Engineering and Testing for EMC and Safety Compliance

Accredited under A2LA Testing Certificate # 2653.01

FCC Part 15.247 & IC RSS-210 Certification Report

Harris Corporation
1680 University Avenue
Rochester, NY 14610

Model: Unity XG-100P Multiband Portable Radio

FCC ID: AQZ-XG-100P00
IC: 122D-XG100P00

December 15, 2009

Standards Referenced for this Report	
American National Standard Institute:	ANSI C63.4-2003: Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
FCC Classification:	DSS – Part 15 Spread Spectrum Transmitter
FCC Rule Part(s):	FCC Rules Part 15.247: Operation within the bands 920-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz Frequency Hopping System (10-01-08)
IC Standard:	RSS-210 Issue 7: Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment
FCC Procedure:	ANSI C63.10-2009: American National Standard for Testing Unlicensed Wireless Devices
Digital Interface Information:	Digital Interface was found to be compliant

Frequency Range (MHz)	Rated Transmit Power (W) (Conducted)	Frequency Tolerance (ppm)	Emission Designator
2402 – 2480	0.13	N/A	897KFXD
2402 – 2480	0.07	N/A	1M32GXD

Report Prepared By: Richard B. McMurray, P.E.

Document Number: 2009287DSS

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1 General Information

1.1 Scope

This is an original certification application test report.

Applicable Standards:

- FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.
- RSS-210 Issue 7: Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment

1.2 Description of EUT

Equipment Under Test	Harris Unity Multiband Transceiver
Model	XG-100P
Power Supply	Internal 7.5 VDC rechargeable battery
Modulation Type	FHSS
Frequency Range	2402 – 2480 MHz
Antenna Connector Type	N/A
Antenna Type	Internal chip antenna 2.2 dBi

1.3 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4-2003).

1.4 Related Submittal(s)/Grant(s)

This is an original application for Harris Corporation., Model: Unity XG-100P, FCC ID: AQZ-XG-100P00, IC: 122D-XG100P00.

1.5 Modifications

None.

2 Test Information

2.1 Description of Test Modes

In accordance with FCC 15.31(m), and because the EUT utilizes an operating band greater than 10 MHz, the following frequencies were tested:

Table 2-1: Channels Tested

Channel	Frequency
Low	2402
Middle	2441
High	2480

2.2 Exercising the EUT

The EUT was supplied with test software to select various transmit/receive modes (for example, high, mid, and low channel, hopping on/off, etc) for testing. The EUT was tested in all three orthogonal planes in order to determine worst-case emissions. The EUT was provided with software to continuously transmit during testing. The carrier was also checked to verify that information was being transmitted. There were no deviations from the test standard(s) and/or methods. The test results reported relate only to the item tested.

DH5 (SDR), 2-DH5 (EDR) and 3-DH5 (EDR) modes were investigated. Where pertinent, data is presented for all three modes; otherwise, worst-case data is presented.

2.3 Test Result Summary

Table 2-2: Test Result Summary – FCC Part 15, Subpart C (Section 15.247)

Standard	Test	Pass/Fail or N/A
FCC 15.207	AC Power Conducted Emissions	Pass
FCC 15.209	Radiated Emissions	Pass
FCC 15.247(b)	Maximum Peak Power Output	Pass
FCC 15.247(d)	Antenna Conducted Spurious Emissions	Pass
FCC 15.247(d)	Band Edge Measurement	Pass
FCC 15.247(a)(1)	Carrier Frequency Separation	Pass
FCC 15.247(a)(1)(ii)	20 dB Bandwidth	Pass
FCC 15.247(a)(1)(iii)	Hopping Characteristics	Pass
FCC 15.247(a)(1)(iii)	Average Time of Occupancy	Pass

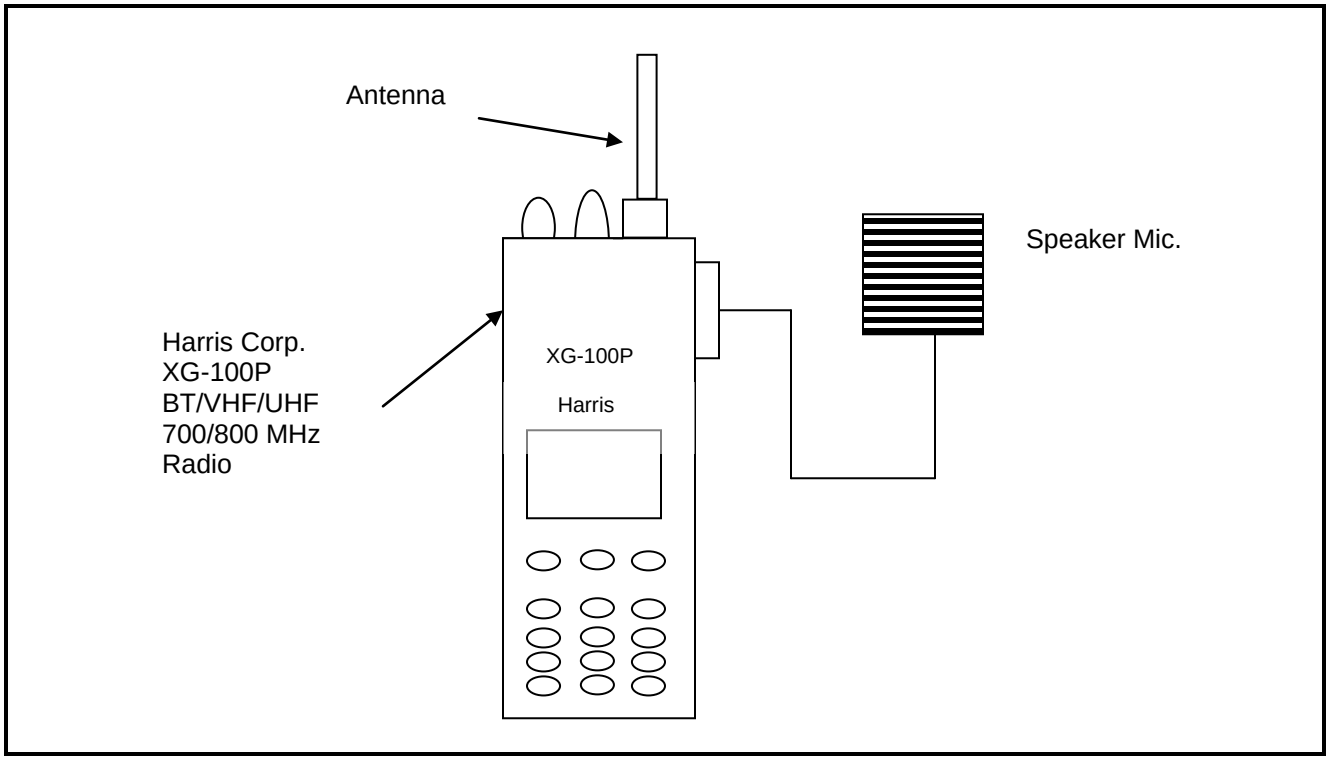
3 Tested System Details

The test sample was received on December 3, 2009. Listed on the following page are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable.

Table 3-1: Equipment Under Test (EUT)

Part	Manufacturer	Model	PN/SN	FCC ID	RTL Bar Code
Radio	Harris Corporation	XG-100P	12082-1000-01/EM010	AQZ-XG-100P00	19311
Radio	Harris Corporation	XG-100P	12082-1000-01/W00000082	AQZ-XG-100P00	19283
Speaker/ Microphone	Harris Corporation	D12082-0600 XXXX 0933	N/A	N/A	19292
Full-Spectrum Multiband Antenna	Harris Corporation	12082-0250-01	N/A	N/A	19283
AC Adapter	FP	SAW36-12.0-3000	N/A	N/A	19291
Charger	Harris Corporation	12082-0310-01	DUT0000031	N/A	19290
Li-Ion Rechargeable Battery	Harris Corporation	N/A	12082-0308-01//01244	N/A	19287
Li-Ion Rechargeable Battery	Harris Corporation	N/A	12082-0308-01/01248	N/A	19288
AC Adapter	GME	GFP 361DA-1230EW	N/A	N/A	19309

Figure 3-1: Configuration of Tested System



4 Peak Output Power – FCC 15.247(b)(1), RSS-210 A8.4(2), RSS-Gen 4.8

4.1 Power Output Test Procedure

A conducted power measurement of the EUT was taken using an Agilent spectrum analyzer.

Procedure: C63.10-2009 6.10

4.2 Power Output Test Data

Table 4-1: Power Output Test Data – High Power

Frequency (MHz)	Peak Conducted Power (dBm) DH5 (SDR)	Peak Conducted Power (dBm) 2-DH5 (EDR)	Peak Conducted Power (dBm) 3-DH5 (EDR)
2402	20.3	16.9	16.9
2441	20.8	17.7	17.6
2480	21.2	18.2	18.1

Table 4-2: Power Output Test Data – Low Power

Frequency (MHz)	Peak Conducted Power (dBm) DH5 (SDR)	Peak Conducted Power (dBm) 2-DH5 (EDR)	Peak Conducted Power (dBm) 3-DH5 (EDR)
2402	-8.2	-9.7	-9.5
2441	-7.8	-9.3	-9.3
2480	-7.2	-9.1	-9.1

Table 4-3: Power Output Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
95448	Agilent Technologies	E4448A	Spectrum Analyzer (3 Hz – 50 GHz)	MY46180621	11/11/10

Test Personnel:

Richard B. McMurray, P.E.	Richard B. McMurray	December 4-15, 2009
Test Engineer	Signature	Dates Of Tests

5 Antenna Conducted Spurious Emissions – FCC 15.247(d), RSS-210 A8.5

Procedure: C63.10-2009 6.7

Low, middle and high channels and hopping mode were investigated at both the lowest and highest operating powers. No spurious emissions were found within 20 dB of the limit; per FCC 15.31(o), no data is being reported (note that we are reporting power as peak).

Table 5-1: Antenna Conducted Spurious Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
95448	Agilent Technologies	E4448A	Spectrum Analyzer (3 Hz – 50 GHz)	MY46180621	11/11/10

Test Personnel:

Richard B. McMurray, P.E.	Richard B. McMurray	December 4-15, 2009
Test Engineer	Signature	Dates Of Tests

6 Band-Edge Compliance of RF Conducted Emissions – FCC 15.247(d), RSS-210 6.6.2(o)

6.1 Band Edge Test Procedure

Procedure: C63.10-2009 6.9.2.4

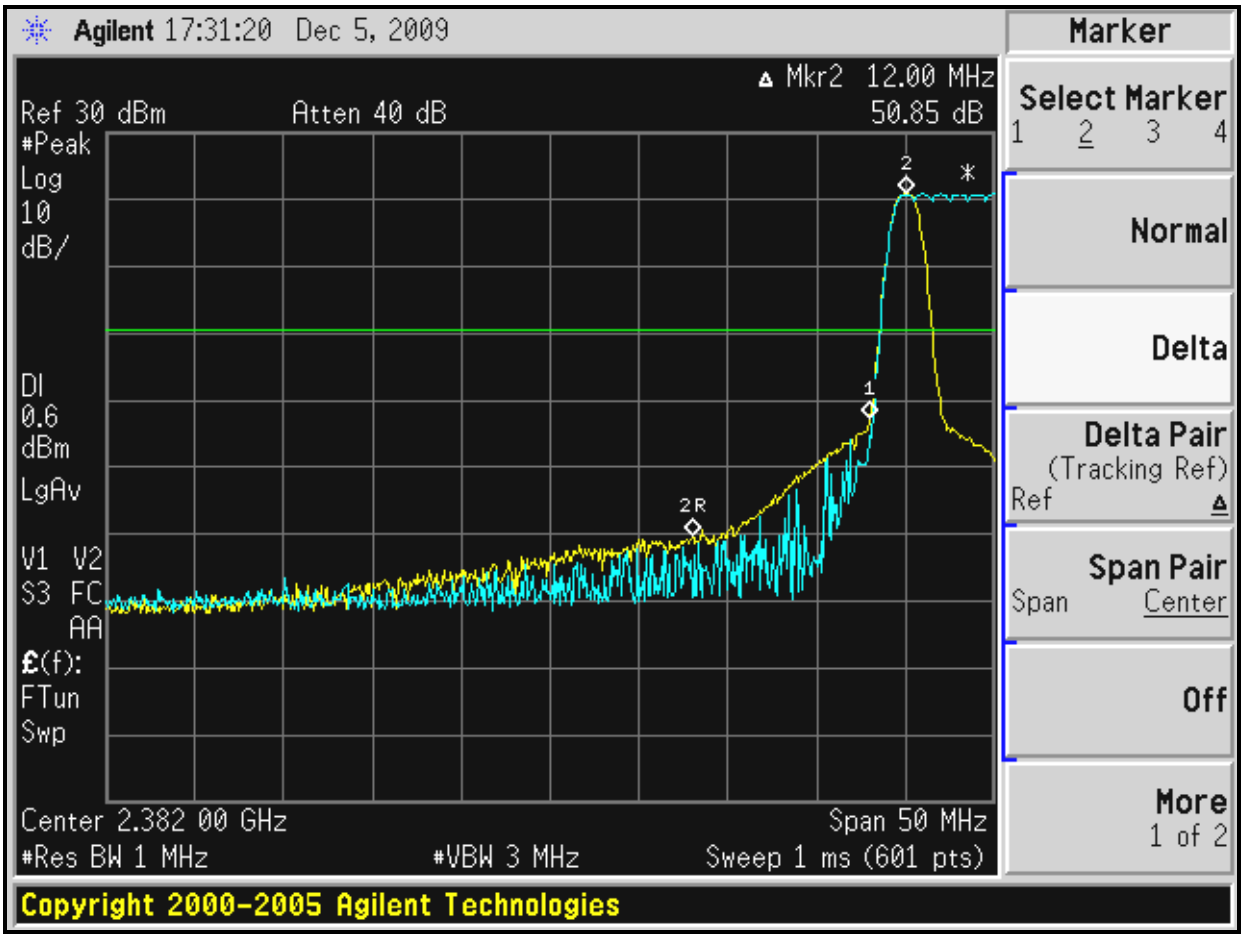
The EUT was connected to the spectrum analyzer through suitable attenuation. The span was set wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation. The spectrum analyzer was set to the following:

RBW > = 1 MHz
VBW > = 3 MHz
Sweep = auto
Detector function = peak
Trace = max hold

The trace was allowed to stabilize. The marker was set on the emission at the band edge. The marker-delta was used to show the delta between the maximum in-band emission and the emission at the band edge, and was compared to the 20 dBc requirement of 15.247(d) (when using peak emissions). This measurement was taken in both fixed frequency and hopping modes.

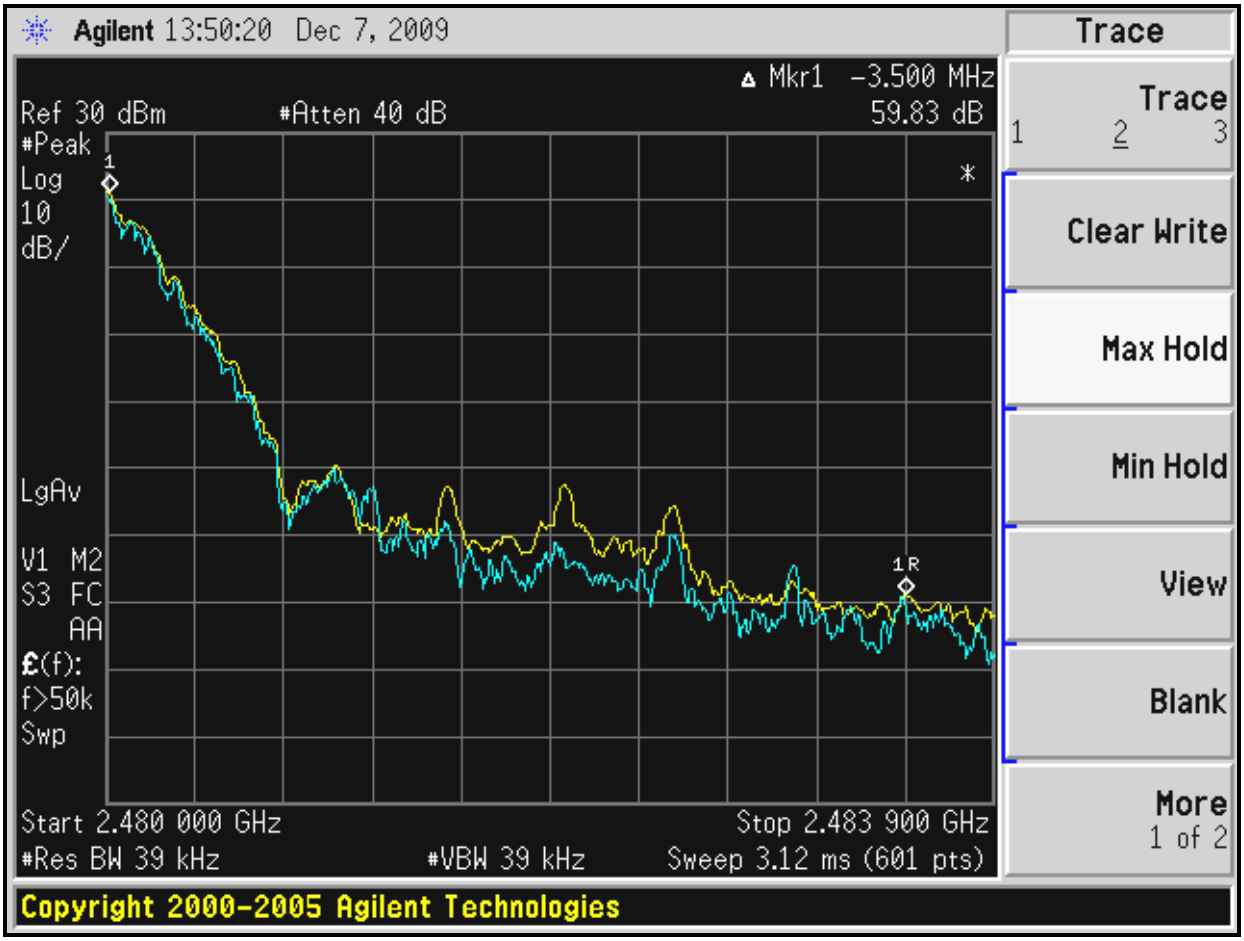
6.2 Test Results

Plot 6-1: Lower Band Edge TX Frequency - 2402 MHz Fixed Frequency (Yellow) & Hopping (Blue)



Note: marker 1 at band edge (2400 MHz), marker 2 showing worst case delta in 2390 MHz restricted band

Plot 6-2: Upper Band Edge TX Frequency - 2480 MHz Fixed Frequency (Yellow) & Hopping (Blue)



Note: marker 1 showing worst case delta at 2483.5 MHz restricted band/band edge

Plot 6-3: Upper Band Edge - 2480 MHz Fixed Frequency (Yellow) & Hopping (Blue) (Extended Plot)

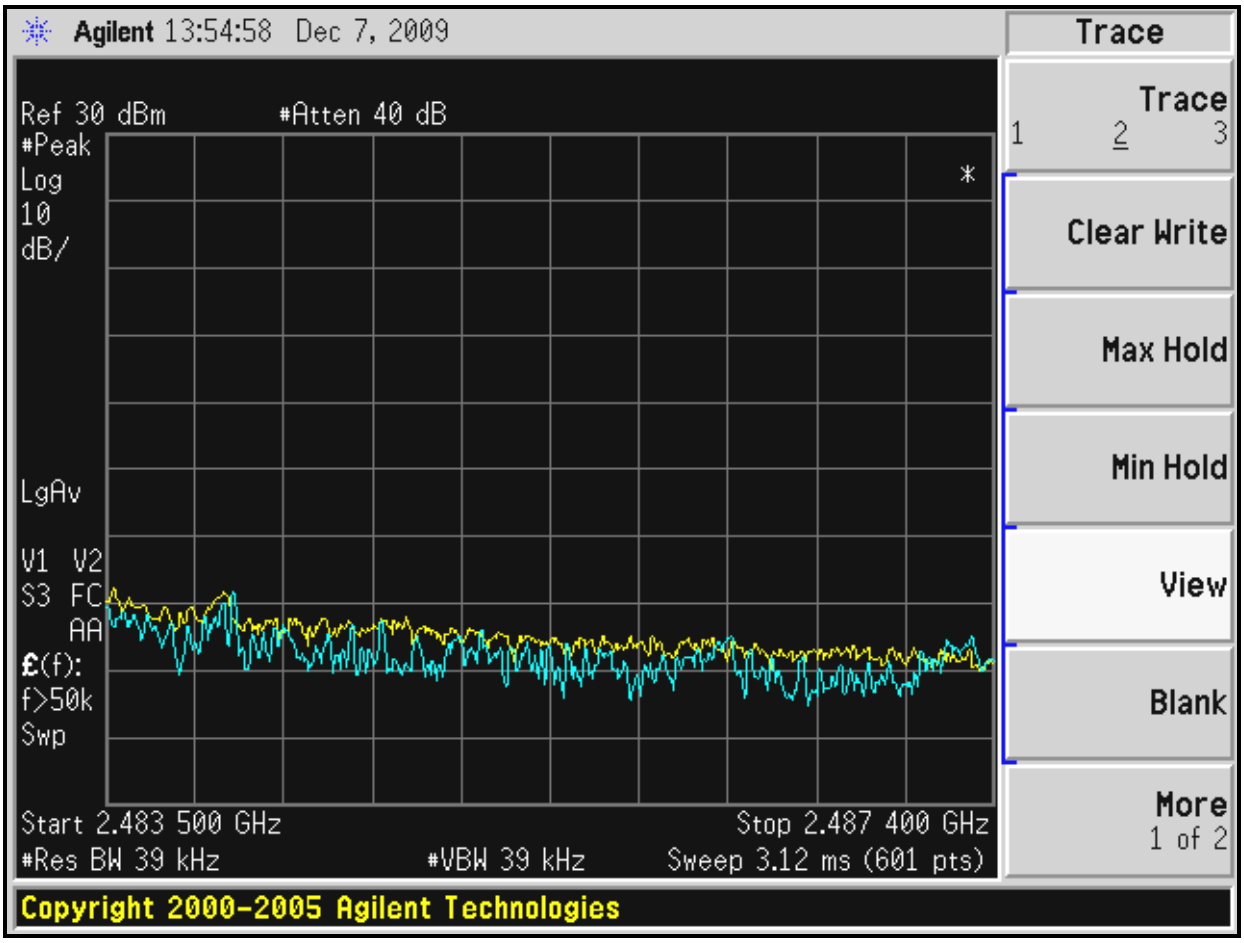


Table 6-1: Band-Edge Compliance of RF Conducted Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
95448	Agilent Technologies	E4448A	Spectrum Analyzer (3 Hz – 50 GHz)	MY46180621	11/11/10

Test Personnel:

Richard B. McMurray, P.E.	Richard B. McMurray	December 5, 7 and 15, 2009
Test Engineer	Signature	Dates Of Tests

6.3 Radiated Band Edge Emissions

Table 6-2: Radiated Band Edge Emissions Test Data

Frequency (MHz)	Peak Spectrum Analyzer Level (1 MHz RBW/ VBW) (dBuV)	Average Spectrum Analyzer Level (1 MHz RBW/ 10 Hz VBW) (dBuV)	Site Correction Factor (dB/m)	Corrected Average Level (dBuV/m)	Delta Measurement From Plots (dB)	Average Limit (dBuV/m)	Margin (dB)
2402.000	89.7	68.0	26.9	94.9	50.9	54.0	-10.0
2480.000	93.5	71.7	26.5	98.2	59.8	54.0	-15.6

Table 6-3: Radiated Band Edge Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901215	Hewlett Packard	8596EM	Spectrum Analyzer (9 kHz - 12.8 GHz)	3826A00144	11/23/10
901516	Insulated Wire, Inc.	KPS-1503-2400-KPS	RF cable, 20'	NA	10/19/10
901517	Insulated Wire Inc.	KPS-1503-360-KPS	RF cable 36"	NA	10/19/10
900791	Chase	CBL6111B	Bilog Antenna (30 MHz – 2000 MHz	N/A	12/12/10
901365	MITEQ	JS4-00102600-41-5P	Amplifier, 0.1-26 GHz, 30dB gain	N/A	3/4/10
900931	Hewlett Packard	8566B	Spectrum Analyzer (100 Hz - 22 GHz)	3138A07771	8/26/10
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	6/14/10
900321	EMCO	3161-03	Horn Antennas (4 – 8 GHz)	9508-1020	6/14/10
900323	EMCO	3160-07	Horn Antennas (8.2 – 12 GHz)	9605-1054	6/14/10
900356	EMCO	3160-08	Horn Antennas (12.4 – 18 GHz)	9607-1044	6/14/10
900325	EMCO	3160-9	Horn Antennas (18 - 26.5 GHz)	9605-1051	6/14/10
900886	EMI Shop	WRT000-0003	Turntable OATS	N/A	Not Required
900890	StoneBridge	Fiberglass Dome	OATS1Tent	N/A	Not Required

Test Personnel:

Dan Baltzell		December 7, 2009
EMC Test Engineer	Signature	Date of Test

7 20 dB Bandwidth – FCC 15.247(a)(1), RSS-210 A8.1(a)

7.1 20 dB Bandwidth Test Procedure

Procedure: C63.10-2009 6.9

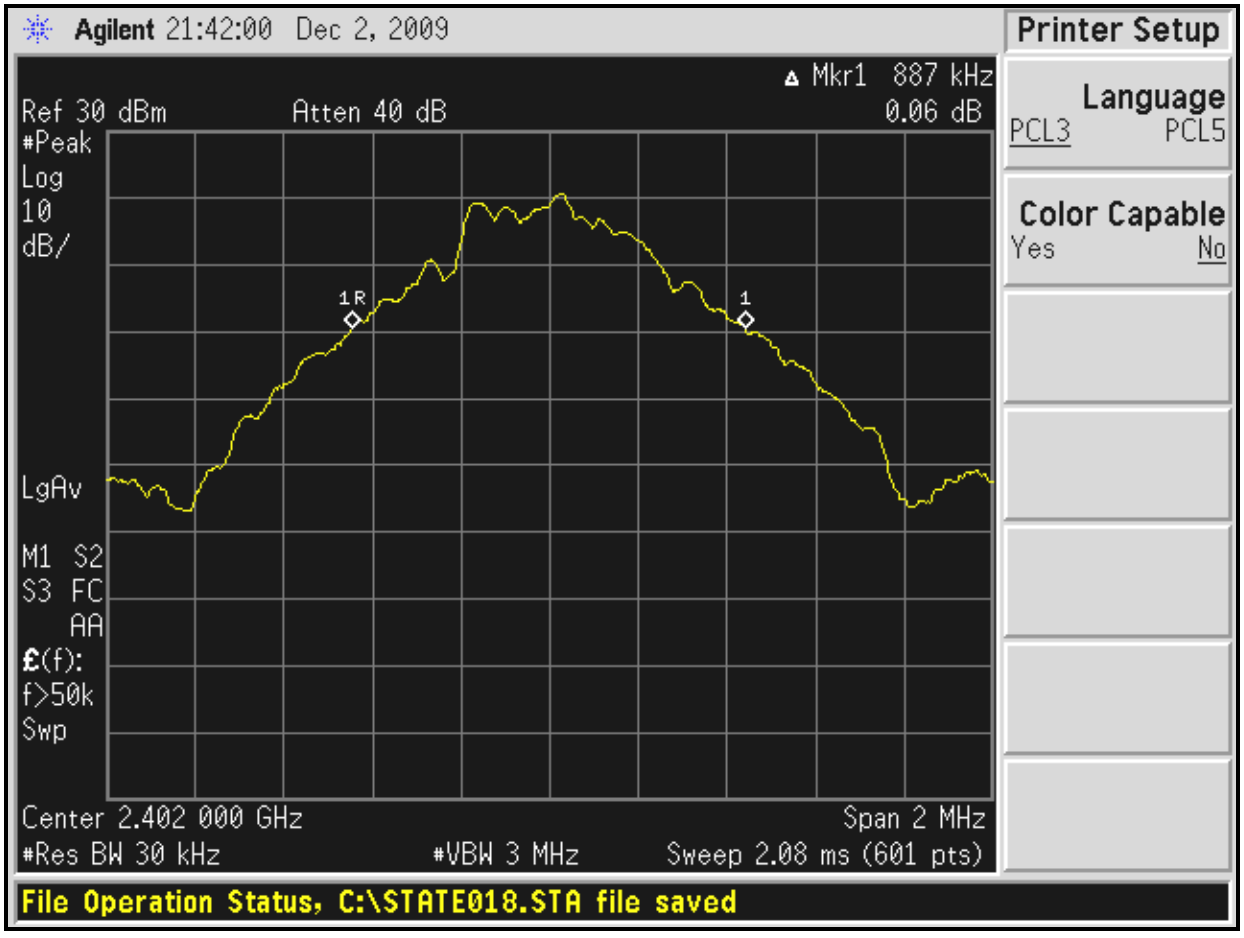
7.2 20 dB Modulated Bandwidth Test Data

Table 7-1: 20 dB Modulated Bandwidth Test Data

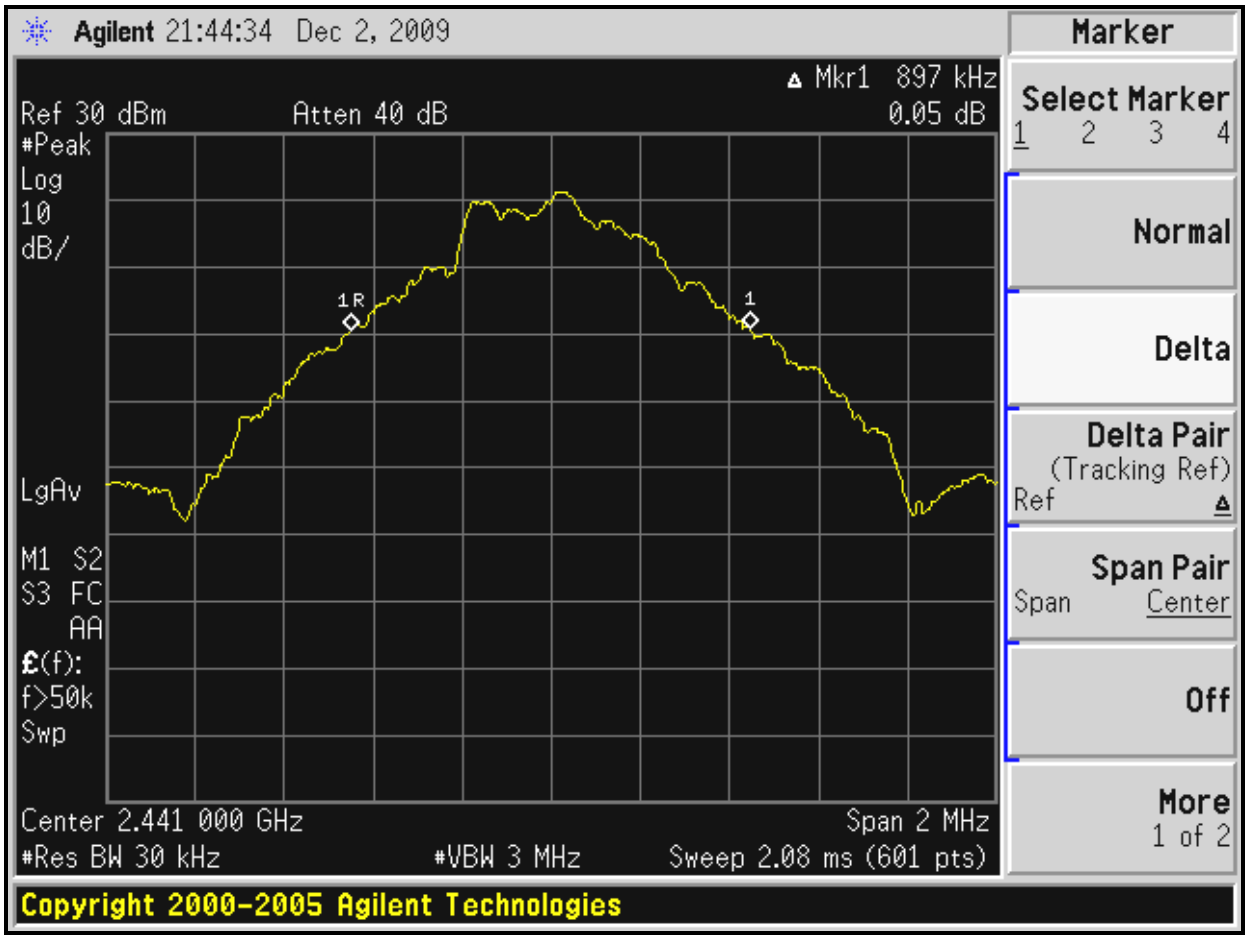
Frequency (MHz)	20 dB Bandwidth (kHz) DH5 (SDR)	20 dB Bandwidth (kHz) 2-DH5 (EDR)	20 dB Bandwidth (kHz) 3-DH5 (EDR)
2402	887	1,283	1,323
2441	897	1,273	1,310
2480	877	1,323	1,303

7.3 20 dB Bandwidth Plots

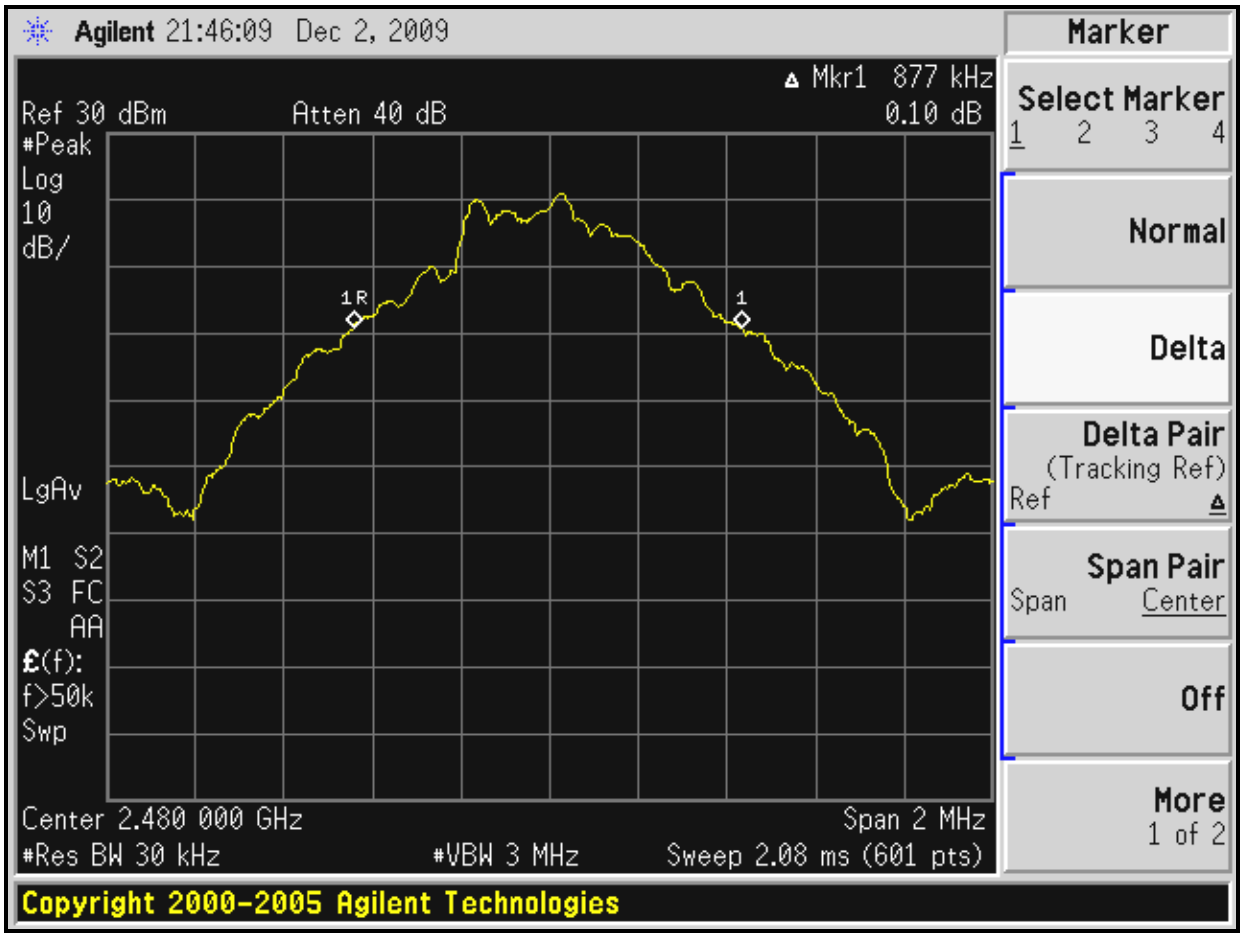
Plot 7-1: 20 dB Bandwidth - 2402 MHz – DH5



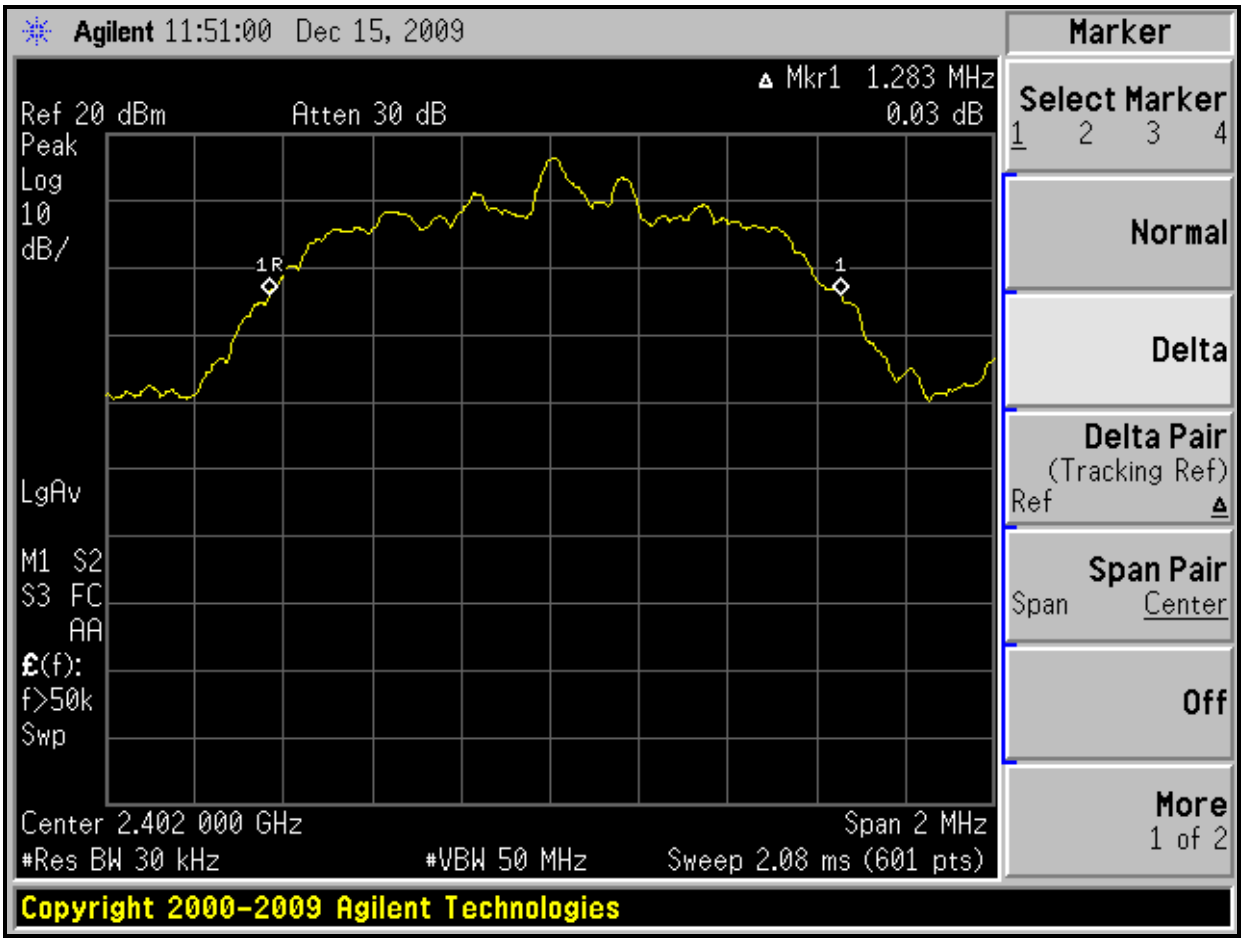
Plot 7-2: 20 dB Bandwidth - 2441 MHz – DH5



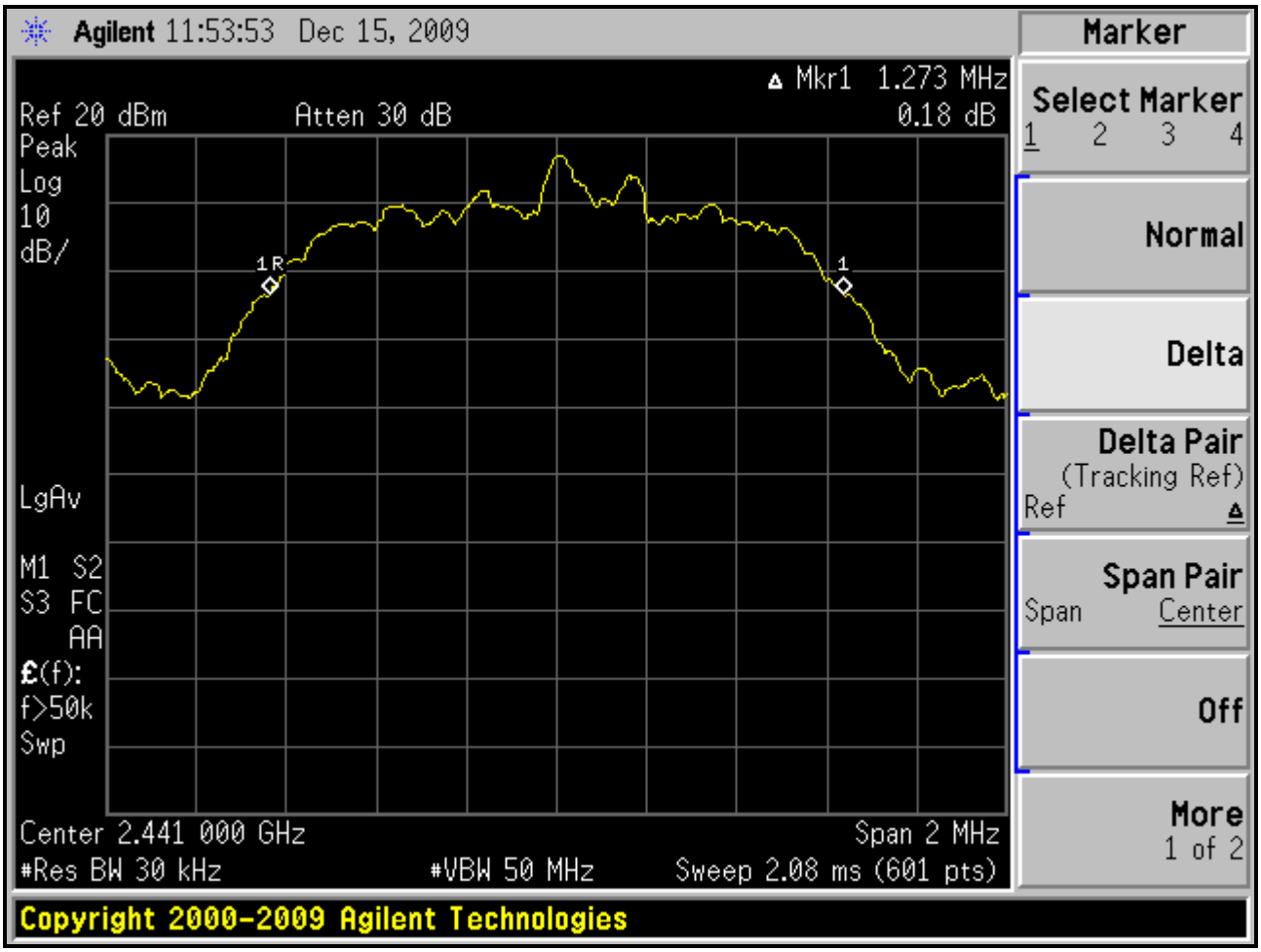
Plot 7-3: 20 dB Bandwidth - 2480 MHz – DH5



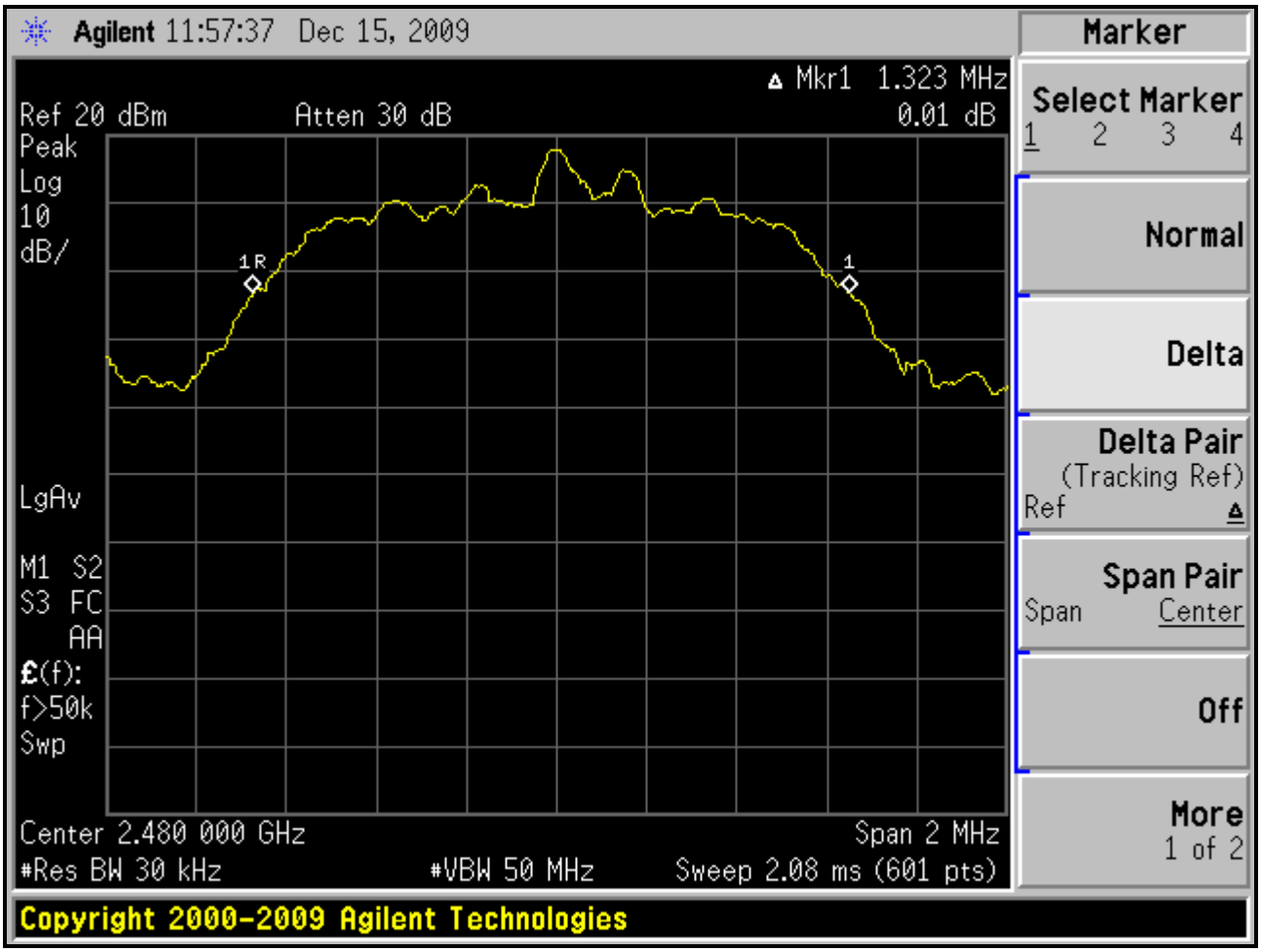
Plot 7-4: 20 dB Bandwidth - 2402 MHz – 2-DH5



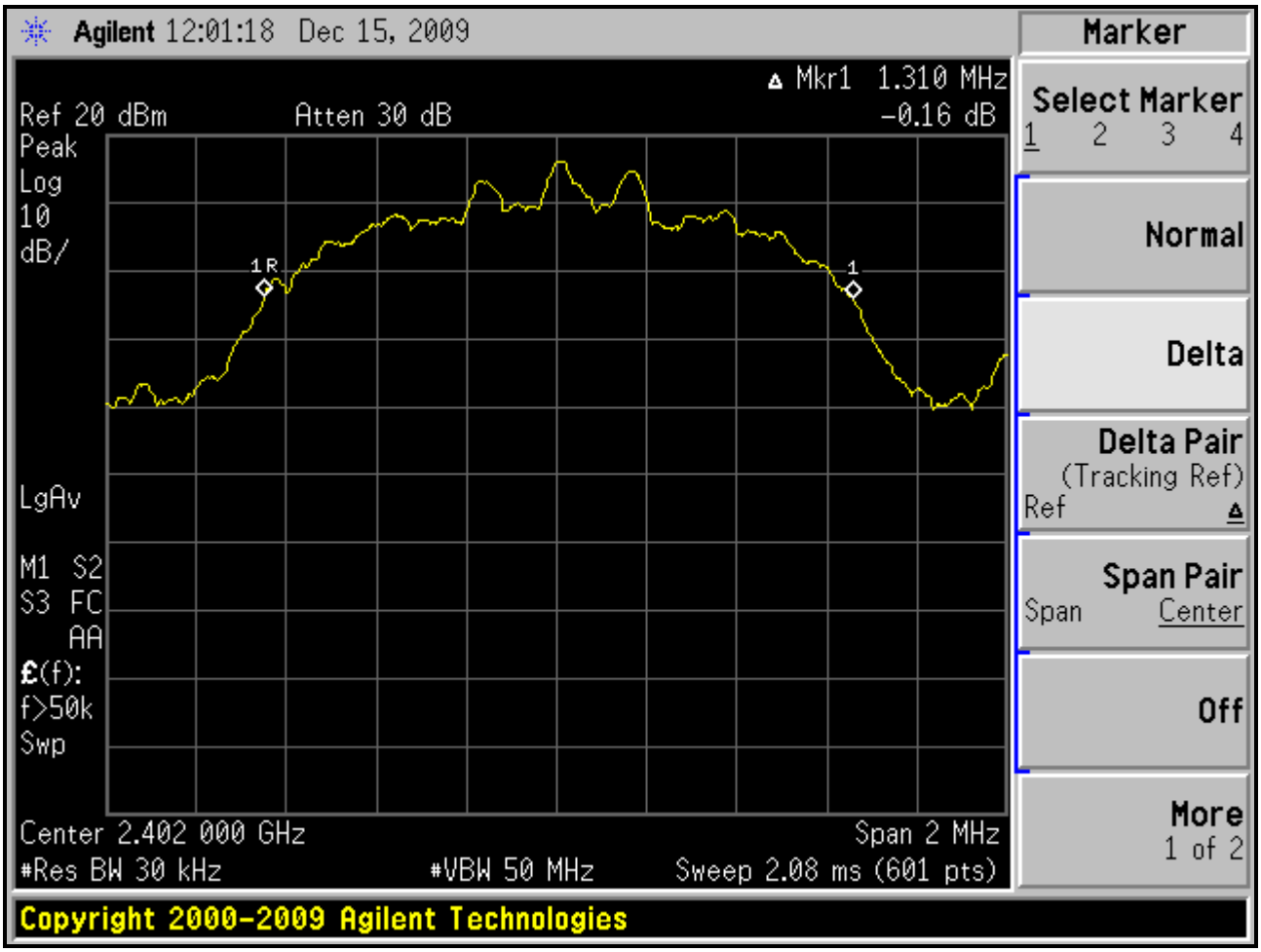
Plot 7-5: 20 dB Bandwidth - 2441 MHz – 2-DH5



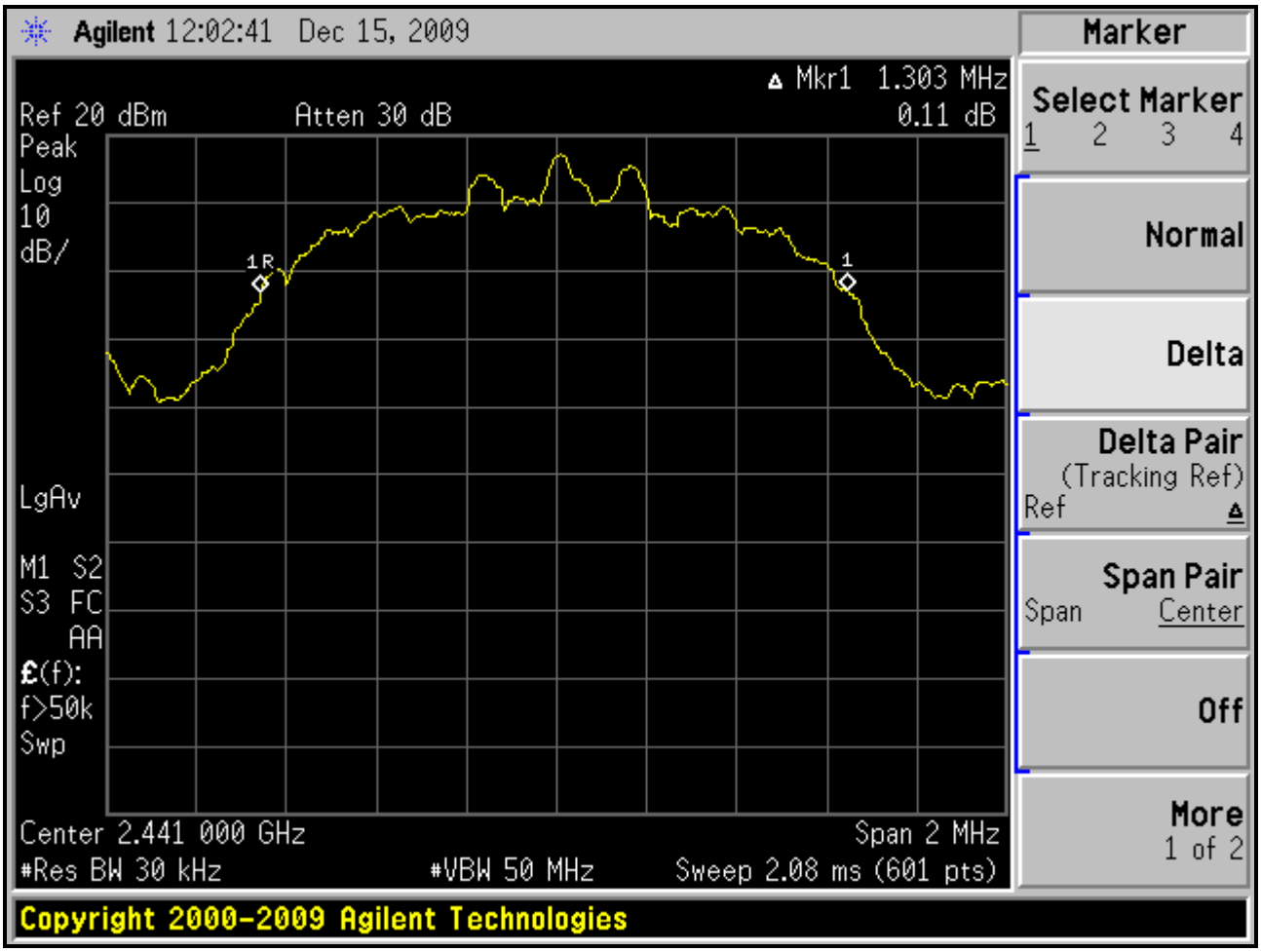
Plot 7-6: 20 dB Bandwidth - 2480 MHz – 2-DH5



Plot 7-7: 20 dB Bandwidth - 2402 MHz – 3-DH5



Plot 7-8: 20 dB Bandwidth - 2441 MHz – 3-DH5



Plot 7-9: 20 dB Bandwidth - 2480 MHz – 3-DH5

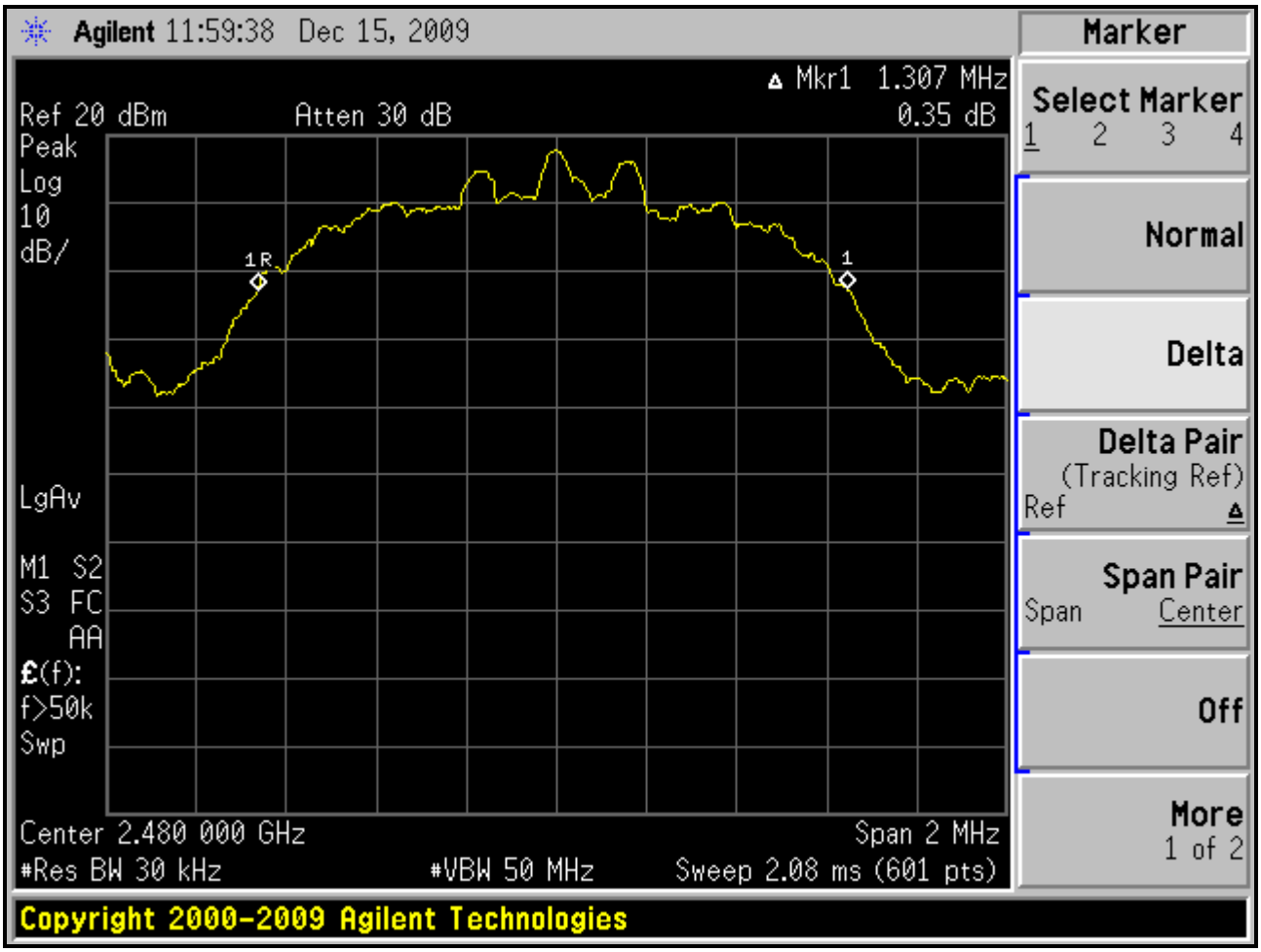


Table 7-2: 20 dB Bandwidth Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
95448	Agilent Technologies	E4448A	Spectrum Analyzer (3 Hz – 50 GHz)	MY46180621	11/11/10

Test Personnel:

Richard B. McMurray, P.E.	Richard B. McMurray	December 4 and 15, 2009
Test Engineer	Signature	Dates Of Tests

8 Carrier Frequency Separation - 15.247(a)(1), RSS-210 A8.1(b)

8.1 Carrier Frequency Separation Test Procedure

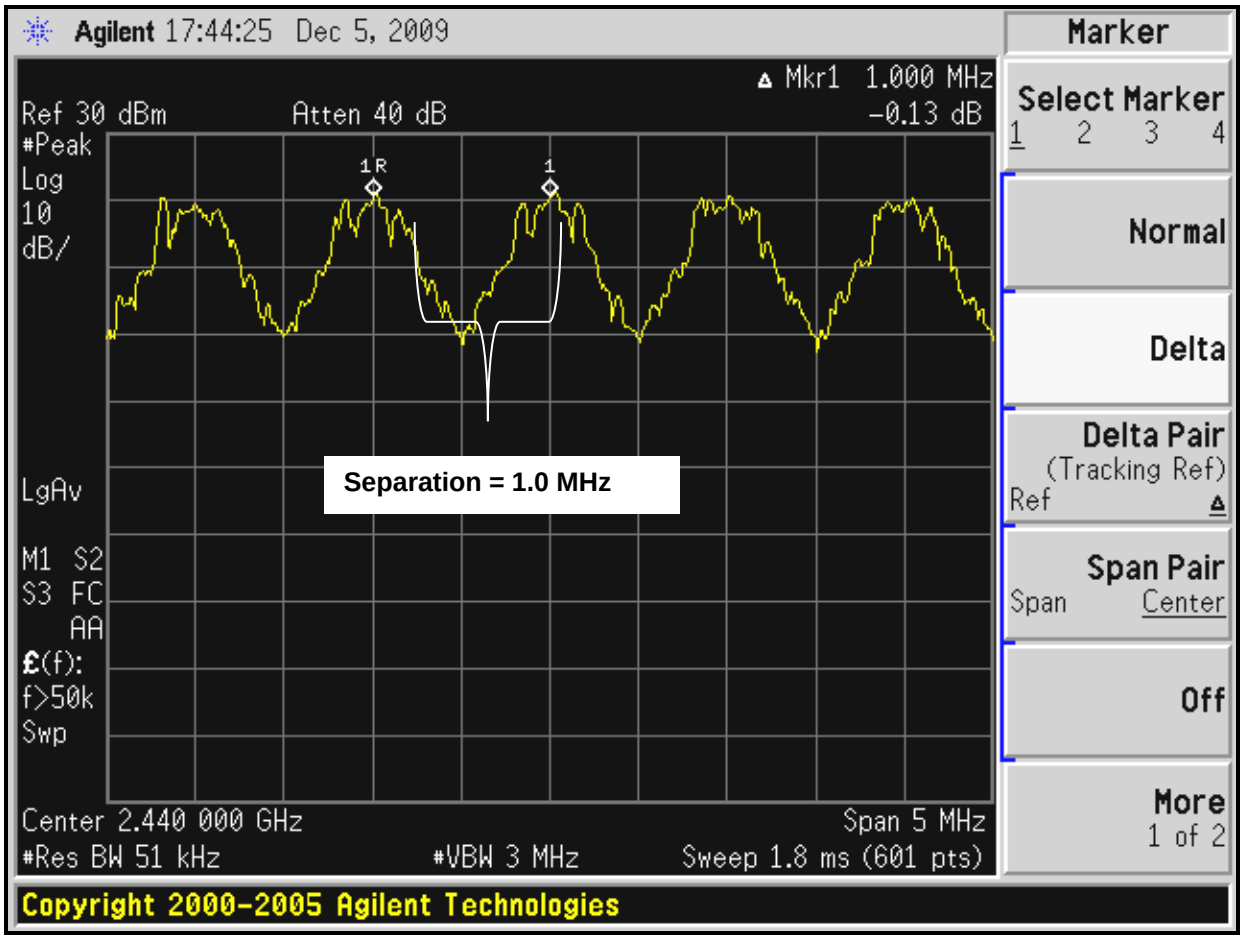
Procedure: C63.10-2009 7.7.2

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Measured frequency separation = 1.0 MHz

8.2 Carrier Frequency Separation Test Data

Plot 8-1: Carrier Frequency Separation



9 Hopping Characteristics – FCC 15.247(a)(1)(iii), RSS-210 A8.1(d)

9.1 Hopping Characteristics Test Procedure

Procedure: C63.10-2009 7.7.3

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

9.2 Number of Hopping Frequencies

Measured number of hopping frequencies = 79

Plot 9-1: Number of Hopping Frequencies (2402 - 2480 MHz)

9.3 Average Time of Occupancy

Procedure: C63.10-2009 7.7.4

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

Allowed period = 0.4 s X 79 channels = 31.6 s

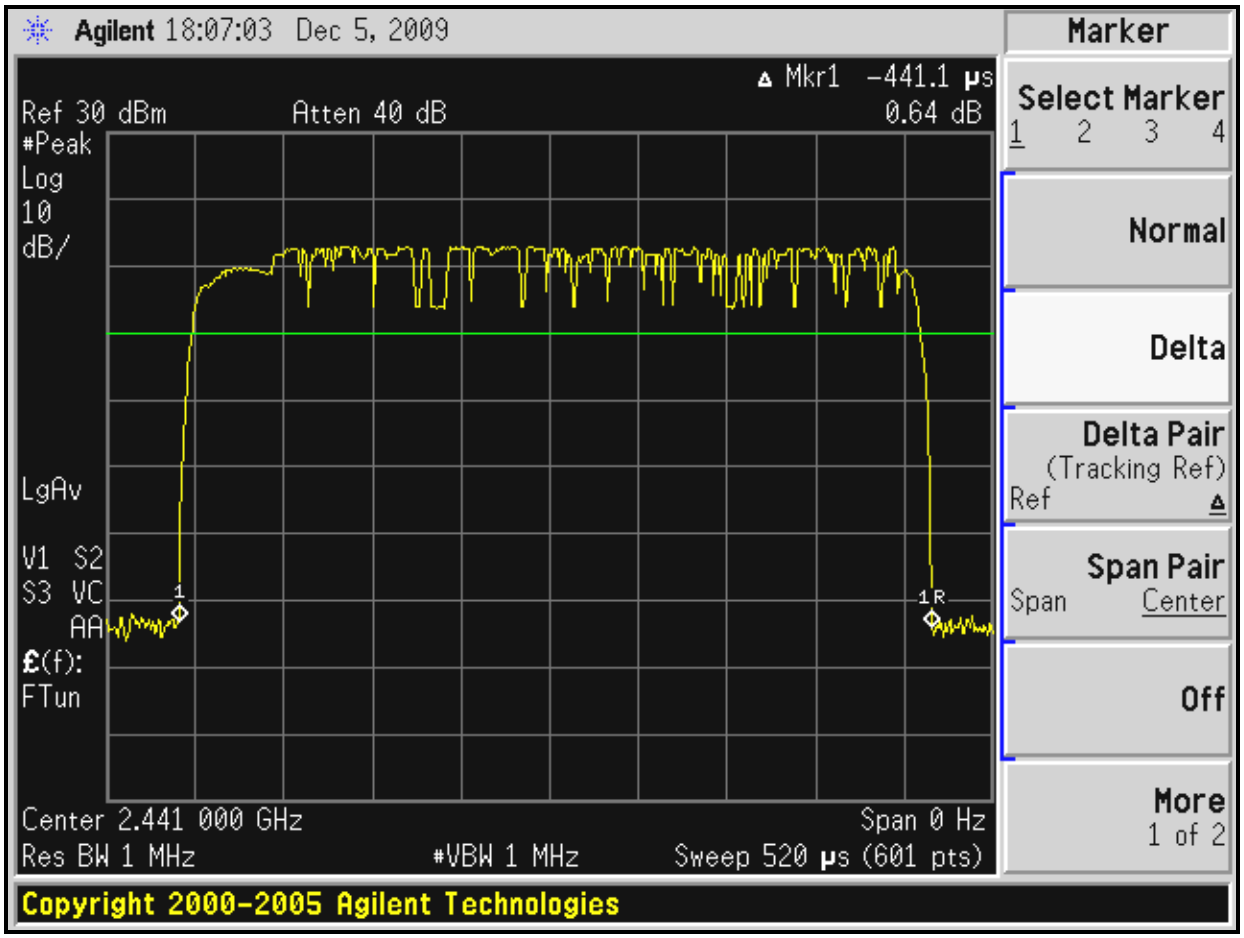
Pulse width = 441 us

Number of pulses could not be resolved with a 31.6 s sweep, so a 5 s sweep was used.

Number of pulses in 5 s sweep = 50 pulses. Therefore, number of pulses in a 31.6 s sweep = 6.32 X 50 = 316 pulses

Average time of occupancy in 31.6 s = 441 us X 316 pulses = 139 ms, which meets the limit of 0.4 s

Plot 9-2: Time of Occupancy (Dwell Time)



Plot 9-3: Number of Pulses in 5 Second Sweep

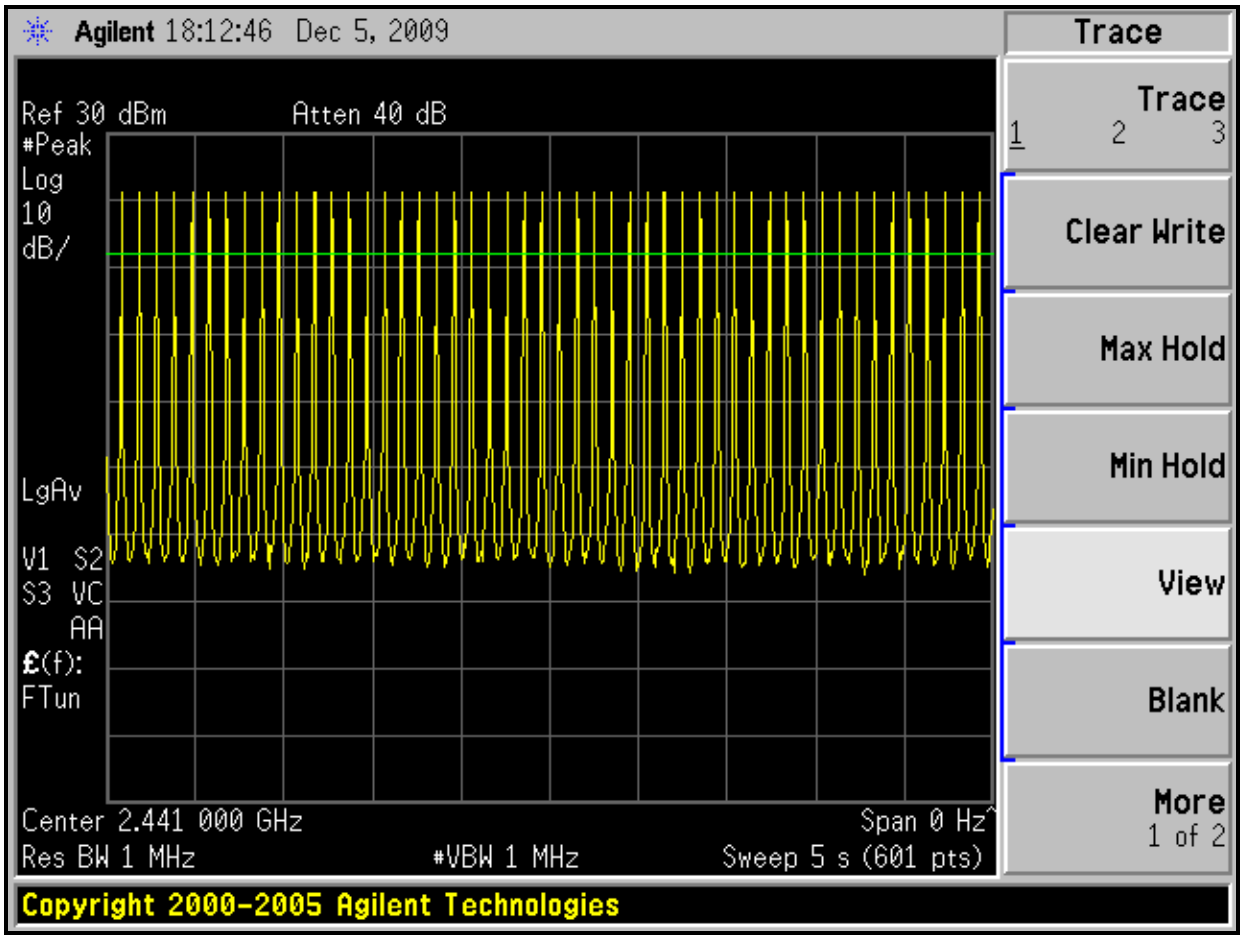


Table 9-1: Hopping Characteristics Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
95448	Agilent Technologies	E4448A	Spectrum Analyzer (3 Hz – 50 GHz)	MY46180621	11/11/10

Test Personnel:

Richard B. McMurray, P.E.	Richard B. McMurray	December 5 and 15, 2009
Test Engineer	Signature	Dates Of Tests

10 AC Conducted Emissions - FCC Rules and Regulations Part 15 15.207

Procedure: C63.10-2009 6.2

10.1 Site and Test Description

The power line conducted emissions measurements were performed in a Series 81 type shielded enclosure manufactured by Rayproof. The EUT was assembled on a wooden table 80 centimeters high. Power was fed to the EUT through a 50-ohm/50 microhenry Line Impedance Stabilization Network (LISN). The EUT LISN was fed power through an A.C. filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. A second LISN, the peripheral LISN, provides isolation for the EUT test peripherals. This peripheral LISN was also fed A.C. power. A metal power outlet box, which is bonded to the ground plane and electrically connected to the peripheral LISN, powers the EUT host peripherals.

The spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the EUT LISN was connected to the spectrum analyzer input through a Solar 100 kHz high-pass filter. The filter is used to prevent overload of the spectrum analyzer from noise below 100 kHz. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable).

The analyzer's 6 dB bandwidth was set to 9 kHz. Video filter less than 10 times the resolution bandwidth is not used. Average measurements are performed in linear mode using a 10 kHz resolution bandwidth, a 1 Hz video bandwidth, and by increasing the sweep time in order to obtain a calibrated measurement. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded.

10.2 Test Limits

Line-Conducted Emissions		
	Limit (dBµV)	
Frequency (MHz)	**Quasi-Peak**	**Average**
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.00	56	46
5.00 to 30.00	60	50

10.3 Conducted Emissions Test Data

Table 10-1: Conducted Emissions Test Data - Neutral Side (Hopping AC Adapter SAW36-12.0-3000)

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)	Pass/ Fail
0.181	Qp	60.9	0.3	61.2	64.4	-3.2			Pass
0.239	Qp	52.8	0.4	53.2	62.1	-8.9			Pass
0.362	Pk	46.0	0.5	46.5			48.7	-2.2	Pass
0.486	Pk	39.2	0.6	39.8			46.2	-6.4	Pass
0.551	Pk	37.3	0.6	37.9			46.0	-8.1	Pass
25.180	Pk	37.5	4.1	41.6			50.0	-8.4	Pass

Table 10-2: Conducted Emissions Test Data – Hot Side (Hopping AC Adapter SAW36-12.0-3000)

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)	Pass/ Fail
0.179	Qp	58.2	0.2	58.4	64.5	-6.1			Pass
0.241	Qp	51.2	0.3	51.5	62.1	-10.6			Pass
0.363	Pk	44.4	0.4	44.8			48.7	-3.9	Pass
0.482	Pk	37.4	0.4	37.8			46.3	-8.5	Pass
0.548	Pk	35.3	0.4	35.7			46.0	-10.3	Pass
25.240	Pk	38.7	4.9	43.6			50.0	-6.4	Pass

Test Personnel:

Daniel W. Baltzell		December 7, 2009
Test Engineer	Signature	Date Of Test

11 Radiated Emissions Test Results - FCC Rules and Regulations Part 15.247(d)

11.1 Limits of Radiated Emissions Measurement

Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009-0.490	2400/f (kHz)	300
0.490-1.705	2400/f (kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any circumstances of modulation.

11.2 Radiated Emissions Measurement Test Procedure

Before final measurements of radiated emissions were made on the open-field three/ten meter range, the EUT was scanned indoors at one and three meter distances. This was done in order to determine its emissions spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to ensure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three/ten-meter, open-field test site. The EUT was placed on a nonconductive turntable 0.8 meters above the ground plane. The spectrum was examined from 9 kHz to the 10^{th} harmonic of the highest fundamental transmitter frequency (24.8 GHz).

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations. For frequencies between 30 and 1000 MHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1000 MHz, emissions are measured using the average detector function with a minimum resolution bandwidth of 1 MHz. No video filter less than 10 times the resolution bandwidth was used. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

Table 11-1: Radiated Emissions Test Equipment

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900151	Rohde and Schwarz	HFH2-Z2	Loop Antenna (9 kHz - 30 MHz)	827525/019	10/1/12
901365	MITEQ	JS4-00102600-41-5P	Amplifier, 0.1-26 GHz, 30dB gain	N/A	3/4/10
900878	Rhein Tech Laboratories	AM3-1197-0005	3 meter antenna mast, polarizing	OATS1	N/A
901516	Insulated Wire Inc.	KPS-1503-2400-KPS	RF cable, 20'	NA	10/19/10
901517	Insulated Wire Inc.	KPS-1503-360-KPS	RF cable 36"	NA	10/19/10
901242	Rhein Tech Laboratories	WRT-000-0003	Wood rotating table	N/A	N/A
901215	Hewlett Packard	8596EM	Spectrum Analyzer (9 kHz - 12.8 GHz)	3826A00144	10/23/10
900791	Chase	CBL6111B	Bilog Antenna (30 MHz – 2000 MHz)	N/A	12/12/10
900321	EMCO	3161-03	Horn Antennas (4 – 8 GHz)	9508-1020	6/14/10
900323	EMCO	3160-07	Horn Antennas (8.2 – 12 GHz)	9605-1054	6/14/10
900356	EMCO	3160-08	Horn Antennas (12.4 – 18 GHz)	9607-1044	6/14/10
901218	EMCO	3160-09	Horn Antenna (18 - 26 GHz)	960281-003	6/19/10
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	6/14/10

11.2.1 Radiated Emissions Harmonics/Spurious Test Data

Table 11-2: Radiated Emissions Harmonics/Spurious - 2402 MHz

Emission Frequency (MHz)	Peak Analyzer Reading (dBuV) (1 MHz RBW/ VBW)	Average Analyzer Reading (dBuV) (Peak -20 dB duty cycle)	Site Correction Factor (dB/m)	Average Emission Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)
4804.000	49.0	33.9	2.0	35.9	54.0	-18.1
12010.000	44.8	31.0	13.5	44.5	54.0	-9.5

Table 11-3: Radiated Emissions Harmonics/Spurious - 2441 MHz

Emission Frequency (MHz)	Peak Analyzer Reading (dBuV) (1 MHz RBW/ VBW)	Average Analyzer Reading (dBuV) (Peak -20 dB duty cycle)	Site Correction Factor (dB/m)	Average Emission Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)
4882.000	48.2	33.6	2.0	35.6	54.0	-18.4
7323.000	42.9	29.7	5.3	35.0	54.0	-19.0
12205.000	43.6	30.7	13.4	44.1	54.0	-9.9

Table 11-4: Radiated Emissions Harmonics/Spurious - 2480 MHz

Emission Frequency (MHz)	Peak Analyzer Reading (dBuV) (1 MHz RBW/ VBW)	Average Analyzer Reading (dBuV) (Peak -20 dB duty cycle)	Site Correction Factor (dB/m)	Average Emission Level (dBuV/m)	Average Limit (dBuV/m)	Average Margin (dB)
4960.000	46.2	33.0	2.2	35.2	54.0	-18.8
7440.000	44.5	31.1	5.8	36.9	54.0	-17.1
12400.000	41.3	29.5	15.8	45.3	54.0	-8.7

Test Personnel:

Daniel W. Baltzell		December 7, 2009
Test Engineer	Signature	Date Of Test

12 Conclusion

The data in this measurement report shows that the **Harris Corporation** Model **Unity XG-100P Multiband Portable Radio, FCC ID: AQZ-XG-100P00, IC: 122D-XG100P00,** complies with all the applicable requirements of FCC Part 15 and Part 2, and IC RSS-210.