COMPLIANCE WORLDWIDE INC.
TEST REPORT 123-08R3

In Accordance with the Requirements of

FCC PART 15.247, Subpart C
INDUSTRY CANADA RSS 210, ISSUE 7, Annex 8

Low Power License-Exempt Radio Communication Devices
Intentional Radiators

Issued to

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

for the

Model SRR - Short Range Radio Adapter

FCC ID: PQC-SRRAV1
IC: 3549B-SRRAV1

Revised Report Issued on August 11, 2008

Tested by

Brian F. Breault

Reviewed by

Larry K. Stillings

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1. Scope

This test report certifies that the Philips Short Range Radio Adapter, Model SRR, as tested, meets the FCC Part 15.247, Subpart C and Industry Canada RSS 210, Issue 7, Annex 8 requirements. 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.

*Original report issued on 3/14/08, R1 report includes changes to typographical errors and customer requested edits, R2 report includes addition of FCC ID and IC number. R3 includes change of model number to SRR.

2. Product Details

2.1 Manufacturer: Philips Medical Systems

2.2 Model Number: SRR

2.3 Serial Number: N/A

2.4 Description of EUT: Short Range Radio Adapter

2.5 Power Source: DC 3 volts – From TRx4841A Philips Personal Worn Device

2.6 EMC Modifications: None

3. Product Configuration

3.1. Operational Characteristics & Software

The connection between the PWD and the bedside monitor is achieved via an 802.15.4 radio operating in the ISM band. Bedside Monitors are equipped with an internal Short Range Radio (SRR). Current generation CTS PWDs need an external Short Range Radio Adapter (SRRA) adapter connected to the 6 pin serial port. The interface used for the PWD and SRRA is RS232 serial @ 115.2 baud, no hardware flow control, 8 bit data, 1 start bit, 1 stop bit, and no parity.

The M4840-63201 SRRA adapter module is mechanically constructed with an over-molded plastic housing: there are no controls or indicators on the SRRA module. It is a completely sealed design for resistance to moisture of any kind. It is

An Irregular shape approximately 3.5 inches long, 1.0 inch wide, and 0.43 inch deep.

The SRRA Radio link operates over the frequency range 2400MHz to 2483MHz. No configuration of usable channels is required. The service user can select/change the SRR channel via a simple interface at the bedside. No channel selection is necessary at the PWD. They are 16 available channels for use by the SRR technology (numbered 11 through 26 in the 802.15.4 context).

802.15.4 Channels: 16 Radio Channel assigned, Fc= 2405 +5*(k-11)MHz, k=11,12,…,26

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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	SRR	N/A		DC	Philips Telemetry II WTAAP Short Range Radio Adapter

3.3. EUT Hardware/Software/Firmware Revision Level

EUT Model#	PCA#	Description	HW	SW	FW
SRR	M4840-63201	Short Range Radio Adapter	Rev. B	N/A	2-12-08
TRx4841A		1.4 GHz PWD	N/A	00.01	N/A

3.4. EUT Cables/Transducers

Blk Diag Ltr	Manufacturer	Model/Part #	Length (m)	Shield Y/N	Description/Function
No Cables/Transducers					

3.5. Support Equipment

Blk Diag #	Manufctr	Model/Part # Options	Serial Number	Input Voltage	Input Frq.	Description/Function
2	Philips	TRx4841A/ABA, AAM, S02	???	3	DC	1.4 GHz PWD SpO2/ECG
3	Bio-Tek	Lionheart2	158997	9	DC	Multi-parameter patient simulator (Recall #125003)
4	DNI	Oxitest7	DOS03010611	9	DC	SpO2 patient simulator (Recall # ?????)
5	Philips	TRx4841A	RO72001290	48	DC	1.4 GHz IntelliVue Core Access Point
6	Philips	453563495101/TRx4844A	USU34300035	100-240	50-60	Philips Telemetry II Synchronization Box
7	PowerDSine	ITS4845A	M04386809557520D03	100-240	50-60	Power-Over-Ethernet Hub- 6 port
8	Cisco	WS-C2950G-24	FOC0816X1S4	100-240	50-60	24 port 10/100 Ethernet Switch
9	Proxim	756005G	35200408	100-240	50-60	Access Point Controller
10	HP	D51C/P2A/13321 US	USU32301H2	100-240	50-60	HP PC configured as a IntelliVue Information Center M3167-60002
9	Philips	???	47517133	100-240	50-60	Display for IntelliVue Information Center
10	Philips	M8105A	???	100-240	50-60	MP5 Patient Bedside Monitor

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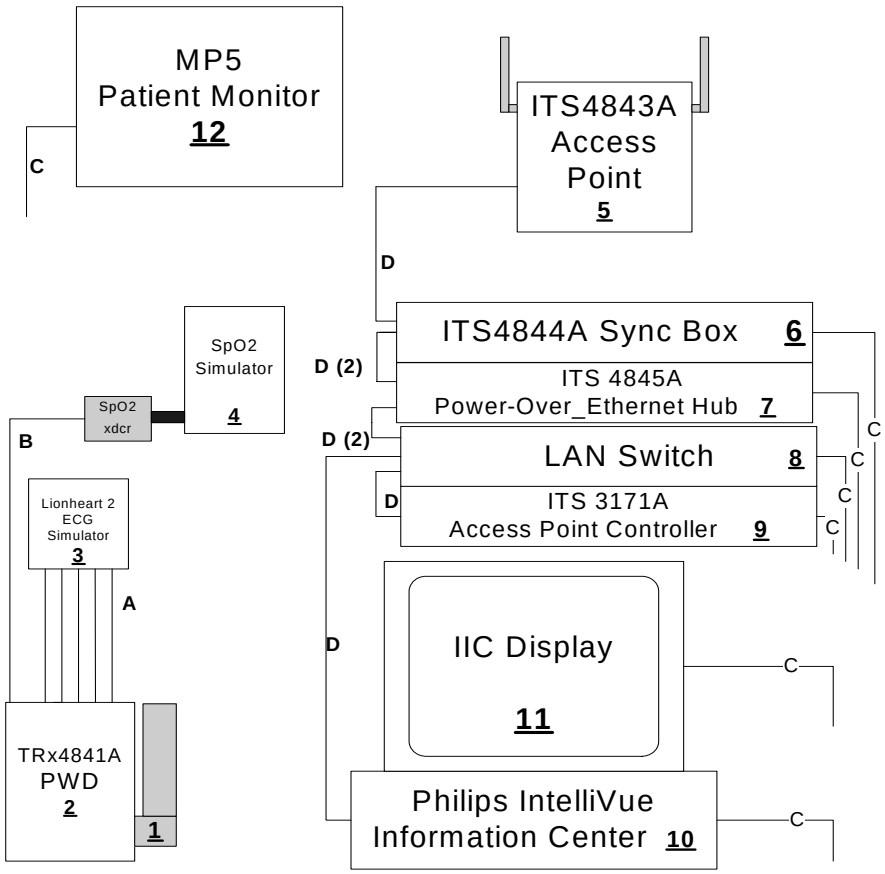
3. Product Configuration (continued)

3.6. Support Equipment Cables/Transducers

Blk Diag Ltr	Manufactr	Model/Part #	Length (m)	Shield Y/N	Description/Function
A	Philips	392 925	1	Y	ECG patient leadset
B	Philips	M1191A	2	N	SpO2 patient transducer
C	Unknown	Unknown	2	N	AC power cords
D	Unknown	Unknown	Various	N	CAT 5 UTP LAN cable

3.7. Block Diagram – Intentional Radiator and Line Conducted Configuration



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4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
EMI Receiver	Hewlett Packard	8546A	3650A00360	3/14/2008
Spectrum Analyzer	Hewlett Packard	8593E	3829A03887	3/8/2008
Microwave Preamp	Hewlett Packard	8449B	3008A01323	9/21/2008
Bilog Antenna	Com-Power	AC220	25509	8/2/2008
Horn Antenna	Electro-Metrics	EM-6961	6337	8/23/2008
2.4 GHz BP Filter	Micro-Tronics	BRM50702	14	11/16/2008

4.2. Measurement & Equipment Setup

Test Dates:	February 28 – 29, 2008
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

The test measurements contained in this report are based on the requirements detailed in FCC Part 15, Section 15.247: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz. Radiated emissions testing is based on the requirements detailed in FCC Part 15, Section 15.209: Radiated emission limits, general requirements.

The test methods used to generate the data is this test report are 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 13.1.4.1, 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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5. Choice of Equipment for Test Suites

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, middle and highest operating frequencies in each of the two bands utilized by the device under test. The frequencies selected were 2405 MHz, 2440, and 2480 MHz.

6. Measurement Summary

Test Requirement	FCC Part 15.247 Reference	Test Report Section	Result	Comment
Minimum 6 dB Bandwidth	(a) (2)	7.1	Compliant	> 500 kHz
99% Bandwidth	N/A	7.2	Compliant	RSS 210
Maximum Peak Conducted Output Power	(b) (1)	7.3	Compliant	< 1 Watt
Operation with directional antenna gains greater than 6 dBi	(b) (4)	7.4	N/A	Antenna gains: -0.5 dBi at 2.4 GHz
Spurious Radiated Emissions (> GHz) - Harmonic Test Data	15.247 (d)	7.5	Compliant	
Spurious Radiated Emissions	15.247 (d)	7.6	Compliant	
Lower and Upper Band Edge	15.247 (d)	7.7	Compliant	
Power Spectral Density	15.247(e)	7.8	Compliant	
Public Exposure to Radio Frequency Energy Levels	1.1307 (b) (1)	7.9	Compliant	Calculated from field strength measurement and antenna gain.
Determination of Average Factor	15.35 (b)	7.12	Compliant	

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7. Measurement Data

7.1. Minimum 6 dB Bandwidth (15.247 (a) (2))

Requirement: Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

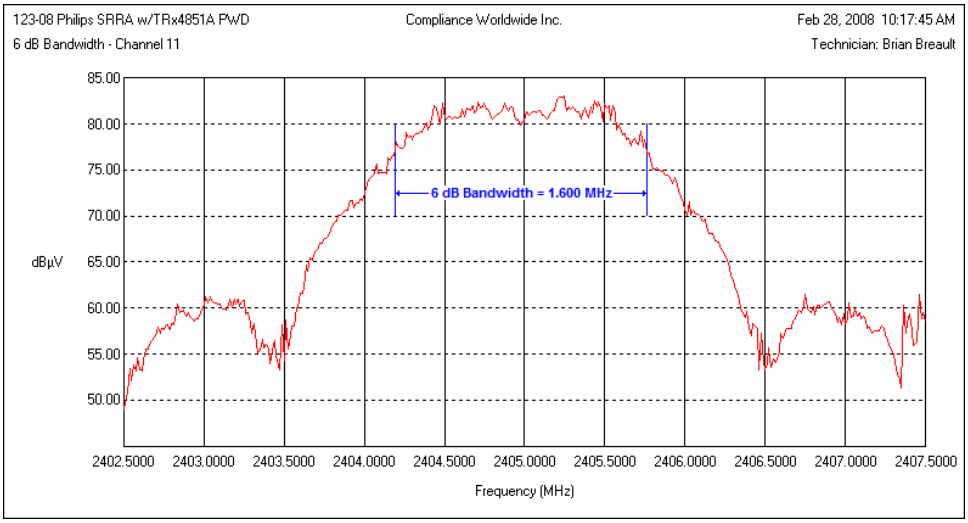
Resolution Bandwidth : 100 kHz
Video Bandwidth : 100 kHz
Sweep Time : 20 mSec

7.1.1 Measurement Results

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum 6 dB Bandwidth (kHz)	Result
11	2405	1.600	500	Compliant
18	2440	1.725	500	Compliant
26	2480	1.625	500	Compliant

7.1.2. Measurement Plots

7.1.2.1. Channel 11



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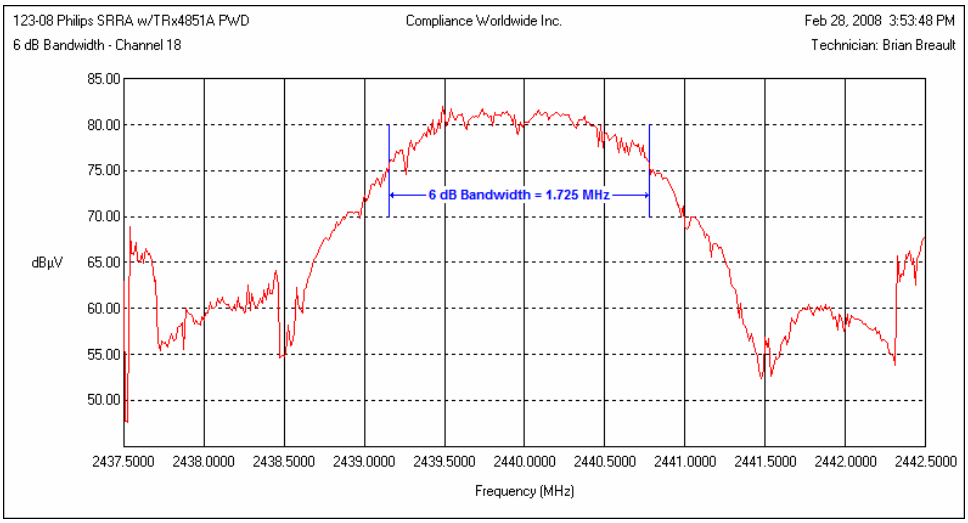
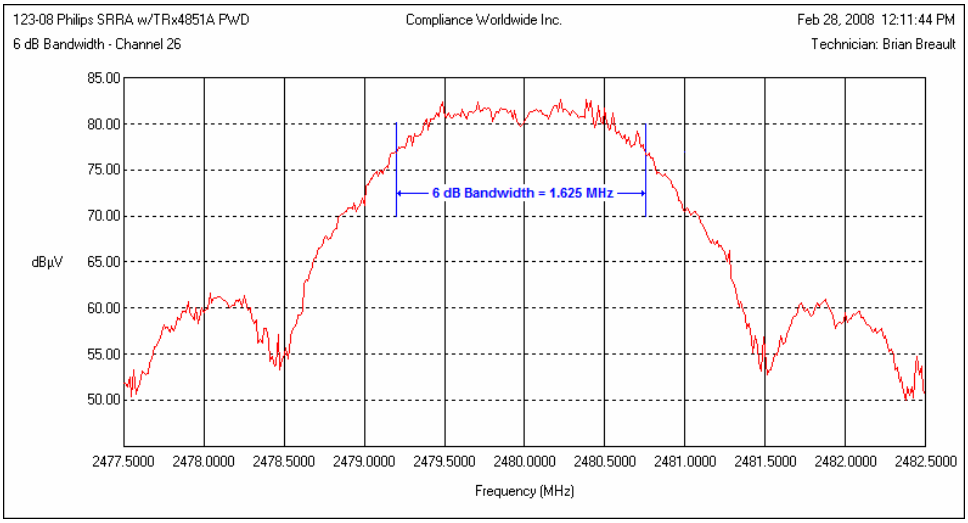
7. Measurement Data (continued)

7.1. Minimum 6 dB Bandwidth (15.247 (a) (2)) (continued)

7.1.2.2. Channel 18



7.1.2.3. High Channel 26



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7. Measurement Data (continued)

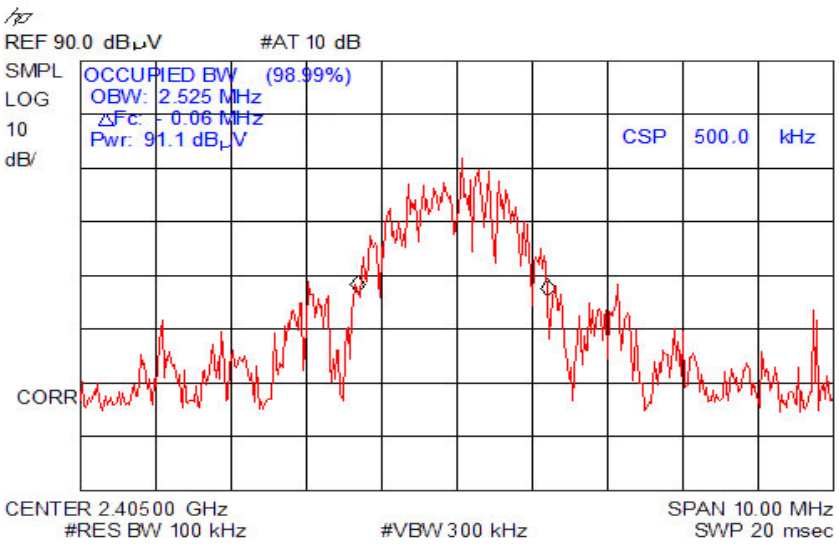
7.2. 99% Bandwidth (RSS 210)

7.2.1. Measurement Results

Channel	Frequency (MHz)	99% Power Bandwidth (MHz)
11	2405	2.525
18	2440	2.600
26	2480	2.550

7.2.2. Measurement Plots (continued)

7.2.2.1. Channel 11



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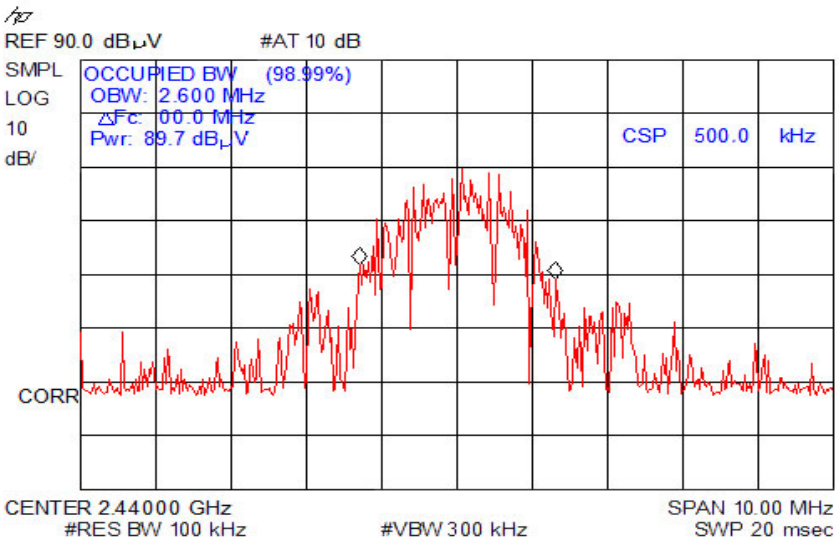
7. Measurement Data (continued)

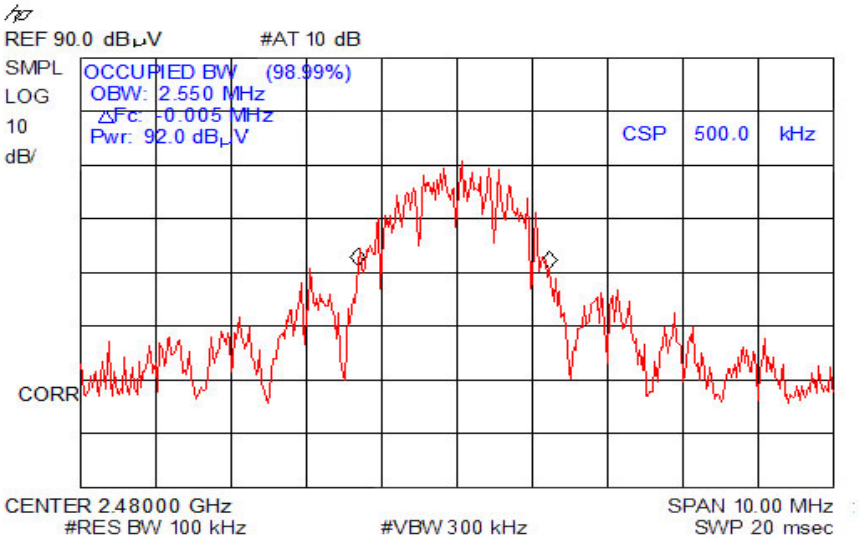
7.2. 99% Bandwidth (IC RSS 210) (cont.)

7.2.2. Measurement Plots (continued)

7.2.2.2. Channel 18



7.2.2.3. Channel 26



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7. Measurement Data (continued)

7.3. Maximum Peak Conducted Output Power (15.247 (b) (1))

Requirement: The maximum peak conducted output power of the intentional radiator shall not exceed the following: For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt.

Note: The following equation was used to determine the output power from the measured field strength:

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

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.
P = the power in Watts.

Resolution Bandwidth : 1 MHz
Video Bandwidth : 3 MHz
Sweep Time : 20 mSec

7.3.1. Measurement Results

Channel	Frequency (MHz)	Peak Field Strength (dBµV/m)	Measured Output Power (dBm)	Measured Output Power (mW)	Output Power Limit (W)	Result
11	2405	86.86	-10.167	0.096	1	Compliant
18	2440	86.46	-10.567	0.088	1	Compliant
26	2480	87.46	-9.567	0.110	1	Compliant

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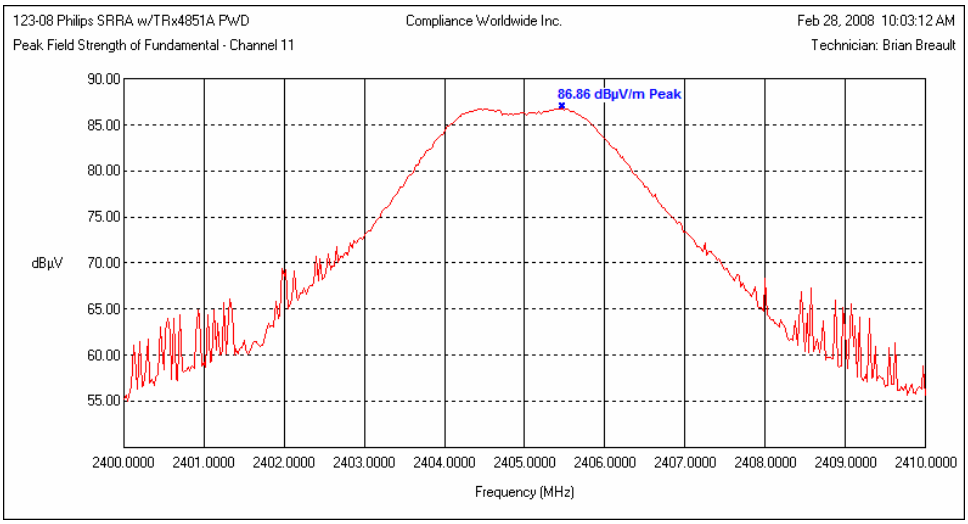
7. Measurement Data (continued)

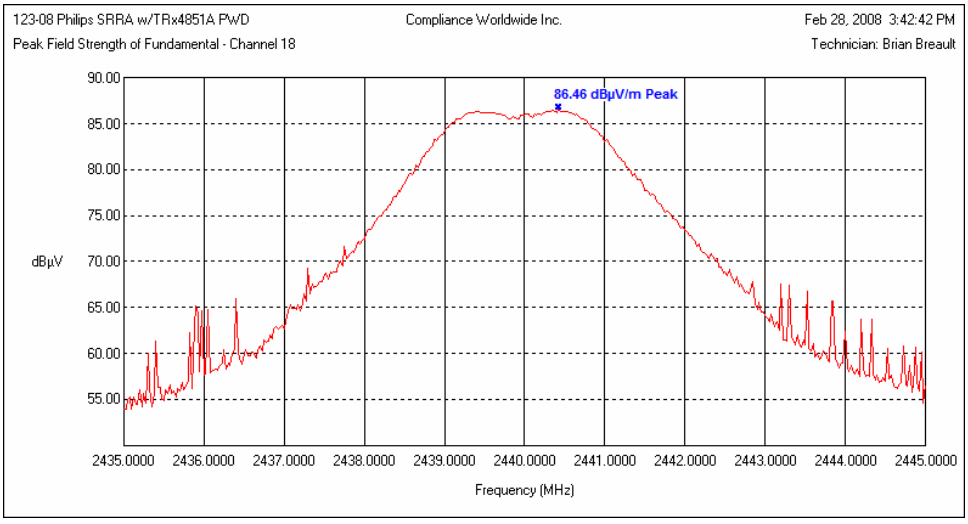
7.3. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.3.2. Measurement Plots – Field Strength

7.3.2.1. Channel 11



7.3.2.2. Channel 18



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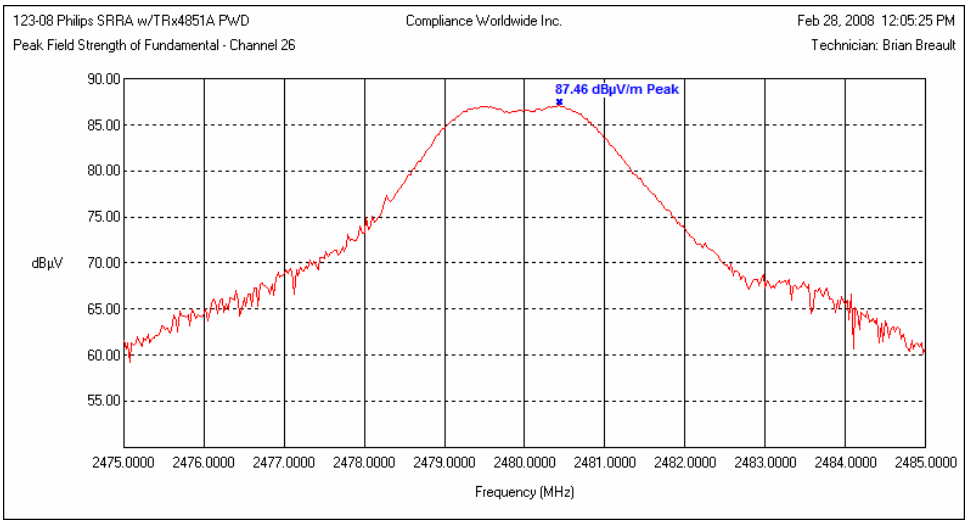
7. Measurement Data (continued)

7.3. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.3.2. Measurement Plots – Field Strength (continued)

7.3.2.3. Channel 26



7.4. Operation with directional antenna gains greater than 6 dBi (15.247 (b)(4))

Requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Result: **The manufacturer states that the antennas used in this device has a gain of less than +6 dBi, therefore this requirement does not apply.**

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7. Measurement Data (continued)

7.5. Spurious Radiated Emissions (30 MHz to 40 GHz)

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

Frequency Range (MHz)	Distance (Meters)	Limit (dBµV/m)
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
>960	3	54.0

7.5.2. Measurement & Equipment Setup

Test Date:	02/28/2008
Test Engineer:	Brian Breault
Site Temperature (°C):	21.3
Relative Humidity (%RH):	31
Frequency Range:	30 MHz to 40 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	120 kHz (30 MHz – 1 GHz) 1 MHz (>1GHz)
EMI Receiver Avg Bandwidth:	300 kHz (30 MHz – 1 GHz) 3 MHz (>1GHz)
Detector Functions:	Peak, Quasi-Peak, Average
Antenna Height:	1 to 4 meters

7.5.3. 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.

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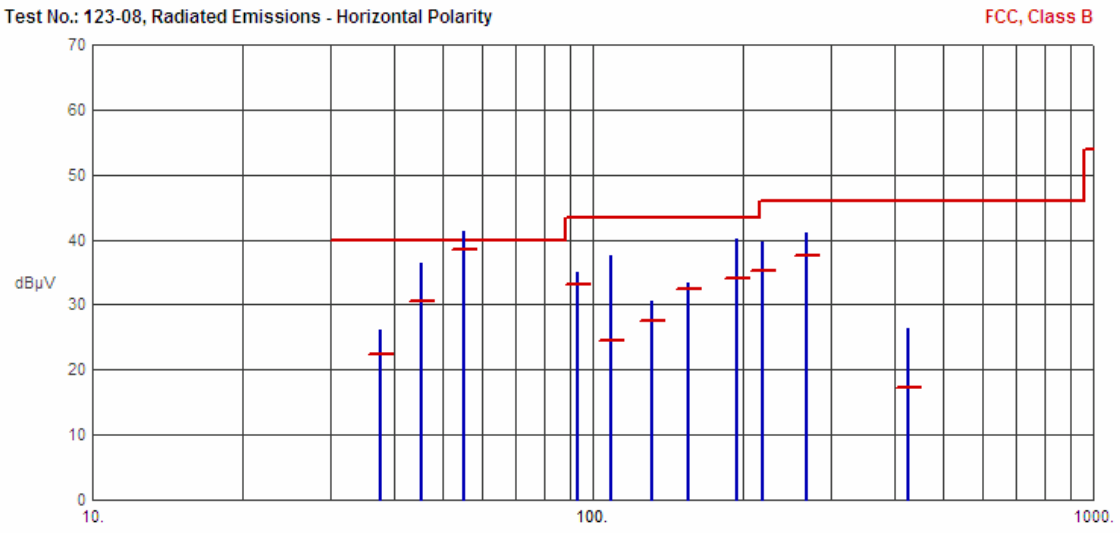
7. Measurement Data (continued)

7.5. Spurious Radiated Emissions (30 MHz to 40 GHz)

7.5.4. Spurious Radiated Emissions (30 MHz – 1 GHz) Test Results

7.5.4.1. Measurement Results – Horizontal Polarity



Frequency (MHz)	Pk Amp (dBµV/m)	QP Amp (dBµV/m)	QP Limit (dBµV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
37.5747	26.07	22.42	40.00	-17.58	N/A	N/A	
45.4862	36.29	30.59	40.00	-9.41	N/A	N/A	
55.2590	41.33	38.50	40.00	-1.50	N/A	N/A	
93.2950	34.96	33.15	43.50	-10.35	N/A	N/A	
108.4408	37.68	24.47	43.50	-19.03	N/A	N/A	
131.0710	30.51	27.44	43.50	-16.06	N/A	N/A	
155.5261	33.44	32.43	43.50	-11.07	N/A	N/A	
193.5155	40.02	34.11	43.50	-9.39	N/A	N/A	
217.7466	39.72	35.30	46.00	-10.70	N/A	N/A	
267.2665	40.95	37.46	46.00	-8.54	N/A	N/A	
426.2109	26.39	17.15	46.00	-28.85	N/A	N/A	

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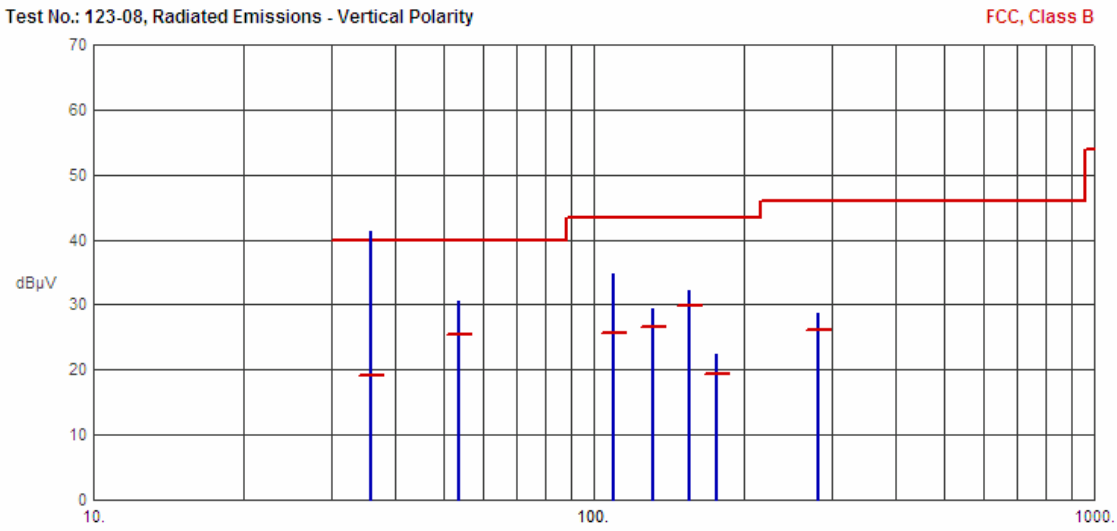
7. Measurement Data (continued)

7.5. Spurious Radiated Emissions (30 MHz to 40 GHz) (continued)

7.5.4. Spurious Radiated Emissions (30 MHz – 1 GHz) Test Results

7.5.4.2. Measurement Results – Vertical Polarity



Frequency (MHz)	Pk Amp (dBµV/m)	QP Amp (dBµV/m)	QP Limit (dBµV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
35.9042	41.34	19.24	40.00	-20.76	N/A	N/A	
53.8703	30.58	25.49	40.00	-14.51	N/A	N/A	
109.1478	34.73	25.74	43.50	-17.76	N/A	N/A	
131.0624	29.37	26.60	43.50	-16.90	N/A	N/A	
155.5231	32.27	29.94	43.50	-13.56	N/A	N/A	
176.2496	22.45	19.29	43.50	-24.21	N/A	N/A	
279.9956	28.81	26.05	46.00	-19.95	N/A	N/A	

7.5.5. Spurious Radiated Emissions (>1 GHz) Test Results

There were no spurious radiated emissions other than the emissions that are detailed in section 7.5.6.

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7. Measurement Data (continued)

7.5. Spurious Radiated Emissions (30 MHz to 40 GHz) (continued)

7.5.6. Spurious Radiated Emissions (Harmonic Measurements) Test Results

7.5.6.1. Measurement Results – Channel 11

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Avg (dBµV/m)	Limit (dB)	Margin (dB)	Pol (H/V)	Ht (cm)	TT Pos (Deg)	Note
2405.000	---	---	---	---	---	---	---	---	---	Fundamental
4810.000[1]	52.79	33.09	-5.36	27.73	54.00	-26.27	V	100	280	
7215.000	48.81	29.11	-0.94	28.17	54.00	-25.83	V	100	280	
9620.000	48.90	29.20	-0.21	28.99	54.00	-25.01	---	---	---	Noise floor
12025.000[1]	49.79	30.09	3.59	33.68	54.00	-20.32	---	---	---	Noise floor
14430.000	48.51	28.81	4.47	33.28	54.00	-20.72	---	---	---	Noise floor
16835.000	49.75	30.05	5.05	35.10	54.00	-18.90	---	---	---	Noise floor
19240.000[1]	48.63	28.93	6.09	35.02	54.00	-18.98	---	---	---	Noise floor
21645.000	50.96	31.26	9.19	40.45	54.00	-13.55	---	---	---	Noise floor
24050.000	52.09	32.39	13.64	46.03	54.00	-7.97	---	---	---	Noise floor

7.5.6.2 Measurement Results – Channel 18

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Avg (dBµV/m)	Limit (dB)	Margin (dB)	Pol (H/V)	Ht (cm)	TT Pos (Deg)	Note
2440.000	---	---	---	---	---	---	---	---	---	Fundamental
4880.000[1]	55.81	35.81	-5.35	30.46	54.00	-23.54	V	109	275	
7320.000[1]	48.05	28.05	-1.65	26.40	54.00	-27.60	V	100	270	
9760.000	48.83	28.83	-0.18	28.65	54.00	-25.35	V	100	270	
12200.000[1]	47.86	27.86	4.50	32.36	54.00	-21.64	---	---	---	Noise floor
14640.000	47.89	27.89	4.89	32.78	54.00	-21.22	---	---	---	Noise floor
17080.000	48.24	28.24	6.33	34.57	54.00	-19.43	---	---	---	Noise floor
19520.000[1]	50.46	30.46	8.82	39.28	54.00	-14.72	---	---	---	Noise floor
21960.000	51.30	31.30	9.09	40.39	54.00	-13.61	---	---	---	Noise floor
24400.000	53.88	33.88	13.09	46.97	54.00	-7.03	---	---	---	Noise floor

7.5.6.3. Measurement Results – Channel 26

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Avg (dBµV/m)	Limit (dB)	Margin (dB)	Pol (H/V)	Ht (cm)	TT Pos (Deg)	Note
2480.000	---	---	---	---	---	---	---	---	---	Fundamental
4960.000[1]	57.31	37.98	-5.18	32.80	54.00	-21.20	H	114	275	
7440.000[1]	48.82	29.49	-1.43	28.06	54.00	-25.94	V	109	271	
9920.000	49.08	29.75	-0.55	29.20	54.00	-24.80	V	100	272	
12400.000	48.23	28.90	3.46	32.36	54.00	-21.64	---	---	---	Noise floor
14880.000	48.31	28.98	4.90	33.88	54.00	-20.12	---	---	---	Noise floor
17360.000	48.88	29.55	7.26	36.81	54.00	-17.19	---	---	---	Noise floor
19840.000[1]	51.78	32.45	9.03	41.48	54.00	-12.52	---	---	---	Noise floor
22320.000[1]	52.12	32.79	10.28	43.07	54.00	-10.93	---	---	---	Noise floor
24800.000	55.49	36.16	14.19	50.35	54.00	-3.65	---	---	---	Noise floor

[1] Frequency falls within the Restricted Bands of Operation. See FCC Part 15, Section 15.205 for additional information.

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7. Measurement Data (continued)

7.6. Lower and Upper Band Edge Measurements (15.247 (d))

Requirement: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

7.6.1. Measurement Results – Lower Band Edge

Lowest Channel (MHz)	Field Strength (dBµV/m)		Band Edge Frequency (MHz)	Field Strength (dBµV/m)		Margin (dB)		Result
	Peak	Average		Peak	Average	Peak	Avg	
2405	81.96	---	2400.0	46.69	---	>20 dB	---	Compliant

7.6.2. Measurement Results – Upper Band Edge

Highest Channel (MHz)	Field Strength (dBµV/m)		Band Edge Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin	Result
	Peak	Average		Peak	Average	Peak	Peak	
2480	86.98	---	2483.5	55.85	---	74.0	-18.15	Compliant

7.6.3. Worst case measurement – Upper Band Edge: Out of Band

Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin	Result
	Peak	Average	Peak	Peak	
2483.88	56.26	---	74.0	-17.74	Compliant

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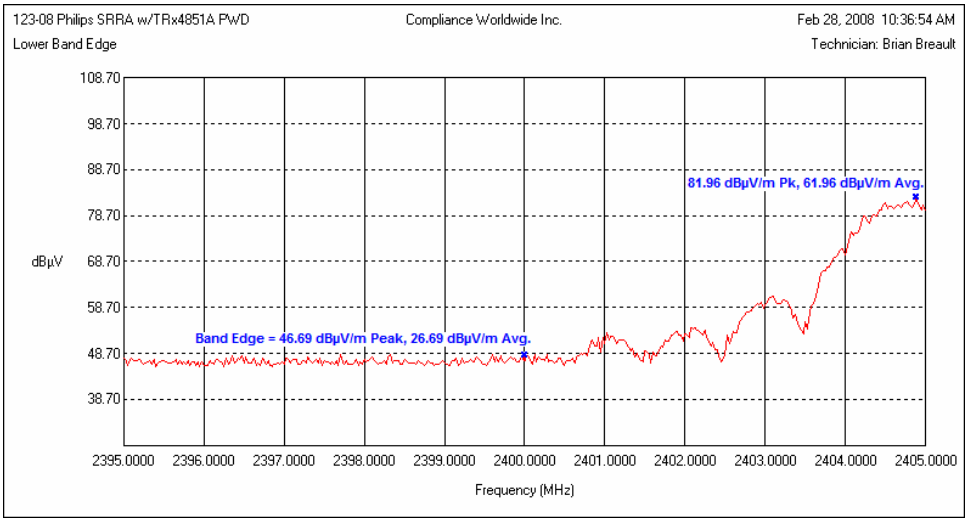
7. Measurement Data (continued)

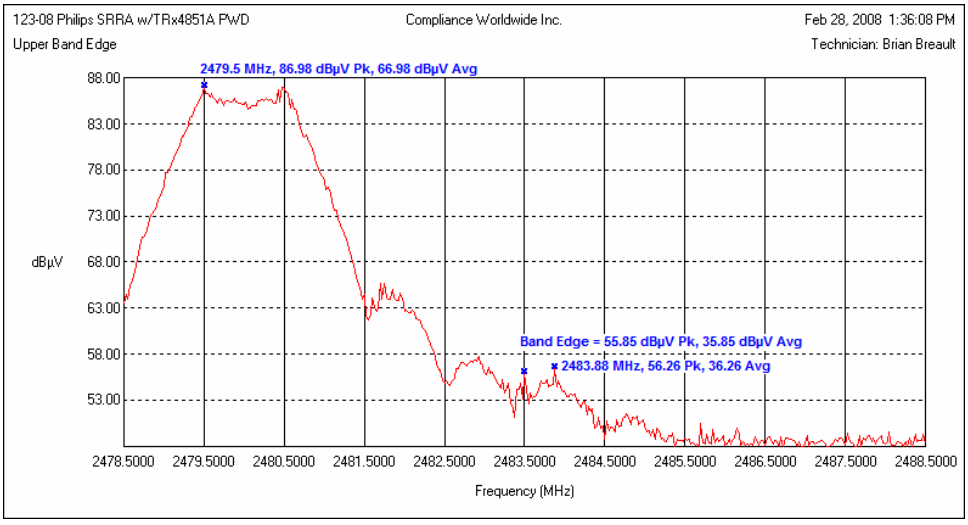
7.6. Lower and Upper Band Edge Measurements (15.247 (d)) (continued)

7.6.3. Measurement Plots

7.6.3.1. Lower Band Edge – Band Edge Measurement



7.6.3.2. Upper Band Edge – Band Edge Measurement



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7. Measurement Data (continued)

7.7. Power Spectral Density (15.247(e))

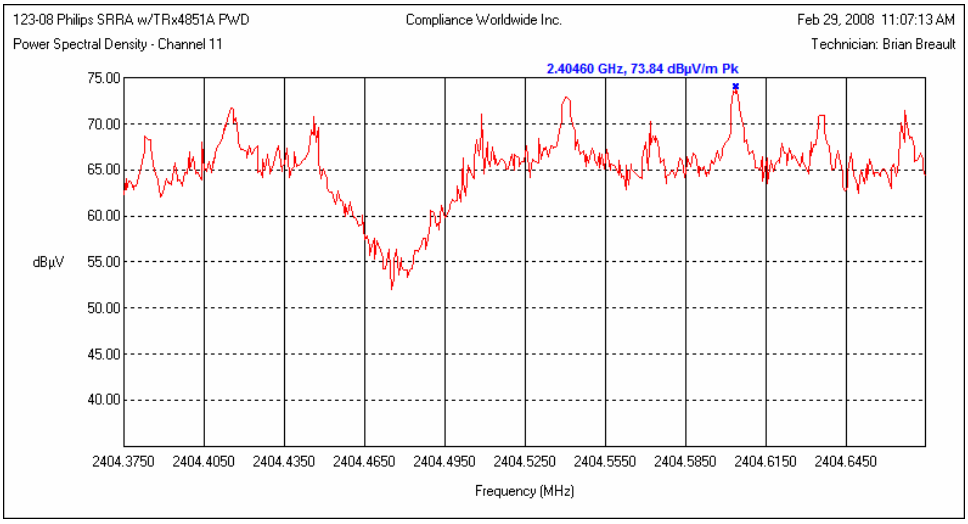
Requirement: For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

7.7.1. Measurement Results

Channel	Channel Frequency	Measured Frequency	Peak Field Strength	Meas. Distance	Antenna Gain	Power Spectral Density		Limit	Result
	MHz	MHz	dBµVm	Meters	Numeric	Watts	dBm	dBm	
11	2405	2.40460	73.84	3	0.890	0.00000816	-20.88	8	Compliant
18	2440	2.43954	74.45	3	0.890	0.00000939	-20.27	8	Compliant
26	2480	2.48026	76.96	3	0.890	0.00001674	-17.76	8	Compliant

7.7.2. Measurement Plots

7.7.2.1. Channel 11



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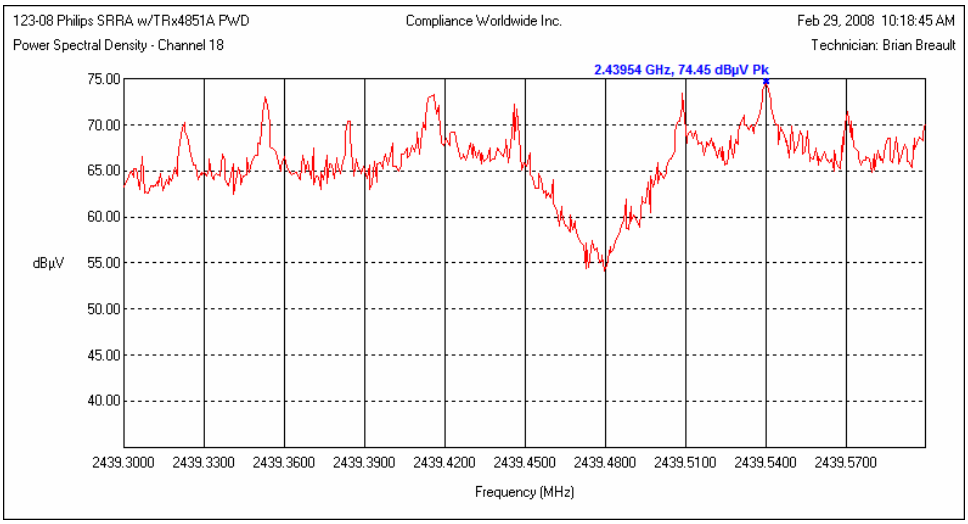
7. Measurement Data (continued)

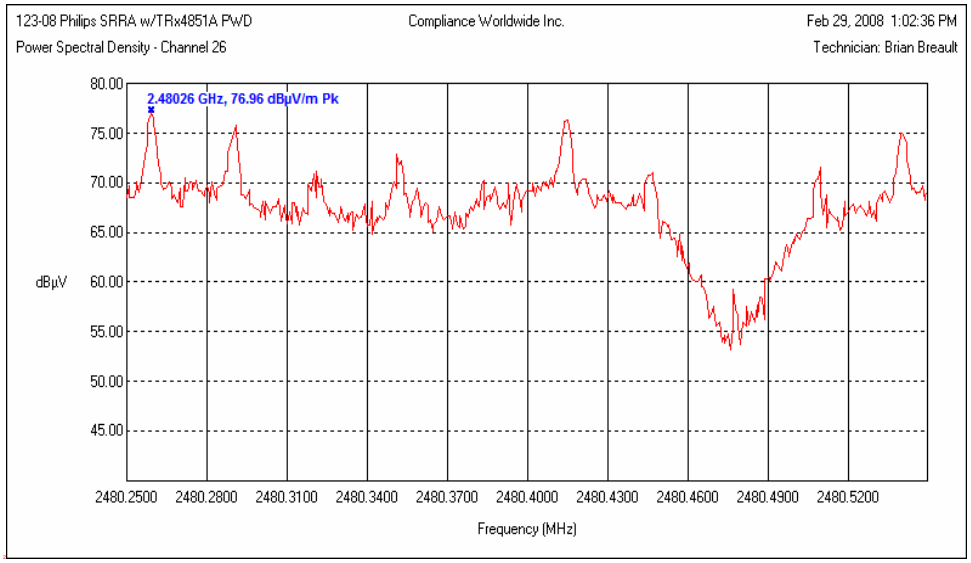
7.7. Power Spectral Density (15.247(e)) (continued)

7.7.2. Measurement Plots

7.7.2.2. Channel 18



7.7.2.3. Channel 26



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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	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density (mW/cm2)	Limit (mW/cm2)	Result
	(1)	(2)	(3)	(4)	(5)	
11	20	-10.167	-0.50	0.00002	1	Compliant
18	20	-10.567	-0.50	0.00002	1	Compliant
26	20	-9.567	-0.50	0.00002	1	Compliant

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 6.3 of this test report.
3. Data supplied by the client.
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.

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7. Measurement Data (continued)

7.9. Determination of Average Factor

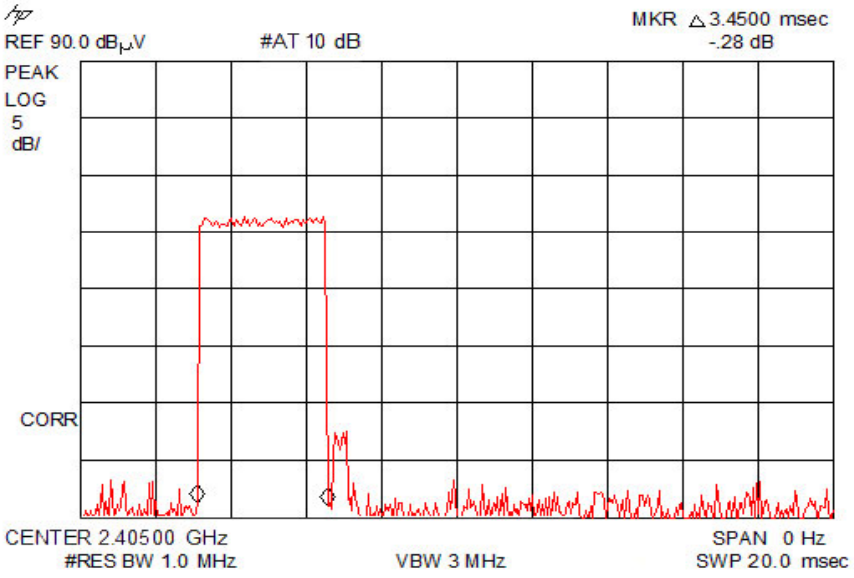
7.9.1. Channel 11

Maximum Duration of 1 cycle:	100 ms
Number of pulses per period:	3
Single pulse width:	3.45 ms
Total On-Time in 1 cycle:	3.45 ms x 3 pulses = 10.35 ms
On-Time divided by cycle:	10.35 ms / 100 ms = 0.1035
Average Factor:	20 x $\log_{10}$ (0.1035) = -19.701 dB

FCC and IC maximum allowed average factor is –20 dB.

Note: The lower output pulses in the pulses per period graphs were a product of the support equipment and not the DUT. This communication was necessary in order for the DUT to function properly.

7.9.1.1. Pulse Width, Channel 11



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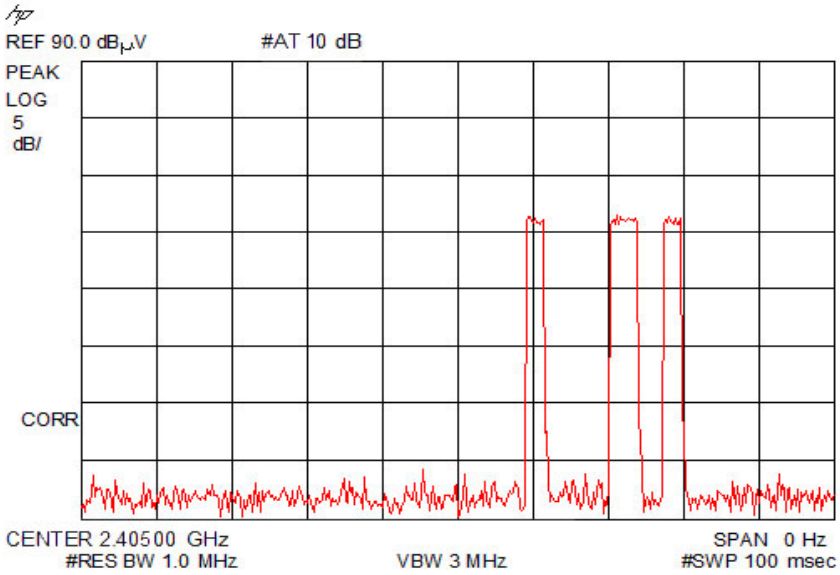
7. Measurement Data (continued)

7.9. Determination of Average Factor (continued)

7.9.1. Channel 11

7.9.1.2. Pulses per Period, Channel 11



7.9.2. Channel 18

Maximum Duration of 1 cycle:	100 ms
Number of pulses per period:	3
Single pulse width:	3.30 ms
Total On-Time in 1 cycle:	3.30 ms x 3 pulses = 9.9 ms
On-Time divided by cycle:	9.9 ms / 100 ms = 0.099
Average Factor:	20 x $\log_{10}$ (0.099) = -20.087 dB

FCC and IC maximum allowed average factor is –20 dB.

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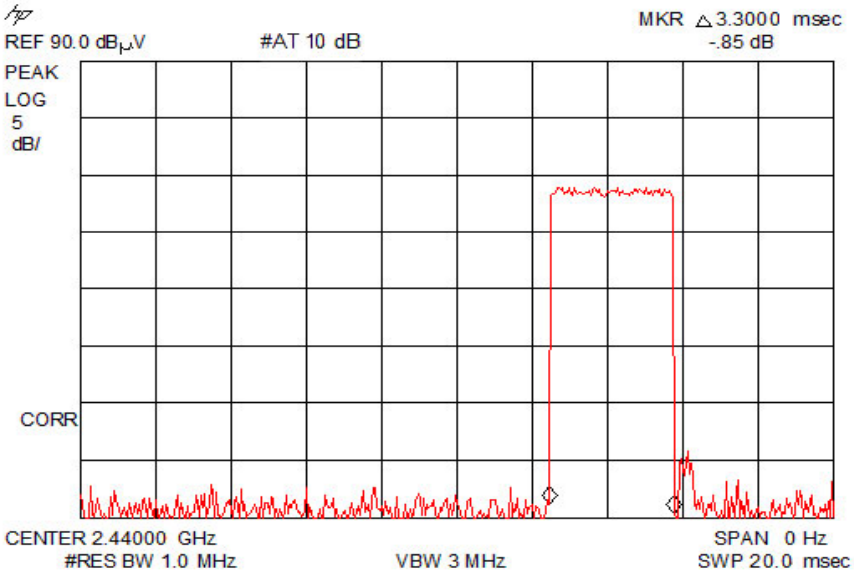
7. Measurement Data (continued)

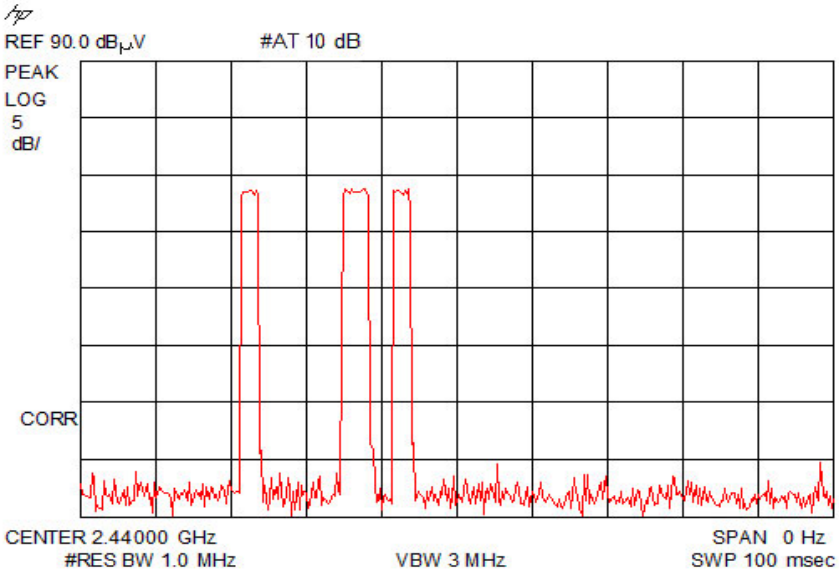
7. 9. Determination of Average Factor (continued)

7. 9.2. Channel 18 (continued)

7. 9.2.1. Pulse Width, Channel 18



7. 9.2.2. Pulses per Period, Channel 18



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7. Measurement Data (continued)

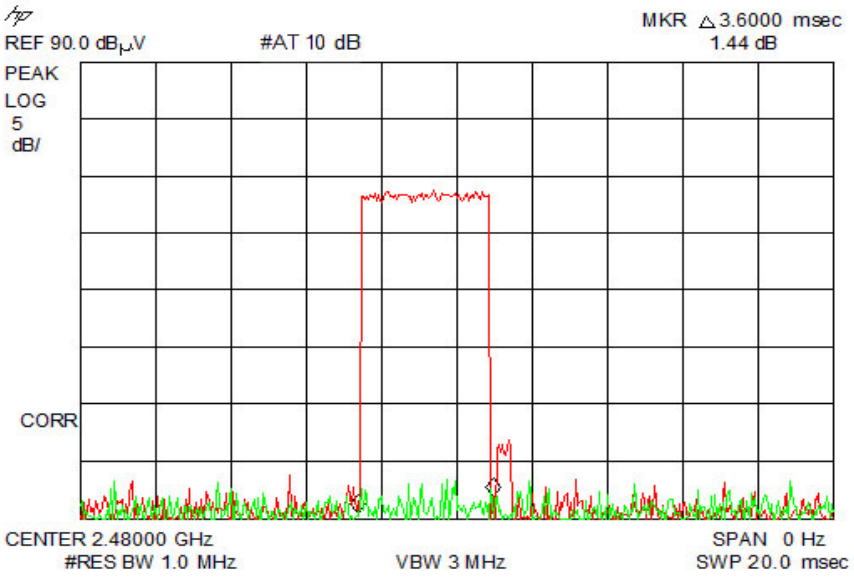
7. 9. Determination of Average Factor (continued)

7. 9.3. Channel 26

Maximum Duration of 1 cycle:	100 ms
Number of pulses per period:	3
Single pulse width:	3.6 ms
Total On-Time in 1 cycle:	3.6 ms x 3 pulses = 10.8 ms
On-Time divided by cycle:	10.8 ms / 100 ms = 0.108
Average Factor:	20 x log (0.108) = -19.33 dB

FCC and IC maximum allowed average factor is –20 dB.

7. 9.3.1. Pulse Width, Channel 26



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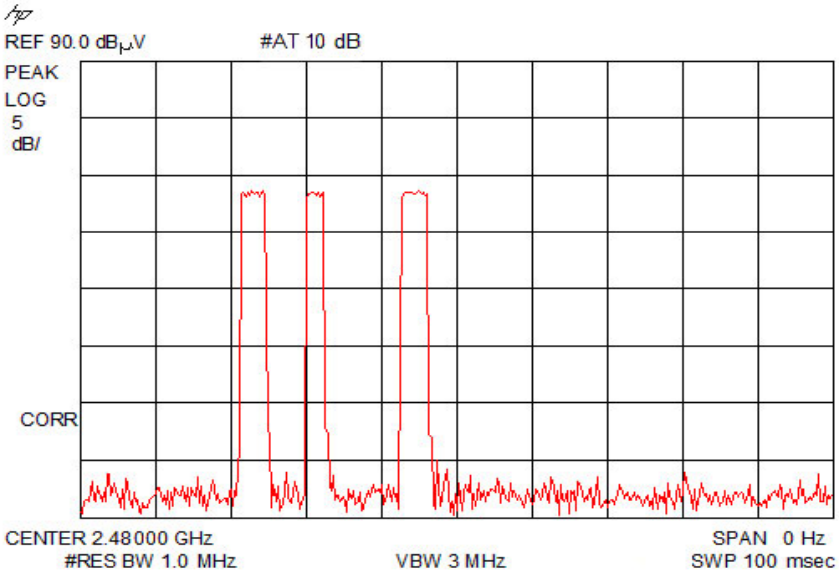
7. Measurement Data (continued)

7. 9. Determination of Average Factor (continued)

7. 9.4. Channel 26

7. 9.4.2. Pulses per Period, Channel 26



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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.

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