

**COMPLIANCE WORLDWIDE INC.  
TEST REPORT 130-11R3**

**In Accordance with the Requirements of  
Federal Communications Commission  
CFR 47 Part 95, Subpart H**

**Wireless Medical Telemetry Devices  
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


**ITS4843A**

**IntelliVue Access Point  
Philips Telemetry System  
1.4 GHz Access Point - Radiohead Project**

**FCC ID: PQC-4843B**

**Original Report Issued on February 25, 2011  
R1 report issued on March 10, 2011**

Tested by

  
\_\_\_\_\_  
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\_\_\_\_\_  
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### 1. Scope

This test report certifies that the Philips ITS4843A IntelliVue 1.4 GHz Cluster Access Point, as 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. R1 report has typo edits and serial number inclusion. R2 report adds section 7.7, Public Exposure to Radio Frequency Energy Levels. R3 report replaces to section 7.6 with FCC 95.1115 (e); frequency stability (page 20). Section 7.6 moves to 7.7 and section 7.7 moves to 7.8.

### 2. Product Details

- 2.1 Manufacturer:** Philips Medical Systems
- 2.2 Model Number:** ITS4843A
- 2.3 Serial Number:** US04500040
- 2.4 Description of EUT:** The IntelliVue ITS4843A Access Point is incorporated into the Philips ITS4840A 1.4 GHz Telemetry system infrastructure.  
Operating Frequencies: 1395.9, 1397.5, 1399.1, 1427.9, 1429.5, 1431.1 MHz.
- 2.5 Power Source:** DC 48 volts – From Power Over Ethernet switch.
- 2.6 EMC Modifications:** None

### 3. Product Configuration

#### 3.1. Operational Characteristics & Software

The ITS4843A is connected to the M3185A Philips Clinical Network which shall be outside the field of test. The patient information will be displayed on a Philips M3150A IntelliVue Information Center which shall also be outside the field of test along with the TRx4841A 1.4 GHz Telemetry Transceiver-Patient Worn Device.

#### 3.2. EUT Hardware

Blk Diag #	Manufactr	Model/Part # / Options	Serial Number	Input Voltage	Frq (Hz)	Description/Function
1A*	Philips	ITS4843A/989803171211	US04500040	48 V	DC	Philips Telemetry II Cluster Access Point 1.4 GHz

\* Only one unit was tested for this evaluation.

#### 3.3. EUT Hardware/Software/Firmware Revision Level

EUT Model#	PCA#	Description	HW	SW	FW
ITS4843A		Access Point		A.00.32	

### 3. Product Configuration (continued)

#### 3.4. EUT Cables/Transducers

Blk Diag Ltr	Manufacturer	Model/Part #	Length (m)	Shield Y/N	Description/Function
A	NA	NA	Various	N	Category 5 UTP LAN cable, quantity 3

#### 3.5. Support Equipment

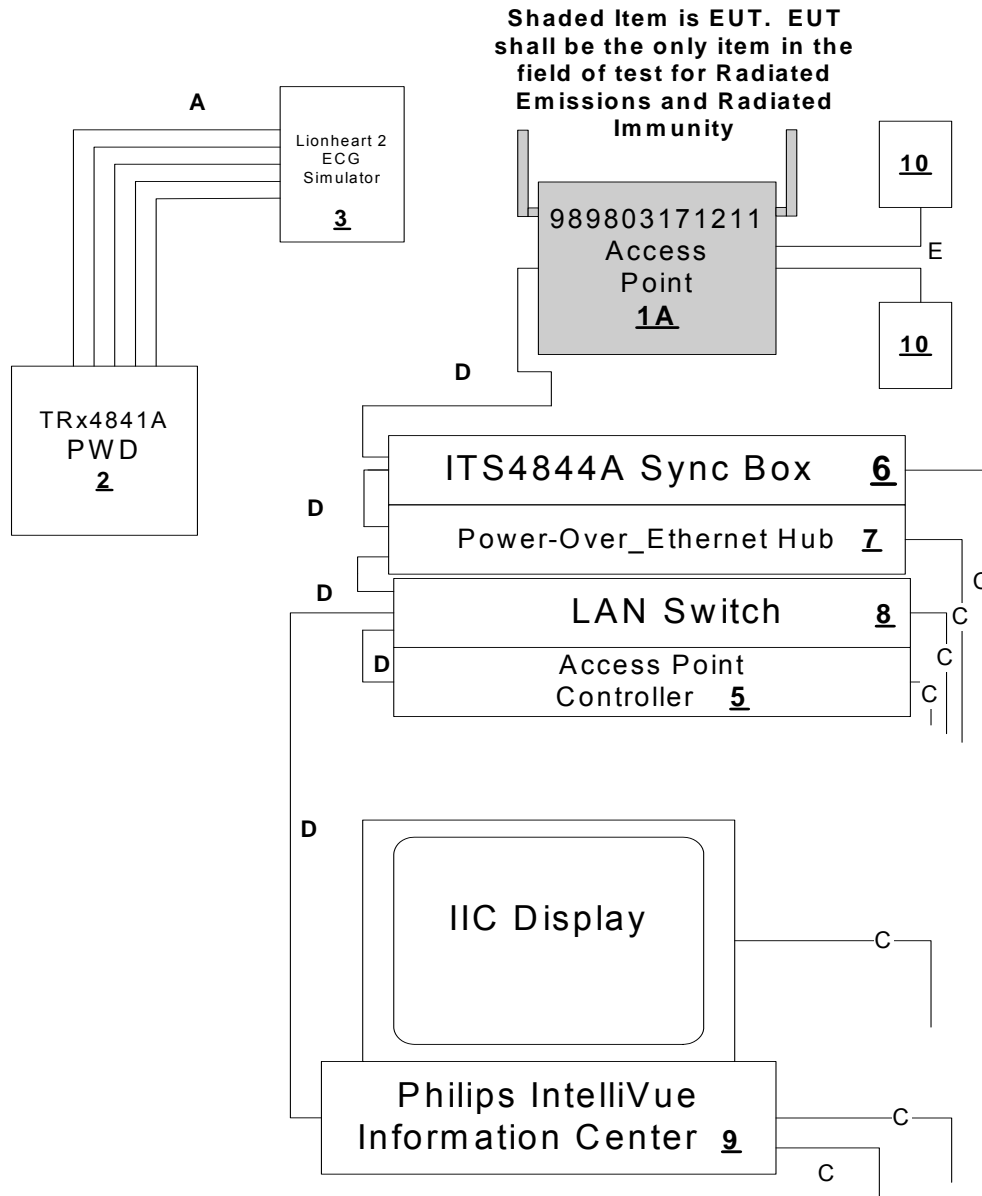
Blk Diag #	Manufactr	Model/Part # Options	Serial Number	Input Voltage	Input Frg.	Description/Function
2	Philips	TRx4841A/ 862439/ ABA, AAM, S02	US73728500	3 VDC		Philips Telemetry II NGRF PWD 1.4 GHz
3	Bio-Tek	Lionheart7	203833	9 VDC		Multi-parameter patient simulator (Recal # 125354)
5	Philips	865346	US00000001	100-240	50-60	Access Point Controller
6	Philips	ITS4844A/862114	US34300013	100-240	50-60	Philips Telemetry II Synchronization box
7	PowerDsine	Philips P/N- ITS4845A		100-240	50-60	Power-Over-Ethernet hub
8	Cisco	WS-C2950-24-E1	FOC0732Z1WN	100-240	50-60	10/100 BASE-T Ethernet LAN Switch
9	Philips	M3150A	2UA6261RQY	100-240	50-60	Philips IntelliVue Information Center
10	Philips	ITS4846A	RO81001832	5 VDC		1.4 GHz Remote antenna
11	Philips	ITS4846A	RO81001864	5 VDC		1.4 GHz Remote antenna

#### 3.6. Support Equipment Cables/Transducers

Blk Diag Ltr	Manufactr	Model/Part #	Length (m)	Shield Y/N	Description/Function
A	Philips	392925	1	N	ECG lead set
C	N/A	NA	Various	N	Category 5 UTP LAN cable
D	N/A	NA	2	N	AC Power cords
E	N/A	M4842-60002	25	Y/N	Combined coax/Cat 5 LAN cable

3. Product Configuration (continued)

3.7. Block Diagram



**4. Measurements Parameters**

**4.1. Measurement Equipment Used to Perform Test**

Device	Manufacturer	Model No.	Serial No.	Cal Due
Spectrum Analyzer	Agilent	E4407B	MY45104493	12/22/2012
Microwave Preamp	Hewlett Packard	83050A	3331A00404	10/20/2011
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
2.4 GHz BP Filter	Micro-Tronics	BRM50702	14	8/11/2011
RF Power Meter	Boonton	4220A	203603AA	5/28/2012
Power Sensor	Boonton	51100 (9E)	24221	5/29/2012
Digital Barometer	Control Company	4195	ID236	11/9/2011

**4.2. Measurement & Equipment Setup**

Test Date: Feb 1, 2011/Feb 18, 2011  
 Test Engineer: Brian Breault  
 Normal Site Temperature (15 - 35°C): 24.0  
 Relative Humidity (20 -75%RH): 33%  
 Frequency Range: 30 MHz to 16 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. Test Procedure**

**All references to CFR 47 PART 95, Subpart H - Wireless Medical Telemetry Service (WMTS) - refer to the 10-1-09 edition.**

The test methods used to generate the data is 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

**4. Measurements Parameters (continued)**

**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	$\pm 4.55$ dB
Radiated Emission of Receiver	$\pm 4.55$ dB
Temperature	$\pm 0.91^{\circ}$ 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 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 1395.8 MHz, 1399.1 MHz, 1427.9 MHz and 1431.1 MHz.

**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.
Emission Type	95.1115(c)	N/A	N/A	Transmits Data and ECG Waveform
Frequency Stability	95.1115(e)	N/A	N/A	Data Provided By Philips Medical
RF Safety	95.1125	N/A	N/A	Statement and Technical Basis
Radiated Field Strength of Fundamental	95.1115(a)(2)	7.1	Compliant	
Radiated Field Strength of Harmonics	95.1115(b)(2)	7.2	Compliant	
Occupied Bandwidth	95.1111(a)(2)	7.3	Compliant	
Band Edge Measurements	95.1115(b)(2)	7.4	Compliant	
Spurious Radiated Emissions	95.1115(b)	7.5	Compliant	
Frequency Stability	95.1115 (e)	7.6	Compliant	
Conducted Emissions	15.207	7.7	Compliant	
Public Exposure to Radio Frequency Energy Levels	15.247(i)	7.8	Compliant	

## 7. Measurement Data

### 7.1. Radiated Field Strength of Fundamental

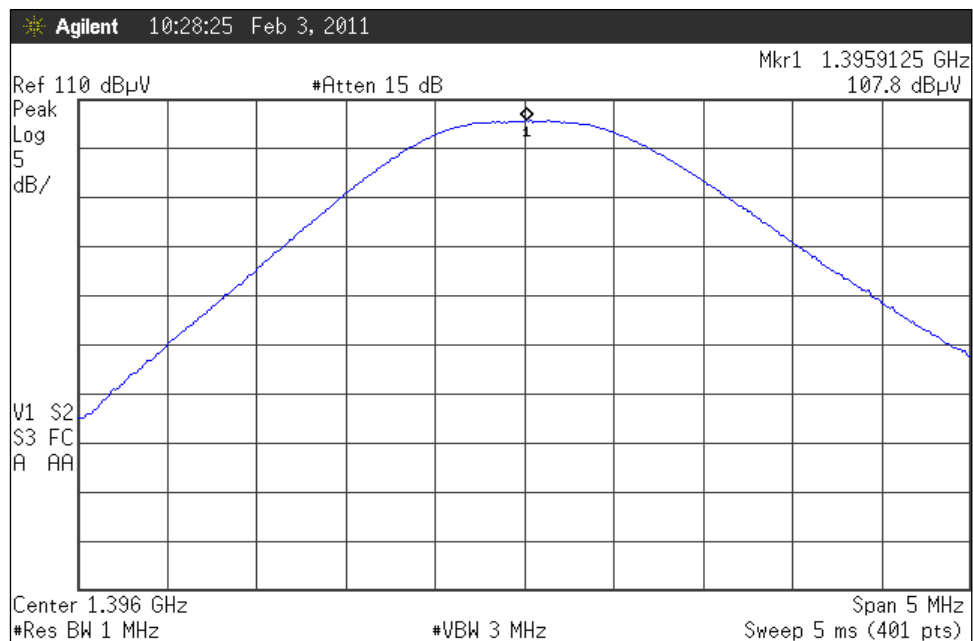
Requirement: In the 1395–1400 MHz and 1427–1429.5 MHz bands, the maximum allowable field strength is 740 mV/m (117.4 dB $\mu$ V/m), as measured at a distance of 3 meters, using measuring equipment with an averaging detector and a 1 MHz measurement bandwidth.

When average radiated emission measurements are specified in this part, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

Channel	Freq (MHz)	Peak Amp (dB $\mu$ V/m)	Avg Amp (dB $\mu$ V/m)	Avg Limit (dB $\mu$ V/m)	Avg Margin (dB)
1	1395.9	107.8	73.49	117.4	-43.91
3	1399.1	107.9	71.95	117.4	-45.45
4	1427.9	106.8	72.74	117.4	-44.66
6	1431.1	107.5	70.87	117.4	-46.53

#### 7.1.1. Channel 1

##### 7.1.1.1. Peak



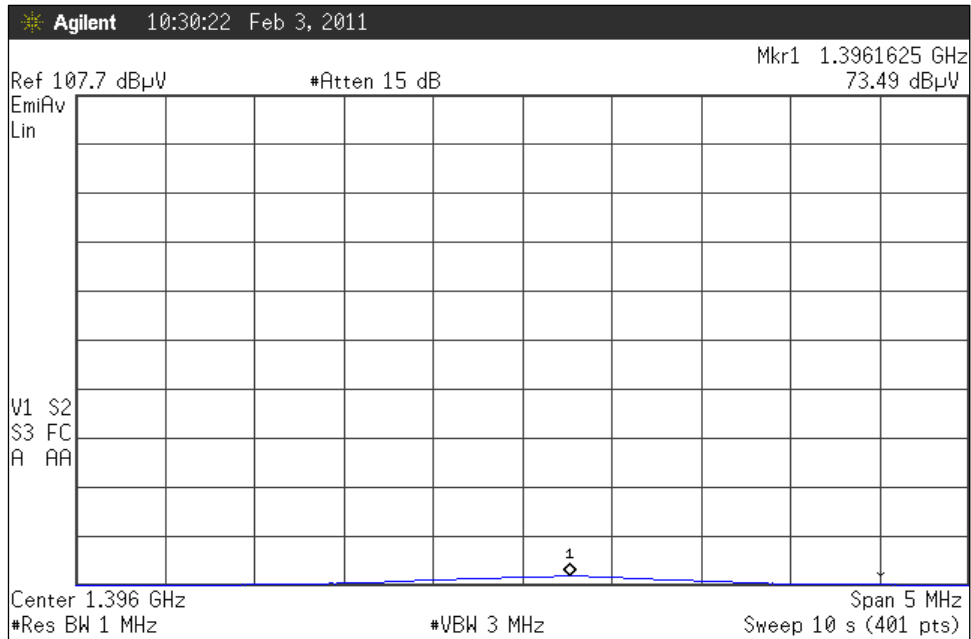


7. Measurement Data (continued)

7.1. Radiated Field Strength of Fundamental (continued)

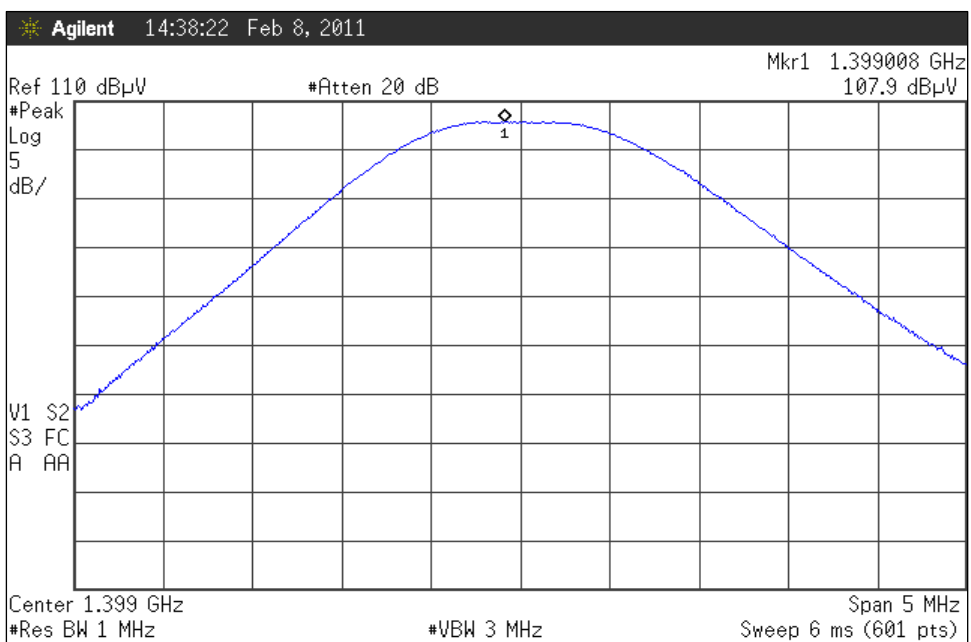
7.1.1. Channel 1

7.1.1.2. Average



7.1.2. Channel 3

7.1.2.1. Peak

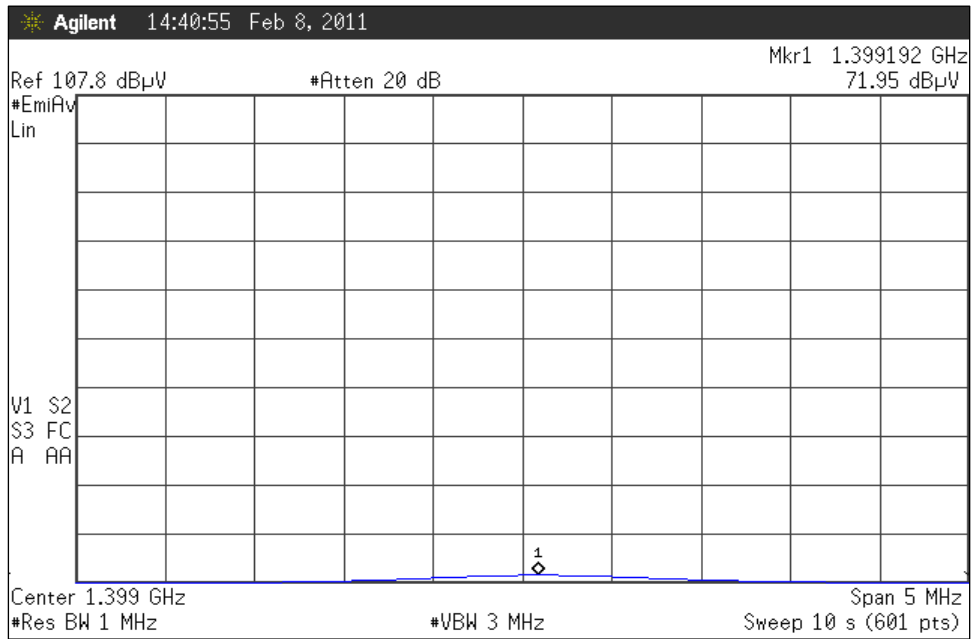


7. Measurement Data (continued)

7.1. Radiated Field Strength of Fundamental (continued)

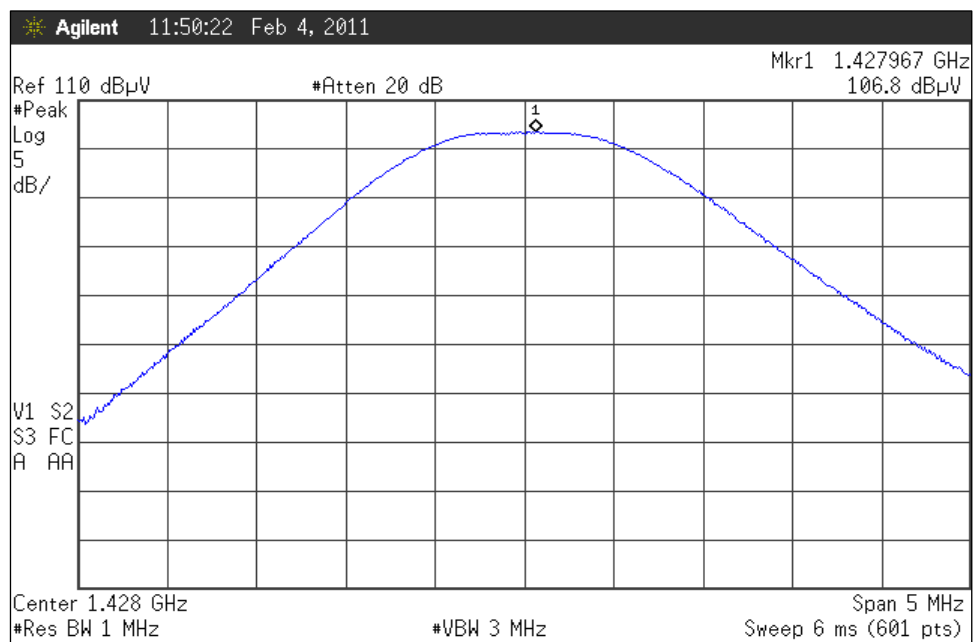
7.1.1. Channel 3

7.1.2.2. Average



7.1.3. Channel 4

7.1.3.1. Peak

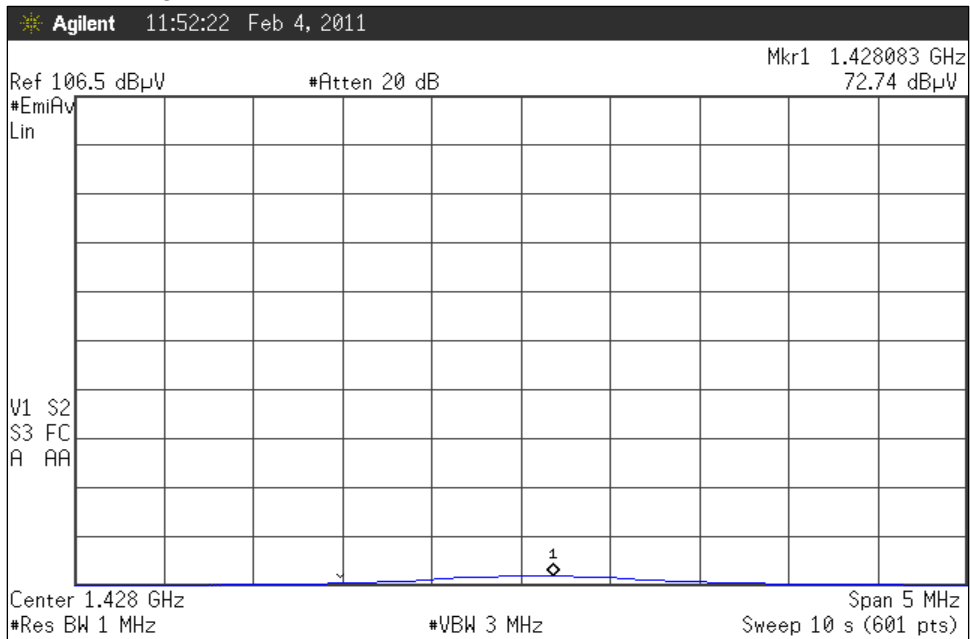


7. Measurement Data (continued)

7.1. Radiated Field Strength of Fundamental (continued)

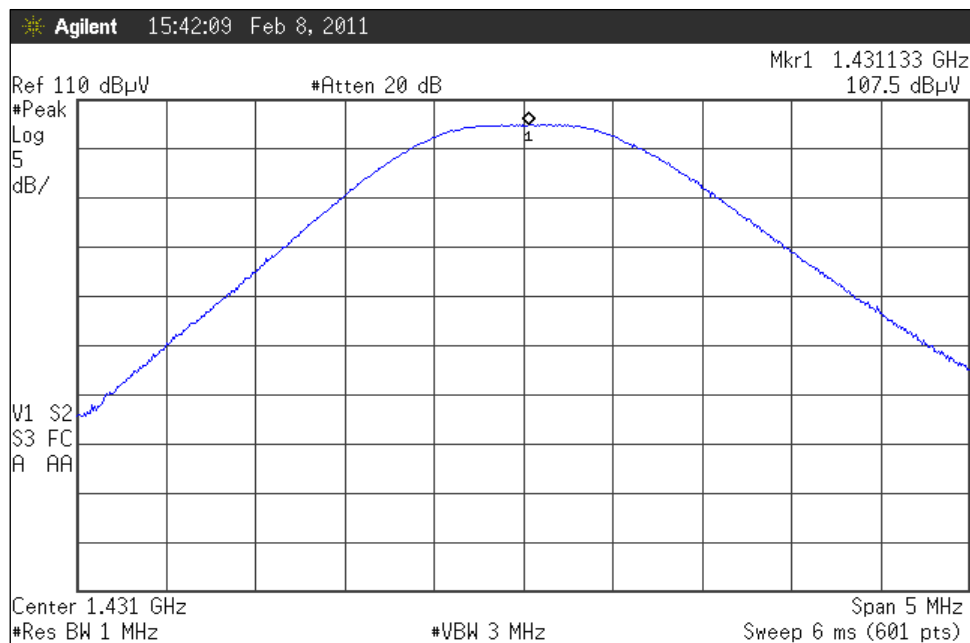
7.1.3. Channel 4

7.1.3.2. Average



7.1.4. Channel 6

7.1.4.1. Peak

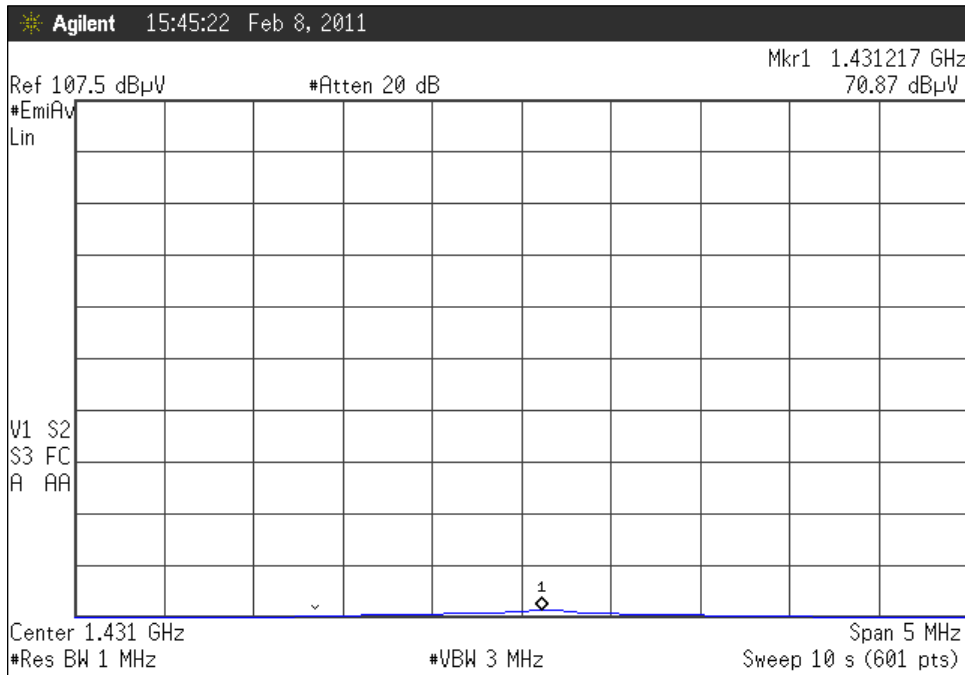


7. Measurement Data (continued)

7.1. Radiated Field Strength of Fundamental (continued)

7.1.4. Channel 6

7.1.4.2. Average



7.2. Combined Radiated Field Strength of Harmonics

Frequency <sup>1</sup> (MHz)	Amplitude (dBµV)		Avg Limit	Margin (dB)	Ant Pol	Ant Ht	TT Pos	Result
	Peak	Avg			H/V	cm	Deg	
2791.80	64.19	33.30	54	-20.70	V	107	302	Compliant
2798.20	63.57	35.67	54	-18.33	V	10	26	Compliant
2855.80	68.93	37.41	54	-16.59	V	104	89	Compliant
2862.20	65.70	46.82	54	-7.18	V	103	350	Compliant
4187.70	48.39	31.89	54	-22.11	V	106	203	Compliant
4197.30	45.28	31.63	54	-22.37	H	102	0	Compliant
4283.70	47.87	31.9	54	-22.10	V	102	170	Compliant
4293.30	44.82	33.26	54	-20.74	V	104	27	Compliant
8375.40	49.41	38.80	54	-15.20	H	105	0	Compliant
8394.60	48.25	38.92	54	-15.08	H	102	0	Compliant
11167.20	52.38	42.56	54	-11.44	H	105	0	Compliant
11192.80	52.06	42.54	54	-11.46	V	105	0	Compliant
11423.20	53.23	42.84	54	-11.16	H	105	0	Compliant
11448.80	52.06	42.54	54	-11.46	V	105	0	Compliant

<sup>1</sup> Frequency falls within the Restricted Bands of Operation. See FCC Part 15, Section 15.205 for additional information.

## 7. Measurement Data (continued)

### 7.2. Combined Radiated Field Strength of Harmonics (continued)

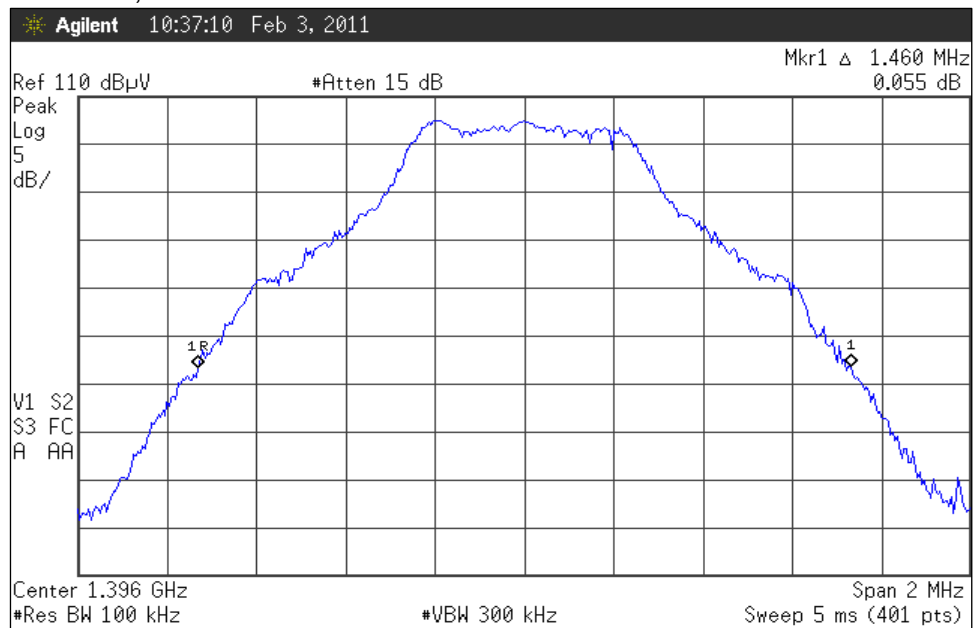
Frequency <sup>1</sup> (MHz)	Amplitude (dB $\mu$ V)		Avg Limit	Margin (dB)	Ant Pol	Ant Ht cm	TT Pos Deg	Result
	Peak	Avg						
12563.10	52.69	42.99	54	-11.01	H	105	0	Compliant
12591.90	52.64	42.86	54	-11.14	V	105	0	Compliant

### 7.3. Occupied Bandwidth

Requirement: The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or the first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical. Once the reference level is established, the equipment is conditioned with typical modulating signals to produce the worst-case (i.e., the widest) bandwidth. If no bandwidth requirement is specified by the procuring or regulatory agency, measure the bandwidth at -26 dB with respect to the reference level

Channel	Freq (MHz)	Bandwidth (MHz)
1	1395.900	1.460
3	1399.100	1.470
4	1427.900	1.437
6	1431.100	1.463

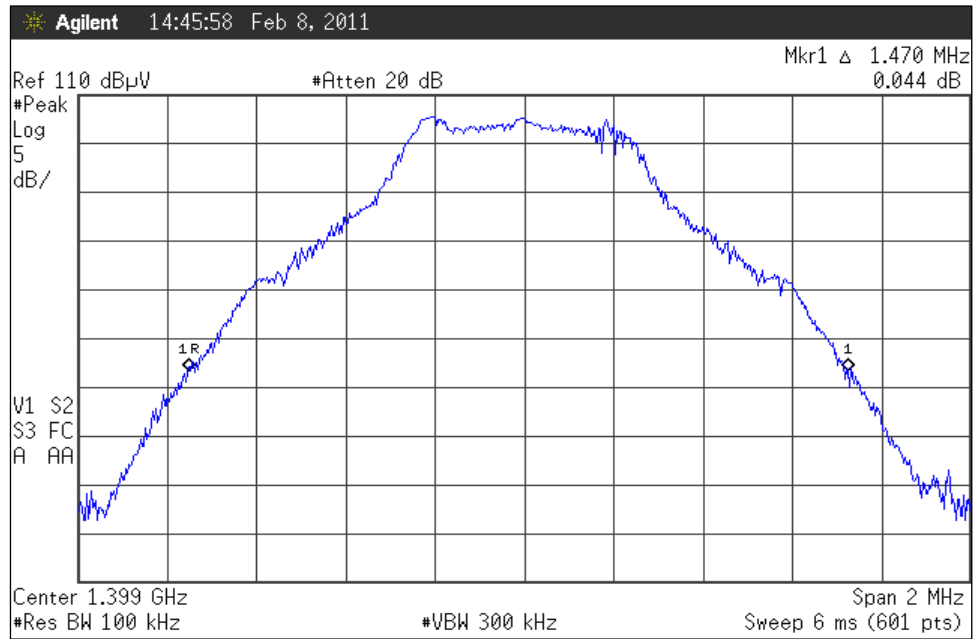
#### 7.3.1. Channel 1, 1395.9 MHz



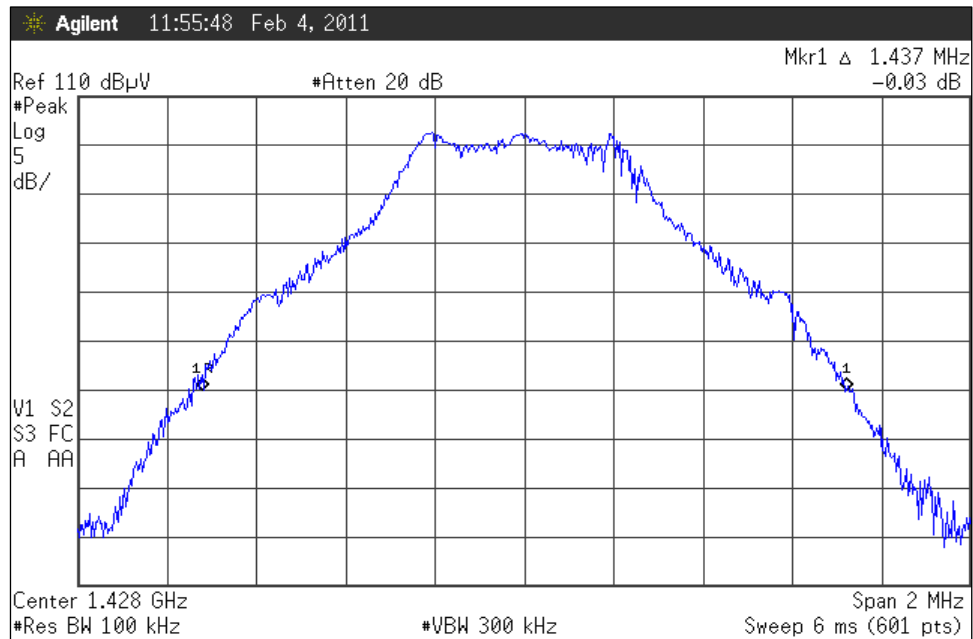
7. Measurement Data (continued)

7.3. Occupied Bandwidth (continued)

7.3.2. Channel 3, 1399.1 MHz



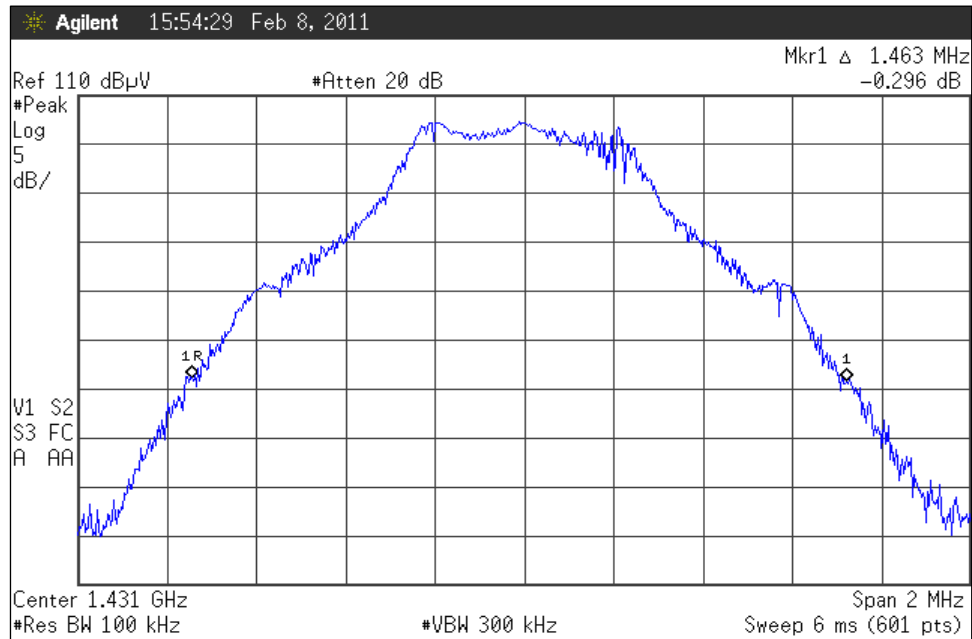
7.3.3. Channel 4, 1427.9 MHz



7. Measurement Data (continued)

7.3. Occupied Bandwidth (continued)

7.3.4. Channel 6, 1431.1 MHz



7.4. Band Edge

Requirement: Out-of-band emissions above 960 MHz are limited to 500 microvolts per meter (54 dBµV/m) as measured at a distance of 3 meters, using measuring equipment with an averaging detector and a 1 MHz measurement bandwidth.

Test Note: The procedure detailed in the FCC Office of Engineering and Technology (FCC OET) Publication Number 913591: Measurement of Radiated Emissions at the Edge of the Band for a Part 15 RF Device was used in determining the following values.

7.4.1. Lower Band Edge (1395–1400)

Channel 1 (MHz)	Field Strength (dBµV/m)		Band Edge Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1395.9	107.8	73.49	1395	63.0	28.65	54	-25.4	Compliant

Worst Case Out of Band (1395–1400)

Channel 1 (MHz)	Field Strength (dBµV/m)		Band Edge Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1395.9	107.8	73.49	1394.75	67.4	33.13	54	-20.9	Compliant

**7. Measurement Data (continued)**

**7.4. Band Edge (continued)**

7.4.2. Upper Band Edge (1395–1400)

Channel 3 (MHz)	Field Strength (dB $\mu$ V/m)		Band Edge Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1399.1	107.90	71.95	1400	61.8	25.86	54	-28.1	Compliant

Worst Case Out of Band (1395–1400)

Channel 3 (MHz)	Field Strength (dB $\mu$ V/m)		Band Edge Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1399.1	107.90	71.95	1400.2	67.8	31.85	54	-22.2	Compliant

7.4.3. Lower Band Edge (1427–1429.5)

Channel 4 (MHz)	Field Strength (dB $\mu$ V/m)		Band Edge Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1427.9	106.8	72.74	1427	59.1	25.0	54	-20.6	Compliant

Worst Case Out of Band (1427–1429.5)

Channel 4 (MHz)	Field Strength (dB $\mu$ V/m)		Band Edge Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1427.9	106.80	72.74	1394.75	67.5	33.39	54	-20.6	Compliant

7.4.4. Upper Band Edge (1427–1429.5)

Channel 6 (MHz)	Field Strength (dB $\mu$ V/m)		Band Edge Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1431.1	107.5	70.87	1432	59.9	23.3	54	-24.4	Compliant

Worst Case Out of Band (1427–1429.5)

Channel 6 (MHz)	Field Strength (dB $\mu$ V/m)		Band Edge Frequency (MHz)	Field Strength (dB $\mu$ V/m)		Limit (dB $\mu$ V/m)	Margin (dB)	Result
	Peak	Average		Peak	Average			
1431.100	107.5	70.87	1432.24	66.3	29.64	54	-24.4	Compliant



**7. Measurement Data (continued)****7.5. Spurious Radiated Emissions**

## 7.5.1. Regulatory Limit: FCC Part 209, Class B, Quasi-Peak

Frequency Range (MHz)	Distance (Meters)	Limit (dB $\mu$ 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.

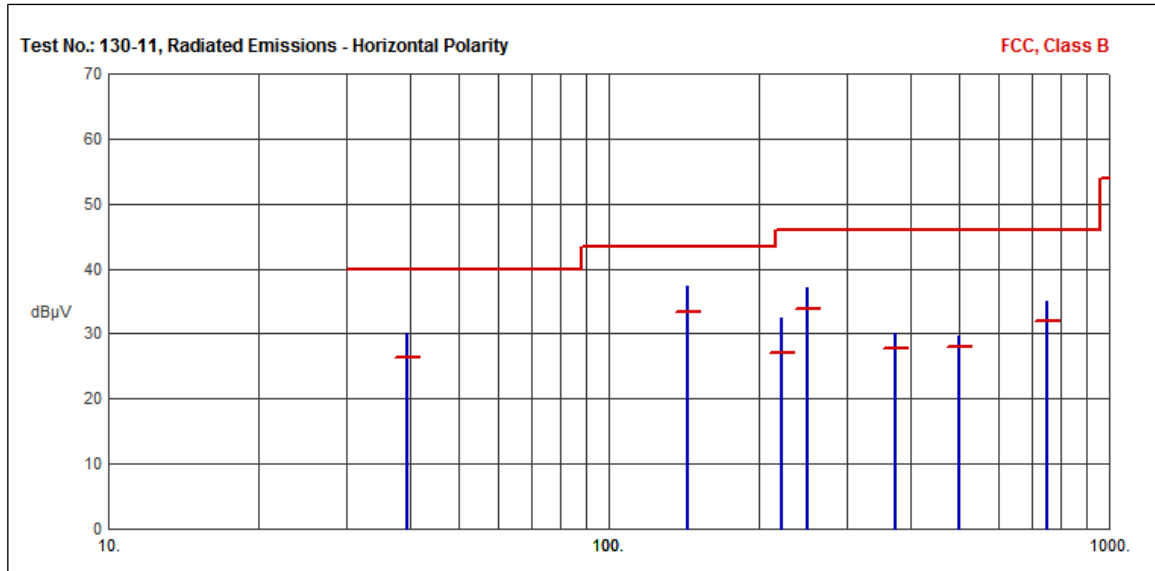
## 7.5.3. Notice: Radiated Emissions &gt; 1 GHz

There were no measurable emissions above 1 GHz other than the emissions tabled in section 7.2.

7. Measurement Data (continued)

7.5. Spurious Radiated Emissions (continued)

7.5.4. Horizontal Polarity



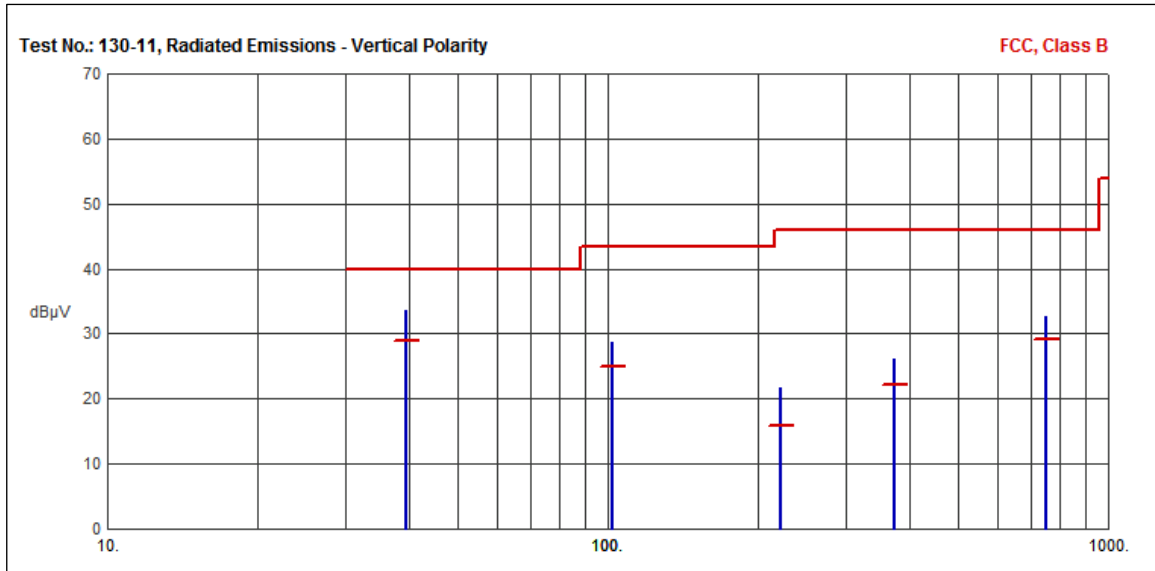
Frequency (MHz)	Pk Amp (dBµV/m)	QP Amp (dBµV/m)	QP Limit (dBµV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
39.4694	30.05	26.29	40.00	-13.71	N/A	N/A	
143.3008	37.36	33.41	43.50	-10.09	N/A	N/A	
221.8363	32.41	27.06	46.00	-18.94	N/A	N/A	
250.0001	37.16	33.74	46.00	-12.26	N/A	N/A	
375.0077	30.20	27.66	46.00	-18.34	N/A	N/A	
499.9960	29.72	28.09	46.00	-17.91	N/A	N/A	
750.0304	35.03	31.92	46.00	-14.08	N/A	N/A	

Results: Compliant

7. Measurement Data (continued)

7.5. Spurious Radiated Emissions (continued)

7.5.5. Vertical Polarity



Frequency (MHz)	Pk Amp (dBµV/m)	QP Amp (dBµV/m)	QP Limit (dBµV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
39.4706	33.53	29.01	40.00	-10.99	N/A	N/A	
101.8862	28.63	24.95	43.50	-18.55	N/A	N/A	
221.8484	21.73	15.76	46.00	-30.24	N/A	N/A	
375.0054	26.08	22.16	46.00	-23.84	N/A	N/A	

Results: Compliant

**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 : 48.0 Volts DC

Voltage Tolerance : Lower: -15%

Upper: Per IEEE 802.3at Type 1 and Type 2 Worst Case

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

Channel	Assigned Freq. GHz	Temp.	Voltage	Meas. Frequency MHz	Deviation		Result
		Deg. C	VDC		kHz	%	
1	1395.9	Nominal	Nominal	1395.8940	-6.0000	0.000430	N/A
		0	40.8	1395.8890	-11.0000	0.000788	Compliant
			57.0	1395.8900	-10.0000	0.000716	Compliant
		37	40.8	1395.8980	-2.0000	0.000143	Compliant
57.0	1395.8960		-4.0000	0.000287	Compliant		
3	1399.1	Nominal	Nominal	1399.0930	-7.0000	0.000500	N/A
		0	40.8	1399.0870	-13.0000	0.000929	Compliant
			57.0	1399.0850	-15.0000	0.001072	Compliant
		37	40.8	1399.0980	-2.0000	0.000143	Compliant
57.0	1399.0970		-3.0000	0.000214	Compliant		
4	1427.9	Nominal	Nominal	1427.8950	-5.0000	0.000350	N/A
		0	40.8	1427.8940	-6.0000	0.000420	Compliant
			57.0	1427.9020	2.0000	0.000140	Compliant
		37	40.8	1427.9030	3.0000	0.000210	Compliant
57.0	1427.9050		5.0000	0.000350	Compliant		
6	1431.1	Nominal	Nominal	1431.0890	-11.0000	0.000769	N/A
		0	40.8	1431.0870	-13.0000	0.000908	Compliant
			57.0	1431.0850	-15.0000	0.001048	Compliant
		37	40.8	1431.1020	2.0000	0.000140	Compliant
57.0	1431.0970		-3.0000	0.000210	Compliant		

## 7. Measurement Data (continued)

### 7.7. Conducted Emissions

Requirement: For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

Test Note: The DUT is powered by 48 volts DC supplied by the Ethernet cable. The power line conducted emissions test was performed on the Power-D-Sine POE Box that supplies the 48 VDC to the DUT via the Ethernet cable. The AC emissions from this device is reported in the following tables and graphs.

#### 7.7.1. Regulatory Limit: EN55022, Class B

Frequency Range (MHz)	Limits (dB $\mu$ V)	
	Quasi-Peak	Average
0.15 to 0.50	66 to 56 <sup>1</sup>	56 to 46 <sup>1</sup>
0.50 to 5.0	56	46
0.50 to 30	60	50

<sup>1</sup> The limit decreases linearly with the logarithm of the frequency.

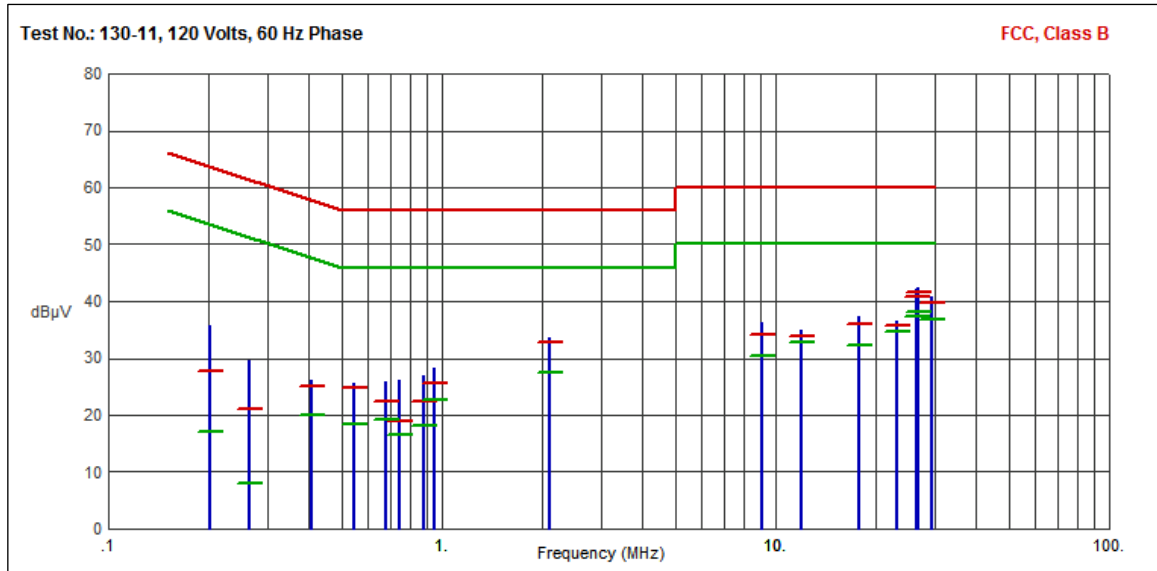
#### 7.7.2. Test Procedure

Test measurements were made in accordance with CISPR 22, Section 9: Method of measurement of conducted disturbance at mains terminals and telecommunication ports and 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.

7. Measurement Data (continued)

7.7. Conducted Emissions (continued)

7.7.3. 120 Volts, 60 Hz Phase



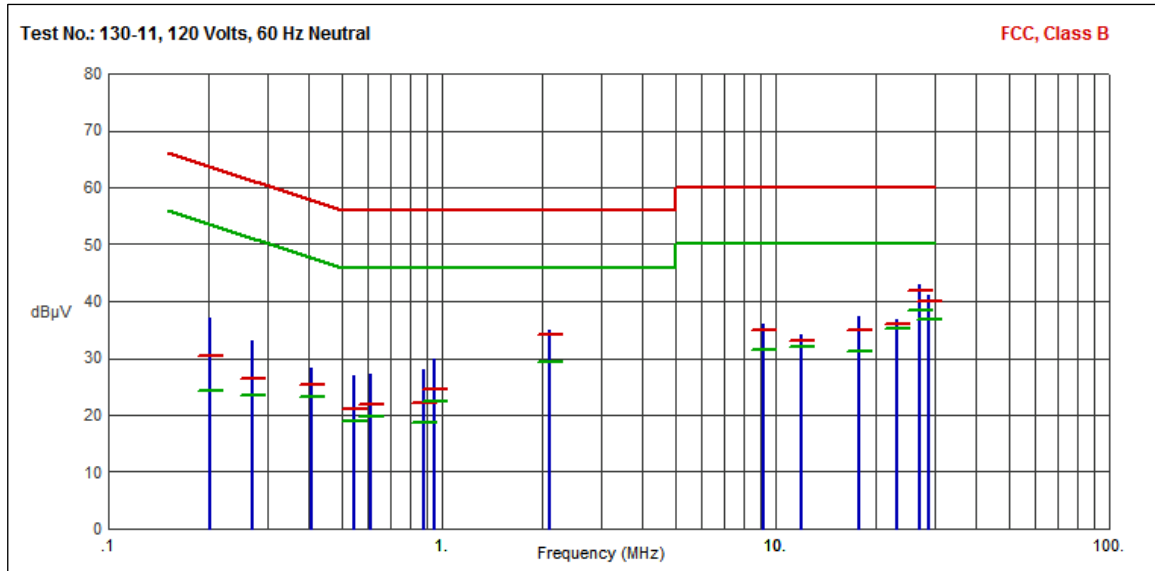
Frequency (MHz)	Pk Amp (dBµV)	QP Amp (dBµV)	QP Limit (dBµV)	QP Margin (dB)	Avg Amp (dBµV)	Avg Limit (dBµV)	Avg Margin (dB)	Comments
.2021	35.74	27.79	63.52	-35.73	16.97	53.52	-36.55	
.2657	29.73	20.95	61.25	-40.30	7.91	51.25	-43.34	
.4068	26.08	24.98	57.71	-32.73	20.09	47.71	-27.62	
.5422	25.71	24.91	56.00	-31.09	18.41	46.00	-27.59	
.6772	25.94	22.38	56.00	-33.62	19.13	46.00	-26.87	
.7456	26.10	19.00	56.00	-37.00	16.57	46.00	-29.43	
.8790	26.96	22.41	56.00	-33.59	18.06	46.00	-27.94	
.9474	28.23	25.71	56.00	-30.29	22.67	46.00	-23.33	
2.0990	33.58	32.76	56.00	-23.24	27.52	46.00	-18.48	
9.1450	36.17	34.08	60.00	-25.92	30.39	50.00	-19.61	
11.8924	34.84	33.92	60.00	-26.08	32.71	50.00	-17.29	
17.6943	37.35	35.90	60.00	-24.10	32.24	50.00	-17.76	
23.1290	36.59	35.73	60.00	-24.27	34.58	50.00	-15.42	
26.4877	42.01	40.90	60.00	-19.10	37.34	50.00	-12.66	
26.6095	42.48	41.56	60.00	-18.44	38.05	50.00	-11.95	
29.2359	40.89	39.75	60.00	-20.25	36.88	50.00	-13.12	

Results: Compliant

7. Measurement Data (continued)

7.7. Conducted Emissions (continued)

7.7.4. 120 Volts, 60 Hz Neutral



Frequency (MHz)	Pk Amp (dBµV)	QP Amp (dBµV)	QP Limit (dBµV)	QP Margin (dB)	Avg Amp (dBµV)	Avg Limit (dBµV)	Avg Margin (dB)	Comments
.2025	37.15	30.46	63.51	-33.05	24.37	53.51	-29.14	
.2716	32.96	26.38	61.07	-34.69	23.42	51.07	-27.65	
.4057	28.29	25.35	57.74	-32.39	23.20	47.74	-24.54	
.5436	26.97	20.94	56.00	-35.06	19.03	46.00	-26.97	
.6099	27.15	21.86	56.00	-34.14	19.85	46.00	-26.15	
.8797	28.13	22.07	56.00	-33.93	18.74	46.00	-27.26	
.9474	29.88	24.46	56.00	-31.54	22.45	46.00	-23.55	
2.0987	34.84	34.04	56.00	-21.96	29.44	46.00	-16.56	
9.2121	35.89	34.85	60.00	-25.15	31.58	50.00	-18.42	
11.8922	34.11	33.11	60.00	-26.89	32.01	50.00	-17.99	
17.6947	37.41	35.05	60.00	-24.95	31.21	50.00	-18.79	
23.1280	36.90	36.10	60.00	-23.90	35.19	50.00	-14.81	
27.1593	43.05	41.94	60.00	-18.06	38.40	50.00	-11.60	
28.6858	41.12	39.92	60.00	-20.08	36.85	50.00	-13.15	

Results: Compliant

7. Measurement Data (continued)

7.8. Public Exposure to Radio Frequency Energy Levels (15.247(i) (1.1307 (b)(1)) RSS-GEN 5.5, RSS 102

Channel Frequency	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm <sup>2</sup> )	Result
				(mW/cm <sup>2</sup> )	(W/m <sup>2</sup> )		
	(1)	(2)	(3)	(4)		(5)	
1395.900	20.0	26.73753	2.0	0.1487589	1.4875890	1	Compliant
1399.100	20.0	26.73753	2.0	0.1487589	1.4875890	1	Compliant
1427.900	20.0	18.49785	2.0	0.0223108	0.2231080	1	Compliant
1431.100	20.0	17.26320	2.0	0.0167900	0.1678997	1	Compliant

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

- PD = Power Density (mW/cm<sup>2</sup>)
- OP = DUT Output Power (dBm)
- AG = DUT Antenna Gain (dBi)
- d = MPE Distance (cm)

- 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 20 centimeters of the body of the user.
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 20 centimeters of the body of the user.
  2. Section 7.1 of this test report. Output power was calculated from the measured field strength.
  3. Antenna gain value for this product was taken from the client's specification data sheet.
  4. Power density is calculated from power 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.



## **8. Test Site Description**

Compliance Worldwide is located at 357 Main Street in Sandown, New Hampshire. The test sites at Compliance Worldwide are used for conducted and radiated emissions testing in accordance with Federal Communications Commission (FCC) and Industry Canada standards. A description of the test sites is on file with the FCC (registration number **96392**) and Industry Canada (file number **IC 3023A-1**).

The radiated emissions test site is a 3 and 10 meter enclosed open area test site (OATS). Personnel, support equipment and test equipment are located in the basement beneath the OATS ground plane.

The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane required by EN 55022.

Both sites are designed to test products or systems 1.5 meter W x 1.5 meter L x 2.0 meter H, floor standing or table top.