



MOTOROLA

PERSONAL COMMUNICATIONS SECTOR

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT - Addendum

Test Report Number –16084 -1BT

Report Date – May 11, 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.

Signature: *Mark Sidlow*

Name: Mark Sidlow

Title: Senior Electrical Engineer

Date : 2005-11-05

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

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Test Report Details

Tests Performed By: Motorola Personal Communications Sector
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: Bartlomiej Mucha
(Tel) 847/664-1216
(Fax) 847/407-1216

Tests Requested By: Motorola Inc.
Personal Communications Sector
600 North US Hwy 45
Libertyville, IL 60048

Product Type: Cellular Phone

Signaling Capability: GSM 850, 1900, Bluetooth

Model Number: V560

Serial Numbers: TA13602621, TA13602621,
TA13602791, TA13602791

Testing Complete Date: May 2, 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	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	1.00MHz
2	Number of Hopping	79
3	Time of Occupancy (Dwell Time)	2.92ms
4	20 dB Bandwidth	1MHz
5	Spurious RF Conducted Emissions	See plots
6	Field Strength of Spurious Emissions	See plots
7	Max Power	16.17 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 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	5/17/2005
Hewlett-Packard	EMC Analyzer	8593EM	3536A00118	10/2/2005
Hewlett-Packard	EMC Analyzer	7405	US39440191	11/13/2005
Miteq	Preamplifier 0.1-26.5GHz	NSP2650-NF-S	966350	1/8/2006
ETS	DRG Horn Antenna	3115	6222	10/4/2005
ETS	Log-Periodic Antenna	3148	1189	7/15/2005
ETS	Biconical Antenna	3110B	3370	11/14/2005
Attenuator	Weinschel	AS-6	6675	10/14/2005
Attenuator	Weinschel	AS-6	6677	11/4/2005
Rohde & Schwarz	Mobile Test Set	CMD 80	DE29008	N/A
Hewlett-Packard	Signal Generator	83623B	3844A01195	6/20/2005
Thermon	Environmental Chamber	S-4	31580	1/18/2006
Giga-Tronics	Power Meter	8651A	8650508	12/27/2005
Hewlett-Packard	Pre-Amplifier	8447F	2805A03419	5/19/2005

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	7/10/2005
EMCO	Horn Antenna 18-26.5GHz	3160-09	9904-1165	N/A*
Chase	Bi-Con Antenna 30-300MHz	VBA6106A	1246	6/23/2005
Chase	Log-Periodic Antenna	UPA6108	1120	6/23/2005

All equipment is on a one-year calibration cycle.

Description of Bluetooth Transmitter

The V560 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, and the antenna gain is -3dBi.

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. Therefore conducted AC line emissions testing as described in CFR47, Part 15.207 was not necessary.

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.

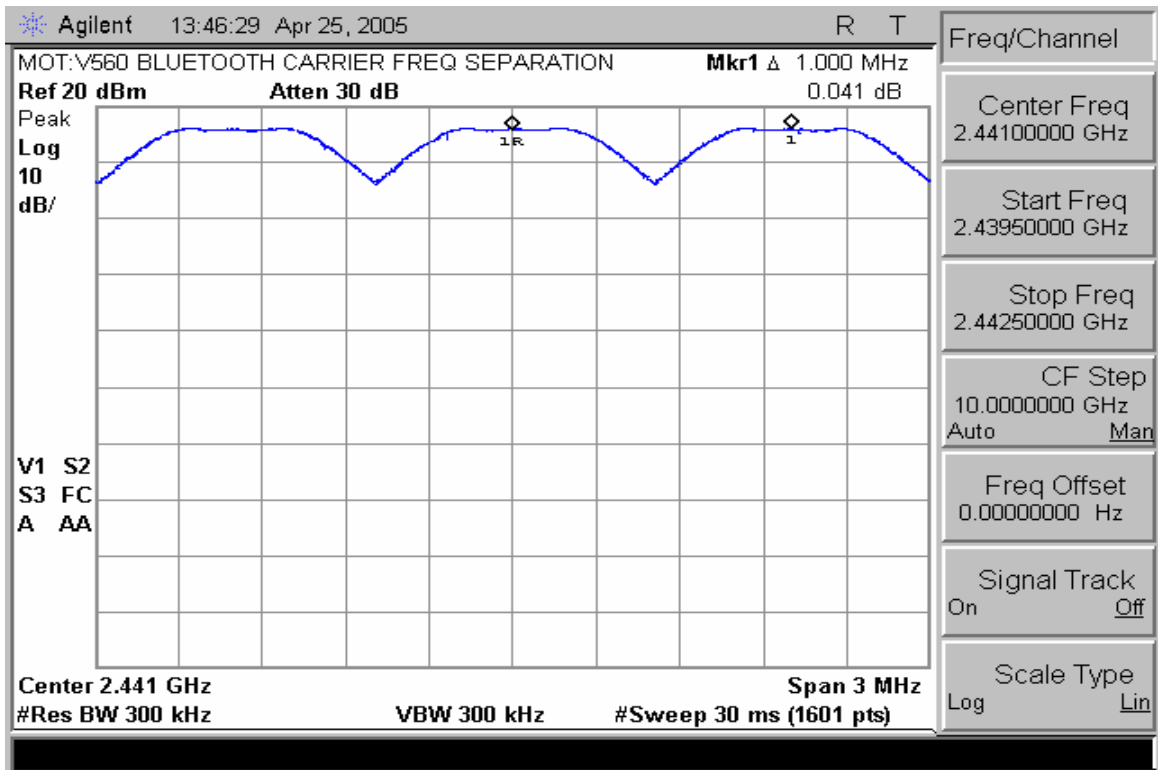
The Bluetooth transmitter of the V560 had its hopping function enabled. The following spectrum analyzer settings were used:

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.

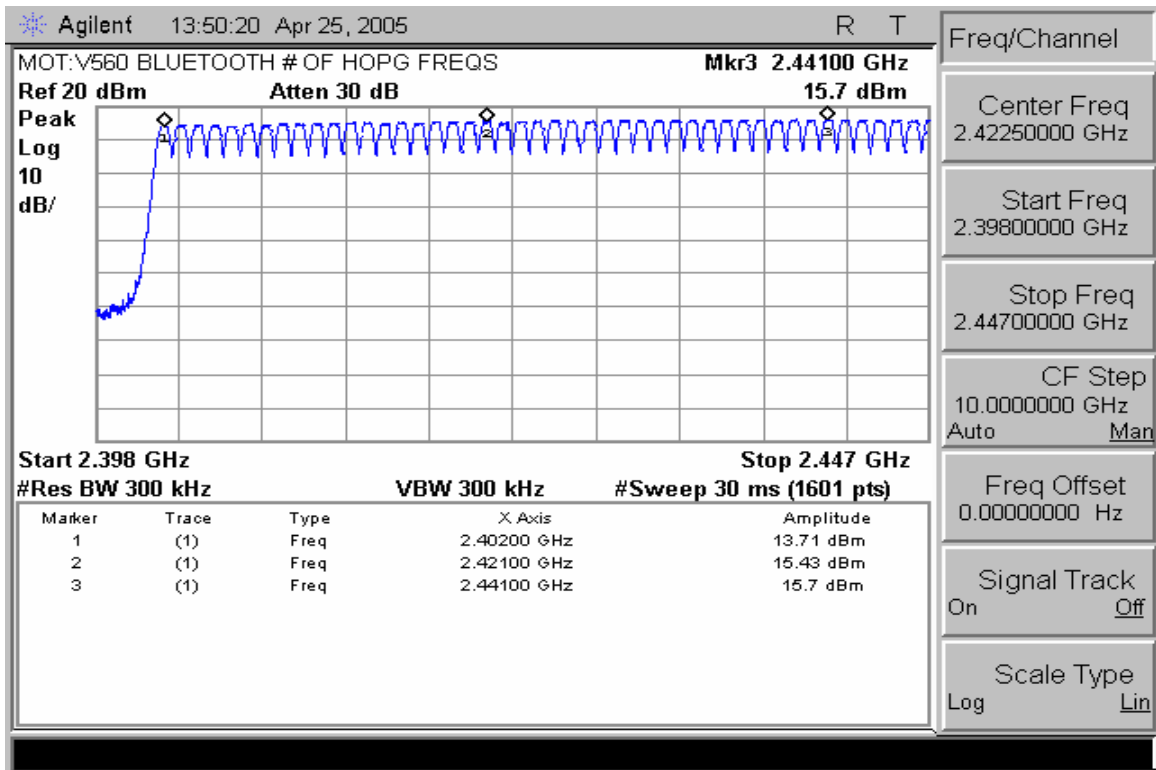
The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

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

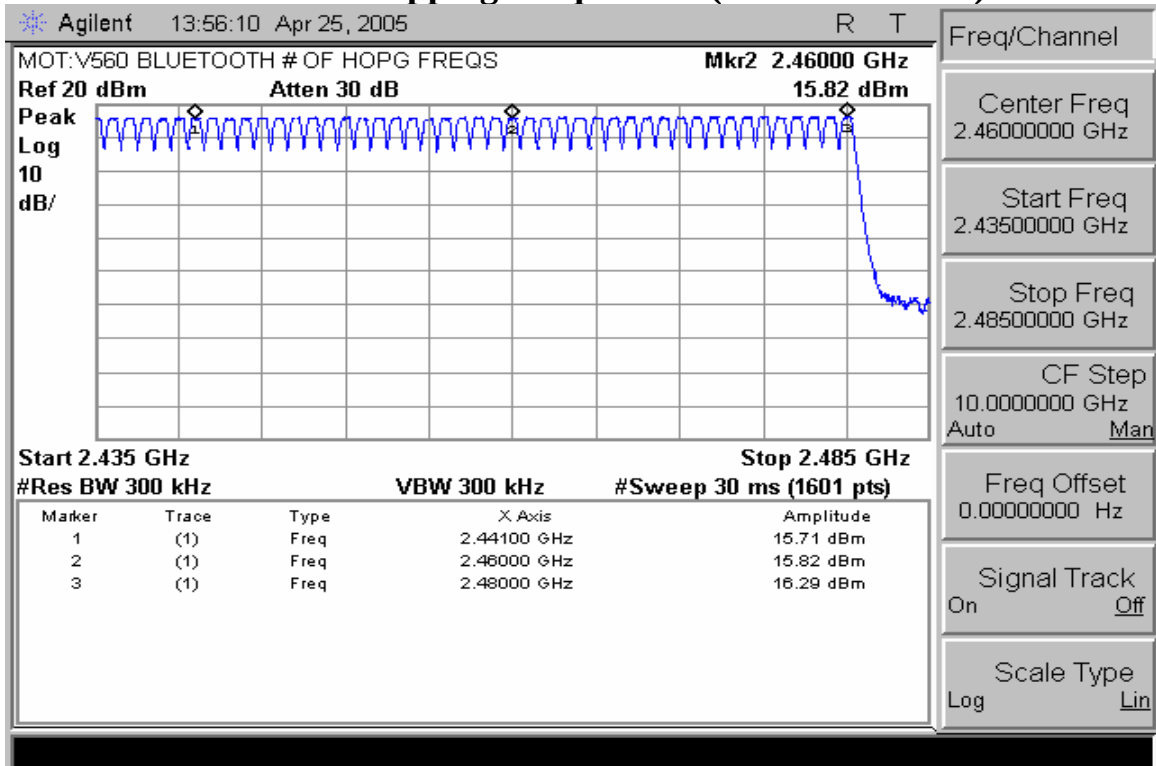
The trace was allowed to stabilize.

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.

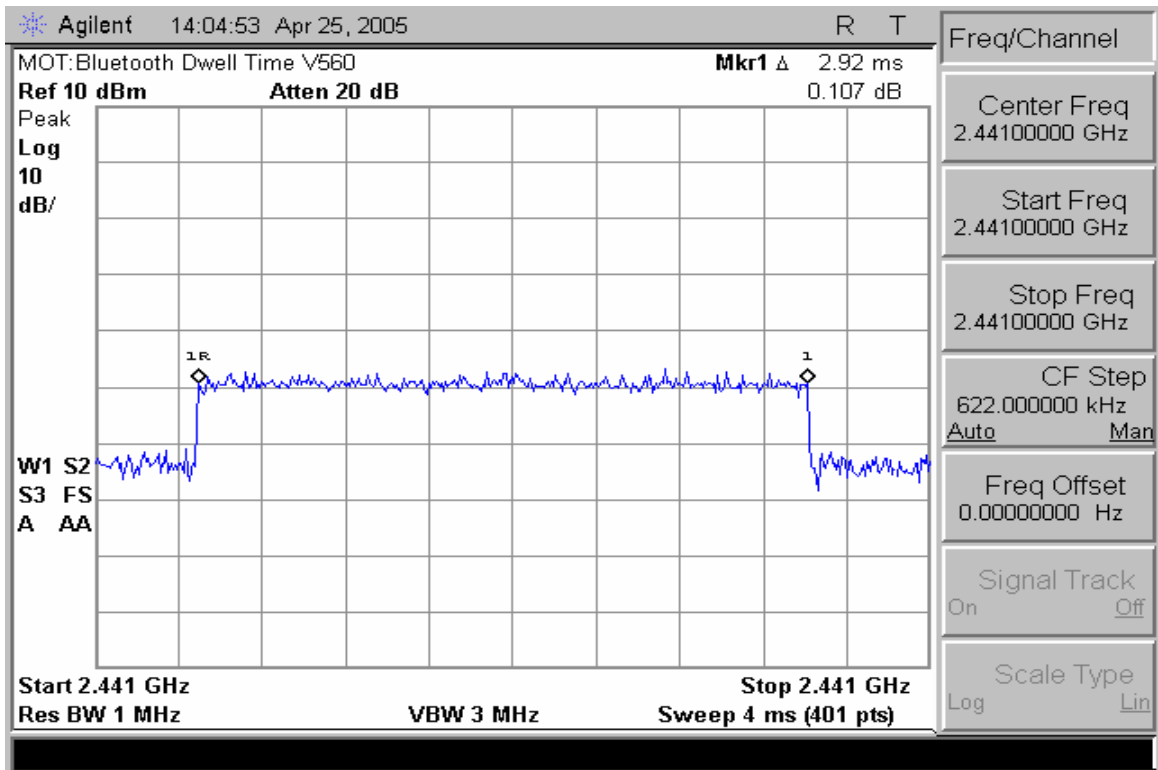
The Bluetooth hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

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.

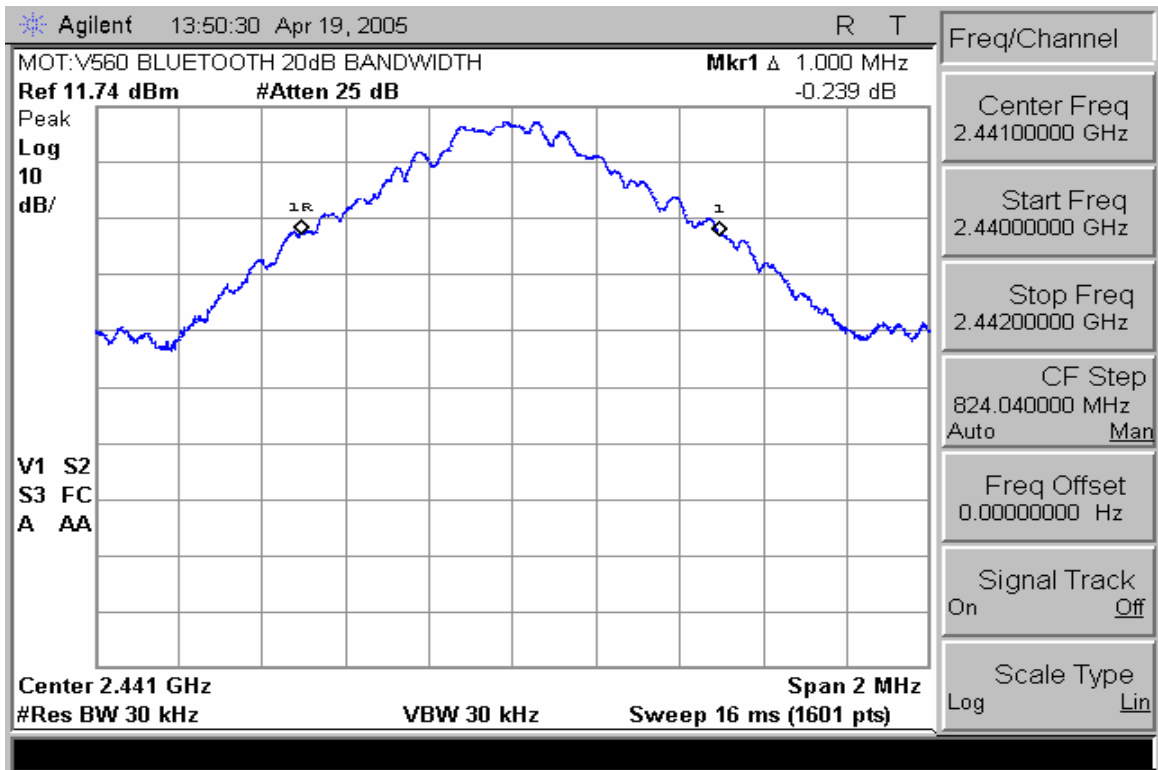
The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

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



20 dB 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.

The Equipment-Under-Test is then replaced with a substitution antenna fed by a signal generator. With the signal generator tuned to a particular spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters to obtain a maximum reading at the spectrum analyzer. The output of the signal generator is then adjusted until a reading identical to that obtained with the actual transmitter is achieved.

The power in dBm of each spurious emission is calculated by correcting the signal generator level for cable loss and gain of the substitution antenna referenced to a dipole.

The field strength of each radiated emission is calculated by correcting the EMI receiver level for cable loss, amplifier gain, and antenna correction factors.

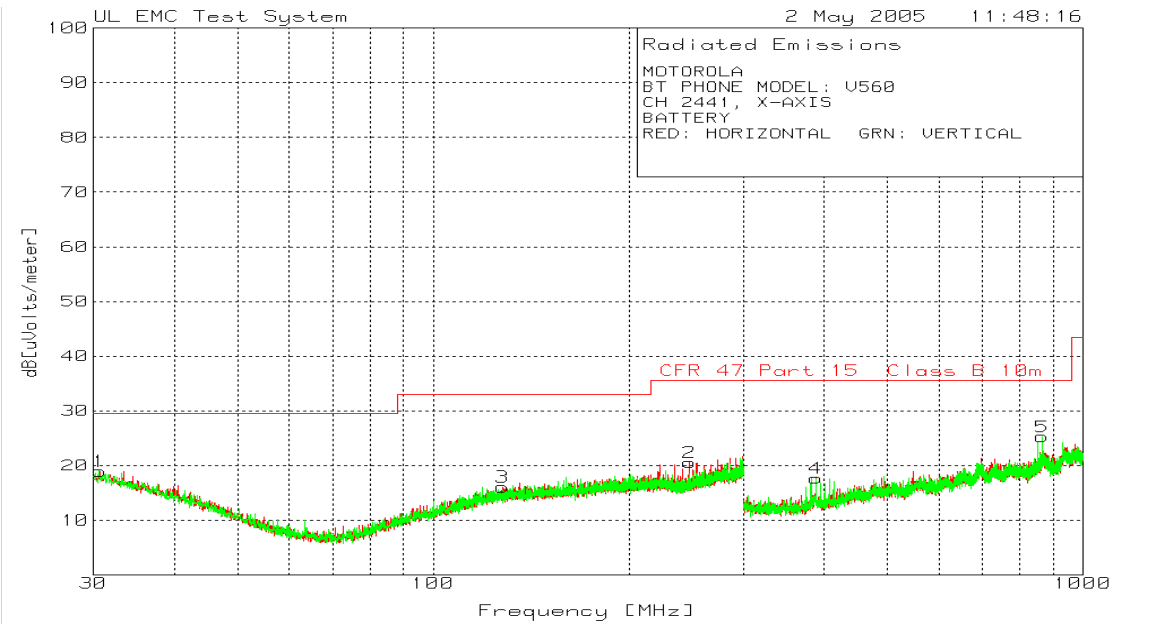
Field Strength (dBuV/m) = EMI Receiver Level (dBuV) + Cable Loss (dB) -
Amplifier Gain (dB) + Antenna Correction Factor (1/m)

A fully charged battery was used for the supply voltage.

This data was taken at Underwriter's Laboratories.

Measurement Results

Attached



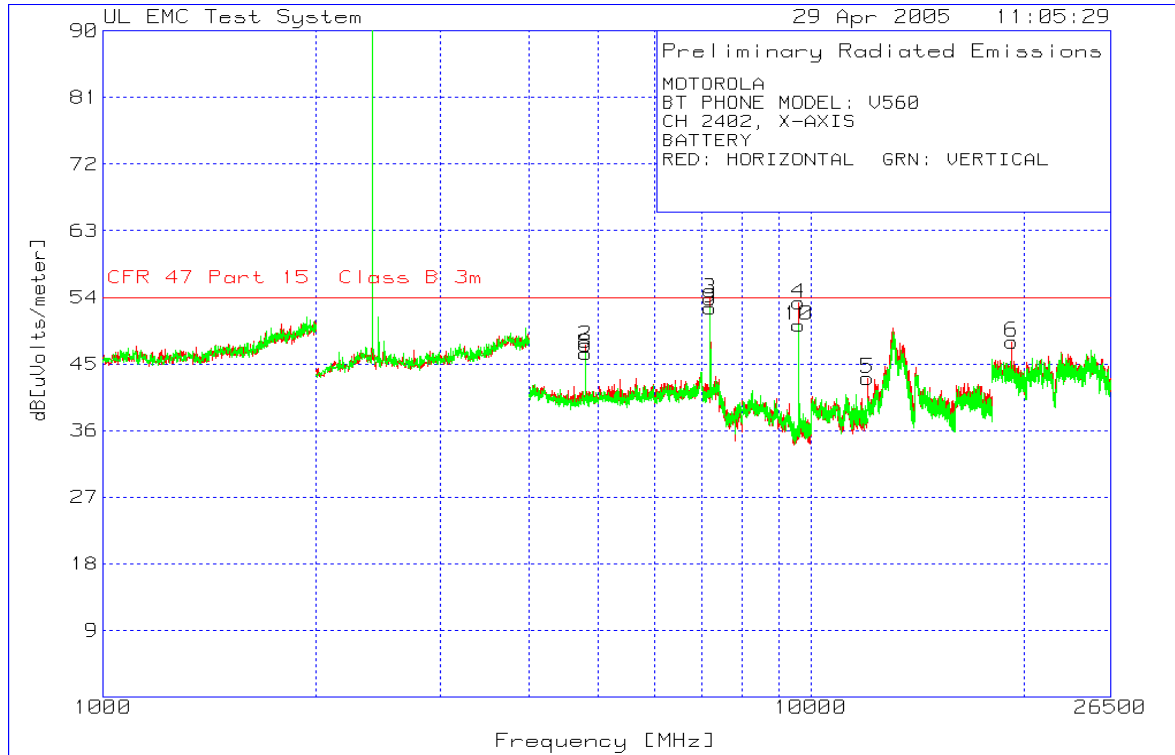
30 -1000MHz Low Channel Dual Polarization

MOTOROLA
 BT PHONE MODEL: V560
 CH 2441, X-AXIS
 BATTERY
 RED: HORIZONTAL GRN: VERTICAL

Test No.	Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level	Limit:1	2	3	4	5	6
1	30.6745	31.9 pk	-30.4	17.5	19	29.6	-	-	-	-	-
	Azimuth:158	Height:300	Horz	Margin [dB]		-10.6	-	-	-	-	-
2	248.0302	34.2 pk	-29.6	16	20.6	35.6	-	-	-	-	-
	Azimuth:132	Height:100	Horz	Margin [dB]		-15	-	-	-	-	-
3	127.8691	32.1 pk	-30.1	14.1	16.1	33.1	-	-	-	-	-
	Azimuth:18	Height:300	Horz	Margin [dB]		-17	-	-	-	-	-
4	387.7841	34.3 pk	-32.2	15.6	17.7	35.6	-	-	-	-	-
	Azimuth:152	Height:100	Horz	Margin [dB]		-17.9	-	-	-	-	-
5	864.1267	33.6 pk	-31.5	23.2	25.3	35.6	-	-	-	-	-
	Azimuth:315	Height:100	Vert	Margin [dB]		-10.3	-	-	-	-	-

LIMIT 1: CFR 47 Part 15 Class B 10m

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector



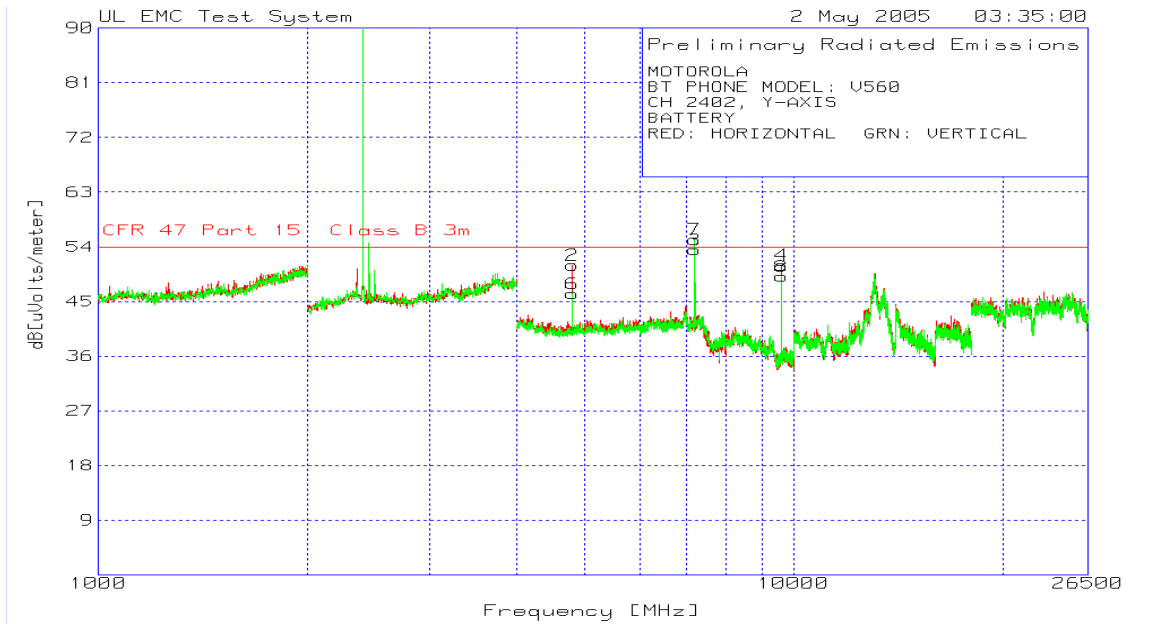
1-26.5GHz Low Channel X-Orientation

MOTOROLA
BT PHONE MODEL: V560
CH 2402, X-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1 [dB]	Height [cm]	Polarity
1	2400.802	77.08	pk	4.4	21.8	103.28	54	49.28	100	Horz
2	4804.805	70.45	pk	-50.6	27.7	47.55	54	-6.45	100	Horz
3	7207.207	70.94	pk	-46.9	29.8	53.84	54	-.16	100	Horz
4	9605.606	65.97	pk	-49.1	36.4	53.27	54	-.73	149	Horz
5	12008.005	49.11	pk	-45.4	39.4	43.11	54	-10.89	149	Horz
6	19216.108	76.2	pk	-68.5	40.3	48	54	-6	100	Horz
7	2400.802	77.19	pk	4.4	21.8	103.39	54	49.39	100	Vert
8	4804.805	69.33	pk	-50.6	27.7	46.43	54	-7.57	149	Vert
9	7207.207	69.62	pk	-46.9	29.8	52.52	54	-1.48	100	Vert
10	9609.61	62.83	pk	-49	36.4	50.23	54	-3.77	150	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector



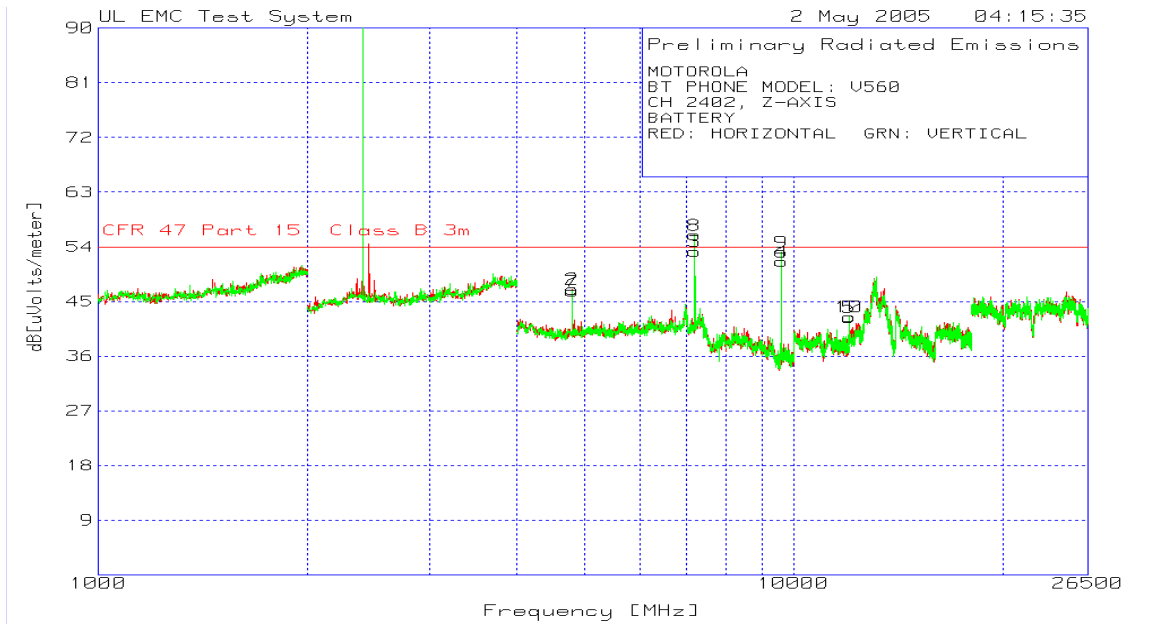
1-26.5GHz Low Channel Y-Orientation

MOTOROLA
BT PHONE MODEL: V560
CH 2402, Y-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1 [dB]	Height [cm]	Polarity
1	2400.802	78.68	pk	4.4	21.8	104.88	54	50.88	100	Horz
2	4804.805	73.91	pk	-50.6	27.7	51.01	54	-2.99	100	Horz
3	7207.207	70.58	pk	-46.9	29.8	53.48	54	-.52	100	Horz
4	9609.61	63.59	pk	-49	36.4	50.99	54	-3.01	150	Horz
5	2400.802	81.7	pk	4.4	21.8	107.9	54	53.9	149	Vert
6	4804.805	69.17	pk	-50.6	27.7	46.27	54	-7.73	100	Vert
7	7207.207	72.3	pk	-46.9	29.8	55.2	54	1.2	100	Vert
8	9605.606	61.82	pk	-49.1	36.4	49.12	54	-4.88	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector



1-26.5GHz Low Channel Z-Orientation

MOTOROLA
BT PHONE MODEL: V560
CH 2402, Z-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
1	2400.802	81.97	pk	4.4	21.8	108.17	54	54.17	100	Horz
2	4804.805	69.93	pk	-50.6	27.7	47.03	54	-6.97	100	Horz
3	7207.207	70.33	pk	-46.9	29.8	53.23	54	-.77	100	Horz
4	9609.61	64.19	pk	-49	36.4	51.59	54	-2.41	150	Horz
5	12008.005	48.4	pk	-45.4	39.4	42.4	54	-11.6	150	Horz
6	2400.802	71.22	pk	4.4	21.8	97.42	54	43.42	150	Vert
7	4804.805	69.57	pk	-50.6	27.7	46.67	54	-7.33	100	Vert
8	7207.207	73.02	pk	-46.9	29.8	55.92	54	1.92	100	Vert
9	9609.61	65.73	pk	-49	36.4	53.13	54	-.87	100	Vert
10	12008.005	48.48	pk	-45.4	39.4	42.48	54	-11.52	150	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

LIMIT 6: NONE

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector

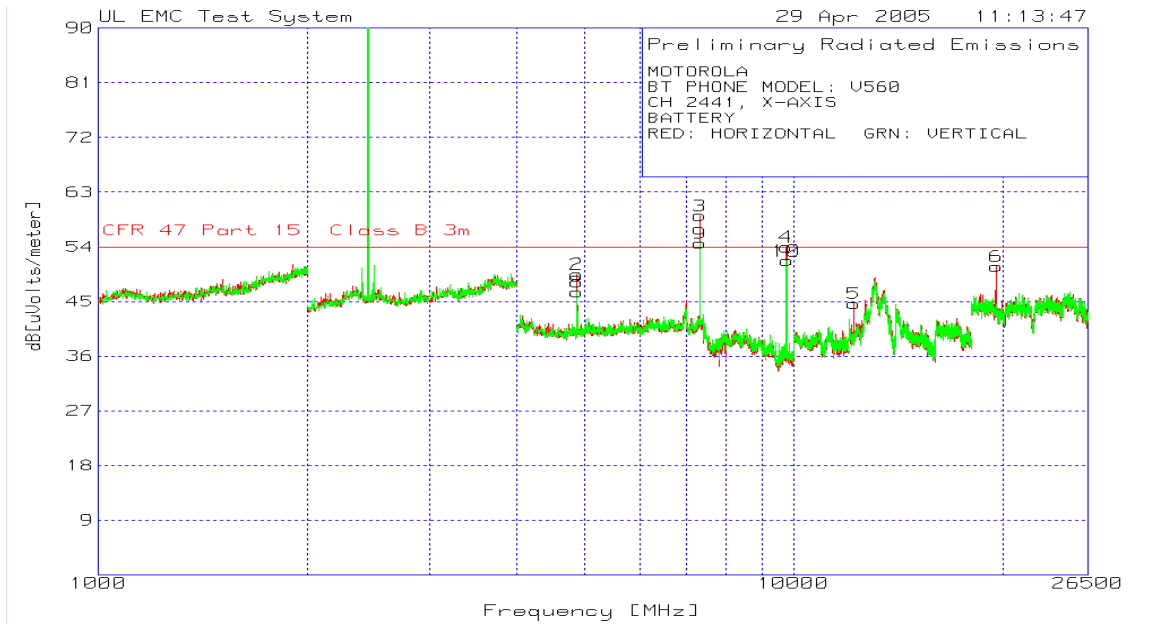
Final Measurements

MOTOROLA
 BT PHONE MODEL: V560
 CH 2480, Z-AXIS
 BATTERY
 RED: HORIZONTAL GRN: VERTICAL

Test Frequency [MHz]	Measured Axis	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Azimuth [deg]	Height [cm]	Polarity
4804.023	Y	74.57	pk	-50.6	27.7	51.67	74	-22.33	102	100	Horz
4804.023	Y	60.57	av	-50.6	27.7	37.67	54	-16.33	102	100	Horz
4804.023	Z	71.07	pk	-50.6	27.7	48.17	74	-25.83	296	100	Vert
4804.023	Z	57.2	av	-50.6	27.7	34.3	54	-19.7	296	100	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector



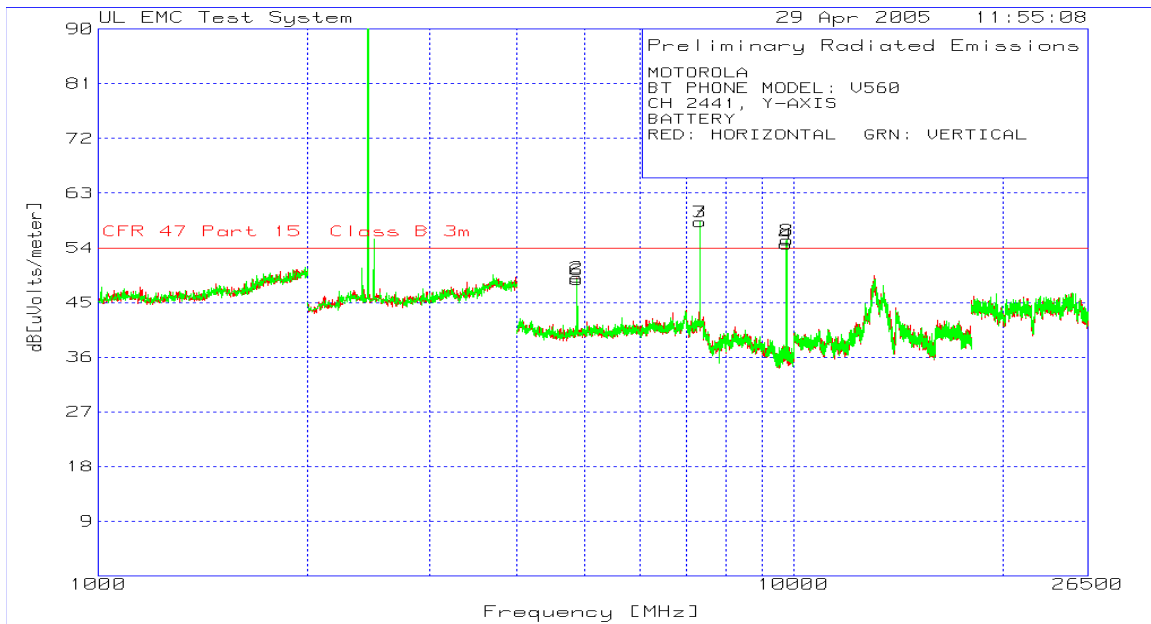
1-26.5GHz Mid-Channel X-Orientation

MOTOROLA
BT PHONE MODEL: V560
CH 2441, X-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
1	2440.882	79.17	pk	4.2	21.9	105.27	54	51.27	100	Horz
2	4880.881	72.3	pk	-50.5	27.7	49.5	54	-4.5	100	Horz
3	7323.323	74.82	pk	-46.3	30.6	59.12	54	5.12	100	Horz
4	9761.762	66.96	pk	-49.4	36.4	53.96	54	-.04	150	Horz
5	12204.136	51.53	pk	-46.3	39.4	44.63	54	-9.37	100	Horz
6	19526.513	79.66	pk	-69.2	40.3	50.76	54	-3.24	100	Horz
7	2440.882	80.59	pk	4.2	21.9	106.69	54	52.69	100	Vert
8	4880.881	69.35	pk	-50.5	27.7	46.55	54	-7.45	149	Vert
9	7323.323	70.26	pk	-46.3	30.6	54.56	54	.56	100	Vert
10	9765.766	64.8	pk	-49.5	36.4	51.7	54	-2.3	149	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector

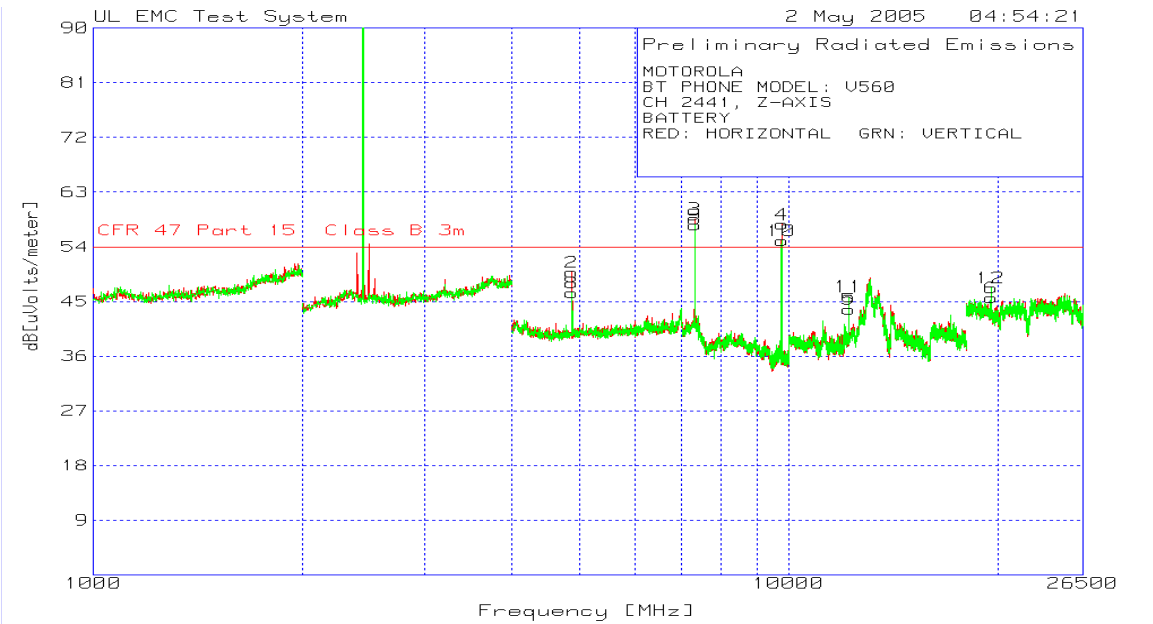


MOTOROLA
BT PHONE MODEL: V560
CH 2441, Y-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
1	2440.882	84.62	pk	4.2	21.9	110.72	54	56.72	150	Horz
2	4880.881	71.91	pk	-50.5	27.7	49.11	54	-4.89	100	Horz
3	7323.323	73.98	pk	-46.3	30.6	58.28	54	4.28	100	Horz
4	9761.762	67.57	pk	-49.4	36.4	54.57	54	.57	149	Horz
5	2440.882	81.8	pk	4.2	21.9	107.9	54	53.9	149	Vert
6	4880.881	71.54	pk	-50.5	27.7	48.74	54	-5.26	100	Vert
7	7323.323	73.95	pk	-46.3	30.6	58.25	54	4.25	100	Vert
8	9765.766	68.38	pk	-49.5	36.4	55.28	54	1.28	149	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector



1-26.5 GHz Mid-Channel Z-Orientation

MOTOROLA
 BT PHONE MODEL: V560
 CH 2441, Z-AXIS
 BATTERY
 RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
1	2440.882	85.7	pk	4.2	21.9	111.8	54	57.8	100	Horz
2	4880.881	72.6	pk	-50.5	27.7	49.8	54	-4.2	100	Horz
3	7323.323	74.3	pk	-46.3	30.6	58.6	54	4.6	100	Horz
4	9765.766	70.79	pk	-49.5	36.4	57.69	54	3.69	149	Horz
5	12204.136	50.6	pk	-46.3	39.4	43.7	54	-10.3	149	Horz
6	19526.513	74.5	pk	-69.2	40.3	45.6	54	-8.4	100	Horz
7	2440.882	75.98	pk	4.2	21.9	102.08	54	48.08	150	Vert
8	4880.881	69.24	pk	-50.5	27.7	46.44	54	-7.56	150	Vert
9	7323.323	73.3	pk	-46.3	30.6	57.6	54	3.6	100	Vert
10	9765.766	68.08	pk	-49.5	36.4	54.98	54	.98	149	Vert
11	12204.136	52.73	pk	-46.3	39.4	45.83	54	-8.17	150	Vert
12	19526.513	76.12	pk	-69.2	40.3	47.22	54	-6.78	149	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

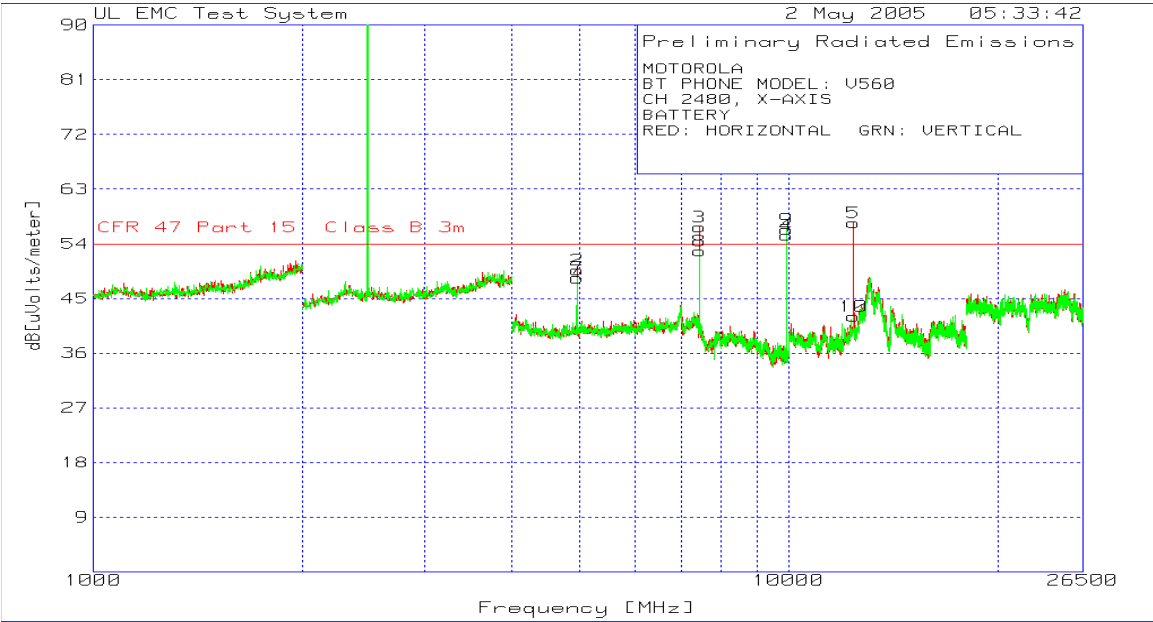
pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector

Final Measurements

Test Frequency [MHz]	Measured Axis	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Azimuth [deg]	Height [cm]	Polarity
4881.98	Z	75	pk	-50.5	27.7	52.2	74	-21.8	133	104	Horz
4881.98	Z	61.07	av	-50.5	27.7	38.27	54	-15.73	133	104	Horz
4881.98	Y	72.75	pk	-50.5	27.7	49.95	74	-24.05	280	101	Vert
4881.98	Y	58.57	av	-50.5	27.7	35.77	54	-18.23	280	101	Vert
7322.985	X	76.35	pk	-46.3	30.6	60.65	74	-13.35	178	108	Horz
7322.985	X	61.77	av	-46.3	30.6	46.07	54	-7.93	178	108	Horz
7322.985	Y	77.42	pk	-46.3	30.6	61.72	74	-12.28	250	110	Vert
7322.985	Y	62.82	av	-46.3	30.6	47.12	54	-6.88	250	110	Vert
12205.017	X	61.3	pk	-46.2	39.4	54.5	74	-19.5	13	159	Horz
12205.017	X	48.45	av	-46.2	39.4	41.65	54	-12.35	13	159	Horz
12205.017	Z	63.45	pk	-46.2	39.4	56.65	74	-17.35	348	118	Vert
12205.017	Z	49.15	av	-46.2	39.4	42.35	54	-11.65	348	118	Vert
19528.139	X	85.2	pk	-69.2	40.3	56.3	74	-17.7	139	103	Horz
19528.139	X	69.72	av	-69.2	40.3	40.82	54	-13.18	139	103	Horz
19528.139	Z	83.62	pk	-69.2	40.3	54.72	74	-19.28	224	130	Vert
19528.139	Z	68.74	av	-69.2	40.3	39.84	54	-14.16	224	130	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector



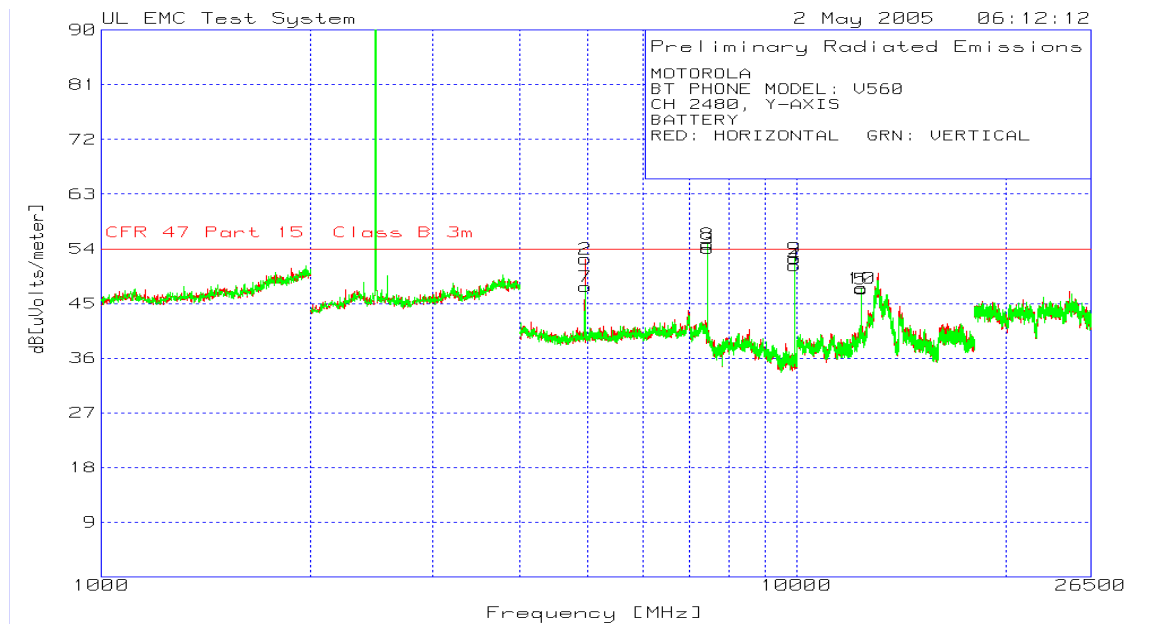
1-26.5GHz High-Channel X-Orientation

MOTOROLA
BT PHONE MODEL: V560
CH 2480, X-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
1	2480.962	76.27	pk	4.1	22	102.37	54	48.37	100	Horz
2	4960.961	72.68	pk	-50.8	27.8	49.68	54	-4.32	100	Horz
3	7439.439	73.04	pk	-46.9	30.6	56.74	54	2.74	100	Horz
4	9921.922	68.37	pk	-49.4	36.4	55.37	54	1.37	149	Horz
5	12400.267	61.95	pk	-43.9	39.4	57.45	54	3.45	150	Horz
6	2480.962	81.15	pk	4.1	22	107.25	54	53.25	150	Vert
7	4956.957	71.39	pk	-50.8	27.8	48.39	54	-5.61	100	Vert
8	7443.443	69.2	pk	-46.9	30.5	52.8	54	-1.2	100	Vert
9	9921.922	69.37	pk	-49.4	36.4	56.37	54	2.37	149	Vert
10	12396.264	46.69	pk	-44	39.4	42.09	54	-11.91	149	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector



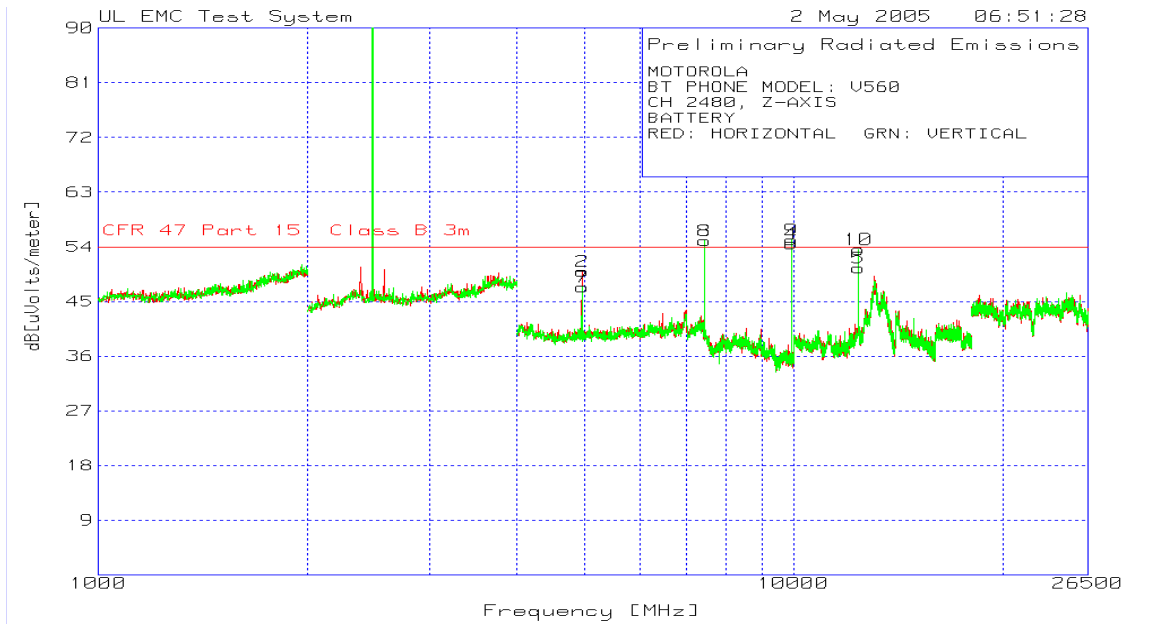
1-26.5 GHz High-Channel Y-Orientation

MOTOROLA
BT PHONE MODEL: V560
CH 2480, Y-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
1	2480.962	84.05	pk	4.1	22	110.15	54	56.15	149	Horz
2	4956.957	75.33	pk	-50.8	27.8	52.33	54	-1.67	100	Horz
3	7443.443	70.44	pk	-46.9	30.5	54.04	54	.04	100	Horz
4	9921.922	64.25	pk	-49.4	36.4	51.25	54	-2.75	149	Horz
5	12400.267	51.9	pk	-43.9	39.4	47.4	54	-6.6	150	Horz
6	2480.962	84.46	pk	4.1	22	110.56	54	56.56	149	Vert
7	4956.957	70.78	pk	-50.8	27.8	47.78	54	-6.22	100	Vert
8	7443.443	71.21	pk	-46.9	30.5	54.81	54	.81	100	Vert
9	9921.922	65.44	pk	-49.4	36.4	52.44	54	-1.56	150	Vert
10	12400.267	52.05	pk	-43.9	39.4	47.55	54	-6.45	150	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector



1-26.5 GHz High-Channel Z-Orientation

MOTOROLA
BT PHONE MODEL: V560
CH 2480, Z-AXIS
BATTERY
RED: HORIZONTAL GRN: VERTICAL

Marker Number	Test Frequency [MHz]	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1[dB]	Height [cm]	Polarity
1	2480.962	84.39	pk	4.1	22	110.49	54	56.49	150	Horz
2	4960.961	72.97	pk	-50.8	27.8	49.97	54	-4.03	100	Horz
3	7443.443	71.38	pk	-46.9	30.5	54.98	54	.98	100	Horz
4	9921.922	67.5	pk	-49.4	36.4	54.5	54	.5	150	Horz
5	12400.267	54.98	pk	-43.9	39.4	50.48	54	-3.52	149	Horz
6	2476.954	74.63	pk	4.1	22	100.73	54	46.73	150	Vert
7	4960.961	70.35	pk	-50.8	27.8	47.35	54	-6.65	100	Vert
8	7443.443	71.4	pk	-46.9	30.5	55	54	1	100	Vert
9	9921.922	68.14	pk	-49.4	36.4	55.14	54	1.14	150	Vert
10	12396.264	58.19	pk	-44	39.4	53.59	54	-.41	149	Vert

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector

FINAL MEASUREMENTS

Test Frequency [MHz]	Measured Axis	Meter Reading [dB(uV)]	Detector Type	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/m]	Limit 1	Margin 1 [dB]	Azimuth [deg]	Height [cm]	Polarity
7439.989	X	76.06	pk	-46.9	30.6	59.76	74	-14.24	113	112	Horz
7439.989	X	62.03	av	-46.9	30.6	45.73	54	-8.27	114	105	Horz
7439.989	Z	75.97	pk	-46.9	30.6	59.67	74	-14.33	153	111	Vert
7439.989	Z	61.32	av	-46.9	30.6	45.02	54	-8.98	153	111	Vert
4960.012	Y	75.1	pk	-50.8	27.8	52.1	74	-21.9	106	100	Horz
4960.012	Y	61.21	av	-50.8	27.8	38.21	54	-15.79	106	100	Horz
4960.012	X	72.93	pk	-50.8	27.8	49.93	74	-24.07	38	106	Vert
4960.012	X	58.75	av	-50.8	27.8	35.75	54	-18.25	38	106	Vert
12400.16	X	66.56	pk	-43.9	39.4	62.06	74	-11.94	158	151	Vert
12400.16	X	51.79	av	-43.9	39.4	47.29	54	-6.71	158	151	Vert
12400.16	X	65	pk	-43.9	39.4	60.5	74	-13.5	7	141	Horz
12400.16	X	50.78	av	-43.9	39.4	46.28	54	-7.72	7	141	Horz

LIMIT 1: CFR 47 Part 15 Class B 3m

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector

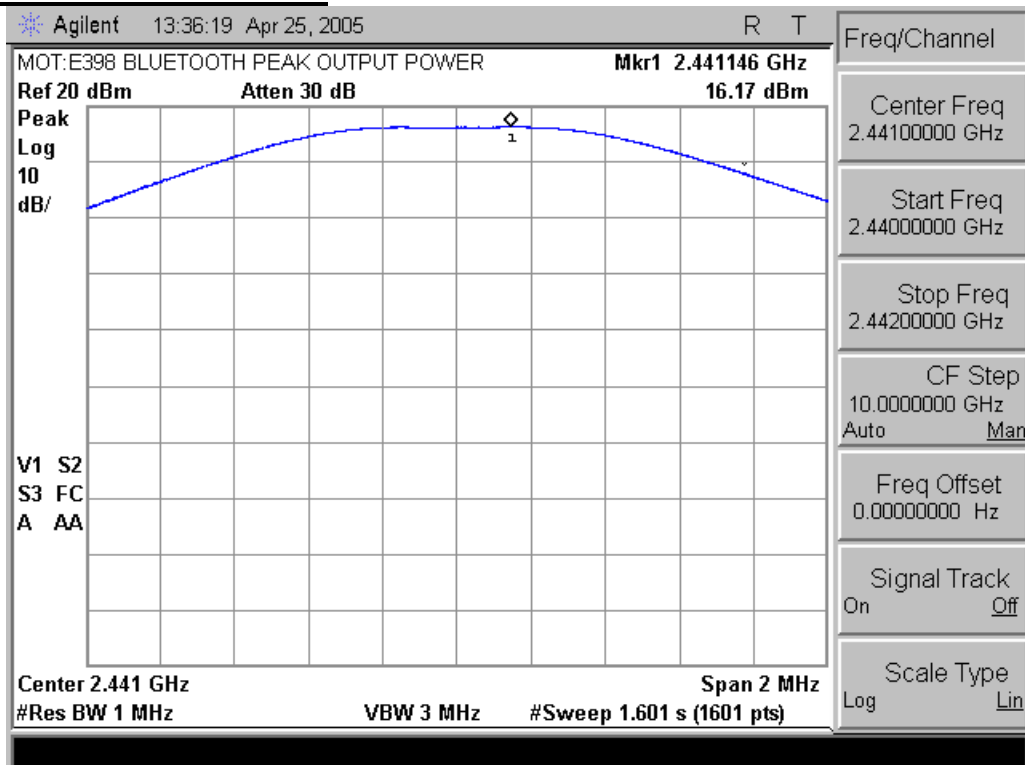
PEAK OUTPUT POWER

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

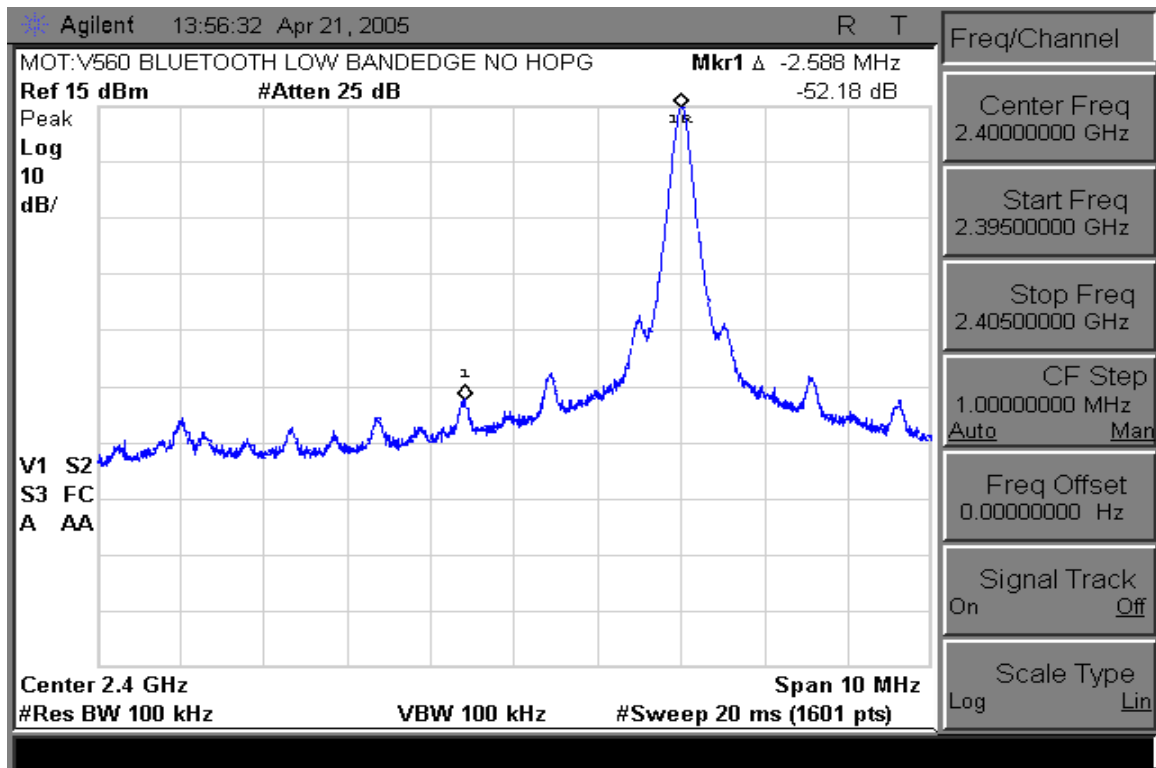
CFR 47 Part 15.247

Measurement Procedure

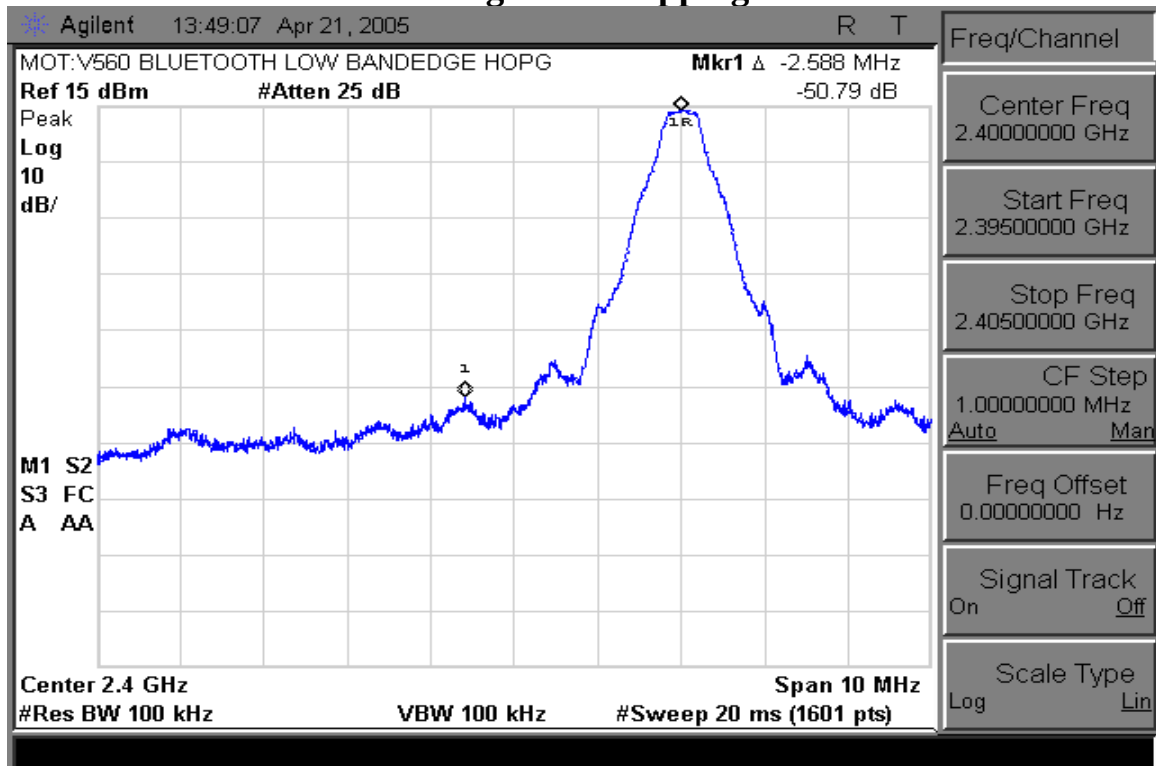
The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

Measurement Results

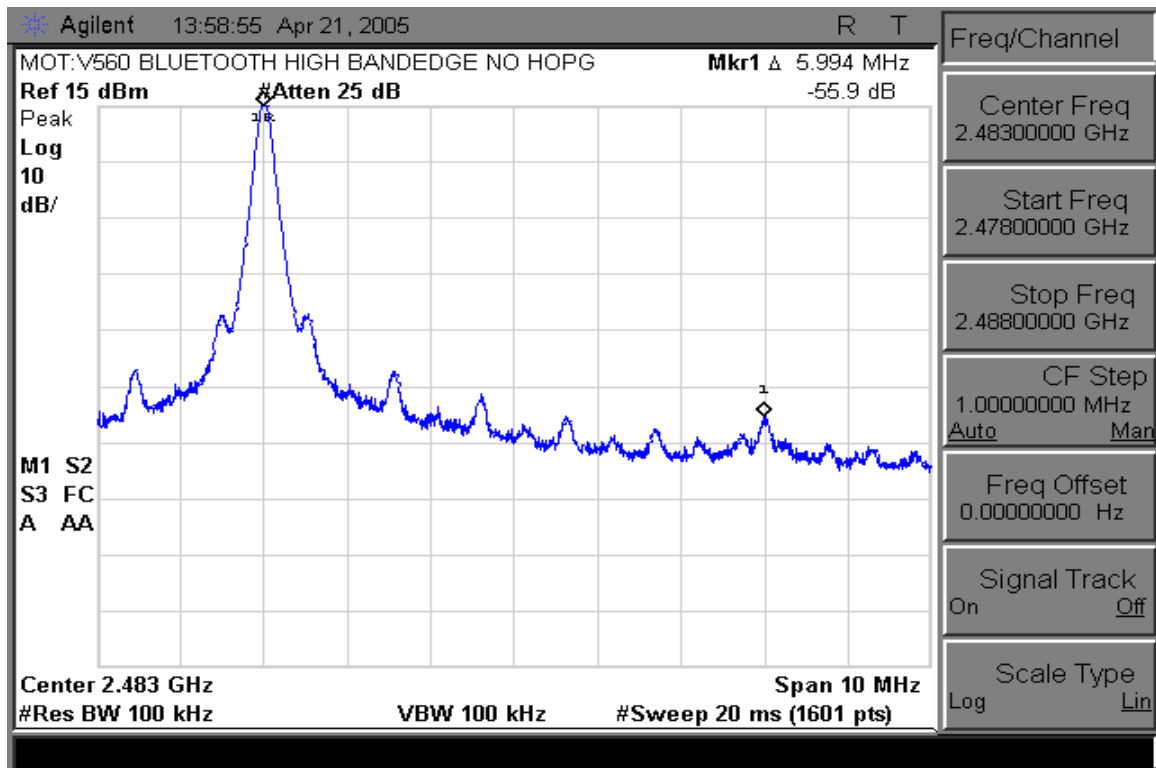
See Attached:



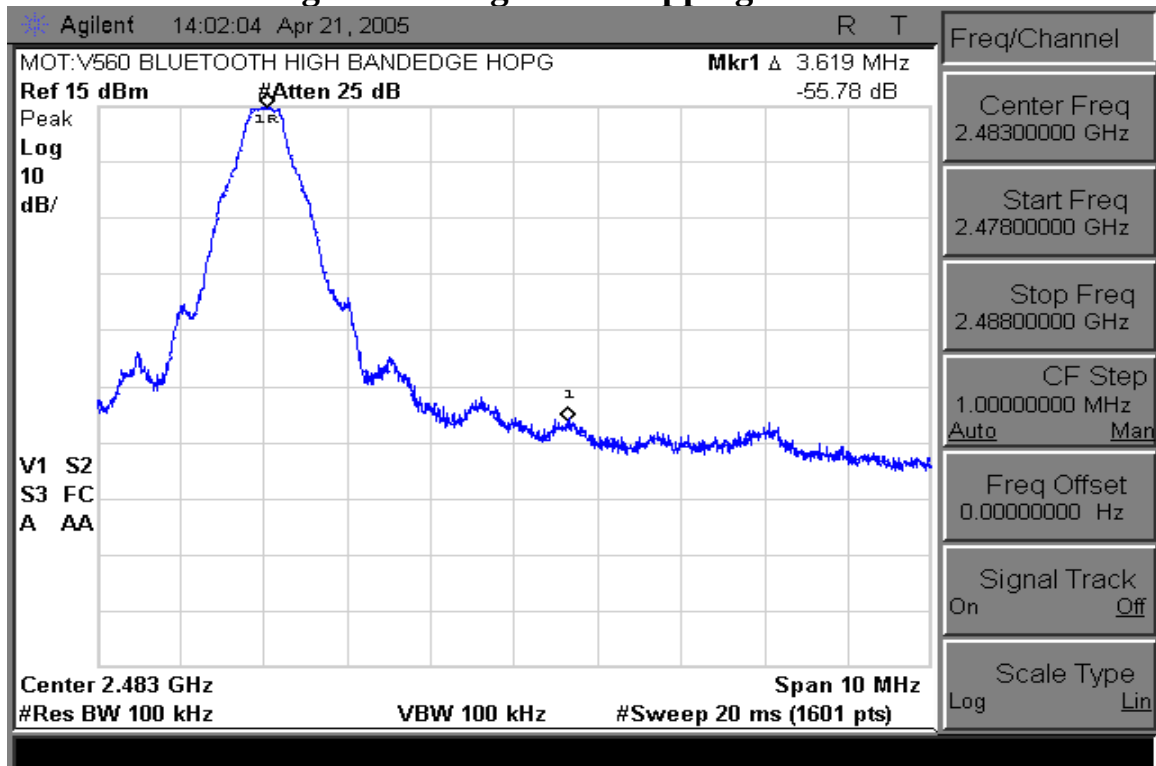
Low Band Edge with Hopping Disabled



Low Band Edge with Hopping Enabled



High Band Edge with Hopping Disabled



High Band Edge with Hopping Enabled

SPURIOUS RF CONDUCTED EMISSIONS

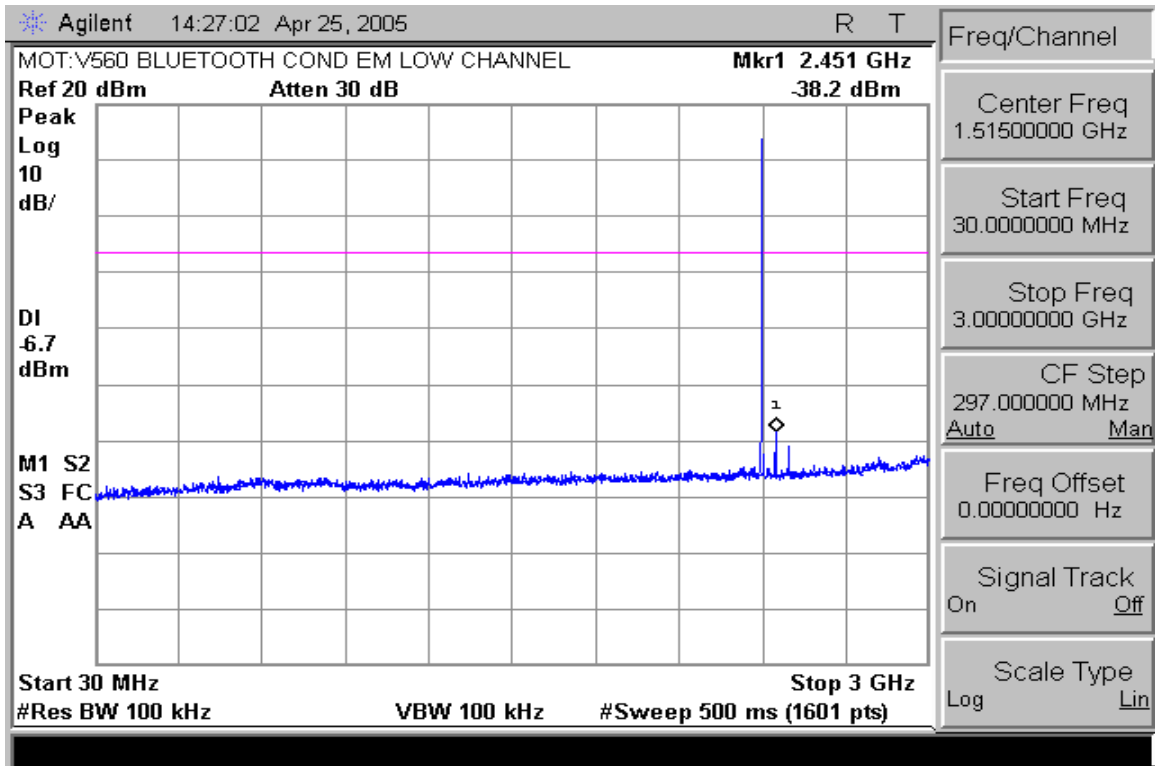
CFR 47 Part 15.247

Measurement Procedure

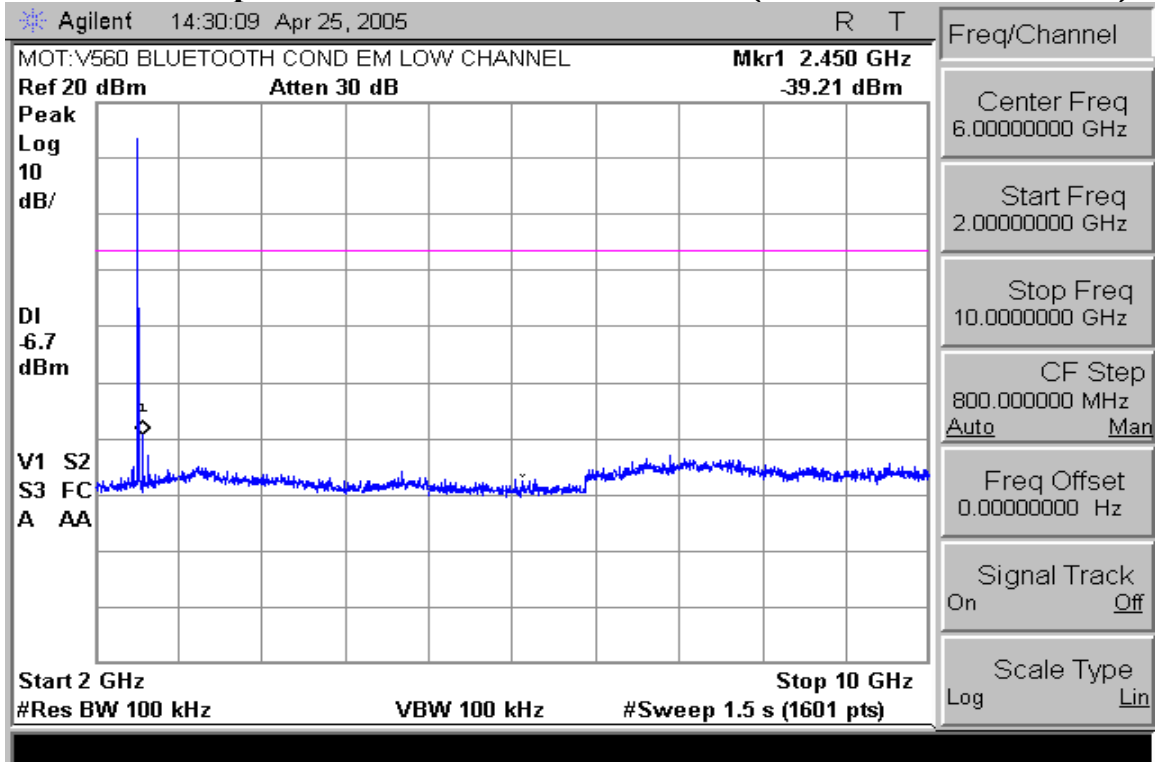
The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

Measurement Results

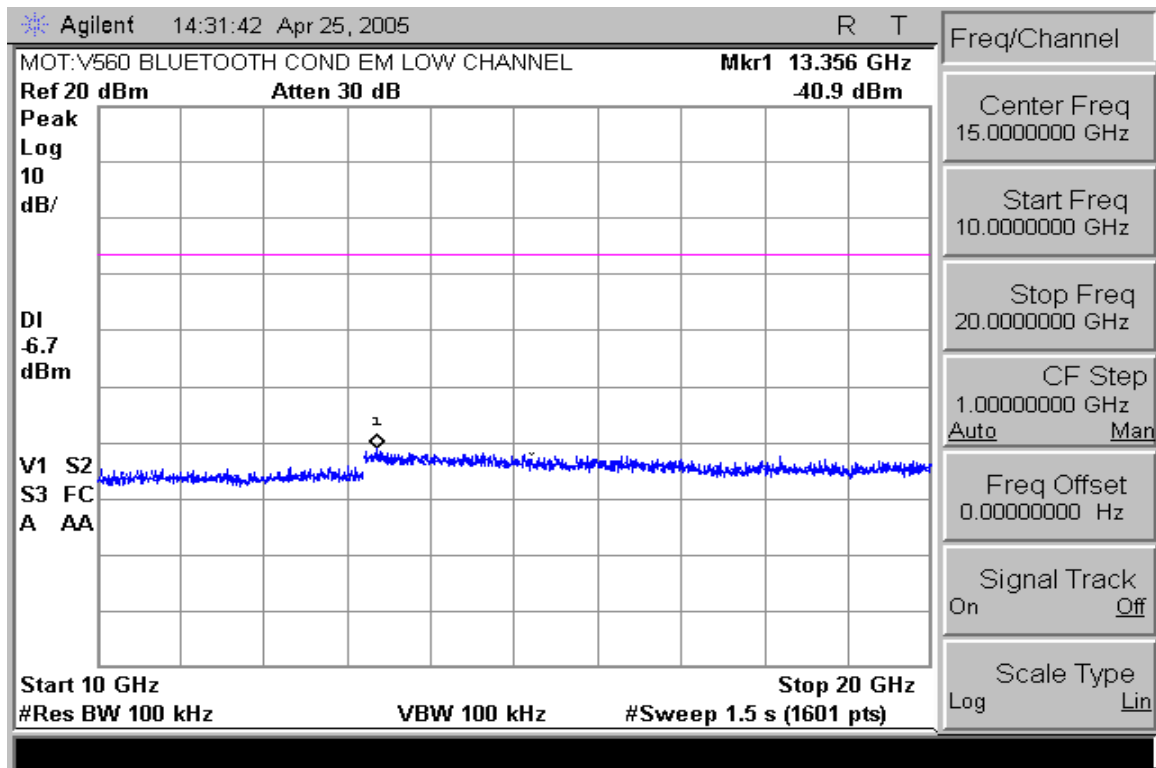
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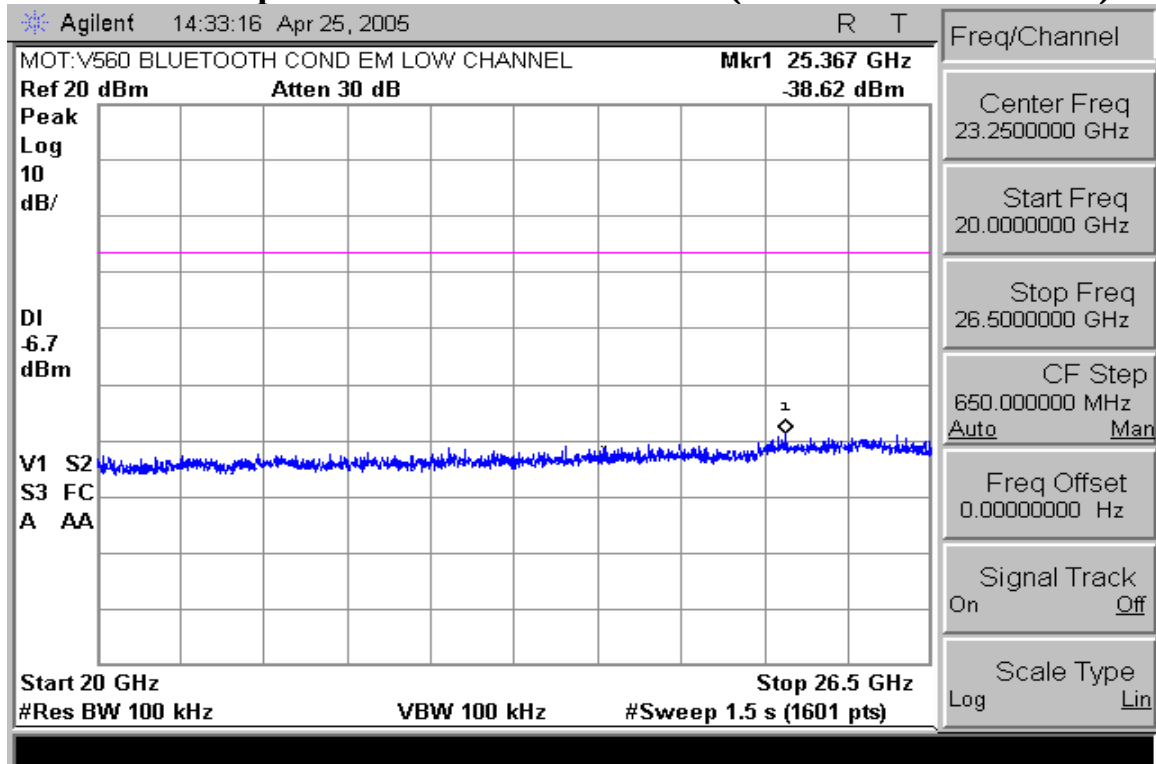
Conducted Spurious Emissions 30-3000MHz (Low Channel Enabled)



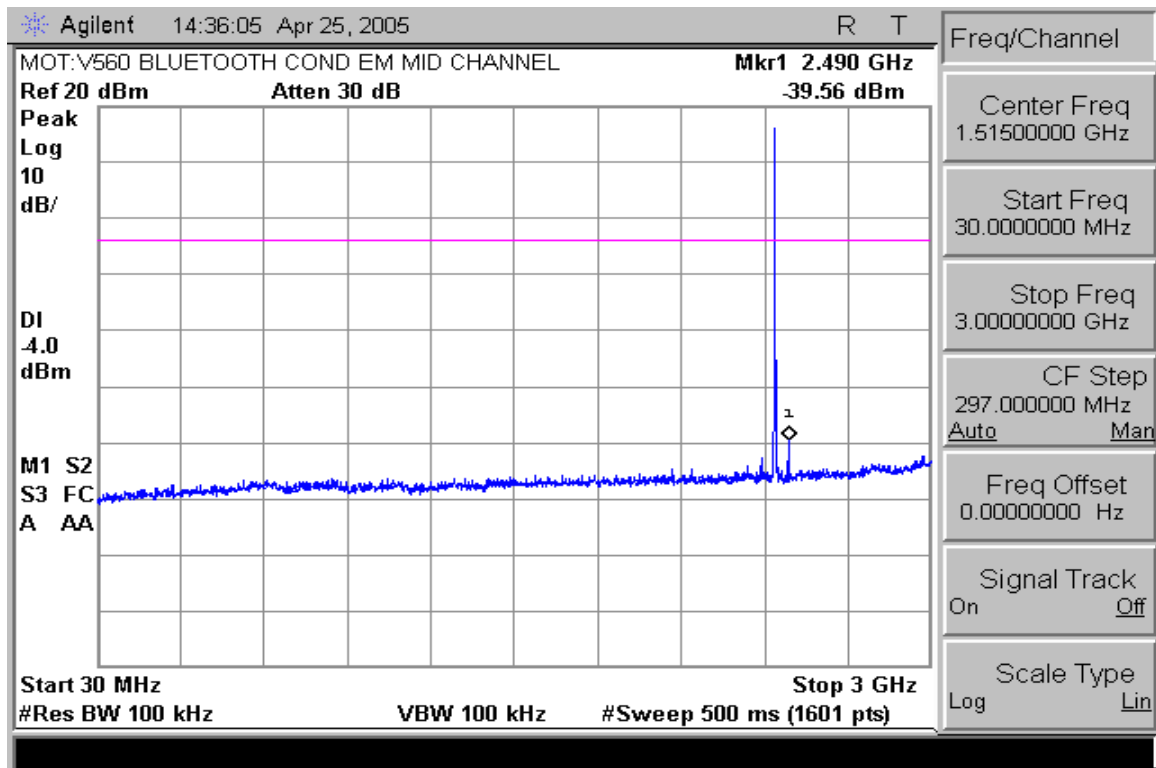
Conducted Spurious Emissions 2-10GHz (Low Channel Enabled)



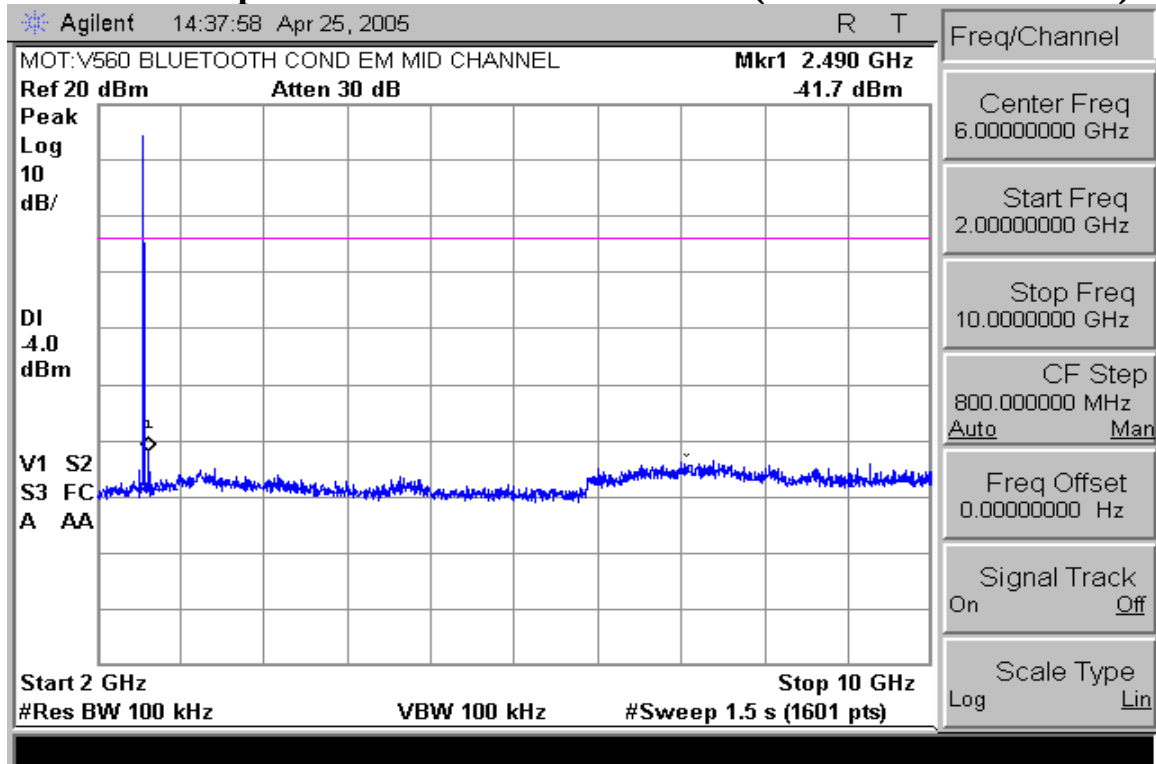
Conducted Spurious Emissions 10-20GHz (Low Channel Enabled)



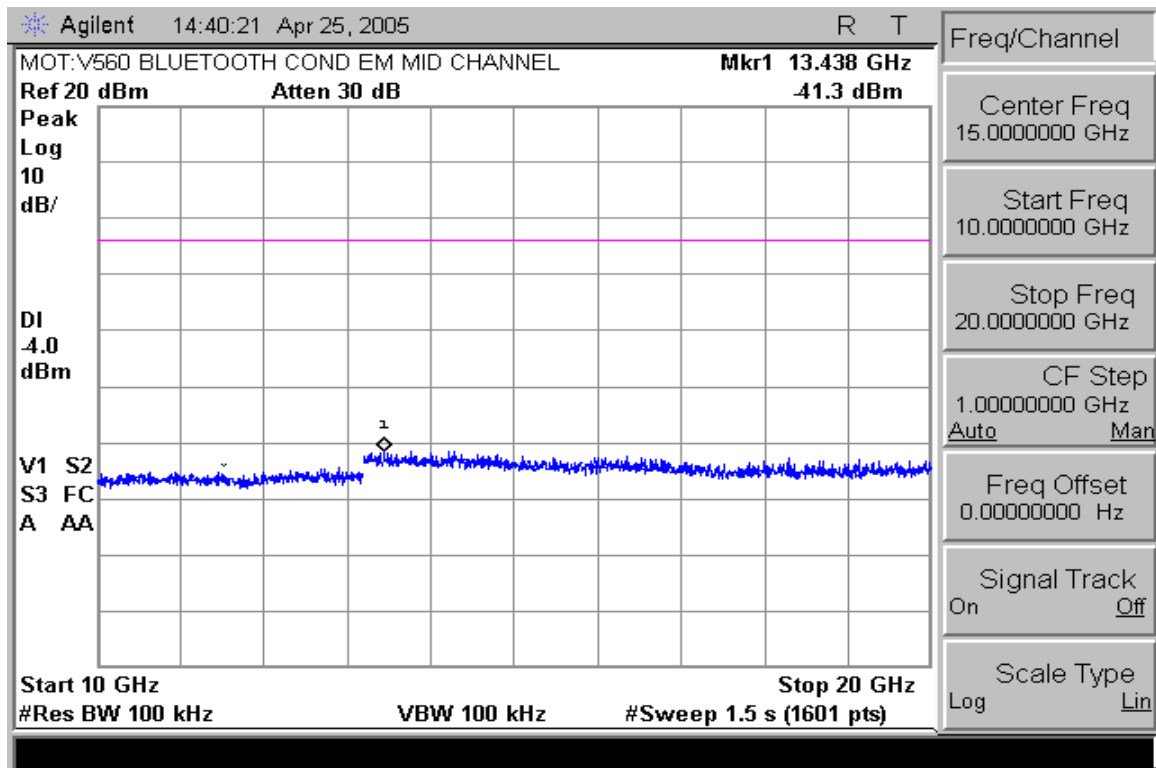
Conducted Spurious Emissions 20-26.5GHz (Low Channel Enabled)



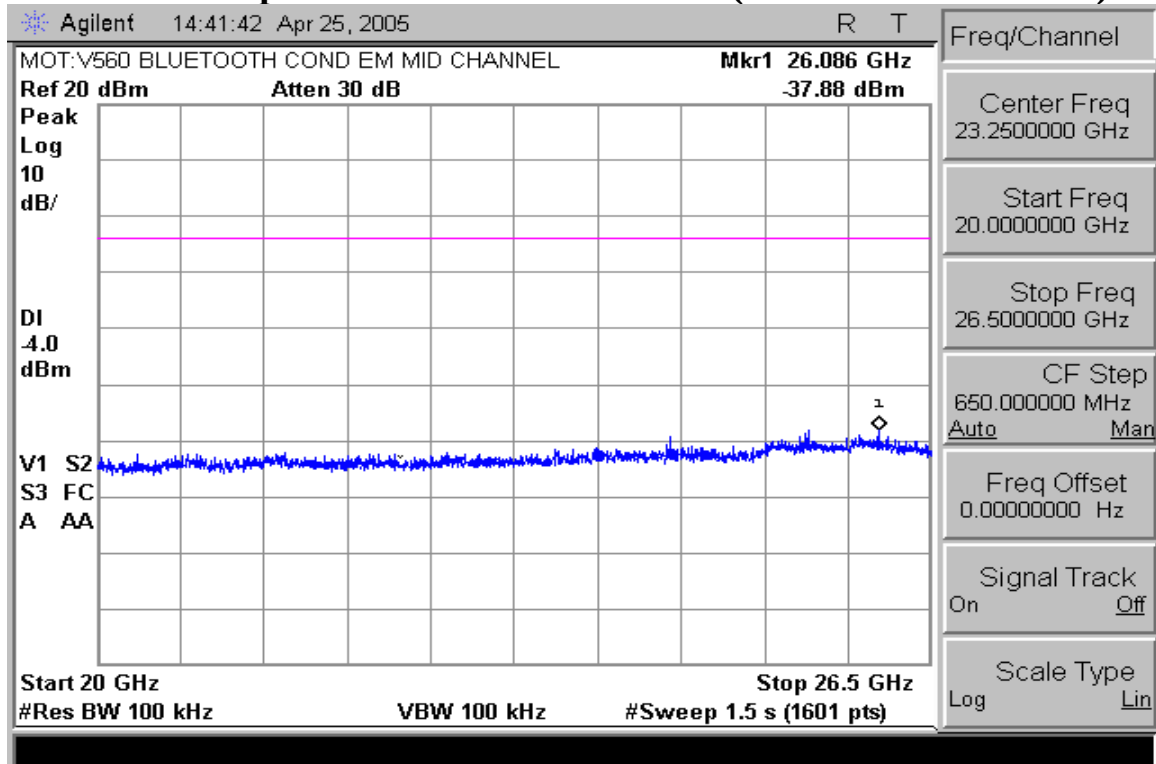
Conducted Spurious Emissions 30-3000MHz (Mid Channel Enabled)



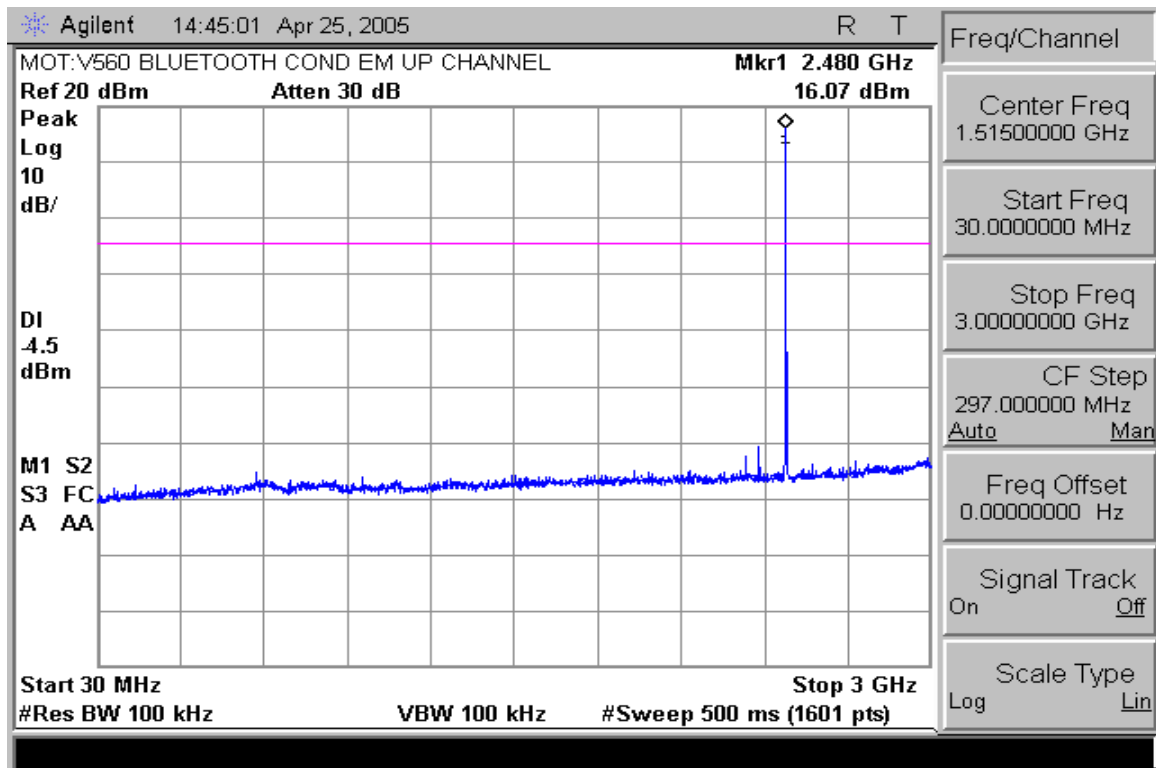
Conducted Spurious Emissions 2-10GHz (Mid Channel Enabled)



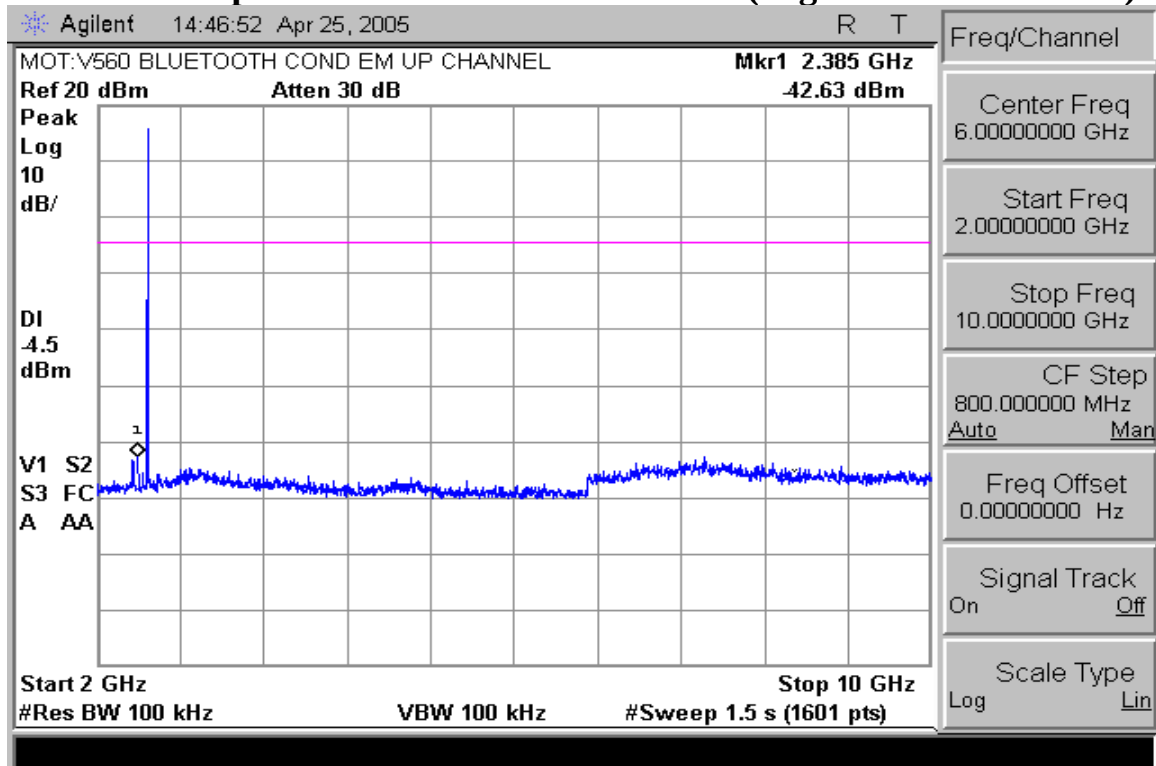
Conducted Spurious Emissions 10-20GHz (Mid Channel Enabled)



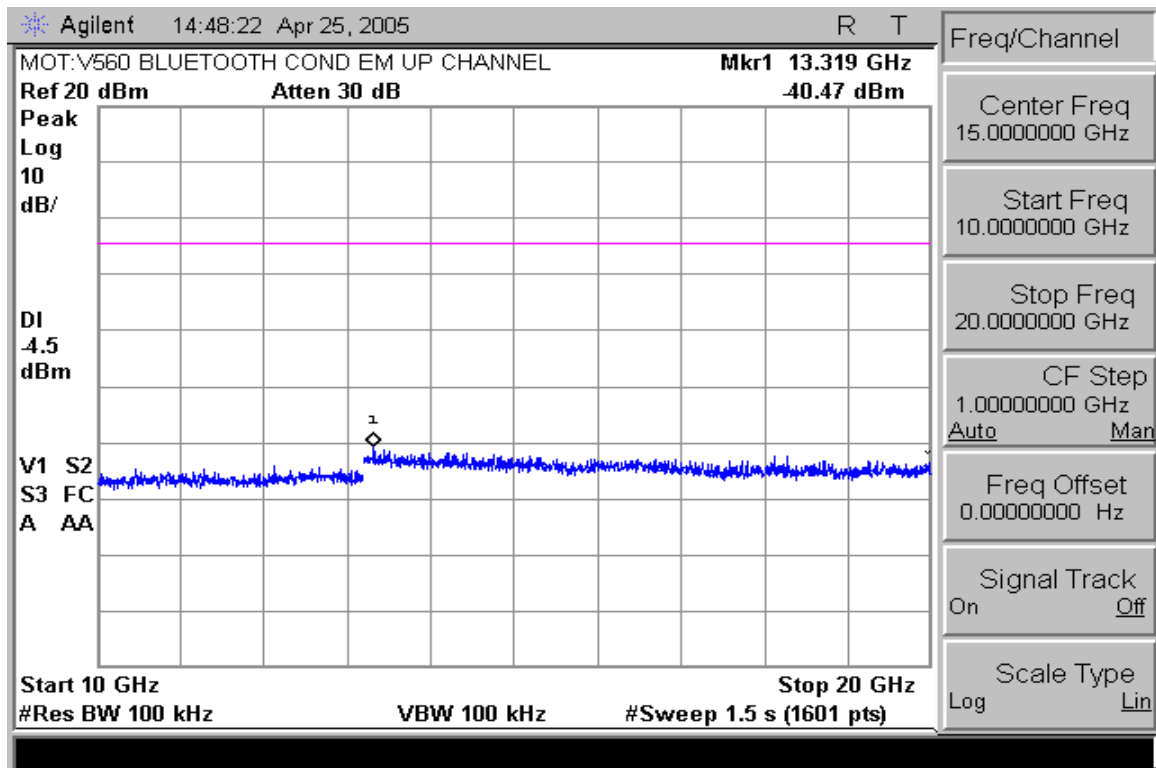
Conducted Spurious Emissions 20-26.5GHz (Mid Chan Enabled)



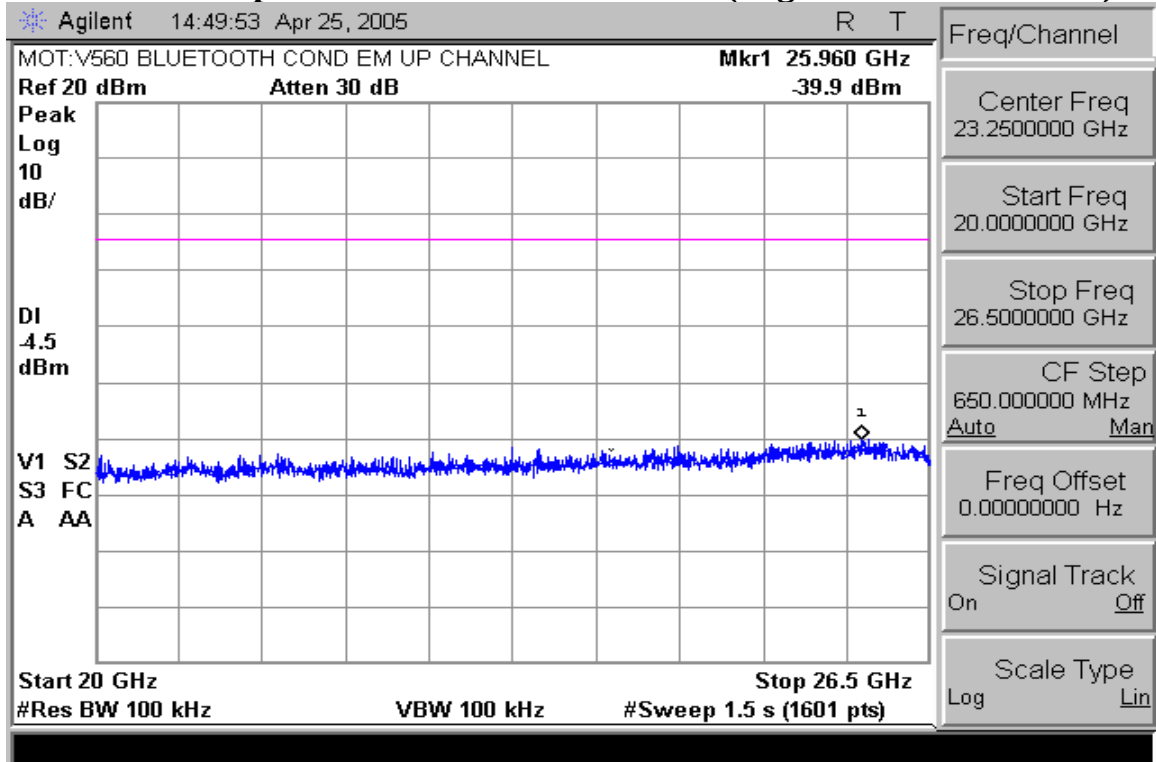
Conducted Spurious Emissions 30-3000MHz (High Channel Enabled)



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)

End of Test Report