45 | 100 | Horz |
| | 6 | 14645.764 | 42.21 | pk | -40.9 | 39.8 | 41.11 | 54 | -12.89 | 149 | Horz |
| | 7 | 17083.389 | 41.5 | pk | -41.2 | 40.3 | 40.6 | 54 | -13.4 | 149 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | | |
| | 8 | 19642.321 | 72.96 | pk | -69.3 | 40.3 | 43.96 | 54 | -10.04 | 149 | Horz |
| | 9 | 21932.466 | 63.76 | pk | -60.3 | 40.4 | 43.86 | 54 | -10.14 | 149 | Horz |
| | 10 | 24422.211 | 65.72 | pk | -61.4 | 40.3 | 44.62 | 54 | -9.38 | 100 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 11 | 2440.882 | 83.72 | pk | 4.2 | 21.9 | 109.82 | 54 | 55.82 | 100 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 12 | 4880.881 | 64.82 | pk | -50.5 | 27.7 | 42.02 | 54 | -11.98 | 100 | Vert |
| | 13 | 7323.323 | 63.17 | pk | -46.3 | 30.6 | 47.47 | 54 | -6.53 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 14 | 9765.766 | 54.46 | pk | -49.5 | 36.4 | 41.36 | 54 | -12.64 | 100 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | | |
| | 15 | 12204.136 | 46.05 | pk | -46.3 | 39.4 | 39.15 | 54 | -14.85 | 149 | Vert |
| | 16 | 14649.766 | 41.1 | pk | -40.9 | 39.8 | 40 | 54 | -14 | 100 | Vert |
| | 17 | 17083.389 | 42.19 | pk | -41.2 | 40.3 | 41.29 | 54 | -12.71 | 149 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | | |
| | 18 | 19645.823 | 71.71 | pk | -69.3 | 40.3 | 42.71 | 54 | -11.29 | 149 | Vert |
| | 19 | 21981.491 | 64.46 | pk | -60.3 | 40.4 | 44.56 | 54 | -9.44 | 149 | Vert |
| | 20 | 24387.194 | 66.23 | pk | -61.4 | 40.3 | 45.13 | 54 | -8.87 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m




# 1-25 GHz Mid Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 39
Z-Axis
Red=Horizontal Green=Vertical

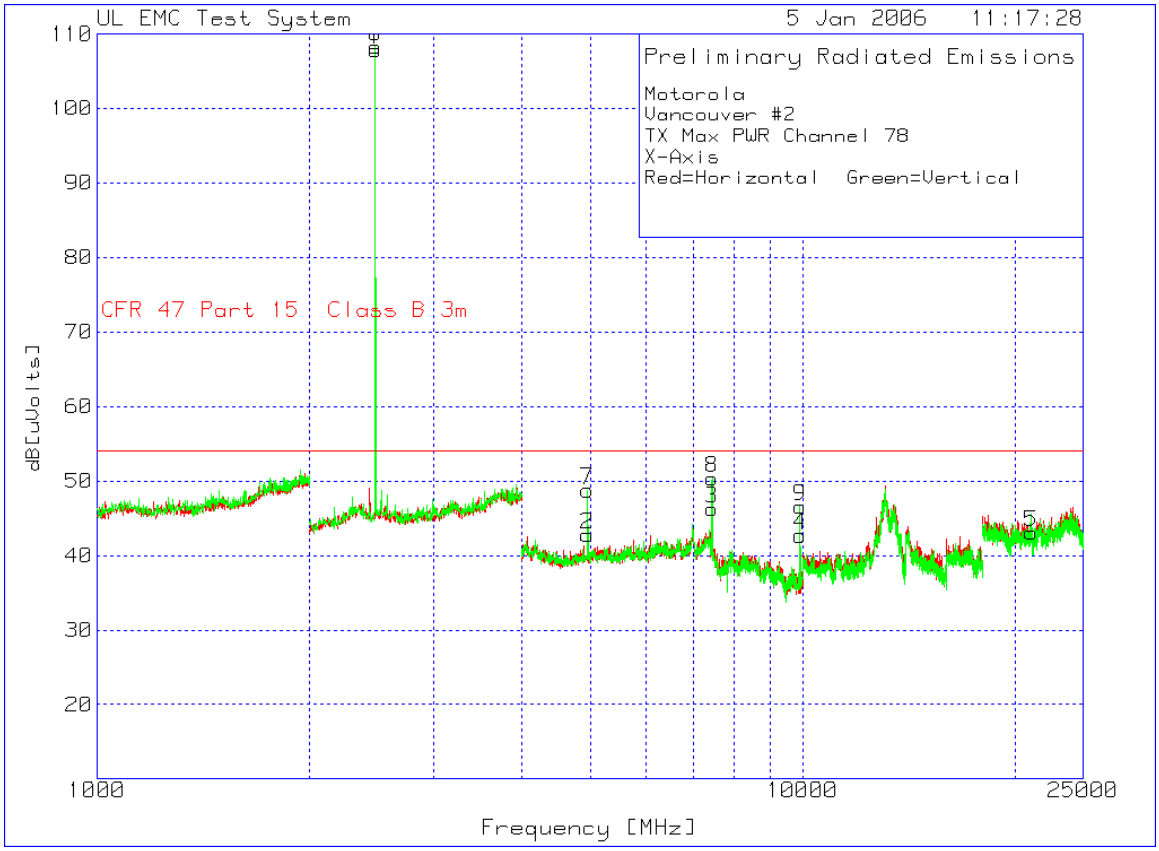
| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 1 | 2440.882 | 79.82 | pk | 4.2 | 21.9 | 105.92 | 54 | 51.92 | 149 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 2 | 4880.881 | 66.28 | pk | -50.5 | 27.7 | 43.48 | 54 | -10.52 | 100 | Horz |
| 3 | 7323.323 | 65.21 | pk | -46.3 | 30.6 | 49.51 | 54 | -4.49 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 4 | 9765.766 | 53.7 | pk | -49.5 | 36.4 | 40.6 | 54 | -13.4 | 149 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 5 | 12204.14 | 49.68 | pk | -46.3 | 39.4 | 42.78 | 54 | -11.22 | 100 | Horz |
| 6 | 14661.77 | 41.63 | pk | -40.8 | 39.8 | 40.63 | 54 | -13.37 | 100 | Horz |
| 7 | 17087.39 | 41.78 | pk | -41.1 | 40.3 | 40.98 | 54 | -13.02 | 149 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 8 | 19498.75 | 72.86 | pk | -69.2 | 40.3 | 43.96 | 54 | -10.04 | 149 | Horz |
| 9 | 21999 | 64.12 | pk | -60.4 | 40.4 | 44.12 | 54 | -9.88 | 149 | Horz |
| 10 | 24432.72 | 66.77 | pk | -61.4 | 40.3 | 45.67 | 54 | -8.33 | 149 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | |
| 11 | 2440.882 | 73.89 | pk | 4.2 | 21.9 | 99.99 | 54 | 45.99 | 149 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | |
| 12 | 4880.881 | 66.73 | pk | -50.5 | 27.7 | 43.93 | 54 | -10.07 | 100 | Vert |
| 13 | 7323.323 | 72.04 | pk | -46.3 | 30.6 | 56.34 | 54 | 2.34 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | |
| 14 | 9765.766 | 55.11 | pk | -49.5 | 36.4 | 42.01 | 54 | -11.99 | 100 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | |
| 15 | 12204.14 | 49.05 | pk | -46.3 | 39.4 | 42.15 | 54 | -11.85 | 149 | Vert |
| 16 | 14653.77 | 41.16 | pk | -40.9 | 39.8 | 40.06 | 54 | -13.94 | 100 | Vert |
| 17 | 17087.39 | 42.83 | pk | -41.1 | 40.3 | 42.03 | 54 | -11.97 | 149 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | |
| 18 | 19498.75 | 71.89 | pk | -69.2 | 40.3 | 42.99 | 54 | -11.01 | 149 | Vert |
| 19 | 21981.49 | 64.28 | pk | -60.3 | 40.4 | 44.38 | 54 | -9.62 | 149 | Vert |
| 20 | 24422.21 | 65.57 | pk | -61.4 | 40.3 | 44.47 | 54 | -9.53 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

Motorola
Vancouver #2
TX Max PWR Channel
Axis
Red=Horizontal Green=Vertical

| Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] |
|---|---|---|---|---|---|---|---|
| ch39 Z | | | | | | | |
| 7323 | 49.98 | av | -46.3 | 30.6 | 34.28 | 54 | -19.72 |

LIMIT 1: CFR 47 Part 15 Class B 3mLIMIT 2: NONE

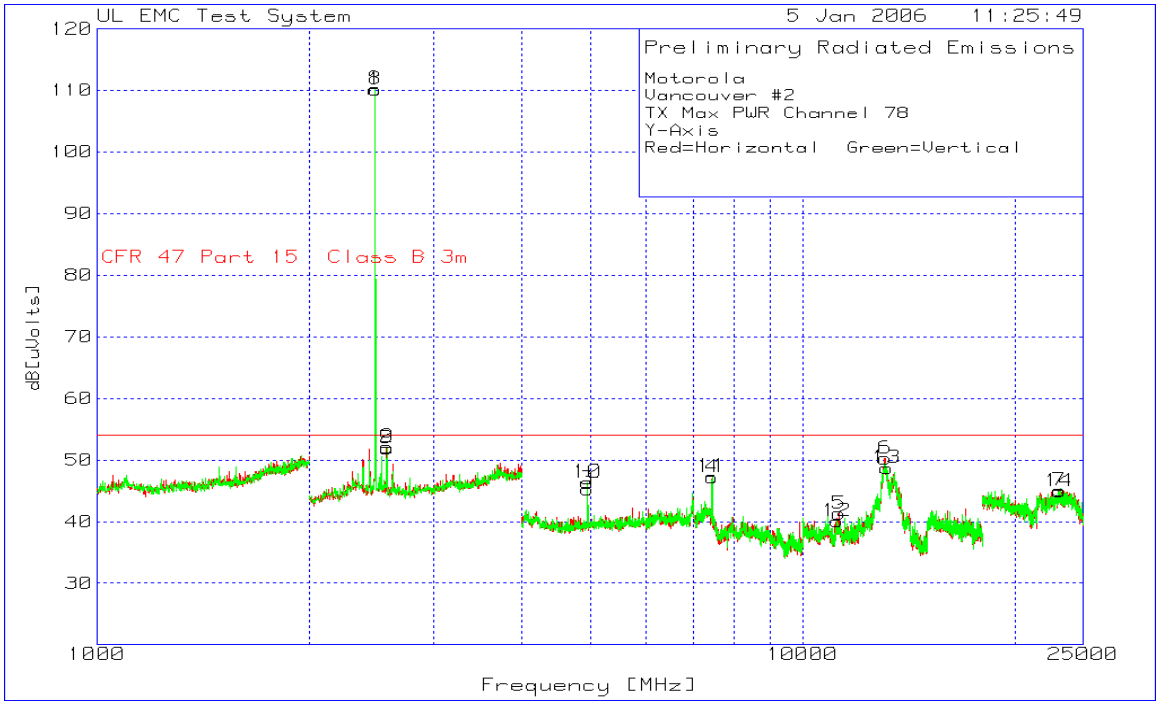



# 1-25 GHz High Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 78
X-Axis
Red=Horizontal Green=Vertical

| Marker Number | | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 1 | 2480.962 | 81.76 | pk | 4.1 | 22 | 107.86 | 54 | 53.86 | 100 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 2 | 4960.961 | 65.78 | pk | -50.8 | 27.8 | 42.78 | 54 | -11.22 | 100 | Horz |
| | 3 | 7443.443 | 62.69 | pk | -46.9 | 30.5 | 46.29 | 54 | -7.71 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 4 | 9921.922 | 55.7 | pk | -49.4 | 36.4 | 42.7 | 54 | -11.3 | 149 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | | |
| | 5 | 21095.548 | 66.41 | pk | -63.4 | 40.1 | 43.11 | 54 | -10.89 | 149 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 6 | 2480.962 | 82.18 | pk | 4.1 | 22 | 108.28 | 54 | 54.28 | 149 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 7 | 4960.961 | 71.76 | pk | -50.8 | 27.8 | 48.76 | 54 | -5.24 | 100 | Vert |
| | 8 | 7443.443 | 66.78 | pk | -46.9 | 30.5 | 50.38 | 54 | -3.62 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 9 | 9921.922 | 59.55 | pk | -49.4 | 36.4 | 46.55 | 54 | -7.45 | 149 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

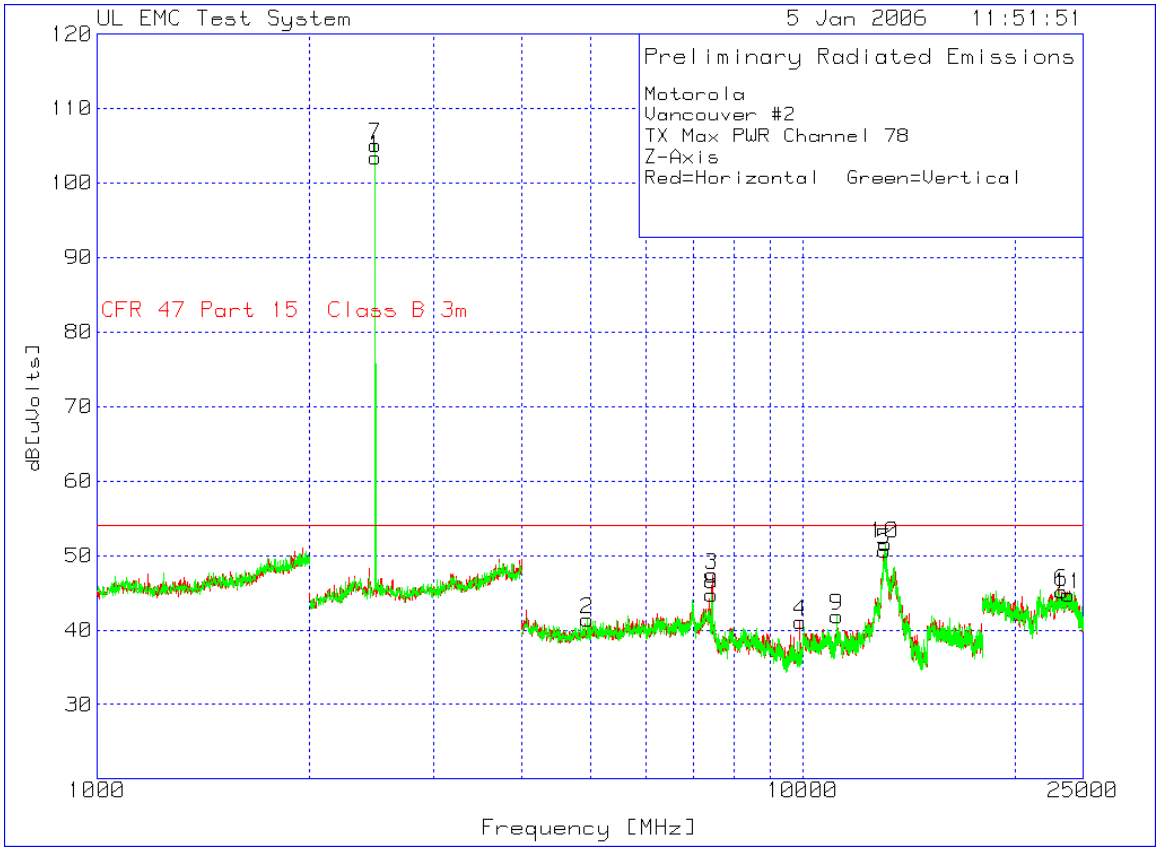



# 1-25 GHz High Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 78
Y-Axis
Red=Horizontal Green=Vertical

| Marker Number | | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 1 | 2476.954 | 84.03 | pk | 4.1 | 22 | 110.13 | 54 | 56.13 | 100 | Horz |
| | 2 | 2577.154 | 25.7 | pk | 4.1 | 22.3 | 52.1 | 54 | -1.9 | 100 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 3 | 4960.961 | 68.28 | pk | -50.8 | 27.8 | 45.28 | 54 | -8.72 | 100 | Horz |
| | 4 | 7443.443 | 63.58 | pk | -46.9 | 30.5 | 47.18 | 54 | -6.82 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 5 | 11251.251 | 50.81 | pk | -46.3 | 36.8 | 41.31 | 54 | -12.69 | 100 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | | |
| | 6 | 13105.105 | 44.26 | pk | -33.8 | 39.8 | 50.26 | 54 | -3.74 | 100 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | | |
| | 7 | 23150.15 | 60.94 | pk | -56.2 | 40.3 | 45.04 | 54 | -8.96 | 100 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 8 | 2480.962 | 84.09 | pk | 4.1 | 22 | 110.19 | 54 | 56.19 | 100 | Vert |
| | 9 | 2577.154 | 25.45 | pk | 4.1 | 22.3 | 51.85 | 54 | -2.15 | 100 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 10 | 4960.961 | 69.34 | pk | -50.8 | 27.8 | 46.34 | 54 | -7.66 | 100 | Vert |
| | 11 | 7443.443 | 63.67 | pk | -46.9 | 30.5 | 47.27 | 54 | -6.73 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 12 | 11187.187 | 48.98 | pk | -45.6 | 36.7 | 40.08 | 54 | -13.92 | 100 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | | |
| | 13 | 13159.159 | 44.49 | pk | -35.6 | 39.8 | 48.69 | 54 | -5.31 | 100 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | | |
| | 14 | 23101.101 | 61 | pk | -56.4 | 40.3 | 44.9 | 54 | -9.1 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

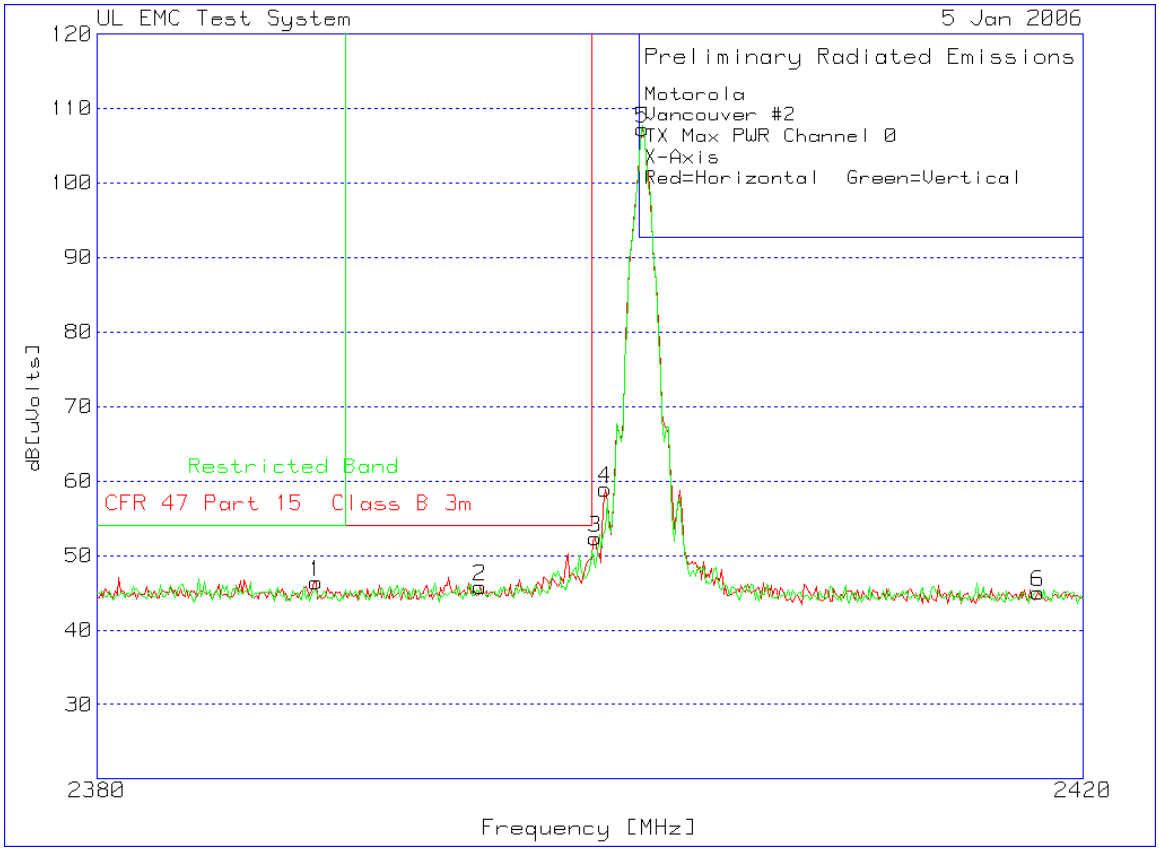



# 1-25 GHz High Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 78
Z-Axis
Red=Horizontal Green=Vertical

| Marker Number | | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 1 | 2480.962 | 77.37 | pk | 4.1 | 22 | 103.47 | 54 | 49.47 | 100 | Horz |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 2 | 4960.961 | 64.38 | pk | -50.8 | 27.8 | 41.38 | 54 | -12.62 | 100 | Horz |
| | 3 | 7443.443 | 63.78 | pk | -46.9 | 30.5 | 47.38 | 54 | -6.62 | 100 | Horz |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 4 | 9921.922 | 54.13 | pk | -49.4 | 36.4 | 41.13 | 54 | -12.87 | 100 | Horz |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | | |
| | 5 | 13069.069 | 44.87 | pk | -34 | 39.8 | 50.67 | 54 | -3.33 | 100 | Horz |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | | |
| | 6 | 23332.332 | 61.16 | pk | -56.3 | 40.3 | 45.16 | 54 | -8.84 | 100 | Horz |
| 2 - 4GHz 2000 - 4000MHz | | | | | | | | | | | |
| | 7 | 2480.962 | 79.01 | pk | 4.1 | 22 | 105.11 | 54 | 51.11 | 100 | Vert |
| 4 - 8GHz 4000 - 8000MHz | | | | | | | | | | | |
| | 8 | 7439.439 | 61.04 | pk | -46.9 | 30.6 | 44.74 | 54 | -9.26 | 100 | Vert |
| 8 - 12GHz 8000 - 12000MHz | | | | | | | | | | | |
| | 9 | 11191.191 | 50.69 | pk | -45.5 | 36.7 | 41.89 | 54 | -12.11 | 100 | Vert |
| 12 - 18GHz 12000 - 18000MHz | | | | | | | | | | | |
| | 10 | 13087.087 | 45.55 | pk | -33.8 | 39.8 | 51.55 | 54 | -2.45 | 100 | Vert |
| 18-26.5GHz 18000 - 25000MHz | | | | | | | | | | | |
| | 11 | 23822.823 | 61.66 | pk | -57.2 | 40.3 | 44.76 | 54 | -9.24 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

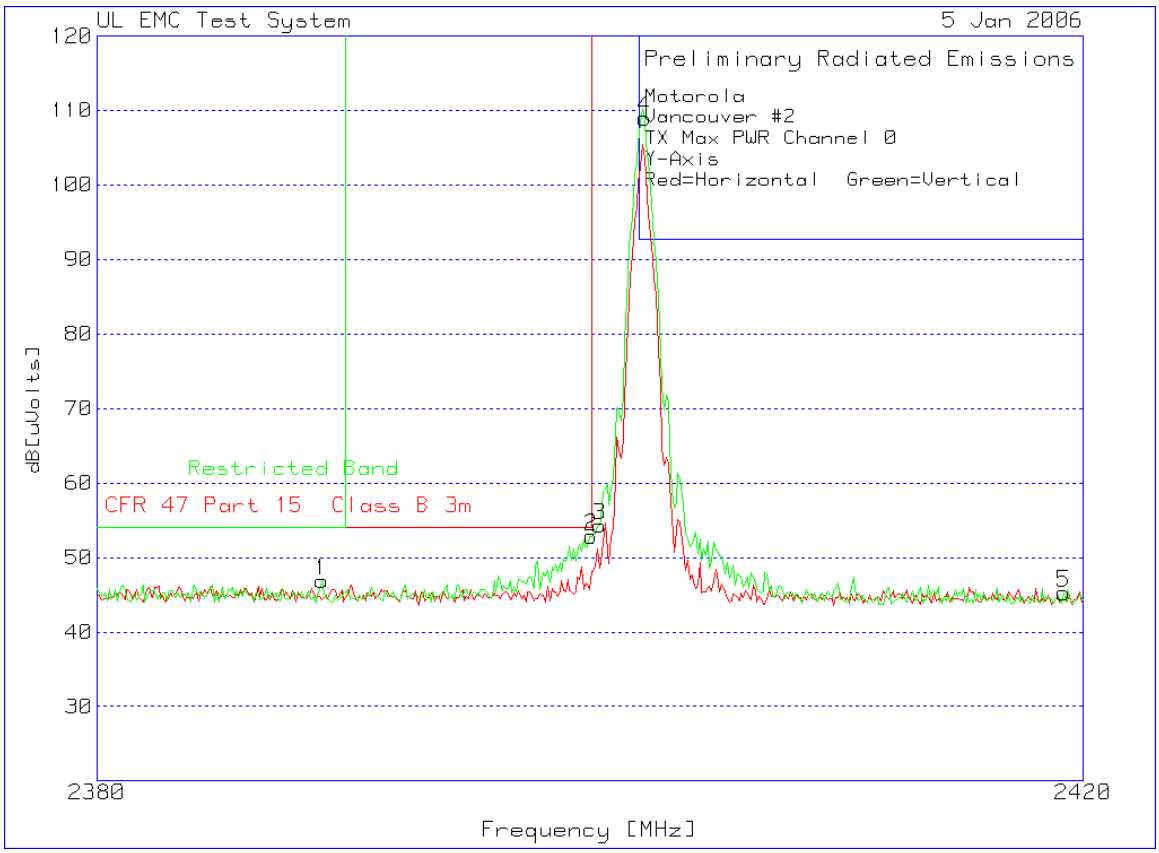



# Authorized Band Emissions Low Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 0
X-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2420MHz | | | | | | | | | | | | |
| 1 | 2388.818 | 20.23 | pk | 4.4 | 21.8 | 46.43 | 54 | -7.57 | 54 | -7.57 | 100 | Horz |
| 2 | 2395.471 | 19.61 | pk | 4.4 | 21.8 | 45.81 | 54 | -8.19 | 999 | -953.19 | 100 | Horz |
| 3 | 2400.12 | 26.13 | pk | 4.4 | 21.8 | 52.33 | 999 | -946.67 | 999 | -946.67 | 100 | Horz |
| 4 | 2400.521 | 32.74 | pk | 4.4 | 21.8 | 58.94 | 999 | -940.06 | 999 | -940.06 | 100 | Horz |
| 5 | 2402.044 | 81.06 | pk | 4.4 | 21.8 | 107.26 | 999 | -891.74 | 999 | -891.74 | 100 | Horz |
| 6 | 2418.156 | 18.86 | pk | 4.3 | 21.9 | 45.06 | 999 | -953.94 | 999 | -953.94 | 100 | Horz |

LIMIT 1: CFR 47 Part 15 Class B 3m




# Authorized Band Emissions Low Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 0
Y-Axis
Red=Horizontal Green=Vertical

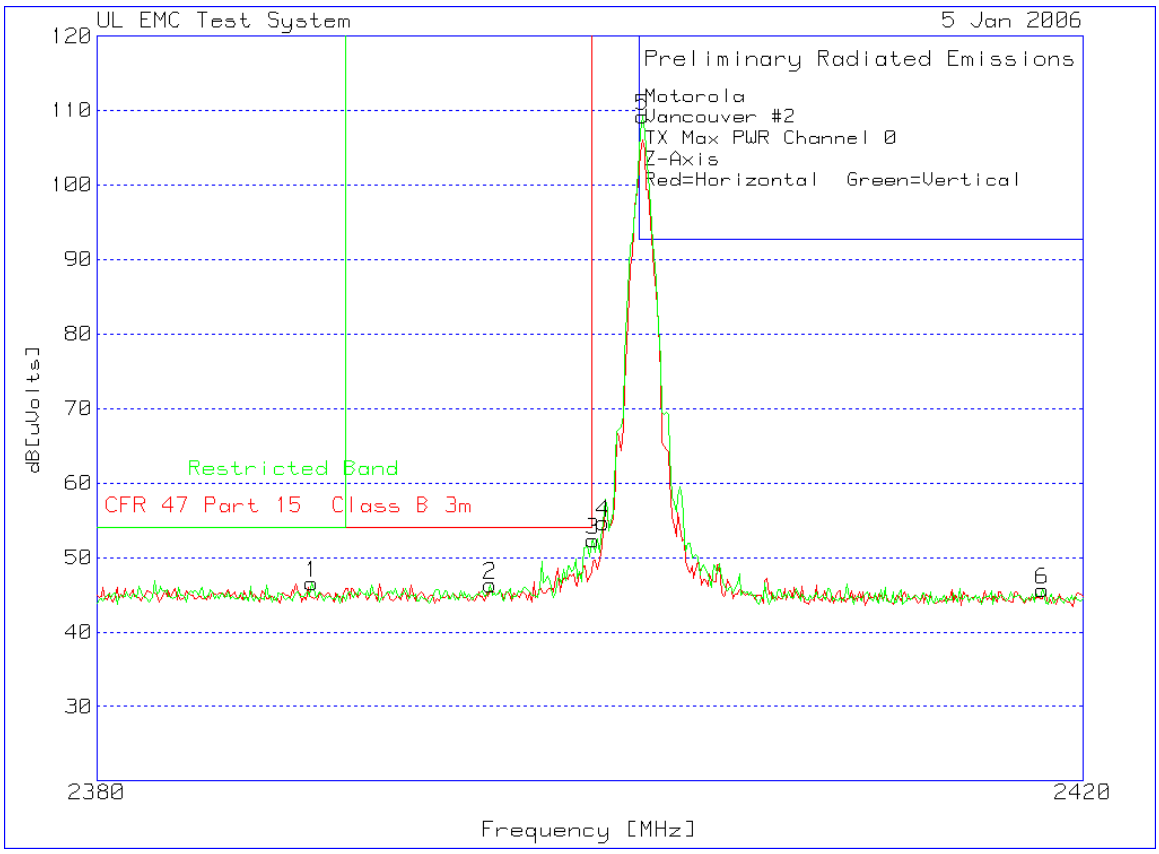
| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2420MHz | | | | | | | | | | | | |
| 1 | 2389.058 | 20.64 | pk | 4.4 | 21.8 | 46.84 | 54 | -7.16 | 54 | -7.16 | 100 | Vert |
| 2 | 2399.96 | 26.67 | pk | 4.4 | 21.8 | 52.87 | 54 | -1.13 | 999 | -946.13 | 100 | Vert |
| 3 | 2400.281 | 28.11 | pk | 4.4 | 21.8 | 54.31 | 999 | -944.69 | 999 | -944.69 | 100 | Vert |
| 4 | 2402.124 | 82.76 | pk | 4.4 | 21.8 | 108.96 | 999 | -890.04 | 999 | -890.04 | 100 | Vert |
| 5 | 2419.198 | 19.07 | pk | 4.3 | 21.9 | 45.27 | 999 | -953.73 | 999 | -953.73 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

Motorola
Vancouver #2
TX Max PWR Channel
Axis
Red=Horizontal Green=Vertical

| Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| ch O Y | | | | | | | | | | |
| 2400 | 34.18 | av | 4.4 | 21.8 | 60.38 | 54 | 6.38 | 221 | 101 | Vert |
| Brt | | | | | | | | | | |
| 2399.9997 | 67.33 | pk | 4.4 | 21.8 | 93.53 | 54 | 39.53 | 179 | 118 | Vert |
| 2399.9997 | 49.91 | av | 4.4 | 21.8 | 76.11 | 54 | 22.11 | 179 | 118 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3mLIMIT 2: NONE

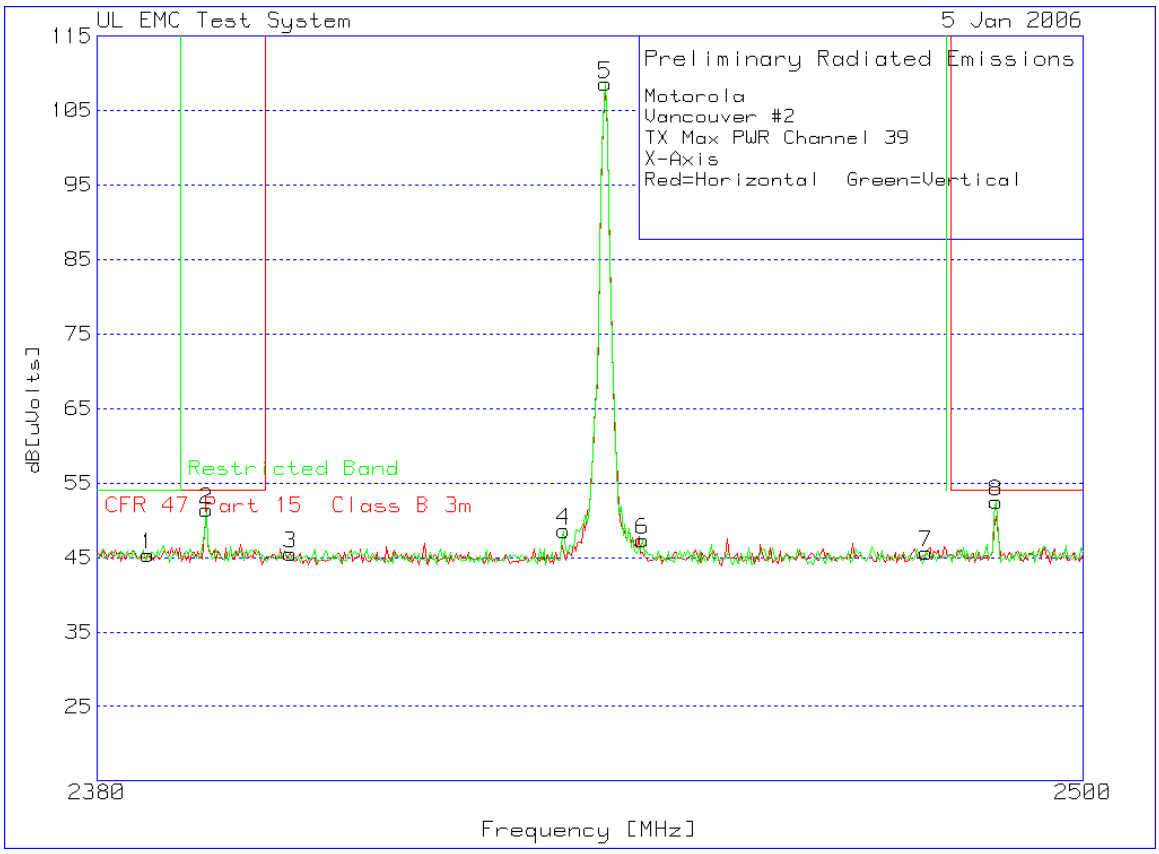



# Authorized Band Emissions Low Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 0
Z-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB | Limit 2 | Margin 2[dB | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2420MHz | | | | | | | | | | | | |
| 1 | 2388.657 | 20.36 | pk | 4.4 | 21.8 | 46.56 | 54 | -7.44 | 54 | -7.44 | 100 | Vert |
| 2 | 2395.872 | 20.12 | pk | 4.4 | 21.8 | 46.32 | 54 | -7.68 | 999 | -952.68 | 100 | Vert |
| 3 | 2400.04 | 26.16 | pk | 4.4 | 21.8 | 52.36 | 999 | -946.64 | 999 | -946.64 | 100 | Vert |
| 4 | 2400.441 | 28.5 | pk | 4.4 | 21.8 | 54.7 | 999 | -944.3 | 999 | -944.3 | 100 | Vert |
| 5 | 2402.044 | 83.03 | pk | 4.4 | 21.8 | 109.23 | 999 | -889.77 | 999 | -889.77 | 100 | Vert |
| 6 | 2418.317 | 19.46 | pk | 4.3 | 21.9 | 45.66 | 999 | -953.34 | 999 | -953.34 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

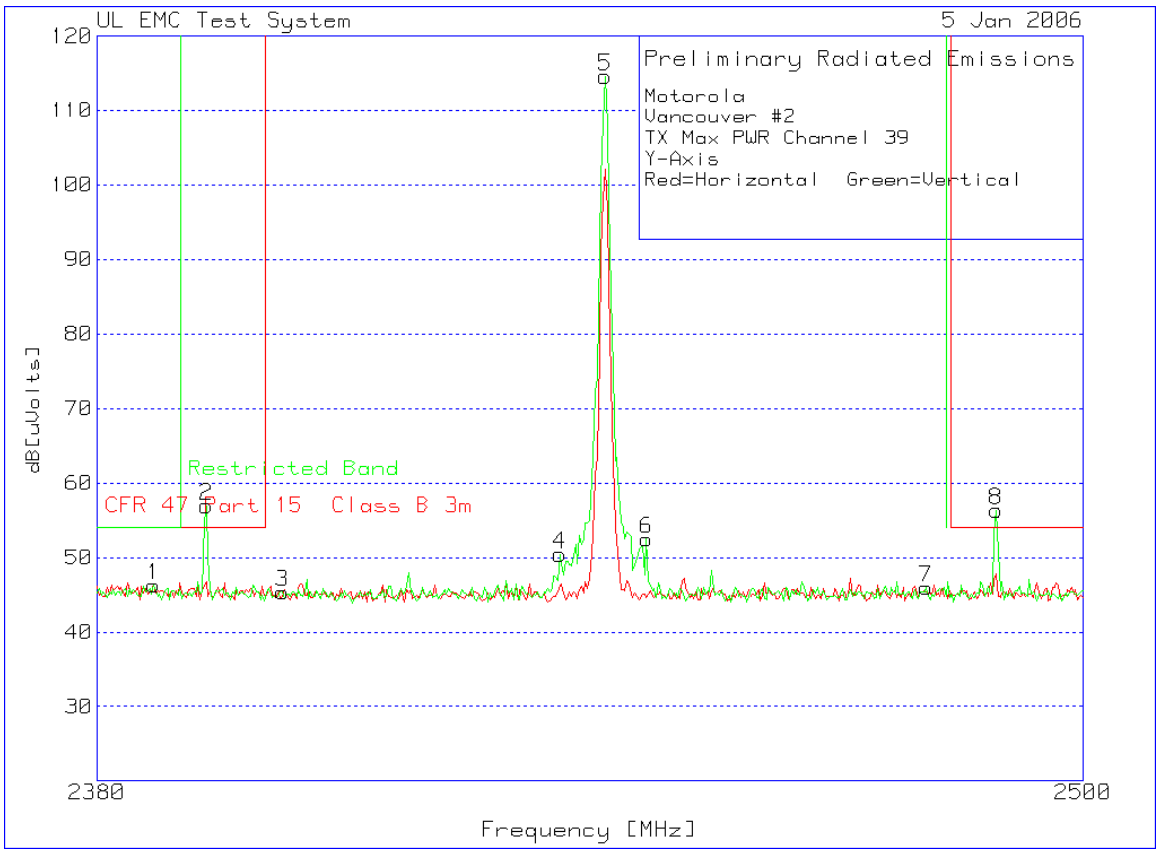



# Authorized Band Emissions Mid Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 39
X-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2500MHz | | | | | | | | | | | | |
| 1 | 2386.012 | 19.13 | pk | 4.4 | 21.8 | 45.33 | 54 | -8.67 | 54 | -8.67 | 100 | Horz |
| 2 | 2392.986 | 25.2 | pk | 4.4 | 21.8 | 51.4 | 54 | -2.6 | 999 | -947.6 | 100 | Horz |
| 3 | 2403.086 | 19.29 | pk | 4.4 | 21.8 | 45.49 | 999 | -953.51 | 999 | -953.51 | 100 | Horz |
| 2 - 4GHz 2380 - 2500MHz | | | | | | | | | | | | |
| 4 | 2436.032 | 22.54 | pk | 4.2 | 21.9 | 48.64 | 999 | -950.36 | 999 | -950.36 | 100 | Vert |
| 5 | 2441.082 | 82.47 | pk | 4.2 | 21.9 | 108.57 | 999 | -890.43 | 999 | -890.43 | 100 | Vert |
| 6 | 2445.651 | 21.21 | pk | 4.2 | 21.9 | 47.31 | 999 | -951.69 | 999 | -951.69 | 100 | Vert |
| 7 | 2480.521 | 19.53 | pk | 4.1 | 22 | 45.63 | 999 | -953.37 | 999 | -953.37 | 100 | Vert |
| 8 | 2489.178 | 26.26 | pk | 4.1 | 22.1 | 52.46 | 54 | -1.54 | 0 | 52.46 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m




# Authorized Band Emissions Mid Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 39
Y-Axis
Red=Horizontal Green=Vertical

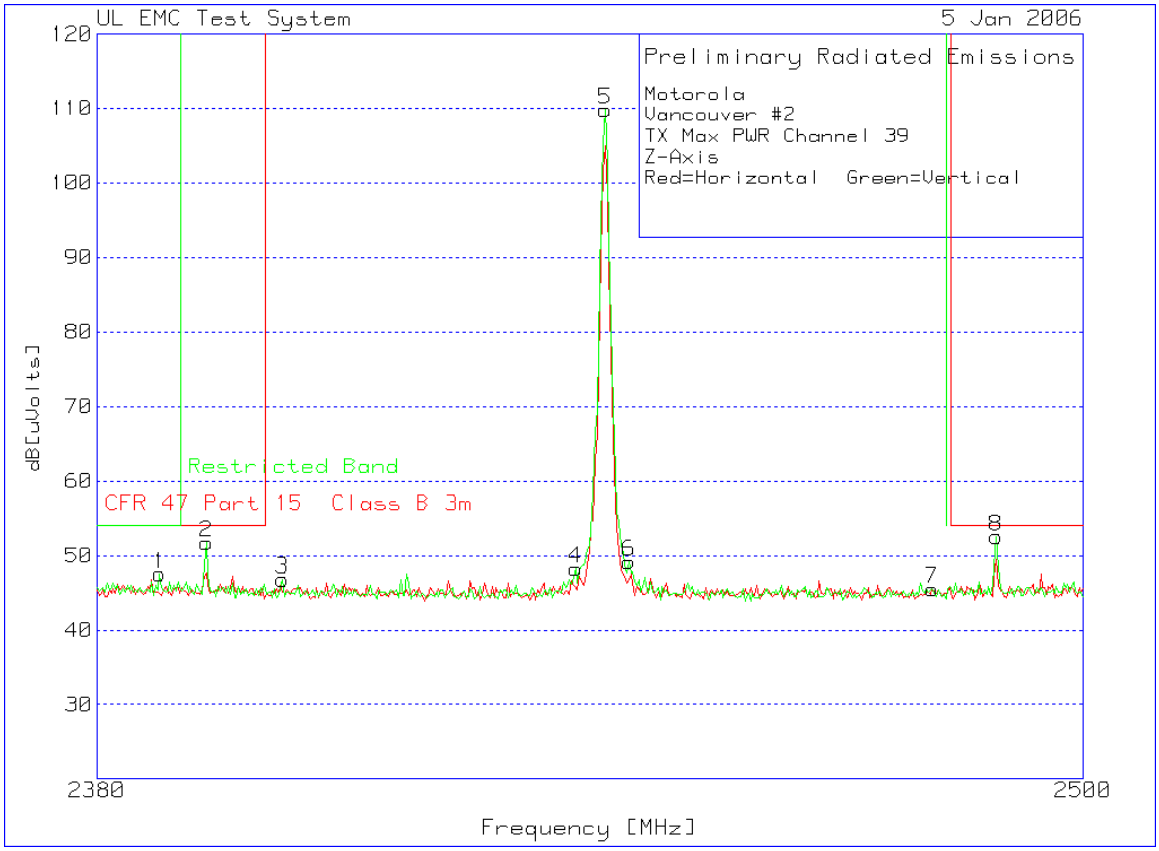
| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2500MHz | | | | | | | | | | | | |
| 1 | 2386.733 | 20.1 | pk | 4.4 | 21.8 | 46.3 | 54 | -7.7 | 54 | -7.7 | 100 | Vert |
| 2 | 2392.986 | 30.74 | pk | 4.4 | 21.8 | 56.94 | 54 | 2.94 | 999 | -942.06 | 100 | Vert |
| 3 | 2402.124 | 19.14 | pk | 4.4 | 21.8 | 45.34 | 999 | -953.66 | 999 | -953.66 | 100 | Vert |
| 4 | 2435.551 | 24.33 | pk | 4.2 | 21.9 | 50.43 | 999 | -948.57 | 999 | -948.57 | 100 | Vert |
| 5 | 2441.082 | 88.5 | pk | 4.2 | 21.9 | 114.6 | 999 | -884.4 | 999 | -884.4 | 100 | Vert |
| 6 | 2446.132 | 26.38 | pk | 4.2 | 21.9 | 52.48 | 999 | -946.52 | 999 | -946.52 | 100 | Vert |
| 7 | 2480.521 | 19.87 | pk | 4.1 | 22 | 45.97 | 999 | -953.03 | 999 | -953.03 | 100 | Vert |
| 8 | 2489.178 | 30.14 | pk | 4.1 | 22.1 | 56.34 | 54 | 2.34 | 0 | 56.34 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

Motorola
Vancouver #2
TX Max PWR Channel
Axis
Red=Horizontal Green=Vertical

| Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Azimuth [degs] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|
| ch39 Y | | | | | | | | | | |
| 2393 | 18.42 | av | 4.4 | 21.8 | 44.62 | 54 | -9.38 | 171 | 115 | Vert |
| 2489.1 | 15.64 | av | 4.1 | 22.1 | 41.84 | 54 | -12.16 | 229 | 119 | Horz |

LIMIT 1: CFR 47 Part 15 Class B 3mLIMIT 2: NONE

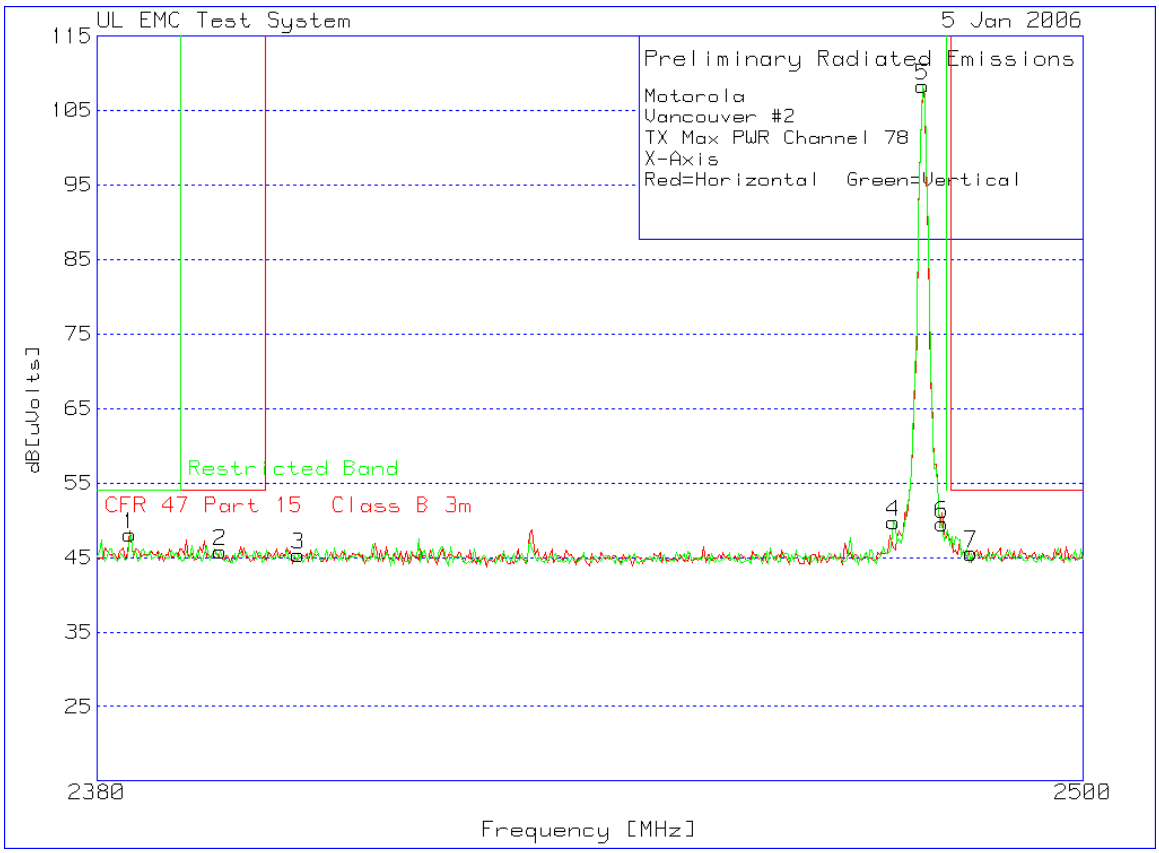



# Authorized Band Emissions Mid Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 39
Z-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2500MHz | | | | | | | | | | | | |
| 1 | 2387.455 | 21.32 | pk | 4.4 | 21.8 | 47.52 | 54 | -6.48 | 54 | -6.48 | 100 | Vert |
| 2 | 2392.986 | 25.5 | pk | 4.4 | 21.8 | 51.7 | 54 | -2.3 | 999 | -947.3 | 100 | Vert |
| 3 | 2402.124 | 20.59 | pk | 4.4 | 21.8 | 46.79 | 999 | -952.21 | 999 | -952.21 | 100 | Vert |
| 4 | 2437.475 | 22.11 | pk | 4.2 | 21.9 | 48.21 | 999 | -950.79 | 999 | -950.79 | 100 | Vert |
| 5 | 2441.082 | 83.68 | pk | 4.2 | 21.9 | 109.78 | 999 | -889.22 | 999 | -889.22 | 100 | Vert |
| 6 | 2443.968 | 23.08 | pk | 4.2 | 21.9 | 49.18 | 999 | -949.82 | 999 | -949.82 | 100 | Vert |
| 7 | 2481.243 | 19.39 | pk | 4.1 | 22 | 45.49 | 999 | -953.51 | 999 | -953.51 | 100 | Vert |
| 8 | 2489.178 | 26.33 | pk | 4.1 | 22.1 | 52.53 | 54 | -1.47 | 0 | 52.53 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m




# Authorized Band Emissions High Channel Dual Polarization X

Motorola
Vancouver #2
TX Max PWR Channel 78
X-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2500MHz | | | | | | | | | | | | |
| 1 | 2383.848 | 21.9 | pk | 4.4 | 21.8 | 48.1 | 54 | -5.9 | 54 | -5.9 | 100 | Vert |
| 2 | 2394.669 | 19.63 | pk | 4.4 | 21.8 | 45.83 | 54 | -8.17 | 999 | -953.17 | 100 | Vert |
| 3 | 2404.048 | 19.18 | pk | 4.4 | 21.8 | 45.38 | 999 | -953.62 | 999 | -953.62 | 100 | Vert |
| 4 | 2476.433 | 23.65 | pk | 4.1 | 22 | 49.75 | 999 | -949.25 | 999 | -949.25 | 100 | Vert |
| 5 | 2480.04 | 82.23 | pk | 4.1 | 22 | 108.33 | 999 | -890.67 | 999 | -890.67 | 100 | Vert |
| 6 | 2482.445 | 23.45 | pk | 4.1 | 22 | 49.55 | 999 | -949.45 | 999 | -949.45 | 100 | Vert |
| 7 | 2486.052 | 19.37 | pk | 4.1 | 22.1 | 45.57 | 54 | -8.43 | 0 | 45.57 | 100 | Vert |

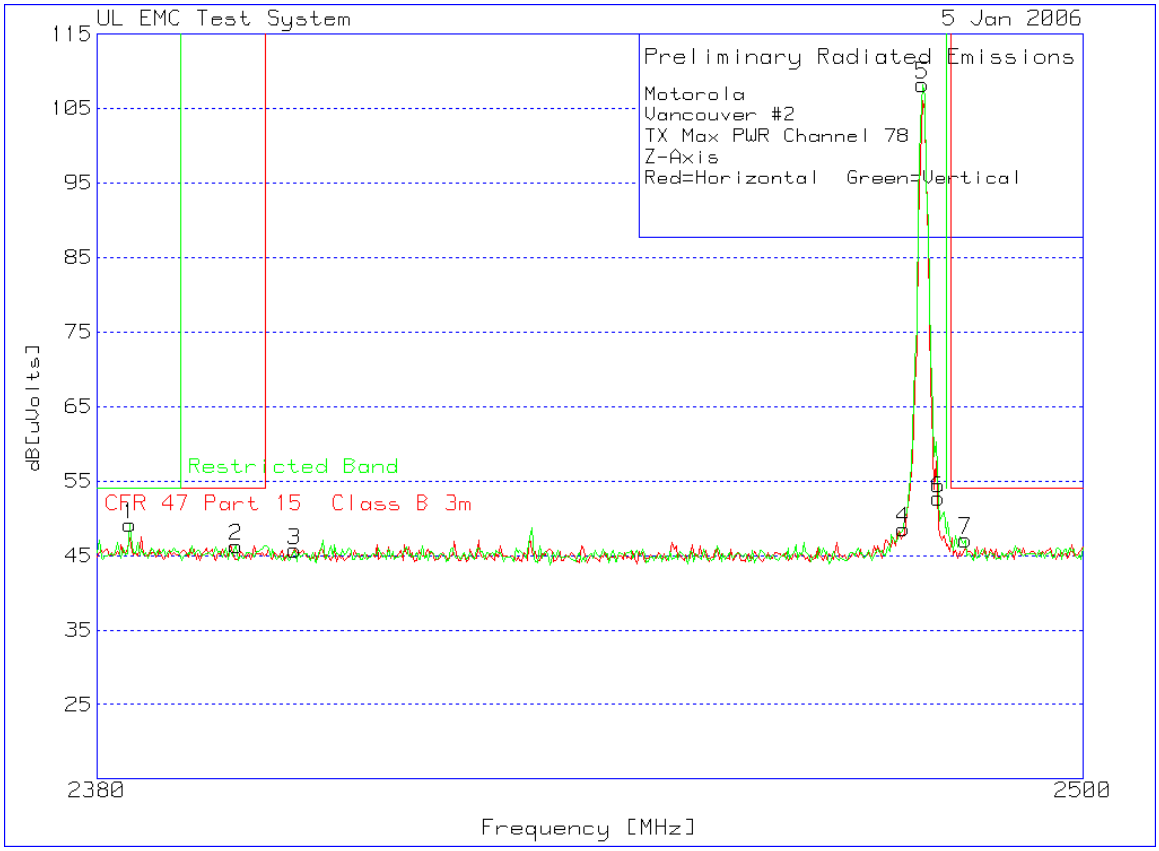
LIMIT 1: CFR 47 Part 15 Class B 3m

# Authorized Band Emissions High Channel Dual Polarization Y

Motorola
Vancouver #2
TX Max PWR Channel 78
Y-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2500MHz | | | | | | | | | | | | |
| 1 | 2383.848 | 24 | pk | 4.4 | 21.8 | 50.2 | 54 | -3.8 | 54 | -3.8 | 100 | Vert |
| 2 | 2395.391 | 19.66 | pk | 4.4 | 21.8 | 45.86 | 54 | -8.14 | 999 | -953.14 | 100 | Vert |
| 3 | 2403.567 | 19.24 | pk | 4.4 | 21.8 | 45.44 | 999 | -953.56 | 999 | -953.56 | 100 | Vert |
| 4 | 2475.711 | 23.92 | pk | 4.1 | 22 | 50.02 | 999 | -948.98 | 999 | -948.98 | 100 | Vert |
| 5 | 2480.04 | 83.99 | pk | 4.1 | 22 | 110.09 | 999 | -888.91 | 999 | -888.91 | 100 | Vert |
| 6 | 2482.445 | 26.1 | pk | 4.1 | 22 | 52.2 | 999 | -946.8 | 999 | -946.8 | 100 | Vert |
| 7 | 2485.812 | 20.09 | pk | 4.1 | 22.1 | 46.29 | 54 | -7.71 | 0 | 46.29 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m




# Authorized Band Emissions High Channel Dual Polarization Z

Motorola
Vancouver #2
TX Max PWR Channel 78
Z-Axis
Red=Horizontal Green=Vertical

| Marker Number | Test Frequency [MHz] | Meter Reading [dB(uV)] | Detector Type | Gain/Loss Factor [dB] | Transducer Factor [dB] | Level dB[uVolts] | Limit 1 | Margin 1[dB] | Limit 2 | Margin 2[dB] | Height [cm] | Polarity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 - 4GHz 2380 - 2500MHz | | | | | | | | | | | | |
| 1 | 2383.848 | 22.93 | pk | 4.4 | 21.8 | 49.13 | 54 | -4.87 | 54 | -4.87 | 100 | Vert |
| 2 | 2396.593 | 20.04 | pk | 4.4 | 21.8 | 46.24 | 54 | -7.76 | 999 | -952.76 | 100 | Vert |
| 3 | 2403.567 | 19.51 | pk | 4.4 | 21.8 | 45.71 | 999 | -953.29 | 999 | -953.29 | 100 | Vert |
| 4 | 2477.635 | 22.48 | pk | 4.1 | 22 | 48.58 | 999 | -950.42 | 999 | -950.42 | 100 | Vert |
| 5 | 2480.04 | 82.14 | pk | 4.1 | 22 | 108.24 | 999 | -890.76 | 999 | -890.76 | 100 | Vert |
| 6 | 2481.964 | 26.58 | pk | 4.1 | 22 | 52.68 | 999 | -946.32 | 999 | -946.32 | 100 | Vert |
| 7 | 2485.331 | 20.91 | pk | 4.1 | 22.1 | 47.11 | 54 | -6.89 | 0 | 47.11 | 100 | Vert |

LIMIT 1: CFR 47 Part 15 Class B 3m

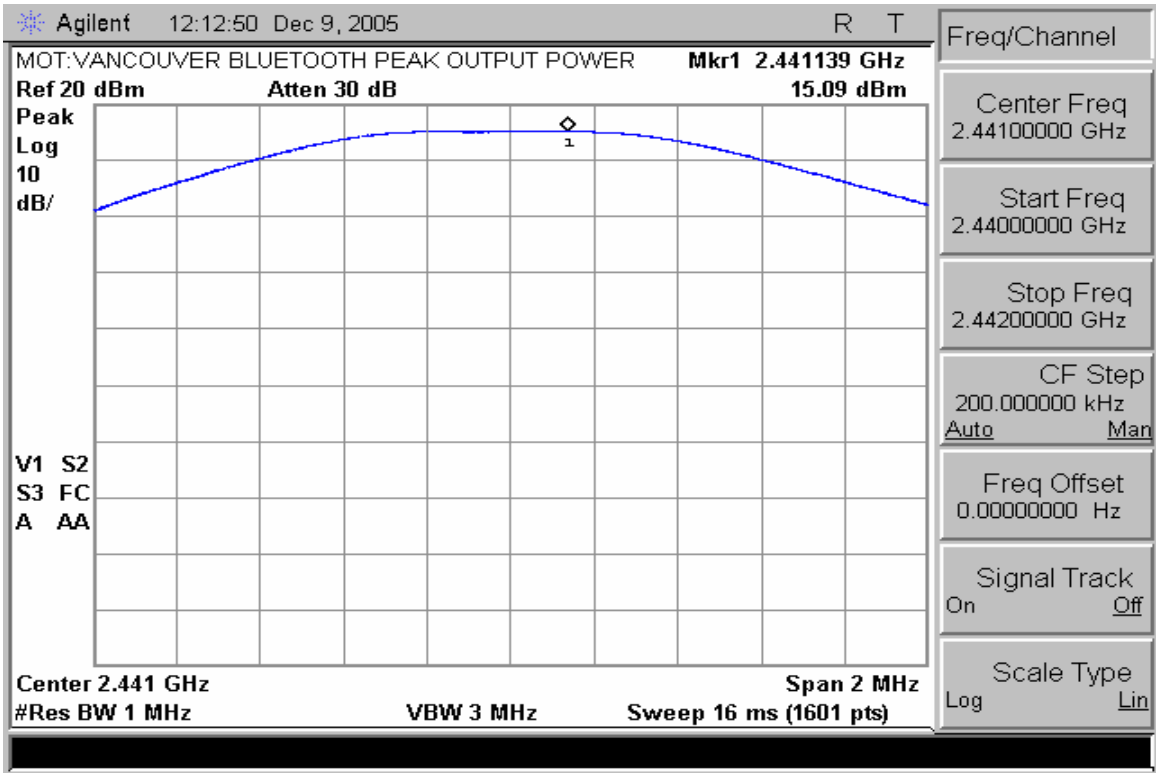
## PEAK OUTPUT POWER

CFR 47 Part 15.247

## Measurement Procedure

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

## Measurement Results




**Peak Output Power**

# BAND-EDGE COMPLIANCE OF RF CONDUCTED EMISSIONS

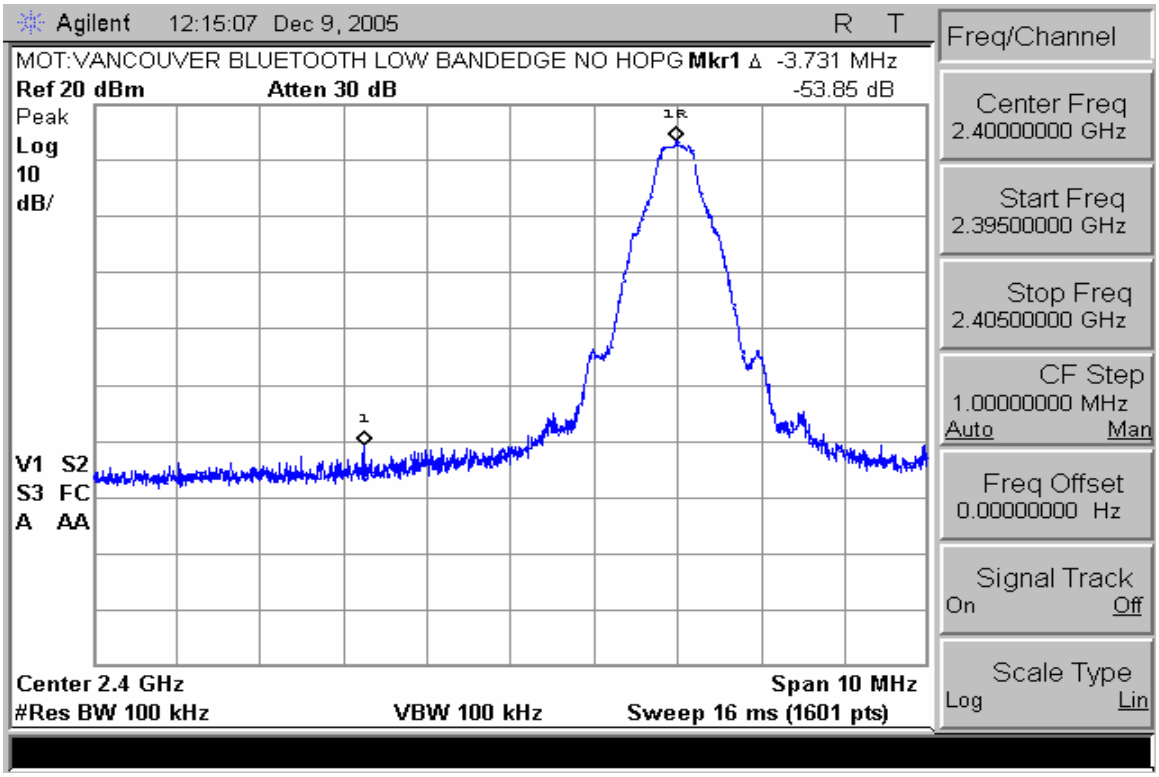
CFR 47 Part 15.247

## Measurement Procedure

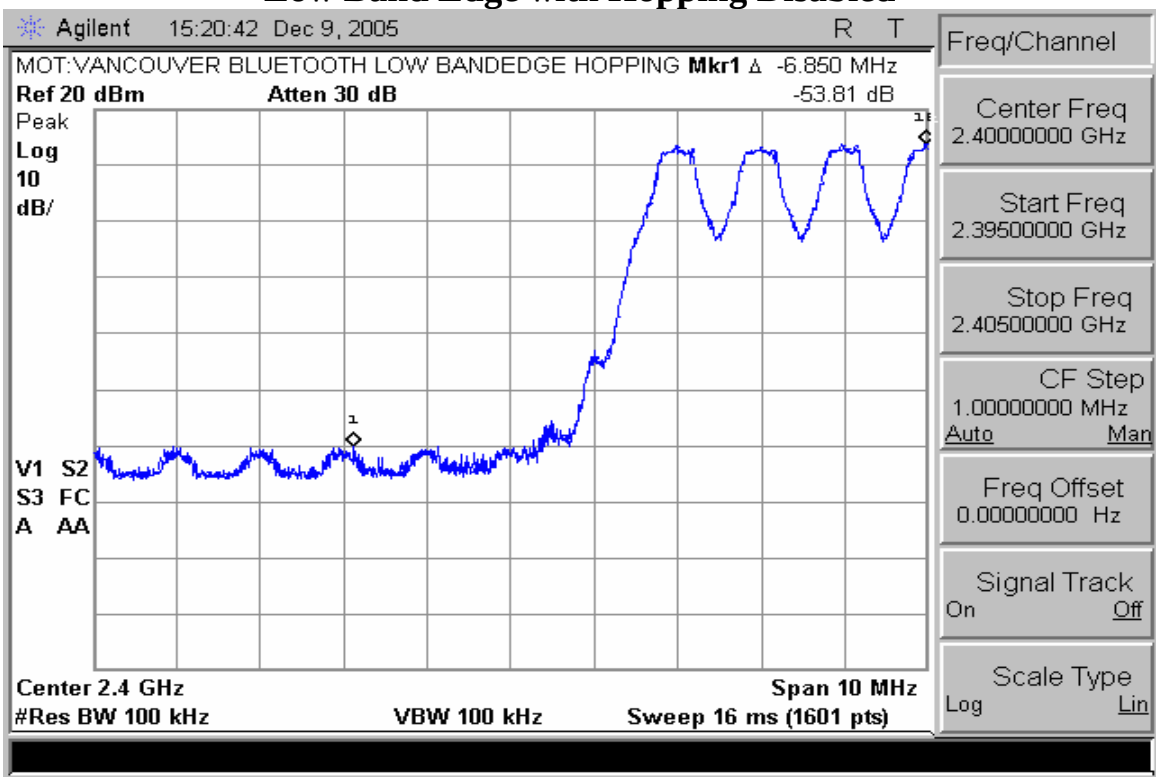
The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

## Measurement Results

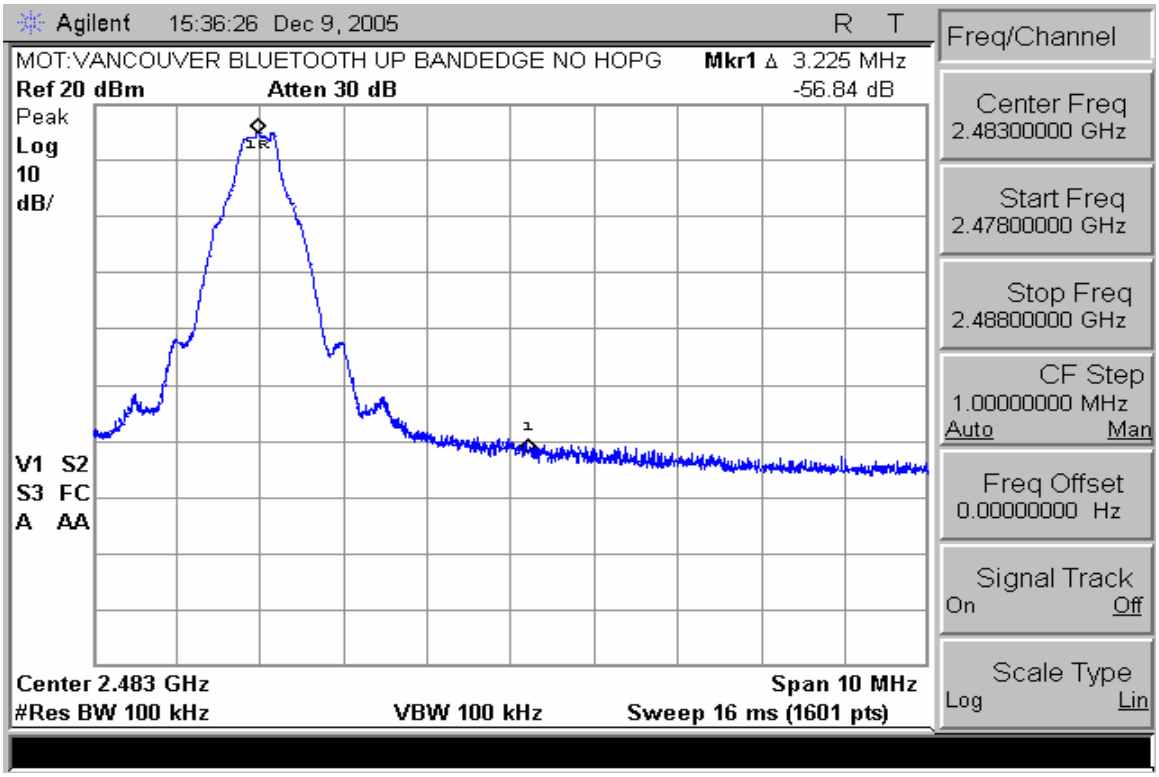
See Attached:



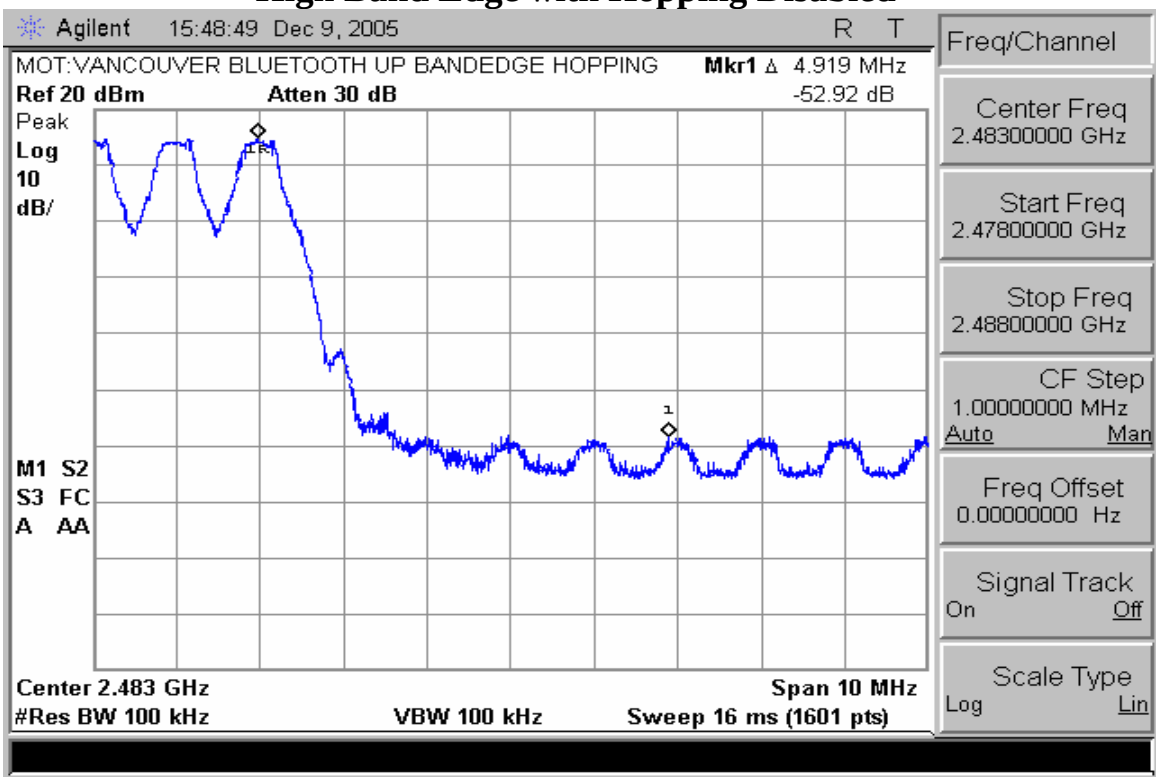

**Low Band Edge with Hopping Disabled**




**Low Band Edge with Hopping Enabled**




**High Band Edge with Hopping Disabled**




**High Band Edge with Hopping Enabled**

# SPURIOUS RF CONDUCTED EMISSIONS

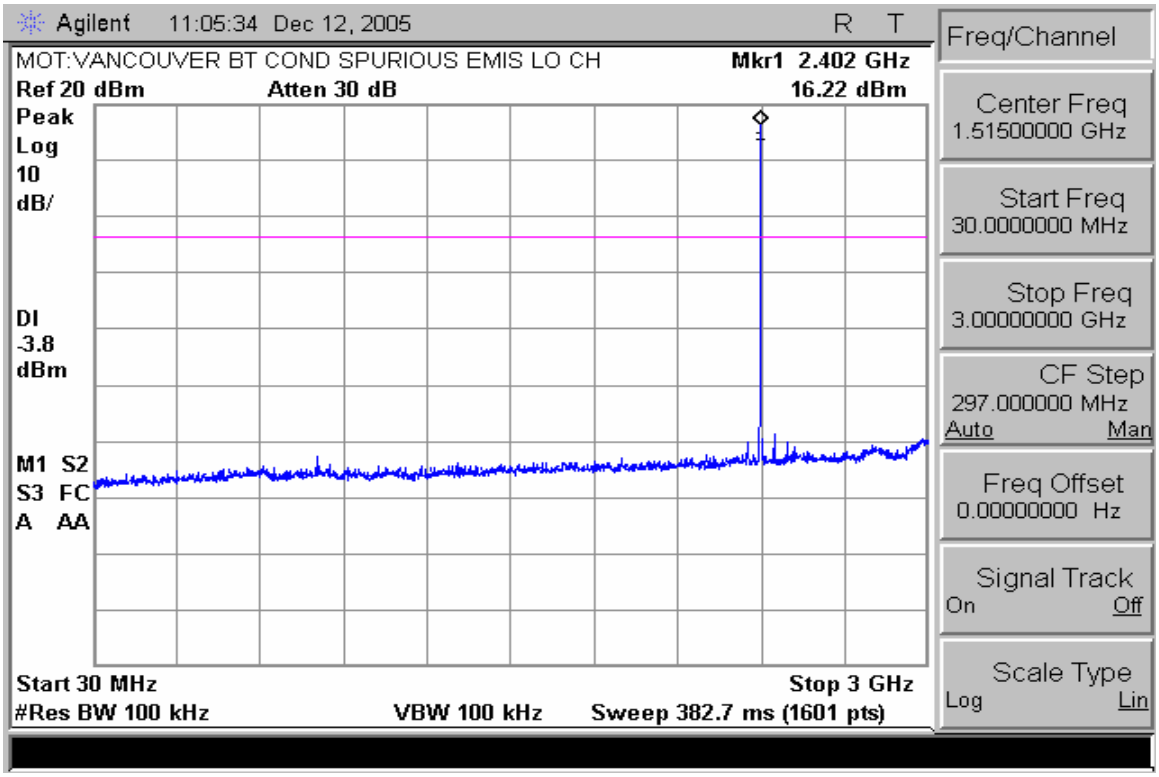
CFR 47 Part 15.247

## Measurement Procedure

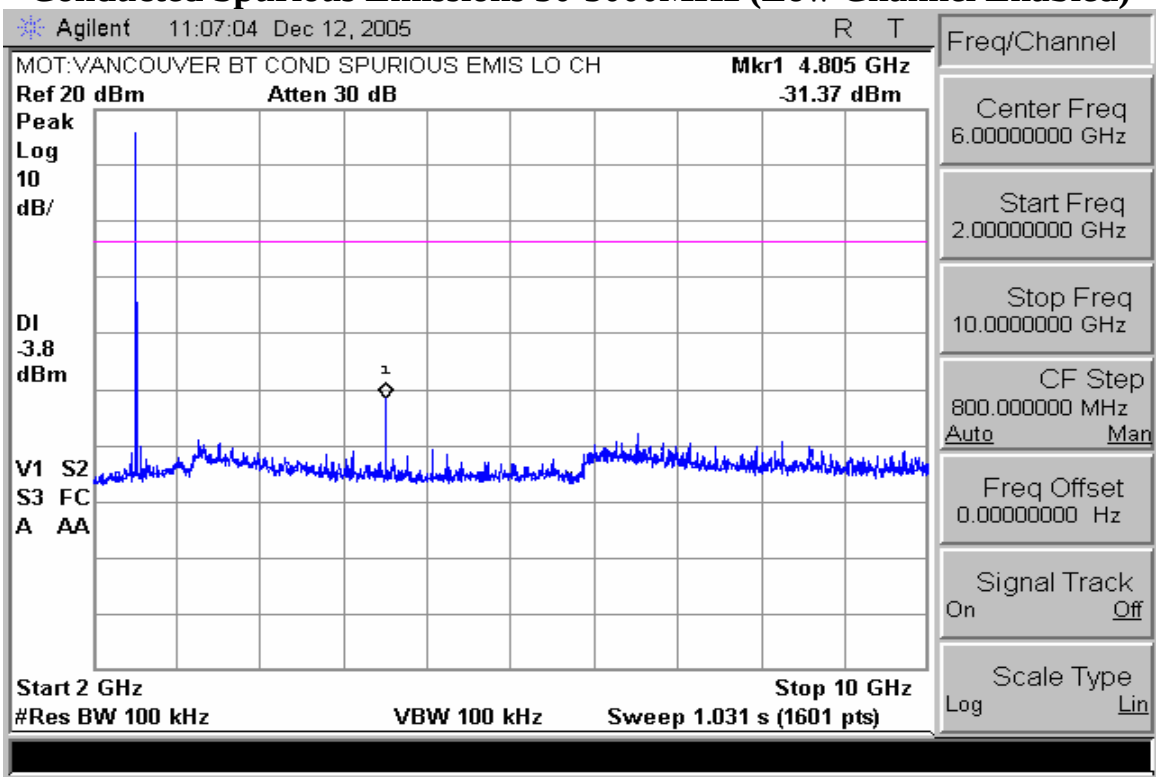
The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

## Measurement Results

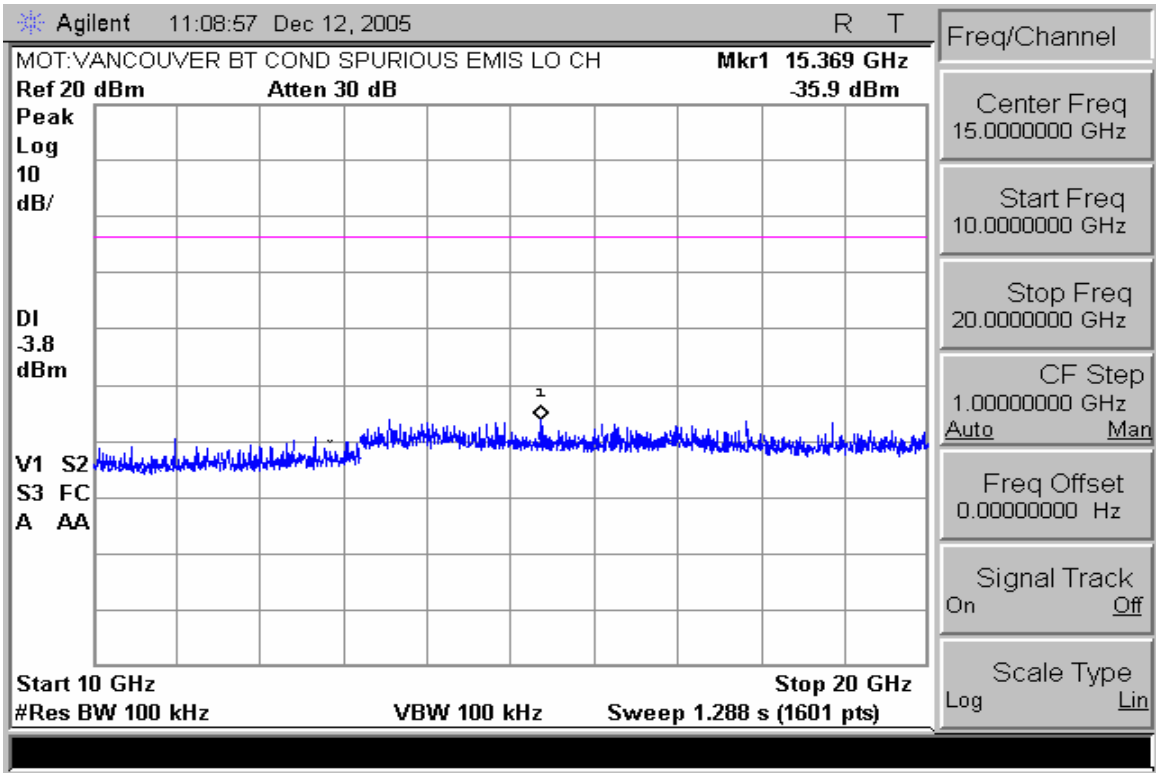
See attached:



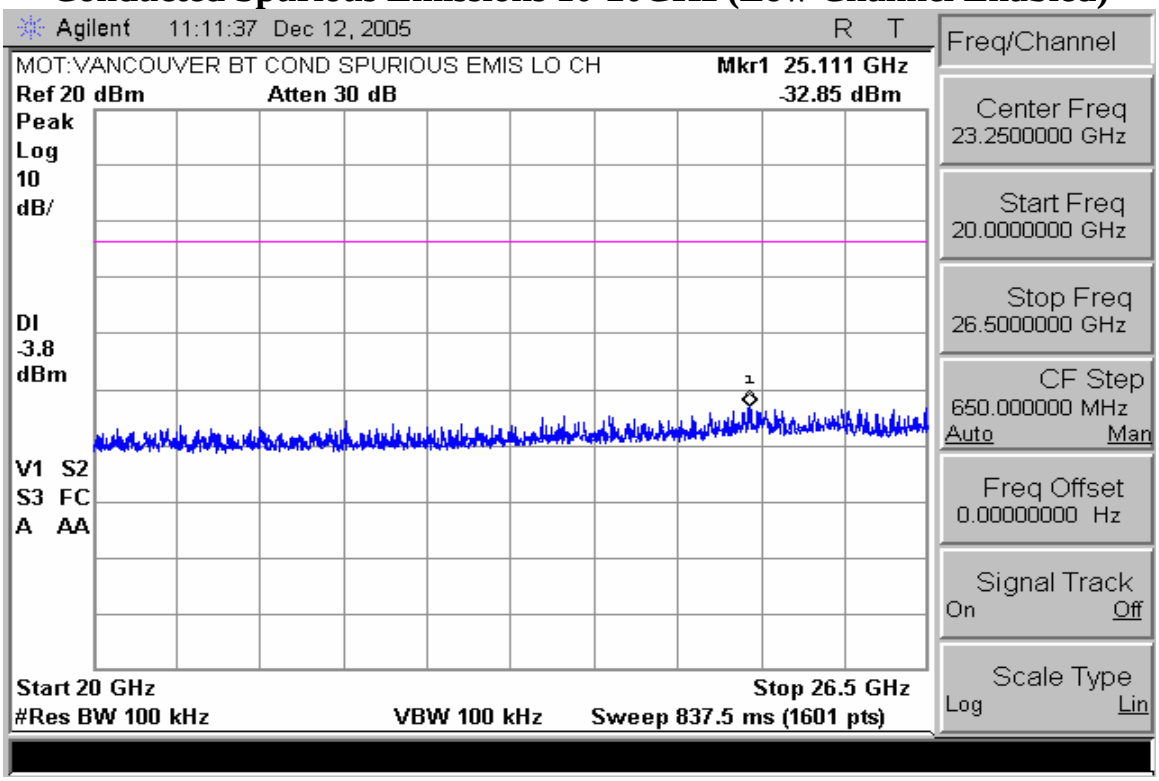

**Conducted Spurious Emissions 30-3000MHz (Low Channel Enabled)**



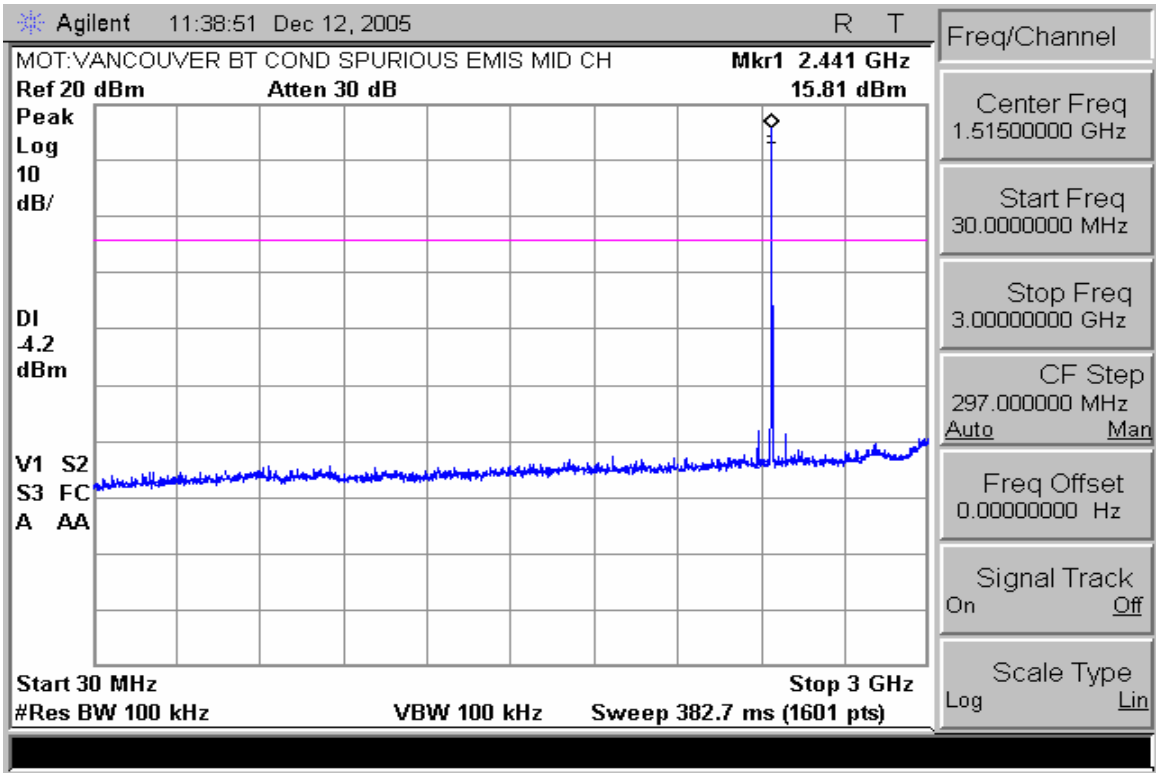

**Conducted Spurious Emissions 2-10GHz (Low Channel Enabled)**



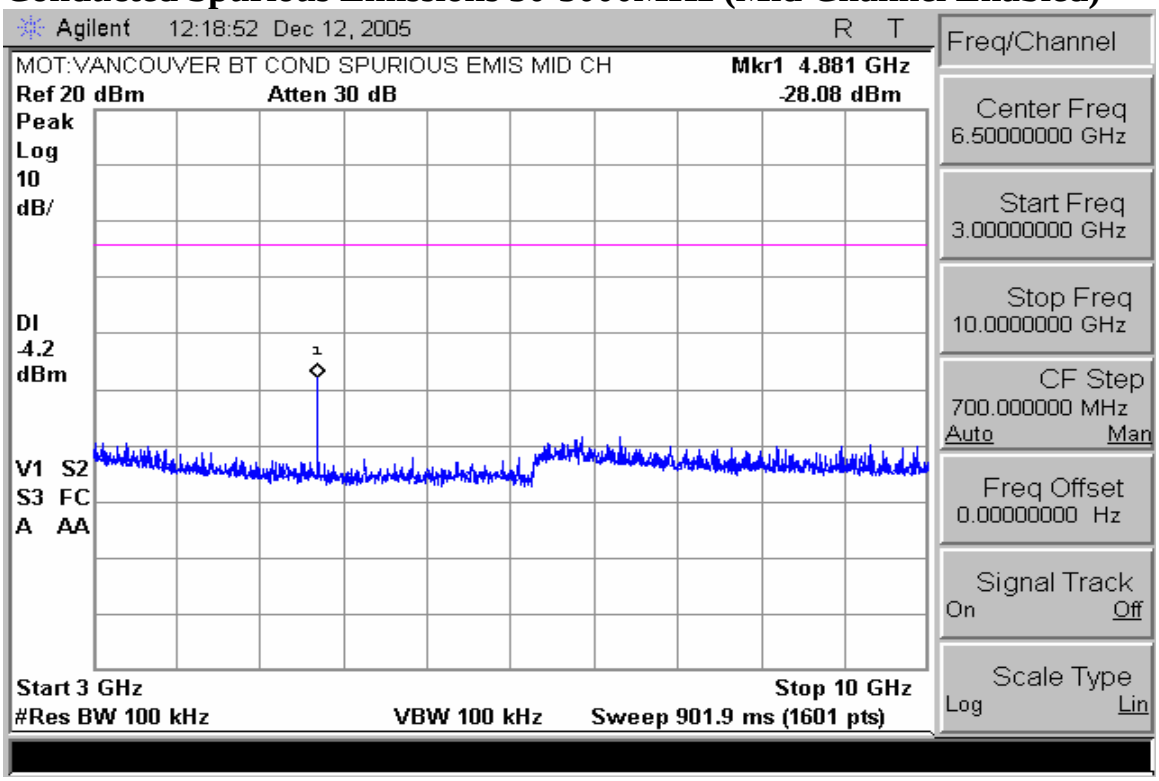

**Conducted Spurious Emissions 10-20GHz (Low Channel Enabled)**



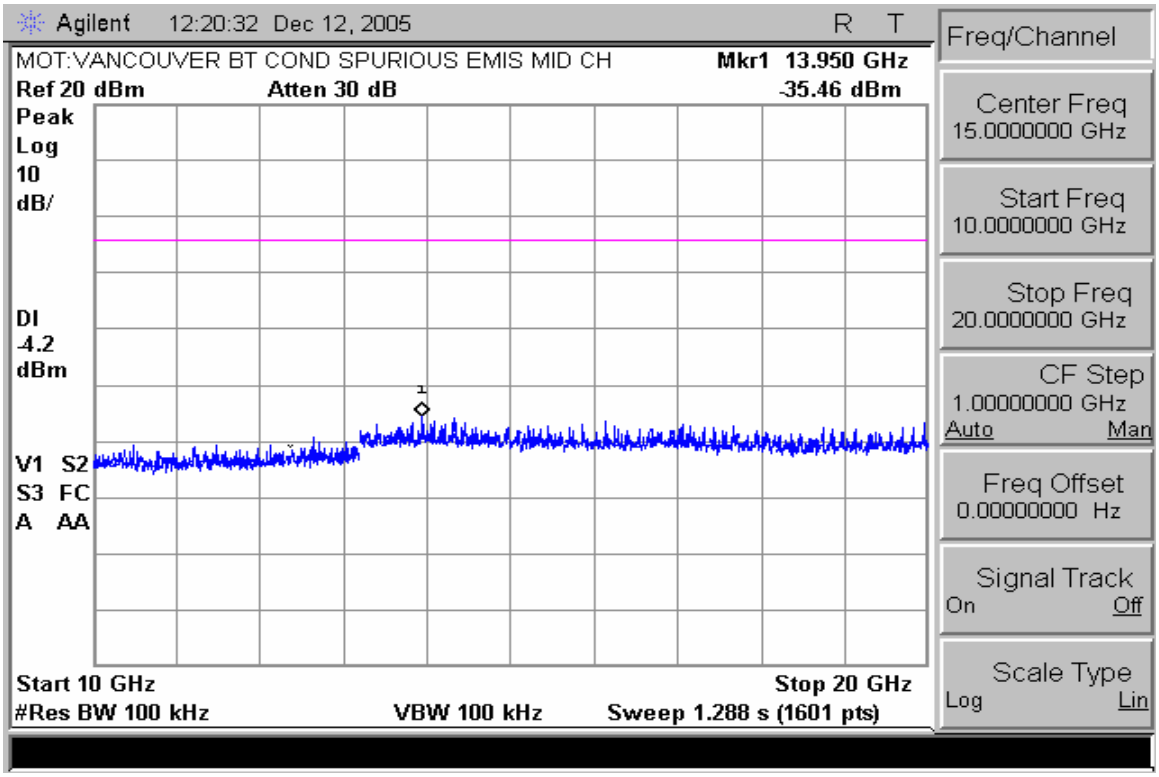

**Conducted Spurious Emissions 20-26.5GHz (Low Channel Enabled)**



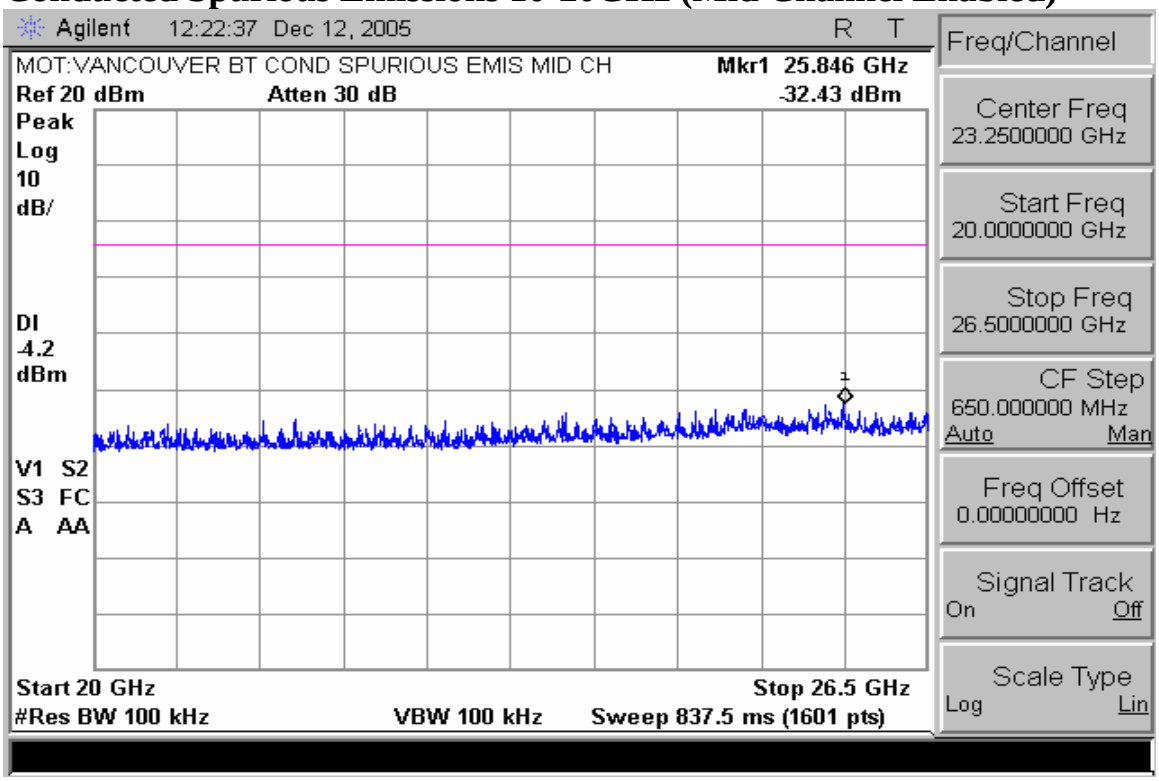

**Conducted Spurious Emissions 30-3000MHz (Mid Channel Enabled)**



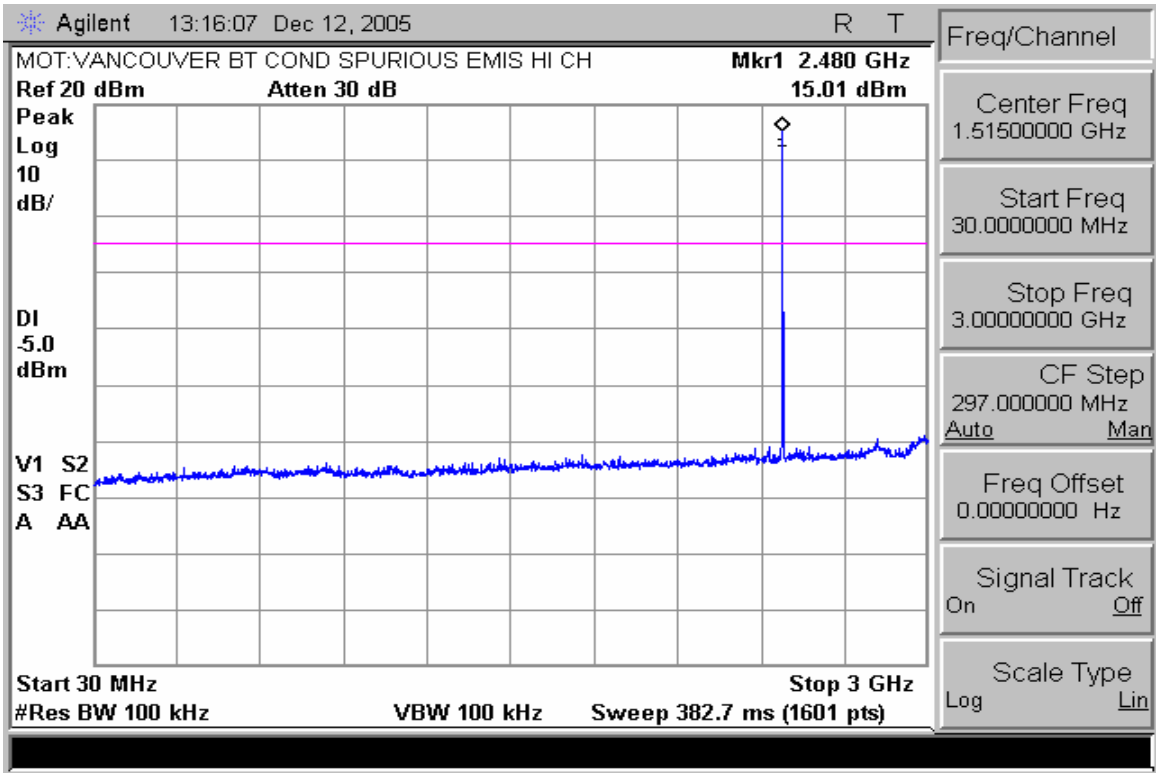

**Conducted Spurious Emissions 2-10GHz (Mid Channel Enabled)**



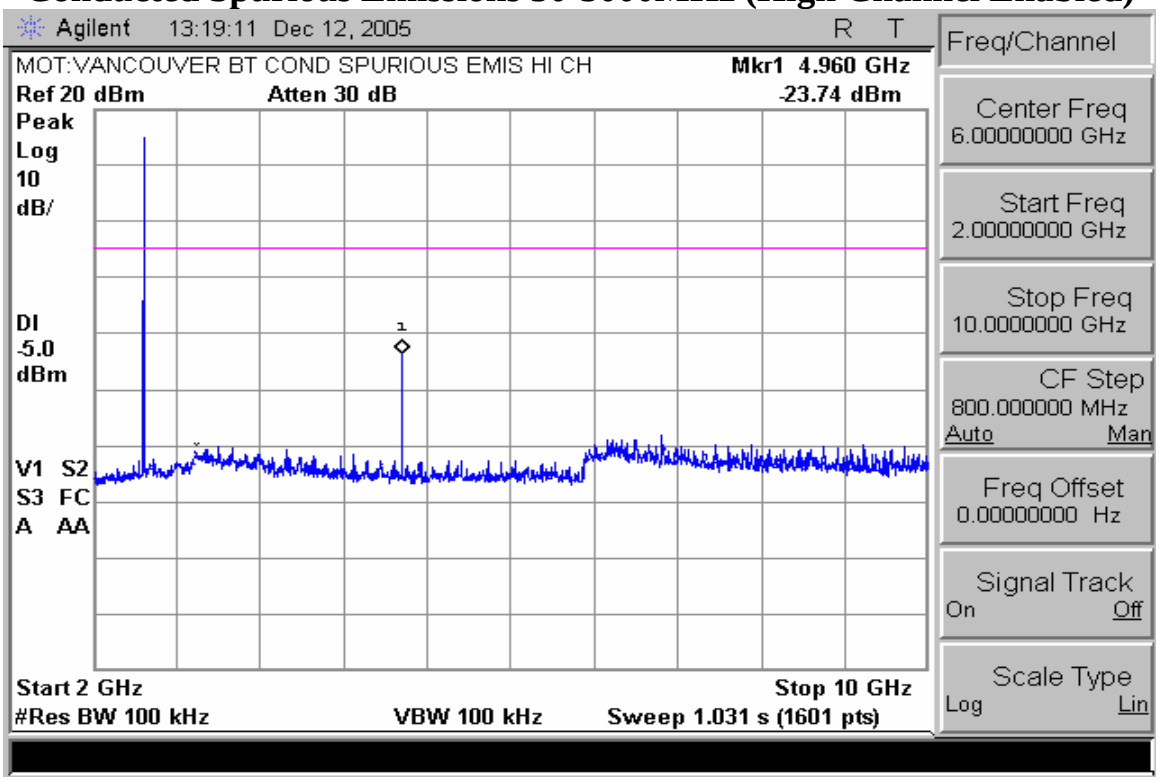

**Conducted Spurious Emissions 10-20GHz (Mid Channel Enabled)**



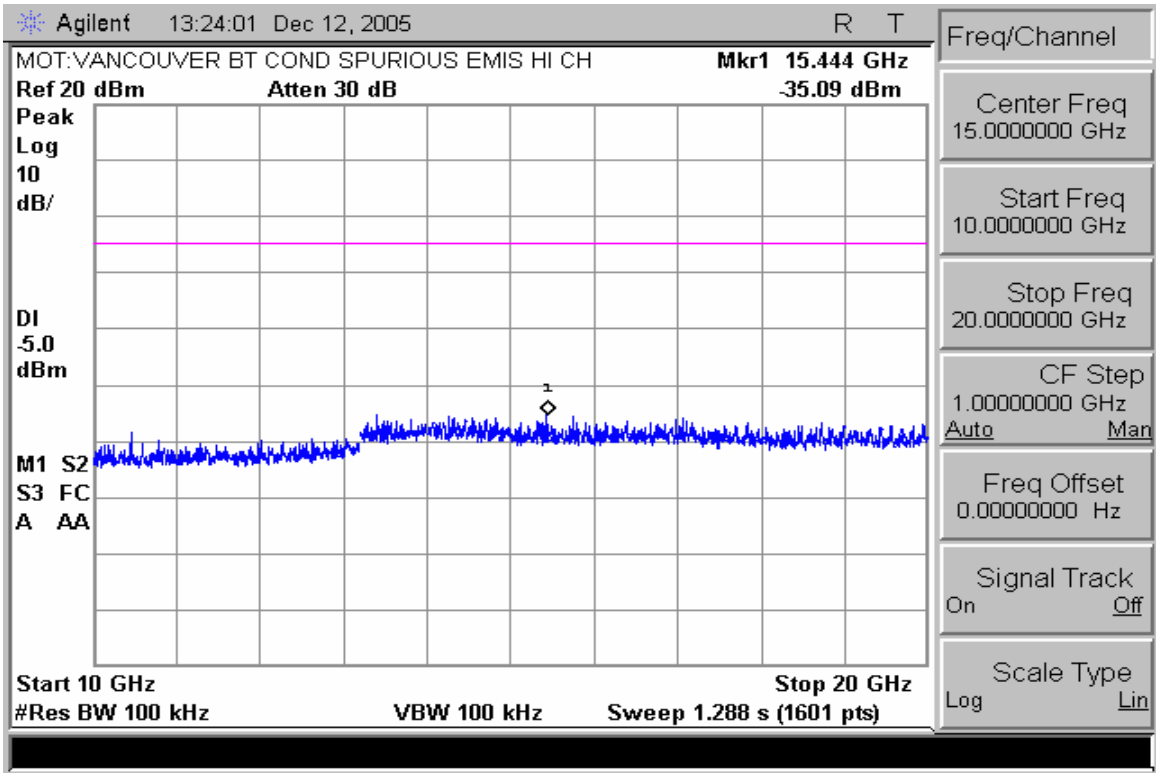

**Conducted Spurious Emissions 20-26.5GHz (Mid Chan Enabled)**



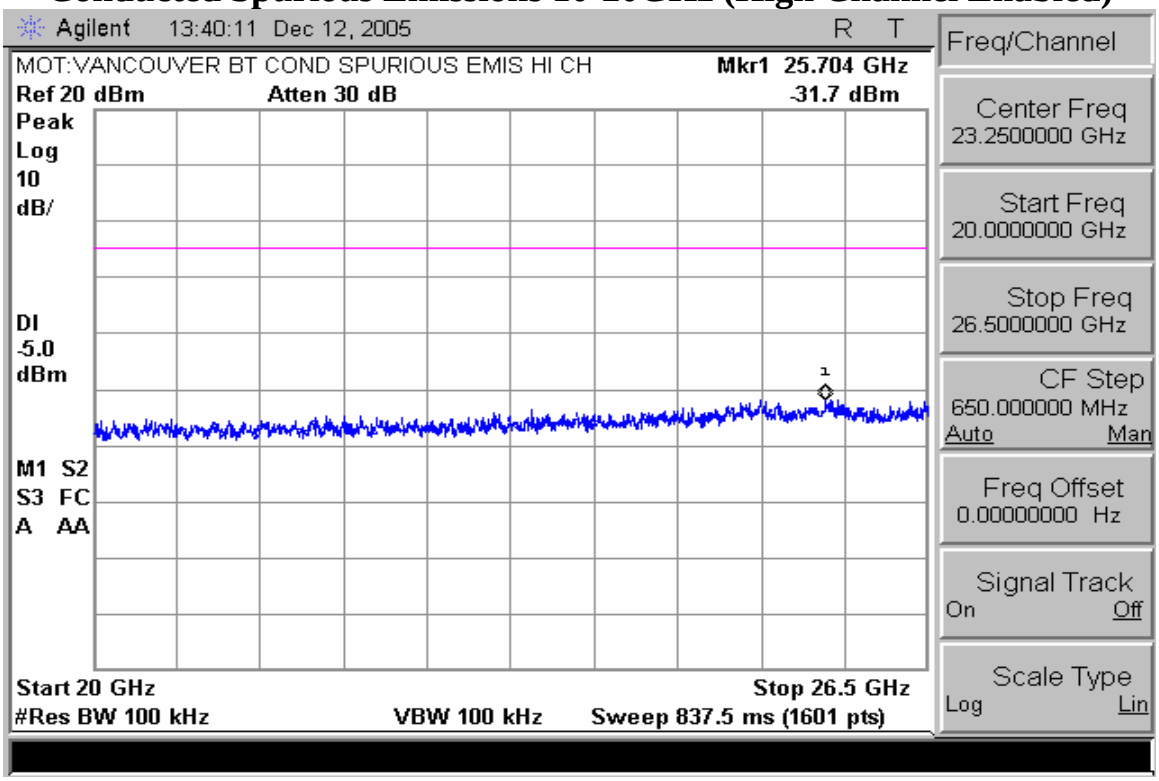

**Conducted Spurious Emissions 30-3000MHz (High Channel Enabled)**




**Conducted Spurious Emissions 2-10GHz (High Channel Enabled)**




**Conducted Spurious Emissions 10-20GHz (High Channel Enabled)**




**Conducted Spurious Emissions 20-26.5GHz (High Chan Enabled)**

# AC LINE CONDUCTED

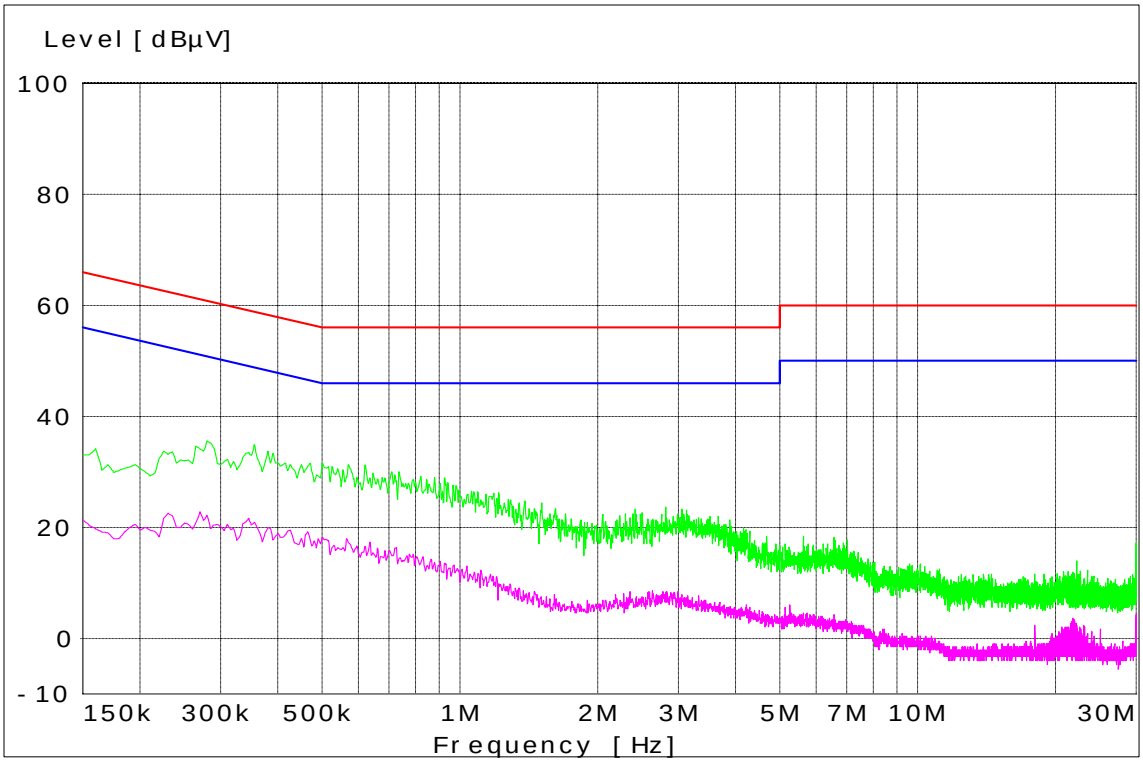
CFR 47 Part 15.207

## Measurement Procedure

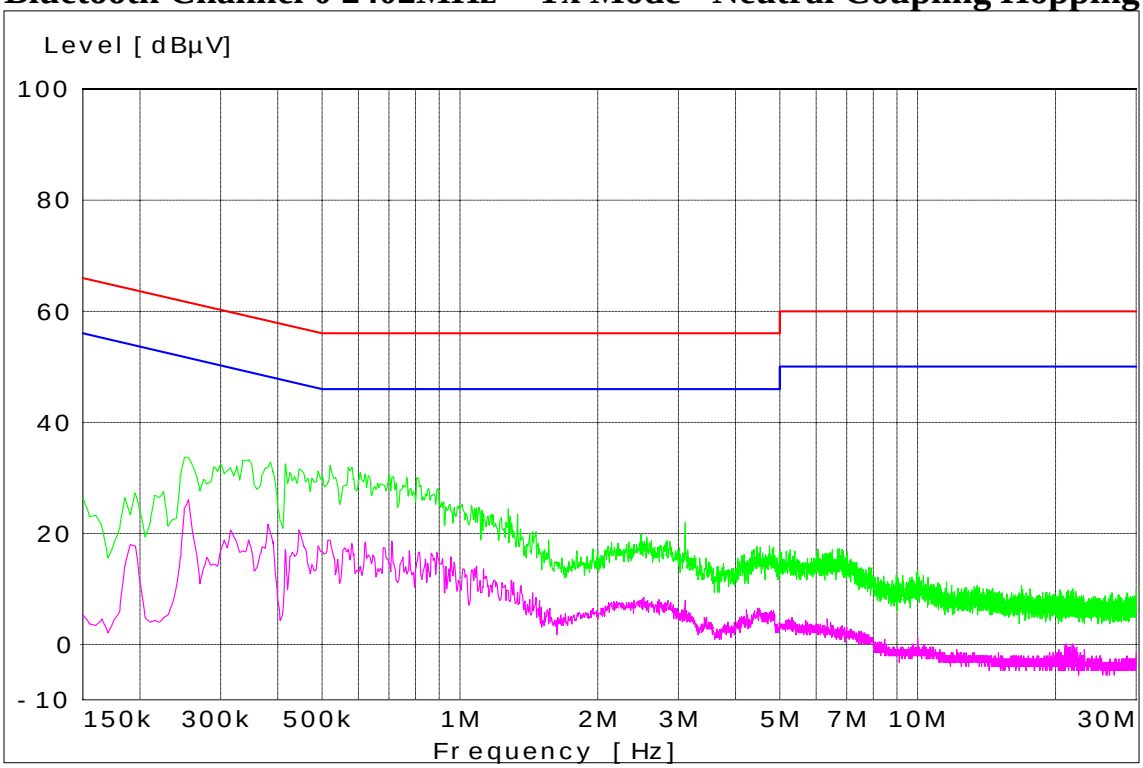
Measured levels of ac powerline conducted emission shall be the radio-noise voltage from the line probe or across the 50 Ω LISN port, where permitted, terminated into a 50 Ω noise meter, or where permitted or required, the radio-noise current on the powerline sensed by a current probe.
All radio-noise voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord or calibrated extension cord by the use of mating plugs and receptacles on the EUT and LISN. Equipment shall be tested with power cords that are normally supplied using an LISN, the 50 Ω measuring port is terminated by a 50 Ω radio-noise meter or a 50 Ω resistive load. All other ports are terminated in 50 Ω.

## Measurement Results

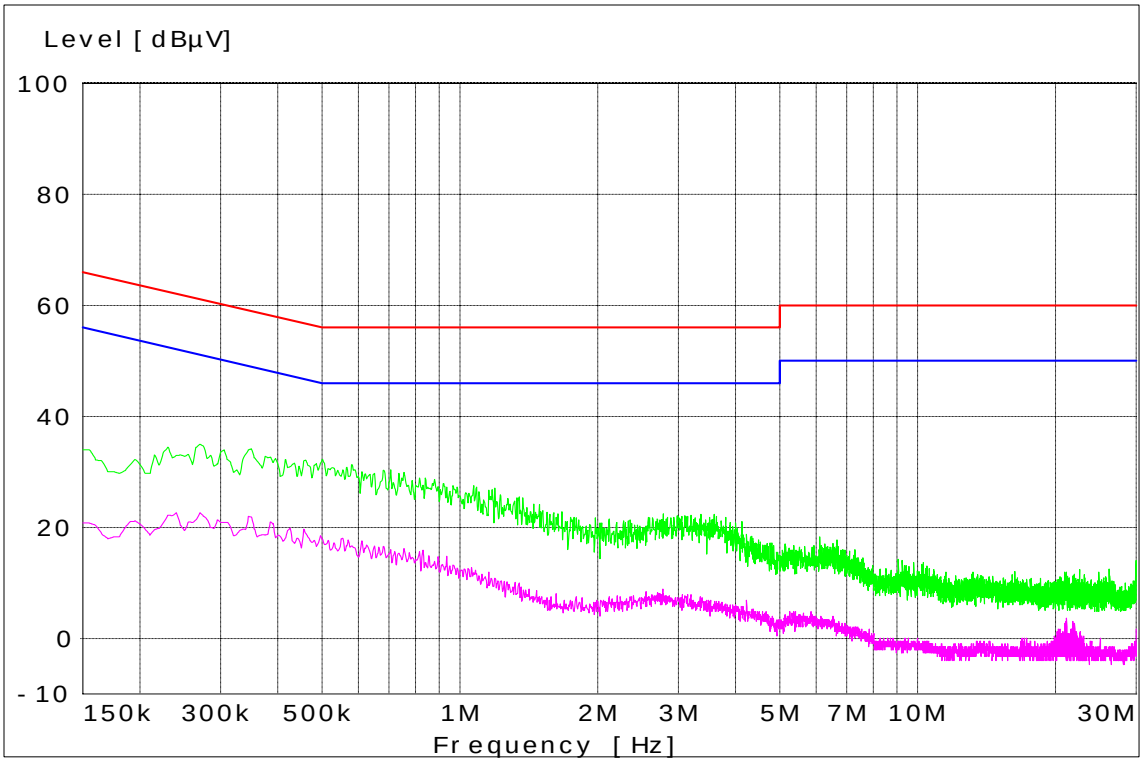
See attached:



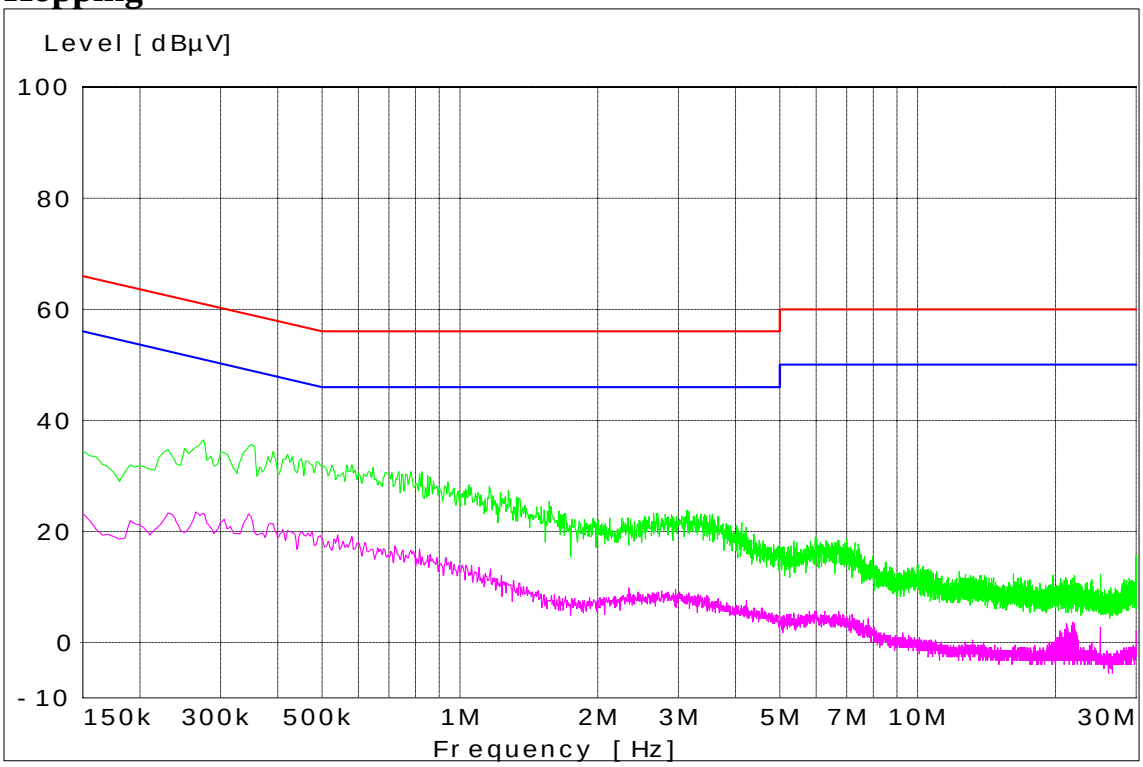

**Bluetooth Channel 0 2402MHz - Tx Mode - Neutral Coupling Hopping**



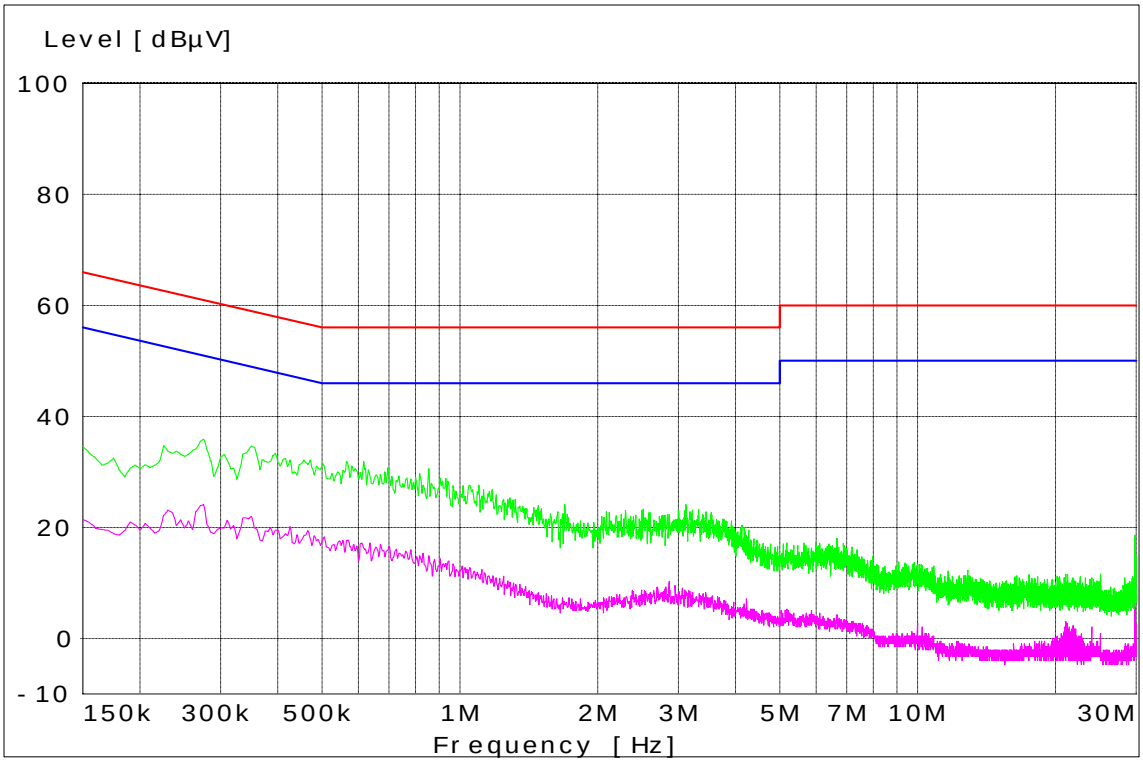

**Bluetooth Channel 39 2441MHz - Tx Mode - Line Coupling Nonhopping**



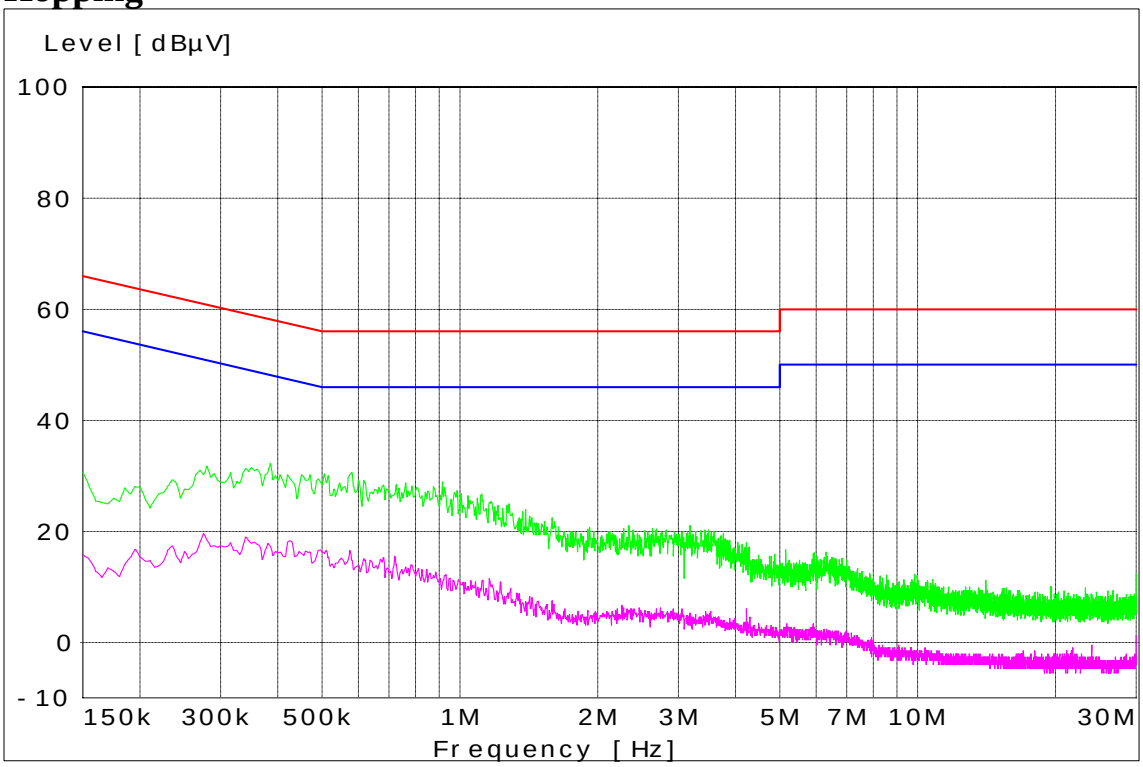

**Bluetooth Channel 39 2441MHz - Tx Mode - Neutral Coupling Hopping**



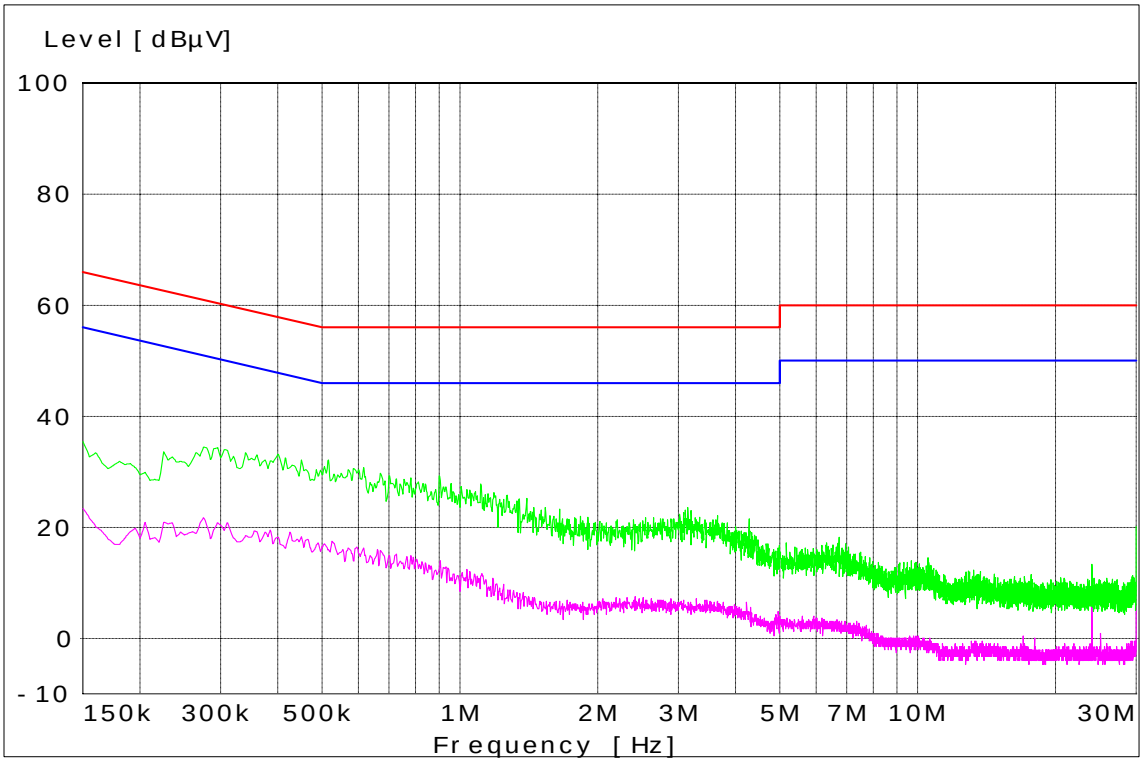

**Bluetooth Channel 78 2480MHz - Tx Mode - Line Coupling Hopping**



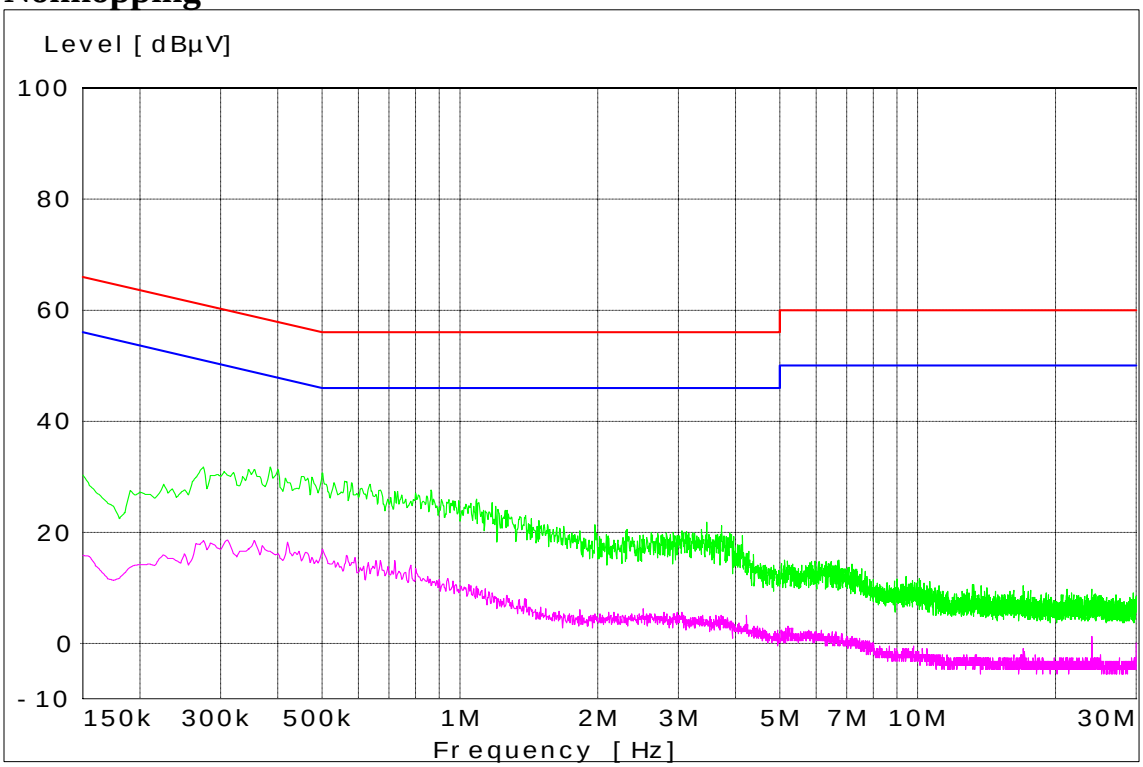

**Bluetooth Channel 78 2480MHz - Tx Mode - Neutral Coupling Hopping**



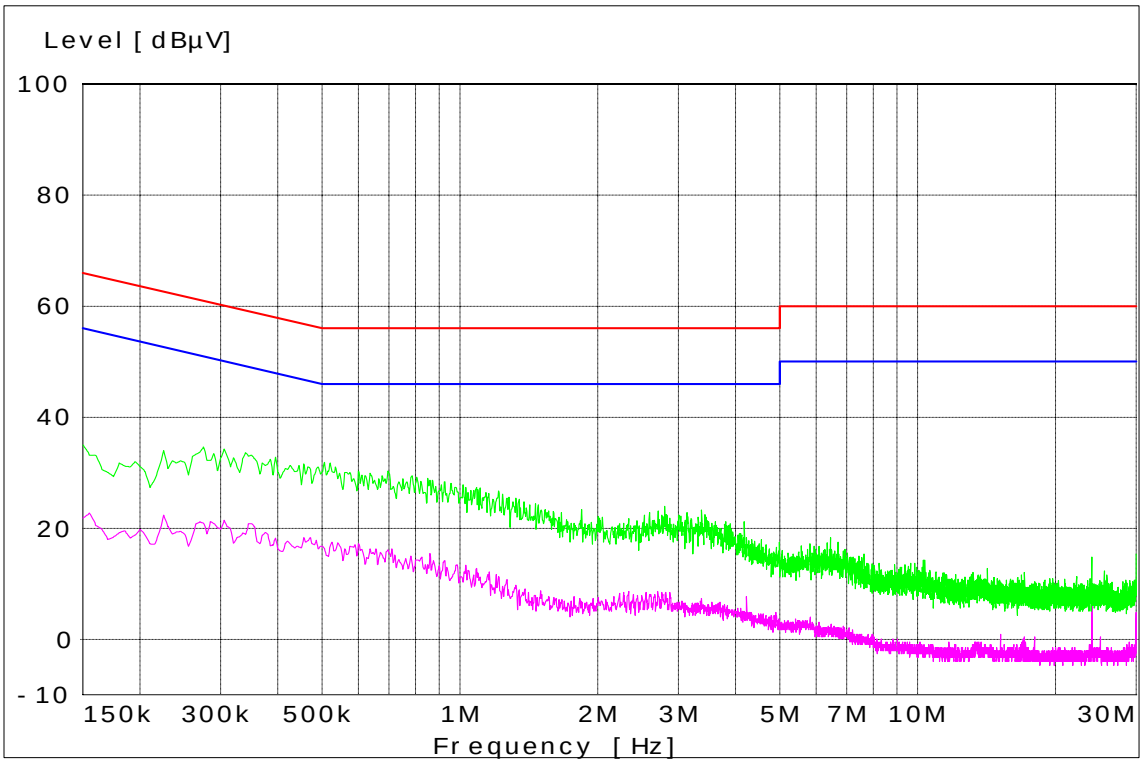

**Bluetooth Channel 0 2402MHz - Tx Mode - Line Coupling Hopping**



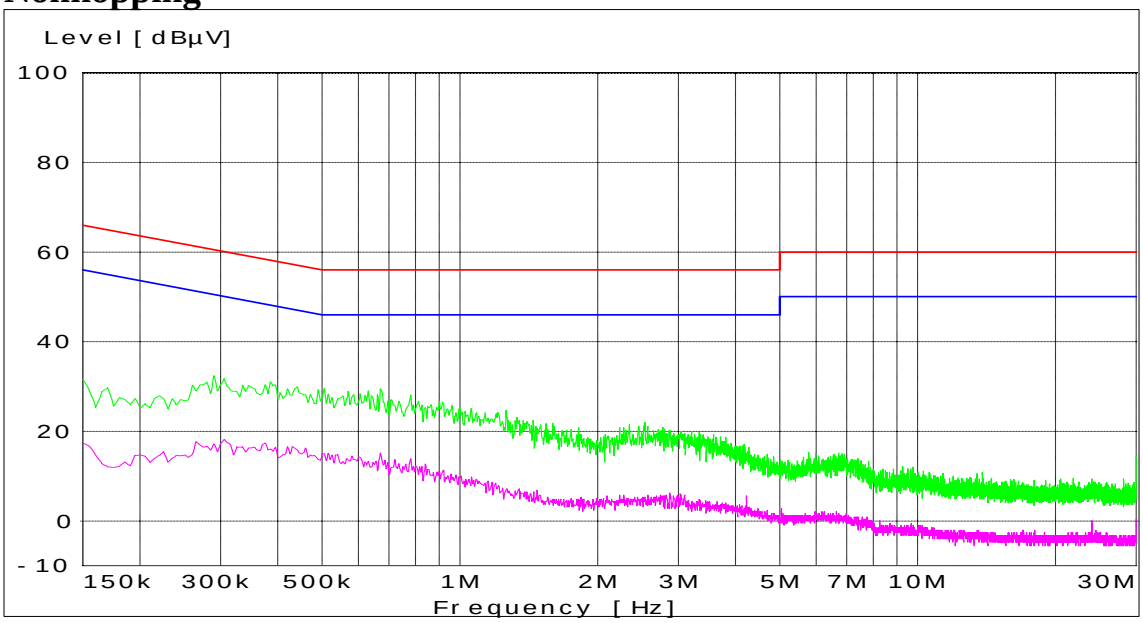

**Bluetooth Channel 0 2402MHz - Tx Mode - Neutral Coupling Nonhopping**



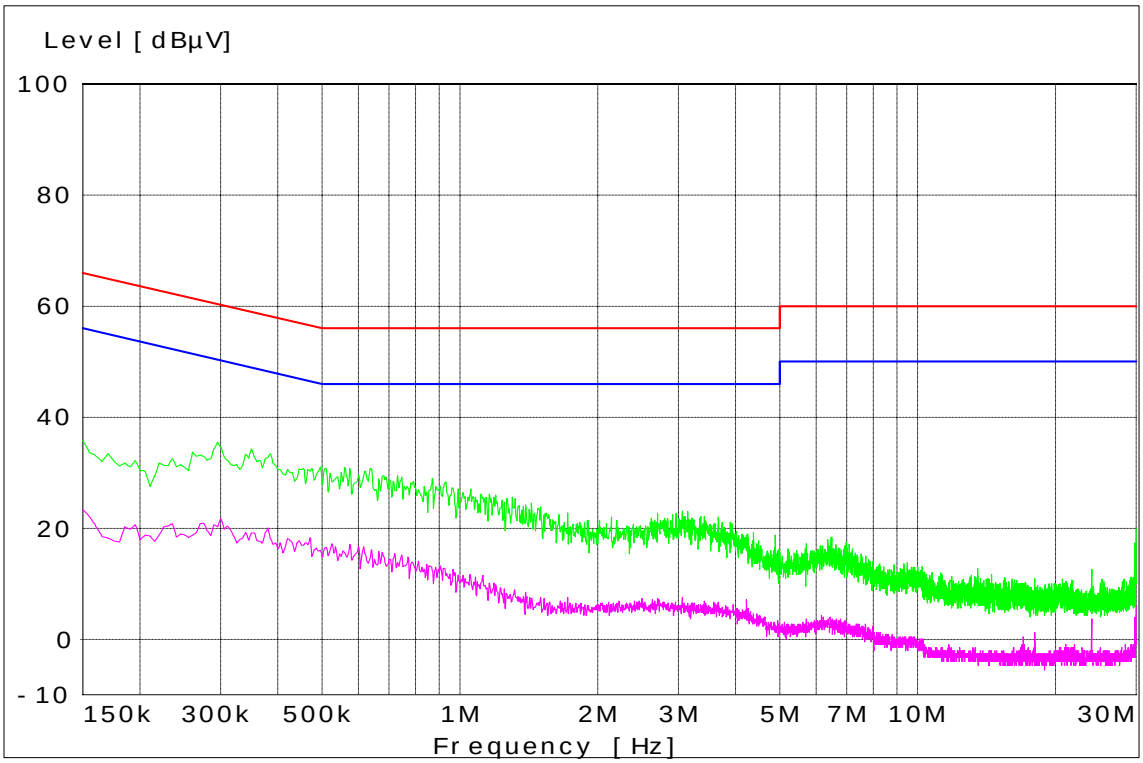

**Bluetooth Channel 39 2441MHz - Tx Mode - Line Coupling Hopping**




**Bluetooth Channel 39 2441MHz - Tx Mode - Neutral Coupling Nonhopping**




**Bluetooth Channel 78 2480MHz - Tx Mode - Line Coupling Nonhopping**




**Bluetooth Channel 78 2480MHz - Tx Mode - Neutral Coupling Nonhopping**

## End of Test Report