



MOBILE DEVICES BUSINESS

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT - Addendum

Test Report Number – 17263-1BT

Report Date – November 18, 2005

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.

A handwritten signature in blue ink that reads 'Michael E. Hill'.

Signature:

Name: Michael E. Hill

Title: Senior Staff Electrical Engineer Date: November 18, 2005

This report must not be reproduced, except in full, without written approval from this laboratory.

THIS REPORT MUST NOT BE USED TO CLAIM PRODUCT ENDORSEMENT BY A2LA OR ANY AGENCY OF THE U.S. GOVERNMENT.

A2LA Certificate Number: 1651.01



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Test Report Details

Tests Performed By: Motorola Mobile Devices business
Product Safety and Compliance Group
600 North US Hwy 45
Libertyville, IL 60048
PH (847) 523-6167 Fax (847) 523-4538
Motorola PCS FRN: 0004321311
FCC Registration Number: 316588
Industry Canada Number: IC3908

Radiated Emissions
Performed By: Underwriters Laboratories
International EMC Services
333 Pfingsten RD
Northbrook, IL 60062
Contact: Lubomir Madjarov
(Tel) 847/664-3957
(Fax) 847/313-3957

Tests Requested By: Motorola Inc.
Mobile Devices business
600 North US Hwy 45
Libertyville, IL 60048

Product Type: E2 ROKR

Signaling Capability: GSM850, 1900, GPRS and Bluetooth

Model Number: CHWF1417AA

Serial Numbers: TA100004D, TA100006D

Testing Complete Date: November 11, 2005

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:

- ☒ 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	Result
2	Number of Hopping Frequencies	Result
3	Time of Occupancy (Dwell Time)	Result
4	20 dB Bandwidth	Result
5	Spurious RF Conducted Emissions	Result
6	Field Strength of Spurious Emissions	Result
7	Max Power	N/A
8	Band Edges	See plots
9	Conducted Spurious Emissions	Result
10	AC Line Conducted Emissions	See plots

Test	Test Name	Results
1	Carrier Frequency Separation	1000 kHz
2	Number of Hopping Frequencies	79
3	Time of Occupancy (Dwell Time)	2.875 ms
4	20 dB Bandwidth	1000 kHz
5	Spurious RF Conducted Emissions	See plots
6	Field Strength of Spurious Emissions	See plots
7	Max Power	0.74 dBm
8	Band Edges	See plots
9	Conducted Spurious Emissions	See plots
10	AC line Conducted 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 22° 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

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	3115	6222	2/9/2006
A.H. Systems Inc.	DRG Horn Antenna	SAS-2--/571	365	5/25/2006
ETS	Log-Periodic Antenna	3148	1188	6/14/2006
ETS	Biconical Antenna	3110B	3370	2/16/2006
Attenuator	Weinschel	AS-6	6675	12/27/2005
Attenuator	Weinschel	AS-6	6677	11/14/2006
Hewlett-Packard	Signal Generator	83623B	3844A01195	6/20/2006
Thermotron	Environmental Chamber	S-4	31580	1/17/2006
Agilent	Power Meter	EE4418B	GB40206388	12/5/2005
Agilent	Power Sensor	E4412B	US38486321	12/5/2005
Hewlett-Packard	Pre-Amplifier	8447F	2805A03419	3/24/2006

U.L. Equipment

Hewlett Packard	QP Adapter	85650A	2811A01069	1/6/2006
Hewlett Packard	S/A Display	8566B	2542A12974	1/6/2006
Hewlett Packard	S/A	8566B	2637A03376	1/6/2006
Hewlett Packard	RF Preselector	85685A	2810A00692	1/6/2006
Rohde & Schwarz	S/A	FSEK20	DE2525315	3/15/2006
EMCO	Horn Antenna 1-18GHz	3115	2638	7/29/2006
EMCO	Horn Antenna 18-26.5GHz	3160-09	9904-1165	N/A*
Chase	Bi-Con Antenna 30-300MHz	VBA6106A	1246	7/22/2006
Chase	Log-Periodic Antenna	UPA6108	1120	8/2/2006

All equipment is on a one-year calibration cycle.

Description of Bluetooth Transmitter

The E2 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 -2.8 dBi.

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.

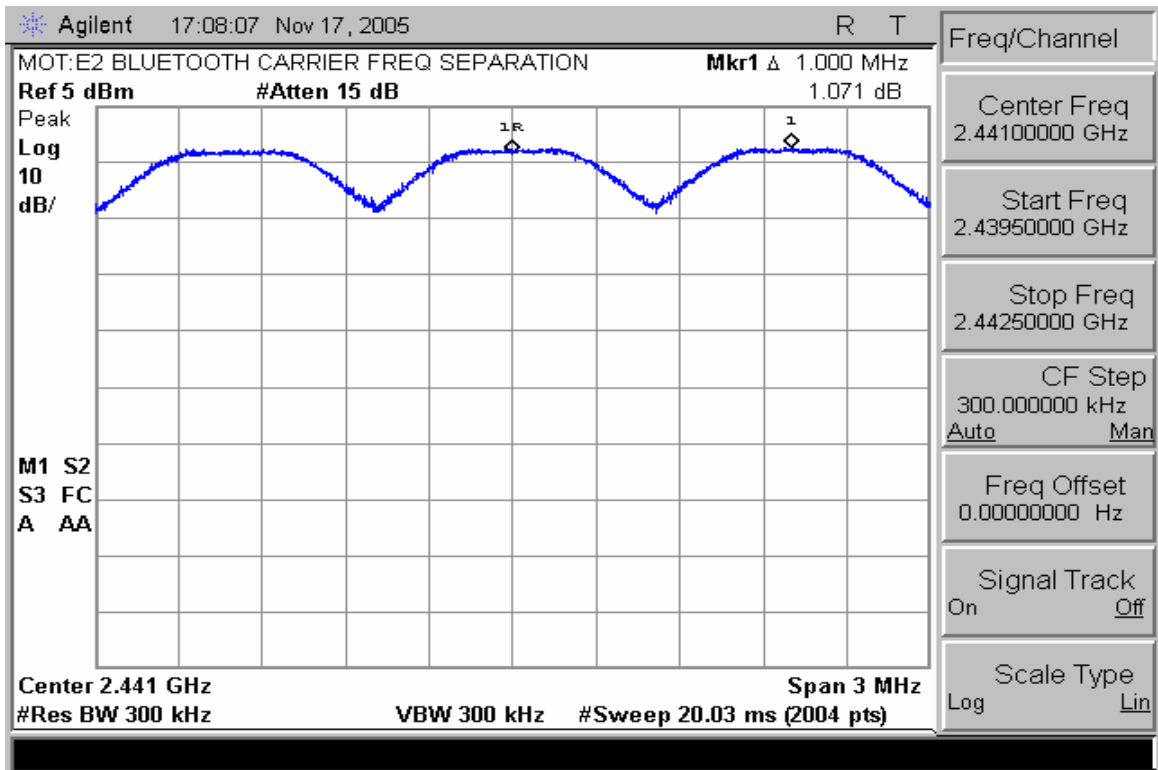
The Bluetooth transmitter of the E2 had its hopping function enabled. The following spectrum analyzer settings were used:

1. Span = wide enough to capture the peaks of two adjacent channels
2. Resolution (or IF) Bandwidth (RBW) $\geq$ 1% of the span
3. Video (or Average) Bandwidth (VBW) $\geq$ 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.

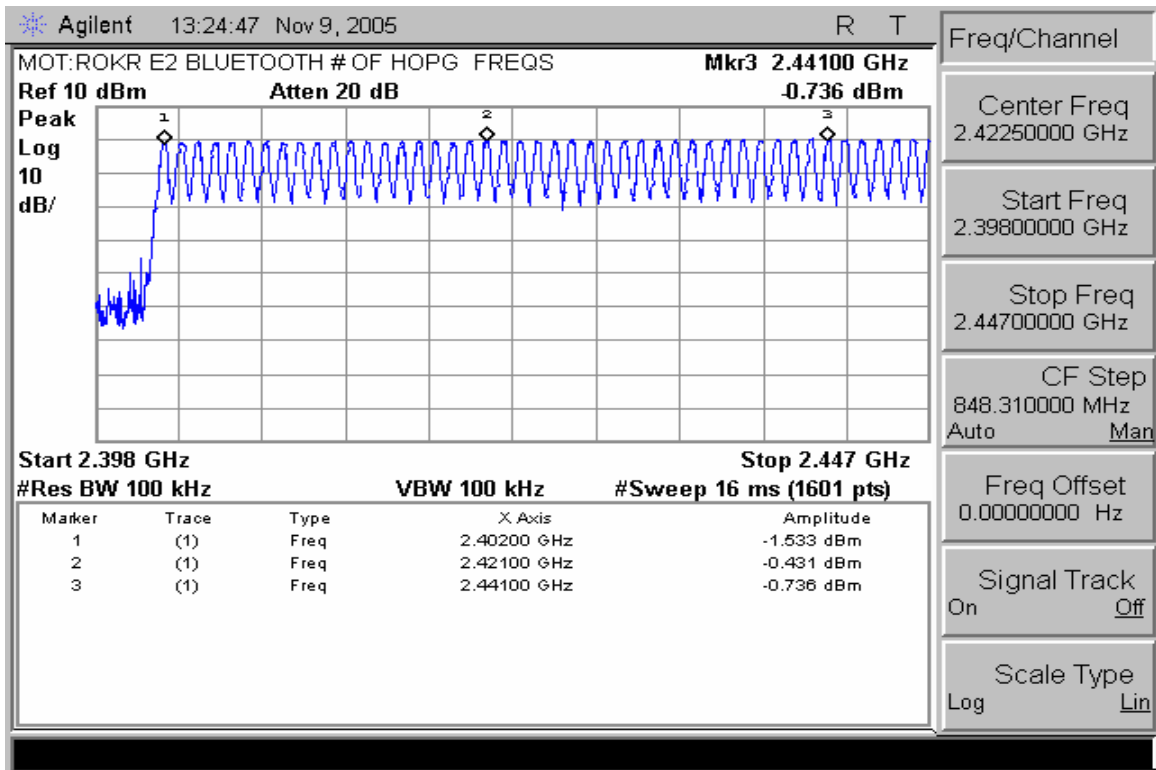
The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

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

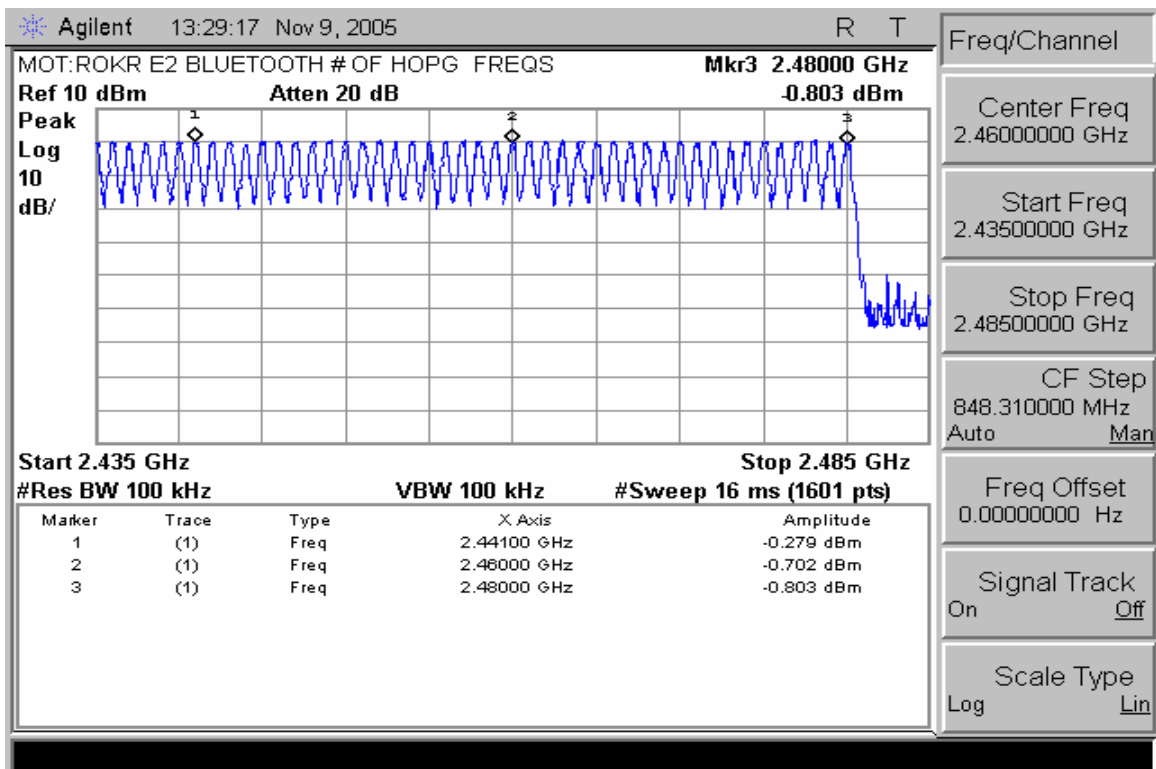
The trace was allowed to stabilize.

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.

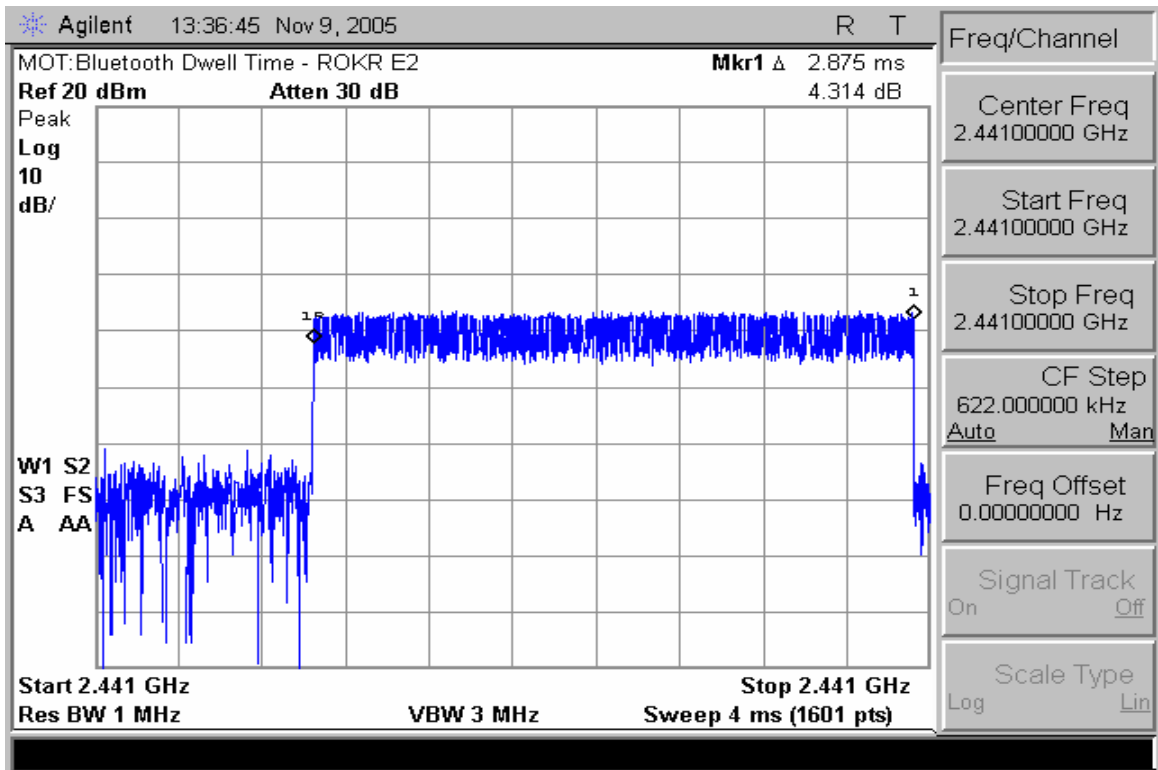
The Bluetooth hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

1. Span = zero span, centered on a hopping channel
2. RBW = 1 MHz
3. VBW $\geq$ 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



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.

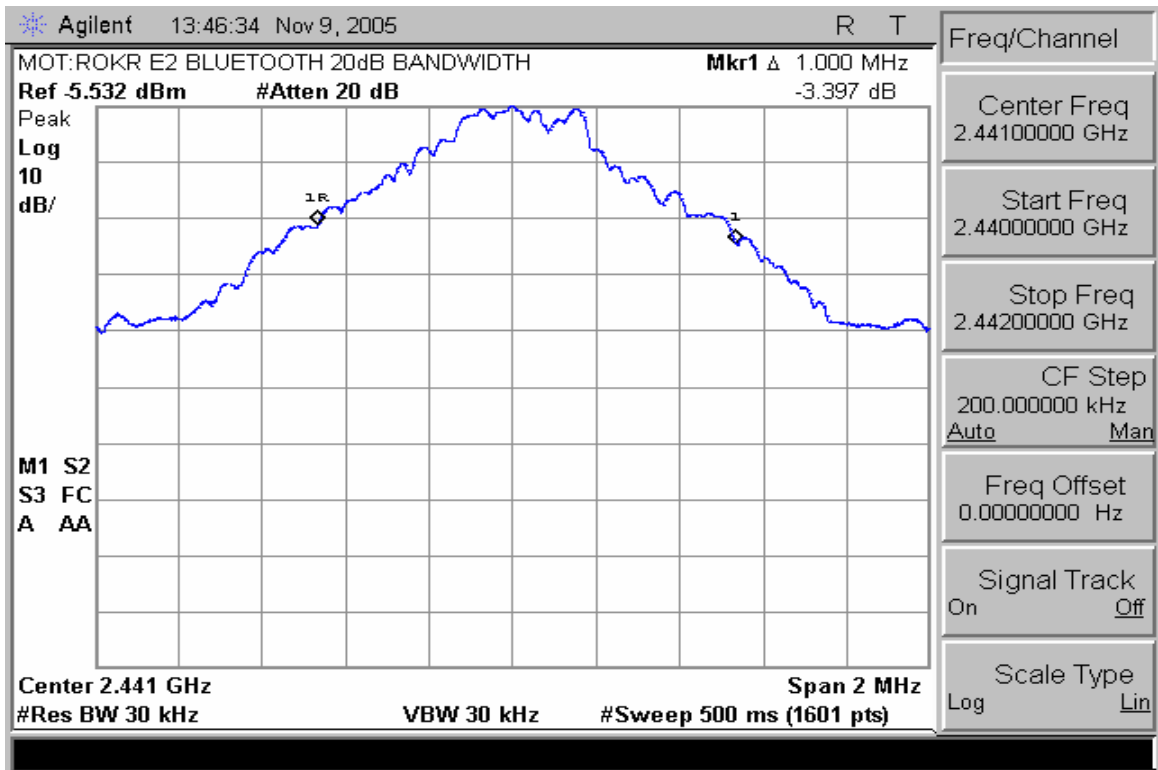
The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = approx. 2 to 3 times the 20dB bandwidth, centered on a hopping frequency
2. RBW $\geq$ 1% of the 20dB span
3. VBW $\geq$ 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, 15.247

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



LIMIT 2: NONE
 LIMIT 3: NONE
 LIMIT 4: NONE
 LIMIT 5: NONE
 LIMIT 6: NONE

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 ave - denotes average detection
 tm - Trace Math Result

MOTOROLA

ROKR E2

BT CH0

AXIS - X

RED: Horizontal GRN: Vertical

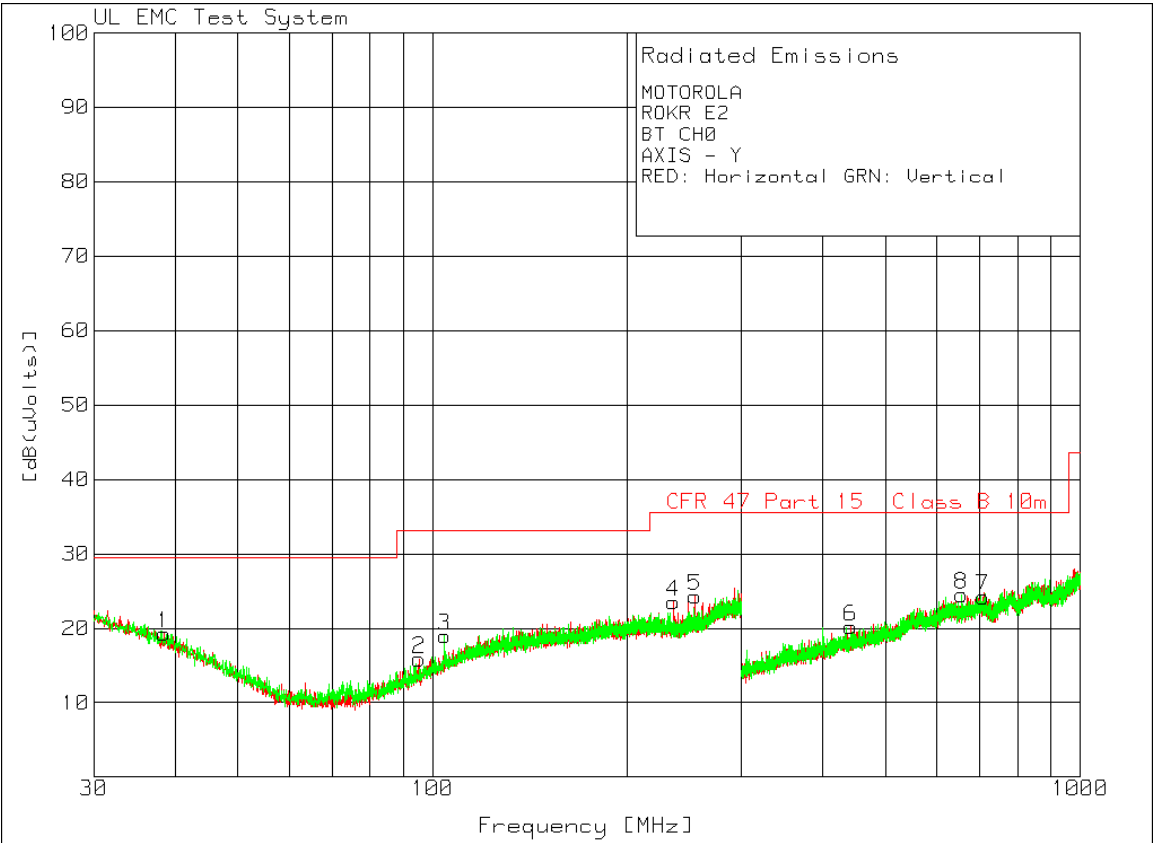
Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							

=====

Range 2 30 - 300MHz

30.2	33.49	pk	-30.4	18	21.09	29.6	-	-	-	-
Azimuth: 0		Height:100 Vert		Margin [dB]: -8.51 - - - - -						

LIMIT 1: CFR 47 Part 15 Class B 10m



30-1000MHz Low Channel Dual Polarization Y

MOTOROLA

ROKR E2

BT CH0

AXIS - Y

RED: Horizontal GRN: Vertical

Test	Meter	Gain/Loss	Transducer	Level	Limit:	1	2	3	4	5	6
No. Frequency	Reading	Factor	Factor	[dB(uVolts)]							
[MHz]	[dB(uV)]	[dB]	[dB]								

=====

=====

Range 1 30 - 300MHz -----

1	38.4312	34.8 pk	-30.4	14.9	19.3	29.6	-	-	-	-	-
	Azimuth:260	Height:100	Horz	Margin [dB]	-10.3	-	-	-	-	-	-
2	95.2236	36.1 pk	-30.1	9.9	15.9	33.1	-	-	-	-	-
	Azimuth:162	Height:100	Horz	Margin [dB]	-17.2	-	-	-	-	-	-
4	235.2485	37.7 pk	-29.7	15.5	23.5	35.6	-	-	-	-	-
	Azimuth:199	Height:100	Horz	Margin [dB]	-12.1	-	-	-	-	-	-
5	254.4716	37.4 pk	-29.5	16.4	24.3	35.6	-	-	-	-	-
	Azimuth:224	Height:100	Horz	Margin [dB]	-11.3	-	-	-	-	-	-

Range 2 30 - 300MHz -----

3	104.3967	37.6 pk	-30	11.4	19	33.1	-	-	-	-	-
	Azimuth:109	Height:100	Vert	Margin [dB]	-14.1	-	-	-	-	-	-

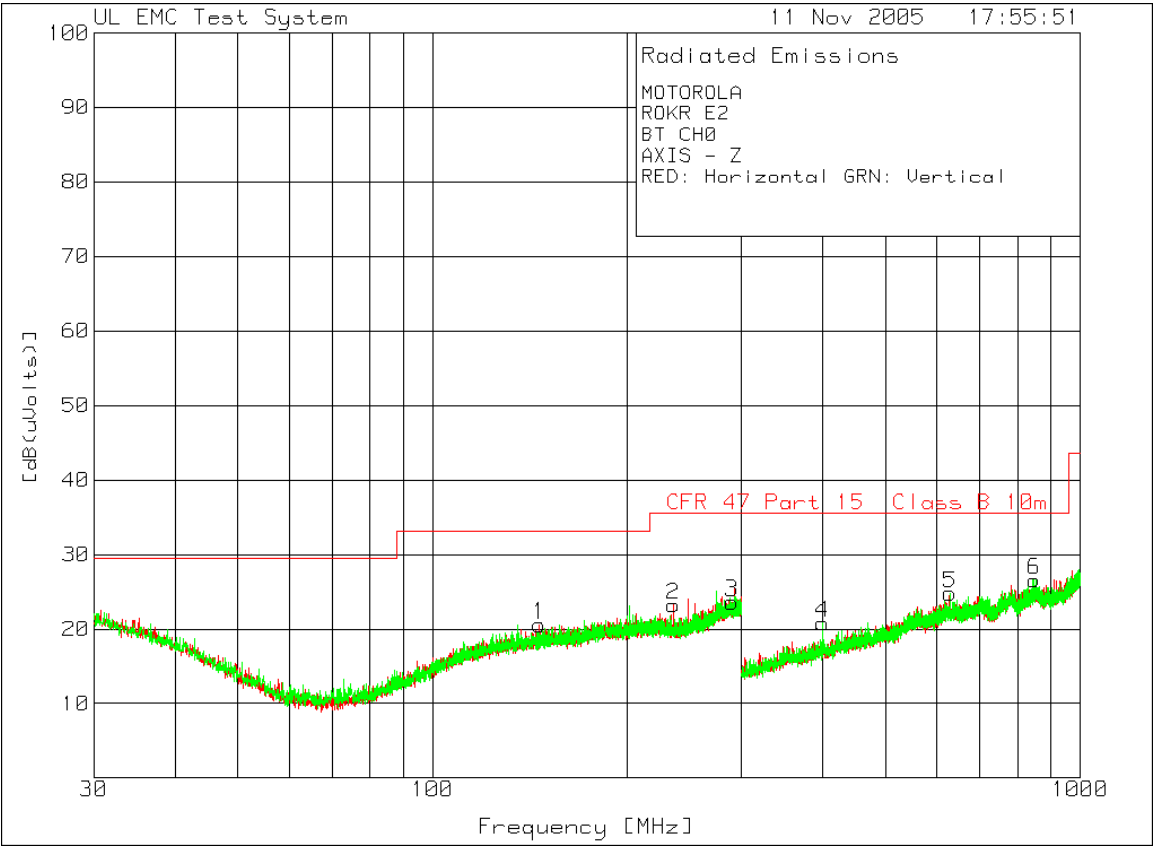
Range 3 300 - 1000MHz -----

6	441.8186	35.7 pk	-31.9	16.4	20.2	35.6	-	-	-	-	-
---	----------	---------	-------	------	------	------	---	---	---	---	---

Azimuth:194		Height:100 Horz		Margin [dB]		-15.4	-	-	-	-
7	708.1438	34.4 pk	-30.7	20.5	24.2	35.6	-	-	-	-
Azimuth:106		Height:100 Horz		Margin [dB]		-11.4	-	-	-	-

Range 4 300 - 1000MHz -----										
8	655.858	35.7 pk	-31	19.8	24.5	35.6	-	-	-	-
Azimuth:95		Height:100 Vert		Margin [dB]		-11.1	-	-	-	-

LIMIT 1: CFR 47 Part 15 Class B 10m



30-1000MHz Low Channel Dual Polarization Z

MOTOROLA

ROKR E2

BT CH0

AXIS - Z

RED: Horizontal GRN: Vertical

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
No.	Frequency	Reading	Factor	Factor	[dB(uVolts)]					
	[MHz]	[dB(uV)]	[dB]	[dB]						

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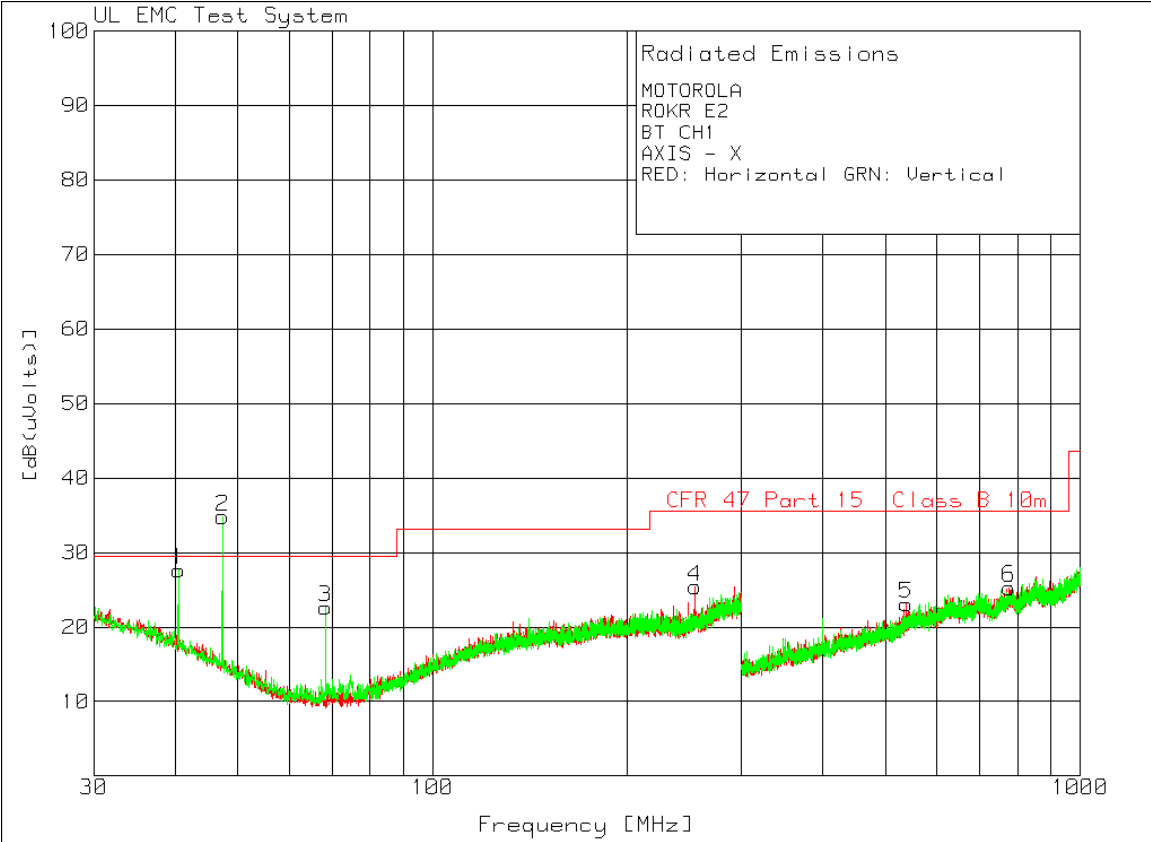
Range 1 30 - 300MHz -----

1	146.0804	36.1 pk	-30.1	14.6	20.6	33.1	-	-	-	-	-
	Azimuth:286	Height:100	Horz	Margin [dB]	-12.5	-	-	-	-	-	-
2	235.2485	37.4 pk	-29.7	15.5	23.2	35.6	-	-	-	-	-
	Azimuth:286	Height:100	Horz	Margin [dB]	-12.4	-	-	-	-	-	-
3	289.7476	34.8 pk	-29.3	18.1	23.6	35.6	-	-	-	-	-
	Azimuth:7	Height:100	Horz	Margin [dB]	-12	-	-	-	-	-	-

Range 4 300 - 1000MHz -----

4	400.1998	37.2 pk	-32	15.6	20.8	35.6	-	-	-	-	-
	Azimuth:249	Height:100	Vert	Margin [dB]	-14.8	-	-	-	-	-	-
5	628.9282	35.7 pk	-31	20.1	24.8	35.6	-	-	-	-	-
	Azimuth:5	Height:100	Vert	Margin [dB]	-10.8	-	-	-	-	-	-
6	849.2629	35.3 pk	-31.5	22.8	26.6	35.6	-	-	-	-	-
	Azimuth:261	Height:100	Vert	Margin [dB]	-9	-	-	-	-	-	-

LIMIT 1: CFR 47 Part 15 Class B 10m



30-1000MHz Mid Channel Dual Polarization X

MOTOROLA										
ROKR E2										
BT CH1										
AXIS - X										
RED: Horizontal GRN: Vertical										
Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
No.	Frequency	Reading	Factor	Factor	[dB(uVolts)]					
[MHz]	[dB(uV)]	[dB]	[dB]							
=====										
Range 1 30 - 300MHz -----										
4	254.4042	38.5 pk	-29.5	16.4	25.4	35.6	-	-	-	-
	Azimuth:181	Height:100	Horz	Margin [dB]	-10.2	-	-	-	-	-
Range 2 30 - 300MHz -----										
1	40.5221	43.8 pk	-30.3	14.1	27.6	29.6	-	-	-	-
	Azimuth:271	Height:100	Vert	Margin [dB]	-2	-	-	-	-	-
2	47.3345	53.8 pk	-30.3	11.3	34.8	29.6	-	-	-	-
	Azimuth:87	Height:100	Vert	Margin [dB]	5.2	-	-	-	-	-
3	68.3113	46.5 pk	-30.2	6.3	22.6	29.6	-	-	-	-
	Azimuth:140	Height:100	Vert	Margin [dB]	-7	-	-	-	-	-
Range 3 300 - 1000MHz -----										
5	539.0457	36 pk	-31.5	18.6	23.1	35.6	-	-	-	-
	Azimuth:6	Height:100	Horz	Margin [dB]	-12.5	-	-	-	-	-
6	776.6923	34.7 pk	-31.1	21.7	25.3	35.6	-	-	-	-
	Azimuth:0	Height:100	Horz	Margin [dB]	-10.3	-	-	-	-	-
LIMIT 1: CFR 47 Part 15 Class B 10m										

LIMIT 2: NONE
 LIMIT 3: NONE
 LIMIT 4: NONE
 LIMIT 5: NONE
 LIMIT 6: NONE

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 ave - denotes average detection
 tm - Trace Math Result

MOTOROLA

ROKR E2

BT CH1

AXIS - X

RED: Horizontal GRN: Vertical

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							

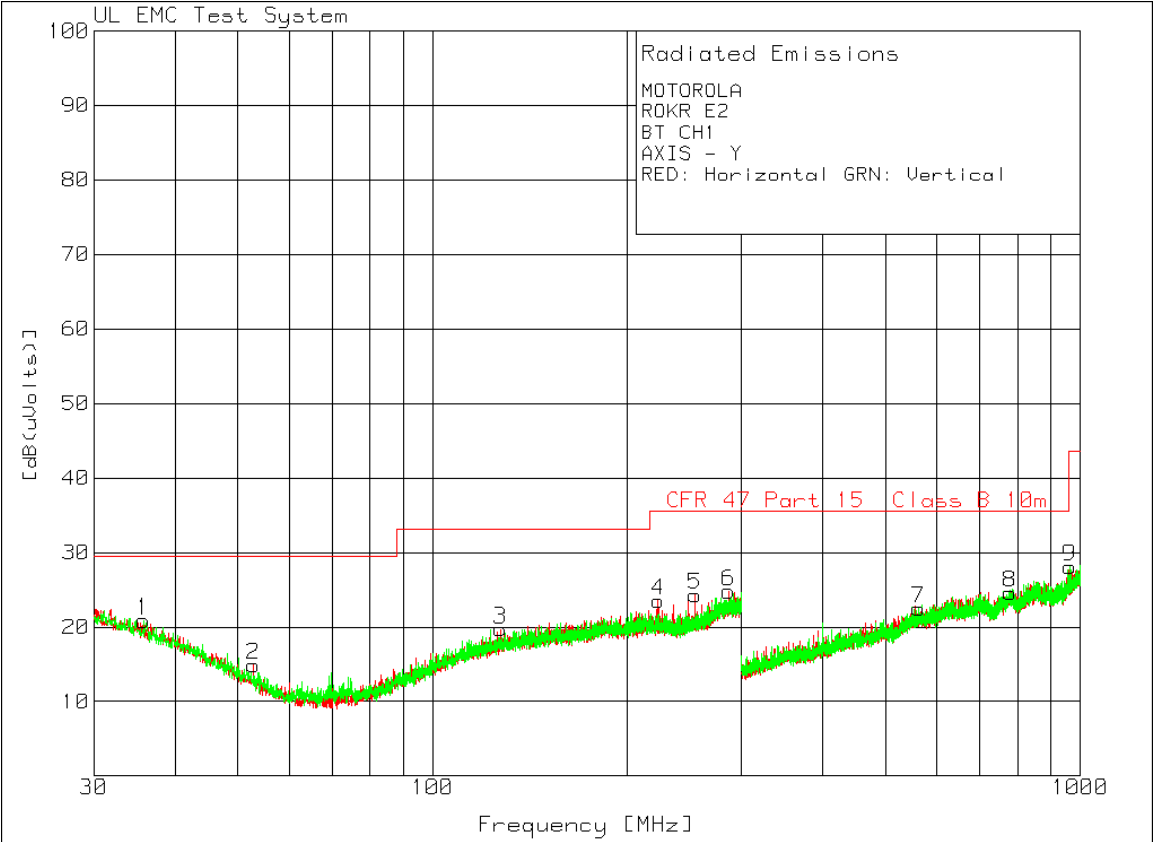
=====

Range 2 30 - 300MHz

47.33	33.17 pk	-30.3	11.3	14.17	29.6	-	-	-	-	-
Azimuth: 0 Height:100 Vert				Margin [dB]: -15.43 - - - - -						

40.52	33.28 pk	-30.3	14.1	17.08	29.6	-	-	-	-	-
Azimuth: 0 Height:100 Vert				Margin [dB]: -12.52 - - - - -						

LIMIT 1: CFR 47 Part 15 Class B 10m



30 -1000MHz Mid Channel Dual Polarization Y

MOTOROLA

ROKR E2

BT CH1

AXIS - Y

RED: Horizontal GRN: Vertical

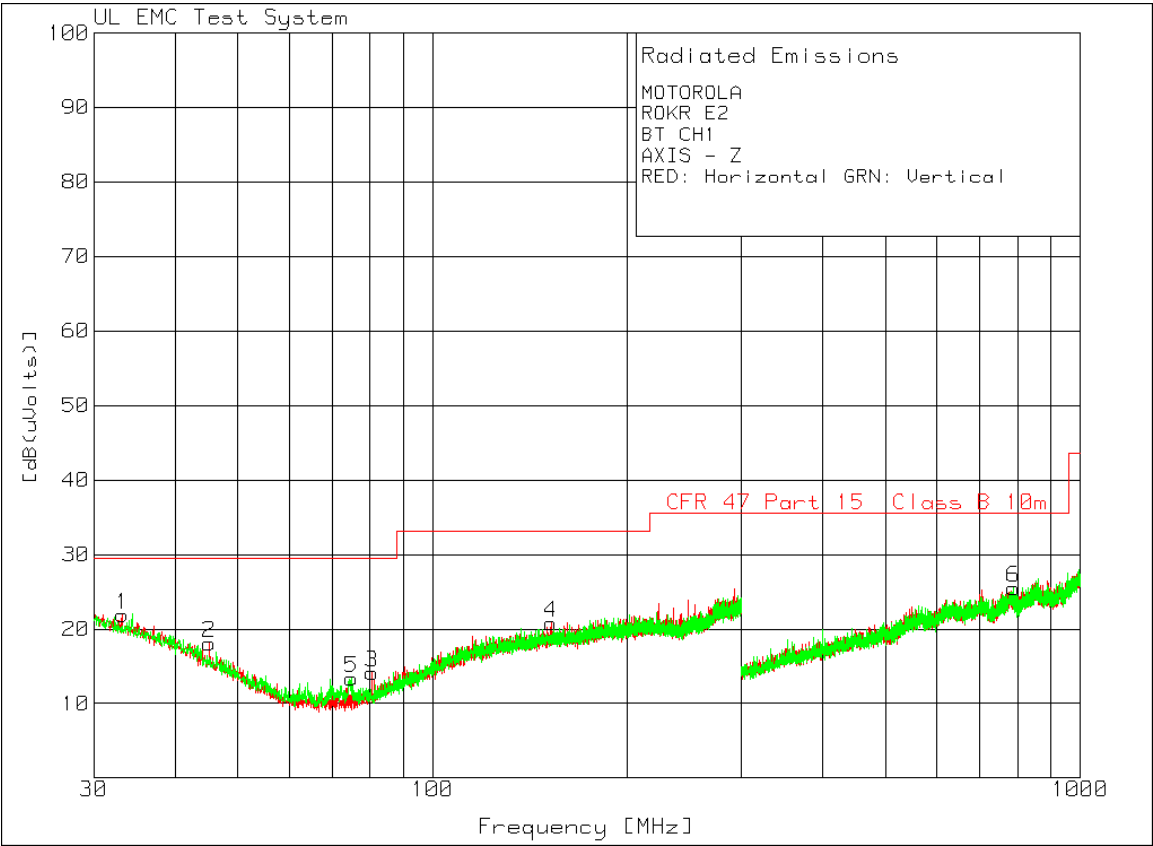
Test Meter Gain/Loss Transducer Level Limit:1 2 3 4 5 6
 No. Frequency Reading Factor Factor [dB(uVolts)]
 [MHz] [dB(uV)] [dB] [dB]

Range 1 30 - 300MHz -----										
1	35.7332	35.2 pk	-30.3	16	20.9	29.6	-	-	-	-
	Azimuth:101 Height:100 Horz		Margin [dB]		-8.7	-	-	-	-	-
2	52.9328	36.2 pk	-30.3	9	14.9	29.6	-	-	-	-
	Azimuth:261 Height:100 Horz		Margin [dB]		-14.7	-	-	-	-	-
3	127.1271	36 pk	-30.1	13.8	19.7	33.1	-	-	-	-
	Azimuth:200 Height:100 Horz		Margin [dB]		-13.4	-	-	-	-	-
4	222.9727	37.2 pk	-29.6	15.9	23.5	35.6	-	-	-	-
	Azimuth:166 Height:100 Horz		Margin [dB]		-12.1	-	-	-	-	-
5	254.4716	37.4 pk	-29.5	16.4	24.3	35.6	-	-	-	-
	Azimuth:77 Height:100 Horz		Margin [dB]		-11.3	-	-	-	-	-
6	286.3077	36.1 pk	-29.4	18.1	24.8	35.6	-	-	-	-
	Azimuth:151 Height:100 Horz		Margin [dB]		-10.8	-	-	-	-	-

Range 4 300 - 1000MHz -----										
7	563.3524	34.6 pk	-31.4	19.3	22.5	35.6	-	-	-	-
	Azimuth:108 Height:100 Vert		Margin [dB]		-13.1	-	-	-	-	-
8	780.5395	34 pk	-31.4	22	24.6	35.6	-	-	-	-
	Azimuth:173 Height:100 Vert		Margin [dB]		-11	-	-	-	-	-

9 962.5779 36.1 pk -31.3 23.3 28.1 43.5 - - - - -
Azimuth:146 Height:100 Vert Margin [dB] -15.4 - - - - -

LIMIT 1: CFR 47 Part 15 Class B 10m



30 -1000MHz Mid Channel Dual Polarization Z

MOTOROLA

ROKR E2

BT CH1

AXIS - Z

RED: Horizontal GRN: Vertical

Test Meter Gain/Loss Transducer Level Limit:1 2 3 4 5 6

No. Frequency Reading Factor Factor [dB(uVolts)]

[MHz] [dB(uV)] [dB] [dB]

=====

=====

Range 1 30 - 300MHz -----

1 33.1701 35.5 pk -30.4 16.8 21.9 29.6 - - - - -

Azimuth:66 Height:100 Horz Margin [dB] -7.7 - - - - -

2 45.1761 36.2 pk -30.3 12.2 18.1 29.6 - - - - -

Azimuth:78 Height:100 Horz Margin [dB] -11.5 - - - - -

3 80.5871 36.9 pk -30.2 7.4 14.1 29.6 - - - - -

Azimuth:29 Height:100 Horz Margin [dB] -15.5 - - - - -

4 152.2858 35.9 pk -30 14.9 20.8 33.1 - - - - -

Azimuth:273 Height:100 Horz Margin [dB] -12.3 - - - - -

Range 2 30 - 300MHz -----

5 74.8539 37.1 pk -30.3 6.6 13.4 29.6 - - - - -

Azimuth:237 Height:100 Vert Margin [dB] -16.2 - - - - -

Range 4 300 - 1000MHz -----

6 789.108 35.2 pk -31.3 21.6 25.5 35.6 - - - - -

Azimuth:289 Height:100 Vert Margin [dB] -10.1 - - - - -

LIMIT 1: CFR 47 Part 15 Class B 10m



LIMIT 1: CFR 47 Part 15 Class B 10m

MOTOROLA

ROKR E2

BT CH2

AXIS - X

RED: Horizontal GRN: Vertical

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
Frequency	Reading	Factor	Factor	[dB(uVolts)]						
[MHz]	[dB(uV)]	[dB]	[dB]							

Range 2 30 - 300MHz

43.15	33.06	pk	-30.3	13.1	15.86	29.6	-	-	-	-
Azimuth: 0		Height:100 Vert		Margin [dB]:		-13.74	-	-	-	-

LIMIT 1: CFR 47 Part 15 Class B 10m

LIMIT 2: NONE

LIMIT 3: NONE

LIMIT 4: NONE

LIMIT 5: NONE

LIMIT 6: NONE

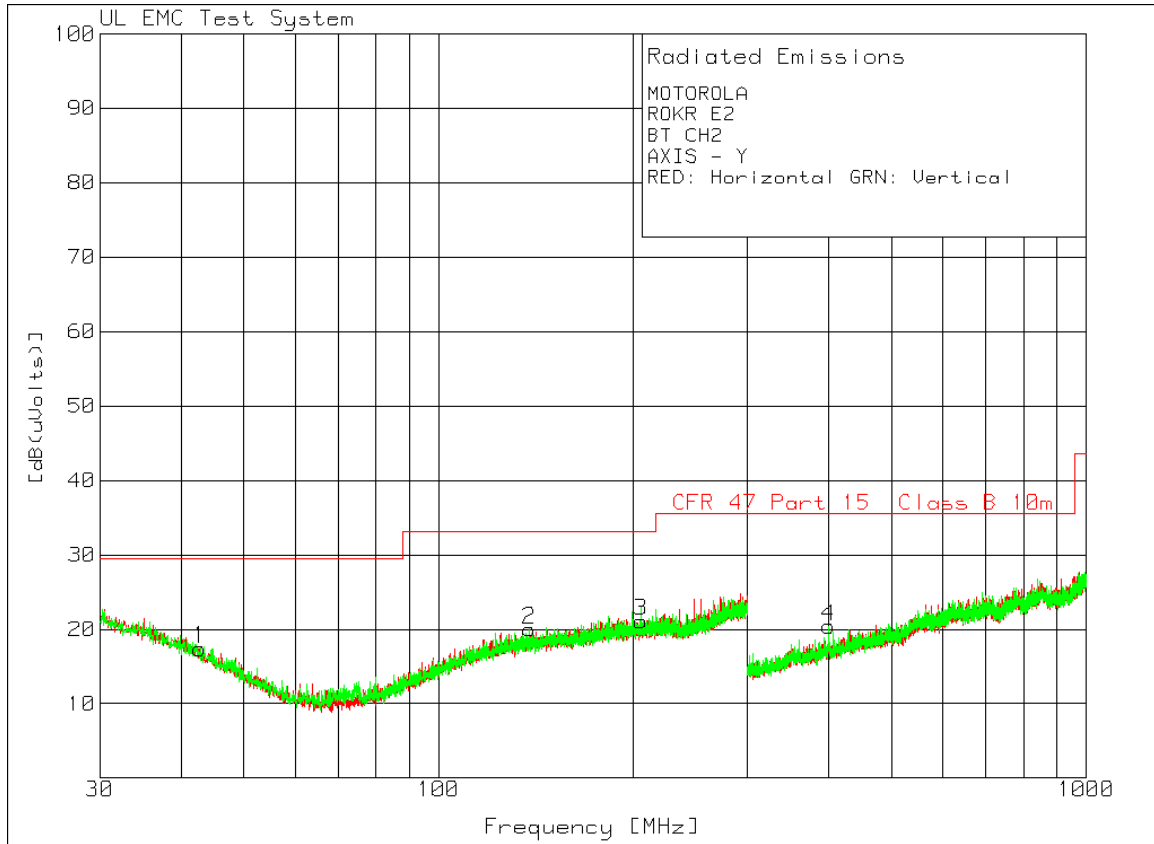
pk - Peak detector

qp - Quasi-Peak detector

av - Average detector

avlg - Average log detector

ave - Average detector



30 -1000MHz High Channel Dual Polarization Y

MOTOROLA

ROKR E2

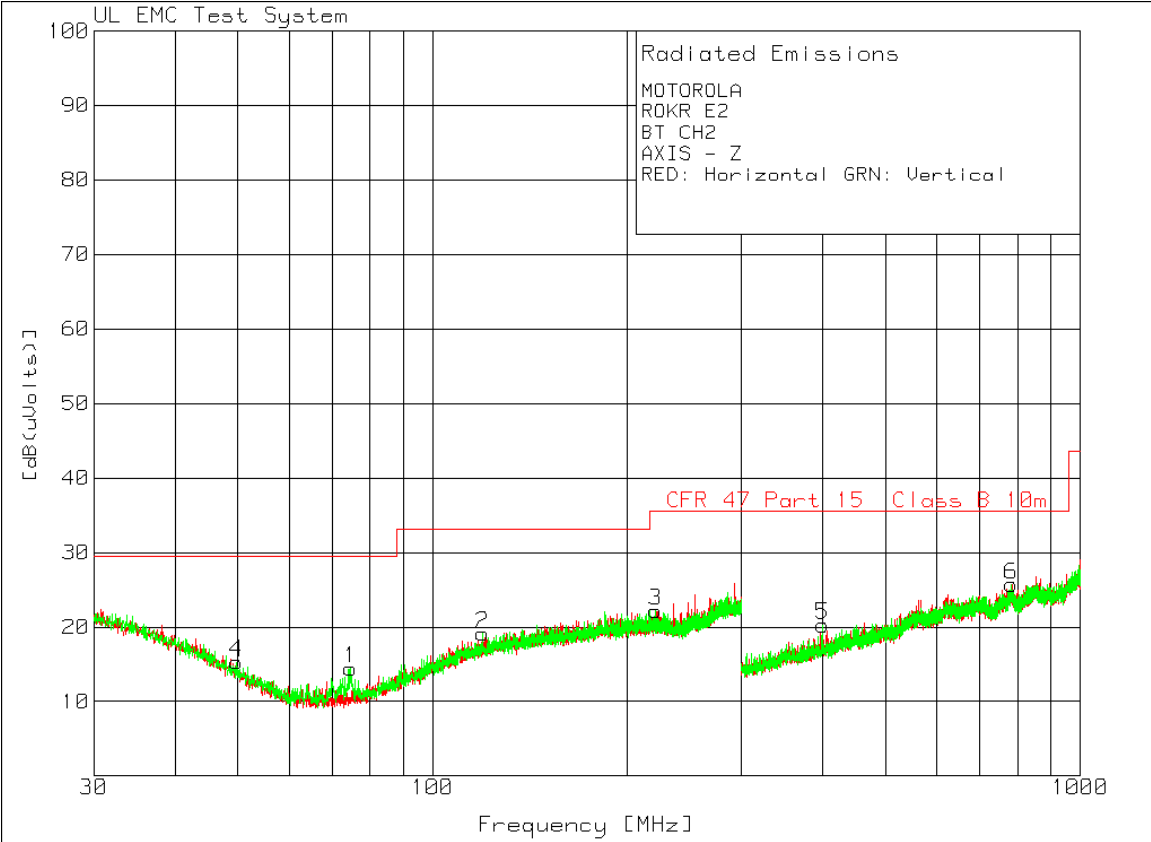
BT CH2

AXIS - Y

RED: Horizontal GRN: Vertical

Test No.	Meter	Gain/Loss	Transducer	Level	Limit:1	2	3	4	5	6
No.	Frequency [MHz]	Reading [dB(uV)]	Factor [dB]	Factor [dB]	[dB(uVolts)]					
=====										
Range 1 30 - 300MHz -----										
1	42.7479	34.5 pk	-30.3	13.2	17.4	29.6	-	-	-	-
Azimuth:142 Height:100 Horz Margin [dB]						-12.2	-	-	-	-
2	138.2563	35.8 pk	-30.1	14.3	20	33.1	-	-	-	-
Azimuth:150 Height:100 Horz Margin [dB]						-13.1	-	-	-	-
3	205.0312	35.1 pk	-29.8	15.8	21.1	33.1	-	-	-	-
Azimuth:68 Height:100 Horz Margin [dB]						-12	-	-	-	-
Range 4 300 - 1000MHz -----										
4	400.1998	36.8 pk	-32	15.6	20.4	35.6	-	-	-	-
Azimuth:211 Height:100 Vert Margin [dB]						-15.2	-	-	-	-

LIMIT 1: CFR 47 Part 15 Class B 10m



MOTOROLA

ROKR E2

BT CH2

AXIS - Z

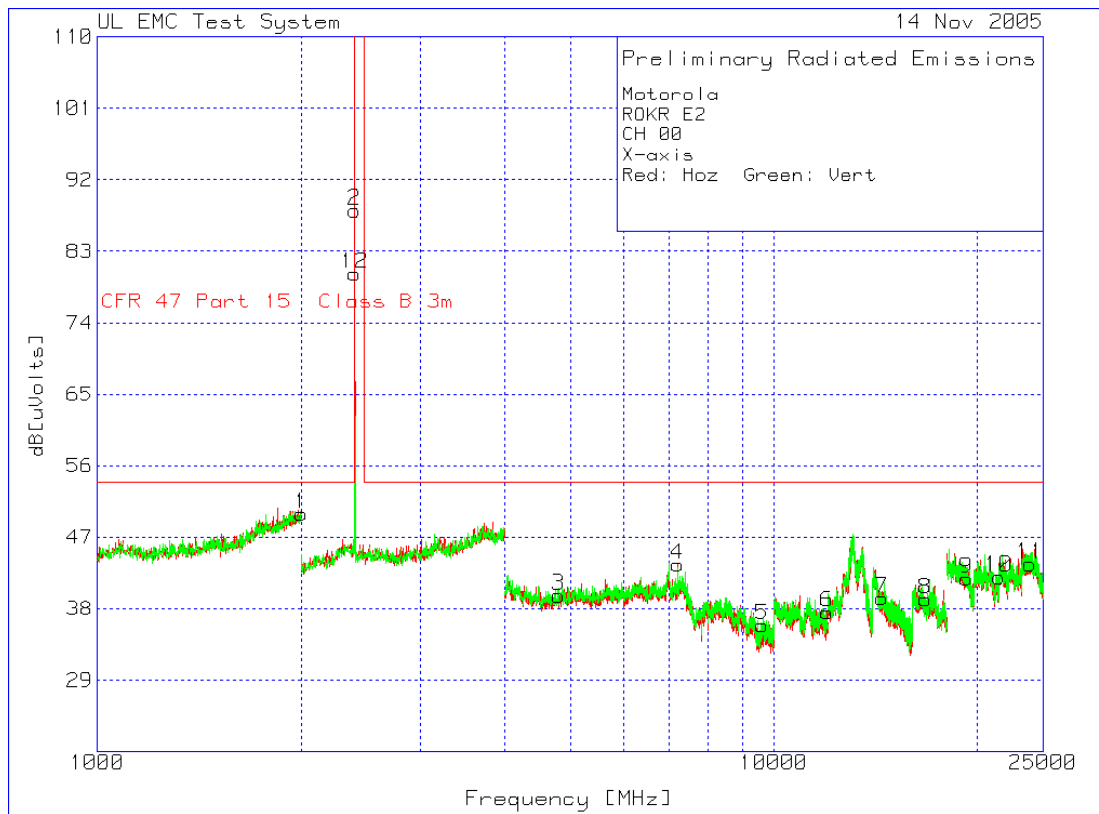
RED: Horizontal GRN: Vertical

Test Meter Gain/Loss Transducer Level Limit:1 2 3 4 5 6
 No. Frequency Reading Factor Factor [dB(uVolts)]
 [MHz] [dB(uV)] [dB] [dB]

Range 2 30 - 300MHz -----										
1	74.719	38.1 pk	-30.3	6.6	14.4	29.6	-	-	-	-
	Azimuth:229		Height:100	Vert	Margin [dB]	-15.2	-	-	-	-
2	119.5728	35.9 pk	-30	13.2	19.1	33.1	-	-	-	-
	Azimuth:0		Height:100	Vert	Margin [dB]	-14	-	-	-	-
3	220.8818	36 pk	-29.7	15.9	22.2	35.6	-	-	-	-
	Azimuth:19		Height:100	Vert	Margin [dB]	-13.4	-	-	-	-
4	49.8301	35.4 pk	-30.3	10.2	15.3	29.6	-	-	-	-
	Azimuth:242		Height:100	Vert	Margin [dB]	-14.3	-	-	-	-

Range 4 300 - 1000MHz -----										
5	400.1998	36.7 pk	-32	15.6	20.3	35.6	-	-	-	-
	Azimuth:162		Height:100	Vert	Margin [dB]	-15.3	-	-	-	-
6	782.9876	35.1 pk	-31.3	21.9	25.7	35.6	-	-	-	-
	Azimuth:168		Height:100	Vert	Margin [dB]	-9.9	-	-	-	-

LIMIT 1: CFR 47 Part 15 Class B 10m



1-25 GHz Low Channel Dual Polarization X

Motorola

CH 00

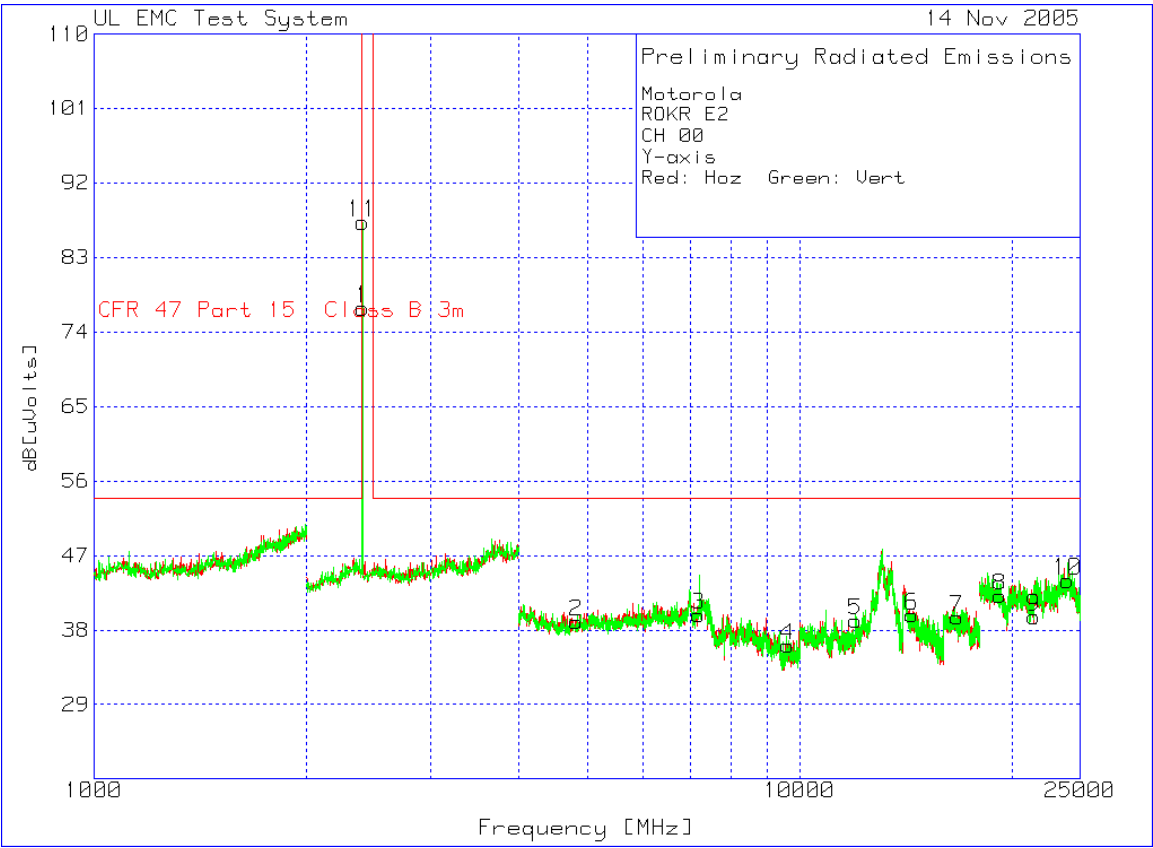
X-axis

Red: Hoz Green: Vert

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
1 - 2GHz 1000 - 2000MHz										
1	2000	18.23	pk	3.9	27.8	49.93	54	-4.07	100	Horz
2 - 4GHz 2000 - 4000MHz										
2	2400.802	61.94	pk	4.4	21.8	88.14	999	-910.86	100	Horz
4 - 8GHz 4000 - 8000MHz										
3	4804.805	62.59	pk	-50.6	27.7	39.69	54	-14.31	100	Horz
4	7207.207	60.66	pk	-46.9	29.8	43.56	54	-10.44	100	Horz
8 - 12GHz 8000 - 12000MHz										
5	9605.606	48.64	pk	-49.1	36.4	35.94	54	-18.06	100	Horz
6	11995.996	45.18	pk	-45.1	37.5	37.58	54	-16.42	100	Horz
12 - 18GHz 12000 - 18000MHz										
7	14445.63	40.35	pk	-40.8	39.8	39.35	54	-14.65	100	Horz
8	16751.167	40.09	pk	-41	40.1	39.19	54	-14.81	100	Horz
18-26.5GHz 18000 - 25000MHz										
9	19250.125	70.1	pk	-68.6	40.3	41.8	54	-12.2	100	Horz
10	21501.751	63.48	pk	-61.8	40.3	41.98	54	-12.02	100	Horz
11	23910.956	61.33	pk	-58	40.3	43.63	54	-10.37	100	Horz
2 - 4GHz 2000 - 4000MHz										
12	2400.802	53.95	pk	4.4	21.8	80.15	999	-918.85	100	Vert

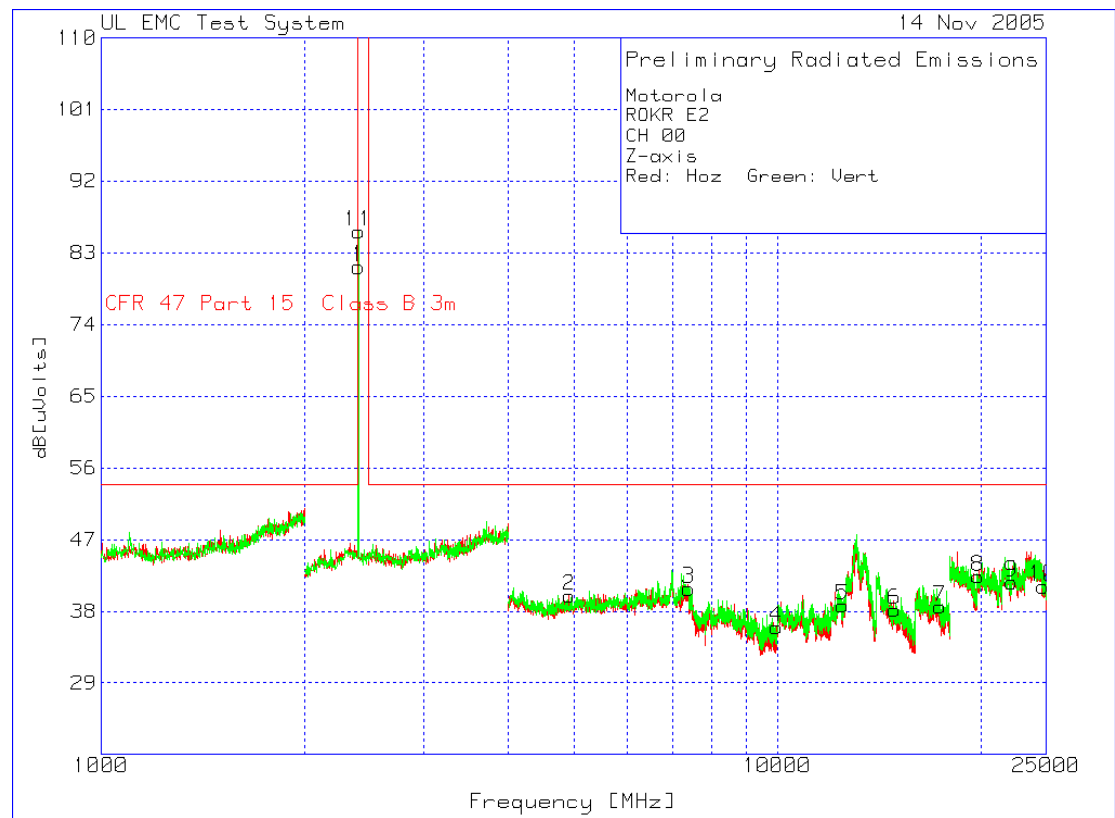
LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 2: NONE



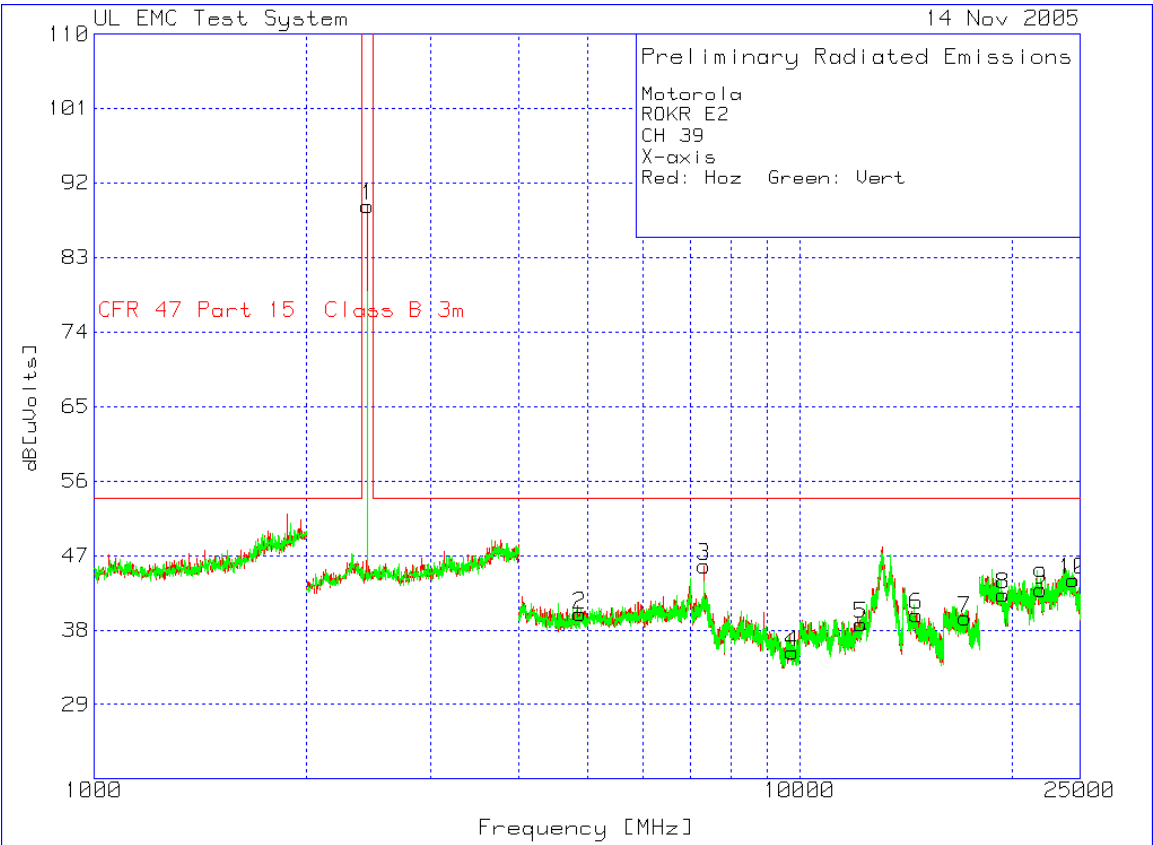
1-25 GHz Low Channel Dual Polarization Y

Motorola ROKR E2 CH 00 Y-axis Red: Hoz Green: Vert										
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	50.7 pk		4.4	21.8	76.9	999	-922.1	100	Horz
4 - 8GHz 4000 - 8000MHz										
2	4820.821	61.88 pk		-50.6	27.7	38.98	54	-15.02	100	Horz
3	7195.195	57.1 pk		-47	29.7	39.8	54	-14.2	100	Horz
8 - 12GHz 8000 - 12000MHz										
4	9629.63	48.55 pk		-48.8	36.4	36.15	54	-17.85	100	Horz
12 - 18GHz 12000 - 18000MHz										
5	12016.011	45.25 pk		-45.5	39.4	39.15	54	-14.85	100	Horz
6	14433.622	40.88 pk		-40.9	39.8	39.78	54	-14.22	100	Horz
7	16731.154	40.45 pk		-40.9	40	39.55	54	-14.45	100	Horz
18-26.5GHz 18000 - 25000MHz										
8	19229.115	70.32 pk		-68.5	40.3	42.12	54	-11.88	100	Horz
9	21491.246	61.23 pk		-61.9	40.3	39.63	54	-14.37	100	Horz
10	23987.994	62.47 pk		-58.8	40.3	43.97	54	-10.03	100	Horz
2 - 4GHz 2000 - 4000MHz										
11	2400.802	61.04 pk		4.4	21.8	87.24	999	-911.76	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: NONE										



1-25 GHz Low Channel Dual Polarization Z

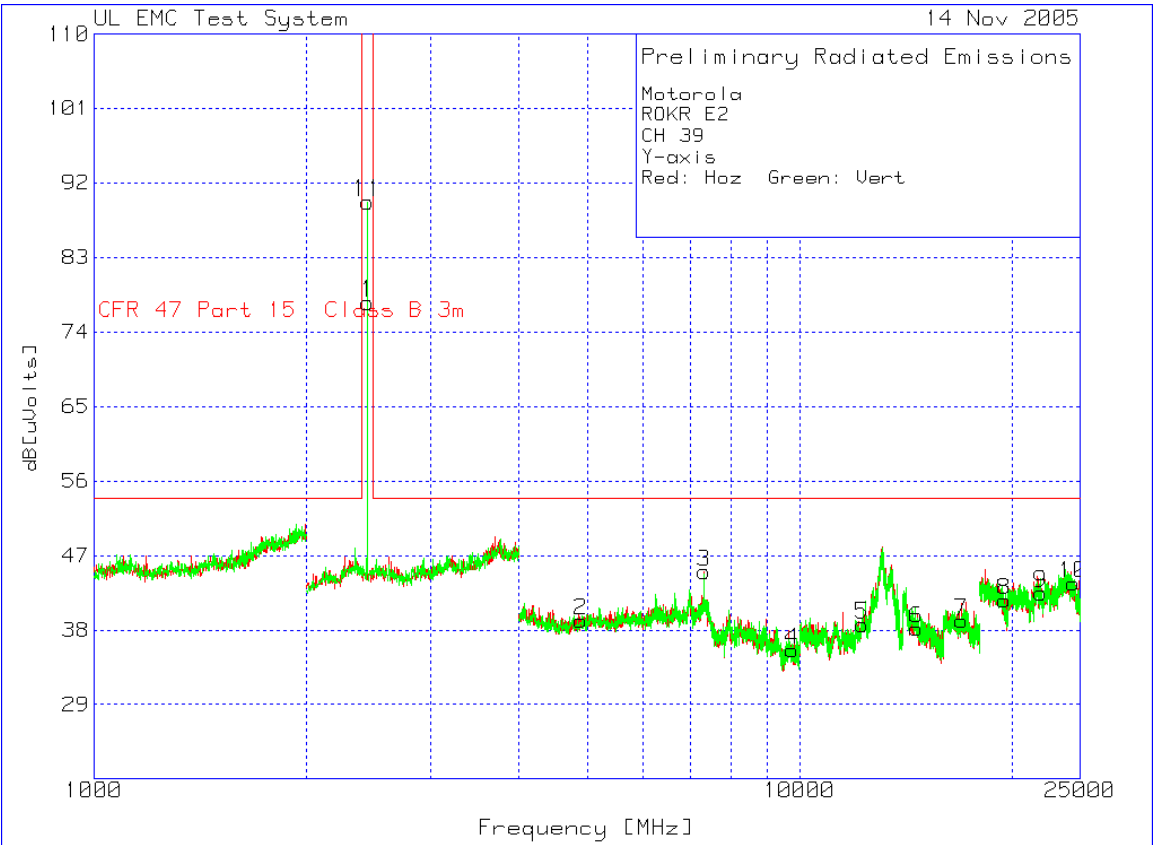
Motorola ROKR E2 CH 00 Z-axis Red: Hoz Green: Vert										
Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2000 - 4000MHz										
1	2400.802	55.05 pk		4.4	21.8	81.25	999	-917.75	100	Horz
4 - 8GHz 4000 - 8000MHz										
2	4924.925	62.83 pk		-50.7	27.8	39.93	54	-14.07	100	Horz
3	7391.391	56.23 pk		-46.5	31.1	40.83	54	-13.17	100	Horz
8 - 12GHz 8000 - 12000MHz										
4	9973.974	48.12 pk		-48.5	36.4	36.02	54	-17.98	100	Horz
12 - 18GHz 12000 - 18000MHz										
5	12476.318	44.32 pk		-45	39.4	38.72	54	-15.28	100	Horz
6	14909.94	39.67 pk		-41.3	39.8	38.17	54	-15.83	100	Horz
7	17379.586	39 pk		-40.5	40.1	38.6	54	-15.4	100	Horz
18-26.5GHz 18000 - 25000MHz										
8	19810.405	71.37 pk		-69.3	40.3	42.37	54	-11.63	100	Horz
9	22223.112	60.94 pk		-59.8	40.5	41.64	54	-12.36	100	Horz
10	24712.856	62.93 pk		-62.1	40.3	41.13	54	-12.87	100	Horz
2 - 4GHz 2000 - 4000MHz										
11	2400.802	59.49 pk		4.4	21.8	85.69	999	-913.31	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: NONE LIMIT 3: NONE										



1-25 GHz Mid Channel Dual Polarization X

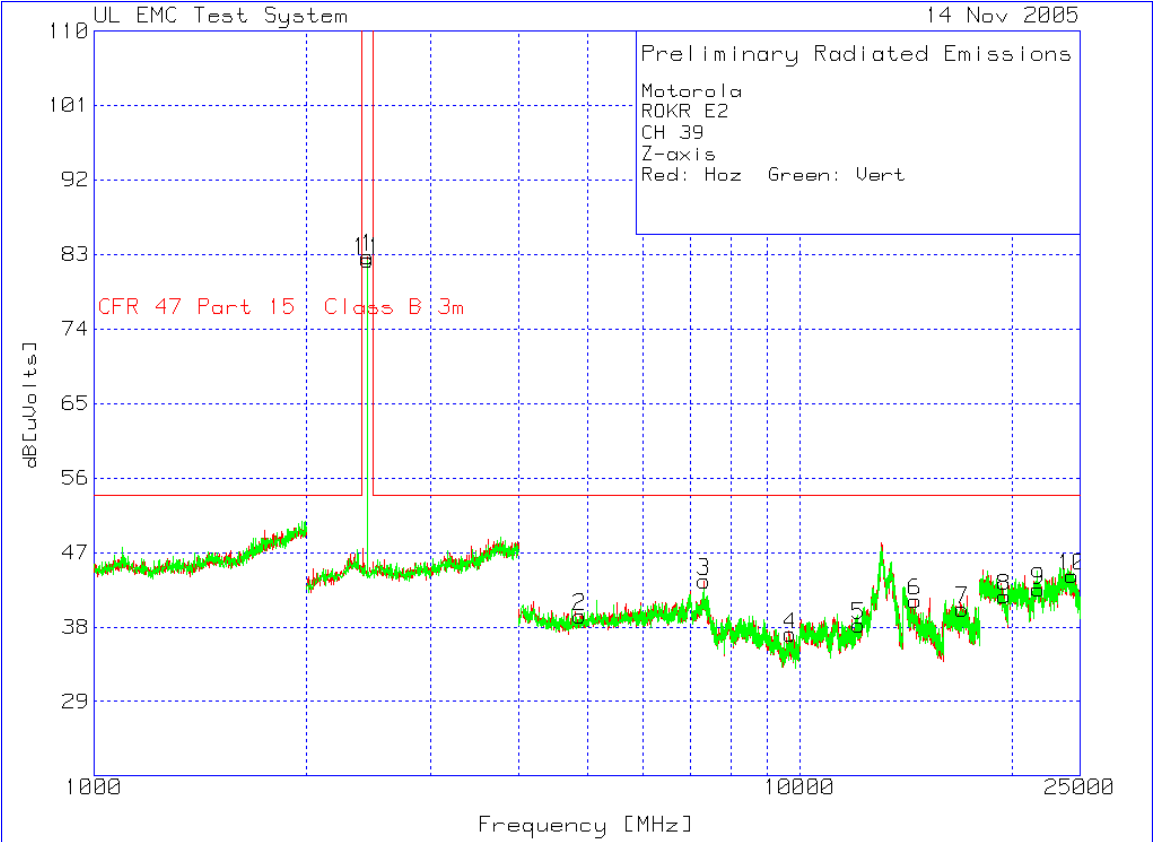
Motorola ROKR E2 CH 39 X-axis Red: Hoz Green: Vert										
Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
2 - 4GHz 2000 - 4000MHz										
1	2440.882	63.13	pk	4.2	21.9	89.23	999	-909.77	100	Horz
4 - 8GHz 4000 - 8000MHz										
2	4880.881	62.72	pk	-50.5	27.7	39.92	54	-14.08	100	Horz
3	7323.323	61.47	pk	-46.3	30.6	45.77	54	-8.23	100	Horz
8 - 12GHz 8000 - 12000MHz										
4	9765.766	48.4	pk	-49.5	36.4	35.3	54	-18.7	100	Horz
12 - 18GHz 12000 - 18000MHz										
5	12216.144	45.3	pk	-46	39.4	38.7	54	-15.3	100	Horz
6	14653.769	40.93	pk	-40.9	39.8	39.83	54	-14.17	100	Horz
7	17163.442	39.84	pk	-40.7	40.3	39.44	54	-14.56	100	Horz
18-26.5GHz 18000 - 25000MHz										
8	19442.721	70.97	pk	-69	40.3	42.27	54	-11.73	100	Horz
9	21963.982	62.79	pk	-60.3	40.4	42.89	54	-11.11	100	Horz
10	24430.966	65.15	pk	-61.4	40.3	44.05	54	-9.95	100	Horz

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



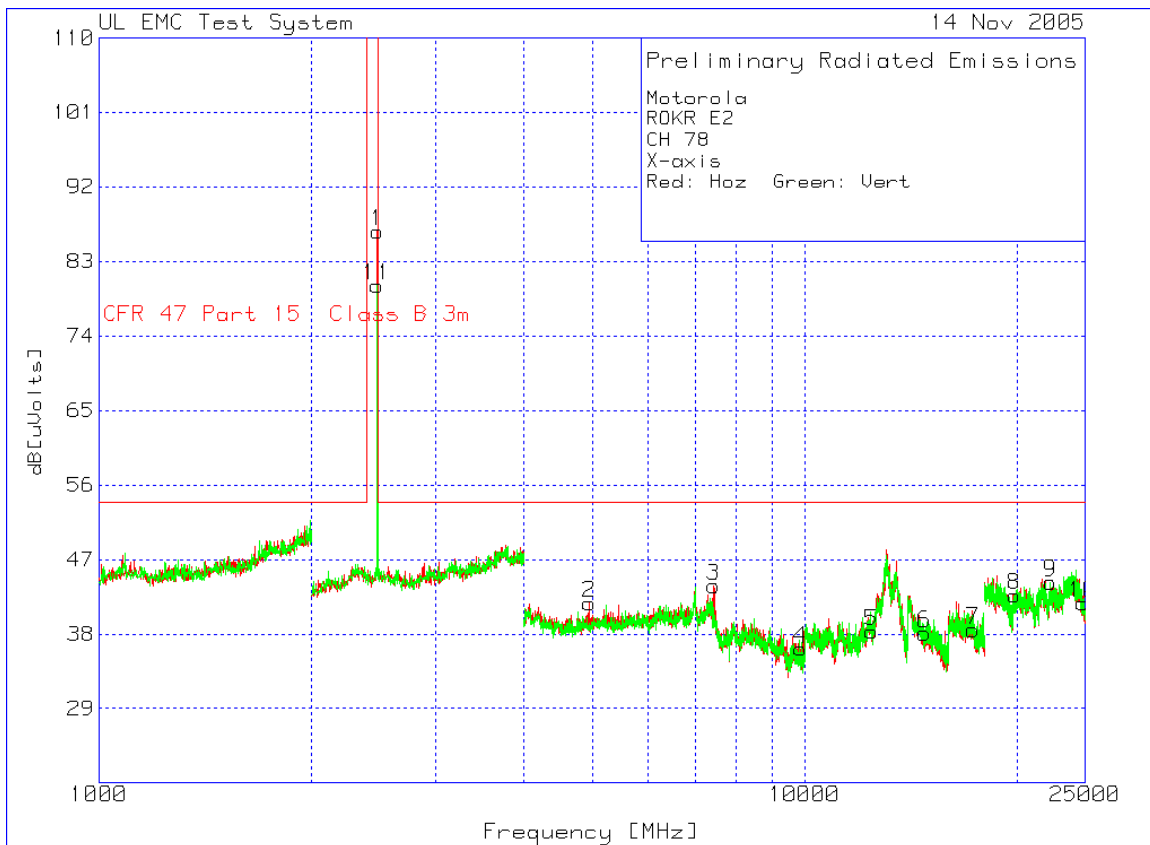
1-25 GHz Mid Channel Dual Polarization Y

Motorola ROKR E2 CH 39 Y-axis Red: Hoz Green: Vert										
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	51.48 pk		4.2	21.9	77.58	999	-921.42	100	Horz
4 - 8GHz 4000 - 8000MHz										
2	4896.897	62.02 pk		-50.6	27.7	39.12	54	-14.88	100	Horz
3	7323.323	60.74 pk		-46.3	30.6	45.04	54	-8.96	100	Horz
8 - 12GHz 8000 - 12000MHz										
4	9765.766	48.71 pk		-49.5	36.4	35.61	54	-18.39	100	Horz
12 - 18GHz 12000 - 18000MHz										
5	12276.184	43.88 pk		-44.6	39.4	38.68	54	-15.32	100	Horz
6	14653.769	39.28 pk		-40.9	39.8	38.18	54	-15.82	100	Horz
7	16975.317	39.8 pk		-41.1	40.4	39.1	54	-14.9	100	Horz
18-26.5GHz 18000 - 25000MHz										
8	19512.756	70.49 pk		-69.2	40.3	41.59	54	-12.41	100	Horz
9	21967.484	62.38 pk		-60.3	40.4	42.48	54	-11.52	100	Horz
10	24436.218	64.74 pk		-61.4	40.3	43.64	54	-10.36	100	Horz
2 - 4GHz 2000 - 4000MHz										
11	2440.882	63.62 pk		4.2	21.9	89.72	999	-909.28	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: NONE LIMIT 3: NONE										



1-25 GHz Mid Channel Dual Polarization Z

Motorola											
ROKR E2											
CH 39											
Z-axis											
Red: Hoz Green: Vert											
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Height [cm]	Polarity	
Number	Frequency [MHz]	Reading [dB(uV)]	Type	Factor [dB]	Factor [dB]	dB[uVolts]					
2 - 4GHz 2000 - 4000MHz											
1	2440.882	56.65 pk		4.2	21.9	82.75	999	-916.25	100	Horz	
4 - 8GHz 4000 - 8000MHz											
2	4884.885	62.13 pk		-50.5	27.7	39.33	54	-14.67	100	Horz	
3	7323.323	59.26 pk		-46.3	30.6	43.56	54	-10.44	100	Horz	
8 - 12GHz 8000 - 12000MHz											
4	9705.706	49.22 pk		-48.5	36.4	37.12	54	-16.88	100	Horz	
12 - 18GHz 12000 - 18000MHz											
5	12148.099	45.26 pk		-46.4	39.4	38.26	54	-15.74	100	Horz	
6	14569.713	41.45 pk		-40.1	39.8	41.15	54	-12.85	100	Horz	
7	16999.333	40.57 pk		-40.8	40.4	40.17	54	-13.83	100	Horz	
18-26.5GHz 18000 - 25000MHz											
8	19502.251	70.61 pk		-69.2	40.3	41.71	54	-12.29	100	Horz	
9	21813.407	63.11 pk		-61	40.4	42.51	54	-11.49	100	Horz	
10	24341.671	64.86 pk		-61	40.3	44.16	54	-9.84	100	Horz	
2 - 4GHz 2000 - 4000MHz											
11	2440.882	56.25 pk		4.2	21.9	82.35	999	-916.65	100	Vert	
LIMIT 1: CFR 47 Part 15 Class B 3m											
LIMIT 2: NONE											
LIMIT 3: NONE											



1-25 GHz High Channel Dual Polarization X

Motorola
ROKR E2
CH 78
X-axis

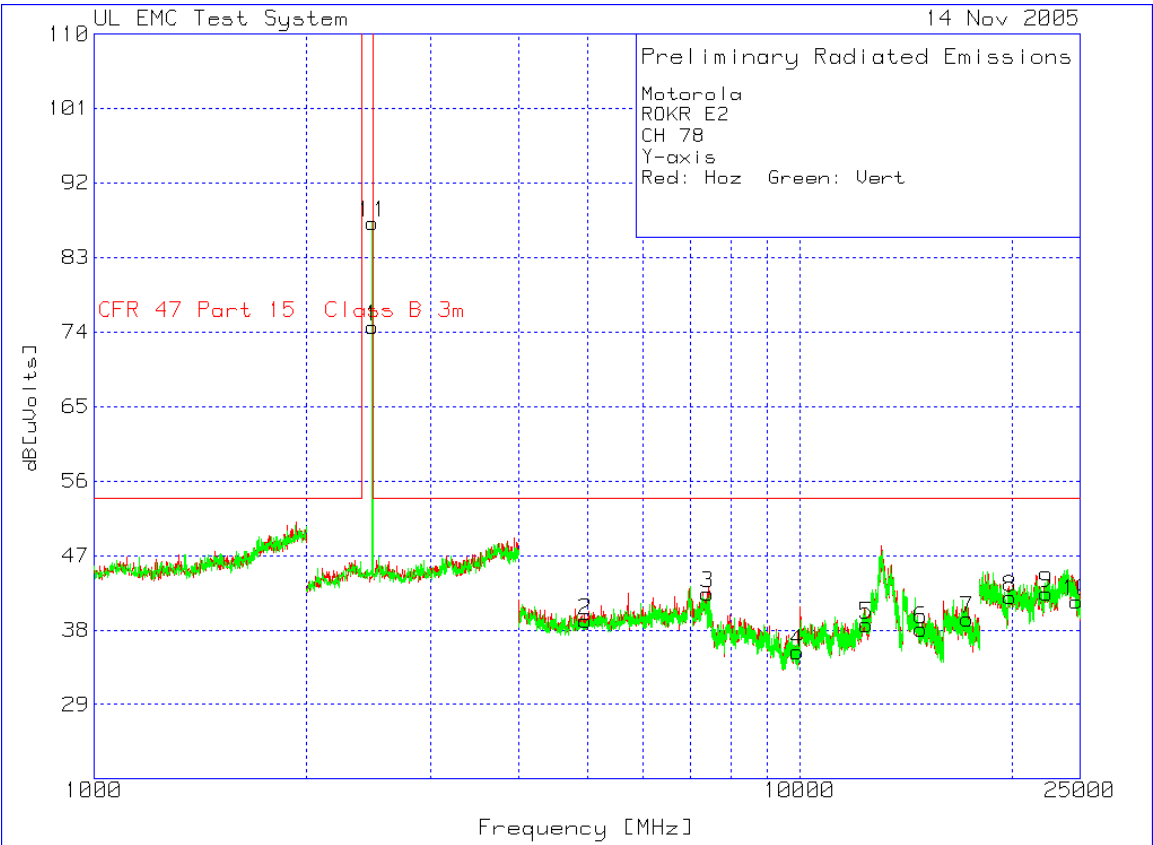
Red: Hoz Green: Vert

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	60.55	pk		4.1	22	86.65	999	-912.35	100 Horz
4 - 8GHz 4000 - 8000MHz										
2	4956.957	64.71	pk	-50.8	27.8	41.71	54	-12.29	100 Horz	
3	7439.439	60.12	pk	-46.9	30.6	43.82	54	-10.18	100 Horz	
8 - 12GHz 8000 - 12000MHz										
4	9877.878	49.93	pk	-50.1	36.4	36.23	54	-17.77	100 Horz	
12 - 18GHz 12000 - 18000MHz										
5	12456.304	43.99	pk	-45.1	39.4	38.29	54	-15.71	100 Horz	
6	14797.865	39.81	pk	-41.5	39.8	38.11	54	-15.89	100 Horz	
7	17343.562	39.21	pk	-40.8	40.1	38.51	54	-15.49	100 Horz	
18-26.5GHz 18000 - 25000MHz										
8	19841.921	71.49	pk	-69.1	40.3	42.69	54	-11.31	100 Horz	
9	22328.164	63.15	pk	-59.4	40.5	44.25	54	-9.75	100 Horz	
10	24807.404	63.25	pk	-61.8	40.3	41.75	54	-12.25	100 Horz	
2 - 4GHz 2000 - 4000MHz										
11	2476.954	53.96	pk	4.1	22	80.06	999	-918.94	100 Vert	

LIMIT 1: CFR 47 Part 15 Class B 3m

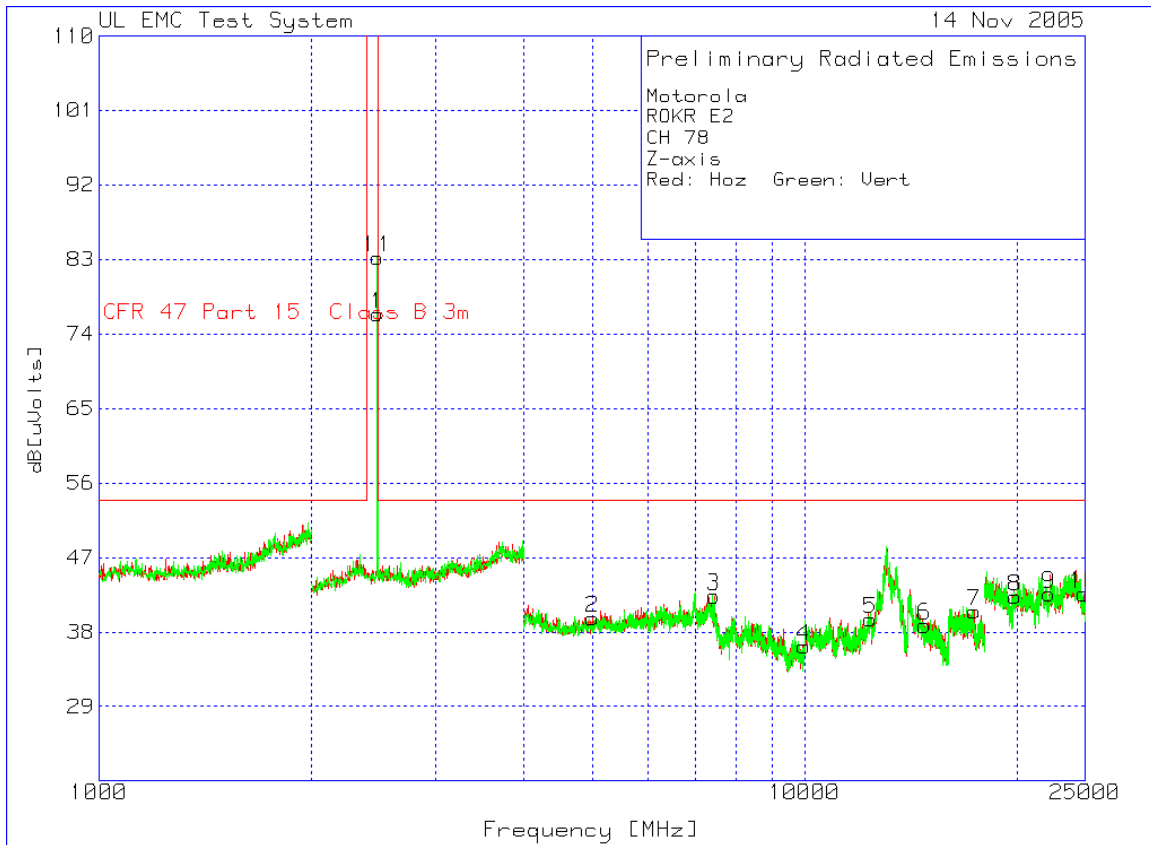
LIMIT 2: NONE

LIMIT 3: NONE



1-25 GHz High Channel Dual Polarization Y

Motorola ROKR E2 CH 78 Y-axis Red: Hoz Green: Vert											
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	48.53	pk	4.1	22	74.63	999	-924.37	100	Horz	
4 - 8GHz 4000 - 8000MHz											
2	4976.977	62.16	pk	-50.8	27.8	39.16	54	-14.84	100	Horz	
3	7403.403	57.8	pk	-46.5	31.1	42.4	54	-11.6	100	Horz	
8 - 12GHz 8000 - 12000MHz											
4	9929.93	48.3	pk	-49.3	36.4	35.4	54	-18.6	100	Horz	
12 - 18GHz 12000 - 18000MHz											
5	12444.296	44.27	pk	-45	39.4	38.67	54	-15.33	100	Horz	
6	14861.908	39.32	pk	-41	39.8	38.12	54	-15.88	100	Horz	
7	17291.528	39.72	pk	-40.6	40.2	39.32	54	-14.68	100	Horz	
18-26.5GHz 18000 - 25000MHz											
8	19890.945	70.86	pk	-69.1	40.2	41.96	54	-12.04	100	Horz	
9	22377.189	61.19	pk	-59.3	40.5	42.39	54	-11.61	100	Horz	
10	24705.853	63.26	pk	-62.1	40.3	41.46	54	-12.54	100	Horz	
2 - 4GHz 2000 - 4000MHz											
11	2480.962	61.11	pk	4.1	22	87.21	999	-911.79	100	Vert	
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: NONE											



1-25 GHz High Channel Dual Polarization Z

Motorola
ROKR E2
CH 78
Z-axis

Red: Hoz Green: Vert

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	50.33 pk		4.1	22	76.43	999	-922.57	100	Horz
4 - 8GHz 4000 - 8000MHz										
2	5001.001	62.57 pk		-50.7	27.8	39.67	54	-14.33	100	Horz
3	7443.443	58.75 pk		-46.9	30.5	42.35	54	-11.65	100	Horz
8 - 12GHz 8000 - 12000MHz										
4	9981.982	48.26 pk		-48.4	36.4	36.26	54	-17.74	100	Horz
12 - 18GHz 12000 - 18000MHz										
5	12392.262	44.12 pk		-44	39.4	39.52	54	-14.48	100	Horz
6	14789.86	40.4 pk		-41.4	39.8	38.8	54	-15.2	100	Horz
7	17387.592	40.82 pk		-40.4	40.1	40.52	54	-13.48	100	Horz
18-26.5GHz 18000 - 25000MHz										
8	19876.938	71.17 pk		-69.1	40.2	42.27	54	-11.73	100	Horz
9	22205.603	62.04 pk		-59.9	40.5	42.64	54	-11.36	100	Horz
10	24873.937	63.81 pk		-61.5	40.3	42.61	54	-11.39	100	Horz
2 - 4GHz 2000 - 4000MHz										
11	2480.962	57.13 pk		4.1	22	83.23	999	-915.77	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

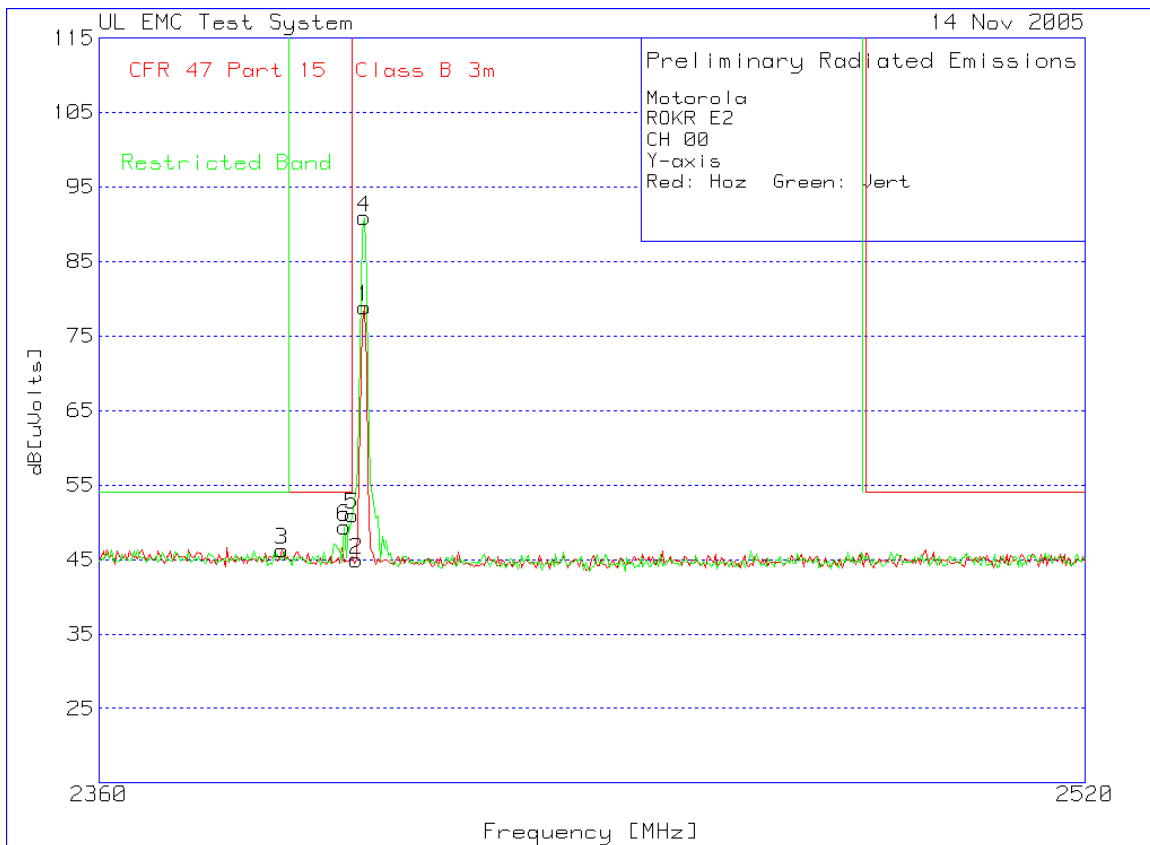
LIMIT 2: NONE

LIMIT 3: NONE



Authorized Band Emissions Low Channel Dual Polarization X

Motorola													
ROKR E2													
CH 00													
X-axis													
Red: Hoz Green: Vert													
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Limit 2	Margin 2[dB]	Height [cm]	Polarity	
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts]							
	[MHz]	[dB(uV)]		[dB]	[dB]								
2 - 4GHz 2360 - 2520MHz													
1	2402.004	62.88	pk	4.4	21.8	89.08	999	-909.92	999	-909.92	100	Horz	
2	2400.08	22.74	pk	4.4	21.8	48.94	999	-950.06	999	-950.06	100	Horz	
3	2380.521	19.25	pk	4.4	21.8	45.45	54	-8.55	54	-8.55	100	Horz	
2 - 4GHz 2360 - 2520MHz													
4	2402.004	56.07	pk	4.4	21.8	82.27	999	-916.73	999	-916.73	100	Vert	
5	2395.271	18.77	pk	4.4	21.8	44.97	54	-9.03	999	-954.03	100	Vert	
6	2369.94	19.79	pk	4.4	21.8	45.99	54	-8.01	54	-8.01	100	Vert	
LIMIT 1: CFR 47 Part 15 Class B 3m													
LIMIT 2: Restricted Band													



Authorized Band Emissions Low Channel Dual Polarization Y

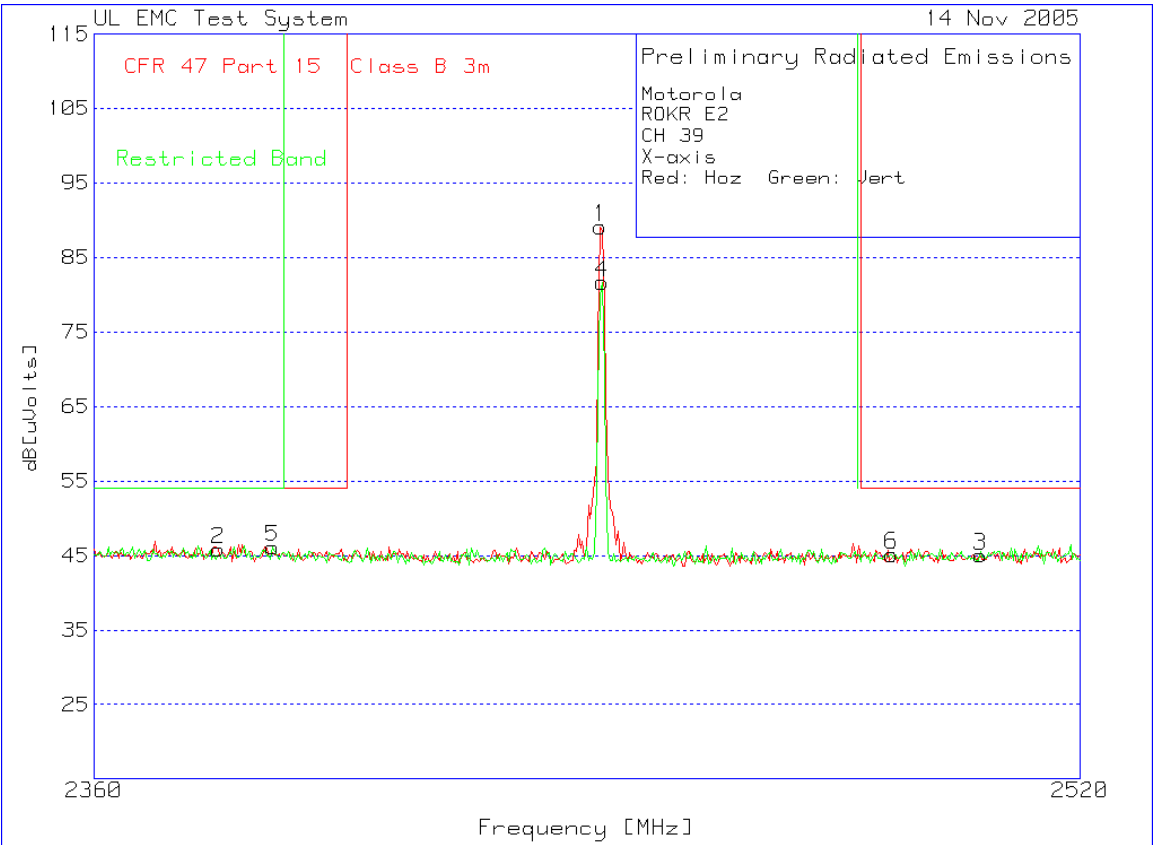
Motorola												
ROKR E2												
CH 00												
Y-axis												
Red: Hoz Green: Vert												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Limit 2	Margin 2[dB]	Height [cm]	Polarity
Number	Frequency [MHz]	Reading [dB(uV)]	Type	Factor [dB]	Factor [dB]	dB[uVolts]						
2 - 4GHz 2360 - 2520MHz												
1	2402.004	52.69 pk		4.4	21.8	78.89	999	-920.11	999	-920.11	100	Horz
2	2400.721	18.75 pk		4.4	21.8	44.95	999	-954.05	999	-954.05	100	Horz
3	2388.858	20.04 pk		4.4	21.8	46.24	54	-7.76	54	-7.76	100	Horz
2 - 4GHz 2360 - 2520MHz												
4	2402.004	64.71 pk		4.4	21.8	90.91	999	-908.09	999	-908.09	100	Vert
5	2400.08	24.79 pk		4.4	21.8	50.99	999	-948.01	999	-948.01	100	Vert
6	2398.798	23.16 pk		4.4	21.8	49.36	54	-4.64	999	-949.64	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m
LIMIT 2: Restricted Band



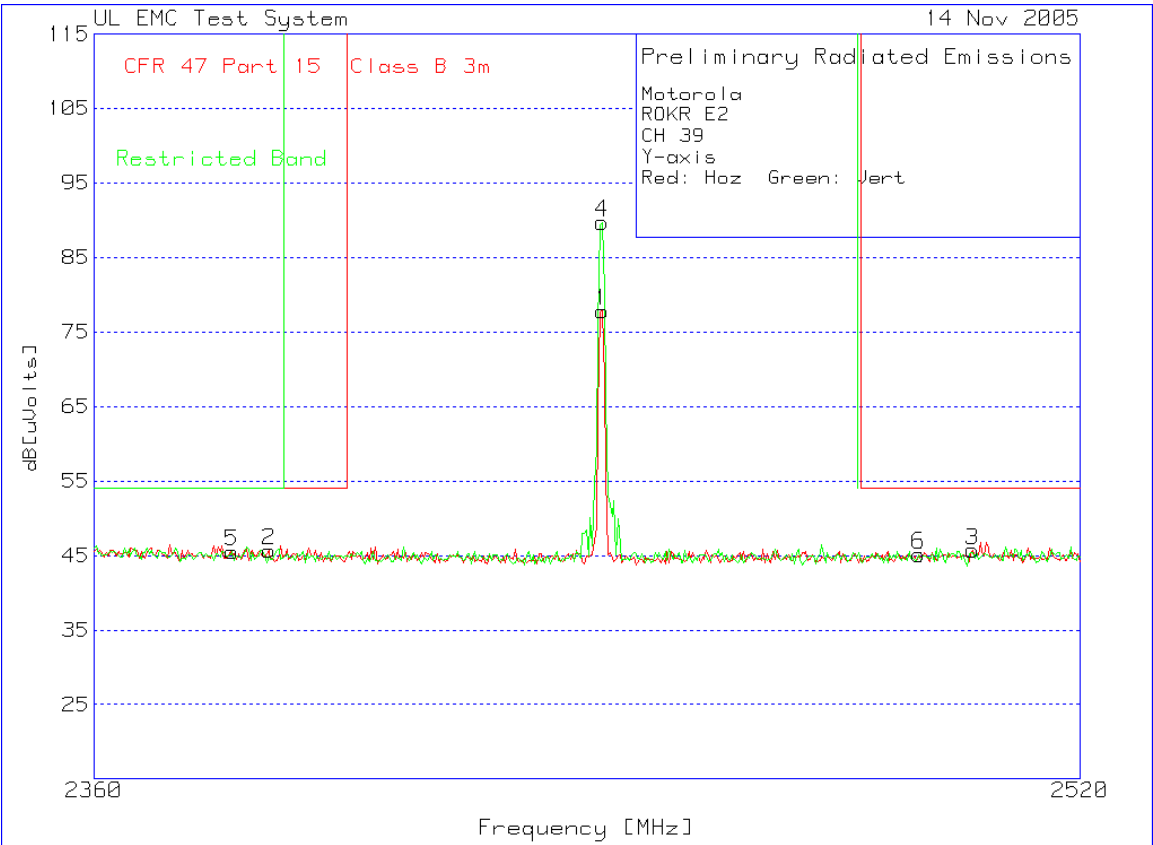
Authorized Band Emissions Low Channel Dual Polarization Z

Motorola ROKR E2 CH 00 Z-axis Red: Hoz Green: Vert												
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 2360 - 2520MHz												
1	2401.683	57.45 pk		4.4	21.8	83.65	999	-915.35	999	-915.35	100	Horz
2	2400.08	18.66 pk		4.4	21.8	44.86	999	-954.14	999	-954.14	100	Horz
3	2388.537	19.35 pk		4.4	21.8	45.55	54	-8.45	54	-8.45	100	Horz
2 - 4GHz 2360 - 2520MHz												
4	2402.004	59.21 pk		4.4	21.8	85.41	999	-913.59	999	-913.59	100	Vert
5	2400.08	24.43 pk		4.4	21.8	50.63	999	-948.37	999	-948.37	100	Vert
6	2395.271	18.17 pk		4.4	21.8	44.37	54	-9.63	999	-954.63	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: Restricted Band LIMIT 3: NONE												



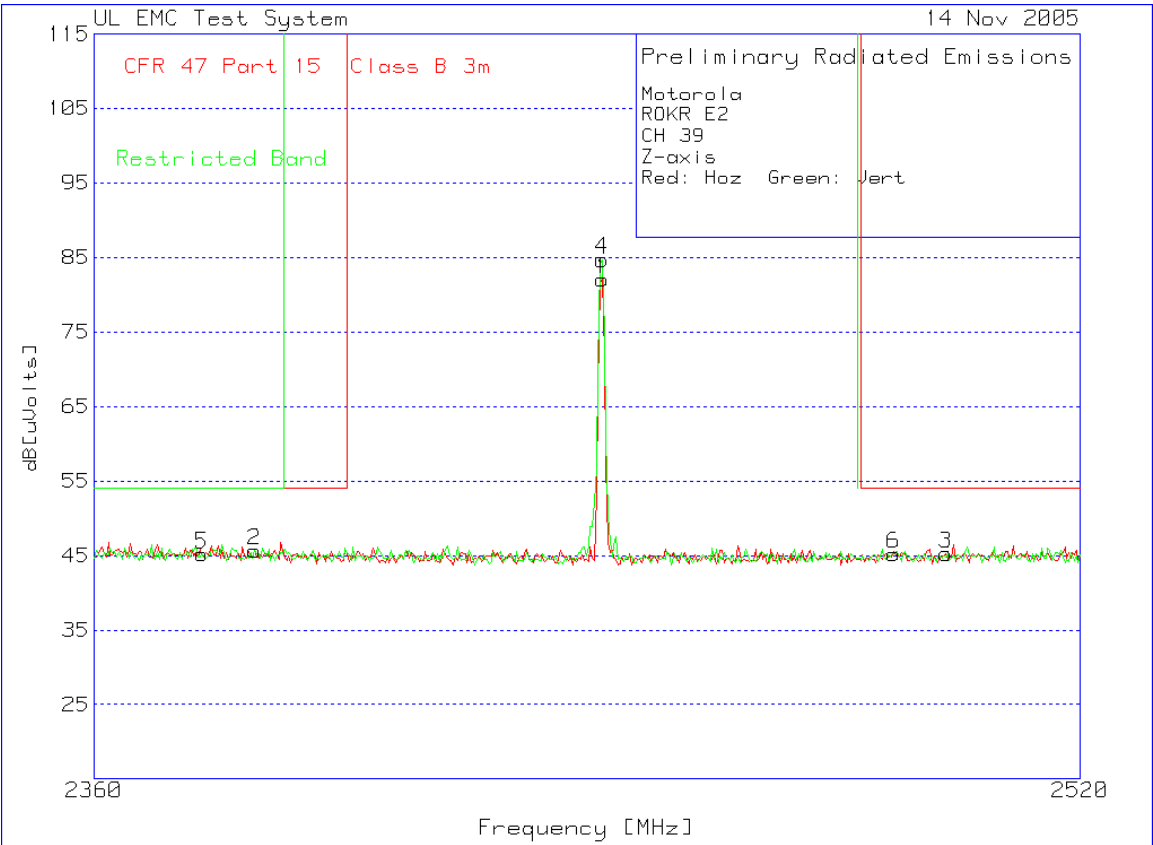
Authorized Band Emissions Mid Channel Dual Polarization X

Motorola ROKR E2 CH 39 X-axis Red: Hoz Green: Vert												
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 2360 - 2520MHz												
1	2440.802	63.04	pk	4.2	21.9	89.14	999	-909.86	999	-909.86	100	Horz
2	2379.559	19.65	pk	4.4	21.8	45.85	54	-8.15	54	-8.15	100	Horz
3	2503.327	18.81	pk	4.1	22.1	45.01	54	-8.99	0	45.01	100	Horz
2 - 4GHz 2360 - 2520MHz												
4	2441.122	55.56	pk	4.2	21.9	81.66	999	-917.34	999	-917.34	100	Vert
5	2388.216	19.93	pk	4.4	21.8	46.13	54	-7.87	54	-7.87	100	Vert
6	2488.577	18.93	pk	4.1	22.1	45.13	54	-8.87	0	45.13	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: Restricted Band												



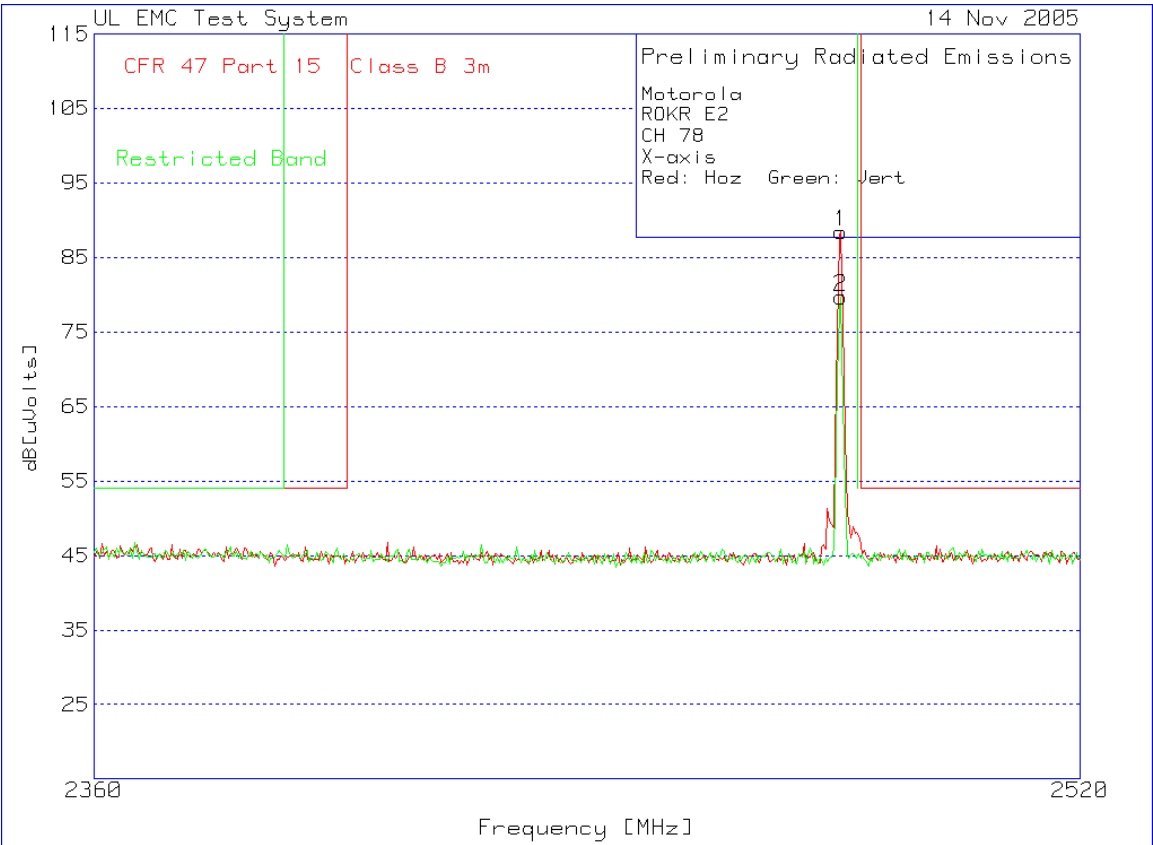
Authorized Band Emissions Mid Channel Dual Polarization Y

Motorola ROKR E2 CH 39 Y-axis Red: Hoz Green: Vert													
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 2360 - 2520MHz													
1	2441.122	51.69	pk	4.2	21.9	77.79	999	-921.21	999	-921.21	100	Horz	
2	2387.575	19.45	pk	4.4	21.8	45.65	54	-8.35	54	-8.35	100	Horz	
3	2502.044	19.51	pk	4.1	22.1	45.71	54	-8.29	0	45.71	100	Horz	
2 - 4GHz 2360 - 2520MHz													
4	2441.122	63.64	pk	4.2	21.9	89.74	999	-909.26	999	-909.26	100	Vert	
5	2381.804	19.33	pk	4.4	21.8	45.53	54	-8.47	54	-8.47	100	Vert	
6	2493.066	18.95	pk	4.1	22.1	45.15	54	-8.85	0	45.15	100	Vert	
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: Restricted Band													



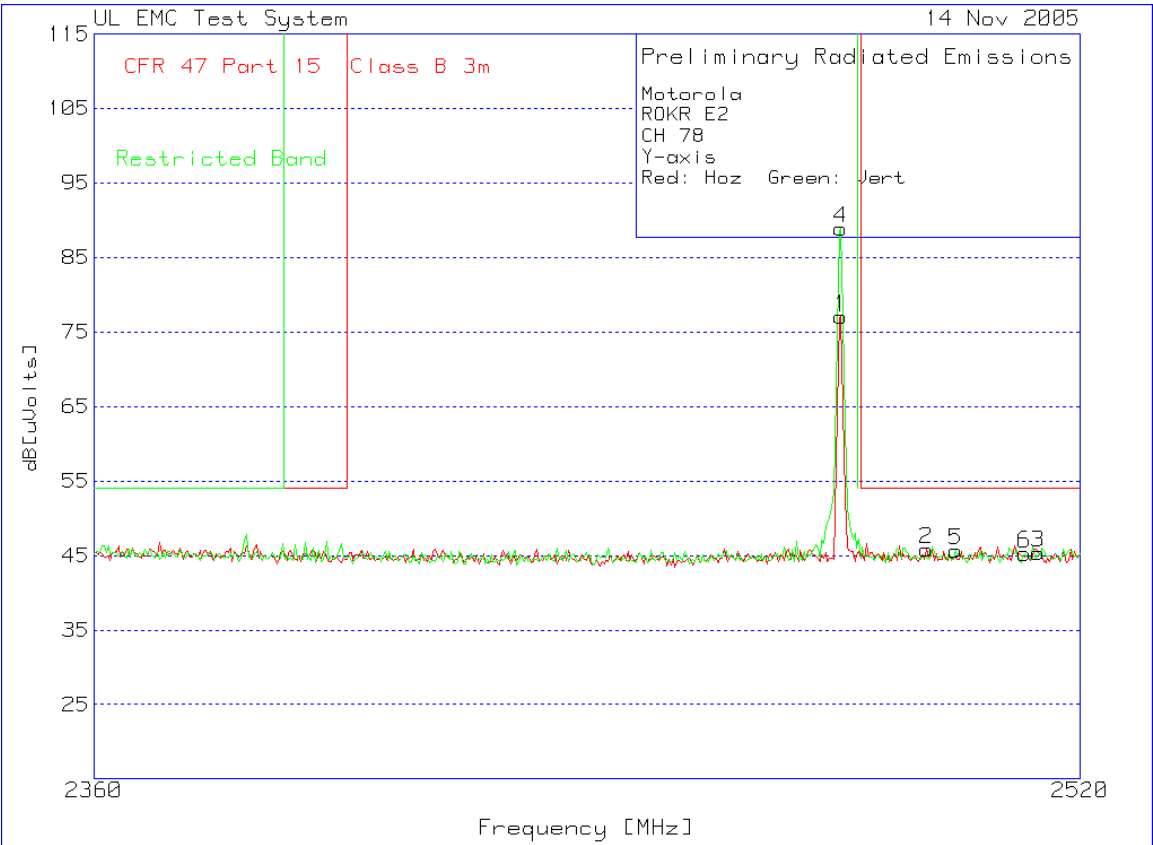
Authorized Band Emissions Mid Channel Dual Polarization Z

Motorola												
ROKR E2												
CH 39												
Z-axis												
Red: Hoz Green: Vert												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Limit 2	Margin 2[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
2 - 4GHz 2360 - 2520MHz												
1	2441.122	55.99	pk	4.2	21.9	82.09	999	-916.91	999	-916.91	100	Horz
2	2385.331	19.43	pk	4.4	21.8	45.63	54	-8.37	54	-8.37	100	Horz
3	2497.555	19.06	pk	4.1	22.1	45.26	54	-8.74	0	45.26	100	Horz
2 - 4GHz 2360 - 2520MHz												
4	2441.122	58.61	pk	4.2	21.9	84.71	999	-914.29	999	-914.29	100	Vert
5	2376.994	18.97	pk	4.4	21.8	45.17	54	-8.83	54	-8.83	100	Vert
6	2488.898	19.03	pk	4.1	22.1	45.23	54	-8.77	0	45.23	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m												
LIMIT 2: Restricted Band												
LIMIT 3: NONE												



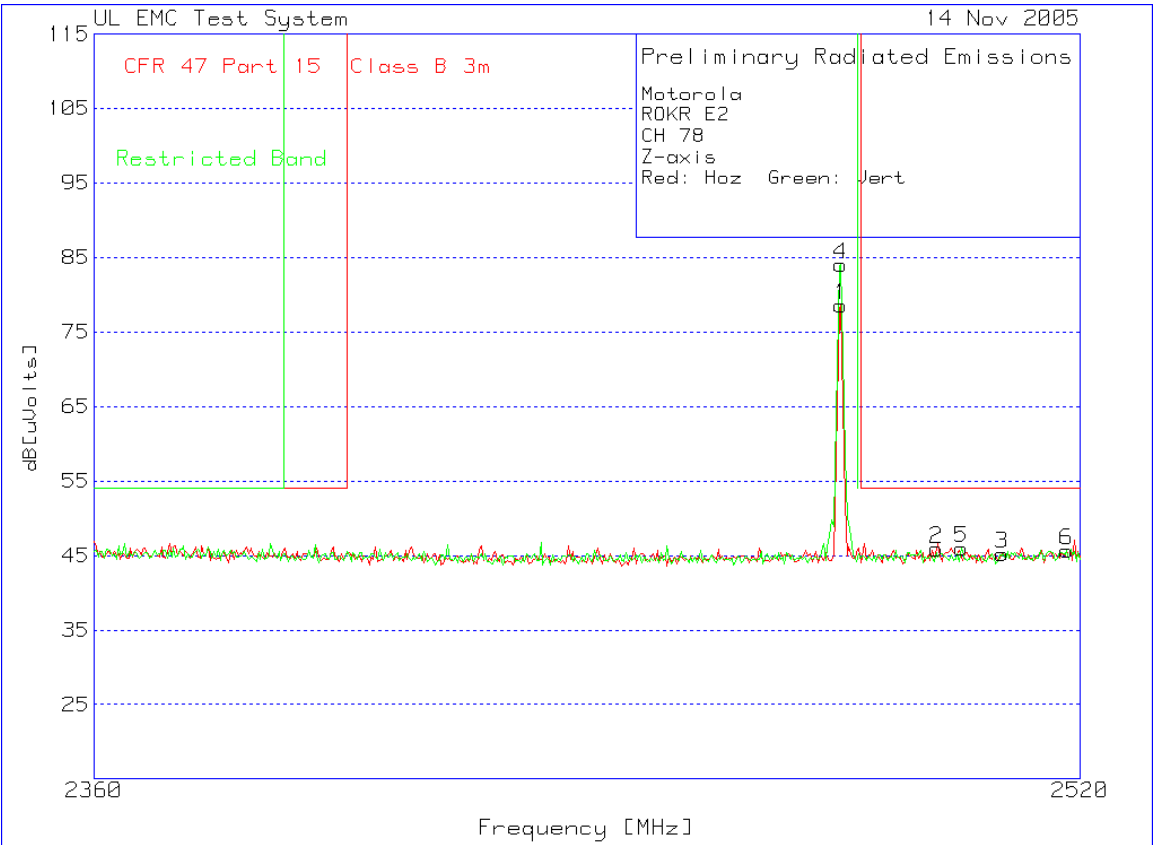
Authorized Band Emissions High Channel Dual Polarization X

Motorola												
ROKR E2												
CH 78												
X-axis												
Red: Hoz Green: Vert												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Limit 2	Margin 2[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
2 - 4GHz 2360 - 2520MHz												
1	2480.24	62.3 pk		4.1	22	88.4	999	-910.6	999	-910.6	100	Horz
2 - 4GHz 2360 - 2520MHz												
2	2480.24	53.64 pk		4.1	22	79.74	999	-919.26	999	-919.26	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m												
LIMIT 2: Restricted Band												



Authorized Band Emissions High Channel Dual Polarization Y

Motorola												
ROKR E2												
CH 78												
Y-axis												
Red: Hoz Green: Vert												
Marker	Test	Meter	Detector	Gain/Loss	Transducer	Level	Limit 1	Margin 1[dB]	Limit 2	Margin 2[dB]	Height [cm]	Polarity
Number	Frequency	Reading	Type	Factor	Factor	dB[uVolts]						
	[MHz]	[dB(uV)]		[dB]	[dB]							
2 - 4GHz 2360 - 2520MHz												
1	2480.24	50.92 pk		4.1	22	77.02	999	-921.98	999	-921.98	100	Horz
2	2494.349	19.62 pk		4.1	22.1	45.82	54	-8.18	0	45.82	100	Horz
3	2512.946	19.15 pk		4.1	22.1	45.35	54	-8.65	0	45.35	100	Horz
2 - 4GHz 2360 - 2520MHz												
4	2480.24	62.76 pk		4.1	22	88.86	999	-910.14	999	-910.14	100	Vert
5	2499.158	19.49 pk		4.1	22.1	45.69	54	-8.31	0	45.69	100	Vert
6	2510.701	19.11 pk		4.1	22.1	45.31	54	-8.69	0	45.31	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m												
LIMIT 2: Restricted Band												



Authorized Band Emissions High Channel Dual Polarization Z

Motorola ROKR E2 CH 78 Z-axis Red: Hoz Green: Vert												
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 2360 - 2520MHz												
1	2480.24	52.49	pk	4.1	22	78.59	999	-920.41	999	-920.41	100	Horz
2	2495.952	19.71	pk	4.1	22.1	45.91	54	-8.09	0	45.91	100	Horz
3	2506.854	19.02	pk	4.1	22.1	45.22	54	-8.78	0	45.22	100	Horz
2 - 4GHz 2360 - 2520MHz												
4	2480.24	57.96	pk	4.1	22	84.06	999	-914.94	999	-914.94	100	Vert
5	2500.12	19.8	pk	4.1	22.1	46	54	-8	0	46	100	Vert
6	2517.756	19.46	pk	4.1	22.1	45.66	54	-8.34	0	45.66	100	Vert
LIMIT 1: CFR 47 Part 15 Class B 3m LIMIT 2: Restricted Band												

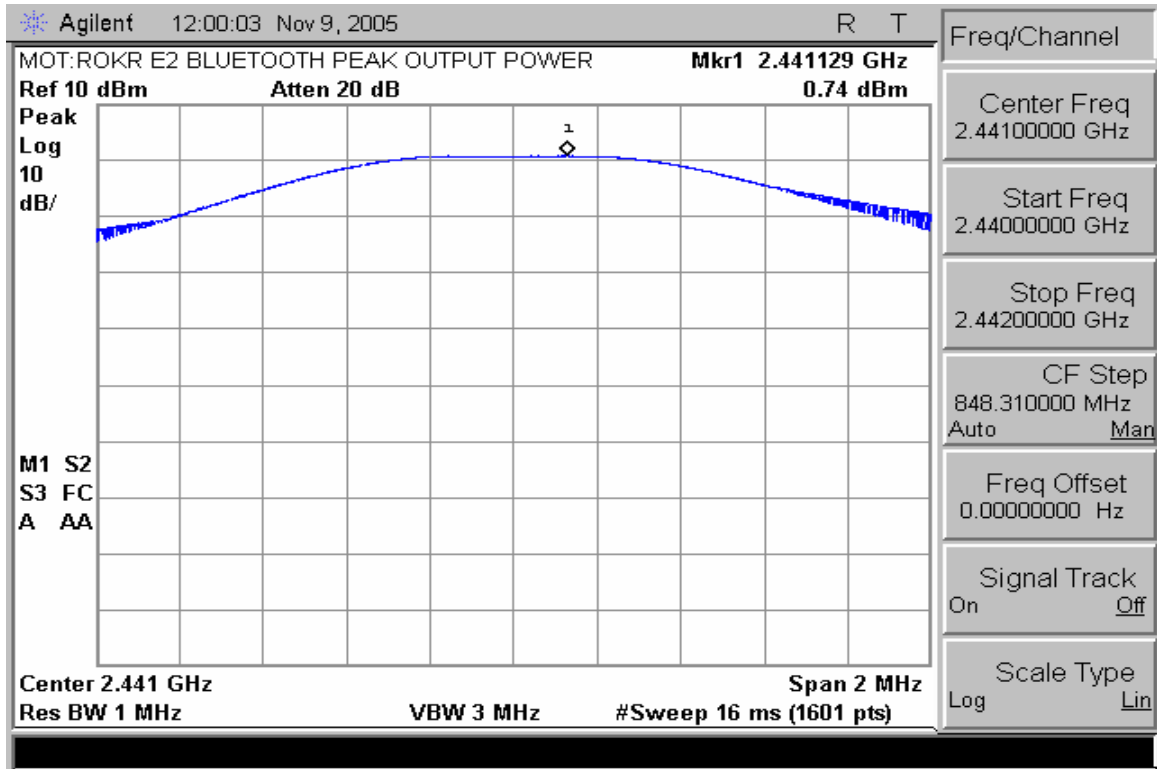
PEAK OUTPUT POWER

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

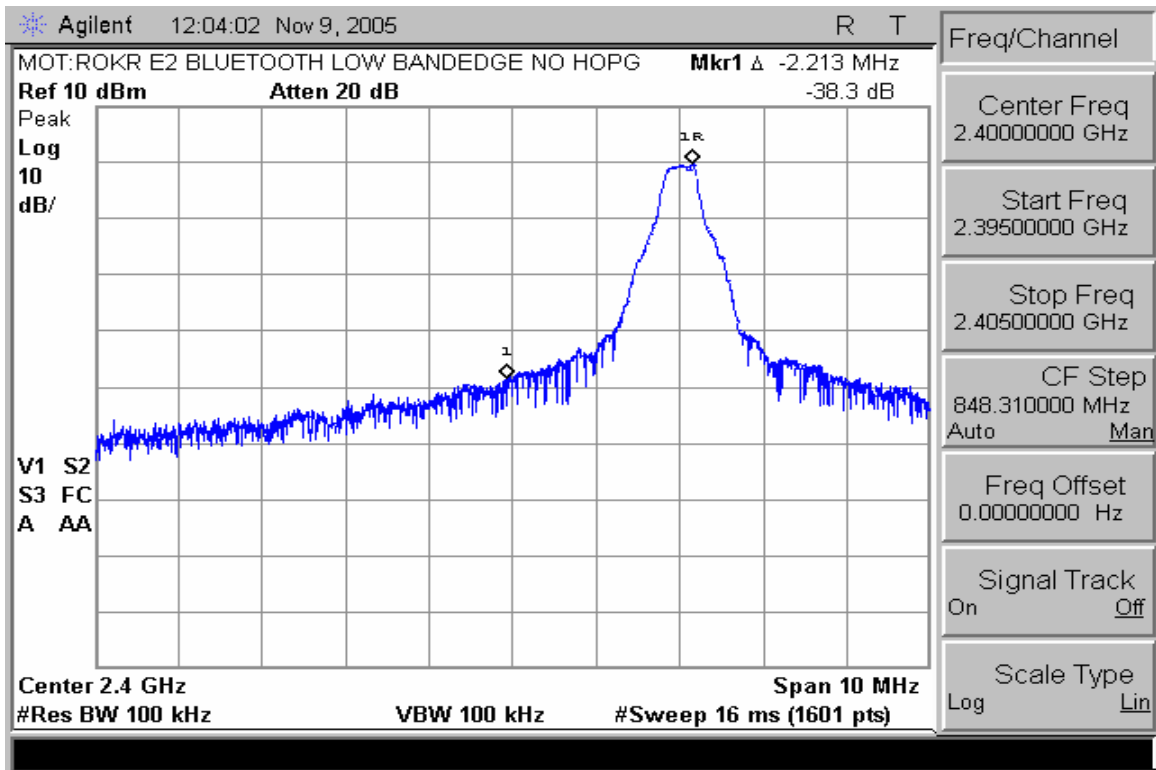
CFR 47 Part 15.247

Measurement Procedure

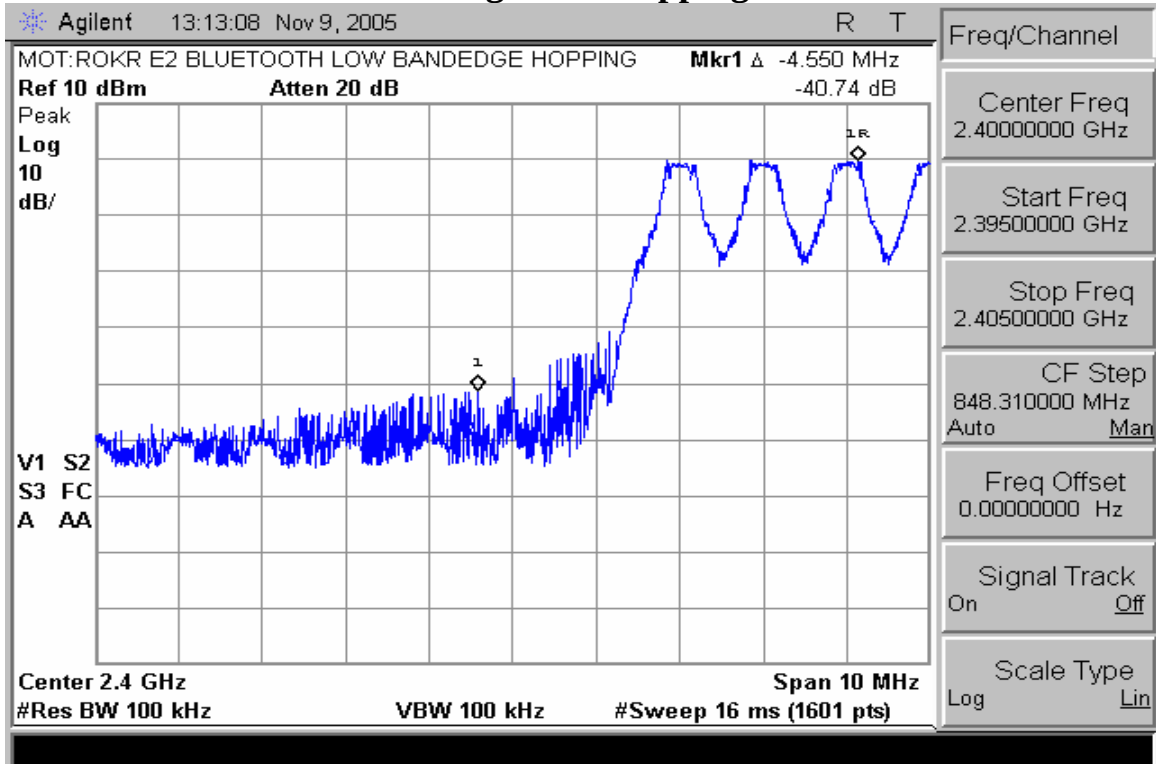
The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

Measurement Results

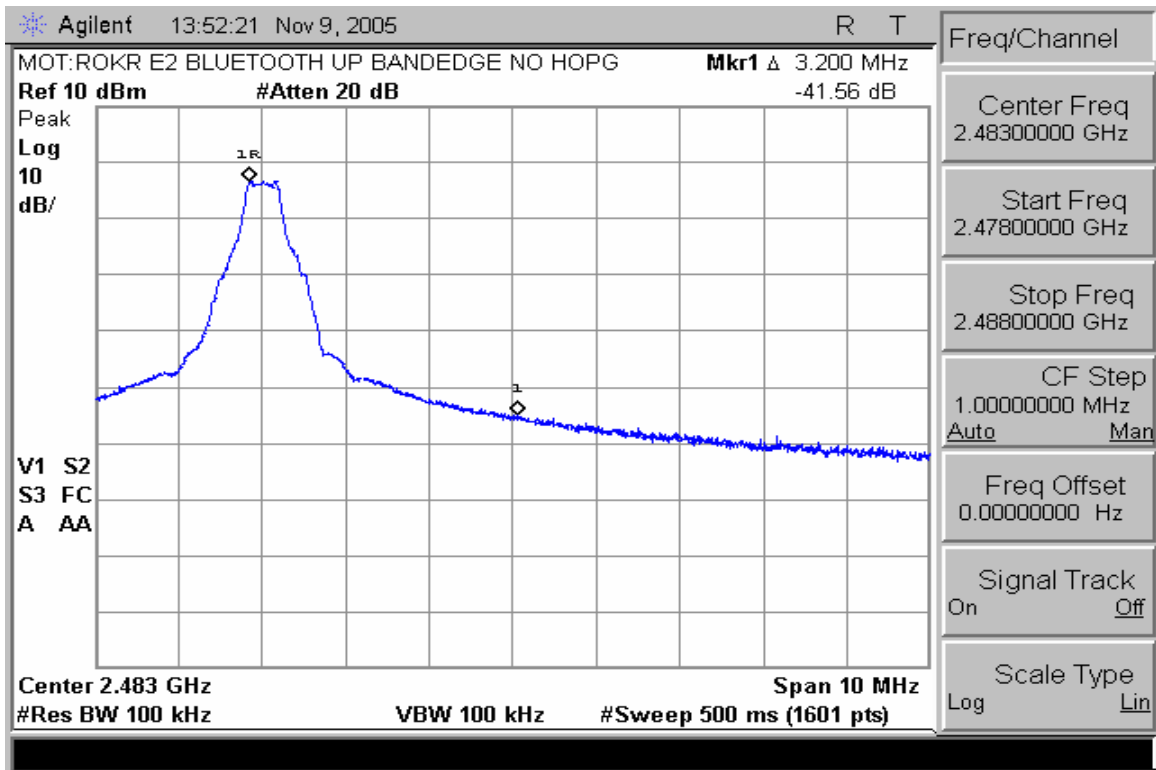
See Attached:



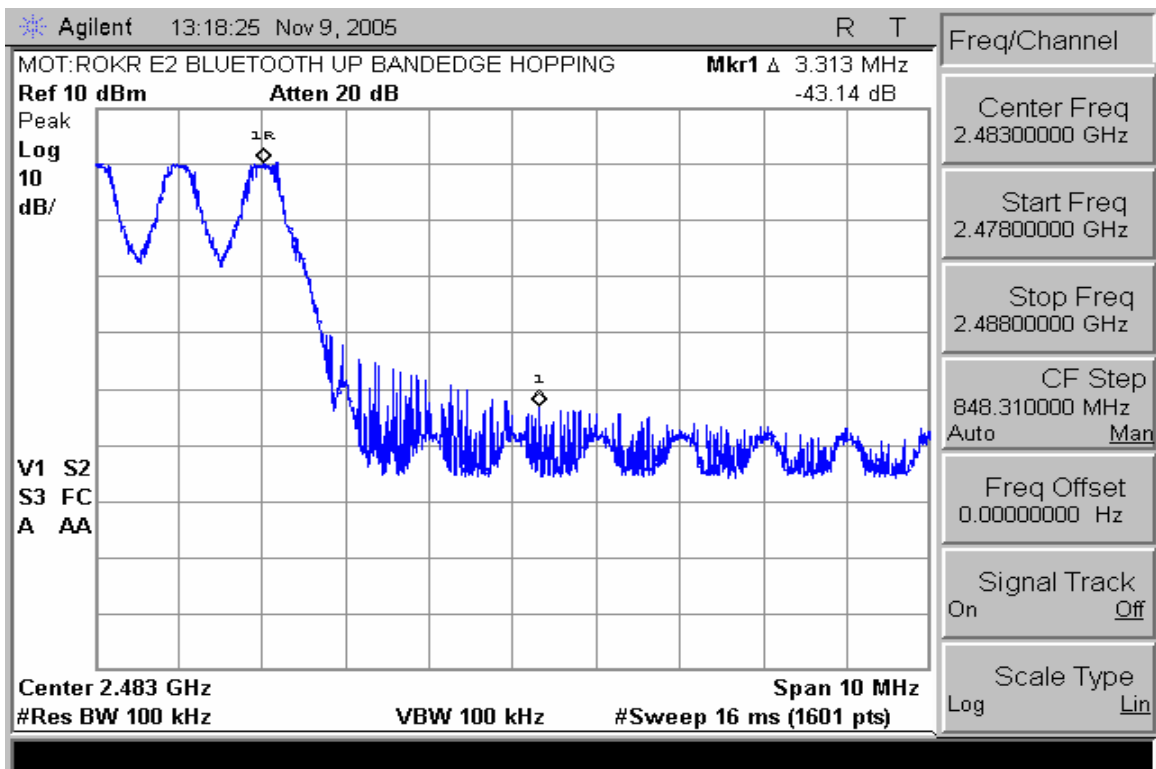
Low Band Edge with Hopping Disabled



Low Band Edge with Hopping Enabled



High Band Edge with Hopping Disabled



High Band Edge with Hopping Enabled

SPURIOUS RF CONDUCTED EMISSIONS

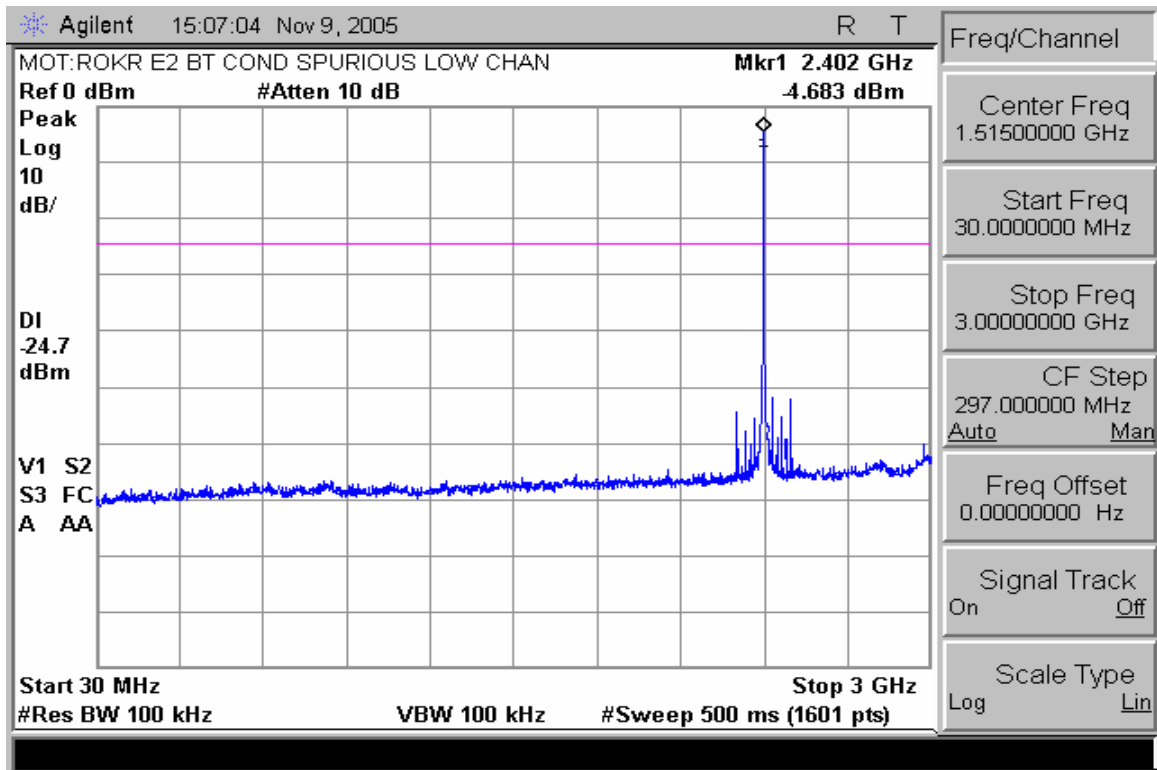
CFR 47 Part 15.247

Measurement Procedure

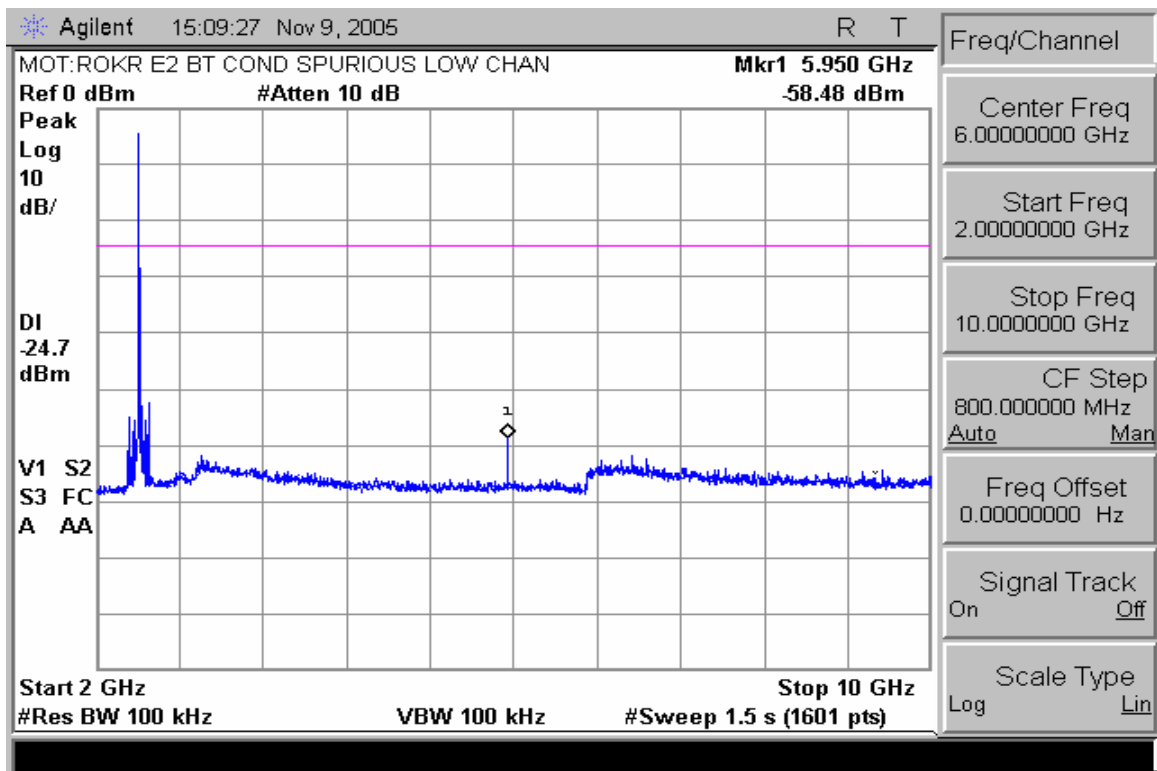
The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

Measurement Results

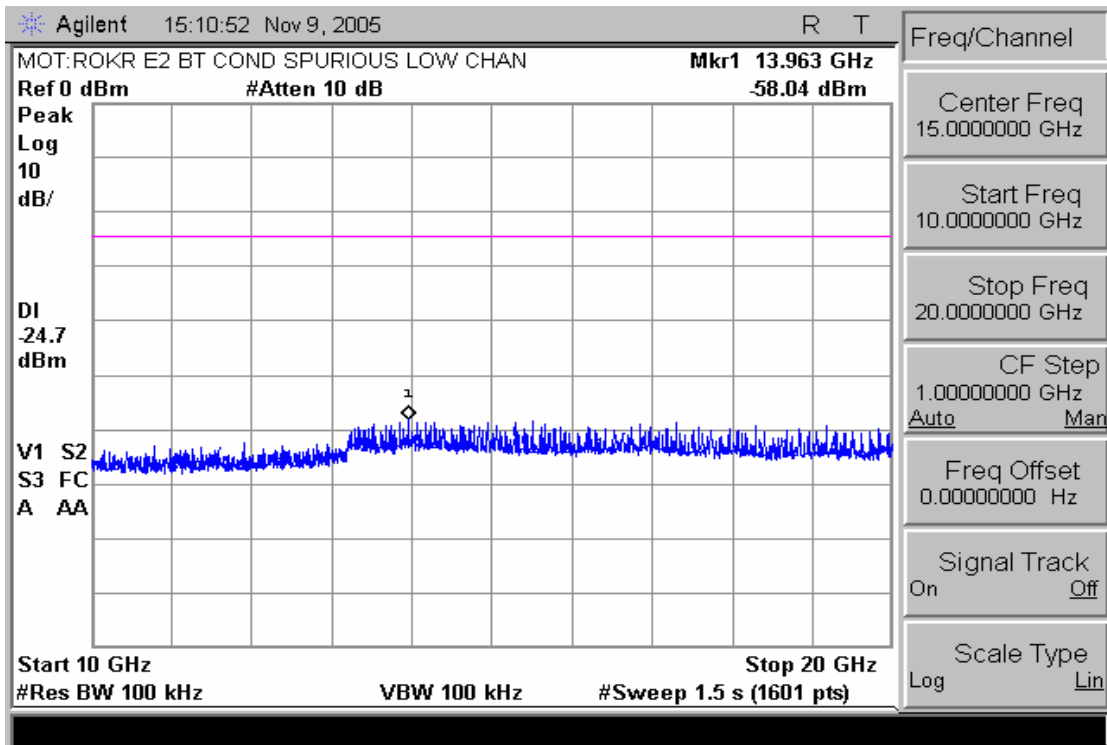
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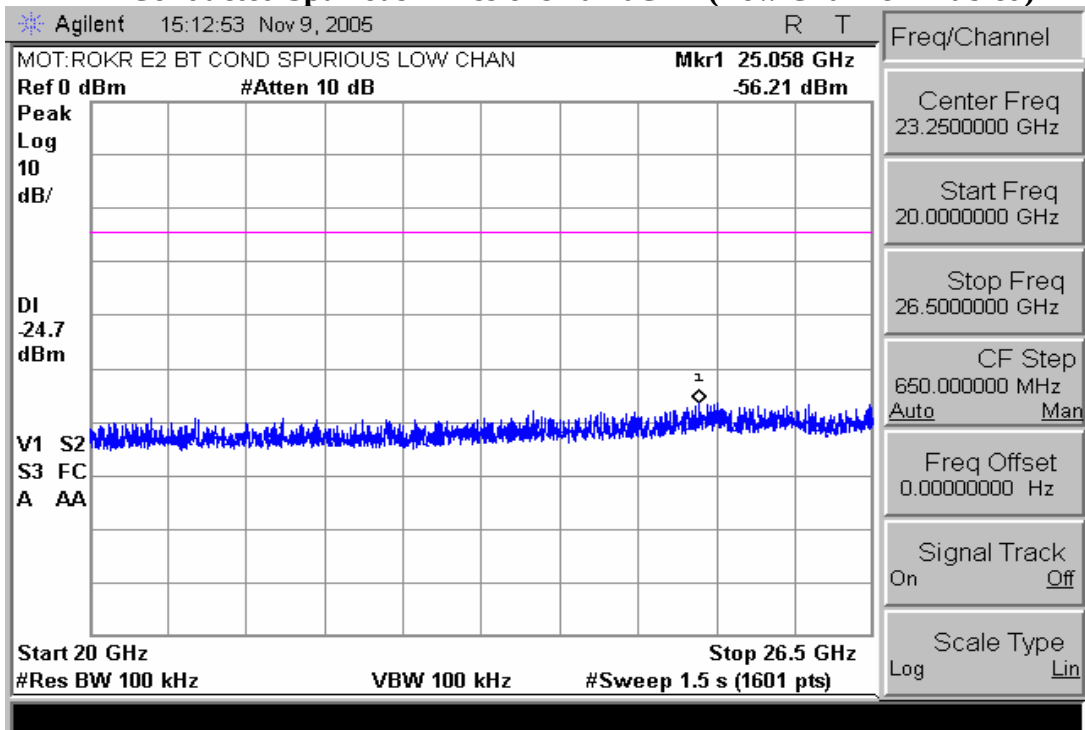
Conducted Spurious Emissions 30-3000MHz (Low Channel Enabled)



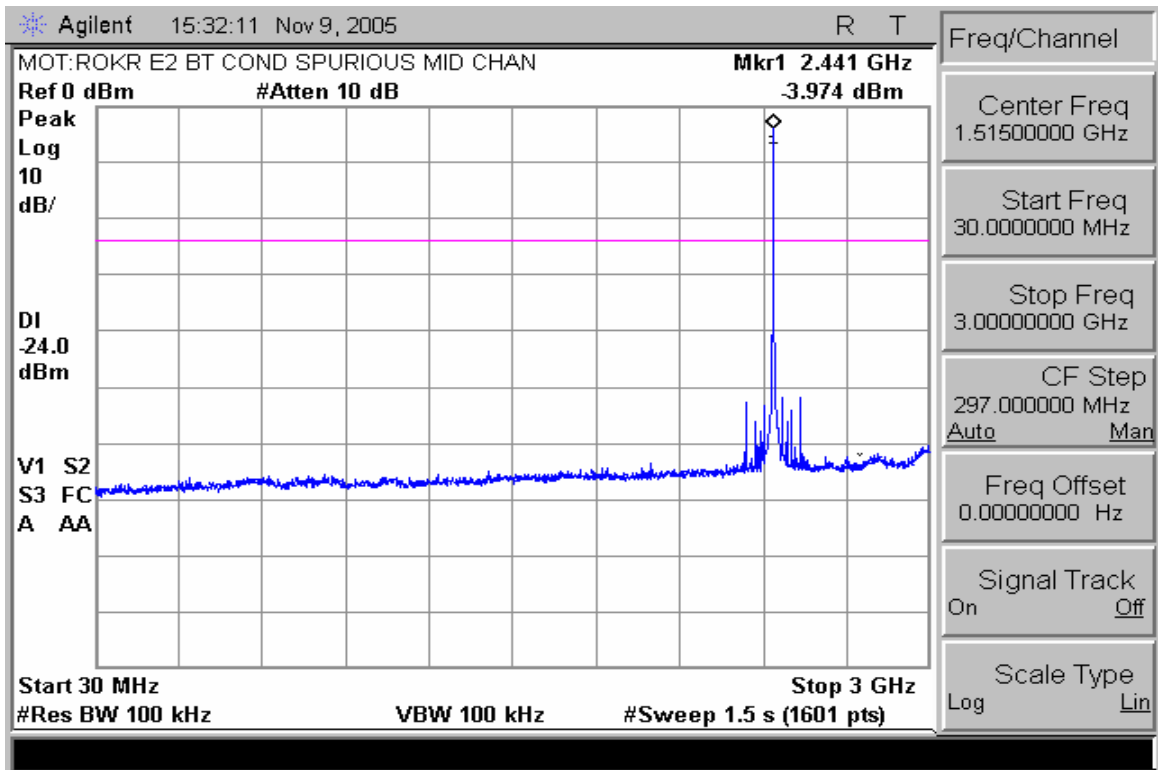
Conducted Spurious Emissions 2-10GHz (Low Channel Enabled)



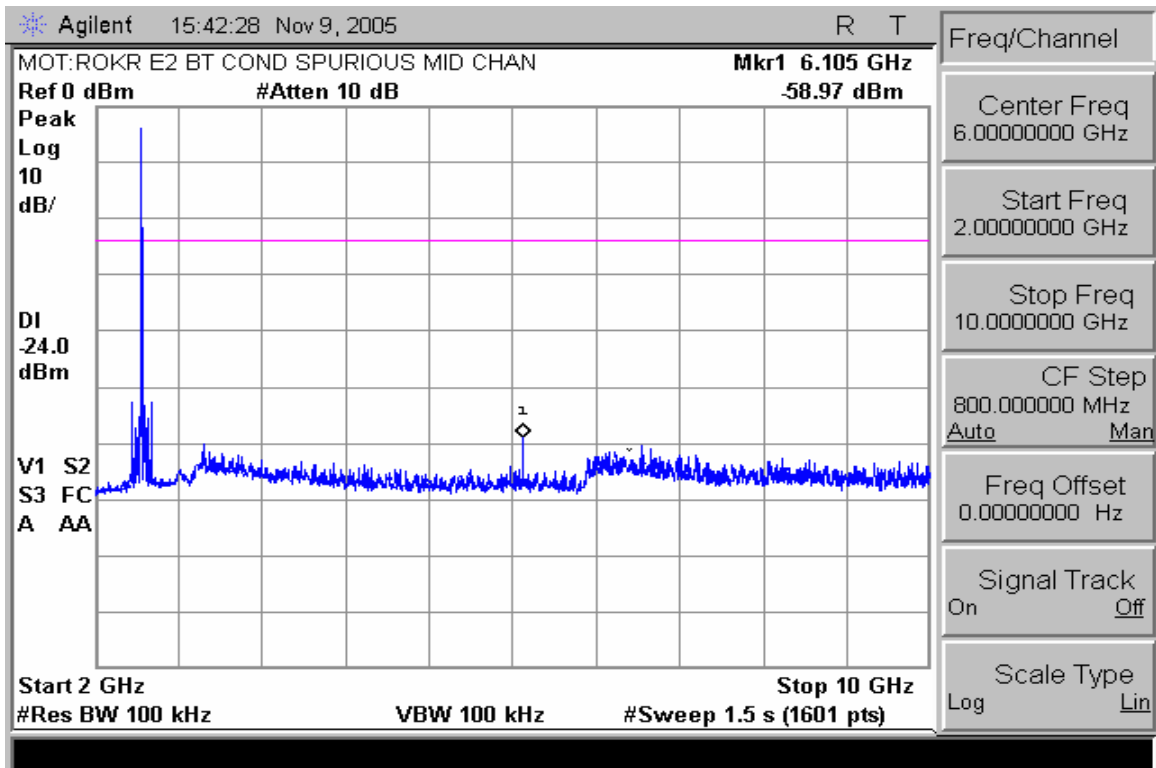
Conducted Spurious Emissions 10-20GHz (Low Channel Enabled)



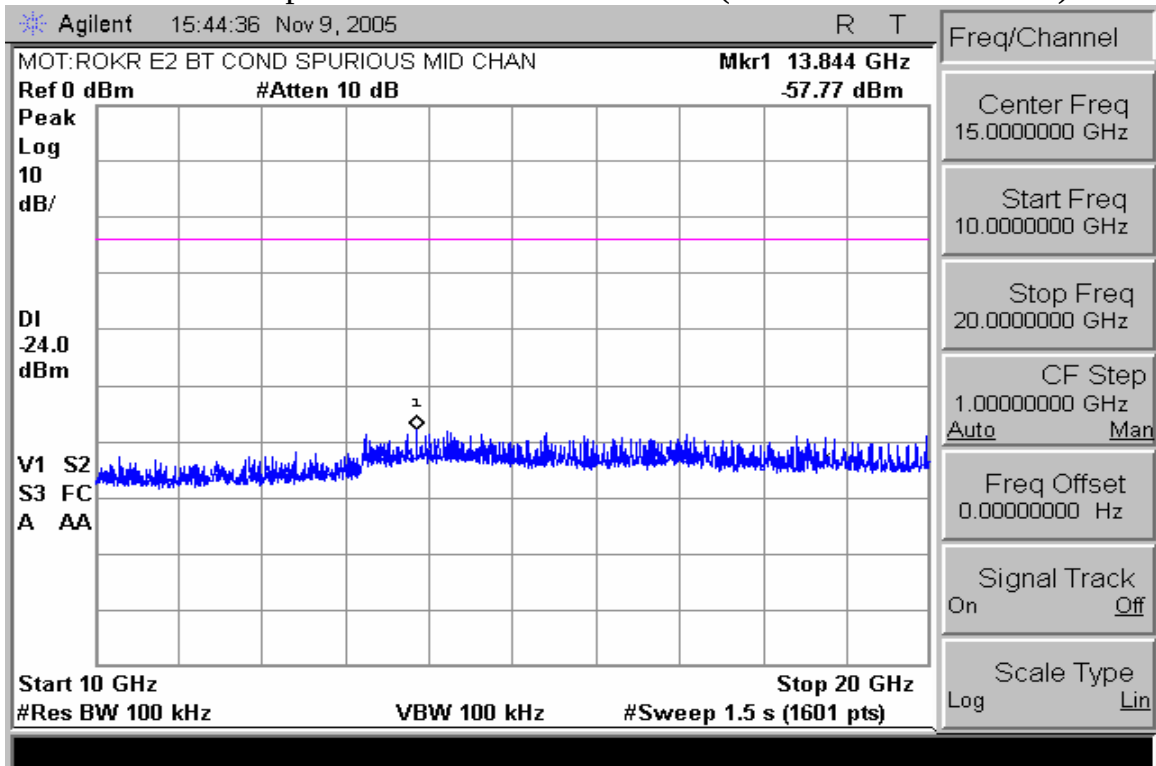
Conducted Spurious Emissions 20-26.5GHz (Low Channel Enabled)



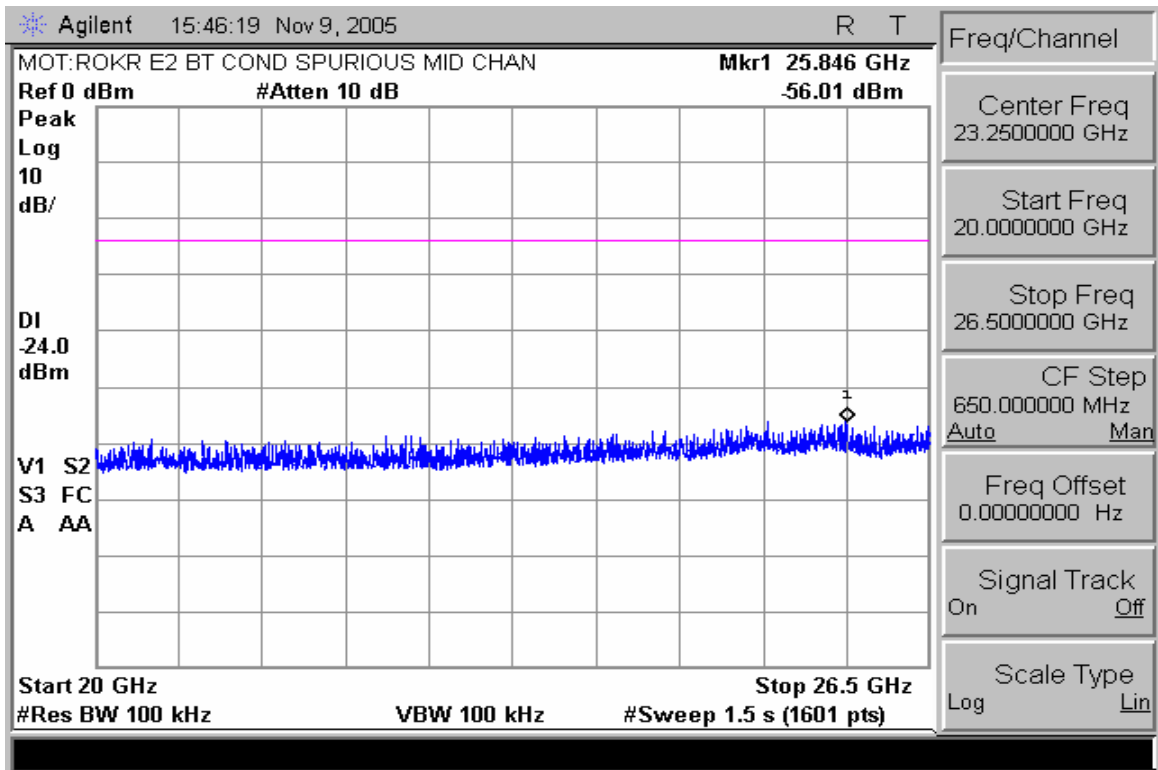
Conducted Spurious Emissions 30-3000MHz (Mid Channel Enabled)



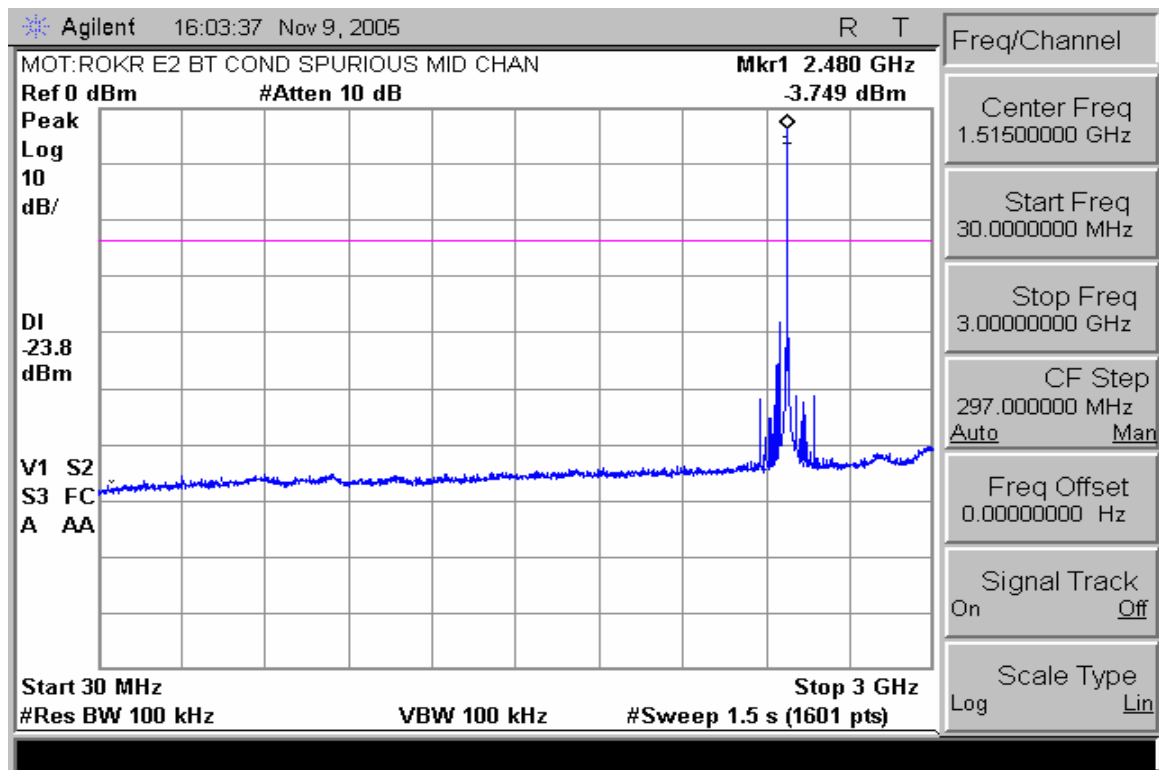
Conducted Spurious Emissions 2-10GHz (Mid Channel Enabled)



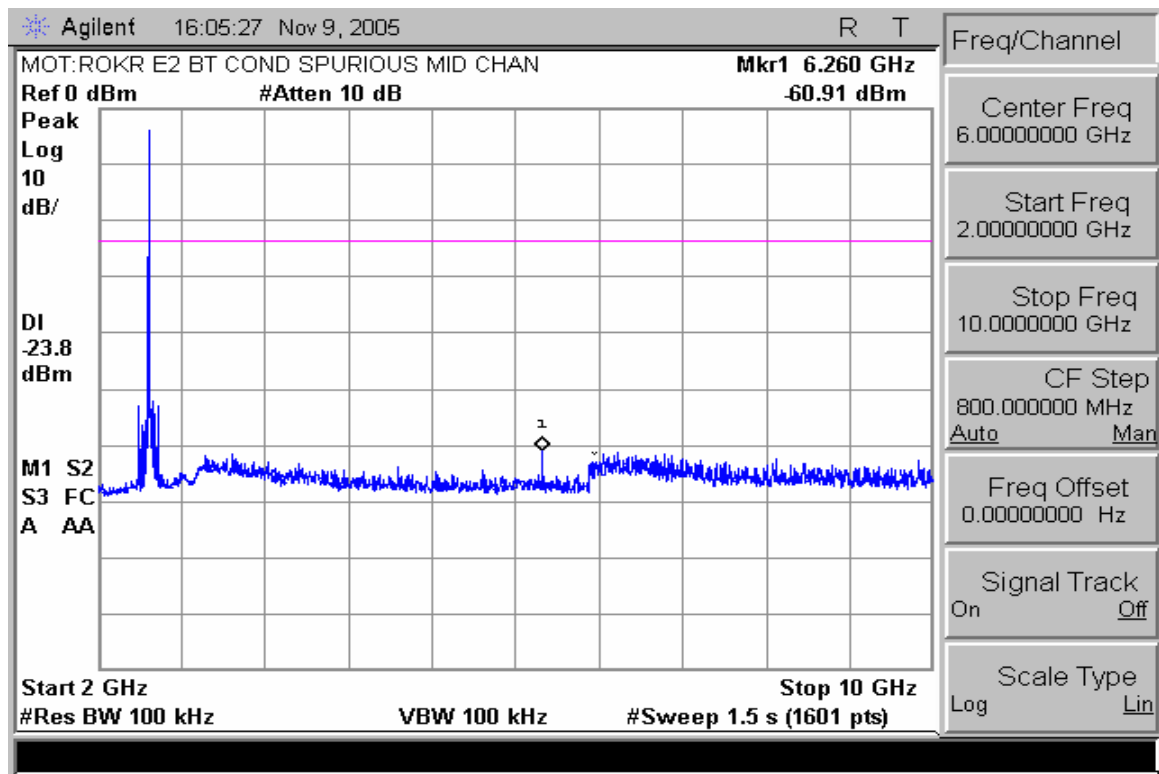
Conducted Spurious Emissions 10-20GHz (Mid Channel Enabled)



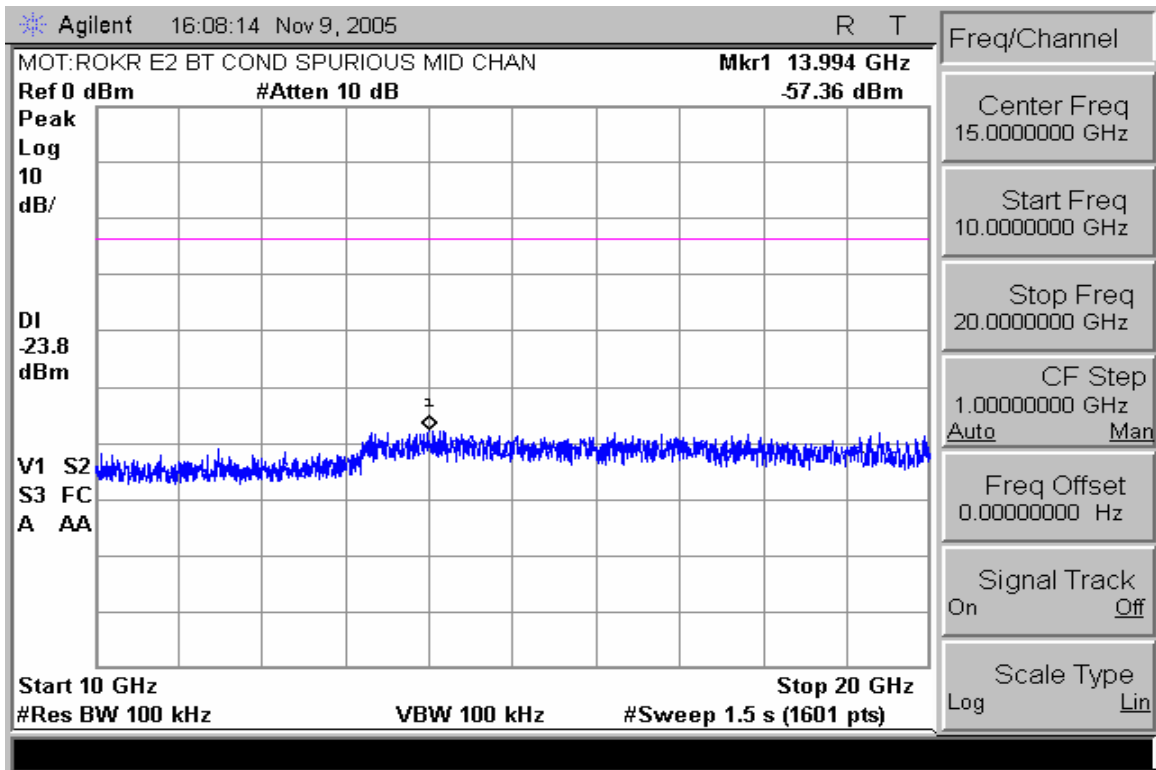
Conducted Spurious Emissions 20-26.5GHz (Mid Chan Enabled)



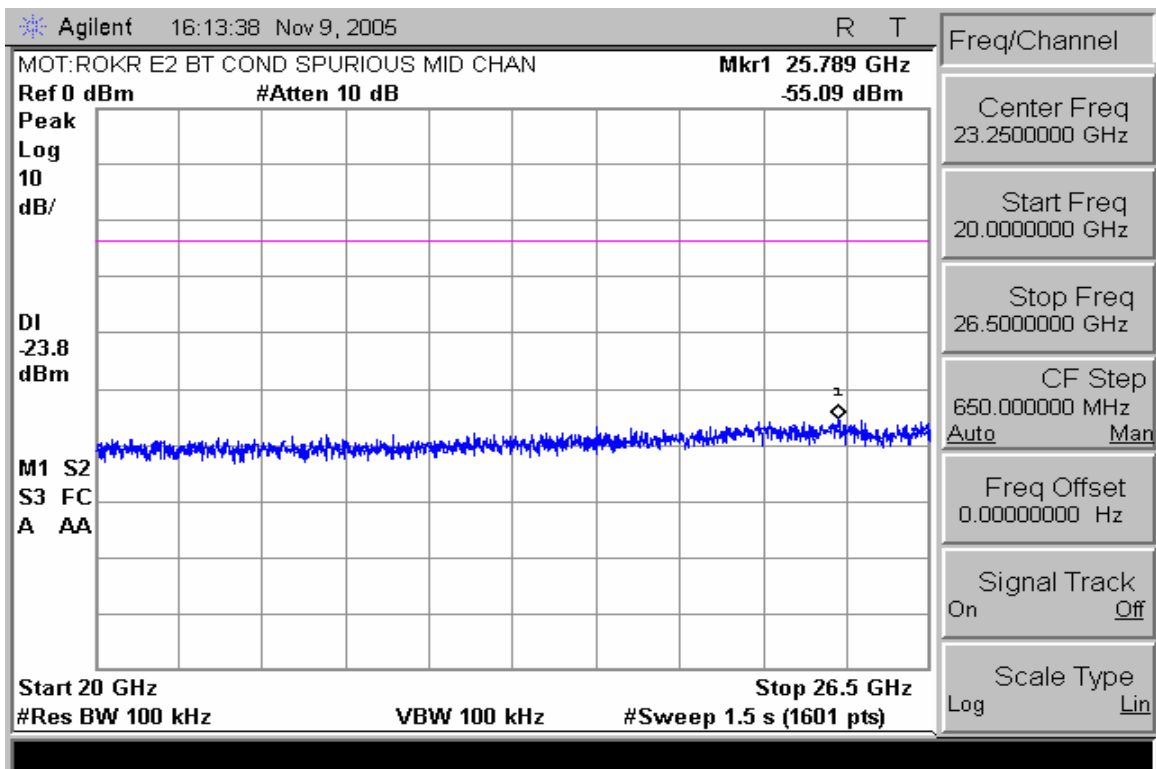
Conducted Spurious Emissions 30-3000MHz (High Channel Enabled)



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

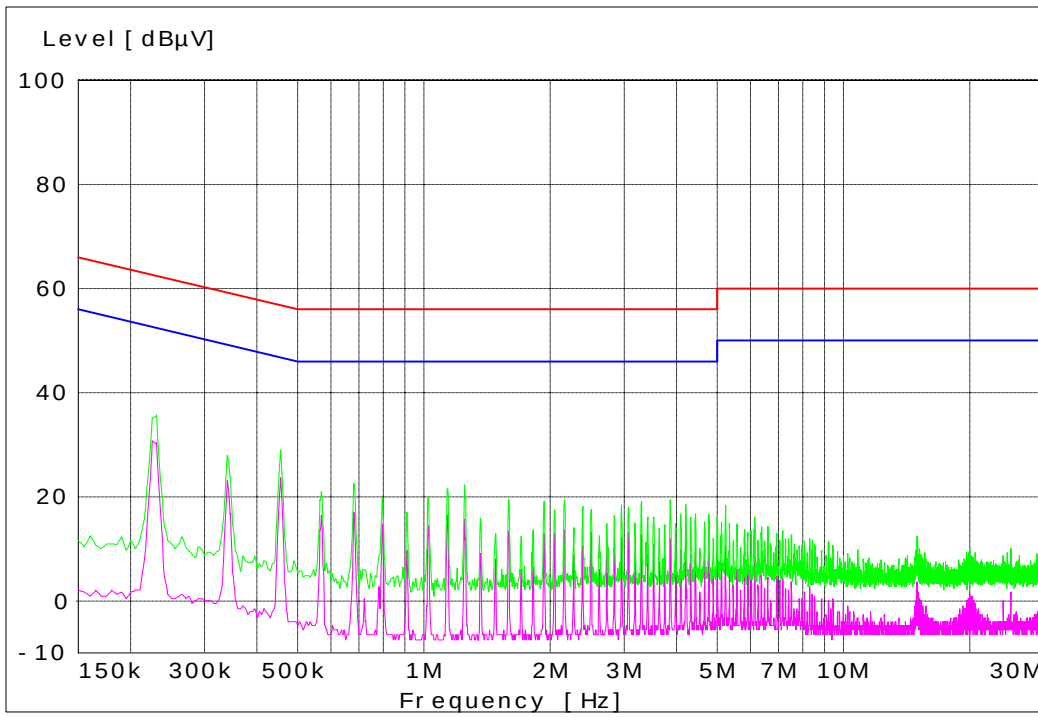
Measurement Procedure

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.

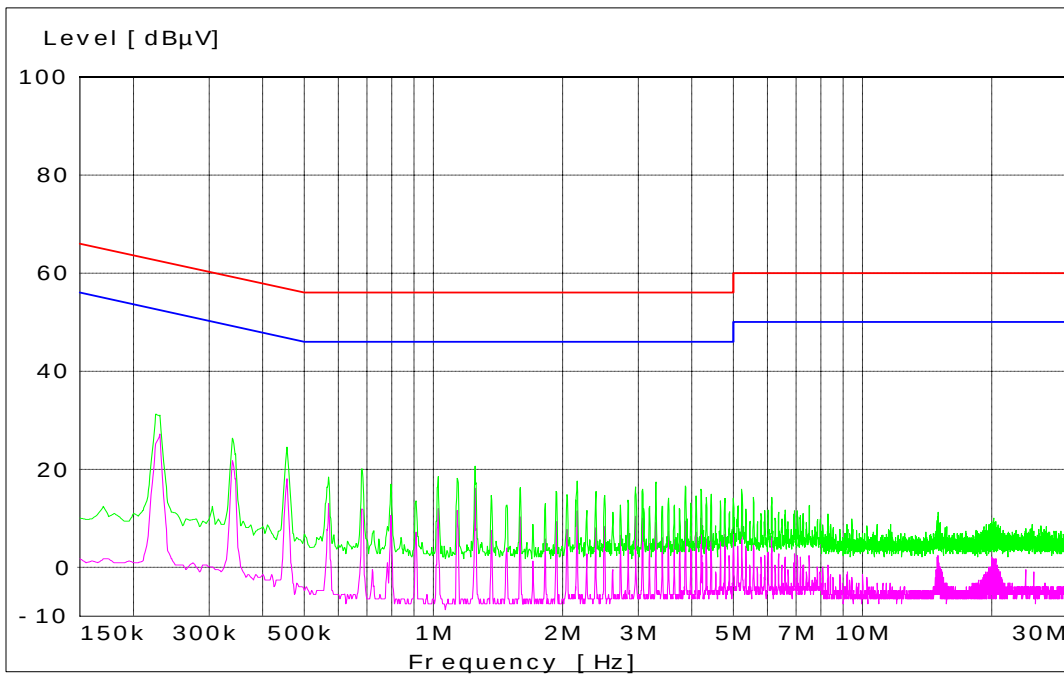
All radio-noise voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord or calibrated extension cord by the use of mating plugs and receptacles on the EUT and LISN. Equipment shall be tested with power cords that are normally supplied using 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

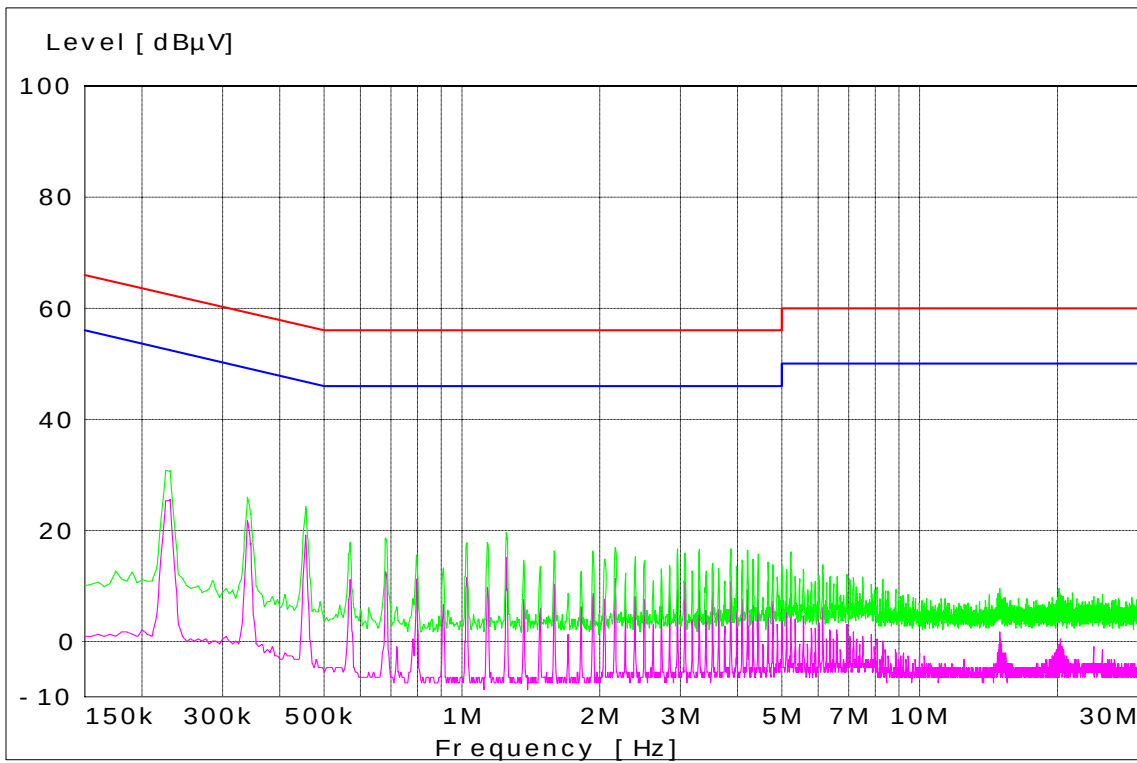
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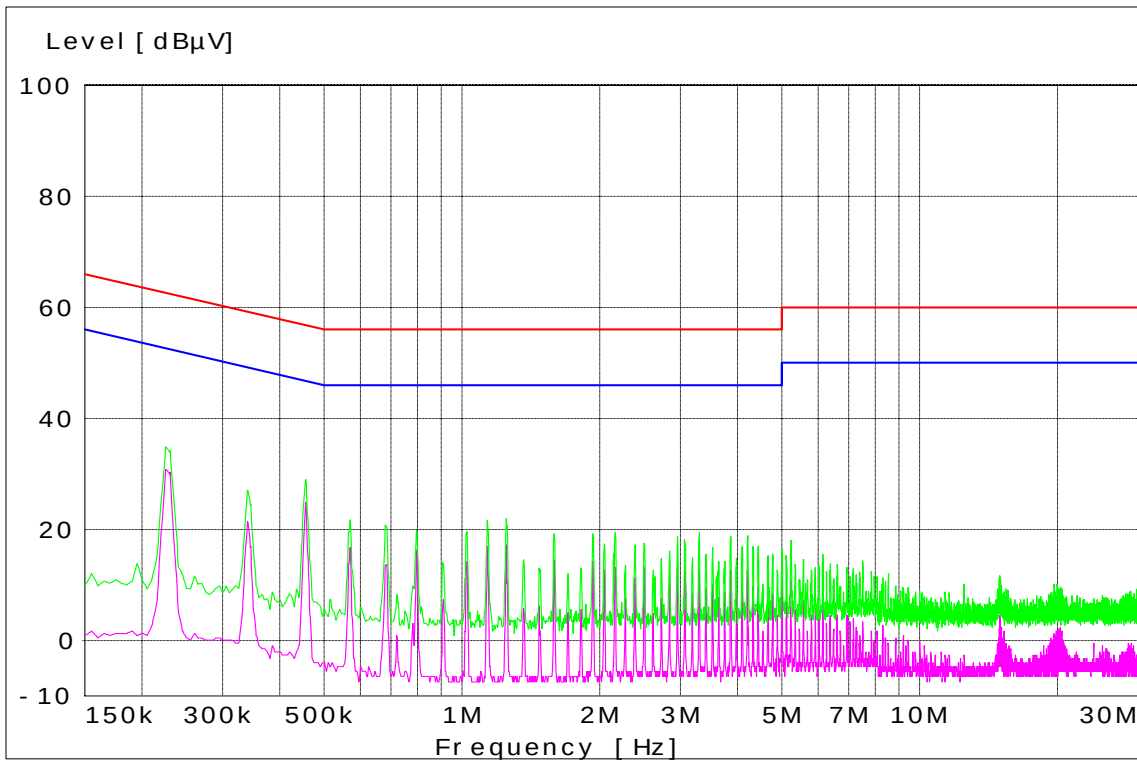
Bluetooth Channel 0 2402MHz - Tx Mode - Neutral Coupling Hopping



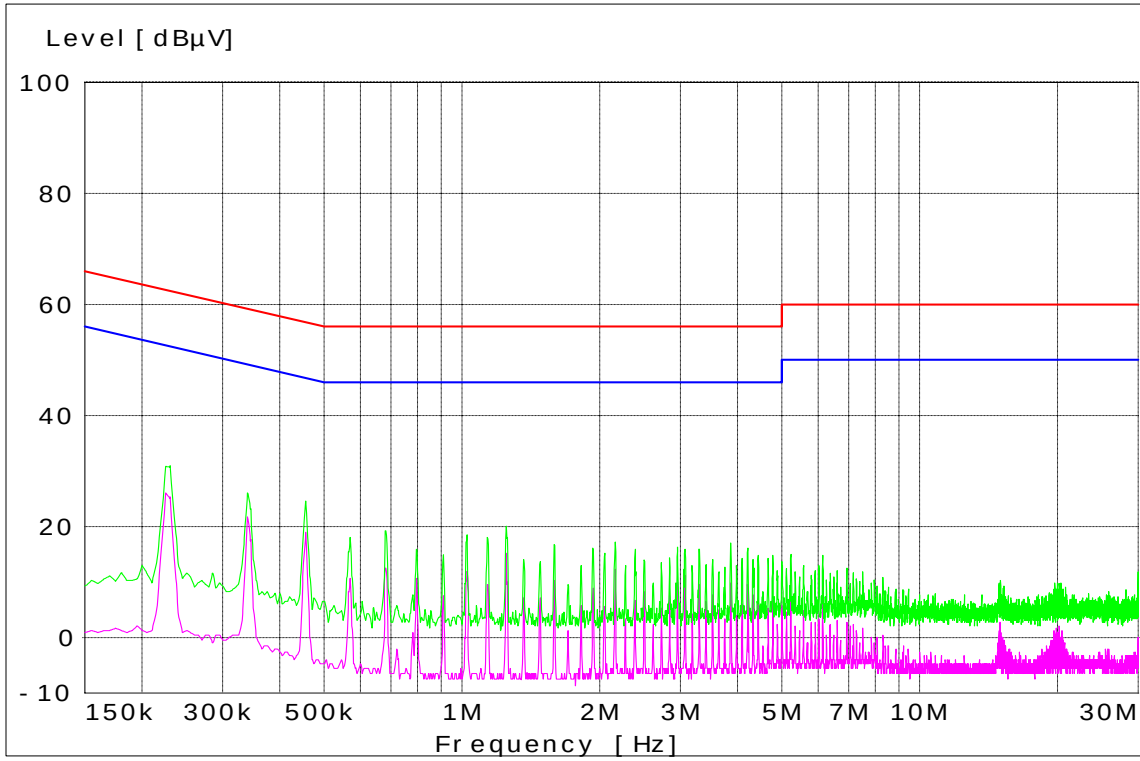
Bluetooth Channel 0 2402MHz - Tx Mode – Line Coupling Nonhopping



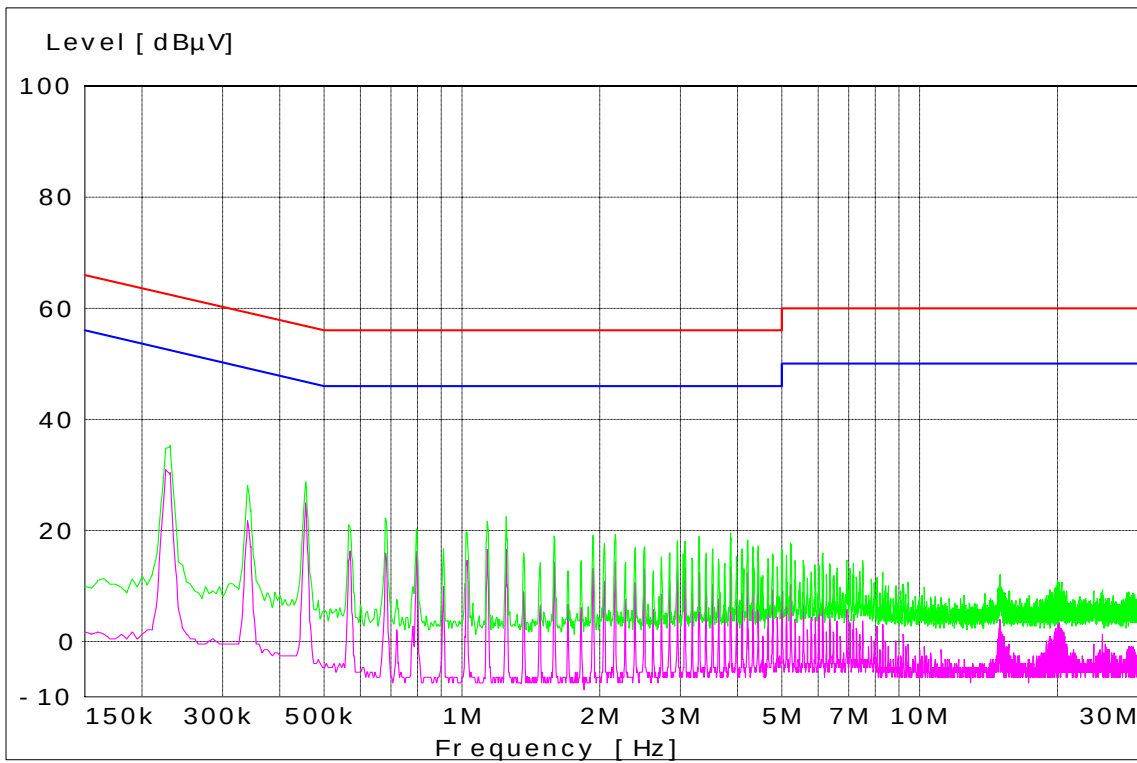
**Bluetooth Channel 39 2441MHz - Tx Mode - Line Coupling
Nonhopping**



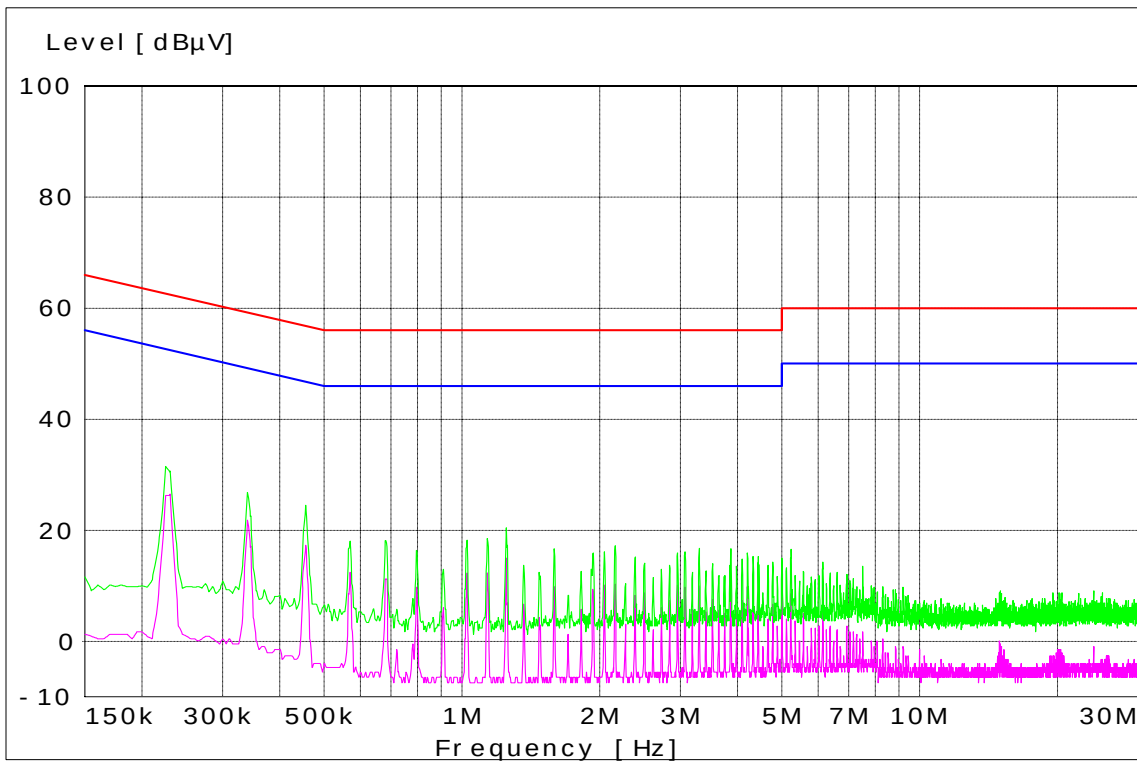
Bluetooth Channel 39 2441MHz - Tx Mode - Neutral Coupling Hopping



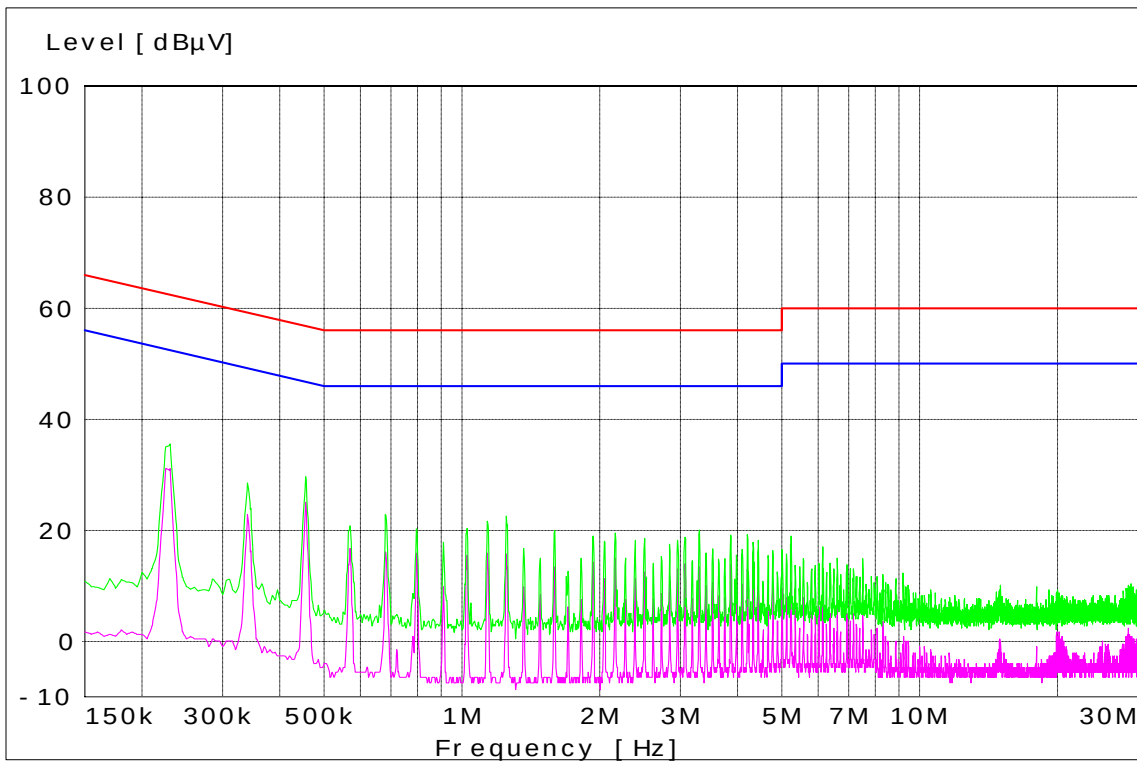
Bluetooth Channel 78 2480MHz - Tx Mode - Line Coupling Hopping



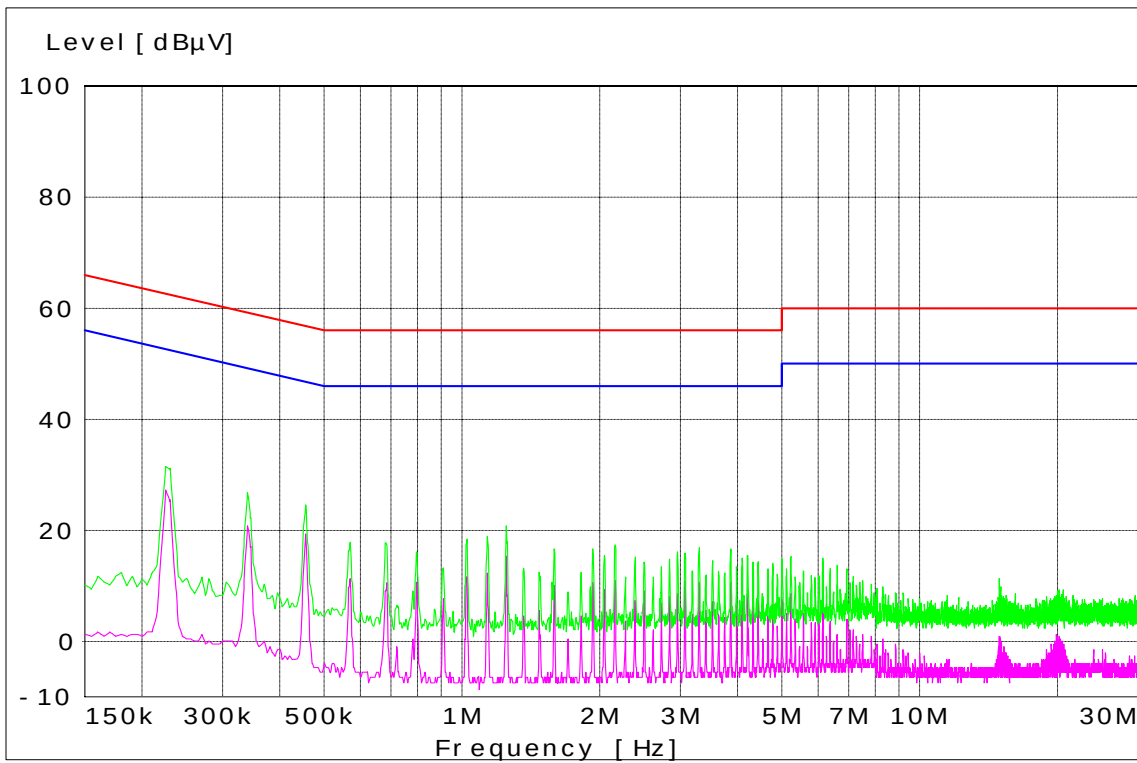
Bluetooth Channel 78 2480MHz - Tx Mode - Neutral Coupling Hopping



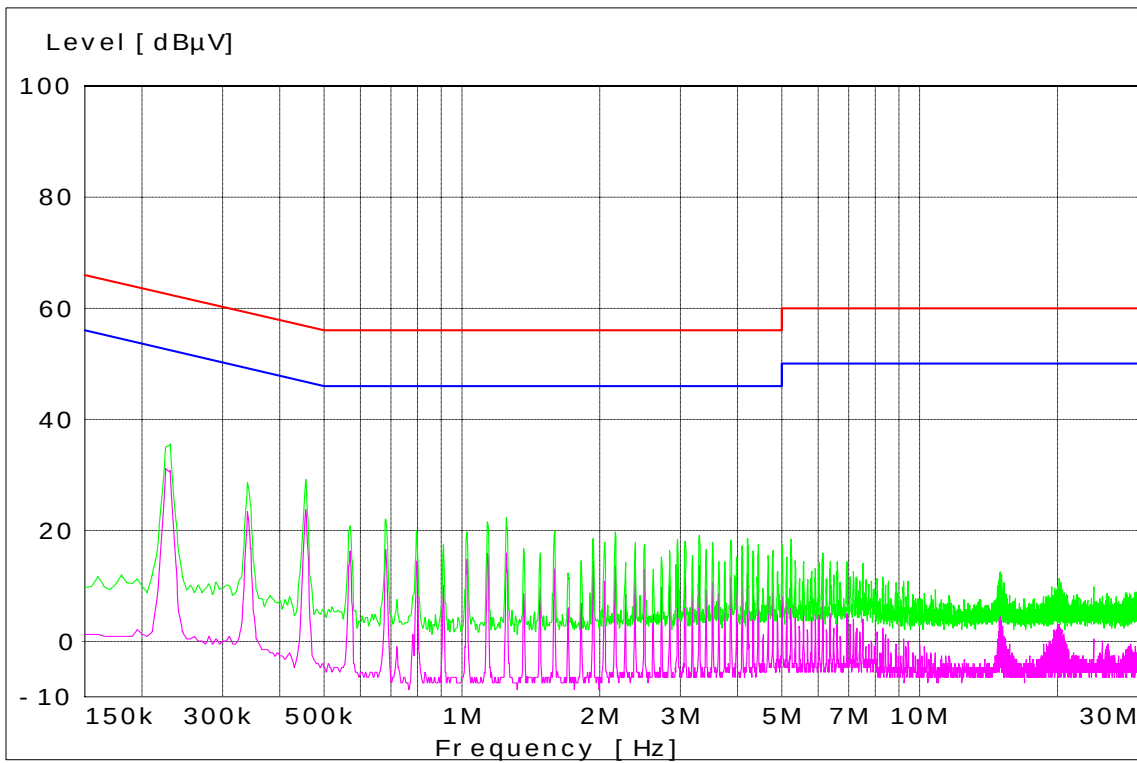
Bluetooth Channel 0 2402MHz - Tx Mode - Line Coupling Hopping



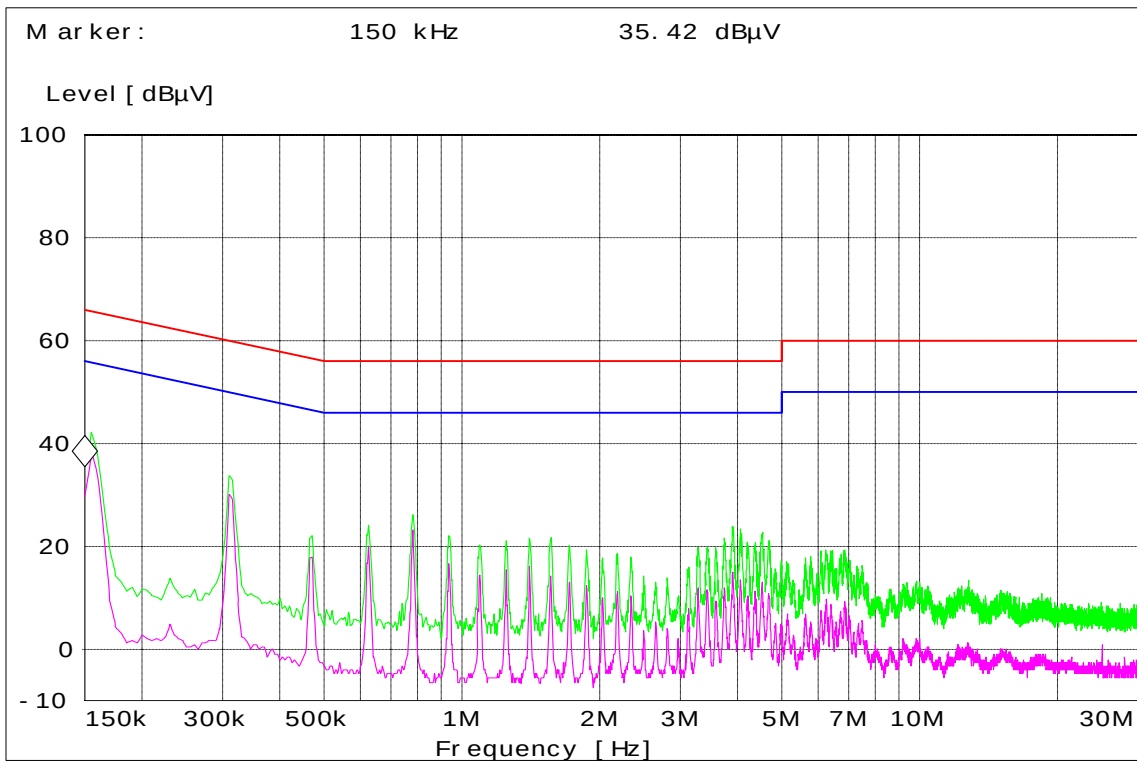
**Bluetooth Channel 0 2402MHz - Tx Mode - Neutral Coupling
Nonhopping**



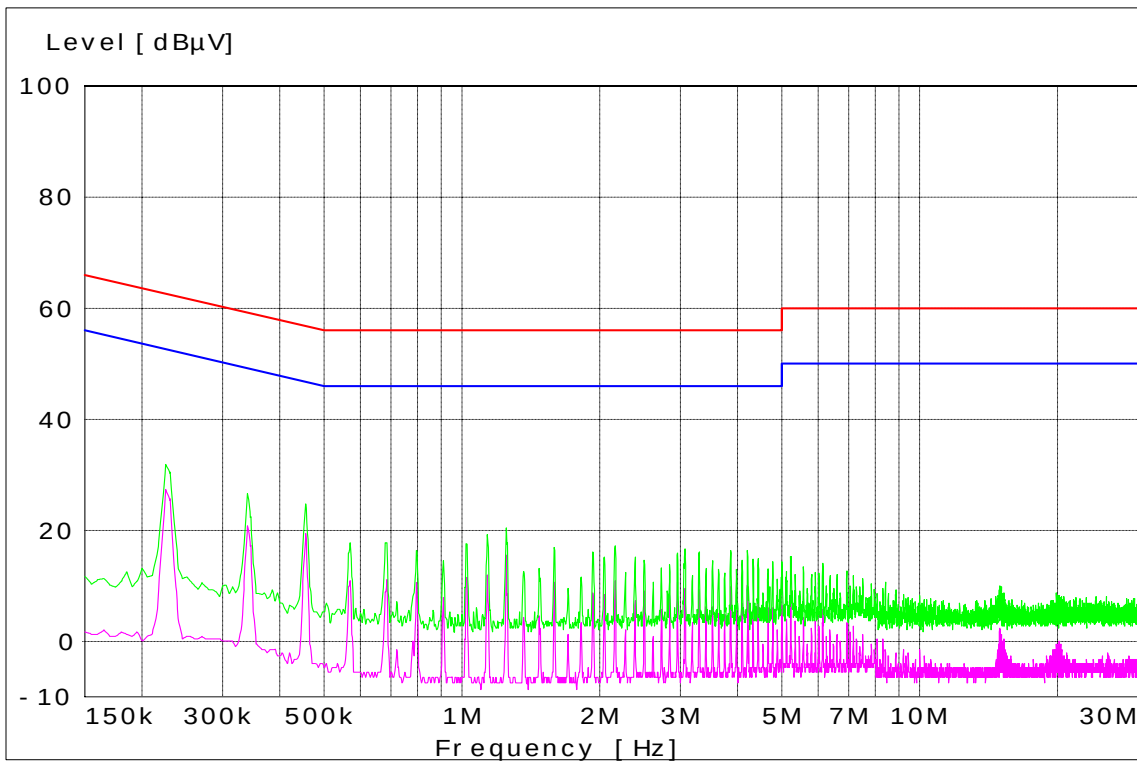
Bluetooth Channel 39 2441MHz - Tx Mode - Line Coupling Hopping



**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