COMPLIANCE WORLDWIDE INC.
TEST REPORT 173-08R1

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

Bluesocket, Inc.
10 North Avenue
Burlington, MA 01803
1-781-328-0888

for

BlueSecure™ BSAP-1800(N)

FCC ID: TIH-BSAP1800N
IC: 6023A-BSAP1800N

Report Issued on October 10, 2008

Tested by

Brian F. Breault

Reviewed by

Larry K. Stillings

Table of Contents

Compliance Worldwide, Inc. - 357 Main Street - Sandown, NH 03873
(603) 887 3903 Fax 887 6445
http://www.cw-inc.com

1. Scope

This test report certifies that the Bluesocket BlueSecure™ Access Point 1800, BSAP-1800(N), as tested, meets the FCC Part 15.247, Subpart C and Industry Canada RSS 210, Issue 7, Annex 8 requirements. The changes to this unit are:

- The original 2.4 GHz transmitter module has been replaced by a Wistron NeWeb Corp. (WNC) model DNMA-83 transmitter module, FCC ID: NKR-DNMA83, IC: 4441A-DNMA83.
- Added passive filter modules between transmitters and antenna array (2.4 and 5 GHz respectively).
- Enabled HT40 (40 MHz mode on 2. 4 and 5 GHz band radios.

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.

2. Product Details

2.1. Manufacturer: Bluesocket, Inc.

2.2. Model Number: BlueSecure™ BSAP-1800(N)

2.3. Serial Number: None

2.4. Description: The BlueSecure™ Access Point 1800 (BSAP-1800(N)) is the first enterprise-class 802.11a/b/g Wi-Fi certified AP to use MIMO technology. This approach achieves more than 30 percent better range and overall performance, using your existing standard 802.11a/b/g clients, than APs using legacy 802.11 technologies. ISM Channels 12 to 14 and 165 have been disabled.

2.5. Power Source: 48 Volts DC via Power Over Ethernet or
48 Volts DC Power Adapter

2.6. EMC Modifications: None

3. Product Configuration

3.1. Support Equipment

Device	Manufacturer	Model	Serial No.	Comment
Notebook PC	Dell	Inspiron 5100	CN-09U806-12961-33V-3939	Remotely located
Notebook PC	Compaq	Presario 1600	1V02DCJ7L3K0	Rem. located & wireless
Ethernet Controller	Bluesocket	BSC-600	06000308010782	Remotely located
Power Supply	Bluesocket	SP80P948MR	N/A	Remotely located

3.2. Cables

Cable Type	Length	Shield	From	To
CAT 5 Ethernet (UTP)	1.5 Meters	No	Notebook PC	PoE Injector
CAT 5 Ethernet (UTP)	10 Meters	No	PoIP Injector	BSAP-1800

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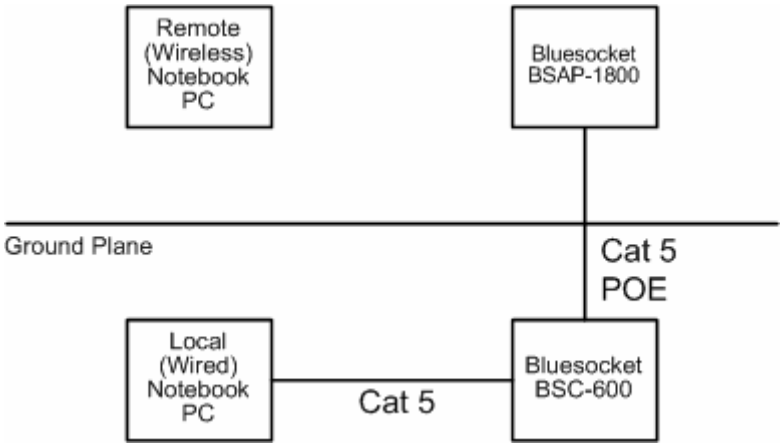
3. Product Configuration (continued)

3.3. Operational Characteristics & Software

1. Log on to the Bluesocket Dell notebook. The username and password is provided on a label near the keyboard.
2. Open a web browser and navigate through the BSAP-1800 web based interface to set the AP channel and channel bandwidth.
3. Click on the "iPerf" icon on the desktop to begin generating data flow to the remote PC.

3.4. Block Diagram



4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
EMI Receiver	Hewlett Packard	8546A	3330A00115	9/26/2009
Spectrum Analyzer	Agilent	E4407B	MY45104493	07/09/2010
Spectrum Analyzer	Hewlett Packard	8593E	3829A03887	09/17/2009
Microwave Preamp	Hewlett Packard	8449B	3008A01323	9/22/2010
Bilog Antenna	Com-Power	AC220	25509	8/6/2009
Horn Antenna	Electro-Metrics	EM-6961	6337	7/22/2009
2.4 GHz Band Reject Filter	Micro-Tronics	BRM50702	14	11/15/2008
6.4 - 18 GHz Band Pass Filter	Micro-Tronics	HPM50112	014	8/12/2009
26.5 - 40 GHz Harmonic Mixer	Hewlett Packard	11970A	3003A08210	N/A
26.5 - 40 GHz Horn Antenna	Alpha Industries	861A/599	324	N/A
LISN	EMCO	3825/2	9109-1860	1/11/2009

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4. Measurements Parameters

4.2. Measurement & Equipment Setup

Test Engineer:	Brian Breault
Normal Site Temperature (15 - 35°C):	21.6
Relative Humidity (20 -75%RH):	33
Frequency Range:	30 MHz to 40 GHz
Measurement Distance:	3 Meters

4.3. Test Procedure

The test measurements contained in this report are based on the requirements detailed in FCC Part 15, Section 15.247, RSS-210: 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.

5. Measurement Summary

Test Requirement	FCC Part 15.247 Reference	Test Report Section	Result	Comment
Equivalent Isotropic Radiated Power/Maximum Peak Conducted Output Power	(b) (3)	6.1	Compliant	< 1 Watt
Minimum 6 dB Bandwidth	(a) (2)	6.2	Compliant	> 500 kHz
99% Bandwidth	N/A	6.3	Compliant	RSS 210
Operation with directional antenna gains greater than 6 dBi	(b) (4)	6.4	N/A	Antenna gains: +3.95 dBi at 2.4 GHz +5.06 dBi at 5.8 GHz
Spurious Radiated Emissions	15.209 15.247 (d)	6.5, 6.6 6.7	Compliant	
Lower and Upper Band Edge	15.247 (d)	6.8	Compliant	
Power Spectral Density	15.247(e)	6.9	Compliant	
Conducted Emissions	15.207	6.10	Compliant	
Public Exposure to Radio Frequency Energy Levels	1.1307 (b) (1)	6.11	Compliant	Calculated from field strength measurement and antenna gain.

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6. Measurement Data

6.1. Equivalent Isotropic Radiated Power (15.247(b)(3)), IC RSS-210

6.1.1. Field Strength Measurements

Requirement: For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands, the maximum conducted output power over the frequency band of operation shall not exceed: 1 Watt.

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

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

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 power was calculated using the spectrum analyzer power integration function with the following settings:

Resolution Bandwidth : 1 MHz
Video Bandwidth : 3 MHz
Frequency Span : 30 MHz (20 MHz bandwidth setting)
60 MHz (40 MHz bandwidth setting)
Channel Bandwidth : 20 MHz (20 MHz bandwidth setting)
40 MHz (40 MHz bandwidth setting)
Sweep Time : 20 mSec

Radiated Equivalent Isotropic Radiated Power 15.247(b)(3)
20 MHz Bandwidth

Channel	Channel Frequency	Peak Field Strength[1]	Antenna Gain	Power		Limit		Result
	GHz	dBµV	Numeric	Watts	dBm	Watts	dBm	
1	2.412	126.00	3.95	0.302	24.81	4	36	Compliant
6	2.437	126.71	3.95	0.356	25.52	4	36	Compliant
11	2.462	124.35	3.95	0.207	23.16	4	36	Compliant
149	5745	120.16	5.06	0.062	17.89	4	36	Compliant
153	5765	120.73	5.06	0.070	18.46	4	36	Compliant
161	5805	122.39	5.06	0.103	20.12	4	36	Compliant

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6. Measurement Data

6.1. Equivalent Isotropic Radiated Power (15.247(b)(3)), IC RSS-210

6.1.1. Field Strength Measurements (continued)

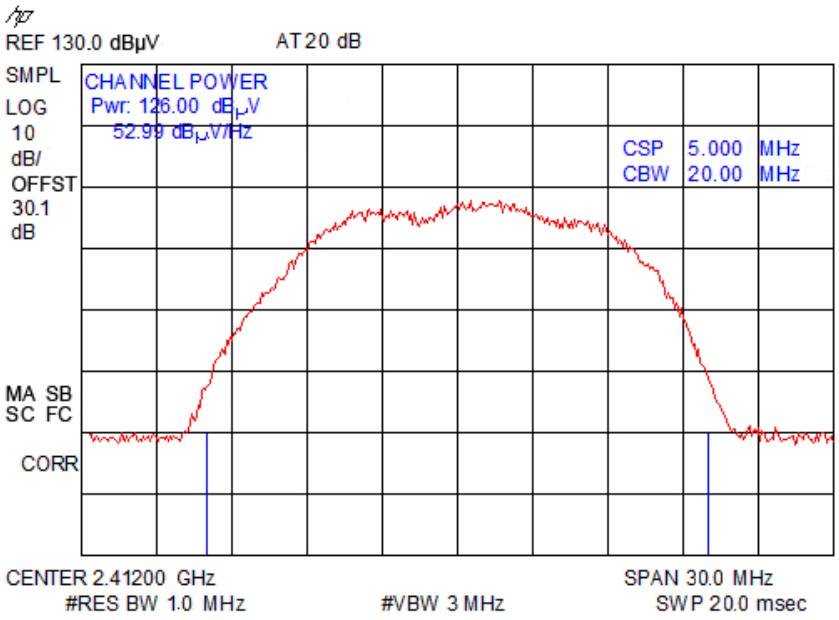
40 MHz Bandwidth

Channel	Channel Frequency	Peak Field Strength[1]	Antenna Gain	Power		Limit		Result
	GHz	dBµV	Numeric	Watts	dBm	Watts	dBm	
3	2.422	126.40	3.95	0.332	25.21	4	30	Compliant
6	2.437	126.73	3.95	0.358	25.54	4	30	Compliant
9	2.452	125.72	3.95	0.283	24.53	4	30	Compliant
151	5.755	123.45	5.06	0.131	21.18	4	30	Compliant
159	5.795	122.38	5.06	0.103	20.11	4	30	Compliant

[1] **Values includes correction factors.**

6.1.1. Field Strength Measurements (continued)

6.1.1.1. Plot: 20 MHz Signal Bandwidth - Channel 1



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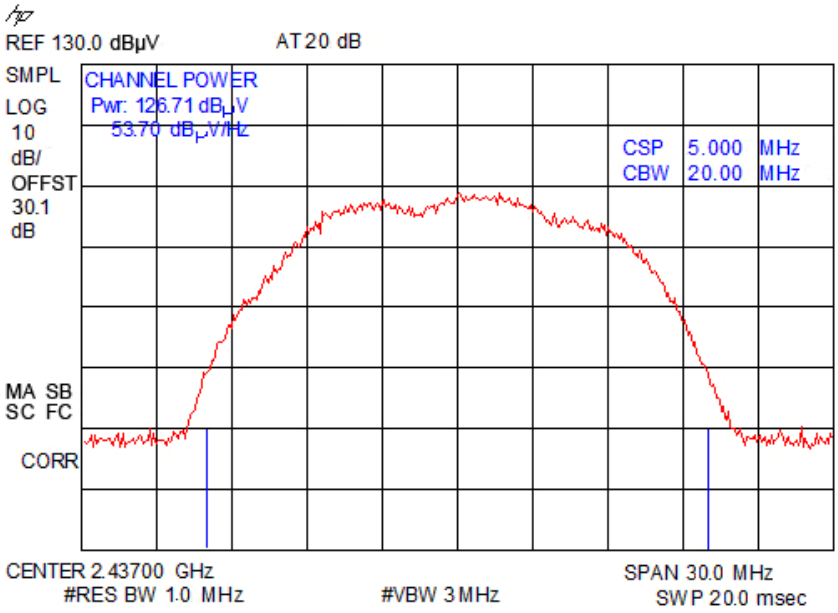
6. Measurement Data

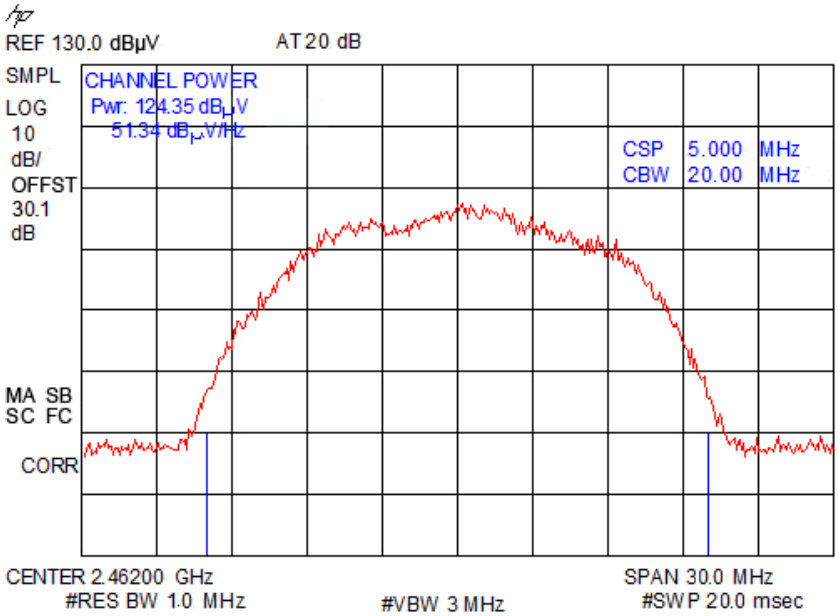
6.1. Equivalent Isotropic Radiated Power (15.247(b)(3)), IC RSS-210

6.1.1. Field Strength Measurements (continued)

6.1.1.2. Plot: 20 MHz Signal Bandwidth - Channel 6



6.1.1.3. Plot: 20 MHz Signal Bandwidth - Channel 11



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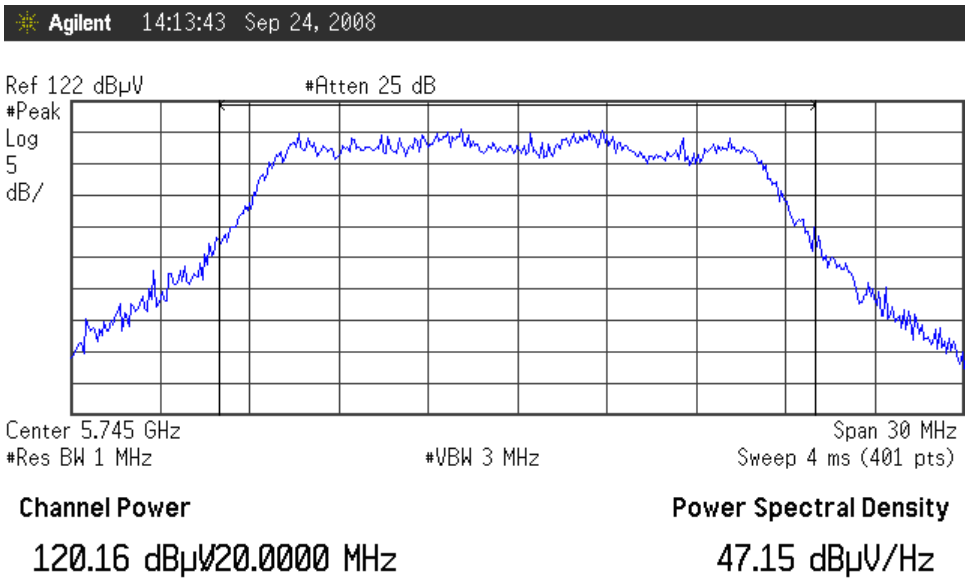
6. Measurement Data

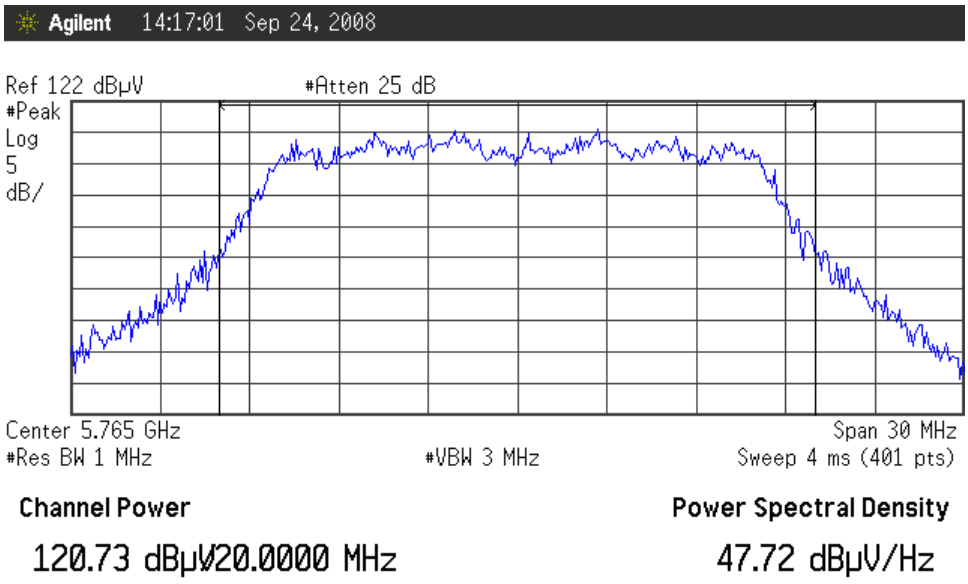
6.1. Equivalent Isotropic Radiated Power (15.247(b)(3)), IC RSS-210

6.1.1. Field Strength Measurements (continued)

6.1.1.4. Plot: 20 MHz Signal Bandwidth - Channel 149



6.1.1.5. Plot: 20 MHz Signal Bandwidth - Channel 153



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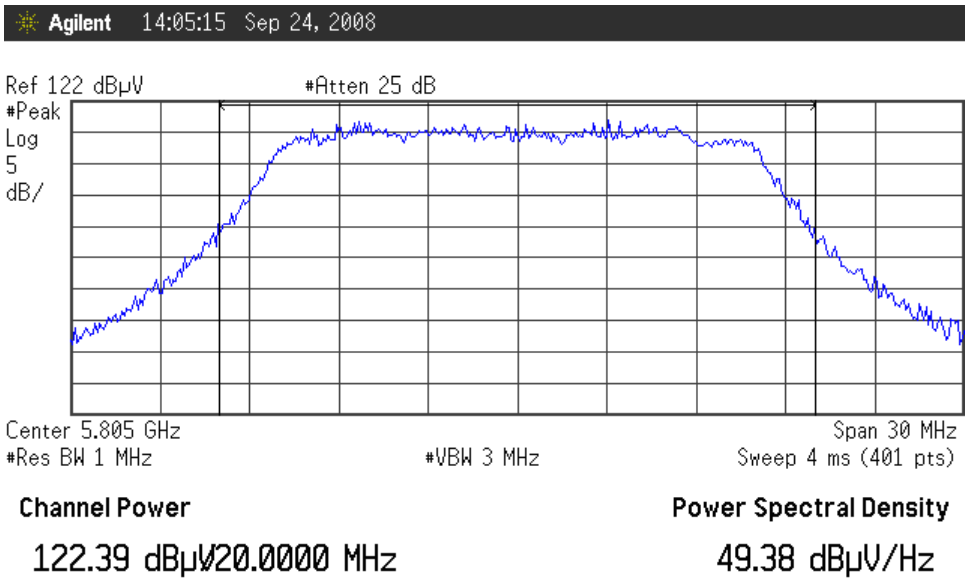
6. Measurement Data

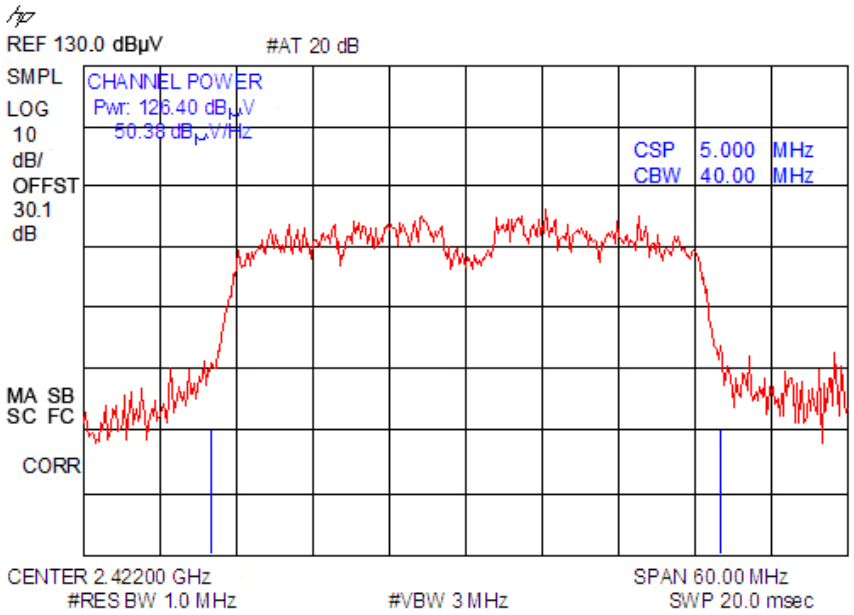
6.1. Equivalent Isotropic Radiated Power (15.247(b)(3)), IC RSS-210

6.1.1. Field Strength Measurements (continued)

6.1.1.6. Plot: 20 MHz Signal Bandwidth - Channel 161



6.1.1.7. Plot: 40 MHz Signal Bandwidth - Channel 3



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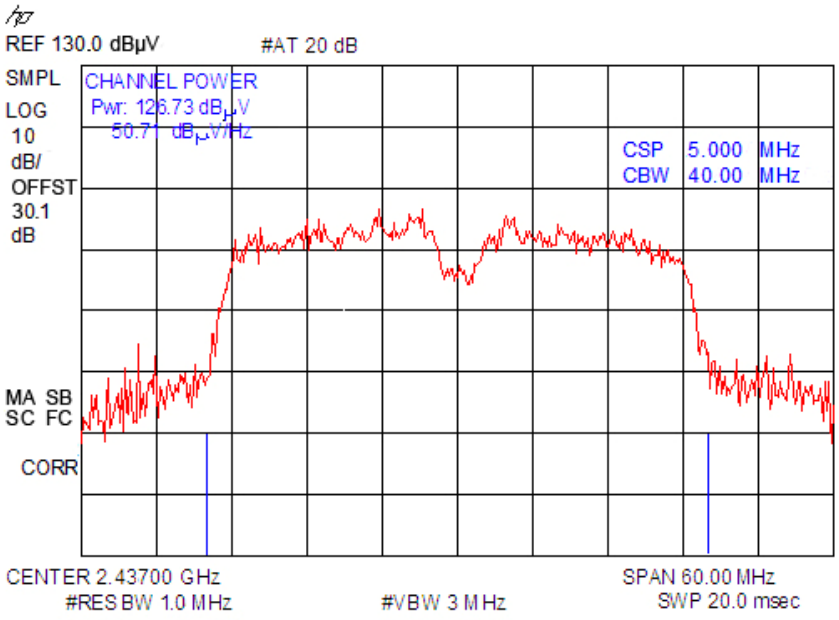
6. Measurement Data (continued)

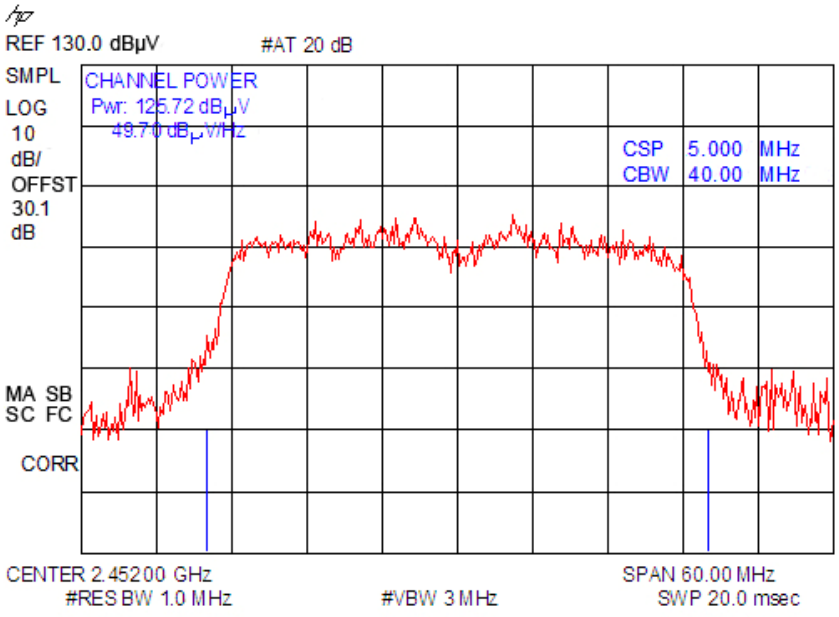
6.1. Equivalent Isotropic Radiated Power (15.247(b)(3)), IC-RSS-210

6.1.1. Field Strength Measurements (continued)

6.1.1.8. Plot: 40 MHz Signal Bandwidth - Channel 6



6.1.1.9. Plot: 40 MHz Signal Bandwidth - Channel 9



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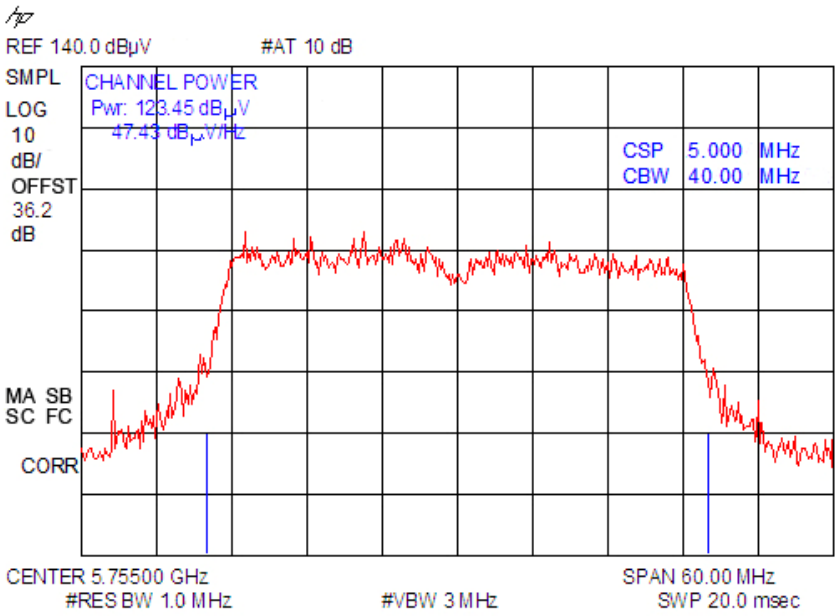
6. Measurement Data (continued)

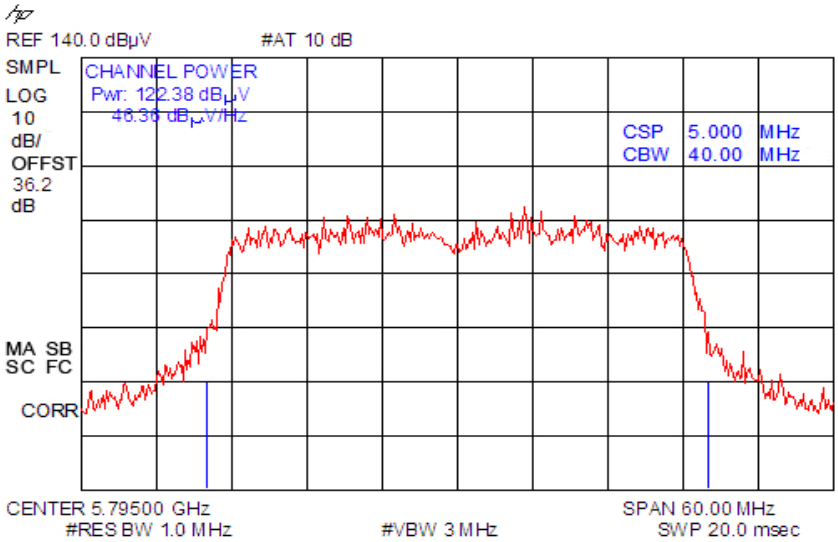
6.1. Equivalent Isotropic Radiated Power (15.247(b)(3)), IC RSS-210

6.1.1. Field Strength Measurements (continued)

6.1.1.10. Plot: 40 MHz Signal Bandwidth - Channel 151



6.1.1.11. Plot: 40 MHz Signal Bandwidth - Channel 159



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6. Measurement Data

6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210

6.1.2. Conducted Mode Measurements

Requirement: For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands, the maximum conducted output power over the frequency band of operation shall not exceed: 1 Watt.

The EUT consists of two transmitters and three receivers for the 3x3 MIMO array. Each transmitter was measured and the power was summed below mathematically.

The power was calculated using the spectrum analyzer power integration function with the following settings:

Resolution Bandwidth : 1 MHz
Video Bandwidth : 3 MHz
Frequency Span : 30 MHz
Channel Bandwidth : 20 MHz or 40 MHz (see data)
Sweep Time : 20 mSec

Total Pwr (dBm) = 10_{LOG} ((10^(Chain 0 Pwr/10)) + (10^(Chain 1 Pwr/10))) + (10^(Chain 2 Pwr/10)))

Maximum Peak Conducted Output Power 15.247(b)(3)

20 MHz Signal Bandwidth

Channel	Channel Frequency	Power Meas. Chain 0	Power Meas. Chain 1	Power Meas. Chain 2	Power		Limit		Result
	GHz	dBm	dBm	dBm	dBm	Watts	dBm	Watts	
1	2.412	16.85	17.93	17.20	22.12	0.163	30	1	Compliant
6	2.437	18.42	17.97	17.73	22.82	0.191	30	1	Compliant
11	2.462	17.47	17.54	17.25	22.19	0.166	30	1	Compliant
149	5745	15.03	15.05	14.73	19.71	0.094	30	1	Compliant
153	5765	15.53	15.44	15.52	20.27	0.106	30	1	Compliant
161	5805	15.74	16.21	17.10	21.16	0.131	30	1	Compliant

40 MHz Signal Bandwidth

Channel	Channel Frequency	Power Meas. Chain 0	Power Meas. Chain 1	Power Meas. Chain 2	Power		Limit		Result
	GHz	dBm	dBm	dBm	dBm	Watts	dBm	Watts	
3	2.422	18.45	19.50	19.16	23.83	0.242	30	1	Compliant
6	2437	18.86	19.52	19.52	24.08	0.256	30	1	Compliant
9	2.452	17.28	19.33	19.22	23.48	0.223	30	1	Compliant
151	5.755	18.00	17.19	17.10	22.22	0.167	30	1	Compliant
159	5.795	17.39	17.10	17.25	22.02	0.159	30	1	Compliant

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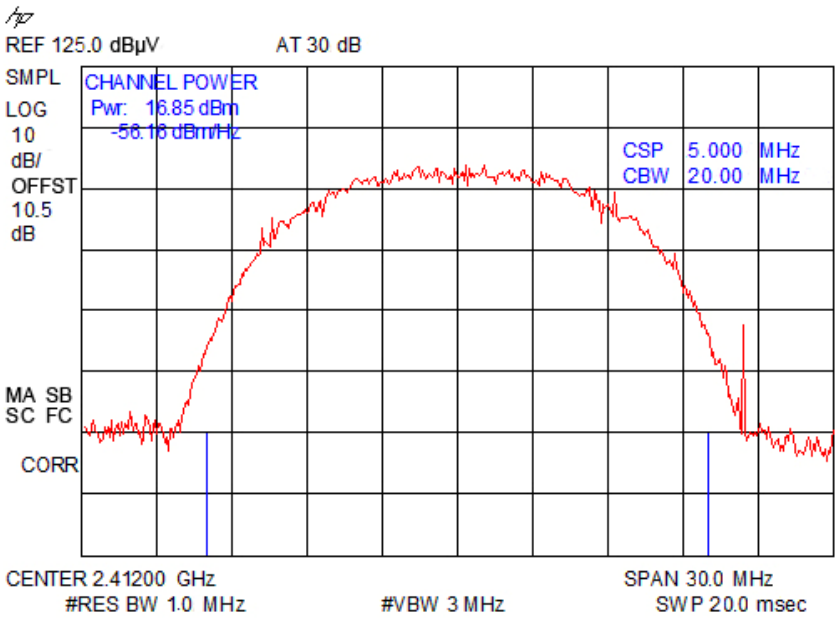
6. Measurement Data (continued)

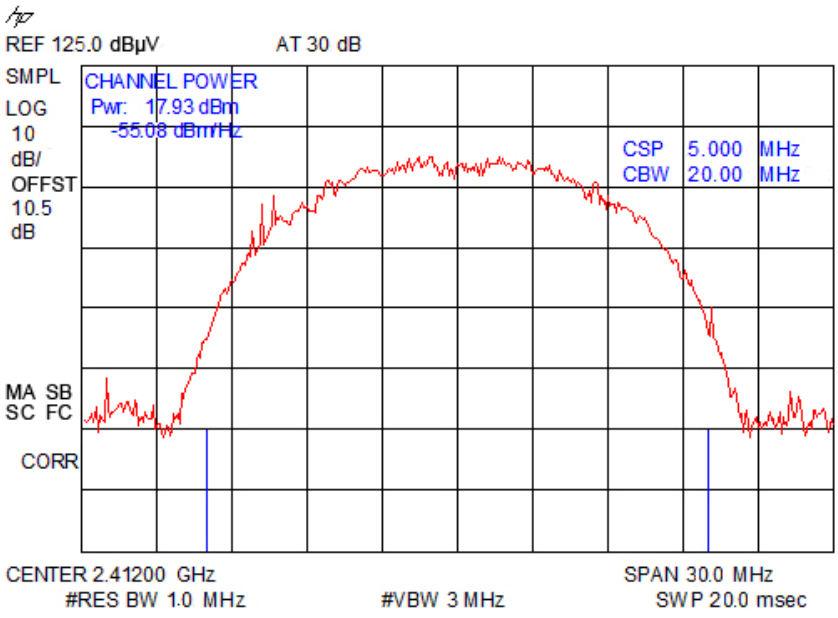
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.1. Plot: 20 MHz Signal Bandwidth - Channel 1 Chain 0



6.1.2.2. Plot: 20 MHz Signal Bandwidth - Channel 1 Chain 1



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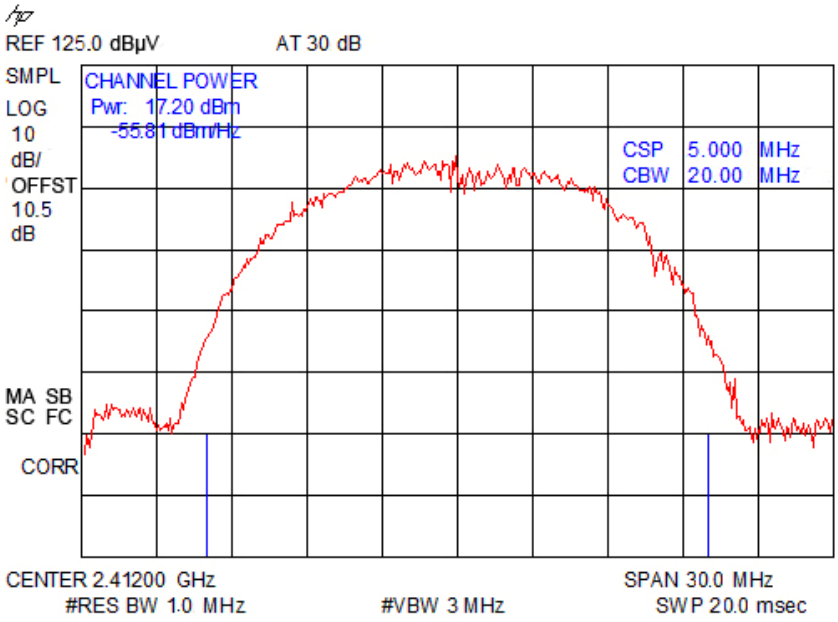
6. Measurement Data (continued)

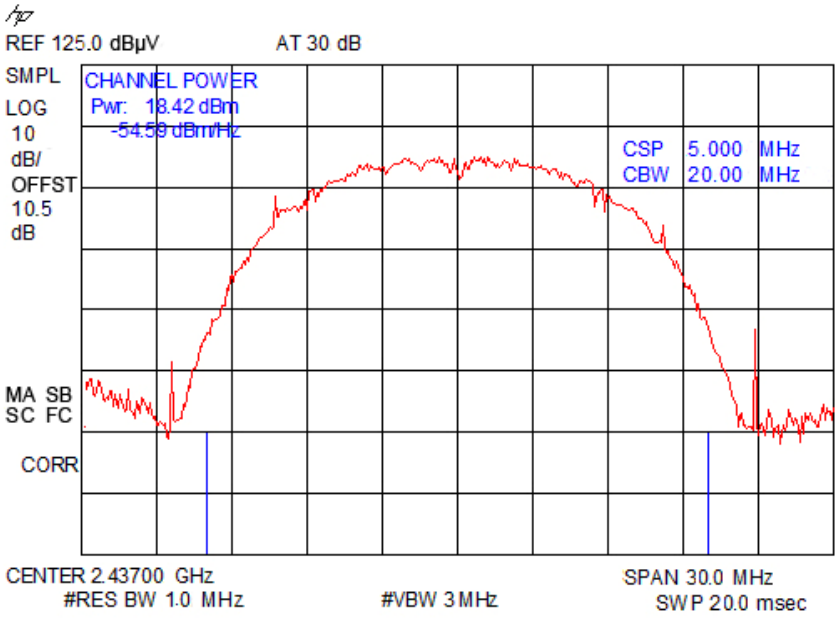
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.3. Plot: 20 MHz Signal Bandwidth - Channel 1 Chain 2



6.1.2.4. Plot: 20 MHz Signal Bandwidth - Channel 6 Chain 0



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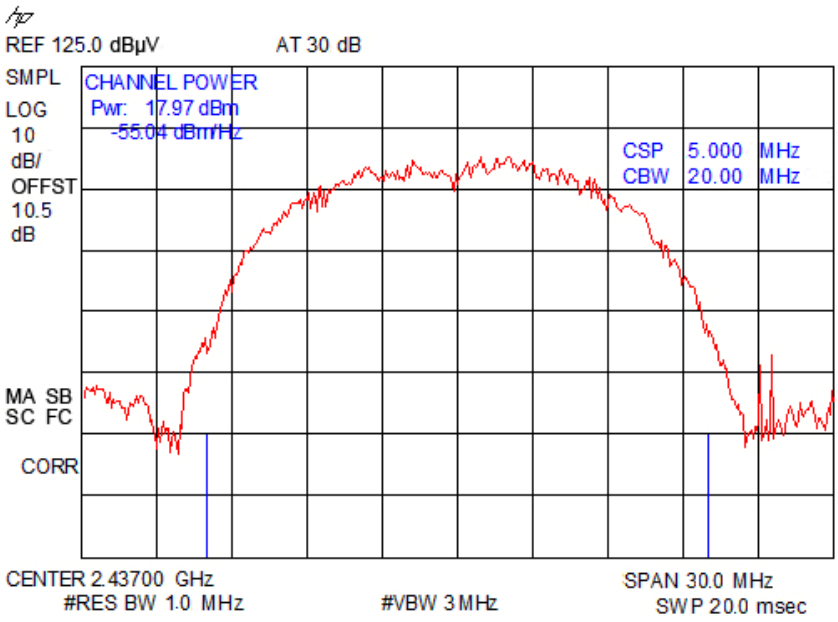
6. Measurement Data (continued)

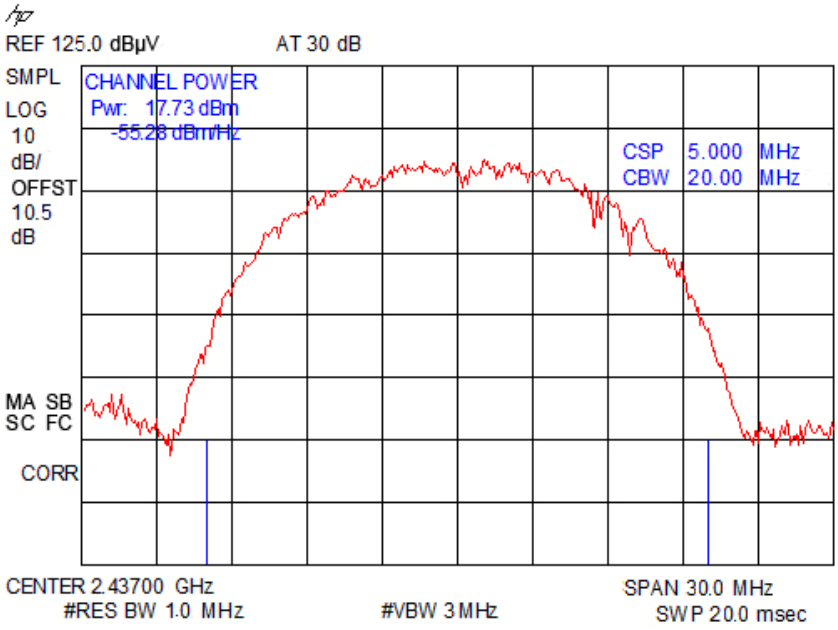
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.5. Plot: 20 MHz Signal Bandwidth - Channel 6 Chain 1



6.1.2.6. Plot: 20 MHz Signal Bandwidth - Channel 6 Chain 2



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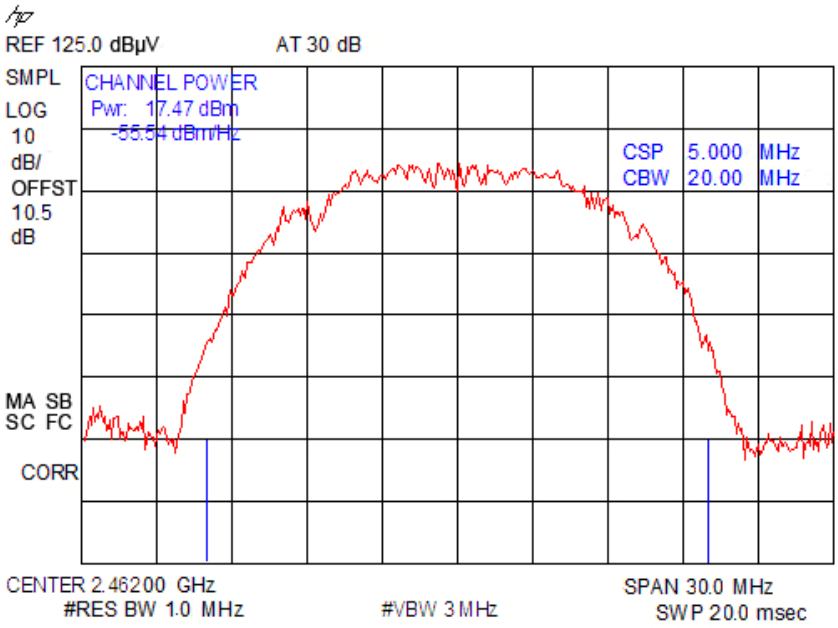
6. Measurement Data (continued)

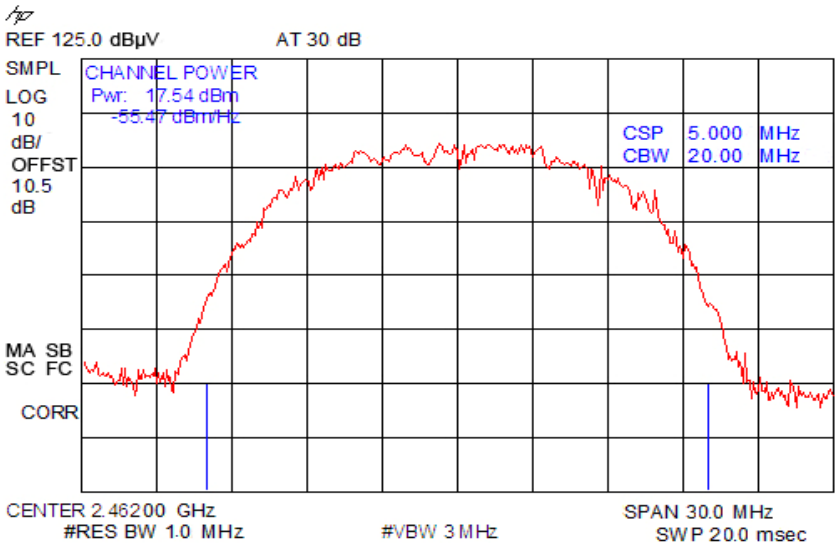
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.7. Plot: 20 MHz Signal Bandwidth - Channel 11 Chain 0



6.1.2.8. Plot: 20 MHz Signal Bandwidth - Channel 11 Chain 1



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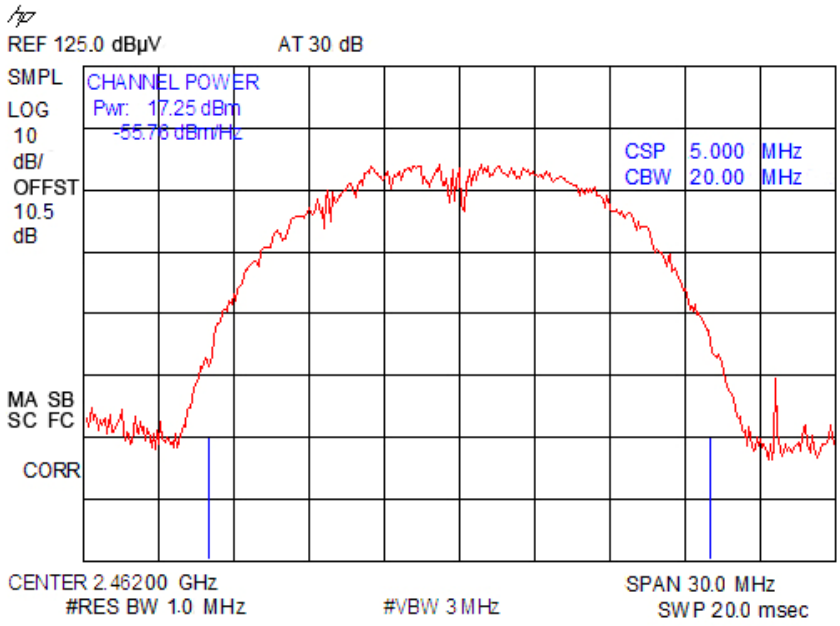
6. Measurement Data (continued)

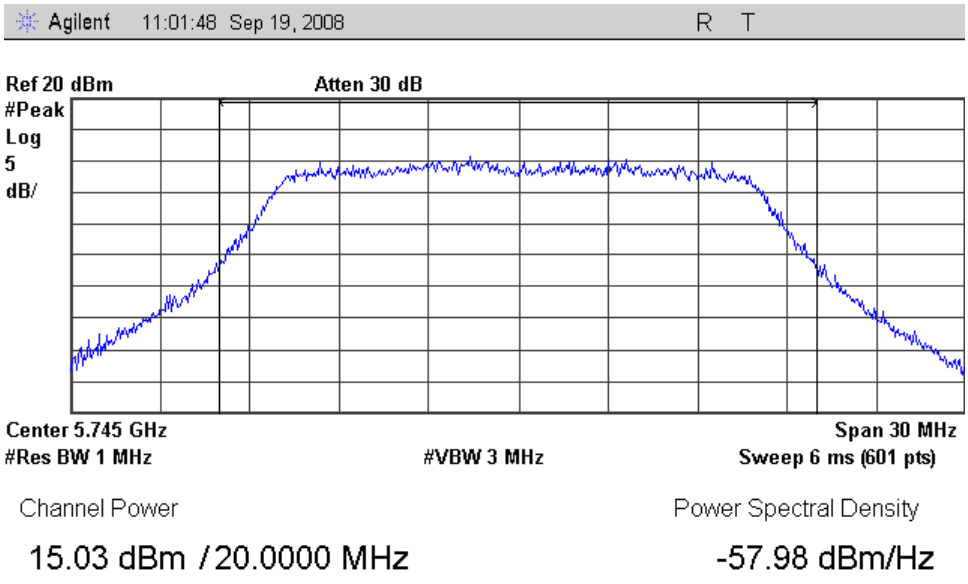
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.9. Plot: 20 MHz Signal Bandwidth - Channel 11 Chain 2



6.1.2.10. Plot: 20 MHz Signal Bandwidth - Channel 149 Chain 0



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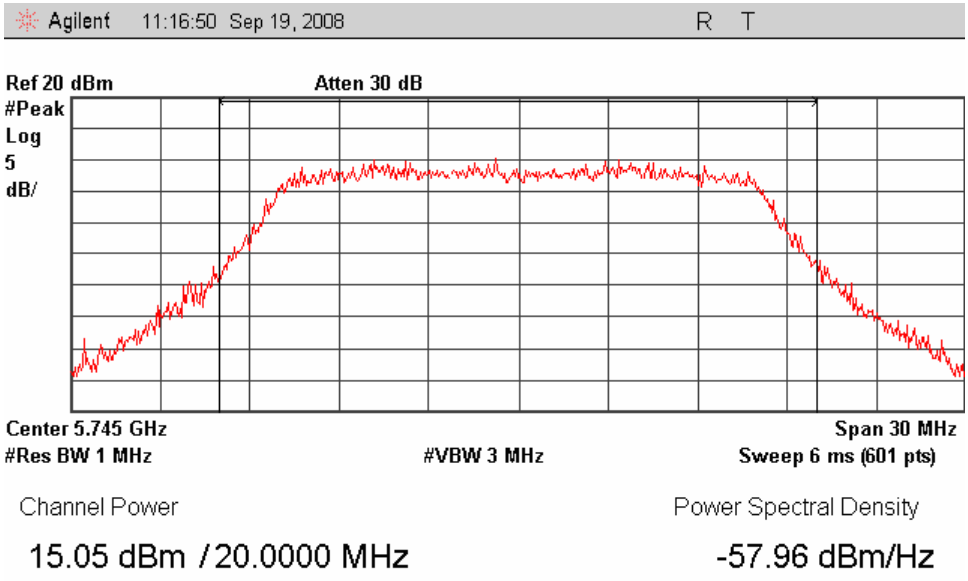
6. Measurement Data (continued)

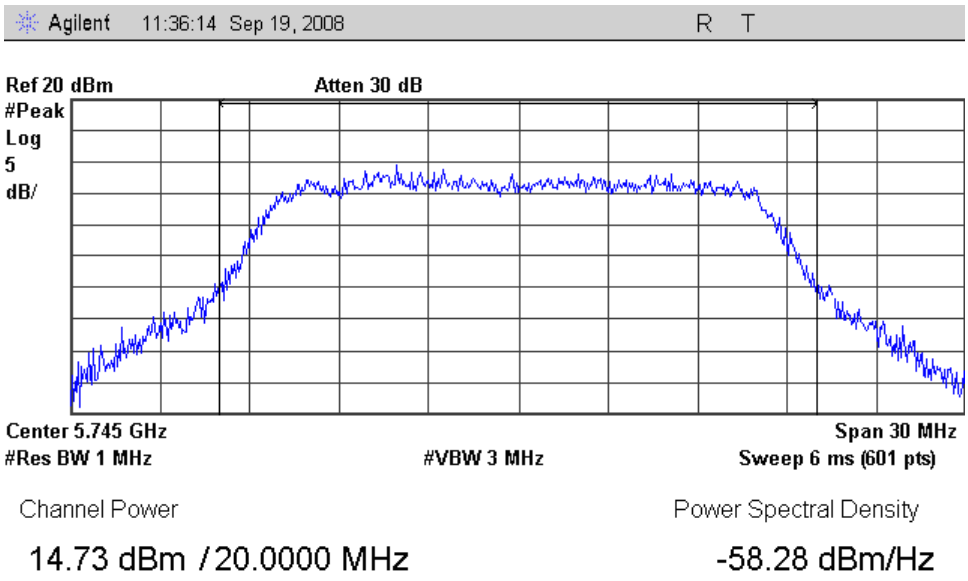
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.11. Plot: 20 MHz Signal Bandwidth - Channel 149 Chain 1



6.1.2.12. Plot: 20 MHz Signal Bandwidth - Channel 149 Chain 2



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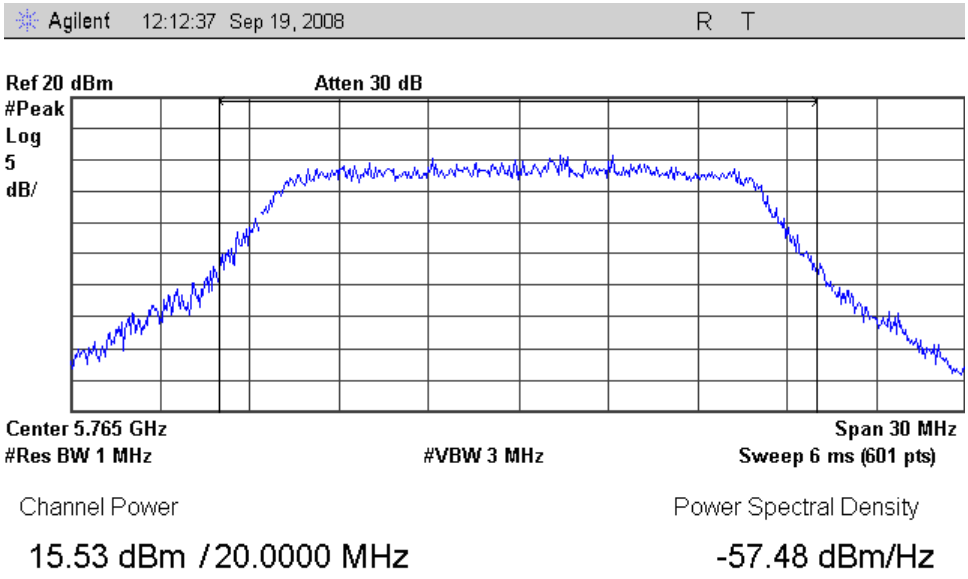
6. Measurement Data (continued)

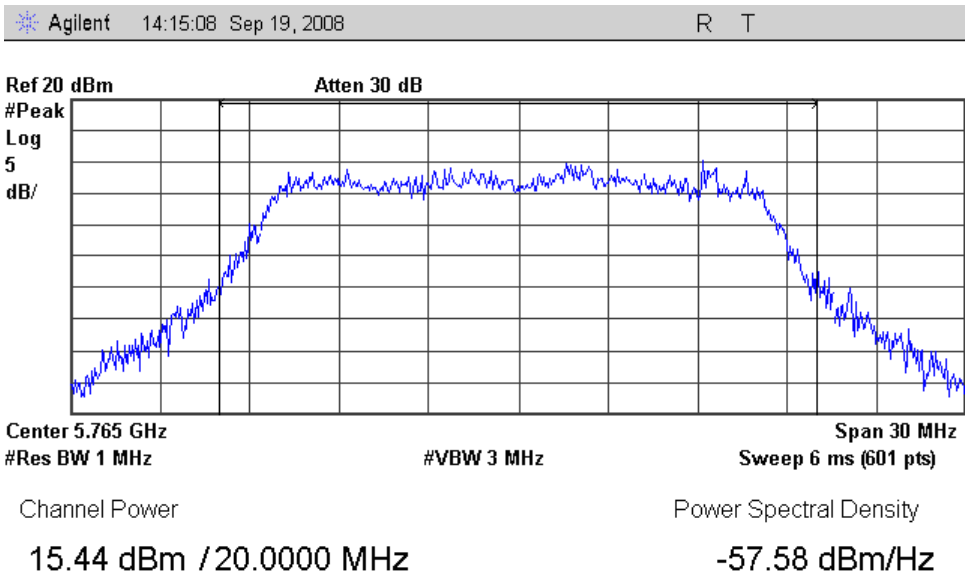
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.13. Plot: 20 MHz Signal Bandwidth - Channel 153 Chain 0



6.1.2.14. Plot: 20 MHz Signal Bandwidth - Channel 153 Chain 1



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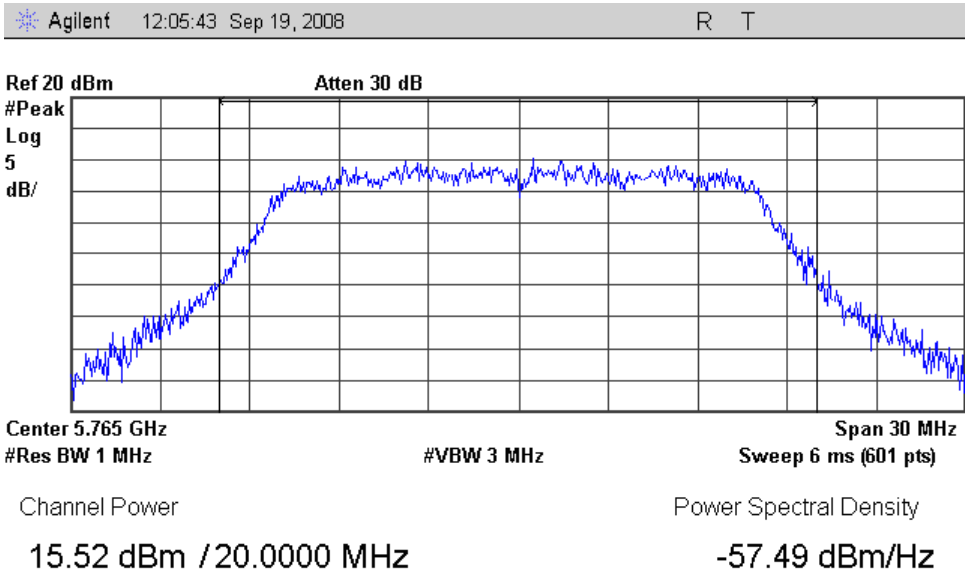
6. Measurement Data (continued)

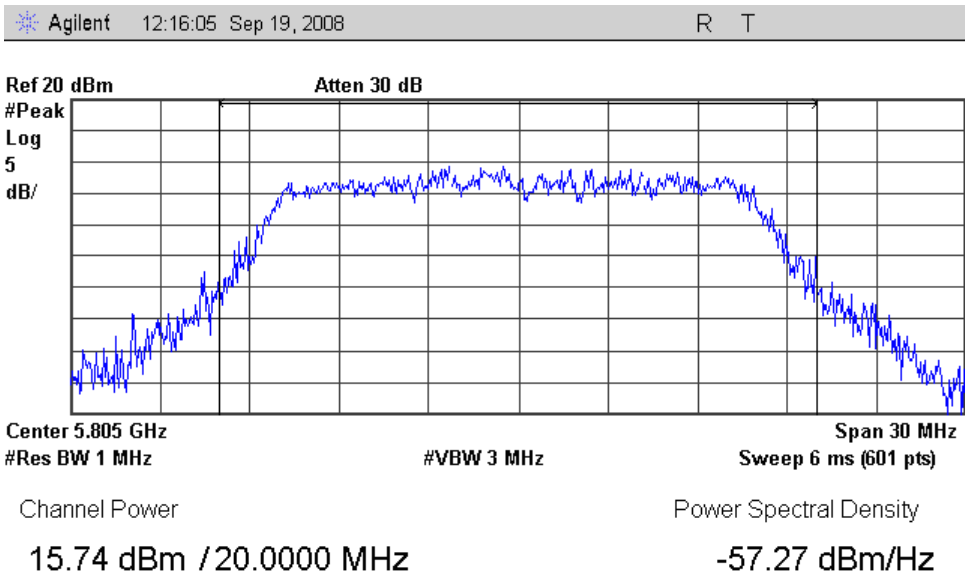
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.15. Plot: 20 MHz Signal Bandwidth - Channel 153 Chain 2



6.1.2.16. Plot: 20 MHz Signal Bandwidth - Channel 161 Chain 0



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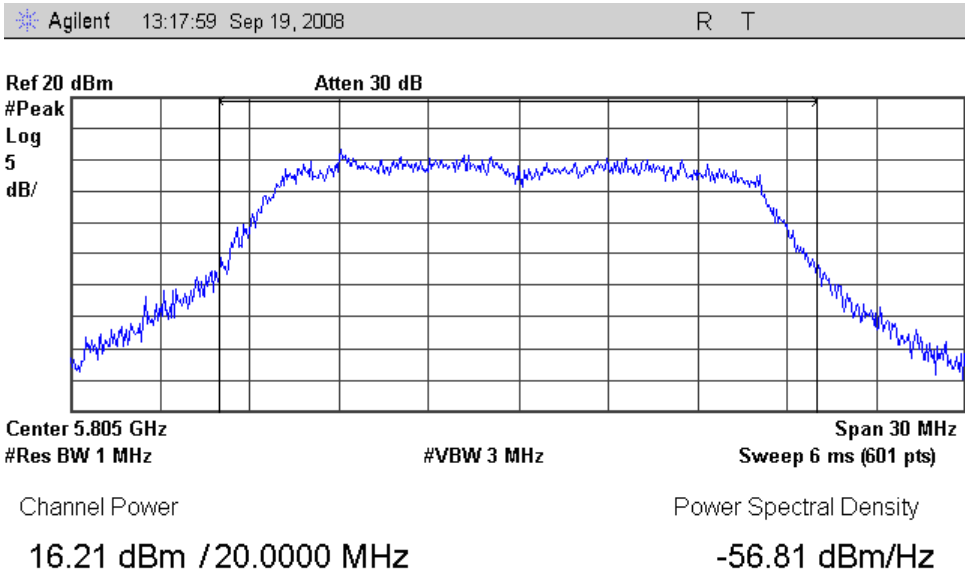
6. Measurement Data (continued)

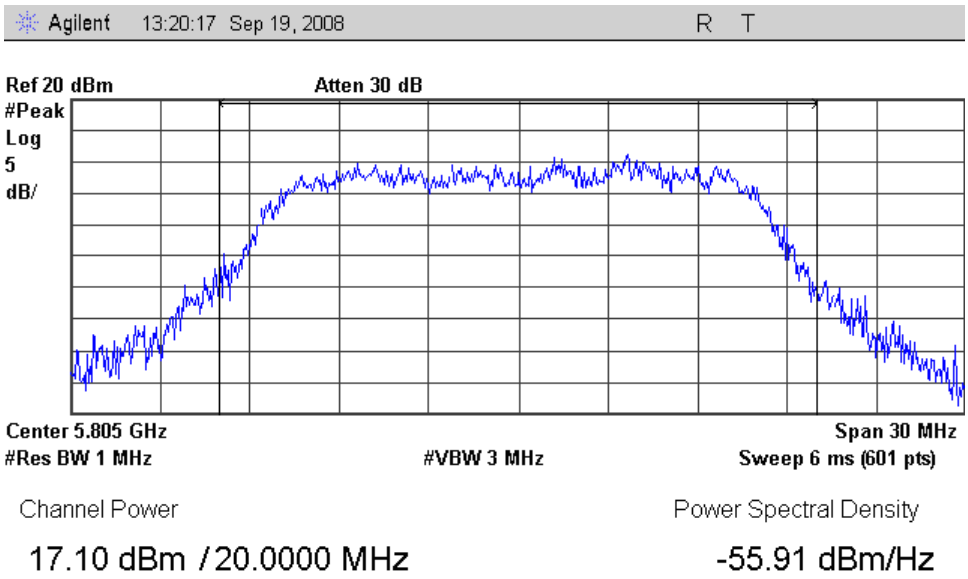
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.17. Plot: 20 MHz Signal Bandwidth - Channel 161 Chain 1



6.1.2.18. Plot: 20 MHz Signal Bandwidth - Channel 161 Chain 2



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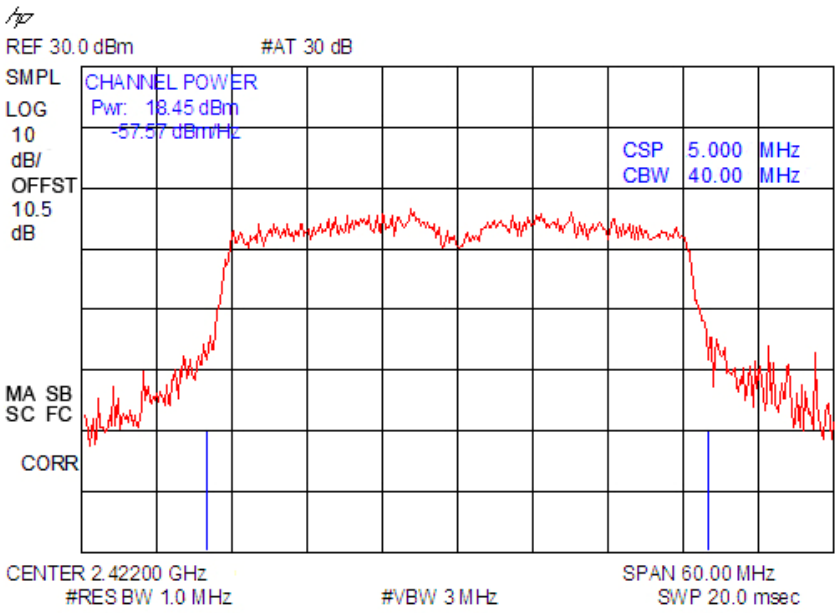
6. Measurement Data (continued)

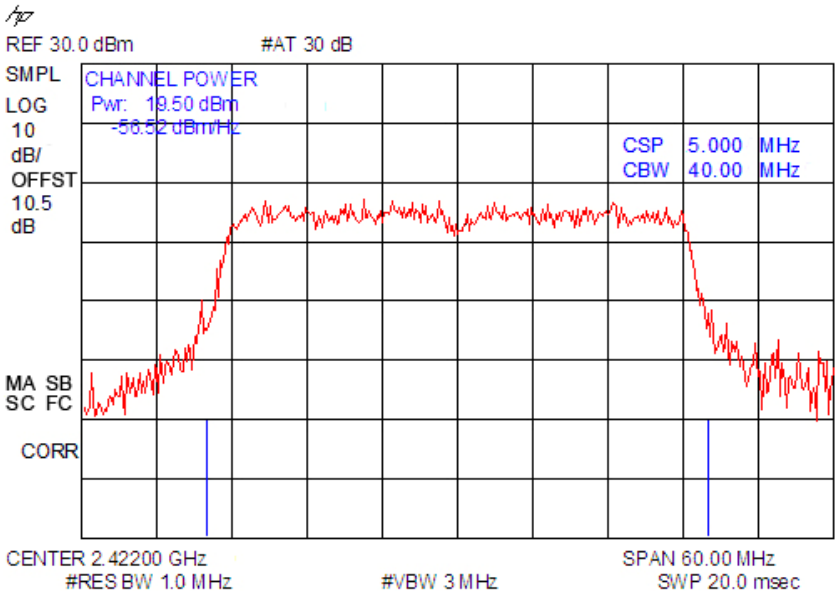
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.19. Plot: 40 MHz Signal Bandwidth - Channel 3 Chain 0



6.1.2.20. Plot: 40 MHz Signal Bandwidth - Channel 3 Chain 1



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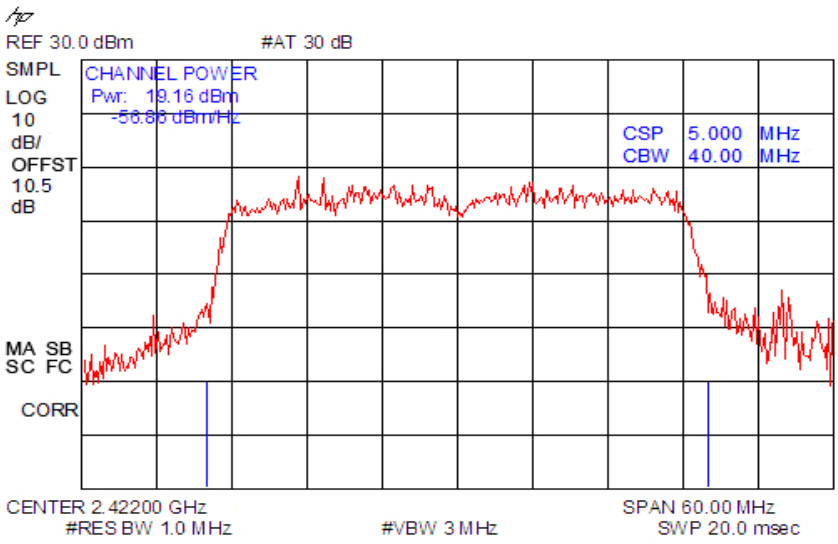
6. Measurement Data (continued)

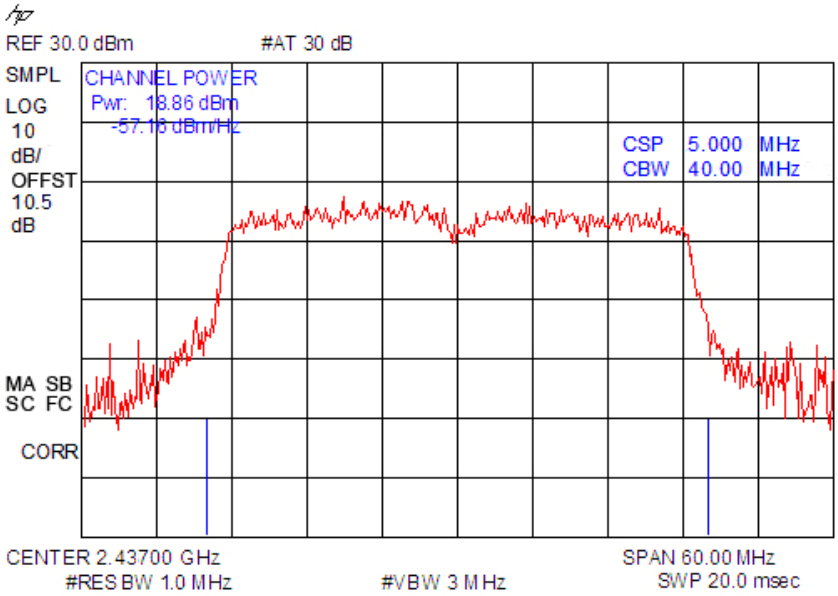
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.21. Plot: 40 MHz Signal Bandwidth - Channel 3 Chain 2



6.1.2.22. Plot: 40 MHz Signal Bandwidth - Channel 6 Chain 0



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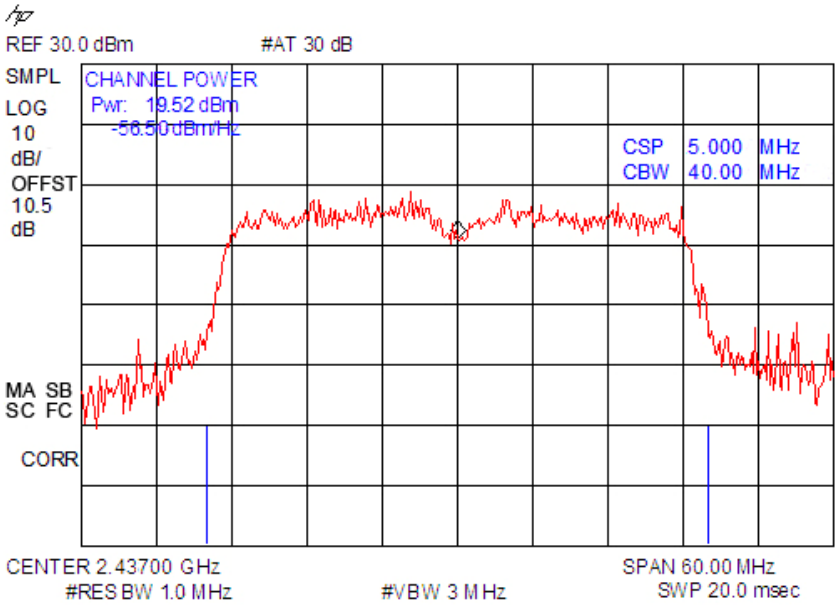
6. Measurement Data (continued)

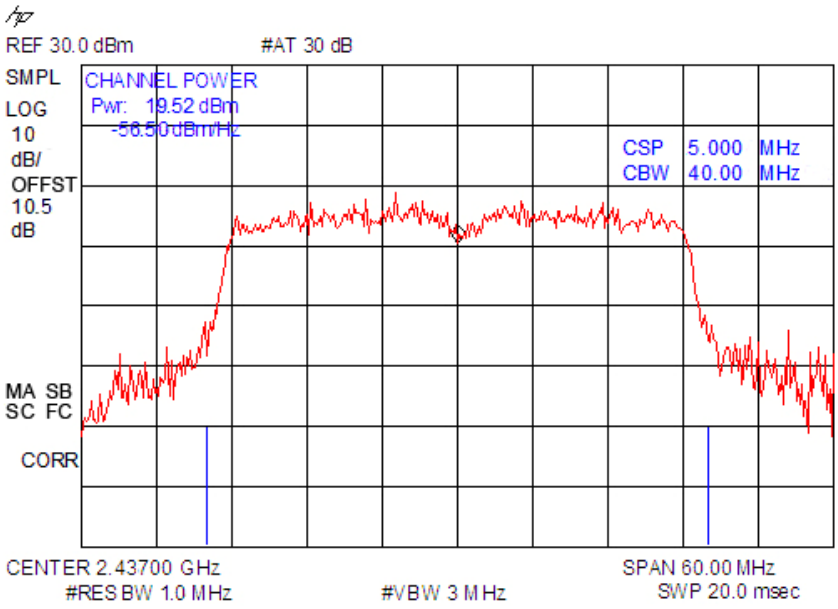
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.23. Plot: 40 MHz Signal Bandwidth - Channel 6 Chain 1



6.1.2.24. Plot: 40 MHz Signal Bandwidth - Channel 6 Chain 2



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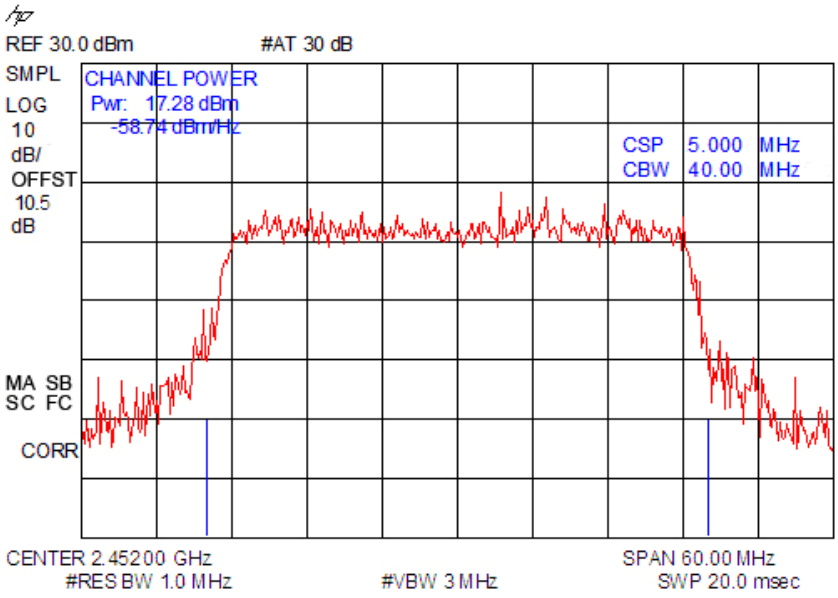
6. Measurement Data (continued)

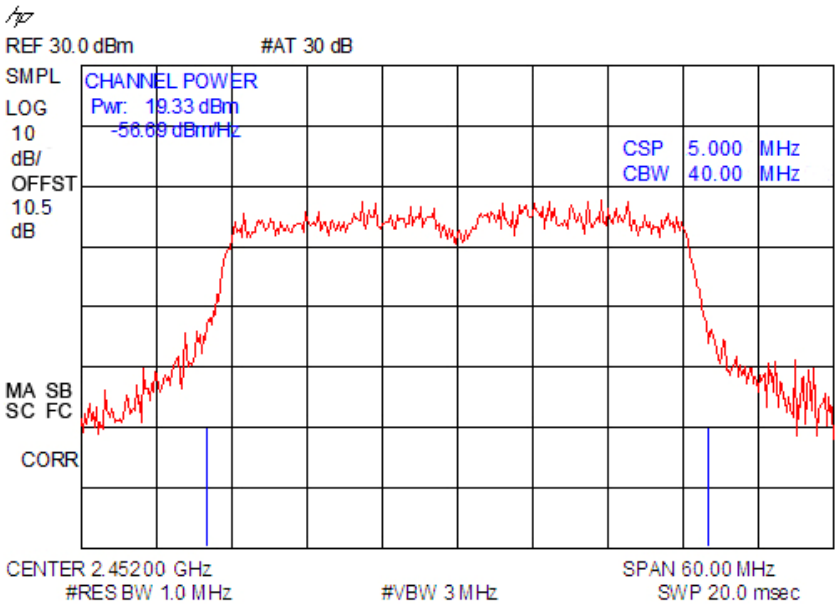
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.25. Plot: 40 MHz Signal Bandwidth - Channel 9 Chain 0



6.1.2.26. Plot: 40 MHz Signal Bandwidth - Channel 9 Chain 1



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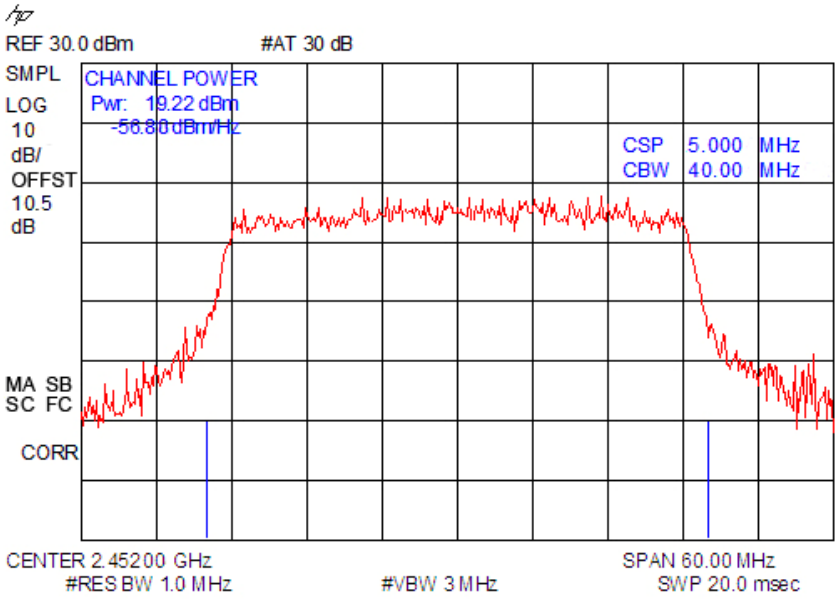
6. Measurement Data (continued)

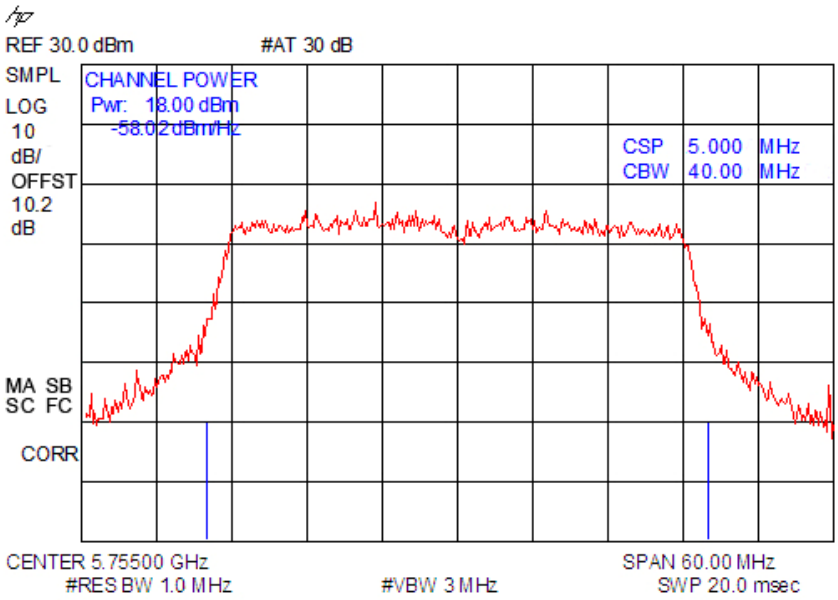
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.27. Plot: 40 MHz Signal Bandwidth - Channel 9 Chain 2



6.1.2.28. Plot: 40 MHz Signal Bandwidth - Channel 151 Chain 0



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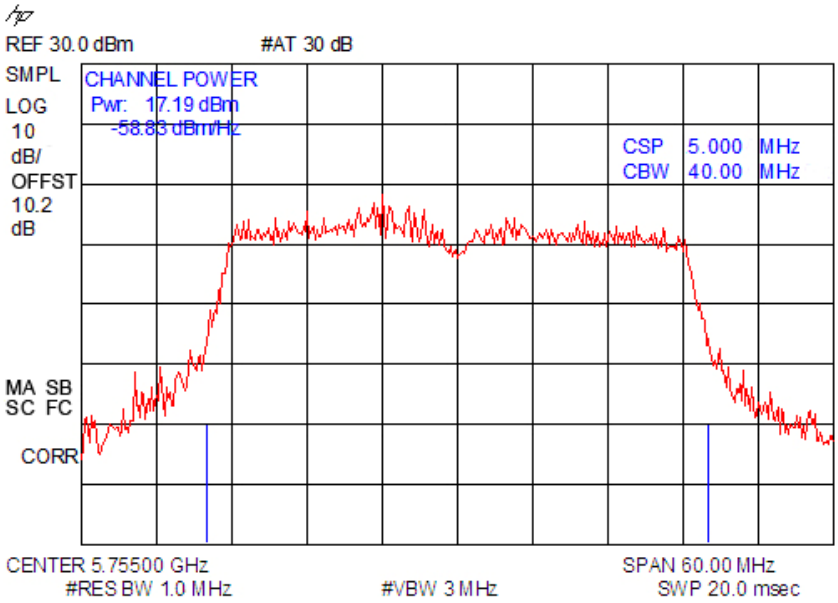
6. Measurement Data (continued)

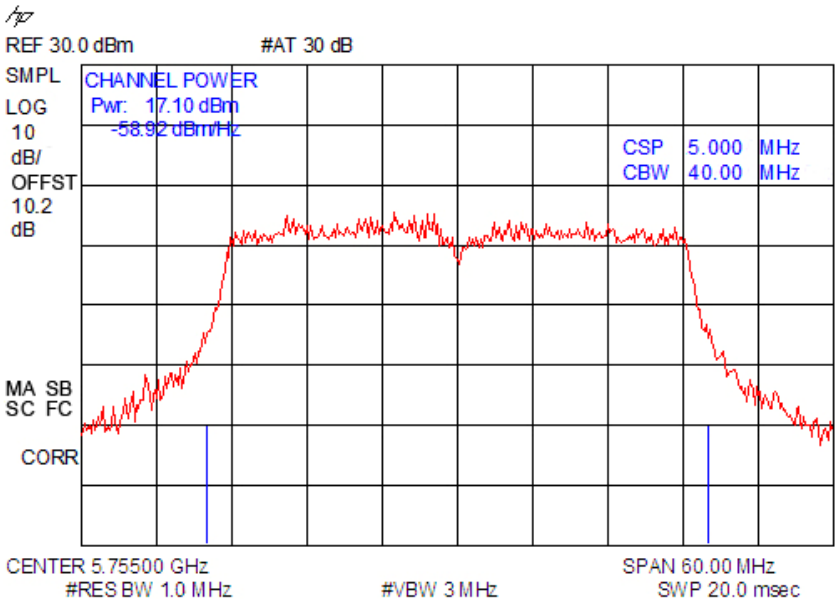
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.29. Plot: 40 MHz Signal Bandwidth - Channel 151 Chain 1



6.1.2.30. Plot: 40 MHz Signal Bandwidth - Channel 151 Chain 2



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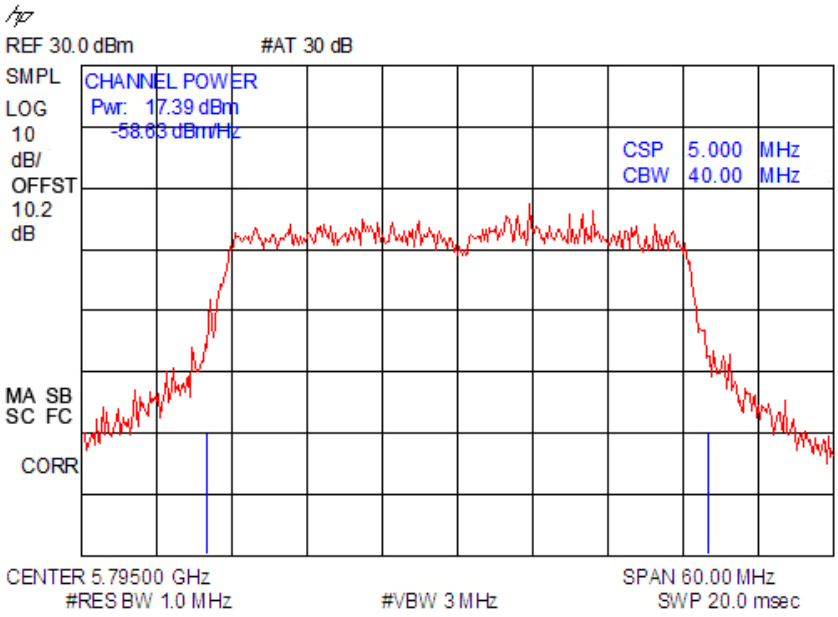
6. Measurement Data (continued)

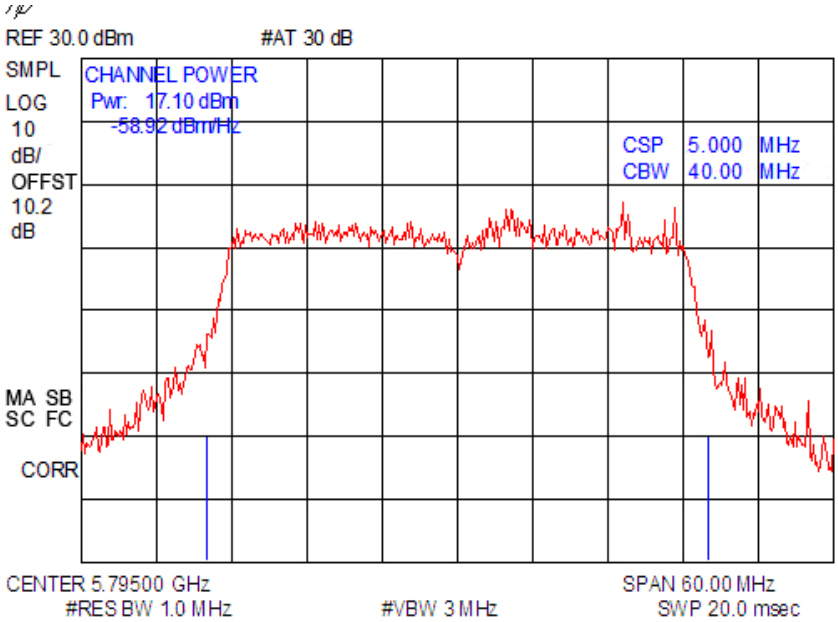
6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.31. Plot: 40 MHz Signal Bandwidth - Channel 159 Chain 0



6.1.2.32. Plot: 40 MHz Signal Bandwidth - Channel 159 Chain 1



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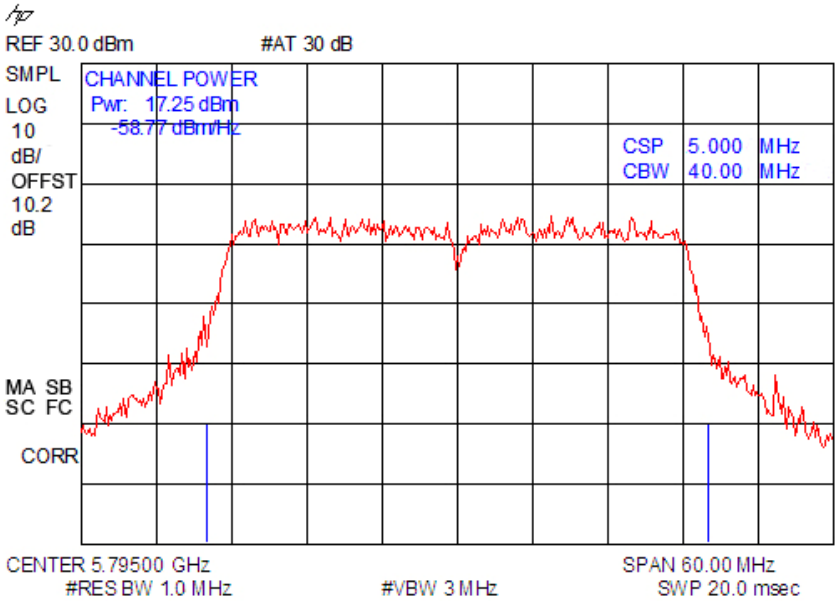
6. Measurement Data (continued)

6.1. Maximum Peak Conducted Output Power (15.247(b)(3)), IC RSS-210 (continued)

6.1.2. Conducted Mode Measurements (continued)

6.1.2.33. Plot: 40 MHz Signal Bandwidth - Channel 159 Chain 2



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6. Measurement Data (continued)

6.2. Minimum 6 dB Bandwidth (15.247 (a) (2)), IC RSS-210

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

Measurement Results -6dB Bandwidth

20 MHz Bandwidth

Channel	Frequency (MHz)	-6 dB Bandwidth (MHz)	Required -6 dB Bandwidth	Result
1	2412	8.77	≥ 0.5	Compliant
6	2437	9.52	≥ 0.5	Compliant
11	2462	5.55	≥ 0.5	Compliant
149	5745	16.65	≥ 0.5	Compliant
153	5765	16.58	≥ 0.5	Compliant
161	5805	16.58	≥ 0.5	Compliant

40 MHz Bandwidth

Channel	Frequency (MHz)	-6 dB Bandwidth (MHz)	Required -6 dB Bandwidth	Result
3	2422	34.50	≥ 0.5	Compliant
6	2437	34.50	≥ 0.5	Compliant
9	2452	35.25	≥ 0.5	Compliant
151	5755	35.85	≥ 0.5	Compliant
159	5795	35.55	≥ 0.5	Compliant

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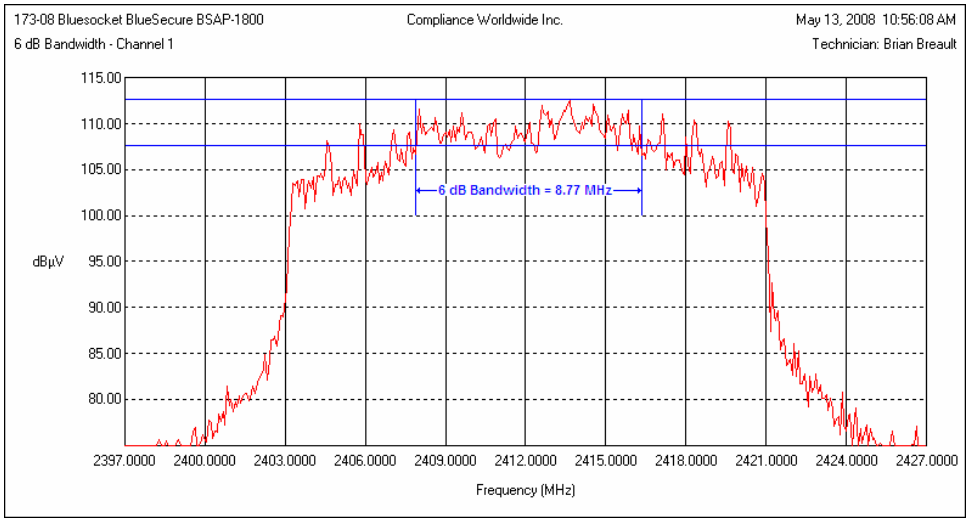
6. Measurement Data (continued)

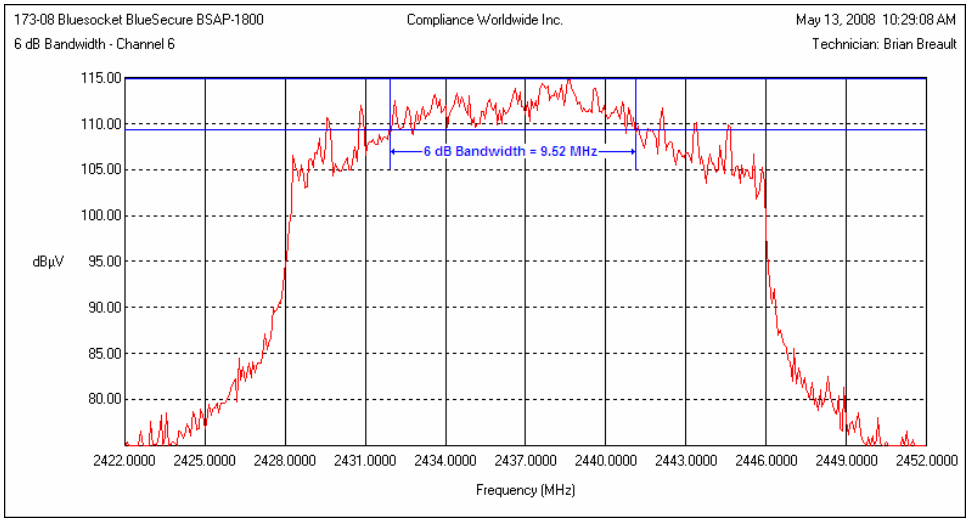
6.2. Minimum 6 dB Bandwidth (15.247 (a) (2)), IC RSS-210

6.2.1. Measurement Plots

6.2.1.1. Plot: 20 MHz Signal Bandwidth - Channel 1



6.2.1.2. Plot: 20 MHz Signal Bandwidth - Channel 6



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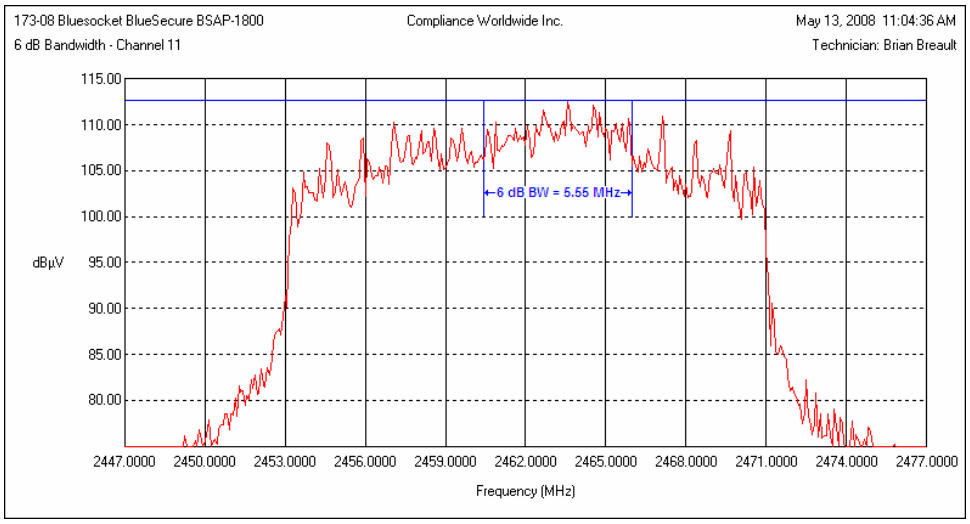
6. Measurement Data (continued)

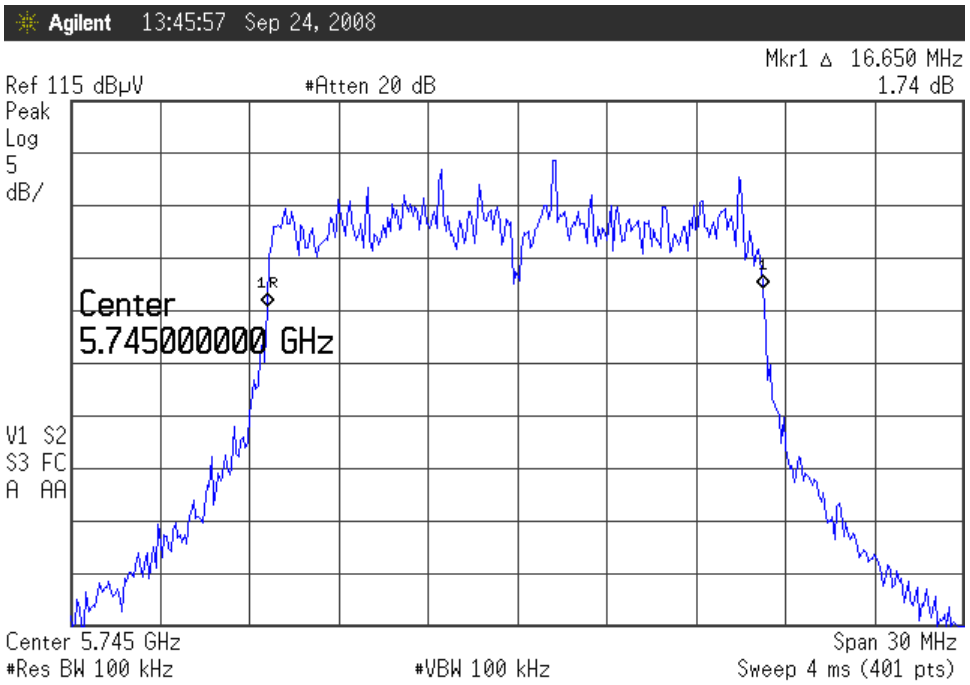
6.2. Minimum 6 dB Bandwidth (15.247 (a) (2)), IC RSS-210 (cont.)

6.2.1. Measurement Plots

6.2.1.3. Plot: 20 MHz Signal Bandwidth - Channel 11



6.2.1.4. Plot: 20 MHz Signal Bandwidth - Channel 149



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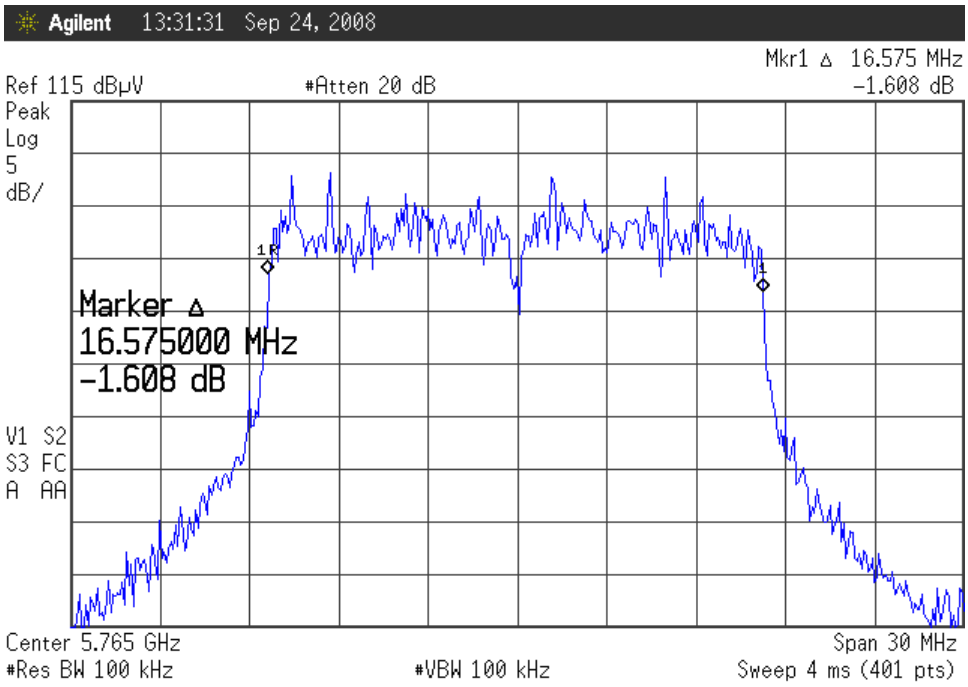
6. Measurement Data (continued)

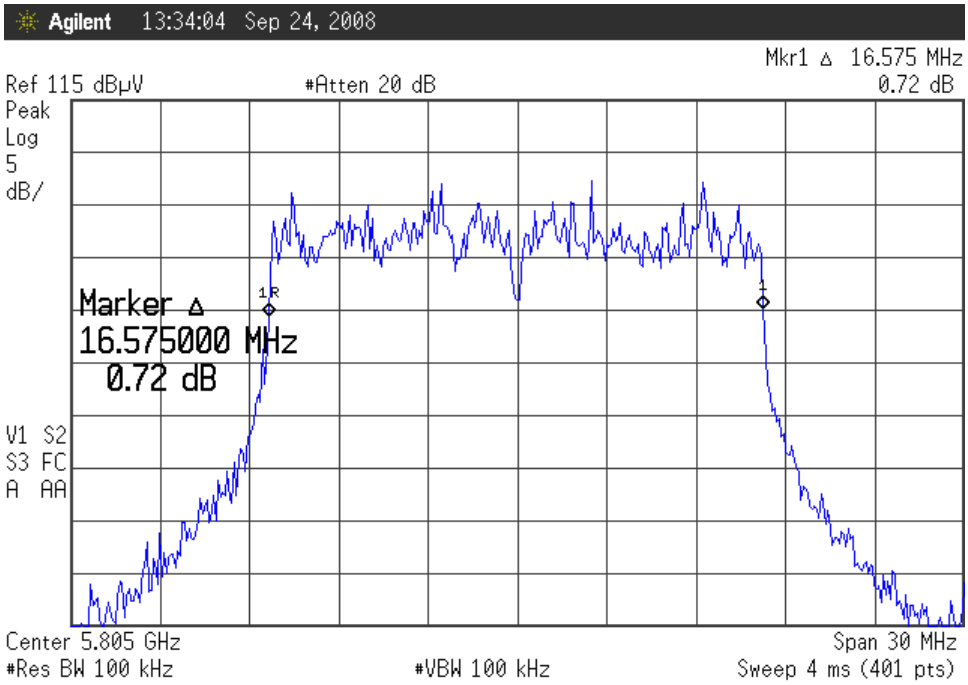
6.2. Minimum 6 dB Bandwidth (15.247 (a) (2)), IC RSS-210 (cont.)

6.2.1. Measurement Plots

6.2.1.5. Plot: 20 MHz Signal Bandwidth - Channel 153



6.2.1.6. Plot: 20 MHz Signal Bandwidth - Channel 161



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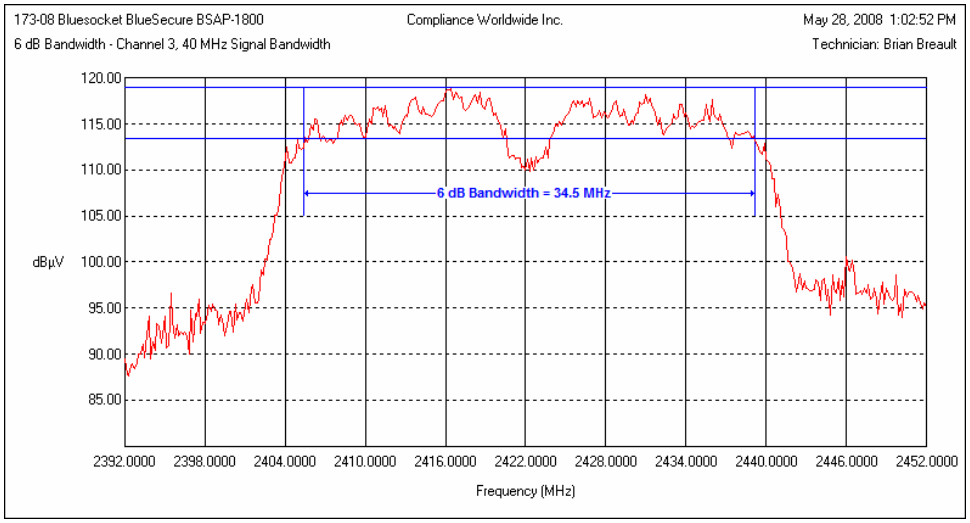
6. Measurement Data (continued)

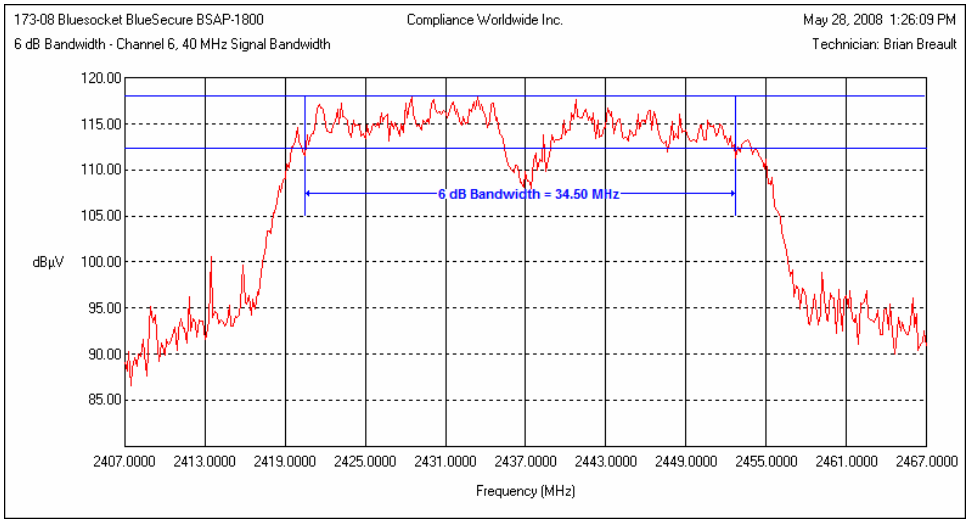
6.2. Minimum 6 dB Bandwidth (15.247 (a) (2)), IC RSS-210 (cont.)

6.2.1. Measurement Plots

6.2.1.7. Plot: 40 MHz Signal Bandwidth - Channel 3



6.2.1.8. Plot: 40 MHz Signal Bandwidth - Channel 6



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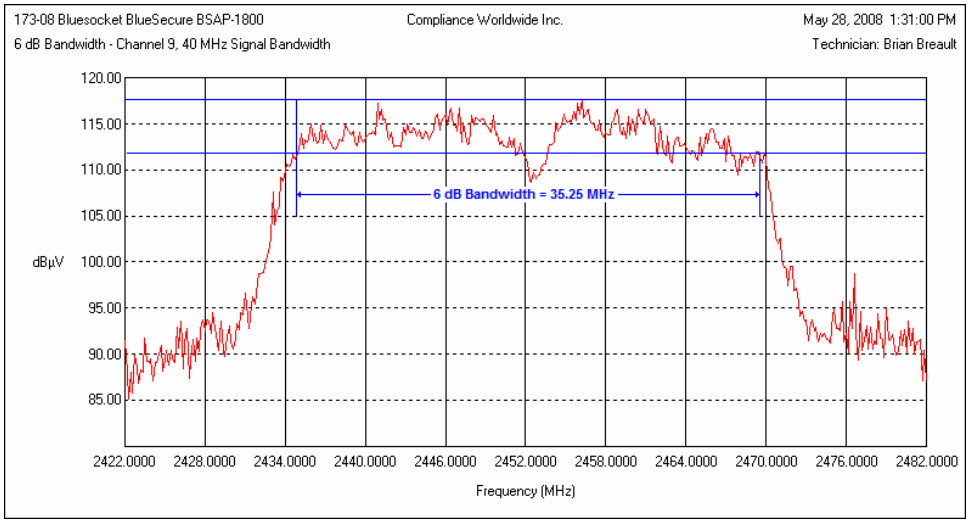
6. Measurement Data (continued)

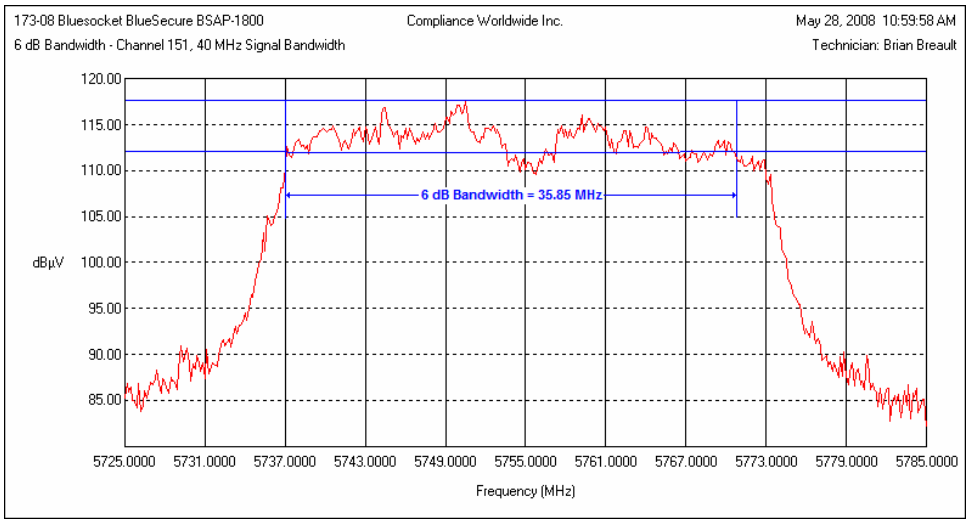
6.2. Minimum 6 dB Bandwidth (15.247 (a) (2)), IC RSS-210 (cont.)

6.2.1. Measurement Plots

6.2.1.9. Plot: 40 MHz Signal Bandwidth - Channel 9



6.2.1.10. Plot: 40 MHz Signal Bandwidth - Channel 151



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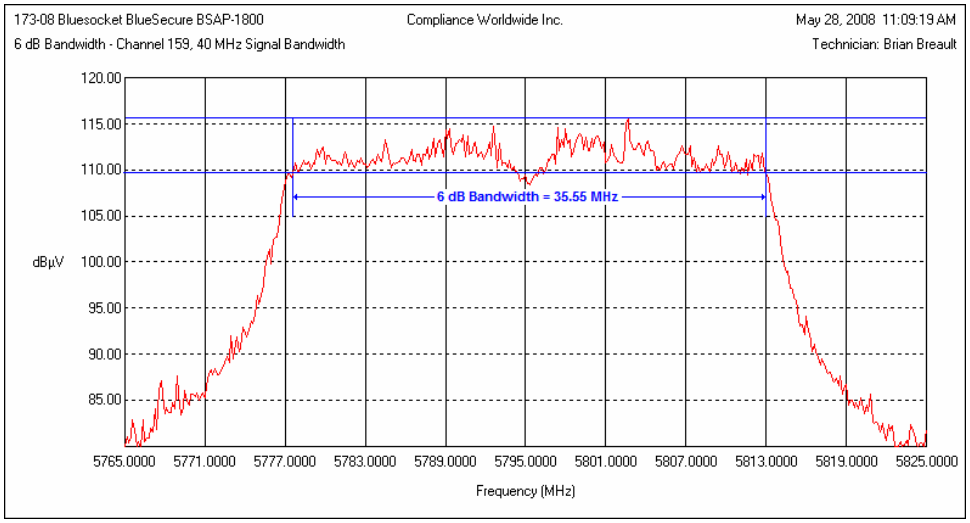
6. Measurement Data (continued)

6.2. Minimum 6 dB Bandwidth (15.247 (a) (2)), IC RSS-210 (cont.)

6.2.1. Measurement Plots

6.2.1.11. Plot: 40 MHz Signal Bandwidth - Channel 159



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6. Measurement Data (continued)

6.3. 99% Bandwidth (RSS 210)

Measurement Results 99% Bandwidth

20 MHz Bandwidth

Channel	Frequency (MHz)	99% Bandwidth (MHz)	Result
1	2412	17.40	Compliant
6	2437	16.95	Compliant
11	2462	17.40	Compliant
149	5745	17.76	Compliant
153	5765	17.57	Compliant
161	5805	17.71	Compliant

40 MHz Bandwidth

Channel	Frequency (MHz)	99% Bandwidth (MHz)	Result
3	2422	36.30	Compliant
6	2437	36.45	Compliant
9	2452	36.45	Compliant
151	5755	36.60	Compliant
159	5795	36.60	Compliant

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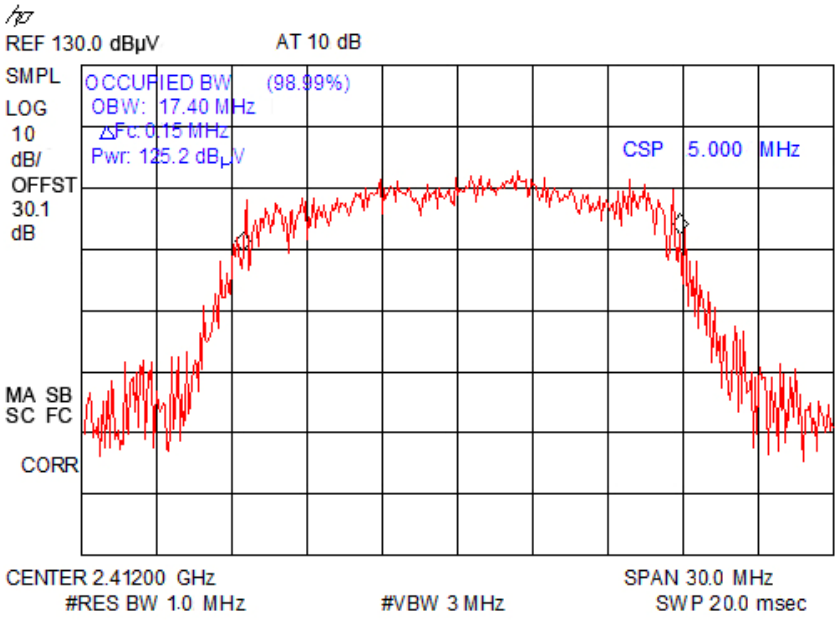
6. Measurement Data (continued)

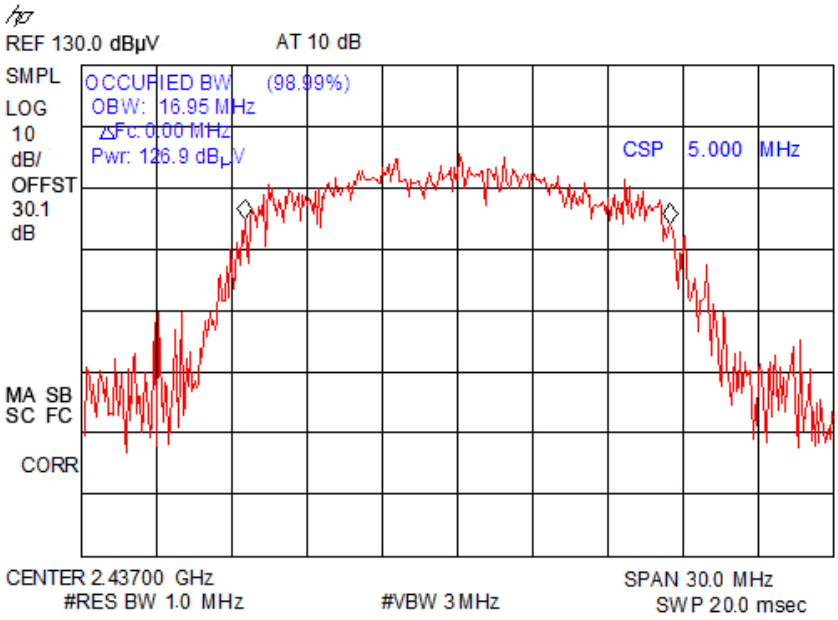
6.3. 99% Bandwidth (RSS 210) (continued)

6.3.1. Measurement Plots

6.3.1.1. Plot: 20 MHz Signal Bandwidth - Channel 1



6.3.1.2. Plot: 20 MHz Signal Bandwidth - Channel 6



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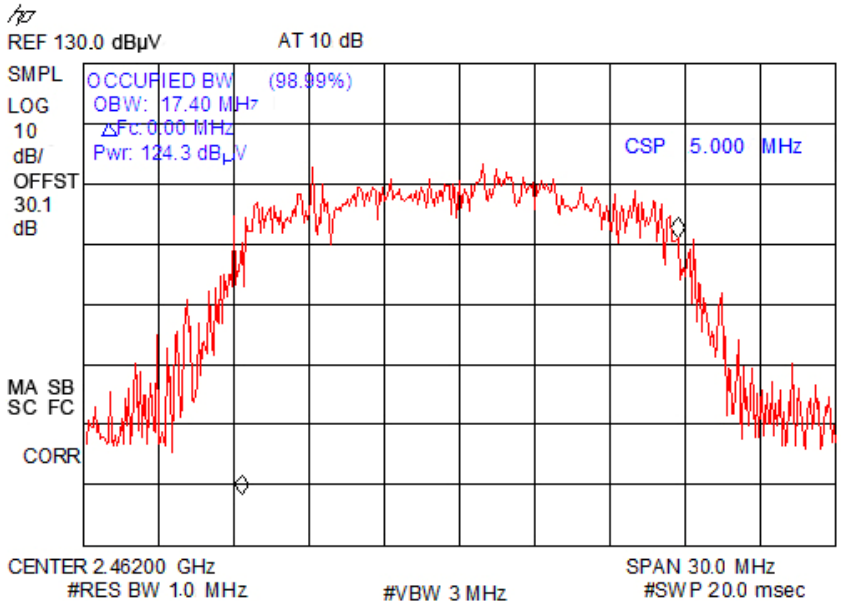
6. Measurement Data (continued)

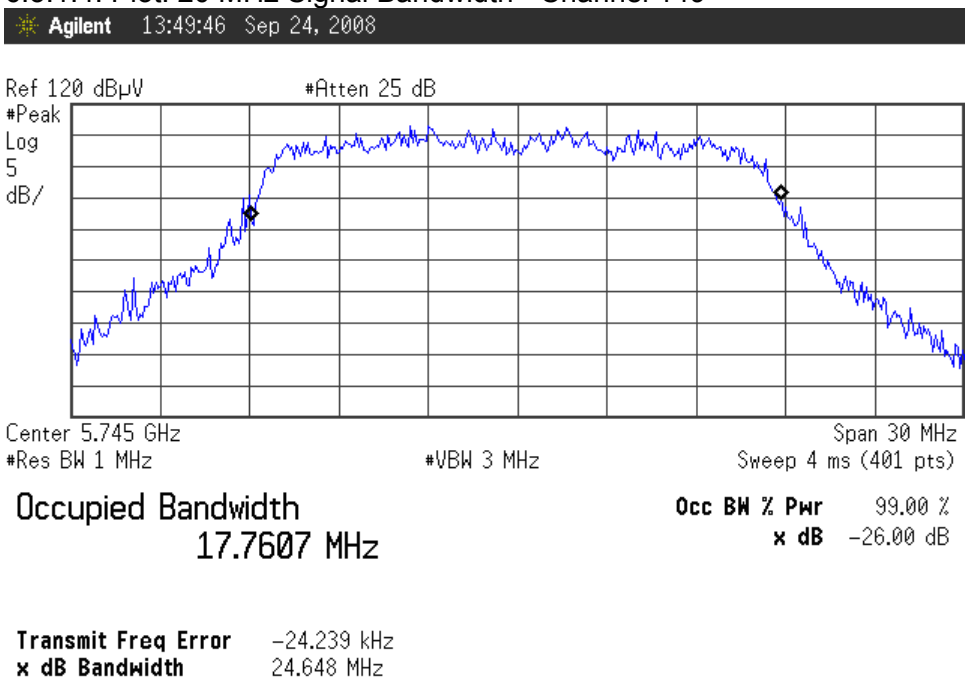
6.3. 99% Bandwidth (RSS 210) (continued)

6.3.1. Measurement Plots (continued)

6.3.1.3. Plot: 20 MHz Signal Bandwidth - Channel 11



6.3.1.4. Plot: 20 MHz Signal Bandwidth - Channel 149



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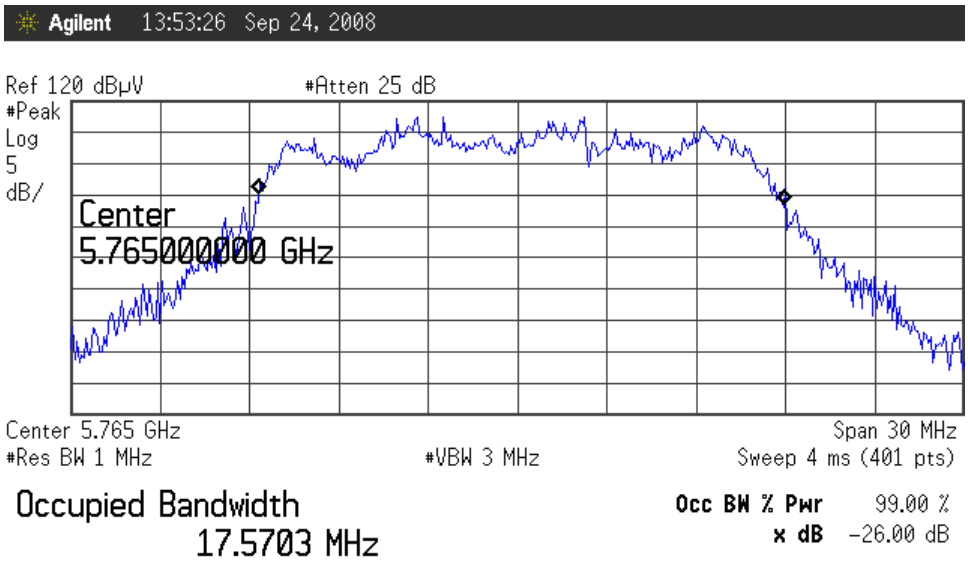
6. Measurement Data (continued)

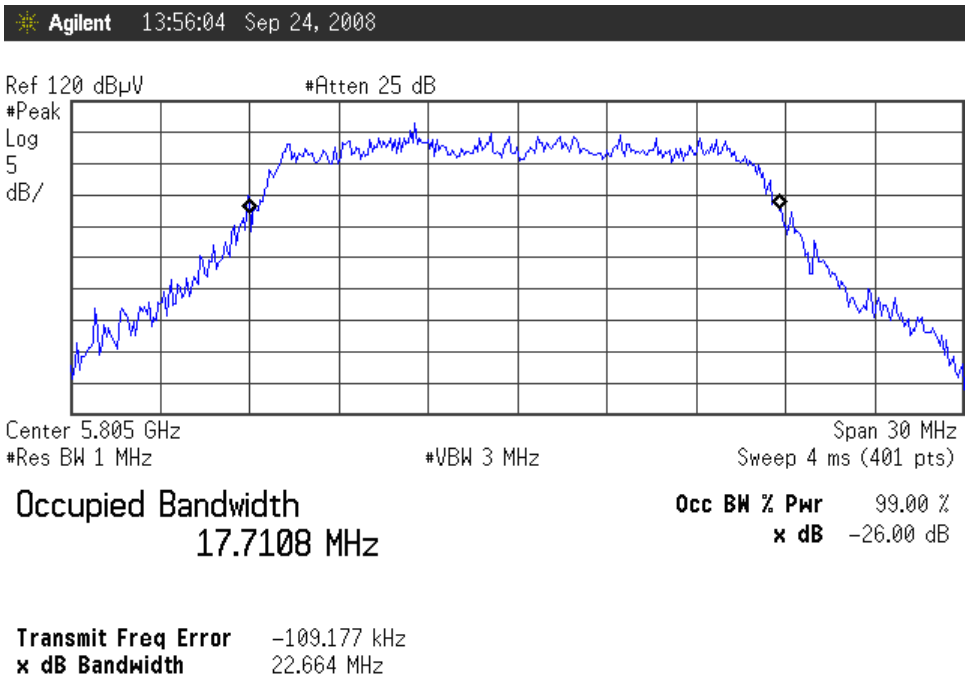
6.3. 99% Bandwidth (RSS 210) (continued)

6.3.1. Measurement Plots (continued)

6.3.1.5. Plot: 20 MHz Signal Bandwidth - Channel 153



6.3.1.6. Plot: 20 MHz Signal Bandwidth - Channel 161



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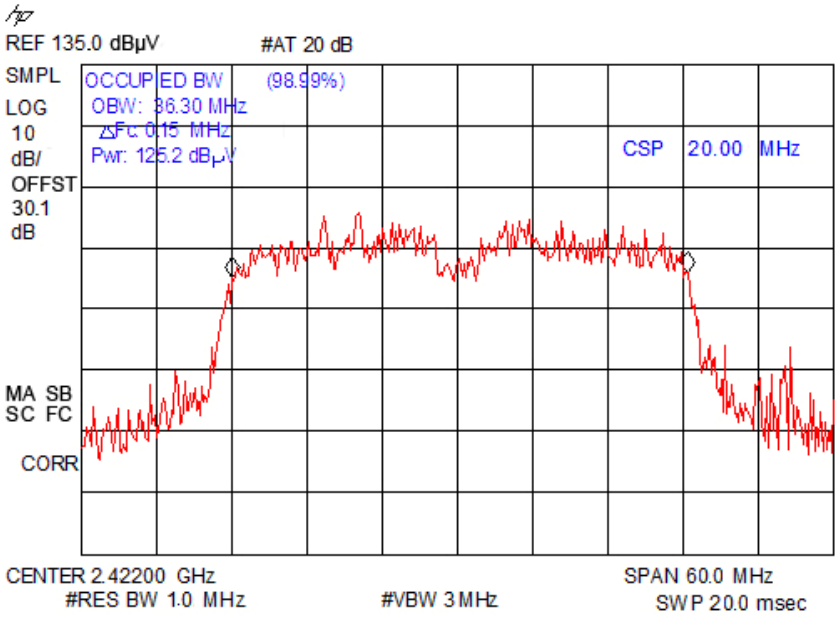
6. Measurement Data (continued)

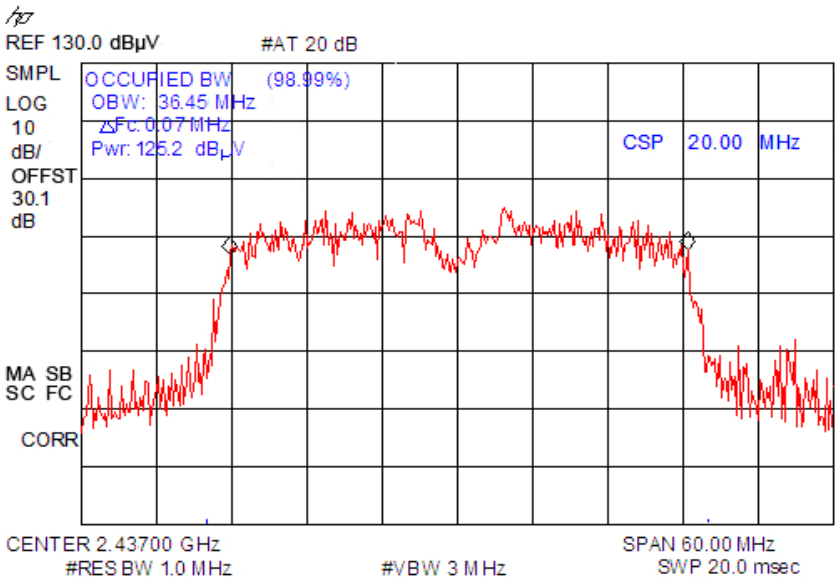
6.3. 99% Bandwidth (RSS 210) (continued)

6.3.1. Measurement Plots (continued)

6.3.1.7. Plot: 40 MHz Signal Bandwidth - Channel 3



6.3.1.8. Plot: 40 MHz Signal Bandwidth - Channel 6



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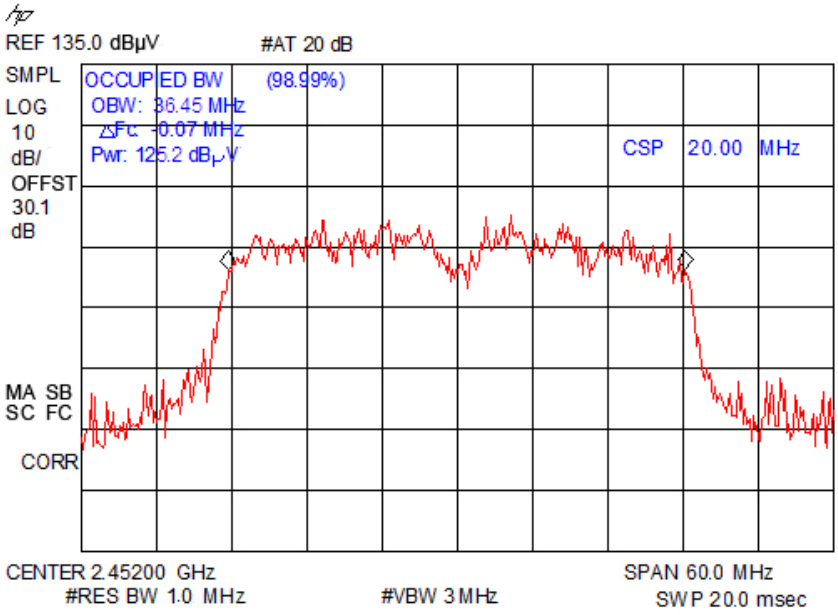
6. Measurement Data (continued)

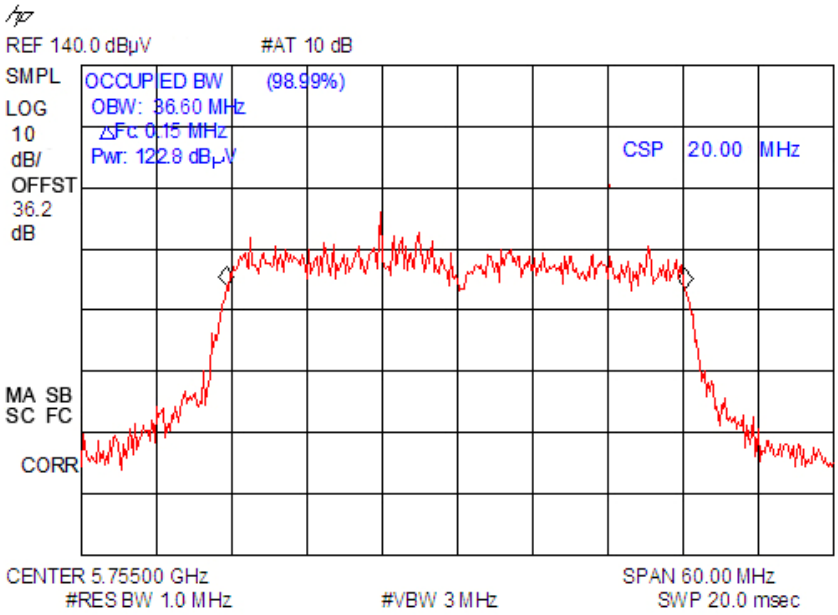
6.3. 99% Bandwidth (RSS 210) (continued)

6.3.1. Measurement Plots (continued)

6.3.1.9. Plot: 40 MHz Signal Bandwidth - Channel 9



6.3.1.10. Plot: 40 MHz Signal Bandwidth - Channel 151



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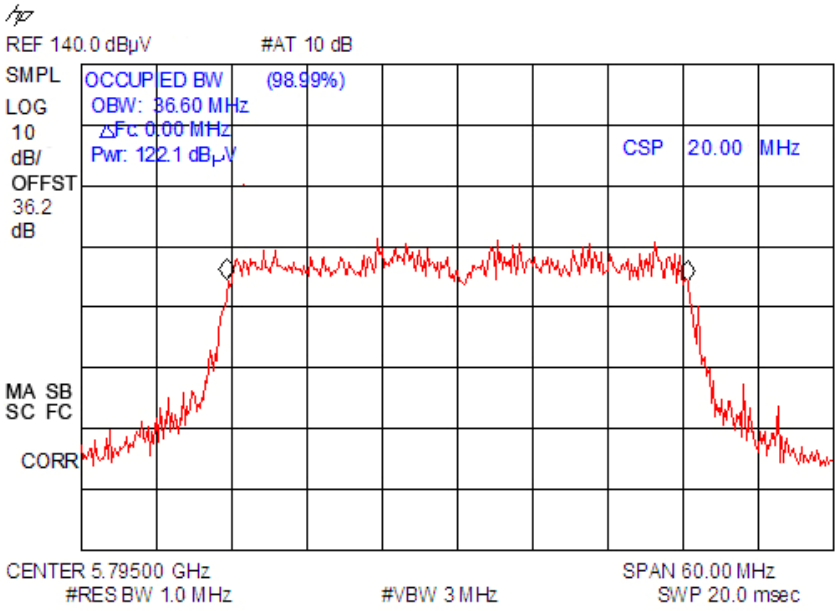
6. Measurement Data (continued)

6.3. 99% Bandwidth (RSS 210) (continued)

6.3.1. Measurement Plots (continued)

6.3.1.11. Plot: 40 MHz Signal Bandwidth - Channel 159



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6. Measurement Data (continued)

6.4. Operation with directional antenna gains greater than 6 dBi (15.247 (b)(4)), IC RSS-210

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.**

6.5. Spurious Radiated Emissions (30 MHz to 1 GHz)

6.5.1. 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 to 1000	3	54.0

6.5.2. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
EMI Receiver	Hewlett Packard	8546A	3650A00360	3/20/2009
Bilog Antenna	Com-Power	AC220	25509	8/3/2008

6.5.3. Measurement & Equipment Setup

Test Date:	07/17/2008
Test Engineer:	Brian Breault
Site Temperature (°C):	21.3
Relative Humidity (%RH):	31
Frequency Range:	30 MHz to 1 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	120 kHz
EMI Receiver Avg Bandwidth:	300 kHz
Detector Functions:	Peak and Quasi-Peak.
Antenna Height:	1 to 4 meters

6.5.4. 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.

6.5.5. Test Results

An emissions comparison of the DUT with and without the transmitter modules enabled was made. There were no measurable emissions that could be attributed to the BlueSecure BSAP-1800 transmitter modules.

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6. Measurement Data (continued)

6.6. Spurious Radiated Emissions (Above 1 GHz) Part 1

6.6.1. Regulatory Limit: FCC Part 209, Average

Frequency Range (MHz)	Distance (Meters)	Limit (dBµV/m)
Above 1 GHz	3	54.0

6.6.2. Measurement & Equipment Setup

Test Date:	07/17/2008
Test Engineer:	Brian Breault
Site Temperature (°C):	21.3
Relative Humidity (%RH):	31
Frequency Range:	1 GHz to 40 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	1 MHz
EMI Receiver Avg Bandwidth:	3 MHz
Detector Functions:	Peak and Average
Antenna Height:	1 to 4 meters

6.6.3. 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.

6.6.4. Test Results

An emissions comparison of the DUT with and without the transmitter modules enabled was made. There were no measurable emissions that could be attributed to the BlueSecure BSAP-1800 transmitter modules.

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6. Measurement Data (continued)

6.7. Spurious Radiated Emissions Above 1 GHz) Part 2

6.7.1. Measurement Results – Channel 1 (2400–2483.5 MHz, Low Channel)

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Average (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
2412.000	---	---	---	---	---	---	---	---	---	Fundamental
4824.000[1]	47.15	32.46	-0.33	32.13	54.00	-21.87	V	159	0	
7236.000	47.91	32.38	4.17	36.55	54.00	-17.45	V	107	5	
9648.000	58.93	44.33	5.40	49.73	54.00	-4.27	H	124	290	
12060.000[1]	47.33	32.45	7.03	39.48	54.00	-14.52	---	---	---	Noise floor
14472.000[1]	46.64	32.59	11.18	43.77	54.00	-10.23	---	---	---	Noise floor
16884.000	48.93	35.37	14.49	49.86	54.00	-4.14	---	---	---	Noise floor
19296.000[1]	48.12	35.41	9.83	45.24	54.00	-8.76	---	---	---	Noise floor
21708.000	49.71	36.51	11.21	47.72	54.00	-6.28	---	---	---	Noise floor
24120.000	50.72	33.39	14.39	47.78	54.00	-6.22	---	---	---	Noise floor

6.7.2 Measurement Results – Channel 6 (2400–2483.5 MHz, Middle Channel)

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Avg (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
2437.000[1]	---	---	---	---	---	---	---	---	---	Fundamental
4874.000[1]	48.16	33.22	-0.22	33.00	54.00	-21.00	V	100	350	
7311.000[1]	48.48	33.63	4.06	37.69	54.00	-16.31	V	142	355	
9748.000	47.34	32.70	5.51	38.21	54.00	-15.79	V	111	0	
12185.000[1]	47.39	32.59	7.41	40.00	54.00	-14.00	V	100	0	
14622.000	47.31	33.05	11.63	44.68	54.00	-9.32	---	---	---	Noise floor
17059.000	47.43	35.82	14.73	50.55	54.00	-3.45	---	---	---	Noise floor
19496.000[1]	49.77	36.89	9.68	46.57	54.00	-7.43	---	---	---	Noise floor
21933.000	50.17	36.76	11.67	48.43	54.00	-5.57	---	---	---	Noise floor
24370.000	53.53	36.37	14.18	50.55	54.00	-3.45	---	---	---	Noise floor

6.7.3 Measurement Results – Channel 11 (2400–2483.5 MHz, High Channel)

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Avg (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
2462.000[1]	---	---	---	---	---	---	---	---	---	Fundamental
4924.000[1]	47.87	32.77	-0.11	32.66	54.00	-21.34	V	126	5	
7386.000[1]	48.19	32.68	3.96	36.64	54.00	-17.36	H	140	350	
9848.000	46.84	33.20	5.63	38.83	54.00	-15.17	H	100	80	
12310.000[1]	47.84	33.34	7.78	41.12	54.00	-12.88	---	---	---	Noise floor
14772.000	47.99	34.10	12.05	46.15	54.00	-7.85	---	---	---	Noise floor
17234.000	48.03	34.10	15.22	49.32	54.00	-4.68	---	---	---	Noise floor
19696.000[1]	50.07	36.48	9.53	46.01	54.00	-7.99	---	---	---	Noise floor
22158.000[1]	51.11	37.43	12.02	49.45	54.00	-4.55	---	---	---	Noise floor
24620.000	53.98	36.37	13.97	50.34	54.00	-3.66	---	---	---	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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6. Measurement Data (continued)

6.7. Spurious Radiated Emissions Above 1 GHz) Part 2 (continued)

6.7.4. Measurement Results – Channel 149, 20 MHz Bandwidth

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Average (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
5745.000[1]	---	---	---	---	---	---	---	---	---	Fundamental
11490.000[1]	44.26	34.62	2.00	36.62	54.00	-17.38	H	100	0	
17235.000	39.24	24.47	10.04	34.51	54.00	-19.49	H	100	80	
22980.000[1]	38.85	14.76	20.23	34.99	54.00	-19.01	H	100	80	
28725.000	29.96		Included	17.92	54.00	-36.08	---	---	---	Noise floor
34470.000	28.99		Included	18.11	54.00	-35.89	---	---	---	Noise floor

6.7.5. Measurement Results – Channel 153, 20 MHz Bandwidth

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Average (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
5765.000[1]	---	---	---	---	---	---	---	---	---	Fundamental
11530.000[1]	50.84	33.16	2.00	35.16	54.00	-18.84	H	100	5	
17295.000	43.94	24.58	10.04	34.62	54.00	-19.38	H	112	275	
23060.000[1]	18.48	14.69	20.23	34.92	54.00	-19.08	H	100	5	
28825.000	32.10		Included	18.77	54.00	-35.23	---	---	---	Noise floor
34590.000	31.49		Included	18.21	54.00	-35.79	---	---	---	Noise floor

6.7.6. Measurement Results – Channel 161, 20 MHz Bandwidth

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Average (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
5805.000[1]	---	---	---	---	---	---	---	---	---	Fundamental
11610.000[1]	50.04	32.34	3.11	35.45	54.00	-18.55	H	105	85	
17415.000	36.57	24.13	10.00	34.13	54.00	-19.87	H	105	280	
23220.000	17.26	14.76	19.91	34.67	54.00	-19.33	H	105	280	
29025.000	30.78		Included	18.16	54.00	-35.84	---	---	---	Noise floor
34830.000	30.32		Included	18.72	54.00	-35.28	---	---	---	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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6. Measurement Data (continued)

6.7. Spurious Radiated Emissions Above 1 GHz) Part 2 (continued)

6.7.7. Measurement Results – Channel 151, 40 MHz Bandwidth

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Average (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
5755.000[1]	---	---	---	---	---	---	---	---	---	Fundamental
11510.000[1]	54.42	44.98	2.00	46.98	54.00	-7.02	H	105	274	
17265.000	55.84	40.89	10.04	50.93	54.00	-3.07	H	105	281	
23020.000[1]	16.21	12.03	20.23	32.26	54.00	-21.74	---	---	---	Noise floor
28775.000	18.54	13.09	22.11	35.20	54.00	-18.80	---	---	---	Noise floor
34530.000	16.94	12.41	20.23	32.64	54.00	-21.36	---	---	---	Noise floor

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

6.7.8. Measurement Results – Channel 159, 40 MHz Bandwidth

Frequency (MHz)	Peak (dBµV)	Avg (dBµV)	Corr Factor (dB)	Average (dBµV/m)	Limit (dB)	Margin (dB)	Polarity (H/V)	Height (cm)	TT Pos (Deg)	Note
5795.000[1]	---	---	---	---	---	---	---	---	---	Fundamental
11590.000[1]	53.93	41.21	3.11	44.32	54.00	-10.64	H	105	278	
17385.000	56.84	41.91	10.00	51.91	54.00	-7.71	H	105	287	
23180.000	16.17	11.44	19.91	31.35	54.00	-22.65	---	---	---	Noise floor
28975.000	17.88	12.55	21.55	34.10	54.00	-19.90	---	---	---	Noise floor
34770.000	15.78	10.95	22.49	33.44	54.00	-20.56	---	---	---	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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6. Measurement Data (continued)

6.8. Lower and Upper Band Edge Measurements (15.247 (d)), IC RSS-210

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. 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)).

6.8.1. 2400 MHz to 2483.5 MHz

Lower Band Edge

20 MHz Signal Bandwidth

Measurement Results – Lower Band Edge

Lowest Channel (MHz)	Field Strength (dBµV/m)		Worst Case Out of Band (MHz)	Field Strength (dBµV/m)		Margin (dB)		Result
	Peak	Average		Peak	Average	Peak	Avg	
2412	110.72	---	2.39981	76.70	---	>20 dB	---	Compliant

Worst Case Measurement – Restricted Out of Band (> 2 BWs, eg >2 MHz)

Lowest Channel (MHz)	Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin	Result
		Peak	Average	Average	Average	
2412	2386.85	72.75	50.84	54.0	-3.16	Compliant

40 MHz Signal Bandwidth

Measurement Results – Lower Band Edge

Lowest Channel (MHz)	Field Strength (dBµV/m)		Worst Case Out of Band (MHz)	Field Strength (dBµV/m)		Margin (dB)		Result
	Peak	Average		Peak	Average	Peak	Avg	
2422	113.98	---	2.39975	77.91	---	>20 dB	---	Compliant

Worst Case Measurement – Restricted Out of Band (> 2 BWs, eg >2 MHz)

Lowest Channel (MHz)	Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin	Result
		Peak	Average	Average	Average	
2422	2389.50	68.69	49.85	54.0	-4.15	Compliant

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6. Measurement Data (continued)

6.8. Lower and Upper Band Edge Measurements (15.247 (d)), IC RSS-210

6.8.1. 2400 MHz to 2483.5 MHz

Upper Band Edge

20 MHz Signal Bandwidth

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	Average	Average	
2462	115.19	95.19	2483.5	69.14	47.29	54.0	-6.71	Compliant

Worst case measurement – Out of Band (100 kHz BW)

Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin	Result
	Peak	Average	Average	Average	
2483.72	69.74	51.72	54	-2.28	Compliant

40 MHz Signal Bandwidth

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	Average	Average	
2452	118.32	98.27	2483.5	70.27	50.23	54	-3.77	Compliant

Worst case measurement – Out of Band (100 kHz BW)

Frequency (MHz)	Field Strength (dBµV/m)		Limit (dBµV/m)	Margin	Result
	Peak	Average	Average	Average	
2485.22	71.91	50.31	54	-3.69	Compliant

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6. Measurement Data (continued)

6.8. Lower and Upper Band Edge Measurements (15.247 (d)), IC RSS-210

6.8.2. 5725 MHz to 5850 MHz

Lower and Upper Band Edge

20 MHz Signal Bandwidth

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	
5745	116.7	92.56	5725	68.83	55.47	>20 dB	> 20 dB	Compliant

Measurement Results – Upper Band Edge

Highest Channel (MHz)	Field Strength (dBµV/m)		Band Edge Frequency (MHz)	Field Strength (dBµV/m)		Margin (dB)		Result
	Peak	Average		Peak	Average	Peak	Avg	
5805	118.9	96.35	5850	64.81	57.59	>20 dB	> 20 dB	Compliant

40 MHz Signal Bandwidth

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	
5755	115.96	98.04	5725	77.49	57.45	>20 dB	> 20 dB	Compliant

Measurement Results – Upper Band Edge

Highest Channel (MHz)	Field Strength (dBµV/m)		Band Edge Frequency (MHz)	Field Strength (dBµV/m)		Margin (dB)		Result
	Peak	Average		Peak	Average	Peak	Avg	
5795	117.76	99.45	5850	69.85	57.61	>20 dB	> 20 dB	Compliant

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6. Measurement Data (continued)

6.9. Power Spectral Density (15.247(e)), IC RSS-210

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.

Note: This test was performed in accordance with the information outlined in Measurement of Digital Transmission Systems Operating under Section 15.247, March 23 2005, Section 15.247(d): Power spectral density (PSD), PSD Option 1. Refer to the graphs in Section 6.1.2 of this report for the noise power density values used for the following table. A 35 dB correction factor was used to convert dBµV /Hz or dBm/Hz values to a 3 kHz Resolution Bandwidth.

dBm = dBµV – 107.

20 MHz Signal Bandwidth

Measurement Results (From Radiated Measurements)

Channel	Channel Frequency	Noise Power Density	BW Correction Factor	Power Spectral Density		Limit	Result
	GHz	dBµV/Hz	dB	mW	dBm	dBm	
1	2.412	52.99	+35	0.0126	-19.01	+8	Compliant
6	2.437	53.70	+35	0.0148	-18.30	+8	Compliant
11	2.462	51.34	+35	0.0086	-20.66	+8	Compliant
149	5.745	47.15	+35	0.0033	-24.85	+8	Compliant
153	5.765	47.72	+35	0.0037	-24.28	+8	Compliant
161	5.805	49.38	+35	0.0055	-22.62	+8	Compliant

Measurement Results (From Conducted Measurements)

Channel	Channel Frequency	Noise Power Density Chain 0	Noise Power Density Chain 1	Noise Power Density Chain 2	BW Corr. Factor	Power Spectral Density	Limit	Result
	GHz	dBm/Hz	dBm/Hz	dBm/Hz	dB	dBm	dBm	
1	2.412	-56.16	-55.08	-55.81	+35	-15.89	+8	Compliant
6	2.437	-54.59	-55.04	-55.28	+35	-15.19	+8	Compliant
11	2.462	-55.54	-55.47	-55.76	+35	-15.82	+8	Compliant
149	5.745	-57.98	-57.96	-58.28	+35	-18.30	+8	Compliant
153	5.765	-57.48	-57.58	-57.49	+35	-17.75	+8	Compliant
161	5.805	-57.27	-56.81	-55.91	+35	-16.85	+8	Compliant

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6. Measurement Data (continued)

6.9. Power Spectral Density (15.247(e))

40 MHz Signal Bandwidth

Measurement Results (From Radiated Measurements)

Channel	Channel Frequency	Noise Power Density	BW Correction Factor	Power Spectral Density		Limit	Result
	GHz	dBµV/Hz	dB	mW	dBm	dBm	
3	2422	50.38	+35	0.0069	-21.62	+8	Compliant
6	2437	50.71	+35	0.0074	-21.29	+8	Compliant
9	2452	49.70	+35	0.0059	-22.30	+8	Compliant
151	5755	47.43	+35	0.0035	-24.57	+8	Compliant
159	5795	46.36	+35	0.0027	-25.64	+8	Compliant

Measurement Results (From Conducted Measurements)

Channel	Channel Frequency	Noise Power Density Chain 0	Noise Power Density Chain 1	Noise Power Density Chain 2	BW Corr. Factor	Power Spectral Density	Limit	Result
	GHz	dBm/Hz	dBm/Hz	dBm/Hz	dB	dBm	dBm	
3	2.422	-57.57	-56.52	-56.86	+35	-17.19	+8	Compliant
6	2.437	-57.16	-56.50	-56.50	+35	-16.94	+8	Compliant
9	2.452	-58.74	-56.69	-56.80	+35	-17.54	+8	Compliant
151	5.755	-58.02	-58.83	-58.92	+35	-18.80	+8	Compliant
159	5.795	-58.63	-58.92	-58.77	+35	-19.00	+8	Compliant

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6. Measurement Data (continued)

6.10. Power Line Conducted Emissions (15.207), IC RSS-210

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 µH/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: A D-Link model DSA-0421S-50 1 24 power adapter was used to power the BSAP-1800. The power adapter was not serialized.

Regulatory Limit: (15.207) (FCC Part 15, Class B)

Frequency Range (MHz)	Limits (dBµV)	
	Quasi-Peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5.0	56	46
5.0 to 30.0	60	50
* Decreases with the logarithm of the frequency.		

Measurement & Equipment Setup

Test Date:	04/29/2008
Test Engineer:	Robert J.McCall
Site Temperature (°C):	21.8
Relative Humidity (%RH):	28
Frequency Range:	0.15 MHz to 30 MHz
EMI Receiver IF Bandwidth:	9 kHz
EMI Receiver Avg Bandwidth:	30 kHz
Detector Functions:	Peak, Quasi-Peak. & Average

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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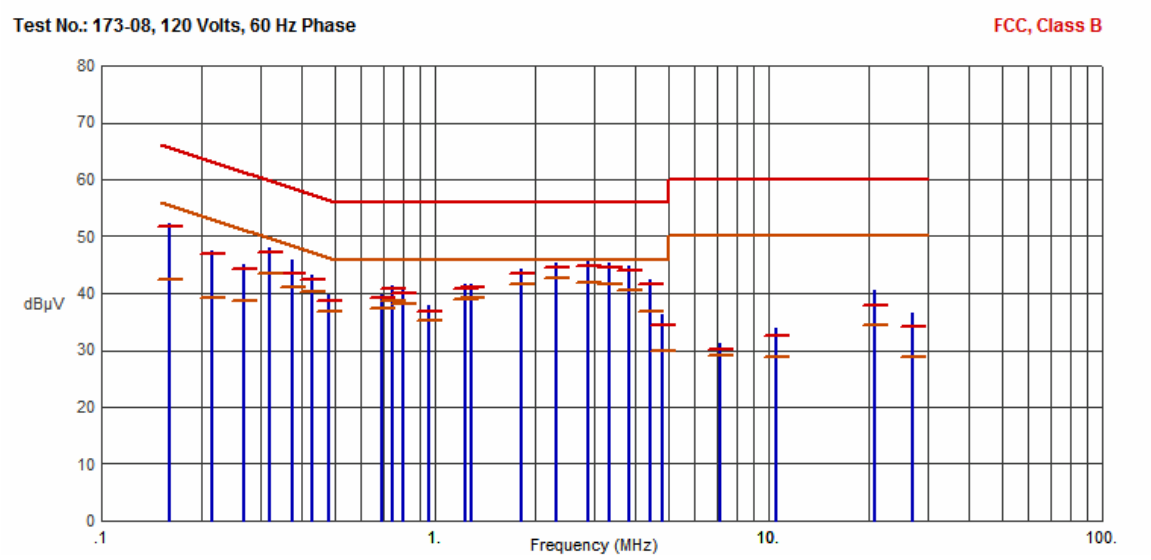
6. Measurement Data (continued)

6.10. Power Line Conducted Emissions (15.207), IC RSS-210 (continued)

6.10.1. 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
.1600	52.40	51.65	65.46	-13.81	42.49	55.46	-12.97	
.2141	47.49	46.86	63.04	-16.18	39.16	53.04	-13.88	
.2674	45.11	44.36	61.20	-16.84	38.54	51.20	-12.66	
.3212	47.87	47.27	59.68	-12.41	43.49	49.68	-6.19	
.3745	45.76	43.51	58.40	-14.89	41.12	48.40	-7.28	
.4279	43.16	42.43	57.29	-14.86	40.15	47.29	-7.14	
.4818	39.70	38.67	56.31	-17.64	36.74	46.31	-9.57	
.6952	39.83	39.12	56.00	-16.88	37.39	46.00	-8.61	
.7493	41.39	40.72	56.00	-15.28	38.72	46.00	-7.28	
.8019	41.03	39.88	56.00	-16.12	38.15	46.00	-7.85	
.9632	37.75	36.68	56.00	-19.32	35.23	46.00	-10.77	
1.2314	41.49	40.87	56.00	-15.13	38.99	46.00	-7.01	
1.2849	41.71	41.09	56.00	-14.91	39.29	46.00	-6.71	
1.8201	44.35	43.58	56.00	-12.42	41.56	46.00	-4.44	
2.3017	45.37	44.64	56.00	-11.36	42.75	46.00	-3.25	
2.8898	45.73	44.70	56.00	-11.30	41.85	46.00	-4.15	
3.3178	45.37	44.52	56.00	-11.48	41.61	46.00	-4.39	
3.8003	44.85	43.96	56.00	-12.04	40.50	46.00	-5.50	
4.4424	42.42	41.48	56.00	-14.52	36.80	46.00	-9.20	
4.8181	36.33	34.42	56.00	-21.58	29.98	46.00	-16.02	
7.1719	31.24	30.13	60.00	-29.87	29.07	50.00	-20.93	
10.4911	33.94	32.40	60.00	-27.60	28.68	50.00	-21.32	
20.8188	40.55	37.97	60.00	-22.03	34.38	50.00	-15.62	
26.9212	36.47	34.02	60.00	-25.98	28.67	50.00	-21.33	

Result: Passed

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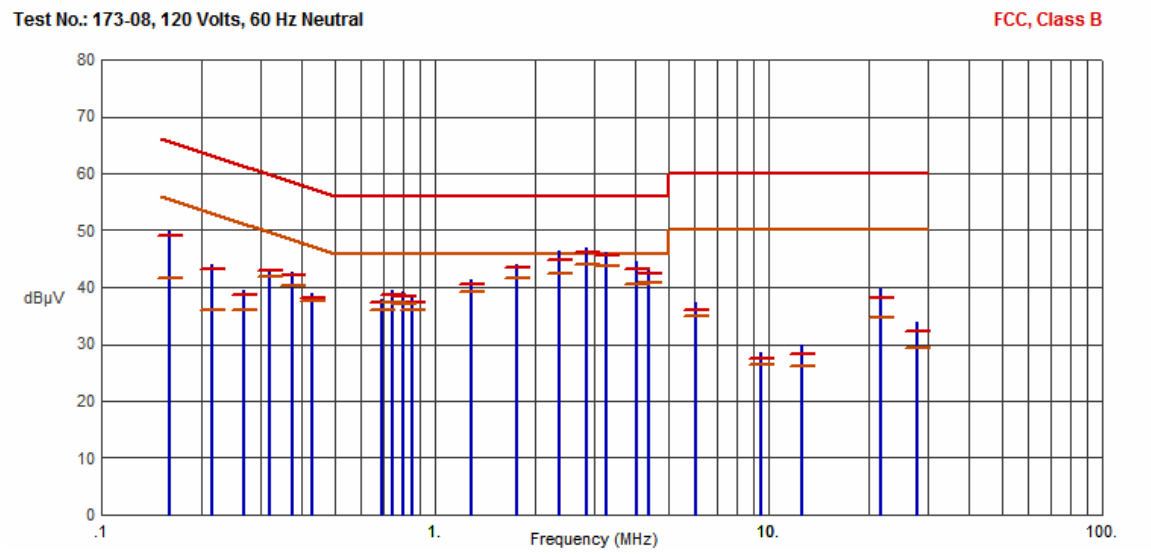
6. Measurement Data (continued)

6.10. Power Line Conducted Emissions (15.207), IC RSS-210 (continued)

6.10.2. 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
.1602	49.81	48.95	65.45	-16.50	41.58	55.45	-13.87	
.2138	44.03	43.33	63.06	-19.73	36.03	53.06	-17.03	
.2680	39.45	38.62	61.18	-22.56	35.87	51.18	-15.31	
.3212	43.17	42.81	59.68	-16.87	41.80	49.68	-7.88	
.3742	42.79	42.11	58.41	-16.30	40.22	48.41	-8.19	
.4284	38.81	38.20	57.28	-19.08	37.64	47.28	-9.64	
.6951	37.98	37.35	56.00	-18.65	36.07	46.00	-9.93	
.7490	39.58	38.76	56.00	-17.24	37.35	46.00	-8.65	
.8032	39.23	38.38	56.00	-17.62	37.09	46.00	-8.91	
.8558	38.55	37.26	56.00	-18.74	35.90	46.00	-10.10	
1.2848	41.35	40.47	56.00	-15.53	39.15	46.00	-6.85	
1.7658	44.05	43.40	56.00	-12.60	41.68	46.00	-4.32	
2.3556	46.28	44.72	56.00	-11.28	42.45	46.00	-3.55	
2.8359	47.00	46.09	56.00	-9.91	44.10	46.00	-1.90	
3.2649	46.17	45.55	56.00	-10.45	43.65	46.00	-2.35	
4.0143	44.49	43.16	56.00	-12.84	40.59	46.00	-5.41	
4.3890	43.40	42.49	56.00	-13.51	40.69	46.00	-5.31	
6.0473	37.45	35.91	60.00	-24.09	34.93	50.00	-15.07	
9.5280	28.52	27.48	60.00	-32.52	26.27	50.00	-23.73	
12.6312	29.86	28.21	60.00	-31.79	26.02	50.00	-23.98	
21.7871	39.85	38.01	60.00	-21.99	34.58	50.00	-15.42	
27.8874	33.98	32.21	60.00	-27.79	29.29	50.00	-20.71	

Result: Passed

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6. Measurement Data (continued)

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

20 MHz Signal Bandwidth

Channel	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm^2)	Result
				(mW/cm^2)	(W/m^2)		
	(1)	(2)	(3)	(4)		(5)	
1	20	24.81	3.95	0.149	1.4937	1	Compliant
6	20	25.52	3.95	0.176	1.7590	1	Compliant
11	20	23.16	3.95	0.102	1.0215	1	Compliant
149	20	17.89	5.06	0.039	0.3924	1	Compliant
153	20	18.46	5.06	0.045	0.4474	1	Compliant
161	20	20.12	5.06	0.066	0.6557	1	Compliant

40 MHz Signal Bandwidth

Channel	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm^2)	Result
				(mW/cm^2)	(W/m^2)		
	(1)	(2)	(3)	(4)		(5)	
3	20	25.21	3.95	0.164	1.6378	1	Compliant
6	20	25.54	3.95	0.177	1.7671	1	Compliant
9	20	24.53	3.95	0.140	1.4004	1	Compliant
151	20	21.18	5.06	0.084	0.8370	1	Compliant
159	20	20.11	5.06	0.065	0.6542	1	Compliant

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

PD = Power Density
OP = DUT Output Power
AG = DUT Antenna Gain
d = MPE Distance

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 6.1.1 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. 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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