

COMPLIANCE WORLDWIDE INC. TEST REPORT 253-11R1

In Accordance with the Requirements of
FCC CFR 47 Part 95, Subpart H
Low Power Licensed Radio Communication Devices
Wireless Medical Telemetry Service Transceiver
In the bands 1395-1400 and 1427-1432 MHz

Issued to

Philips Medical Systems
3000 Minuteman Drive
Andover, MA 01810
978-659-2800

for the

Philips Telemetry System
MX40 Patient Worn Monitor
1.4 GHz CTS Radio

FCC ID: PQC-MX40SH1B4

Report Issued on April 23, 2012

Tested by



Brian F. Breault

Reviewed by



Larry K. Stillings

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1. Scope

This test report certifies that the 1.4 GHz Philips IntelliVue Patient Worn Monitor, MX40, tested, meets the Federal Communications Commission CFR 47, PART 95 requirement. The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required. Revision R1 updates the FCCID for the new WLAN filing.

2. Product Details

2.1 Manufacturer: Philips Medical Systems

2.2 Model Number: MX40

2.3 Serial Number: US11600746

2.4 Description of EUT: The Patient Worn Monitor is a body worn patient monitor for ECG and SpO₂ measurements. The device has a touch screen display which can display patient waveforms and/or numeric values locally or transmitted via several possible radio links to the hospital wireless network, a wireless bedside monitor, or to a CTS network for display on the IntelliVue Information Center. The device is capable of transmitting in the 2.4GHz (ISM bands), 5.6GHz (ISM bands) and/or the WMTS bands, 1395 MHz to 1400 MHz and 1427 MHz to 1432 MHz. The PWM contains an 802.11 a/b/g WLAN radio to communicate with a WLAN, an 802.15.4 SRR radio to communicate with a SRR equipped bedside monitor, or an optional 1.4 GHz or 2.4 GHz CTS radio to communicate with a Philips CTS network. Performance evaluation during immunity testing shall be done on the PWM display, the WLAN display, the IntelliVue Information Center display and the MP5 bedside monitor. The PWM will be configured with a 1.4 GHz CTS radio for this test plan.

2.5 Power Source: DC 3 volts – Three 1.5 VDC Alkaline AA Batteries (Regulated)

2.6 EMC Modifications: None

3. Product Configuration

3.1. Operational Characteristics & Software

The PWM provides a link from itself to the Access Point/Wireless Infrastructure and the Hospital LAN. The patient data is received by the IntelliVue Access Point and transmitted over the wireless LAN infrastructure to the IntelliVue Central Station. The performance of the PWM will be monitored on the Philips IntelliVue Information Center (PIIC) display, i.e. the Central Station. The system should maintain smooth scrolling patient waveforms and constant numeric readouts.

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3. Product Configuration (continued)

3.2. EUT Hardware

Blk Diag #	Manufactr	Model/Part # / Options	Serial Number	Input Voltage	Frq (Hz)	Description/Function
1	Philips	865350/MX40	US11600746	3 V	DC	Patient Worn Monitor w/1.4 GHz ROW radio, PP3 build units

3.3. EUT Hardware/Software/Firmware Revision Level

EUT Model#	PCA#	Description	HW	SW	FW
MX40		1.4 GHz CTS radio		A.02.54	A.00.26

3.4. EUT Cables/Transducers

Blk Diag Ltr	Manufacturer	Model/Part #	Length (m)	Shield Y/N	Description/Function	
A	Philips	989803171871	0.8	Y	SpO2 connector/ECG leadset- 6 leads	
B	Philips	M1191A	2	N	SpO2 patient transducer	

3.5. Support Equipment

Diag Blk #	Manufacturer	Model/Part # Options	Serial Number	Input Voltage	Input Fq.	Description/Function
2	Philips	ITS4843A/862228	RO81005969	48	DC	1.4 GHz Access Point
4	PowerDSine	ITS4845A (6506)	P06451223000004A00	100-240	50-60	Power-over-Ethernet hub
5	Cisco	WS-C2950C-24	FOC1034Z2FU	100-240	50-60	LAN switch
6	Philips	M3154B	2UA610JXJK	100-240	50-60	InbteilliVue Information Center
7	Philips	M3154B	2UA610JXJK	100-240	50-60	InbteilliVue Information Center
8	Philips	ITS3171A	756005AG-35200536	100-240	50-60	Access Point Controller
9	Linksys	WRT320N	CUH017J726025	12	DC	WLAN router
10	Philips	865024/M8105A	DE74808392	100-240	50-60	MP5 Patient Bedside Monitor
11	Philips	LE1708	14AP1727A00	100-240	50-60	Display
12	Philips	190P6EB/27	BZ000534113115	100-240	50-60	Display

Note: Blk Diag #'s 2, 4, 5, 6 and 11 were configured for this test.

3.6. Support Equipment Cables/Transducers

Blk Diag Ltr	Manufacturer	Model/Part #	Length (m)	Shield Y/N	Description/Function	
C	NA	NA	Various	N	Cat 5 LAN cables	

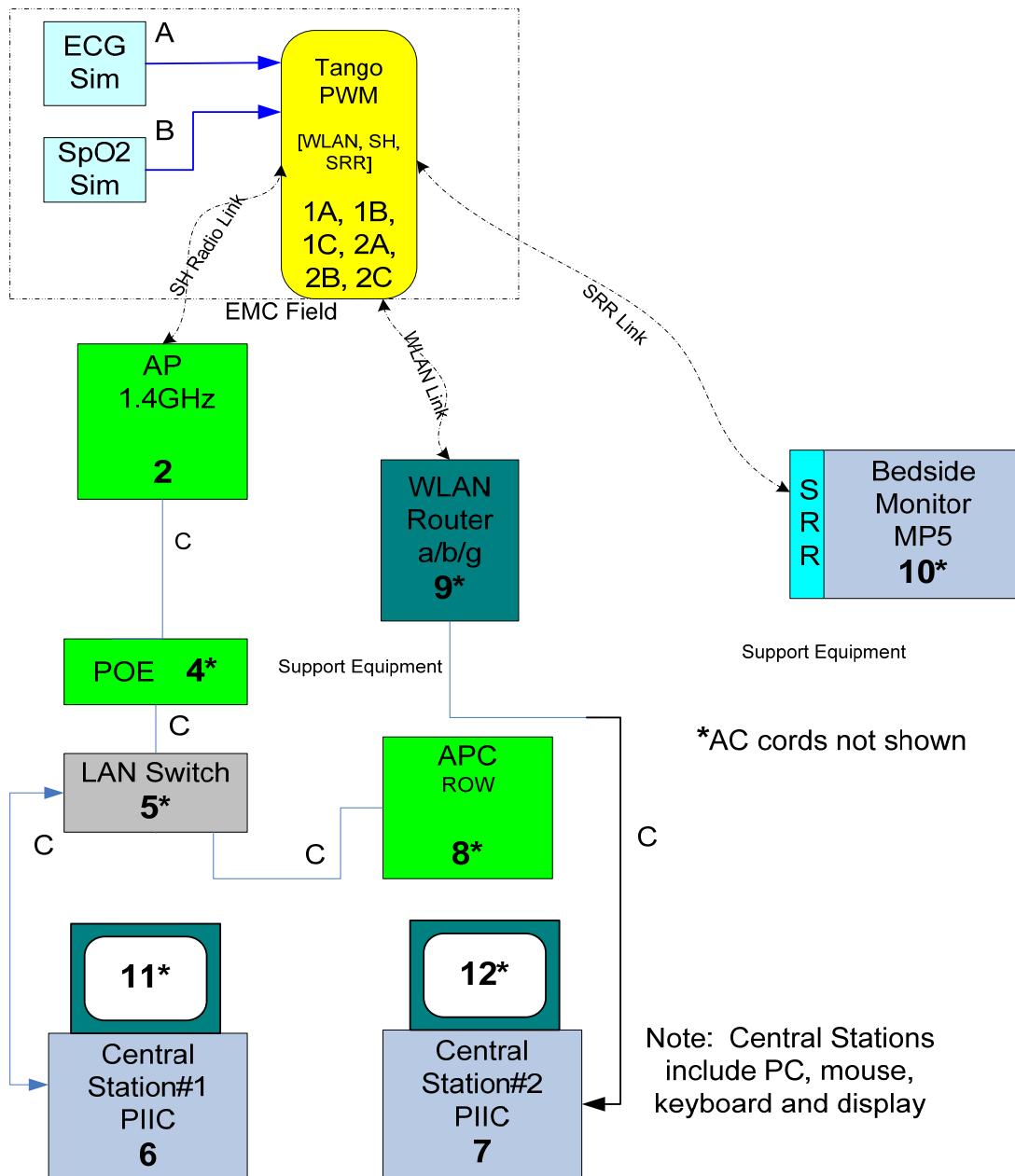
3.7. Miscellaneous

Manufacturer	Model/Part #	Description/Function		
Duracell	NA	AA batteries		
Philips	453564128871	Li-ion rechargeable batteries		

3. Product Configuration (continued)

3.8. Block Diagram

Fig.1 Tango EMC Testing



Note: Blk Diag #'s 2, 4, 5, 6 and 11 were configured as support equipment for this test.

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4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Tests

Device	Manufacturer	Model No.	Serial No.	Cal Due
Spectrum Analyzer	Agilent	E4407B	MY45104493	12/22/2012
Microwave Preamp	Hewlett Packard	8449B	3008A01323	12/1/2012
Spectrum Analyzer	Agilent	E7405A	MY45115430	10/22/2011
Bilog Antenna	Com-Power	AC-220	25509	8/30/2011
Horn Antenna	Electro-Metrics	EM-6961	6337	10/19/2012
Horn Antenna	ComPower	AH-118	10078	7/23/2011
Horn Antenna	ComPower	AH-840	03075	7/20/2012
DMM / Temperature	Fluke	187	79690058	11/29/2011
RF Signal Generator	Hewlett Packard	8648C	3642U01557	7/16/2011
High Pass Filter 2.5 GHz	Micro-Tronics	HPM50110	070	06/25/2012
Digital Barometer	Control Company	4195	ID236	11/9/2011
Thermal Chamber	Associated Testing Labs	SLHU-1-CRLC	N/A	Not Required

4.2. Measurement & Equipment Setup

Test Dates:	May 16, 2010 to June 3, 2011
Test Engineer:	Brian Breault
Normal Site Temperature (15 - 35°C):	21.7
Relative Humidity (20 - 75%RH):	33%
Frequency Range:	30 MHz to 15 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	120 kHz - 30 MHz to 1 GHz 1 MHz - Above 1 GHz
EMI Receiver Avg Bandwidth:	300 kHz - 30 MHz to 1 GHz 3 MHz - Above 1 GHz
Detector Function:	Peak, QP - 30 MHz to 1 GHz Peak, Avg - Above 1 GHz Unless otherwise specified.

4.3. Measurement Procedure

All references to CFR 47 PART 95, Subpart H - Wireless Medical Telemetry Service (WMTS) - refer to the 2010 edition.

The test methods used to generate the data in this test report is in accordance with ANSI C63.4: 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

In accordance with ANSI C63.4-2003, section 13.4.1, c), the device under test was rotated through three orthogonal axes to determine which attitude produced the highest emission relative to the limit. The attitude that produced the highest emission relative to the limit was used for all radiated emission measurements.

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4. Measurements Parameters

4.4. Measurement Uncertainty

The following uncertainties are expressed for an expansion/coverage factor of K=2.

RF Frequency	$\pm 1 \times 10^{-8}$
Radiated Emission of Transmitter	± 4.55 dB
Radiated Emission of Receiver	± 4.55 dB
Temperature	± 0.91 °C
Humidity	$\pm 5\%$

5. Choice of Equipment for Test Suits

5.1 Choice of Model

This test report is based on the test samples supplied by the manufacturer and are reported by the manufacturer to be equivalent to the production units.

5.2 Presentation

This test sample was tested complete with all required ancillary equipment. Refer to Section 3 of this report for product equipment configuration.

5.3 Choice of Operating Frequencies

The MX40 1.4 GHz Patient Worn Monitor operates on a total of 6 channels:

WMTS Channel Frequencies in the Band 1395 to 1400MHz		
Channel 1	1395.9MHz	Primary WMTS Channel
Channel 2	1397.5MHz	Primary WMTS Channel
Channel 3	1399.1MHz	Primary WMTS Channel
WMTS Channel Frequencies in the Band 1427 to 1432MHz		
Channel 4	1427.9MHz	Primary WMTS Channel
Channel 5	1429.5MHz	Secondary Channel, only available if not in use
Channel 6	1431.1MHz	Secondary Channel, only available if not in use

The choice of operating frequencies selected for the testing outlined in this report was based on the lowest and highest operating frequencies in each of the two bands utilized by the device under test. The frequencies selected were 1395.9 MHz, 1399.1 MHz, 1427.9 MHz and 1431.1 MHz.

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6. Measurement Summary

Transmitter Test Requirement	FCC Requirement	Test Report Section	Result	Comment
Product Labeling	95.1109(b)	N/A	N/A	See exhibits FCC label sample and label location.
Specific Frequencies or Frequency Range(s) Used	95.1111(a)(1)	5.3	Compliant	
Modulation Scheme & Occupied Bandwidth	95.1111(a)(2)	7.1	Compliant	
Radiated Field Strength of Fundamental	95.1115(a)(2)	7.2	Compliant	
Radiated Field Strength of Harmonics	95.1115(b)(2)	7.3	Compliant	
Band Edge Measurements	95.1115(b)(2)	7.4	Compliant	
Spurious Radiated Emissions	95.1115(b)(2)	7.5	Compliant	
Emission Type	95.1115(c)	N/A	N/A	Transmits Data and ECG Waveforms
Channel Use	95.1115(d)	5.3	N/A	Reference Part 2.106 (2)(1) 1427-1432 MHz: Medical Operations Band
Frequency Stability	95.1115(e)	7.6		
Conducted Emissions	N/A	N/A	N/A	Battery Operated Device
RF Safety	95.1125	7.7	Compliant	

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7. Measurement Data (continued)

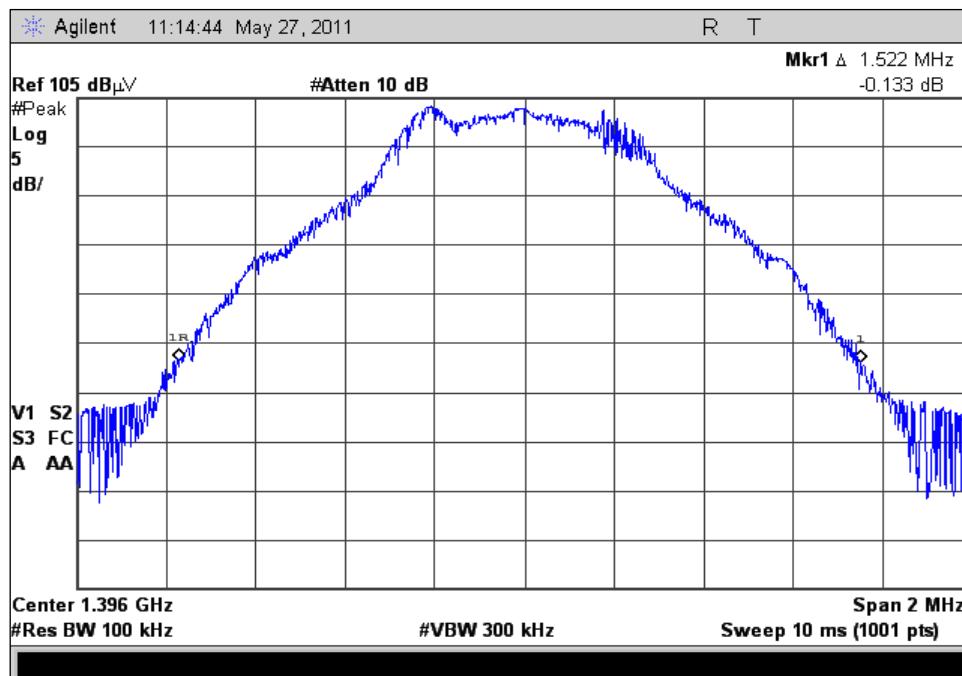
7.1. Occupied Bandwidth

Requirement: Subpart H, Section 95.1111: Frequency coordination requires the occupied bandwidth to be disclosed.

The modulation scheme used by the MX40 1.4 GHz Patient Worn Monitor is GFSK. This information is supplied by the manufacturer. The occupied bandwidths of the measured emissions are detailed in the following table and screen captures.

Channel	Freq (MHz)	Occupied Bandwidth (MHz)	Channel	Freq (MHz)	Occupied Bandwidth (MHz)
1	1395.9	1.522	4	1427.9	1.518
3	1399.1	1.530	6	1431.1	1.554

7.1.1. Channel 1, 1395.9 MHz



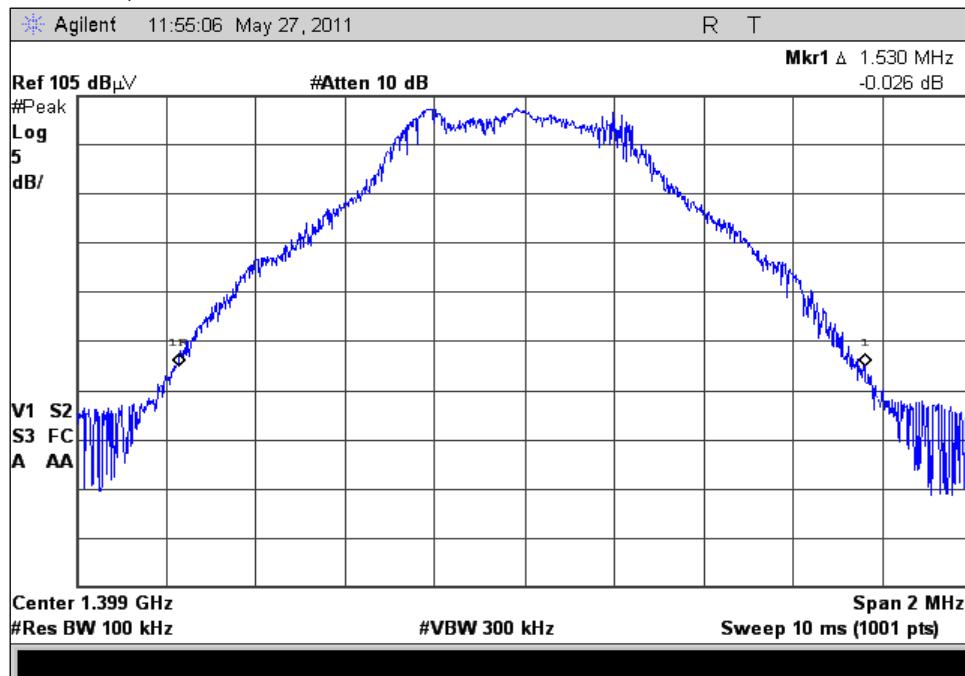
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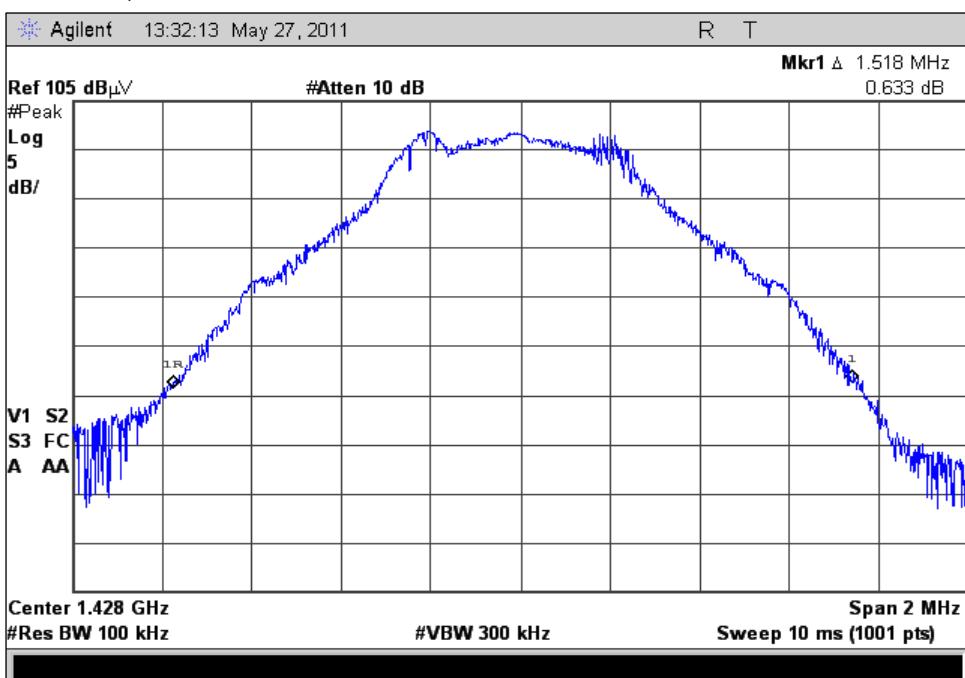
7. Measurement Data (continued)

7.1. Occupied Bandwidth

7.1.2. Channel 3, 1399.1 MHz



7.1.3. Channel 4, 1427.9 MHz

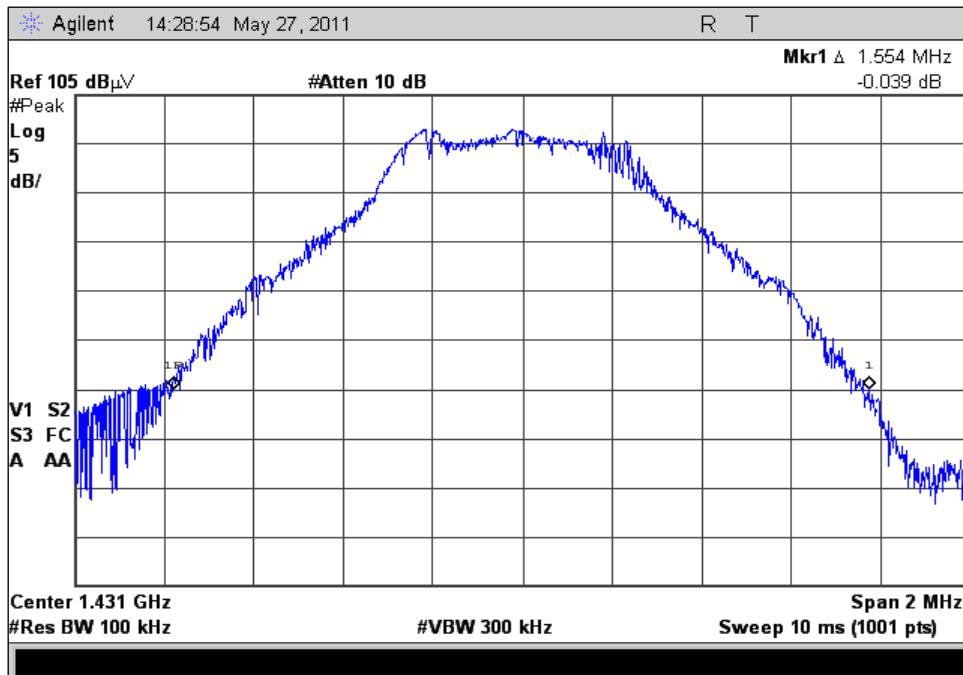


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7. Measurement Data (continued)

7.1. Occupied Bandwidth

7.1.4. Channel 6, 1431.1 MHz



7.2. Radiated Field Strength of Fundamental (95.115(a)(2))

Requirement: In the 1395–1400 MHz and 1427–1429.5 MHz bands, the maximum allowable field strength is 740 mV/m (117.4 dB μ V/m), as measured at a distance of 3 meters, using measuring equipment with a linear averaging detector and a 1 MHz measurement bandwidth.

Channel	Freq (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Peak Margin (dB)	Average Margin (dB)	Result
		Peak	Average	Peak	Average			
1	1395.9	104.20	64.36	137.4	117.4	-33.2	-53.5	Compliant
3	1399.1	104.00	64.27	137.4	117.4	-33.4	-53.5	Compliant
4	1427.9	102.10	68.26	137.4	117.4	-35.3	-55.6	Compliant
6	1431.1	101.90	63.26	137.4	117.4	-35.5	-55.4	Compliant

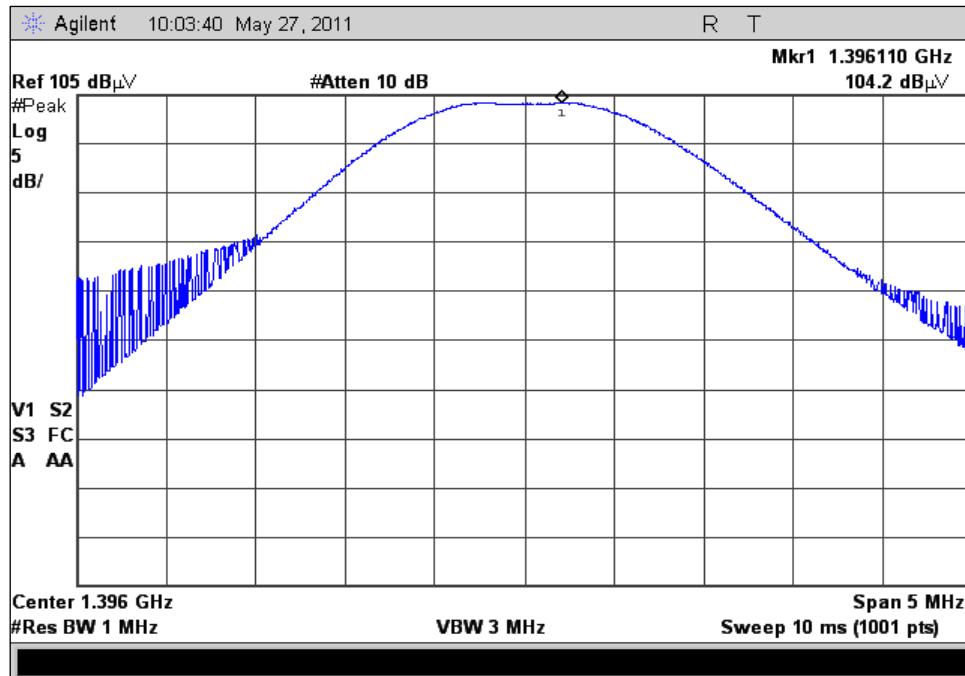
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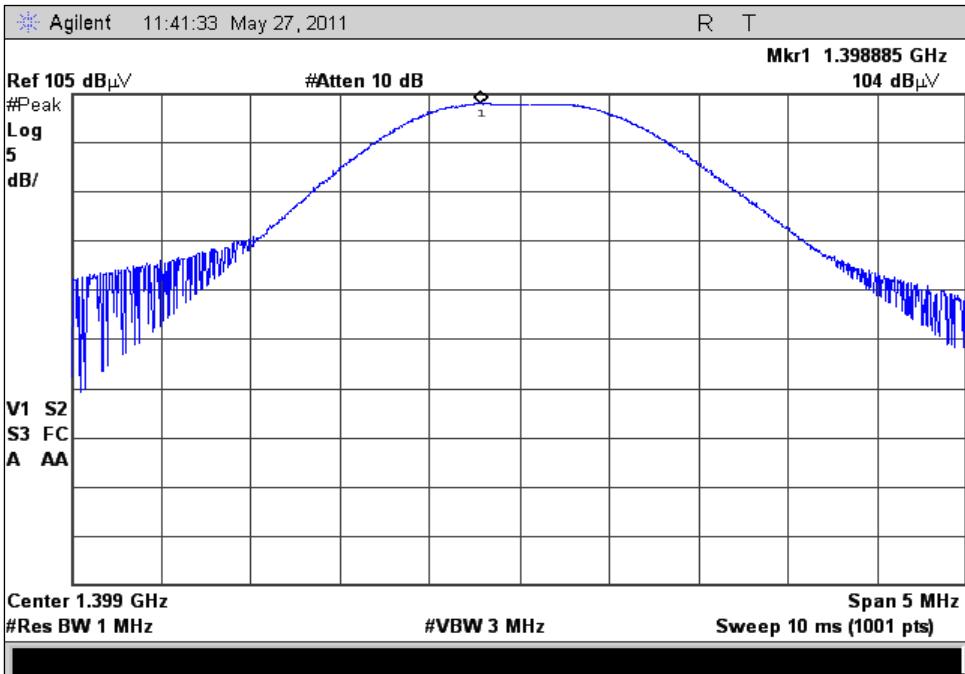
7. Measurement Data (continued)

7.2. Radiated Field Strength of Fundamental (95.115(a)(2)) (continued)

7.2.1. Channel 1, 1395.9 MHz



7.2.2. Channel 3 1399.1 MHz



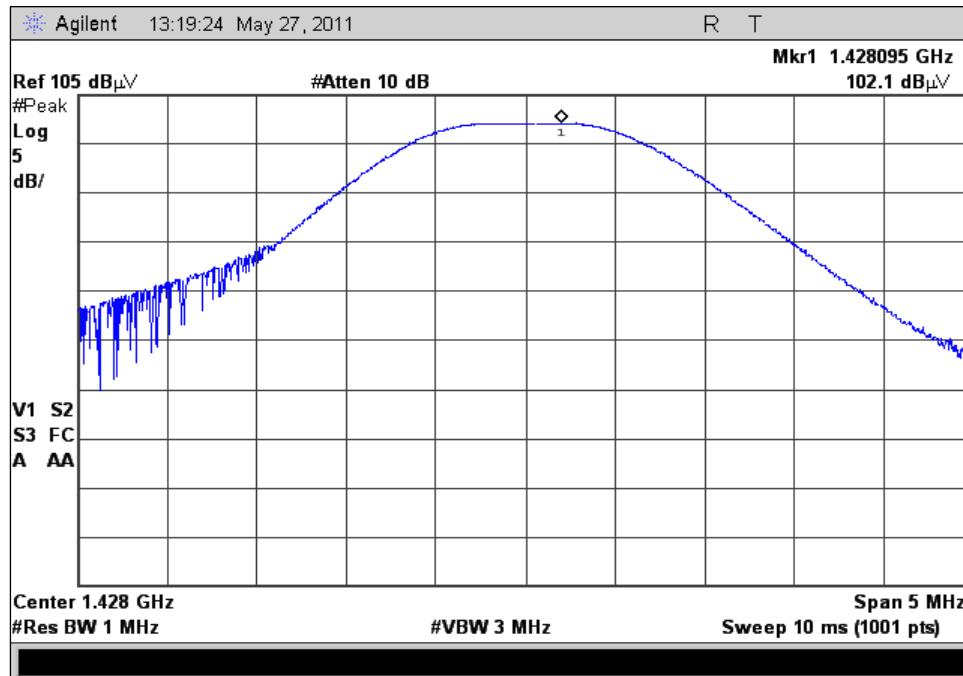
Test Number: 253-11R1

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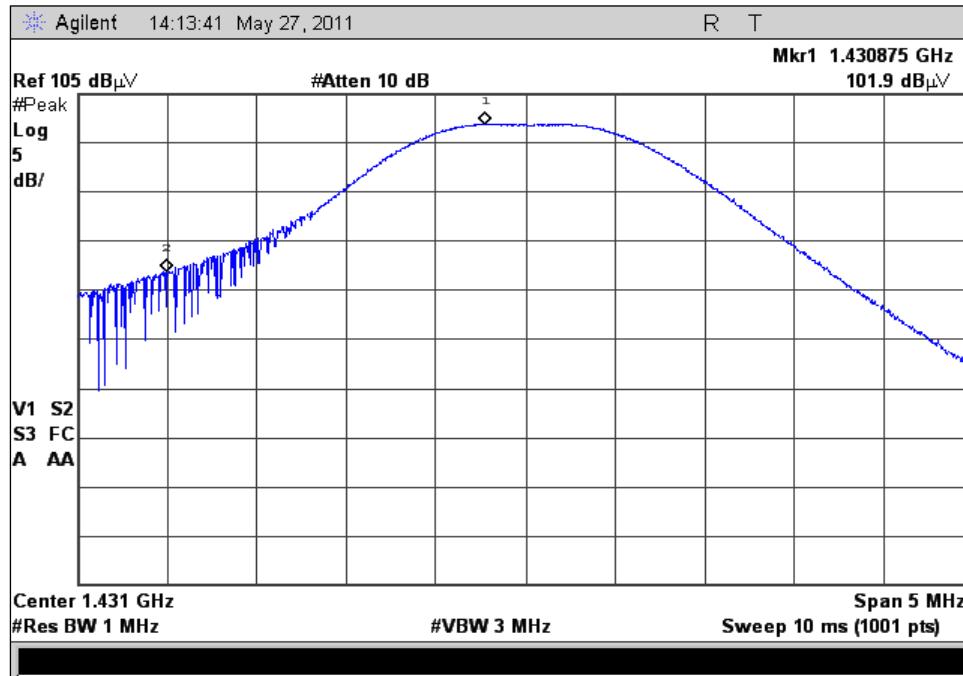
7. Measurement Data (continued)

7.2. Radiated Field Strength of Fundamental (95.115(a)(2)) (continued)

7.2.3. Channel 4, 1427.9 MHz



7.2.4. Channel 6, 1431.1 MHz



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7. Measurement Data (continued)

7.3. Combined Worst Case Radiated Field Strength of Harmonics

Test Note: For each harmonic emission, all three orthogonal positions at both antenna polarities were investigated. This table represents the worst case of each harmonic frequency.

Freq. (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB μ V/m)		Antenna Polarity (H/V)	Result
	Peak	Average	Peak	Average	Peak	Average		
2791.8	46.51	33.93	74.00	54.00	-27.49	-20.07	V	Compliant
2798.2	42.02	30.71	74.00	54.00	-31.98	-23.29	H	Compliant
2855.8	44.03	30.44	74.00	54.00	-29.97	-23.56	H	Compliant
2862.2	44.04	30.93	74.00	54.00	-29.96	-23.07	H	Compliant
4187.7	47.82	34.11	74.00	54.00	-26.18	-19.89	V	Compliant
4197.3	46.97	34.68	74.00	54.00	-27.03	-19.32	V	Compliant
4283.7	46.77	34.04	74.00	54.00	-27.23	-19.96	V	Compliant
4293.3	47.51	34.84	74.00	54.00	-26.49	-19.16	H	Compliant
5583.6	48.22	35.63	74.00	54.00	-25.78	-18.37	H	Compliant
5596.4	48.09	35.61	74.00	54.00	-25.91	-18.39	V	Compliant
5711.6	47.54	35.38	74.00	54.00	-26.46	-18.62	V	Compliant
5724.4	48.48	36.18	74.00	54.00	-25.52	-17.82	H	Compliant
6979.5	50.70	38.48	74.00	54.00	-23.30	-15.52	H	Compliant
6995.5	50.68	38.54	74.00	54.00	-23.32	-15.46	V	Compliant
7139.5	50.95	38.86	74.00	54.00	-23.05	-15.14	H	Compliant
7155.5	52.39	39.90	74.00	54.00	-21.61	-14.10	H	Compliant
8375.4	53.89	41.09	74.00	54.00	-20.11	-12.91	H	Compliant
8394.6	54.51	41.80	74.00	54.00	-19.49	-12.20	V	Compliant
8567.4	54.36	41.61	74.00	54.00	-19.64	-12.39	H	Compliant
8586.6	55.07	42.79	74.00	54.00	-18.93	-11.21	H	Compliant
9771.3	55.15	42.41	74.00	54.00	-18.85	-11.59	H	Compliant
9793.7	54.11	42.37	74.00	54.00	-19.89	-11.63	V	Compliant
9995.3	56.55	43.38	74.00	54.00	-17.45	-10.62	H	Compliant
10017.7	56.45	44.22	74.00	54.00	-17.55	-9.78	H	Compliant
11167.2	56.48	44.21	74.00	54.00	-17.52	-9.79	H	Compliant
11192.8	56.08	44.08	74.00	54.00	-17.92	-9.92	H	Compliant
11423.2	57.20	44.16	74.00	54.00	-16.80	-9.84	H	Compliant
11448.8	57.30	44.92	74.00	54.00	-16.70	-9.08	H	Compliant
12563.1	58.31	45.00	74.00	54.00	-15.69	-9.00	H	Compliant
12591.9	55.91	45.33	74.00	54.00	-18.09	-8.67	V	Compliant
12851.1	58.85	45.89	74.00	54.00	-15.15	-8.11	V	Compliant
12879.9	58.32	46.13	74.00	54.00	-15.68	-7.87	H	Compliant
13959.0 ¹	52.50	41.09	74.00	54.00	-21.50	-12.91	V	Compliant
13991.0 ¹	52.90	40.43	74.00	54.00	-21.10	-13.57	V	Compliant
14279.0 ¹	53.78	41.37	74.00	54.00	-20.22	-12.63	H	Compliant
14311.0 ¹	54.93	42.22	74.00	54.00	-19.07	-11.78	H	Compliant

¹ Measurements of each 10th harmonic emission were made at 1 meter and extrapolated to 3 meters.

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7. Measurement Data (continued)

7.4. Band Edge

Requirement: Out-of-band emissions above 960 MHz are limited to 500 microvolts per meter as measured at a distance of 3 meters, using measuring equipment with a linear averaging detector and a 1 MHz measurement bandwidth.

Test Note: Band edge measurements were made using the procedure detailed in the FCC Office of Engineering and Technology (FCC OET) Publication Number 913591.

FCC OET Publication Number 913591 Calculator

Channel	Freq. (MHz)	Field Strength (dB μ V/m)		Band Edge		Corrected Band Edge & Worst Case Out of Band (dB μ V/m)	
		Peak	Average	Freq. (MHz)	30 kHz Offset (dB)	Peak	Average
1	1395.9	104.2	64.36	1395	39.18	65.02	25.18
3	1399.1	104.0	64.27	1400	40.35	63.65	23.92
4	1427.9	102.1	68.26	1427	38.70	63.40	29.56
6	1431.1	101.9	63.26	1432	40.81	61.09	22.45

Notes: 1 – Peak values from plots on following pages

2 – Delta values from plots on following pages

Delta values are subtracted from peak & average values

Corrected Measurement Results

Channel	Freq. (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB μ V/m)		Result
		Peak	Average	Peak	Average	Peak	Average	
1 LBE	1395	65.02	25.18	74	54	-8.98	-28.82	Compliant
3 UBE	1400	63.65	23.92	74	54	-10.35	-30.08	Compliant
4 LBE	1427	63.40	29.56	74	54	-10.60	-24.44	Compliant
6 UBE	1430	61.09	22.45	74	54	-12.91	-31.55	Compliant

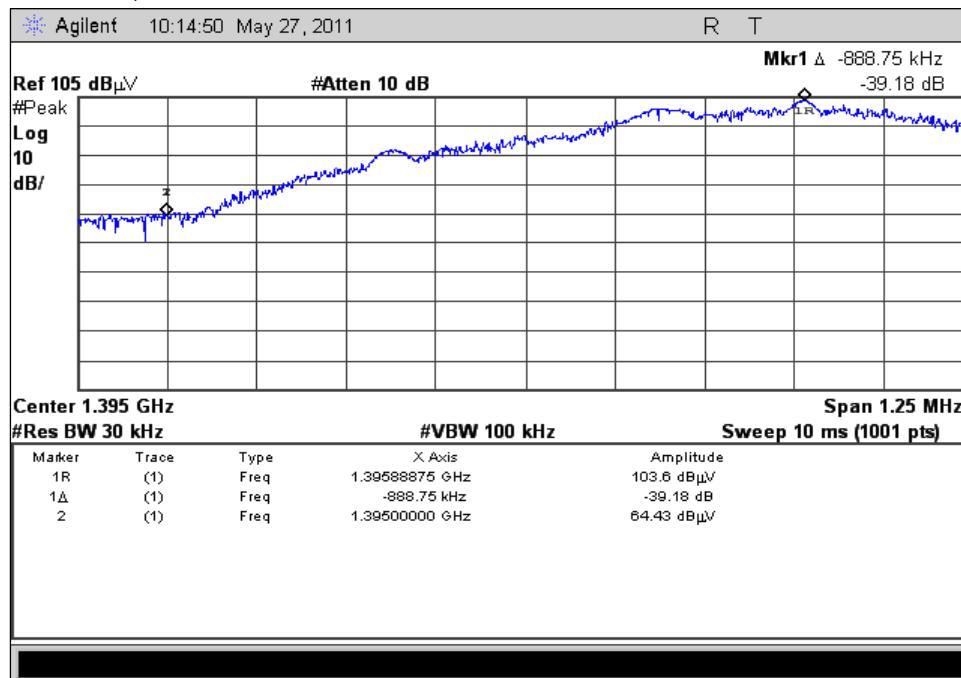
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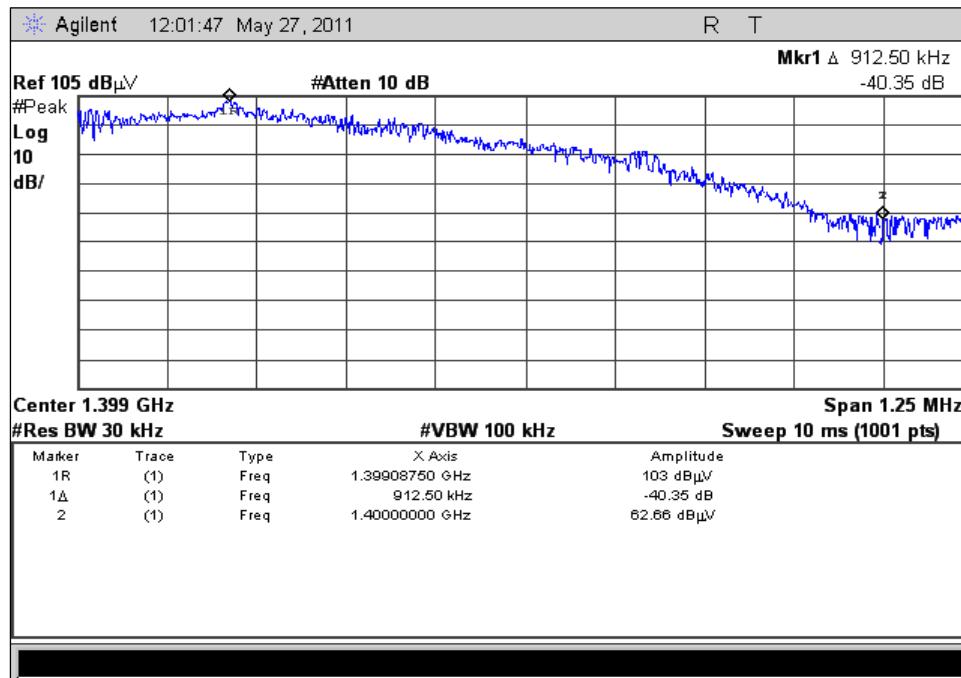
7. Measurement Data (continued)

7.4. Band Edge (continued)

7.4.2. Channel 1, 1395.9 MHz Offset Measurement



7.4.2. Channel 3, 1399.1 MHz Offset Measurement



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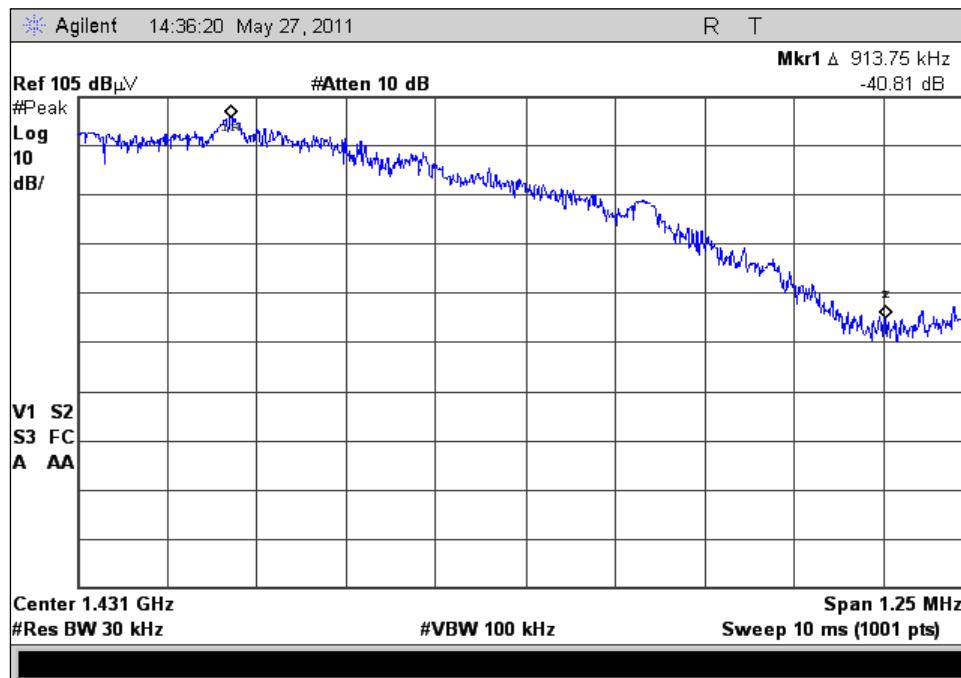
7. Measurement Data (continued)

7.4. Band Edge (continued)

7.4.3. Channel 4, 1427.9 MHz Offset Measurement



7.4.4. Channel 6, 1431.1 MHz Offset Measurement



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7. Measurement Data (continued)

7.5. Spurious Radiated Emissions

7.5.1. Regulatory Limit: FCC Part 15, Class B, Quasi-Peak

Frequency Range (MHz)	Distance (Meters)	Limit (dB μ V/m)
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
960 to 1000	3	54.0

7.5.2. Test Procedure

Test measurements were made in accordance with ANSI C63.4-2003, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

The device under test was prescreened in three orthogonal positions to determine the worst case emissions. The test data detailed in this test report represents the worst case orientation.

7.5.3. Note: Radiated Emissions > 1 GHz

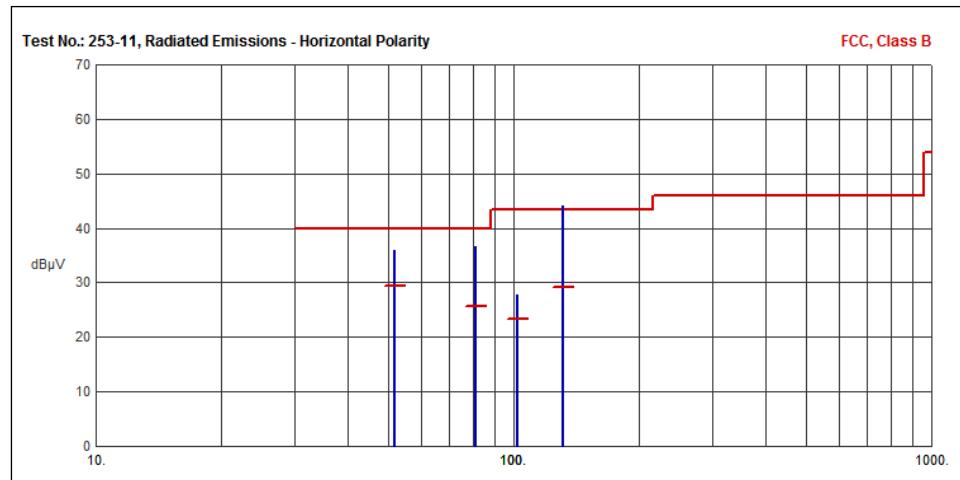
There were no measurable emissions above 1 GHz other than the harmonic emissions outlined in Section 7.3.

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7. Measurement Data (continued)

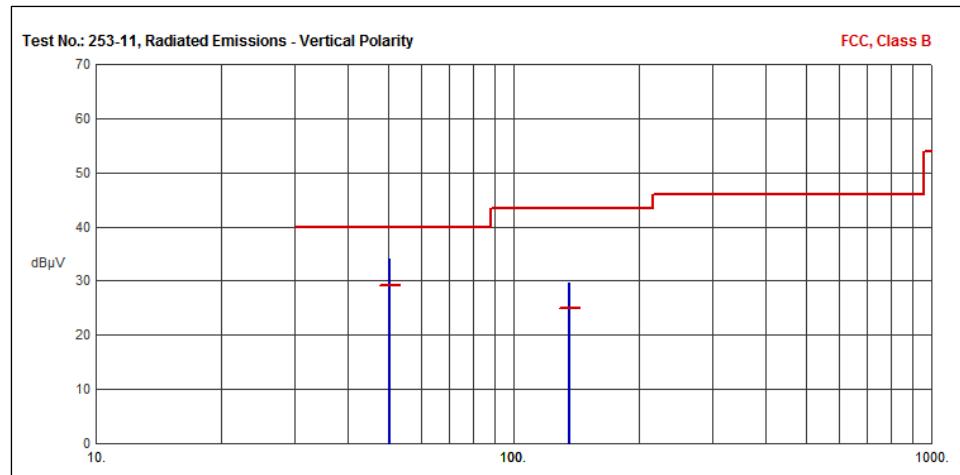
7.5. Spurious Radiated Emissions (continued)

7.5.4. Horizontal Polarity



Frequency (MHz)	Pk Amp (dB μ V/m)	QP Amp (dB μ V/m)	QP Limit (dB μ V/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
51.9449	36.01	29.49	40.00	-10.51	N/A	N/A	Compliant
81.3534	36.70	25.67	40.00	-14.33	N/A	N/A	Compliant
101.8451	27.80	23.24	43.50	-20.26	N/A	N/A	Compliant
131.7223	44.01	29.23	43.50	-14.27	N/A	N/A	Compliant

7.5.5. Vertical Polarity



Frequency (MHz)	Pk Amp (dB μ V/m)	QP Amp (dB μ V/m)	QP Limit (dB μ V/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
50.6158	34.16	29.14	40.00	-10.86	N/A	N/A	Compliant
136.1469	29.57	24.92	43.50	-18.58	N/A	N/A	Compliant

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7. Measurement Data (continued)

7.6. Frequency Stability (FCC 95.1115 (e))

Requirement: Manufacturers of wireless medical telemetry devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all of the manufacturer's specified conditions.

Nominal Temperature : 22.5 °C

Nominal Voltage : 3.0 Volts DC (internally regulated)

Voltage Tolerance : Lower: See Test Note

Upper: See Test Note

Test Note : The internal voltage monitoring circuitry of the DUT kept the device from operating properly with an external power supply connected.

For this reason, the stability measurements were made with three fresh alkaline batteries.

Measurement Result : The DUT remained well within the WMTS band.

Channel	Assigned Freq.		Temp.	Voltage	Meas. Frequency	Deviation		Result
	GHz	Deg. C				VDC	MHz	
1	1395.9	Nominal	Nominal	1395.8750	-25.0000	0.001791		N/A
		0	4.5	1395.8820	-18.0000	0.001290		Compliant
		37	4.5	1395.8950	-5.0000	0.000358		Compliant
3	1399.1	Nominal	4.5	1399.0840	-16.0000	0.001144		N/A
		0	4.5	1399.0875	-12.5000	0.000893		Compliant
		37	4.5	1399.0910	-9.0000	0.000643		Compliant
4	1427.9	Nominal	4.5	1427.9010	1.0000	0.000070		N/A
		0	4.5	1427.8950	-5.0000	0.000350		Compliant
		37	4.5	1427.9000	0.0000	0.000000		Compliant
6	1431.1	Nominal	4.5	1431.0990	-1.0000	0.000070		N/A
		0	4.5	1431.1070	7.0000	0.000489		Compliant
		37	4.5	1431.1130	13.0000	0.000908		Compliant

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Requirement: Portable devices as defined in § 2.1093(b) of this chapter operating in the WMTS are subject to radio frequency radiation exposure requirements as specified in §§ 1.1307(b) and 2.1093 of this chapter.

Test Notes: Due to the product configuration, it was not possible to directly connect the device under test to the measurement equipment. The output power of the device was derived from the peak field strength measurements using the following formula:

$$P = \frac{(E \times d)^2}{(30 \times G)}$$

P = the power in Watts.

E = the measured maximum field in V/m

G = the numeric gain of the transmitting antenna over an isotropic radiator.

d = the distance in meters of the field strength measurement.

The calculated output power can be referenced in column 6 of the table below. The calculated peak output power is lower than the 41.93 mW requirement for performing SAR testing using the formula: 60 / F (GHz).

Channel	Frequency	Peak Field Strength	Meas. Distance	Antenna Gain ¹	Output Power
	(MHz)	(dB μ V/m)	(m)	(dBi)	(mW)
1	1395.9	104.20	3.0	-3.0	15.7
3	1399.1	104.00	3.0	-3.0	15.0
4	1427.9	102.10	3.0	-3.0	9.7
6	1431.1	101.90	3.0	-3.0	9.3

¹ Data provided by the customer

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7. Measurement Data (continued)

7.7. RF Safety (Public Exposure to Radio Frequency Energy Levels (95.1125, 1.1307 (b)(1)) (continued)

The following results are based on the power values derived in the table on the previous page:

Channel	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
	(1)	(2)	(3)	(4)	(5)	
1	2.5	11.97	-3.0	0.1004688	0.93	Compliant
3	2.5	11.77	-3.0	0.0959470	0.93	Compliant
4	2.5	9.87	-3.0	0.0619486	0.95	Compliant
6	2.5	9.67	-3.0	0.0591604	0.95	Compliant

$$PD = \frac{OP + AG}{(4 \times \pi \times d^2)}$$

PD = Power Density (mW/cm²)

OP = DUT Output Power (dBm)

AG = DUT Antenna Gain (dBi)

d = MPE Distance (cm)

1. Reference CFR 2.1093(b): For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 2.5 centimeters of the body of the user.
2. Calculated from the peak field strength measurements in section 7.1 of this test report.
3. Data provided by the customer. Antenna manufacturer's data sheets.
4. Power density is calculated from field strength measurement and antenna gain.
5. Reference CFR 1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure.