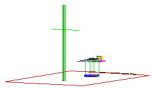
PCTEST ENGINEERING LABORATORY, INC.
6660-B Dobbin Road, Columbia, MD 21045 USA
Tel. 410.290.6652 / Fax 410.290.6554
http://www.pctestlab.com



MEASUREMENT REPORT
FCC PART 15.407 / IC RSS-210 802.11 a/n

Applicant Name:
Samsung Electronics, Co. Ltd.
18600 Broadwick St.
Rancho Dominguez, CA 90220
United States

Date of Testing:
May 04-12, 2011
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0Y1105040845.A3L

FCC ID:	**A3LGTP7310**
APPLICANT:	**Samsung Electronics, Co. Ltd.**

Application Type:	Certification
Model(s):	GT-P7310
EUT Type:	Tablet with BT and WLAN
Max. RF Output Power:	17.38 mW (12.4 dBm) Conducted (802.11a UNII Band 1) 17.42 mW (12.41 dBm) Conducted (802.11a UNII Band 2) 16 mW (12.04 dBm) Conducted (802.11a UNII Band 3) 18.11 mW (12.58 dBm) Conducted (802.11n UNII Band 1) 17.78 mW (12.5 dBm) Conducted (802.11n UNII Band 2) 15.85 mW (12 dBm) Conducted (802.11n UNII Band 3)
Frequency Range:	5180MHz – 5240MHz (UNII-I Band), 5260MHz – 5320MHz (UNII-II Band), 5500 – 5700MHz (UNII-III Band)
FCC Classification:	Unlicensed National Information Infrastructure (UNII)
FCC Rule Part(s):	Part 15.407
Test Device Serial No.:	FI-110C, FI-110 A

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C-63.4-2003. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Grant Conditions: Listed output power is conducted.
PCTEST certifies that no party to this application has been subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

ACCREDITED
TESTING LABORATORY
CERTIFICATE #2041.01

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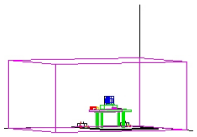


MEASUREMENT REPORT
FCC Part 15.407

§ 2.1033 General Information

APPLICANT:	Samsung Electronics, Co. Ltd.
APPLICANT ADDRESS:	18600 Broadwick St.
	Rancho Dominguez, CA 90220
TEST SITE:	PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS:	6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S):	Part 15.407
MODEL NAME:	GT-P7310
FCC ID:	A3LGTP7310
Test Device Serial No.:	FI-110C, FI-110 A ☐ Production ☒ Pre-Production ☐ Engineering
FCC CLASSIFICATION:	Unlicensed National Information Infrastructure (UNII)
DATE(S) OF TEST:	May 04-12, 2011
TEST REPORT S/N:	0Y1105040845.A3L

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21045, U.S.A.

- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (2451A-1).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (2451A-1) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2 PCTEST Test Location

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity are, the Baltimore-Washington Internt'l (BWI) airport, the city of Baltimore and the Washington, DC area. (*see Figure 1-1*).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 28, 2009.

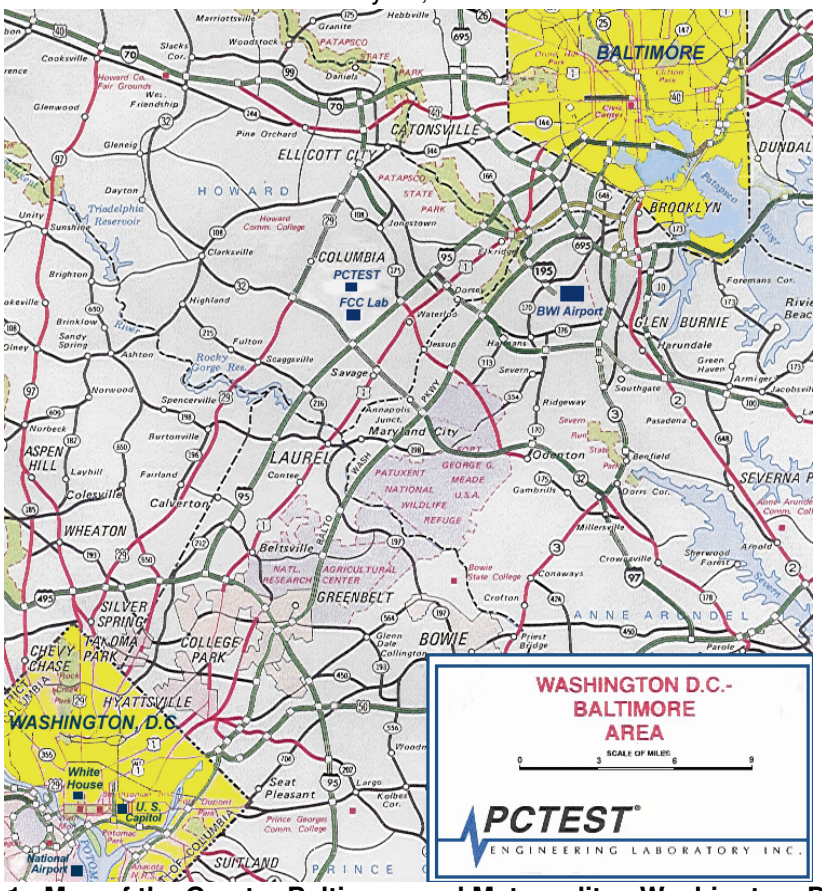


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Tablet with BT and WLAN FCC ID: A3LGTP7310**. The EUT consisted of the following component(s):

Manufacturer / Model	FCC ID	Description
Samsung / Model: GT-P7310	A3LGTP7310	Tablet with BT and WLAN

Table 2-1. EUT Equipment Description

2.2 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.3 Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

3.0 DESCRIPTION OF TEST

3.1 Evaluation Procedure

The measurement procedure described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2003) and FCC Public Notice DA 02-2138 dated August 30, 2002 entitled "Measurement Procedure Updated for Peak Transmit Power in the Unlicensed National Information Infrastructure (U-NII) Bands" were used in the measurement of **Samsung Tablet with BT and WLAN FCC ID: A3LGTP7310.**

Deviation from measurement procedure……..……..None

3.2 Conducted Emissions

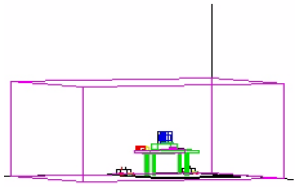


Figure 3-1. Shielded Enclosure Line-Conducted Test Facility

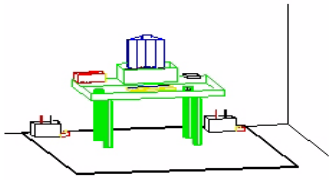


Figure 3-2. Line Conducted Emission Test Set-Up

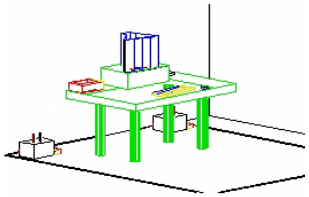


Figure 3-3. Wooden Table & Bonded LISNs

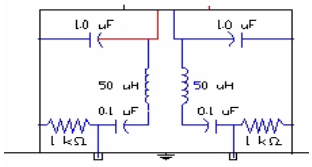


Figure 3-4. LISN Schematic Diagram

The line-conducted facility is located inside a 16'x20'x10' shielded enclosure, manufactured by Ray Proof Series 81 (*see Figure 3-1*). The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-5. A 1m x 1.5m wooden table 80cm high is placed 40cm away from the vertical wall and 1.5m away from the sidewall of the shielded room (*see Figure 3-2*). Solar Electronics and EMCO Model 3725/2 (10kHz-30MHz) 50Ω/50µH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room (*see Figure 3-3).* The EUT is powered from the Solar LISN and the support equipment is powered from the EMCO LISN. Power to the LISNs are filtered by a high-current high-insertion loss Ray Proof power line filter (100dB 14Hz-10GHz). The purpose of the filter is to attenuate ambient signal interference and this filter is also bonded to the shielded enclosure. All electrical cables are shielded by braided tinned copper zipper tubing with an inner diameter of ½". If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the Solar LISN. The LISN schematic diagram is shown (s*ee Figure 3-4*). All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion). Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT.

The spectrum was scanned from 150kHz to 30MHz with a spectrum analyzer. The detector function was set to CISPR quasi-peak and average mode. The bandwidth of the analyzer was set to 10kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission. Each emission was maximized by: switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and/or support equipment, and powering the monitor from the floor mounted outlet box and the computer aux AC outlet, if applicable; whichever determined the worst-case emission. Photographs of the worst-case emission can be seen in the test setup photographs. Each EME reported was calibrated using the Agilent E8257D (250kHz – 20GHz) PSG Signal Generator.

3.3 Radiated Emissions

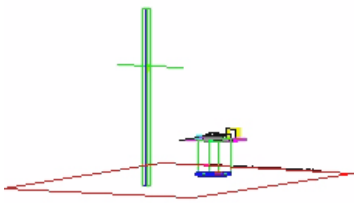


Figure 3-5. 3-Meter Test Site

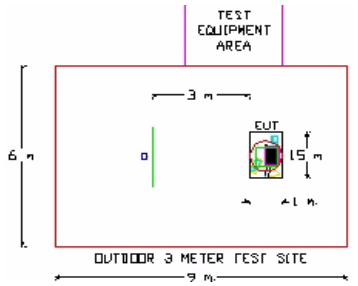


Figure 3-6. Dimensions of Outdoor Test Site

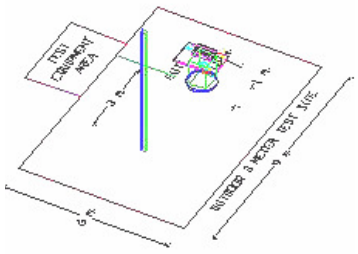


Figure 3-7. Turntable and System Setup

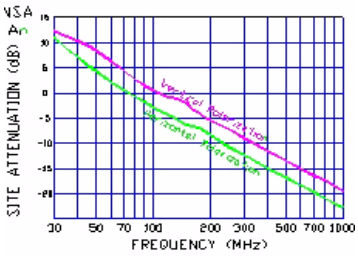


Figure 3-8. Normalized Site Attenuation Curves (H&V)

Preliminary measurements were made indoors at 1-meter using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, and turntable azimuth with respect to the antenna was noted for each frequency found. The spectrum was scanned from 30 to 200 MHz using a bi-conical antenna and from 200 to 1000 MHz using a log-spiral antenna. Above 1 GHz, linearly polarized double ridge horn antennas were used.

Final measurements were made outdoors at 3-meter test range using Roberts™ Dipole antennas or horn antennas (*see Figure 3-5*). The test equipment was placed on a wooden and plastic bench situated on a 1.5m x 2m area adjacent to the measurement area (*see Figure 3-6*). Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The detector function was set to CISPR quasi-peak mode and the bandwidth of the spectrum analyzer was set to 100kHz for frequencies below 1GHz or 1MHz for frequencies above 1GHz. Above 1GHz the detector function was set to average mode (RBW = 1MHz, VBW = 10Hz).

The half-wave dipole antenna was tuned to the frequency found during preliminary radiated measurements. The EUT, support equipment and interconnecting cables were re-configured to the set-up producing the maximum emission for the frequency and were placed on top of a 0.8-meter high non-metallic 1 x 1.5 meter table (*see Figure 3-7*). The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission. The turntable containing the system was rotated and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by: varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and/or support equipment, and powering the monitor from the floor mounted outlet box and the computer aux AC outlet, if applicable; and changing the polarity of the antenna, whichever determined the worst-case emission. Photographs of the worst-case emission can be seen in the test setup photographs. Each EME reported was calibrated using the .Agilent E8257D (250kHz – 20GHz) PSG Signal Generator. The Theoretical Normalized Site Attenuation Curves for both horizontal and vertical polarization are shown in Figure 3-8.

4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:
"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antennas of the Tablet with BT and WLAN are **permanently attached.**
- There are no provisions for connection to an external antenna.

Conclusion:

The **Samsung Tablet with BT and WLAN FCC ID: A3LGTP7310** unit complies with the requirement of §15.203.

Band 1

Ch.	Frequency (MHz)
36	5180
:	:
42	5210
:	:
48	5240

Band 2

Ch.	Frequency (MHz)
52	5260
:	:
56	5280
:	:
64	5320

Band 3

Ch.	Frequency (MHz)
100	5500
:	:
120	5600
:	:
140	5700

Table 4-1. 802.11a/n Frequency / Channel Operations

5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	No.165	(30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Agilent	N9020A	MXA Signal Analyzer	9/8/2010	Annual	9/8/2011	US46470561
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	11/30/2010	Annual	11/30/2011	US42510244
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	2/8/2011	Annual	2/8/2012	3008A00985
Agilent	8447D	Broadband Amplifier	3/17/2011	Annual	3/17/2012	1937A03348
Agilent	8447D	Broadband Amplifier	3/17/2011	Annual	3/17/2012	2443A01900
Agilent	E4407B	ESA Spectrum Analyzer	4/5/2011	Annual	4/5/2012	US39210313
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/5/2011	Annual	4/5/2012	MY45470194
Agilent	85650A	Quasi-Peak Adapter	4/7/2011	Annual	4/7/2012	3303A01872
Agilent	85650A	Quasi-Peak Adapter	4/7/2011	Annual	4/7/2012	2043A00301
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	4/7/2011	Annual	4/7/2012	2618A02866
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	4/7/2011	Annual	4/7/2012	2542A11898
Anritsu	ML2495A	Power Meter	10/13/2010	Annual	10/13/2011	941001
Anritsu	MA2411B	Pulse Sensor	N/A	Annual		1027293
Emco	3116	Horn Antenna (18 - 40GHz)	9/9/2008	Triennial	9/9/2011	9203-2178
Emco	3115	Horn Antenna (1-18GHz)	10/14/2009	Biennial	10/14/2011	9704-5182
Emco	3115	Horn Antenna (1-18GHz)	4/8/2010	Biennial	4/8/2012	9205-3874
Emco	3816/2	LISN	11/3/2010	Biennial	11/3/2012	9707-1079
Emco	3816/2	LISN	11/5/2010	Biennial	11/5/2012	9707-1077
Gigatronics	80701A	(0.05-18GHz) Power Sensor	10/11/2010	Annual	10/11/2011	1833460
Gigatronics	8651A	Universal Power Meter	10/11/2010	Annual	10/11/2011	8650319
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Rohde & Schwarz	FSQ 26	Spectrum Analyzer	8/28/2010	Annual	8/28/2011	200452
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/14/2009	Biennial	5/14/2011	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	7/17/2009	Biennial	7/17/2011	A051107

Table 5-1. Annual Test Equipment Calibration Schedule

6.0 TEST RESULTS

6.1 Summary

Company Name: Samsung Electronics, Co. Ltd.

FCC ID: A3LGTP7310

Method/System: Unlicensed National Information Infrastructure (UNII)

Data Rate(s) Tested: 6, 9, 12, 18, 24, 36, 48, 54Mbps (802.11a)
6.5/7.2, 13/14.4, 19.5/21.7, 26/28.9, 39/43.3, 52/57.8, 58.5/65, 65/72.2Mbps (802.11n)

FCC Part Section(s)	RSS Sections	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)						
N/A	RSS-210 [A8.1]	26 dB Bandwidth	> 500kHz	CONDUCTED	PASS	Section 6.2
15.407 (a)(1)	RSS-210 [A8.4(2)]	Maximum Conducted Output Power	< 4 + 10log$_{10}$(BW) dBm (5150-5250) < 11 + 10log$_{10}$(B) dBm (5250-5350) < 11 + 10log$_{10}$(B) dBm (5470-5725)		PASS	Sections 6.3, 6.4, 6.5
15.407 (a)(1), (5)	RSS-210 [A8.1(2)]	Peak Power Spectral Density	< 4 dBm/MHz (5150-5250) < 11dBm/MHz (5250-5350) < 11dBm/MHz (5470-5725)		PASS	Section 6.6
15.407(a)(6)	RSS-210 [A8.1(2)]	Peak Excursion	< 13 dB/MHz maximum difference		PASS	Section 6.7
15.407(g)	RSS-210 [A8.1(2)]	Frequency Stability	N/A		PASS	Section 6.8
15.407(b)(1), (2), (3), (6)	RSS-210 [A8.5]	Undesirable Emissions	< -27 dBm/MHz EIRP (5150-5350, 5470-5725)	RADIATED	PASS	Section 6.9 Section 6.10
15.205, 15.407(b)(1), (2), (3), (5), (6)	RSS-210 [A8.5]	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209 (RSS-210 table 3 limits)		PASS	Section 6.11
15.207	RSS-Gen (7.2.2)	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.207 limits or < RSS-Gen table 2 limits	LINE CONDUCTED	PASS	Section 6.12
RECEIVER MODE (RX) / DIGITAL EMISSIONS						
15.107	RSS-Gen (7.2.2)	AC Conducted Emissions 150kHz – 30MHz	< FCC 15.107 limits or < RSS-Gen table 2 limits	LINE CONDUCTED	PASS	Part 15B Test Report
15.109	RSS-Gen (7.2.3.2]	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.109 limits or < RSS-210 table 3 limits	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Part 15B Test Report

Table 6-1. Summary of Test Results

Note:
All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.

6.2 26dB Bandwidth Measurement

RSS-210 [A8.1]

The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies. ***The 26dB bandwidth is used to determine the conducted power limits.***

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured 26dB Bandwidth [MHz]
Band I	5180	36	a	6	19.21
	5200	40	a	6	19.11
	5240	48	a	6	19.28
	5180	36	n	6.5/7.2 (MCS0)	19.26
	5200	40	n	6.5/7.2 (MCS0)	19.40
	5240	48	n	6.5/7.2 (MCS0)	19.35
Band II	5260	52	a	6	19.24
	5280	56	a	6	26.37
	5320	64	a	6	19.21
	5260	52	n	6.5/7.2 (MCS0)	19.49
	5280	56	n	6.5/7.2 (MCS0)	26.06
	5320	64	n	6.5/7.2 (MCS0)	19.39
Band III	5500	100	a	6	19.26
	5600	120	a	6	19.15
	5700	140	a	6	18.90
	5500	100	n	6.5/7.2 (MCS0)	19.40
	5600	120	n	6.5/7.2 (MCS0)	19.29
	5700	140	n	6.5/7.2 (MCS0)	19.49

Table 6-2. Conducted Bandwidth Measurements

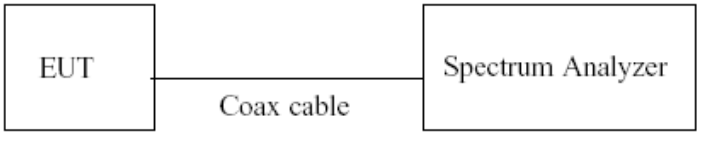
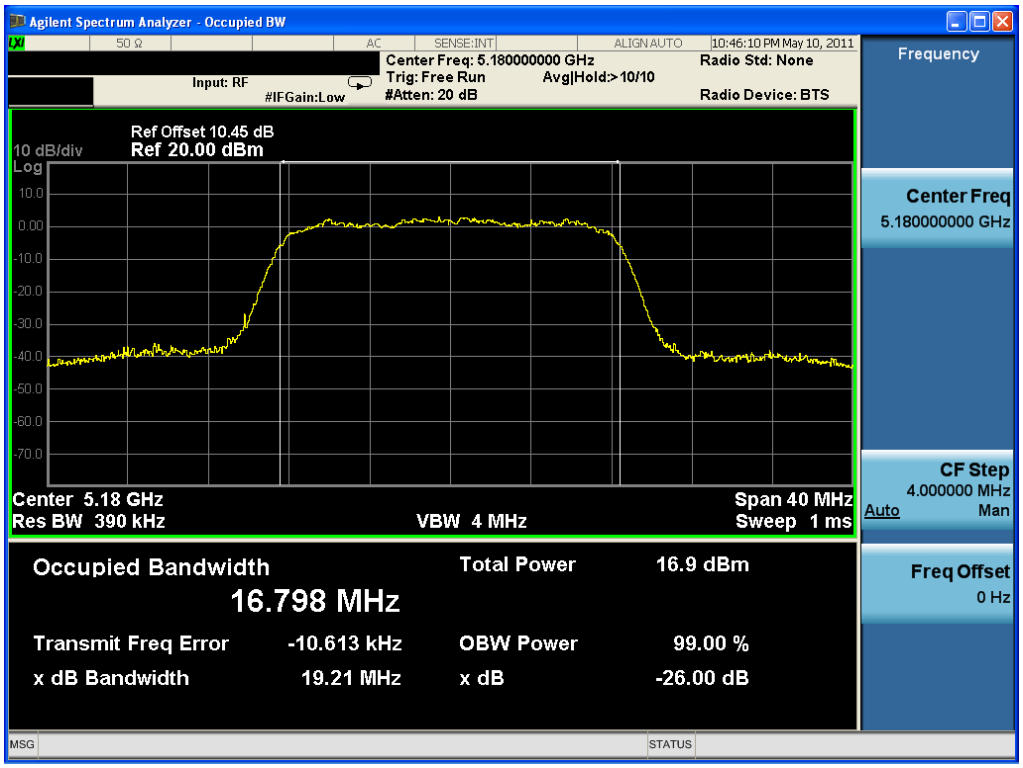
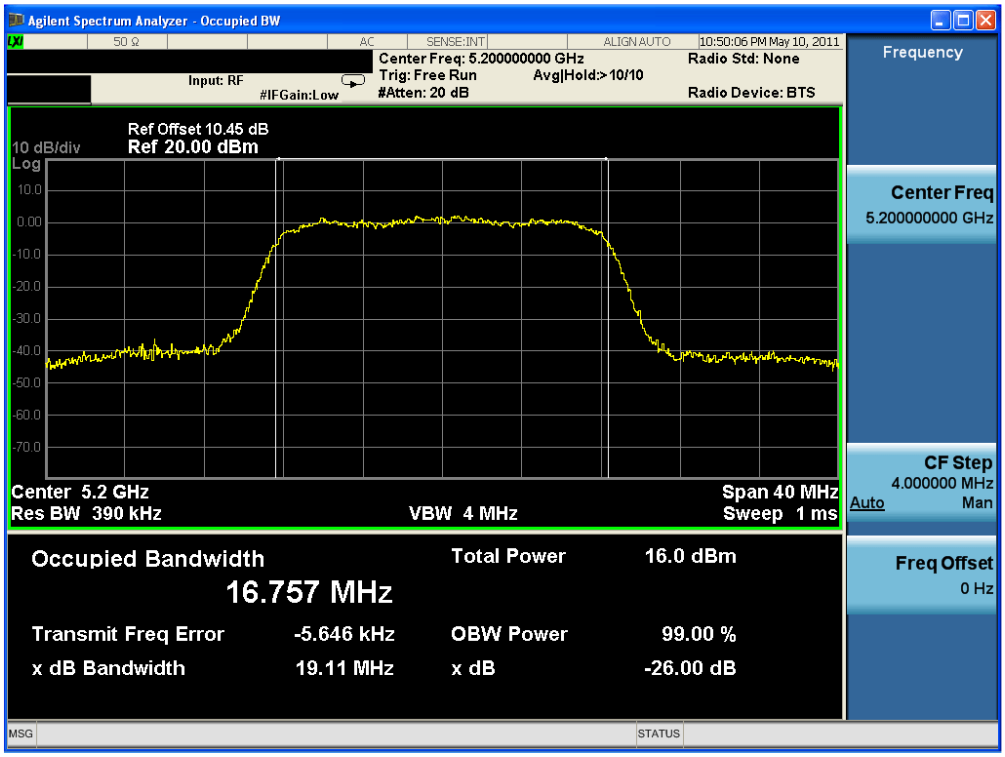


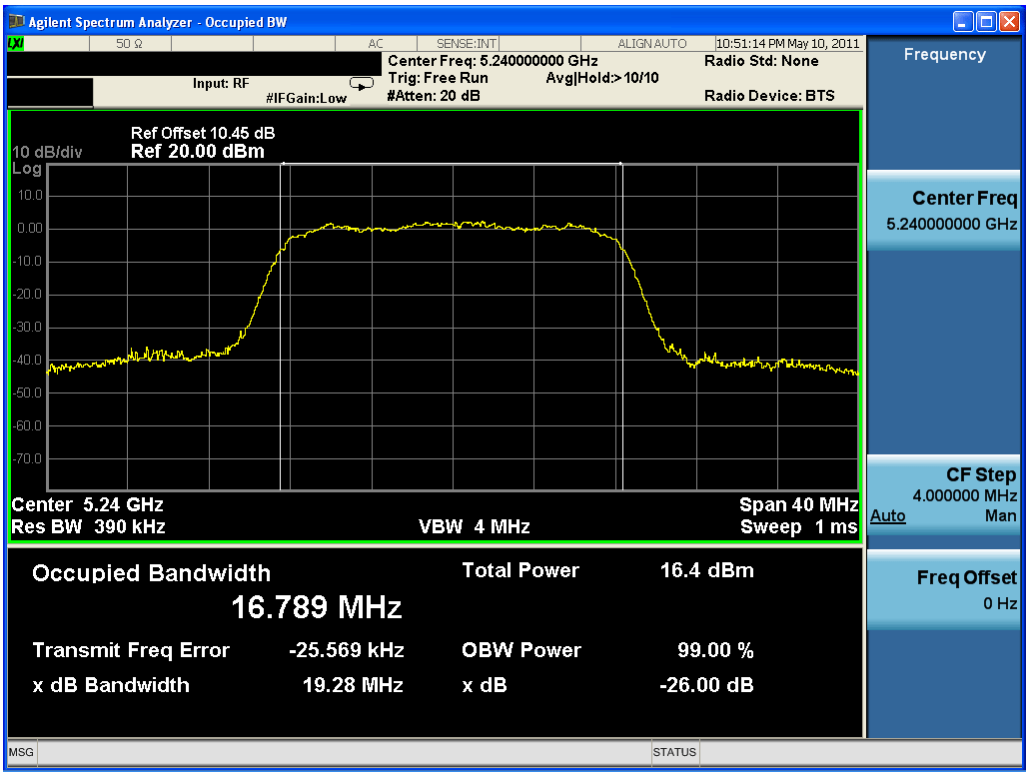
Figure 6-1. Test Instrument & Measurement Setup



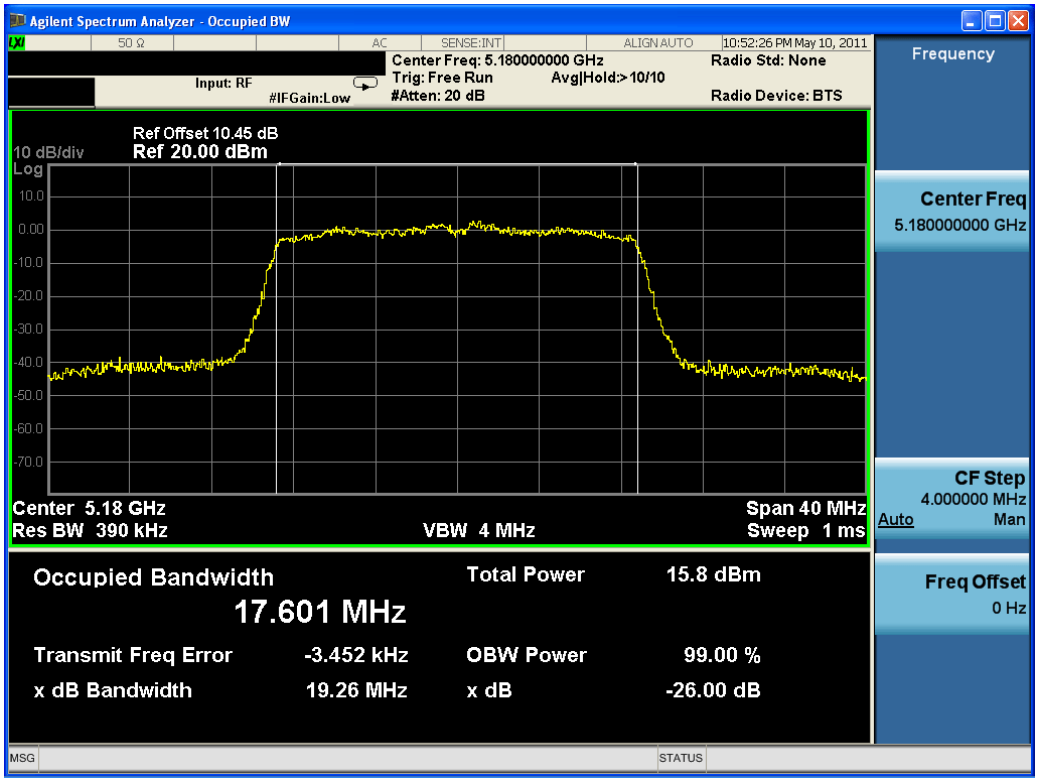
Plot 6-1. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 36)



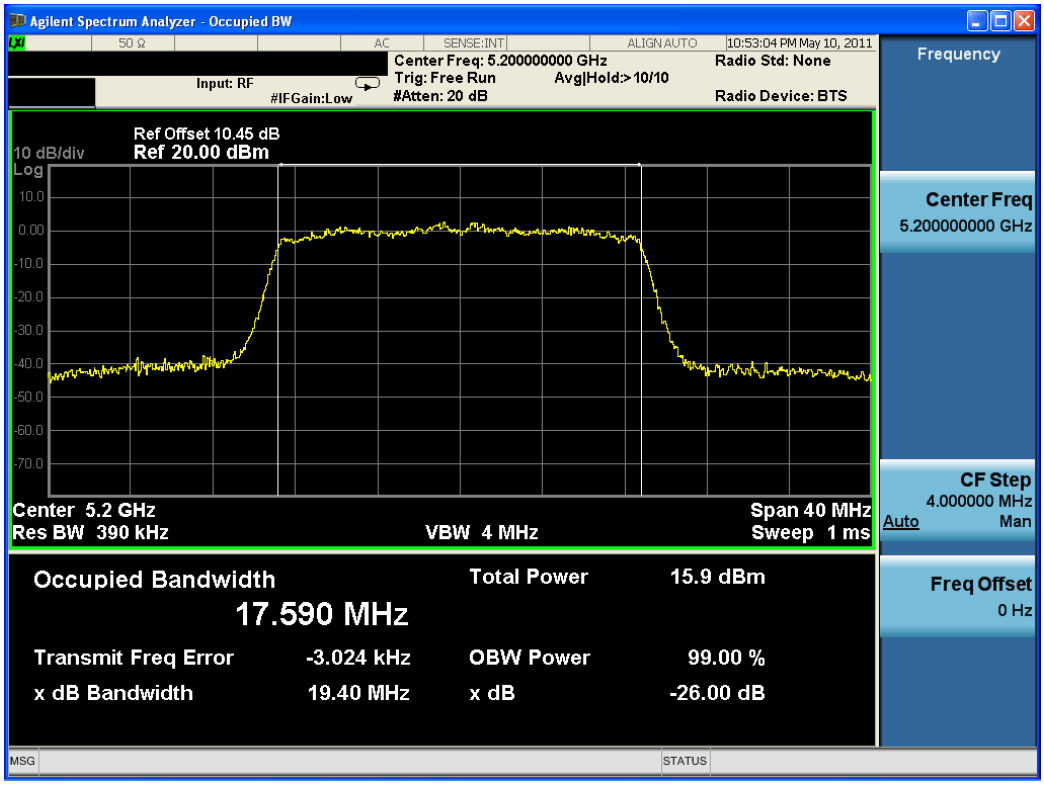
Plot 6-2. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 40)



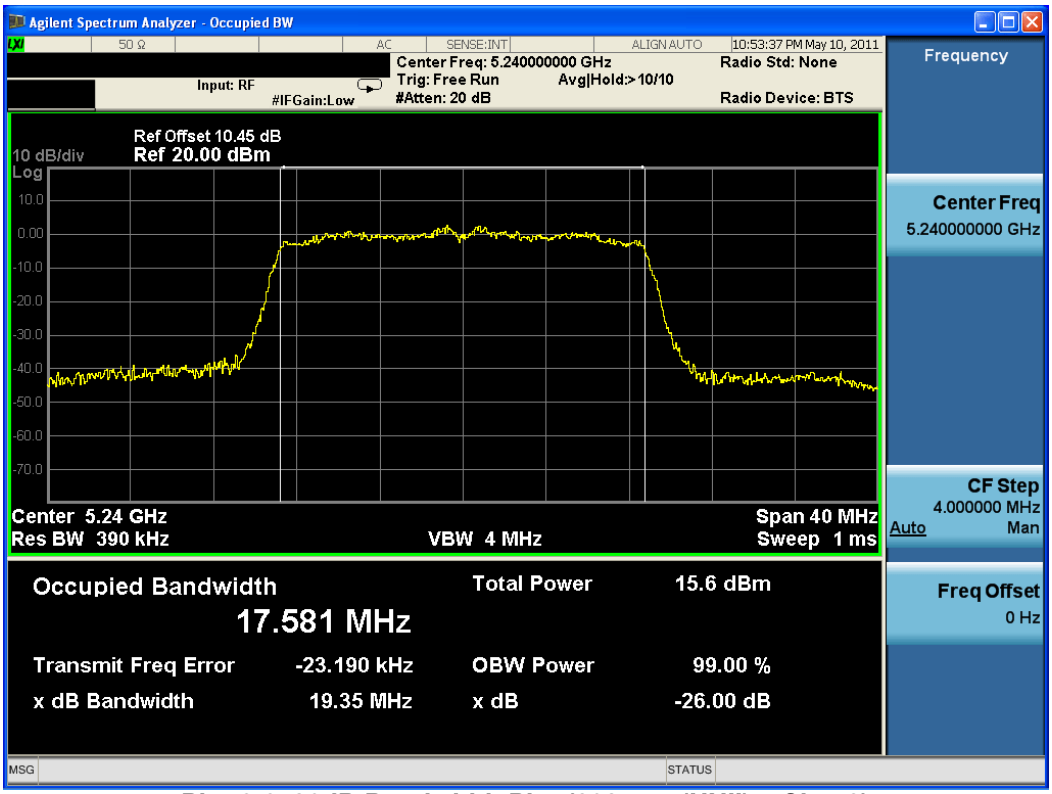
Plot 6-3. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 48)



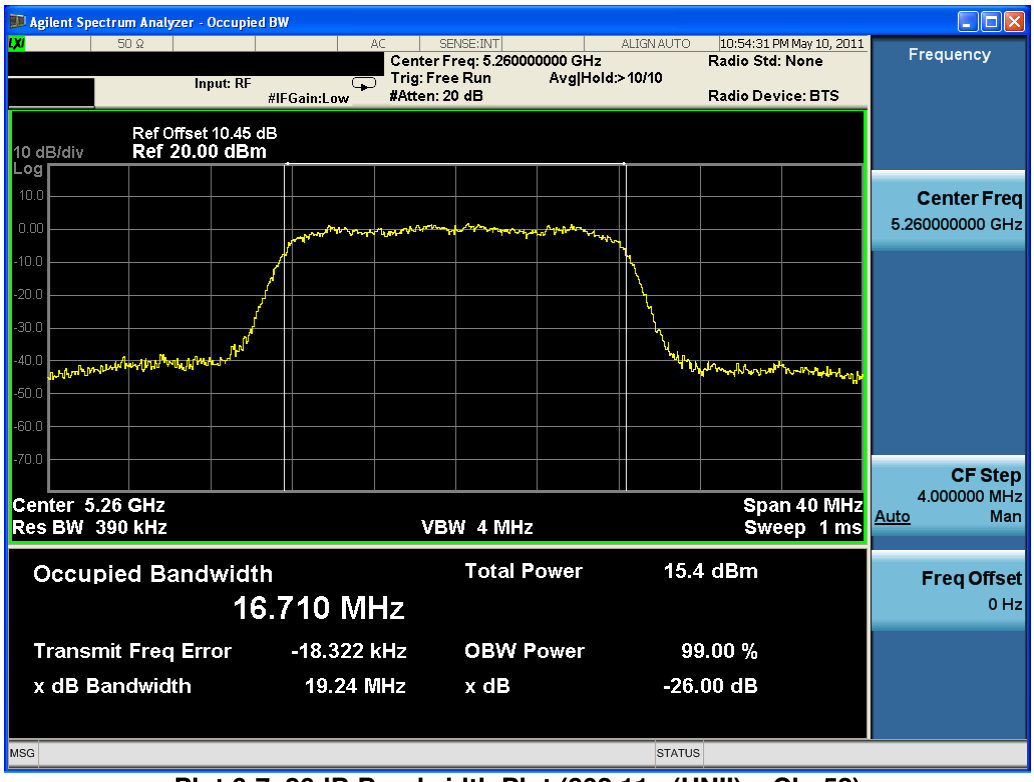
Plot 6-4. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 36)



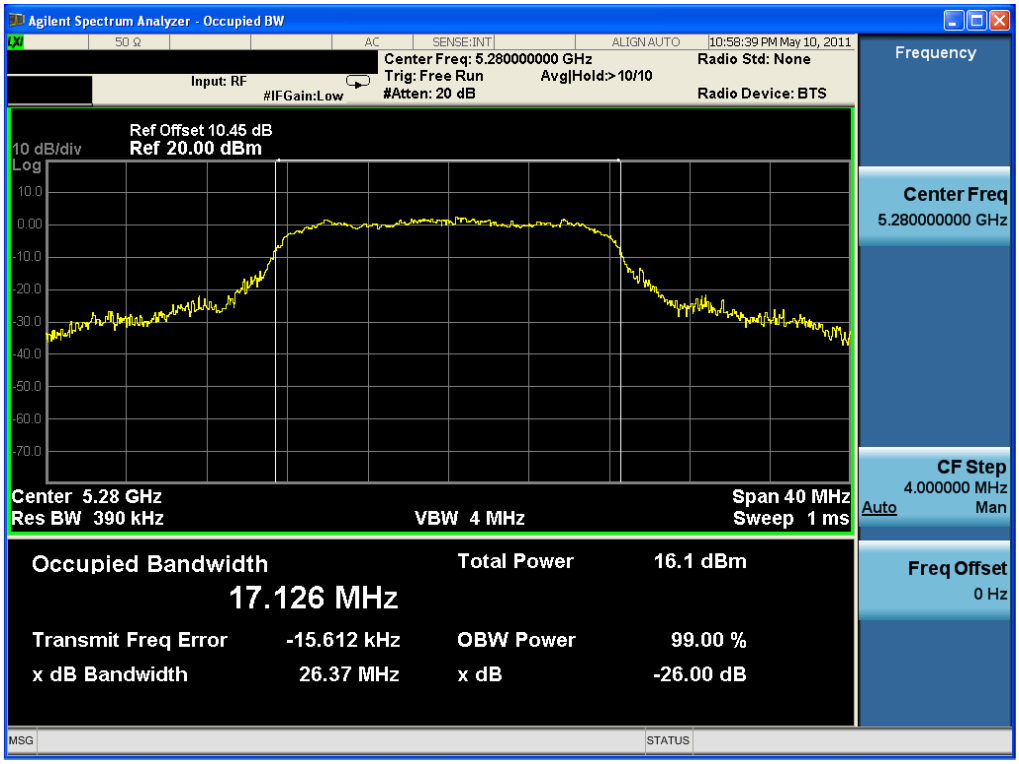
Plot 6-5. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 40)



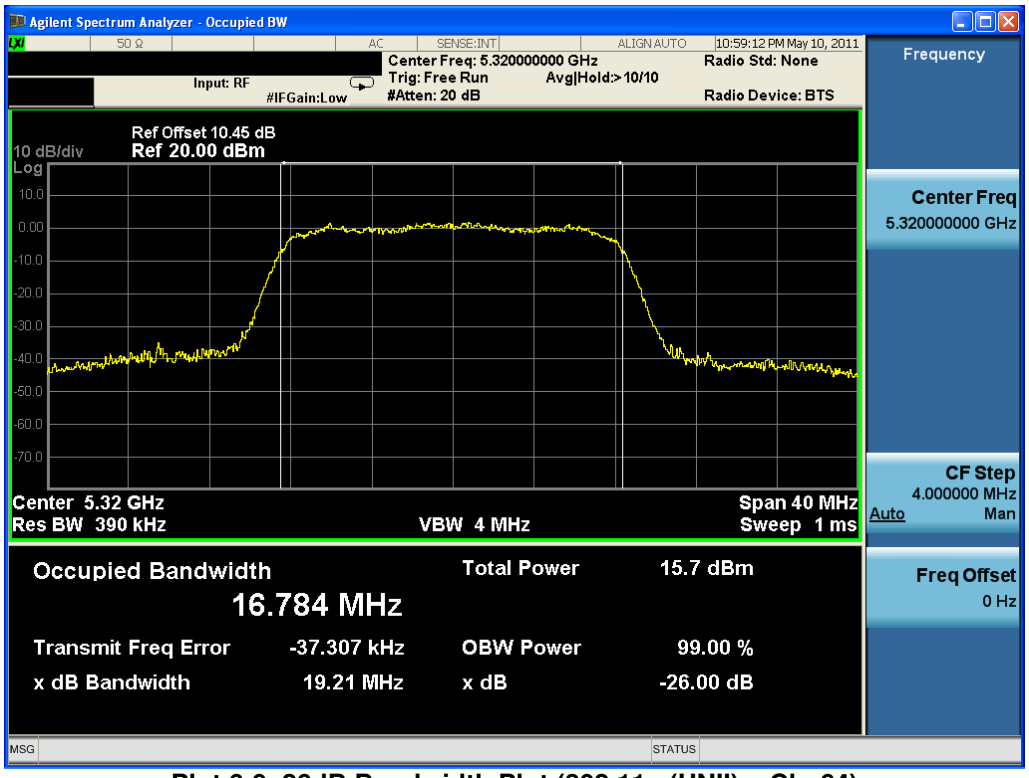
Plot 6-6. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 48)



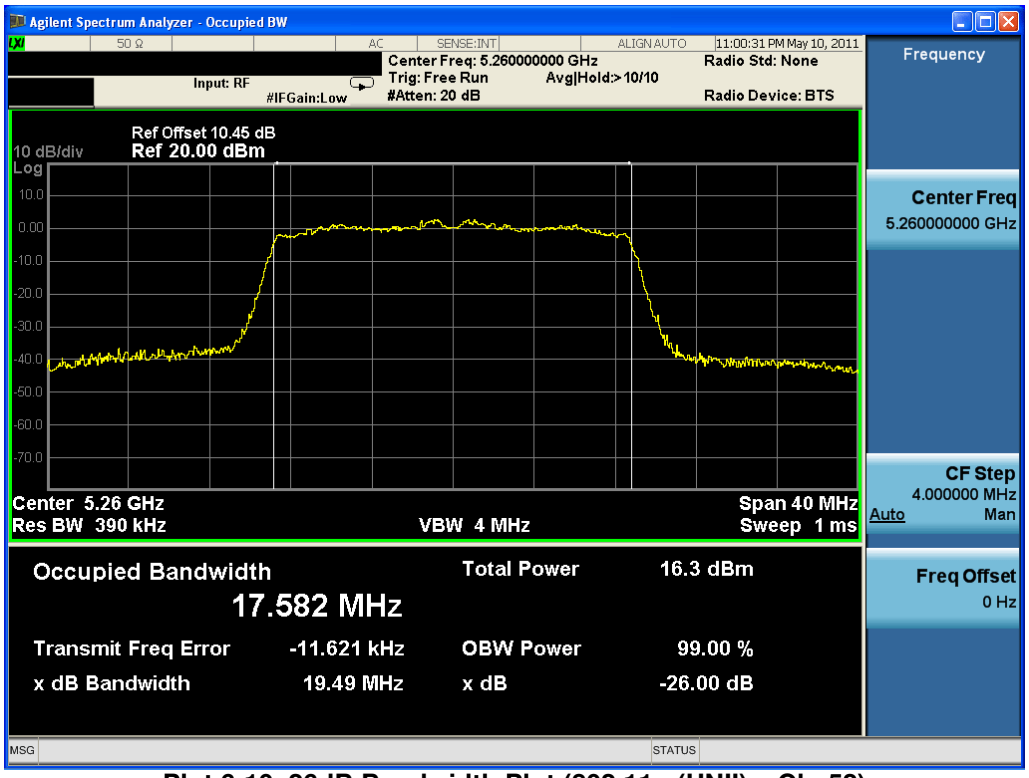
Plot 6-7. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 52)



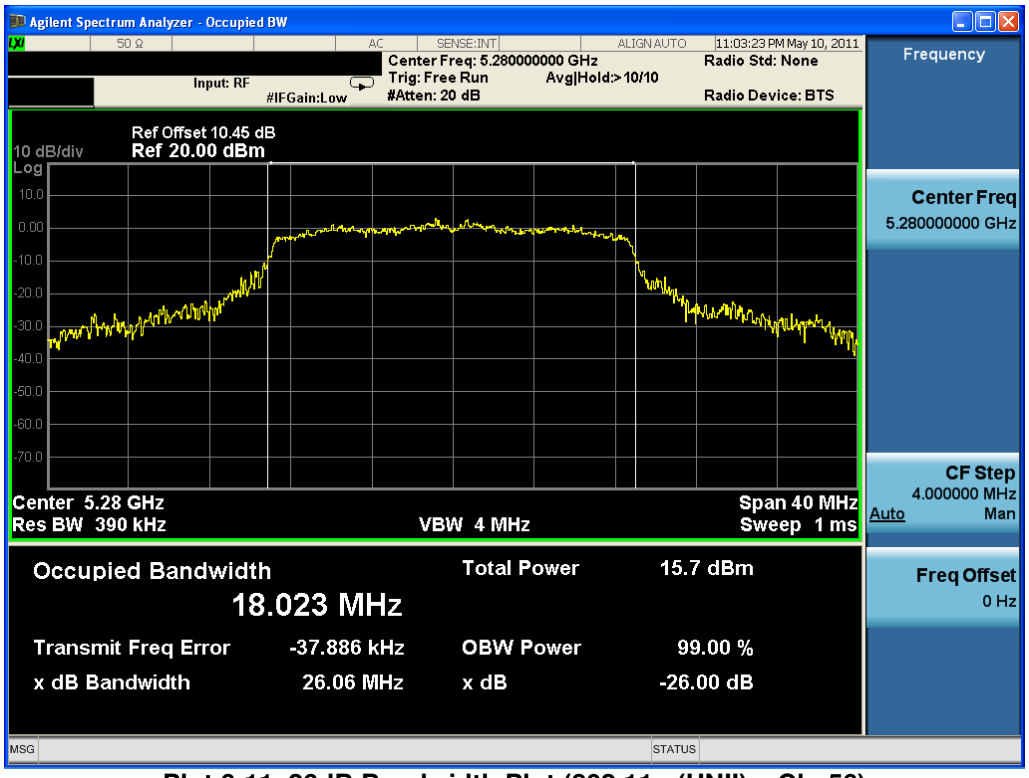
Plot 6-8. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 56)



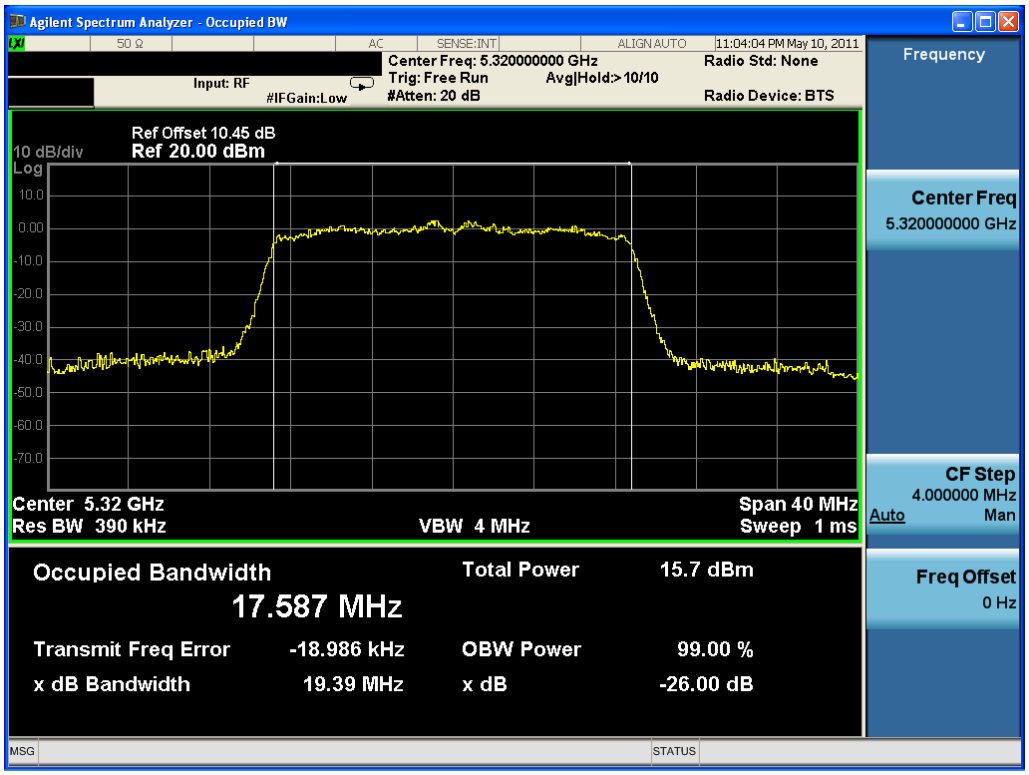
Plot 6-9. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 64)



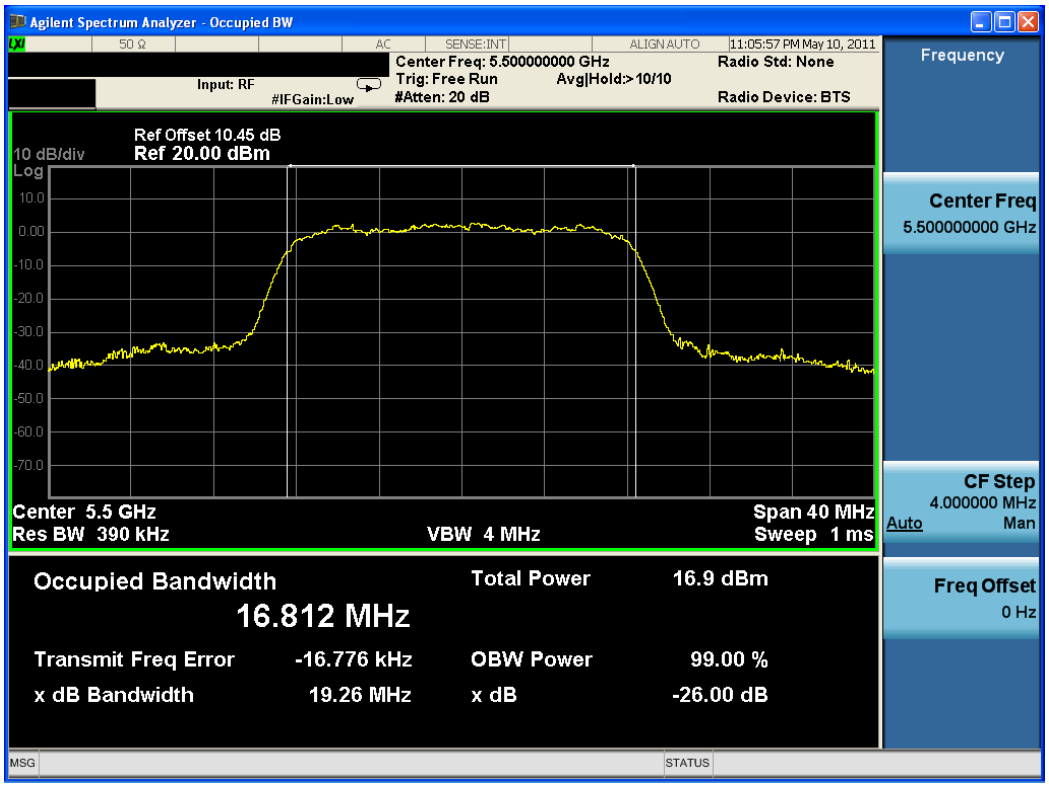
Plot 6-10. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 52)



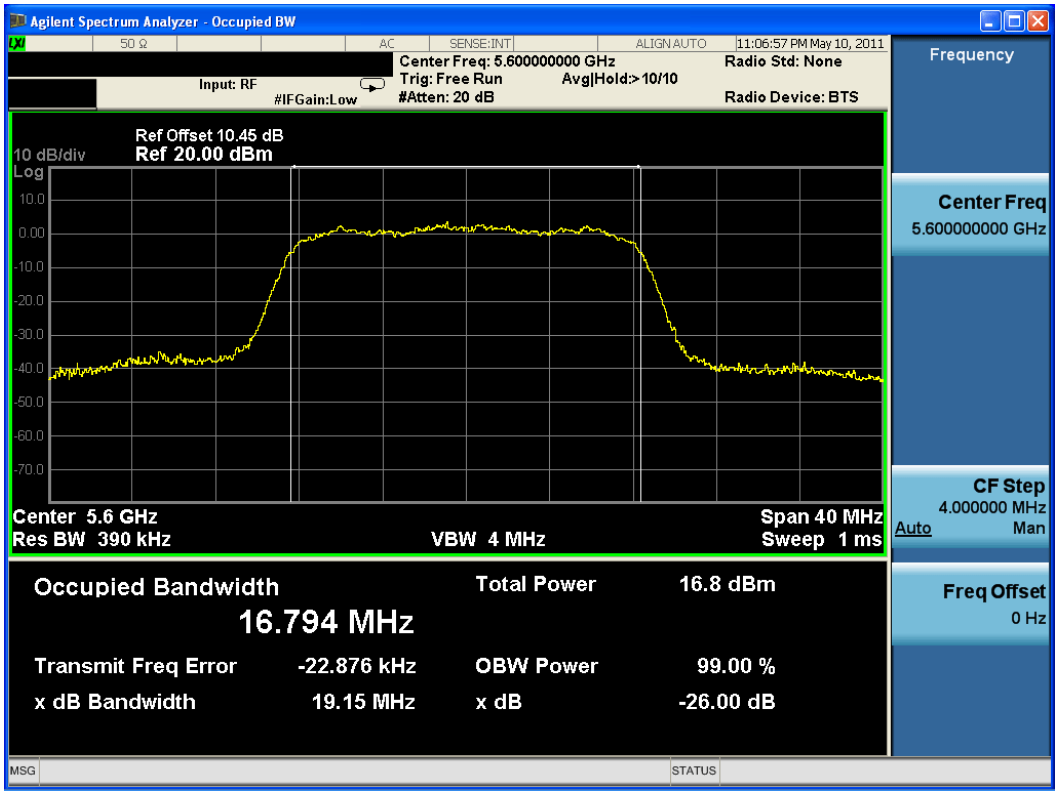
Plot 6-11. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 56)



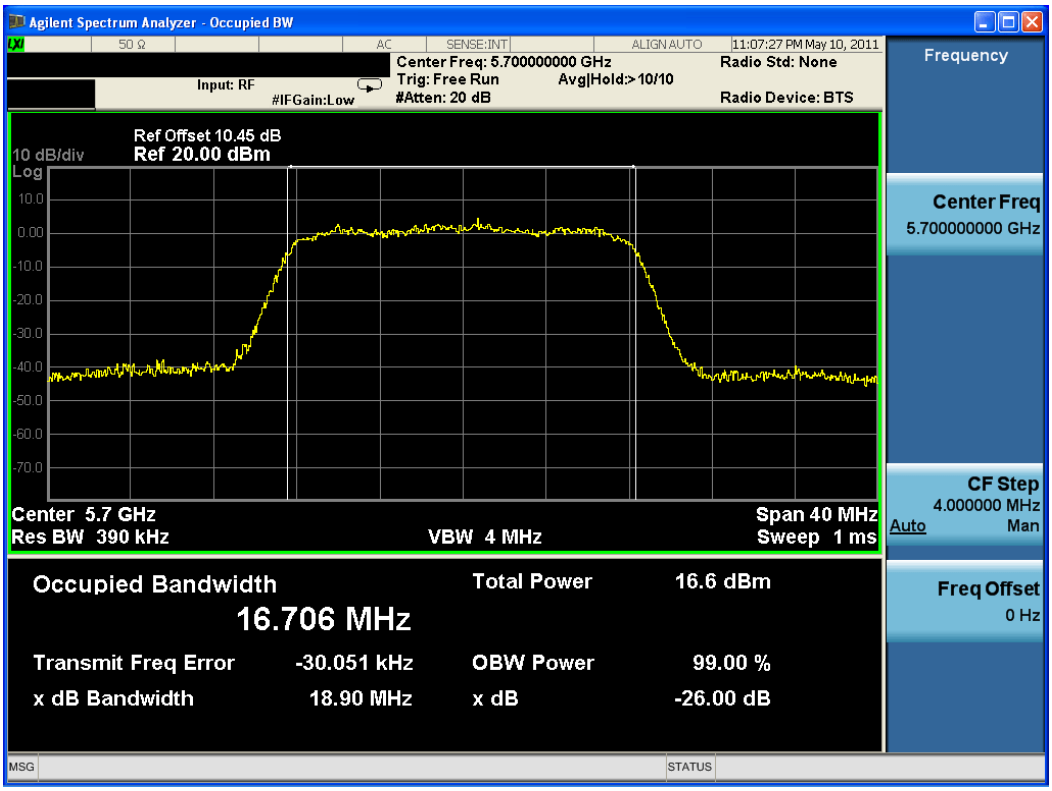
Plot 6-12. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 64)



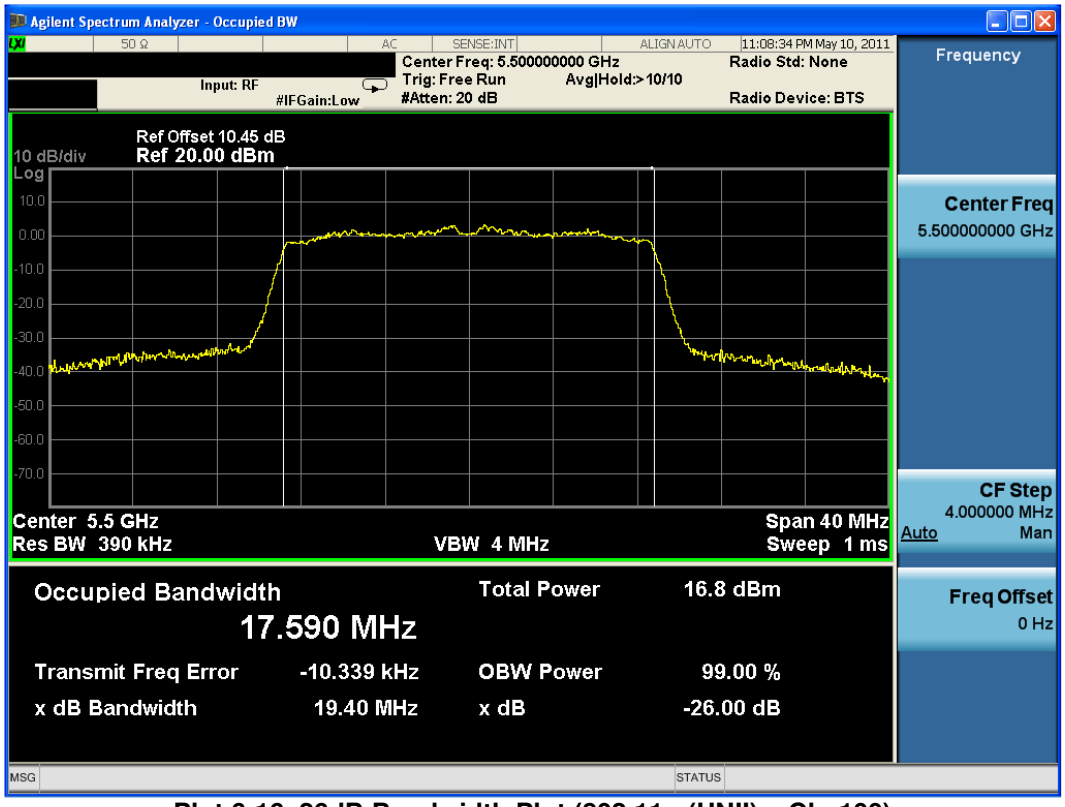
Plot 6-13. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 100)



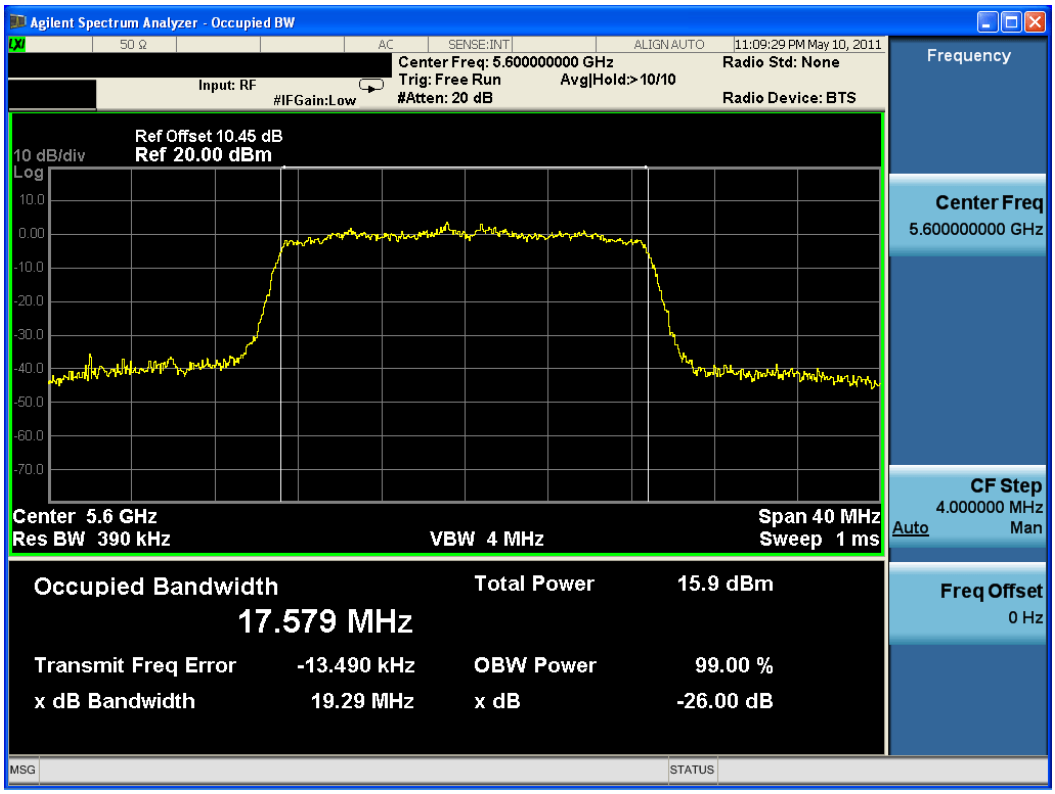
Plot 6-14. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 120)



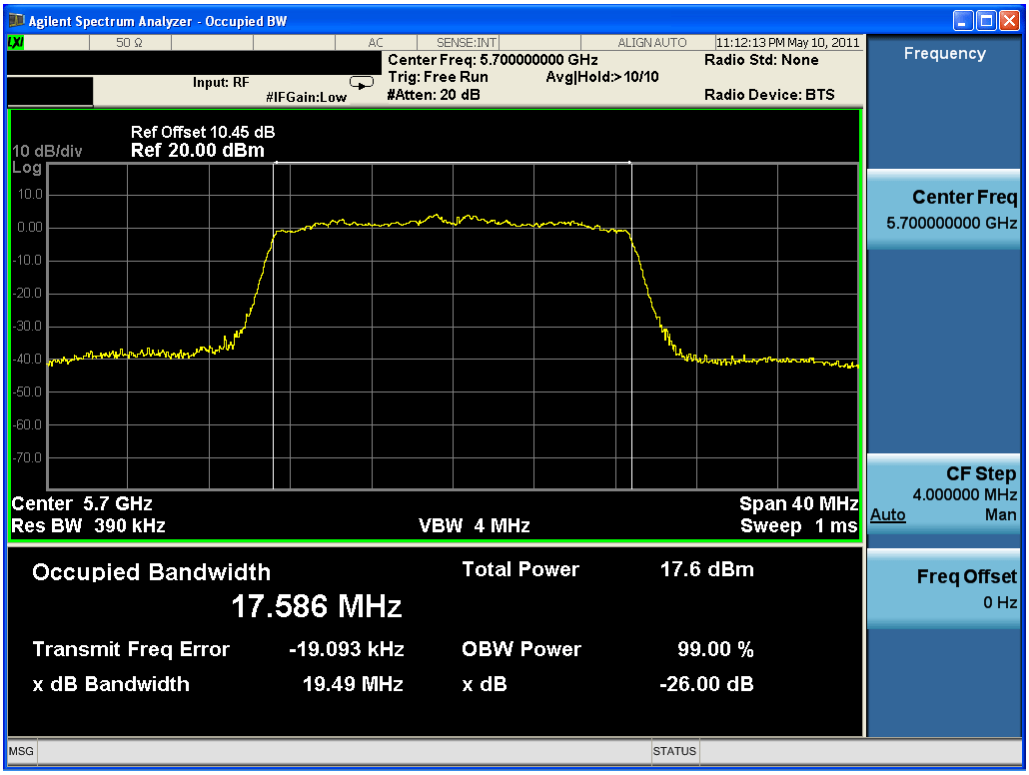
Plot 6-15. 26dB Bandwidth Plot (802.11a (UNII) – Ch. 140)



Plot 6-16. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 100)



Plot 6-17. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 120)



Plot 6-18. 26dB Bandwidth Plot (802.11n (UNII) – Ch. 140)

6.3 Output Power Measurement – 802.11a/n (UNII I)

§15.407 (a)(1)

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies. ***In the 5.15 – 5.25GHz band, the maximum permissible conducted output power is the lesser of 50mW (16.99dBm) and 4 dBm + 10log$_{10}$(26dB BW)= 4+10log$_{10}$(19.11)=16.81dBm which is 16.81dBm.***

Freq [MHz]	Channel	Data Rate [Mbps]	Measured Average Power [dBm]
5180	36	6	12.20
		9	12.12
		12	12.22
		18	12.35
		24	12.28
		36	12.20
		48	12.40
		54	12.32
5200	40	6	12.22
		9	12.30
		12	12.26
		18	12.30
		24	12.31
		36	12.26
		48	12.32
		54	12.35
5240	48	6	12.10
		9	12.28
		12	12.25
		18	12.25
		24	12.35
		36	12.40
		48	12.30
		54	12.40

Table 6-3. UNII Band I (802.11a) Conducted Output Power Measurements

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	Measured Average Power [dBm]
5180	36	0	6.5/7.2	12.30
		1	13/14.4	12.20
		2	19.5/21.7	12.35
		3	26/28.9	12.45
		4	39/43.3	12.35
		5	52/57.8	12.35
		6	58.5/65	12.52
		7	65/72.2	12.57
5200	40	0	6.5/7.2	12.30
		1	13/14.4	12.22
		2	19.5/21.7	12.33
		3	26/28.9	12.40
		4	39/43.3	12.50
		5	52/57.8	12.49
		6	58.5/65	12.55
		7	65/72.2	12.55
5240	48	0	6.5/7.2	12.20
		1	13/14.4	12.15
		2	19.5/21.7	12.35
		3	26/28.9	12.38
		4	39/43.3	12.55
		5	52/57.8	12.58
		6	58.5/65	12.51
		7	65/72.2	12.47

Table 6-4. UNII Band I (802.11n) Conducted Output Power Measurements

6.4 Output Power Measurement – 802.11a/n (UNII II)

§15.407 (a)(1)

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies. ***In the 5.25 – 5.35GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) and 11 dBm + 10log$_{10}$(26dB BW)= 11+10log$_{10}$(19.21)= 23.84dBm which is 23.84dBm.***

Freq [MHz]	Channel	Data Rate [Mbps]	Measured Average Power [dBm]
5260	52	6	12.20
		9	12.25
		12	12.20
		18	12.30
		24	12.41
		36	12.35
		48	12.40
		54	12.30
5280	56	6	12.20
		9	12.25
		12	12.12
		18	12.32
		24	12.30
		36	12.22
		48	12.40
		54	12.30
5320	64	6	12.06
		9	12.11
		12	12.20
		18	12.25
		24	12.20
		36	12.01
		48	12.30
		54	12.25

Table 6-5. UNII Band II (802.11a) Conducted Output Power Measurements

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	Measured Average Power [dBm]
5260	52	0	6.5/7.2	12.20
		1	13/14.4	12.15
		2	19.5/21.7	12.35
		3	26/28.9	12.25
		4	39/43.3	12.42
		5	52/57.8	12.50
		6	58.5/65	12.50
		7	65/72.2	12.47
5280	56	0	6.5/7.2	12.20
		1	13/14.4	12.06
		2	19.5/21.7	12.15
		3	26/28.9	12.30
		4	39/43.3	12.30
		5	52/57.8	12.35
		6	58.5/65	12.32
		7	65/72.2	12.40
5320	64	0	6.5/7.2	12.10
		1	13/14.4	12.09
		2	19.5/21.7	12.15
		3	26/28.9	12.25
		4	39/43.3	12.22
		5	52/57.8	12.43
		6	58.5/65	12.39
		7	65/72.2	12.30

Table 6-6. UNII Band II (802.11n) Conducted Output Power Measurements

6.5 Output Power Measurement – 802.11a/n (UNII III)

§15.407 (a)(1)

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made while the EUT is operating in transmission mode at the appropriate frequencies. ***In the 5.47 – 5.725GHz band, the maximum permissible conducted output power is the lesser of 250mW (23.98dBm) and 11 dBm + 10log$_{10}$(26dB BW)= 11 + 10log$_{10}$(18.90)= 23.76dBm which is 23.76dBm.***

Freq [MHz]	Channel	Data Rate [Mbps]	Measured Average Power [dBm]
5500	100	6	11.60
		9	11.61
		12	11.60
		18	11.70
		24	11.67
		36	11.70
		48	11.75
		54	11.80
5600	120	6	11.80
		9	11.90
		12	11.91
		18	11.89
		24	11.85
		36	12.00
		48	11.95
		54	12.04
5700	140	6	11.90
		9	11.92
		12	11.84
		18	11.86
		24	11.99
		36	11.95
		48	12.00
		54	12.00

Table 6-7. UNII Band III (802.11a) Conducted Output Power Measurements

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	Measured Average Power [dBm]
5500	100	0	6.5/7.2	11.60
		1	13/14.4	11.71
		2	19.5/21.7	11.72
		3	26/28.9	11.67
		4	39/43.3	11.80
		5	52/57.8	11.85
		6	58.5/65	11.95
		7	65/72.2	11.97
5600	120	0	6.5/7.2	11.60
		1	13/14.4	11.51
		2	19.5/21.7	11.70
		3	26/28.9	11.65
		4	39/43.3	11.75
		5	52/57.8	11.61
		6	58.5/65	11.75
		7	65/72.2	11.80
5700	140	0	6.5/7.2	11.72
		1	13/14.4	11.72
		2	19.5/21.7	11.81
		3	26/28.9	11.60
		4	39/43.3	11.81
		5	52/57.8	11.90
		6	58.5/65	12.00
		7	65/72.2	12.00

Table 6-8. UNII Band III (802.11n) Conducted Output Power Measurements

6.6 Peak Power Spectral Density

§15.407 (a)(1),(5)

The spectrum analyzer was connected to the antenna teminal while the EUT was operating in a continuous transmission mode at the appropriate center frequencies. ***The maximum permissible peak power spectral density is 4dBm/MHz in the 5.15GHz – 5.25GHz band and 11dBm/MHz in the 5.25GHz – 5.35 GHz and 5.47 – 5.725GHz bands.***

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]
Band I	5180	36	a	6	-0.73	4.0	-4.73
	5200	40	a	6	-0.70	4.0	-4.70
	5240	48	a	6	-0.80	4.0	-4.80
	5180	36	n	6.5/7.2 (MCS0)	0.54	4.0	-3.46
	5200	40	n	6.5/7.2 (MCS0)	-0.66	4.0	-4.66
	5240	48	n	6.5/7.2 (MCS0)	-0.94	4.0	-4.94
Band II	5260	52	a	6	-0.85	11.0	-11.85
	5280	56	a	6	-0.81	11.0	-11.81
	5320	64	a	6	-1.09	11.0	-12.09
	5260	52	n	6.5/7.2 (MCS0)	-1.31	11.0	-12.31
	5280	56	n	6.5/7.2 (MCS0)	-1.39	11.0	-12.39
	5320	64	n	6.5/7.2 (MCS0)	-1.44	11.0	-12.44
Band III	5500	100	a	6	-0.37	11.0	-11.37
	5600	120	a	6	-0.26	11.0	-11.26
	5700	140	a	6	0.44	11.0	-10.56
	5500	100	n	6.5/7.2 (MCS0)	-0.40	11.0	-11.40
	5600	120	n	6.5/7.2 (MCS0)	-0.22	11.0	-11.22
	5700	140	n	6.5/7.2 (MCS0)	-0.01	11.0	-11.01

Table 6-9. Conducted Power Spectral Density Measurements

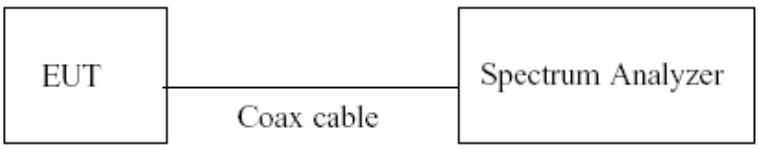
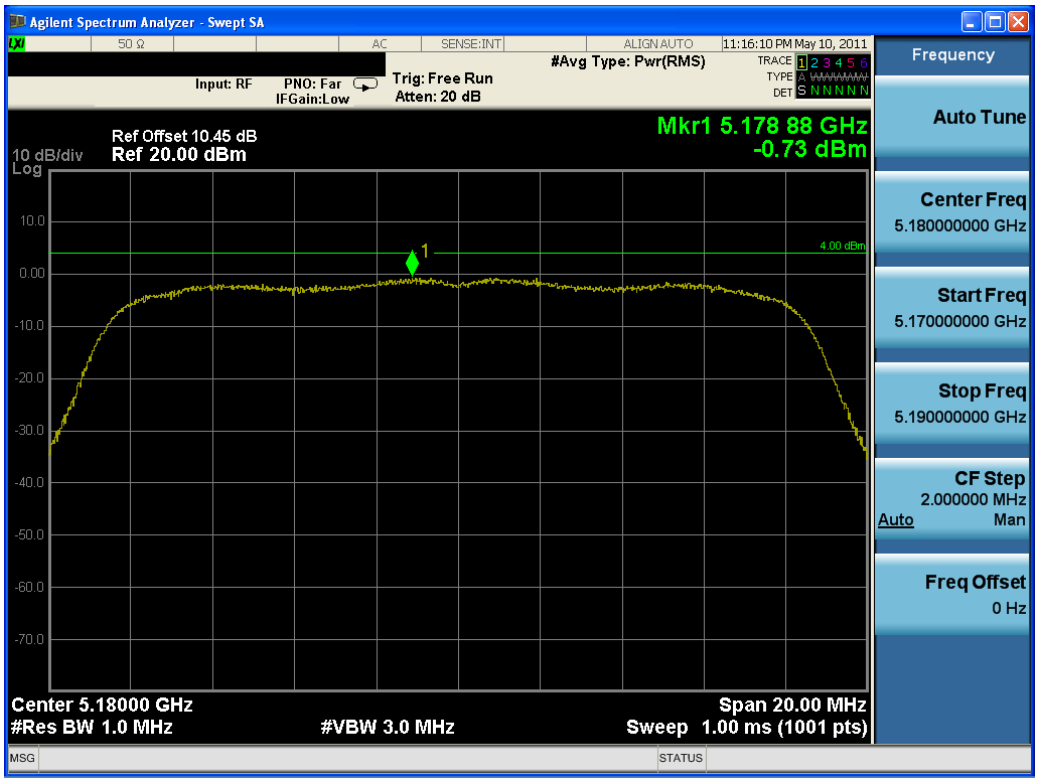
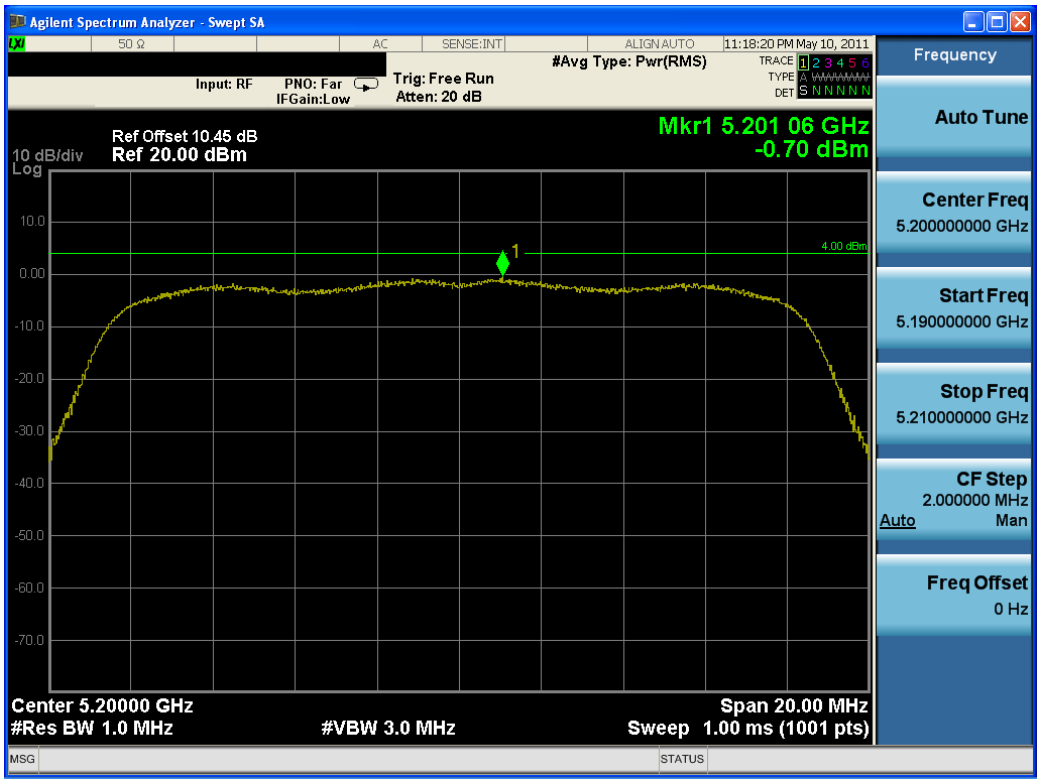


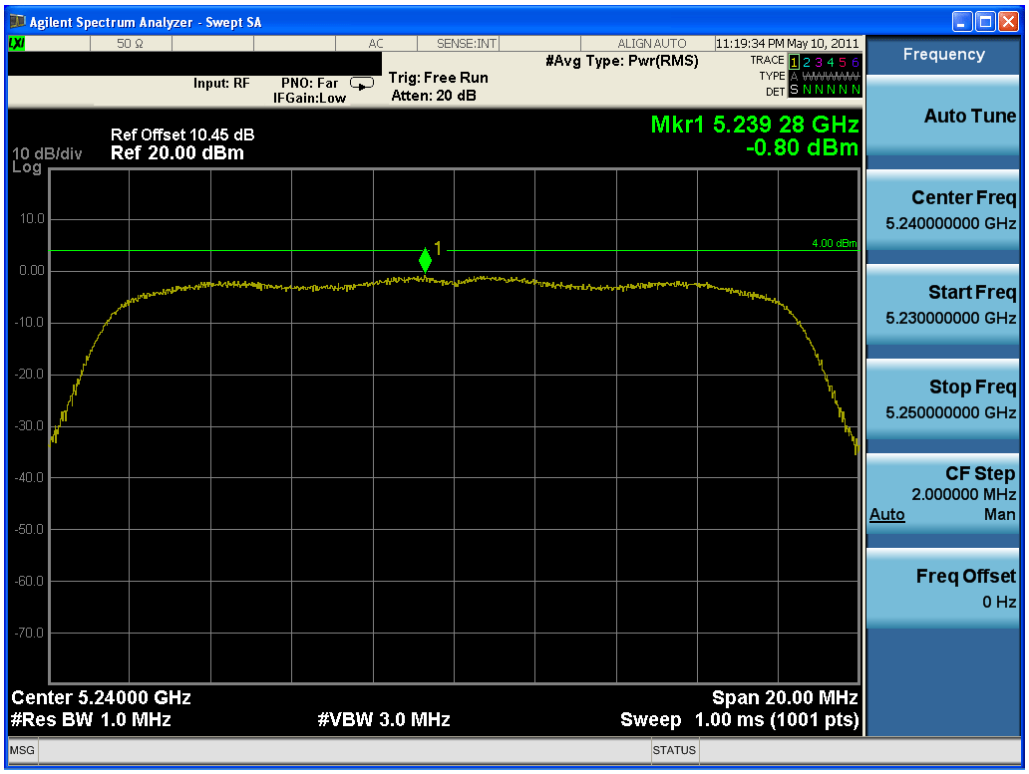
Figure 6-2. Test Instrument & Measurement Setup



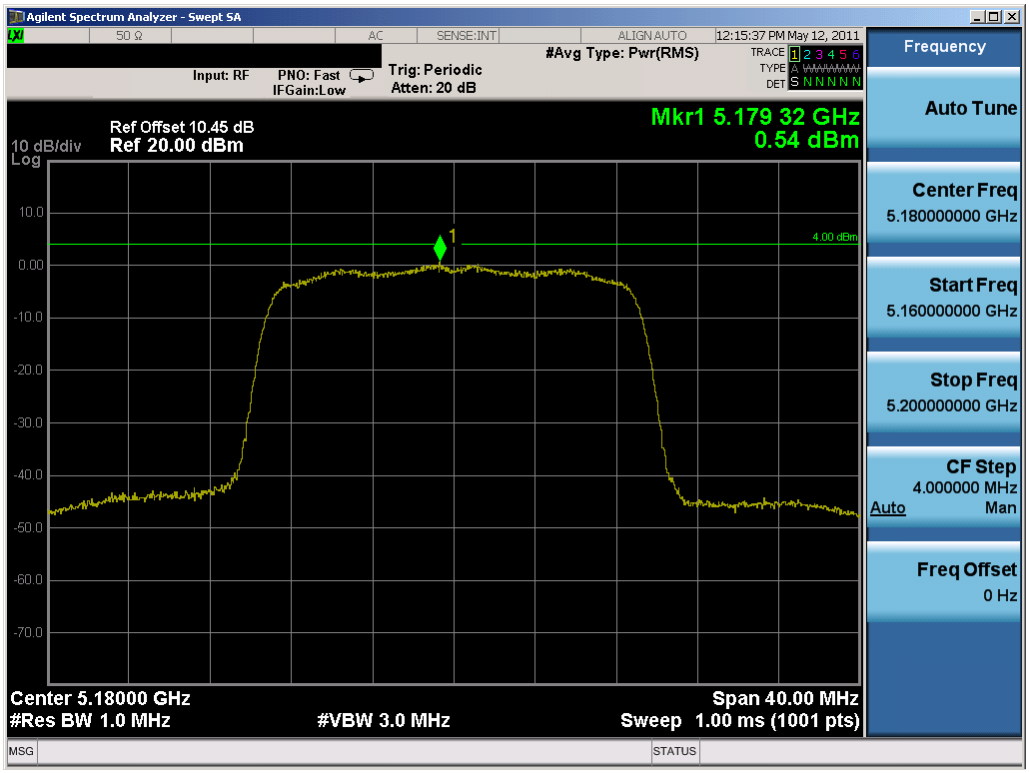
Plot 6-19. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 36)



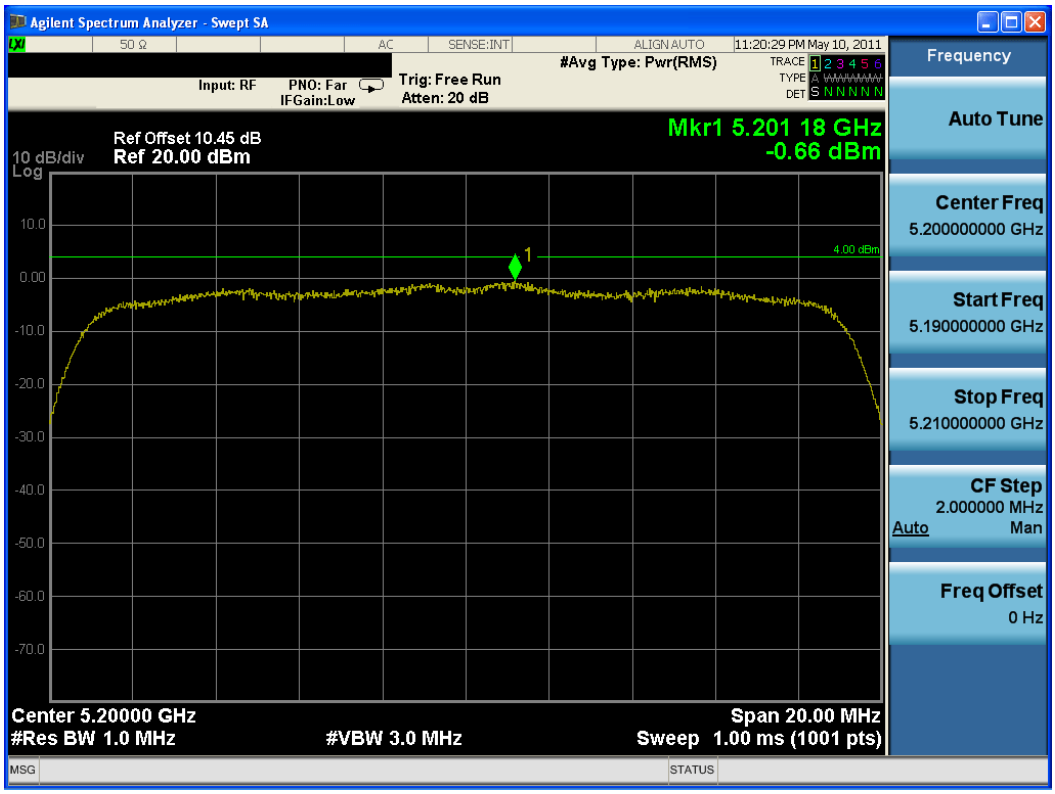
Plot 6-20. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 40)



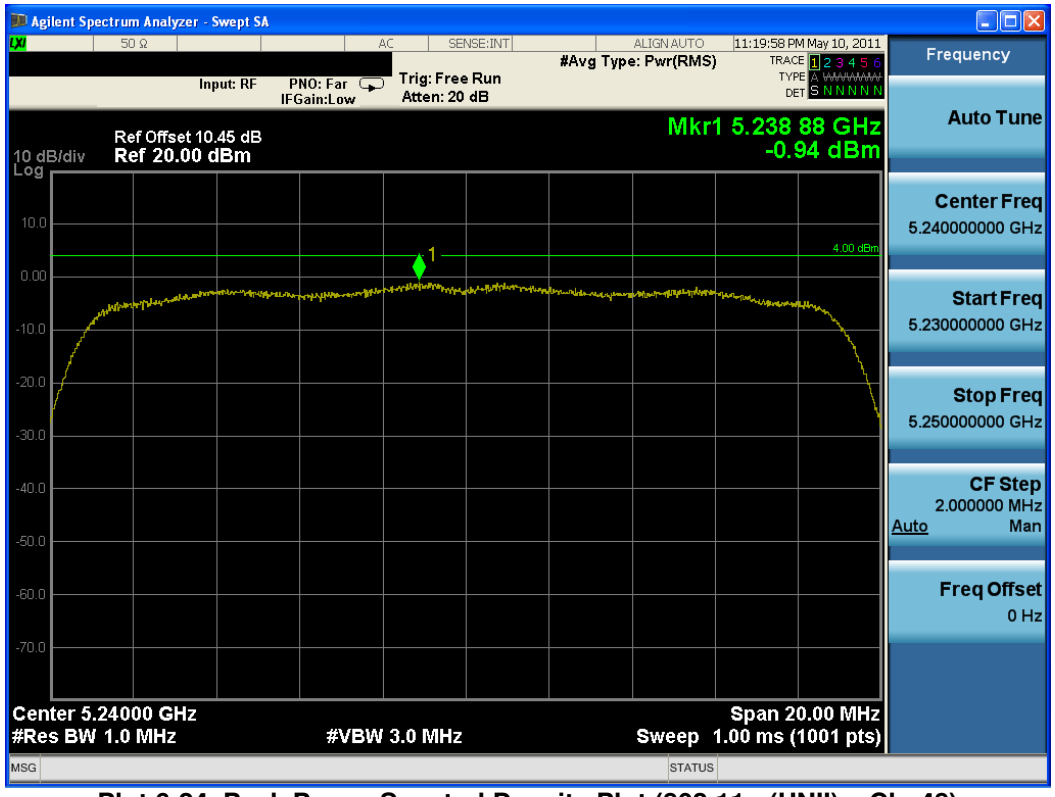
Plot 6-21. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 48)



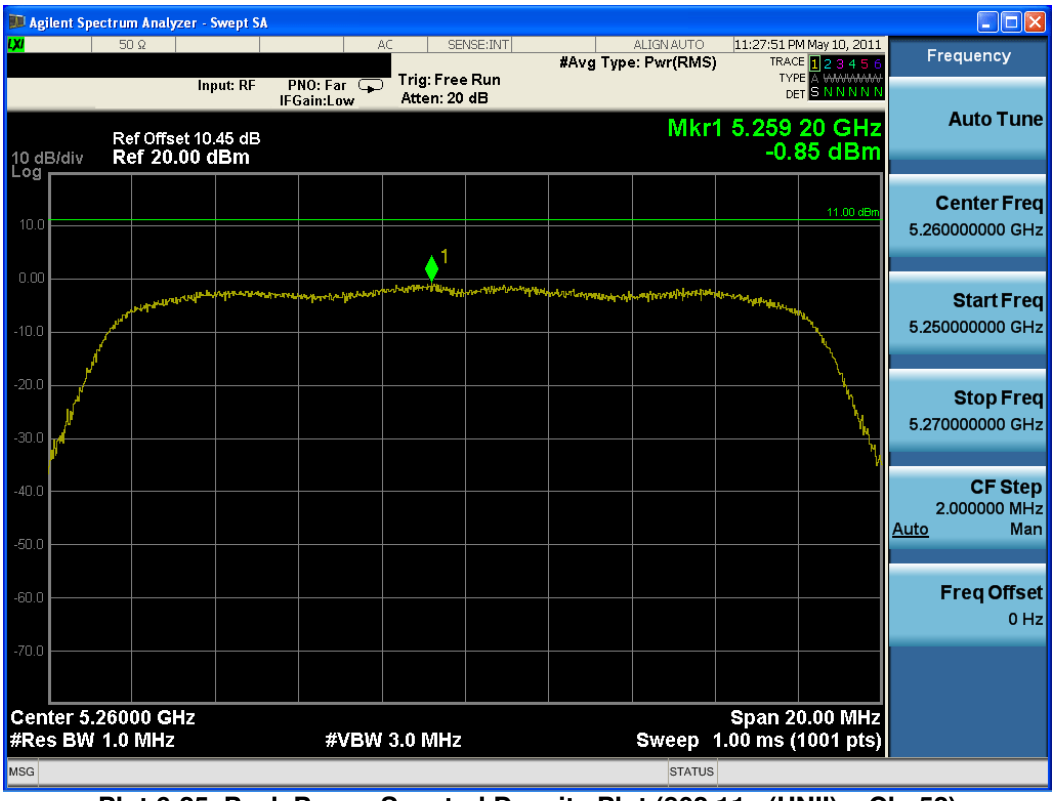
Plot 6-22. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 36)



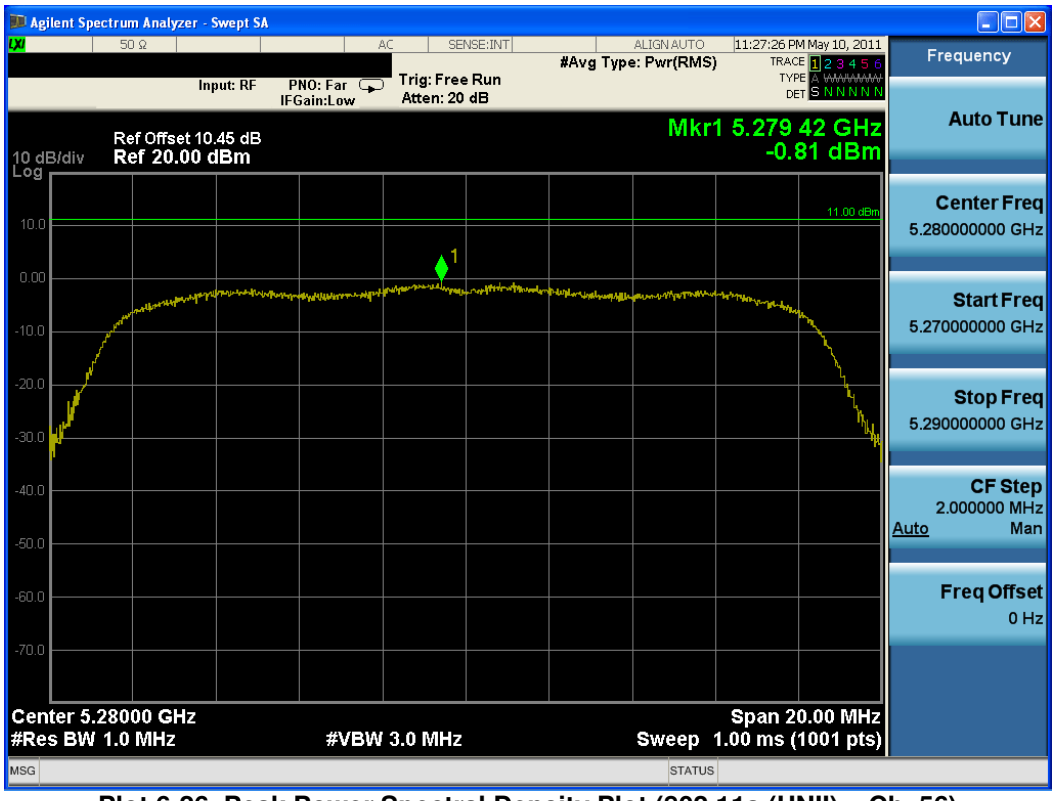
Plot 6-23. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 40)



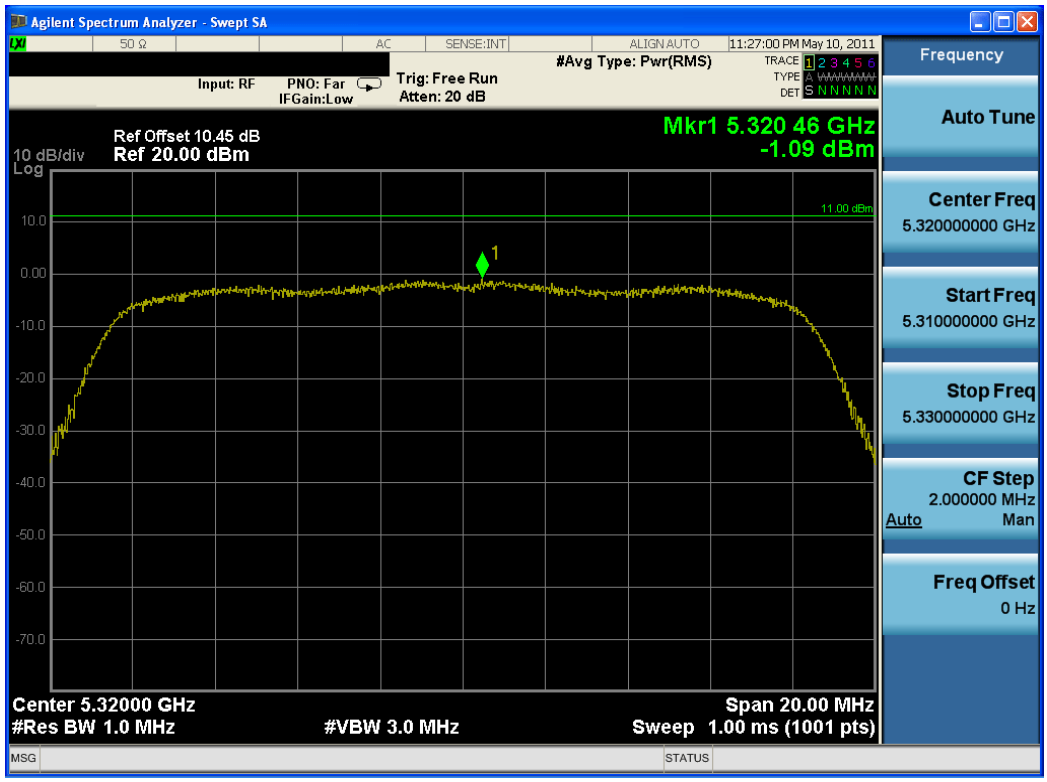
Plot 6-24. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 48)



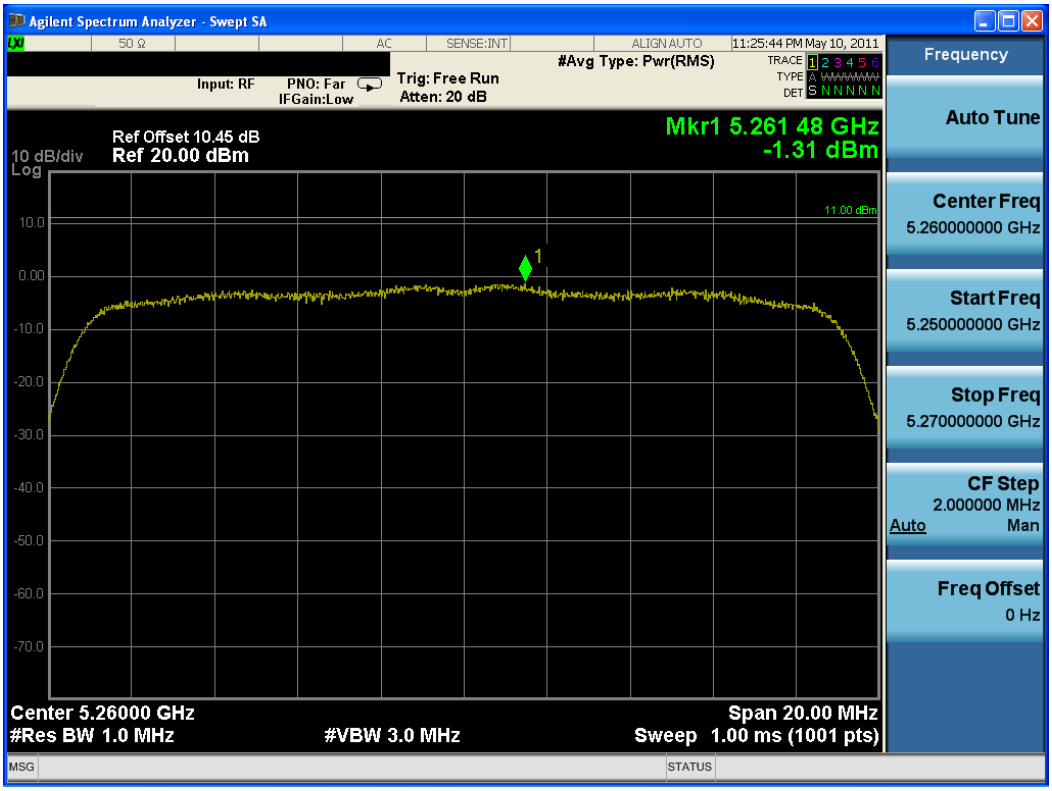
Plot 6-25. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 52)



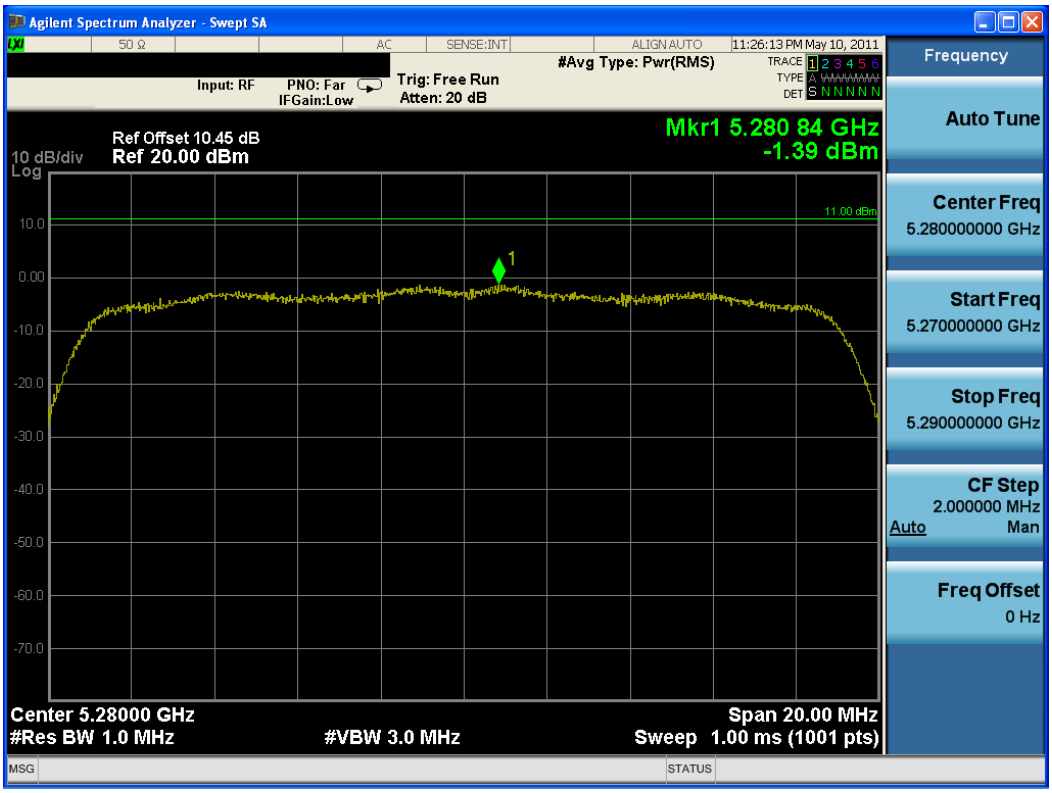
Plot 6-26. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 56)



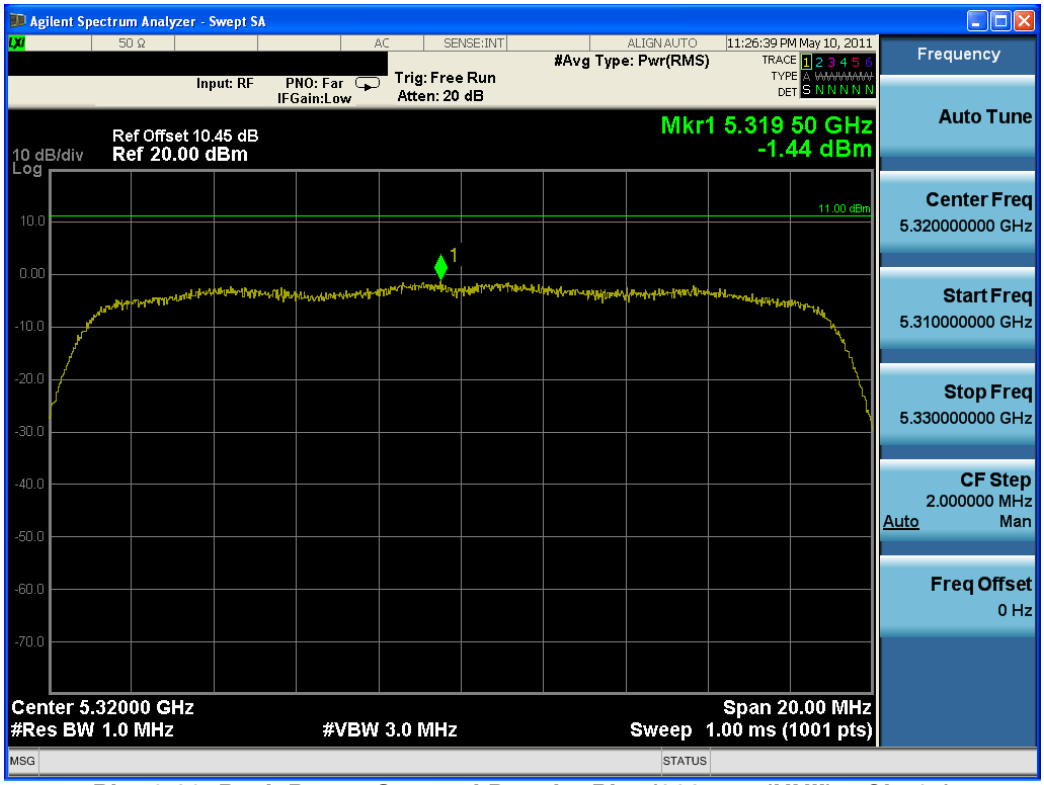
Plot 6-27. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 64)



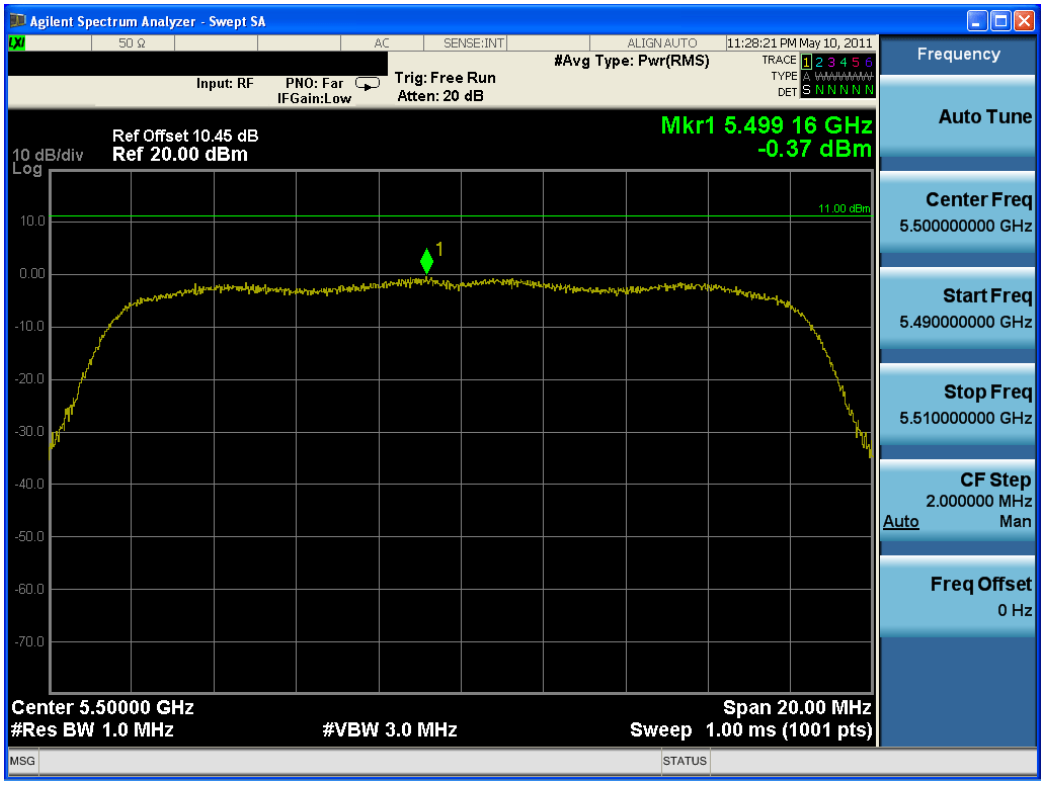
Plot 6-28. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 52)



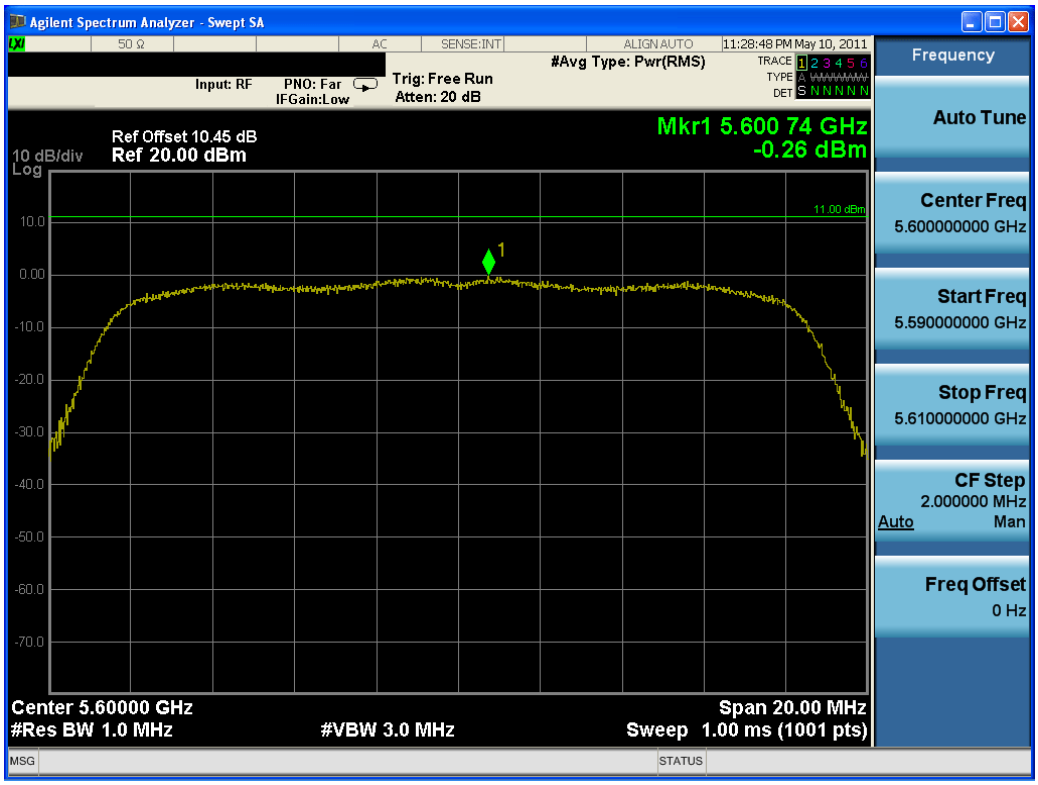
Plot 6-29. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 56)



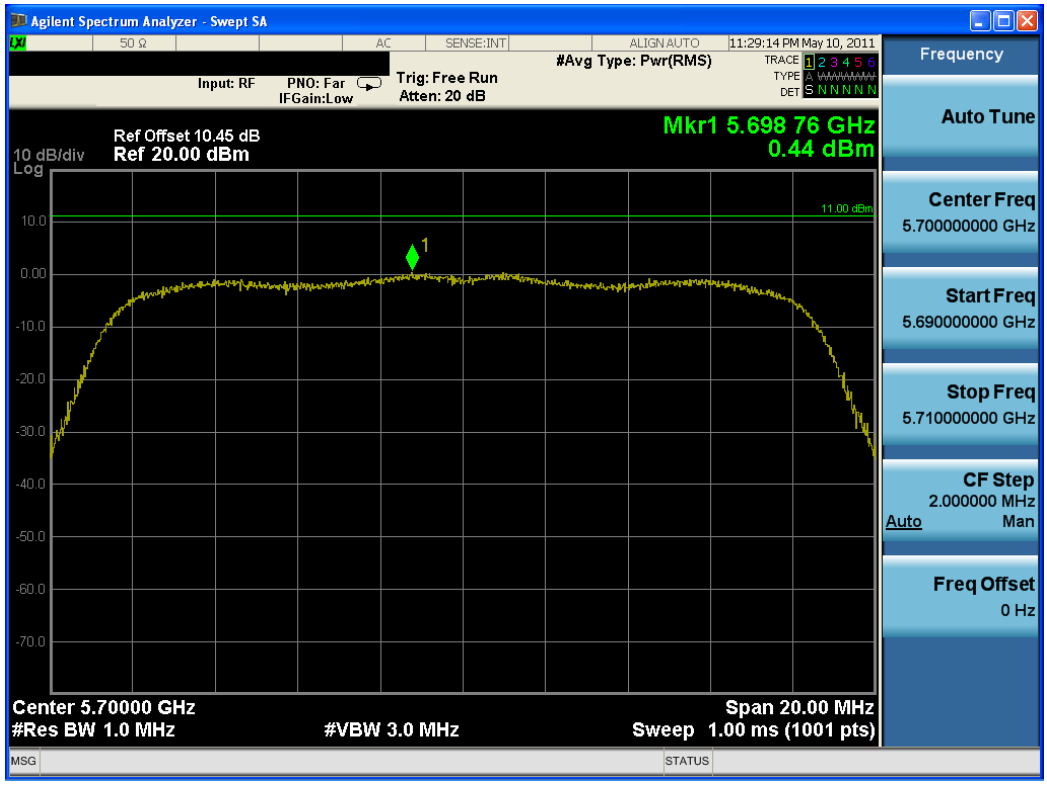
Plot 6-30. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 64)



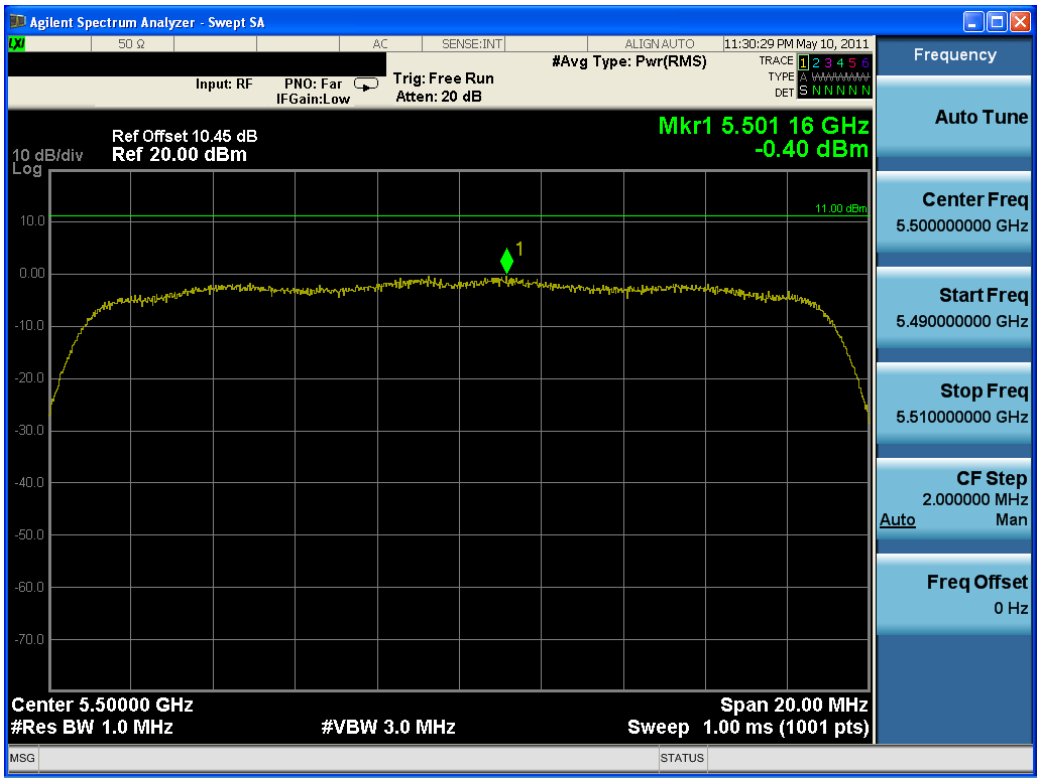
Plot 6-31. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 100)



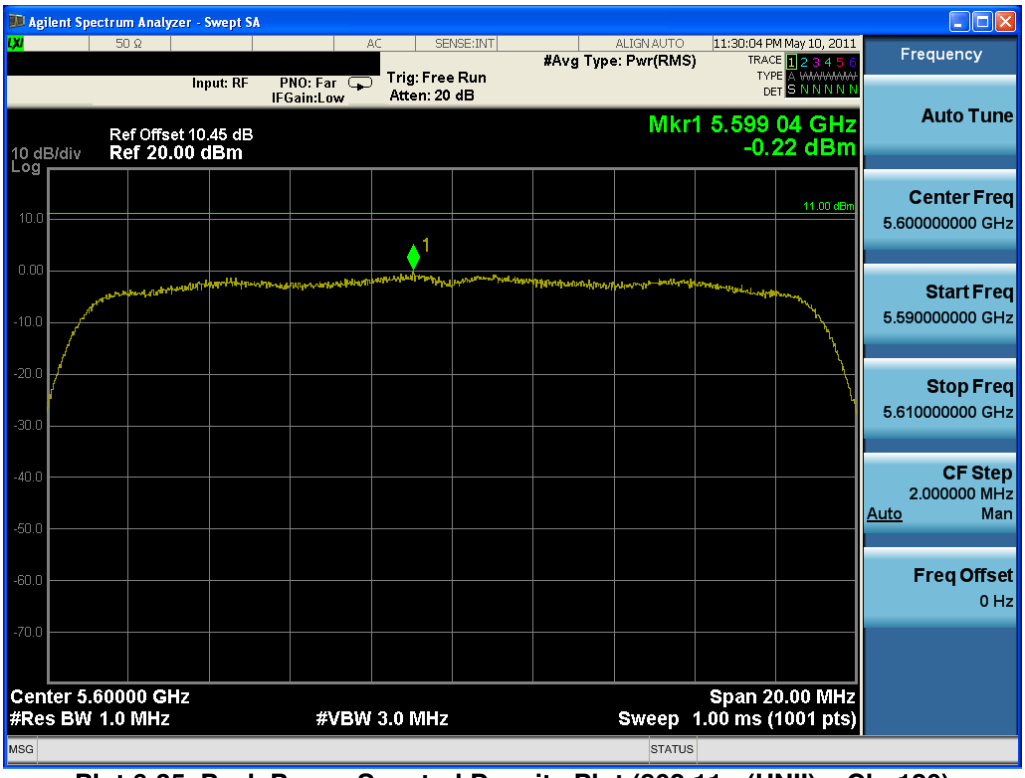
Plot 6-32. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 120)



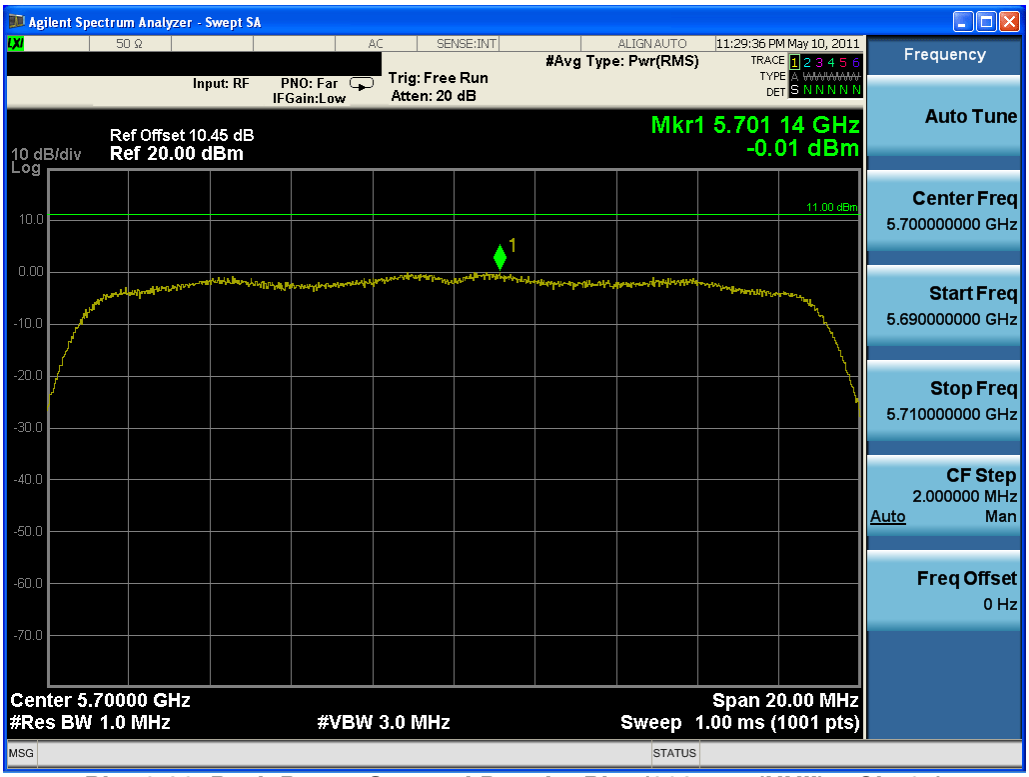
Plot 6-33. Peak Power Spectral Density Plot (802.11a (UNII) – Ch. 140)



Plot 6-34. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 100)



Plot 6-35. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 120)



Plot 6-36. Peak Power Spectral Density Plot (802.11n (UNII) – Ch. 64)

6.7 Peak Excursion Ratio

§15.407(a)(6)

The spectrum analyzer was connected to the antenna terminal while the EUT was operating in the continuous transmission mode at the appropriate center frequencies. ***The largest permissible difference between the modulation envelope (measured using a peak hold function) and the maximum conducted output power is 13 dBm/MHz.***

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]
Band I	5180	36	a	6	9.87	13.0	-3.13
	5200	40	a	6	10.03	13.0	-2.97
	5240	48	a	6	9.24	13.0	-3.76
	5180	36	n	6.5/7.2 (MCS0)	8.34	13.0	-4.66
	5200	40	n	6.5/7.2 (MCS0)	8.26	13.0	-4.74
	5240	48	n	6.5/7.2 (MCS0)	8.00	13.0	-5.00
Band II	5260	52	a	6	9.96	13.0	-3.04
	5280	56	a	6	9.97	13.0	-3.03
	5320	64	a	6	9.75	13.0	-3.25
	5260	52	n	6.5/7.2 (MCS0)	8.69	13.0	-4.31
	5280	56	n	6.5/7.2 (MCS0)	8.13	13.0	-4.87
	5320	64	n	6.5/7.2 (MCS0)	8.32	13.0	-4.68
Band III	5500	100	a	6	10.32	13.0	-2.68
	5600	120	a	6	10.37	13.0	-2.63
	5700	140	a	6	9.66	13.0	-3.34
	5500	100	n	6.5/7.2 (MCS0)	8.02	13.0	-4.98
	5600	120	n	6.5/7.2 (MCS0)	8.16	13.0	-4.84
	5700	140	n	6.5/7.2 (MCS0)	8.56	13.0	-4.44

Table 6-10. Conducted Peak Excursion Ratio Measurements

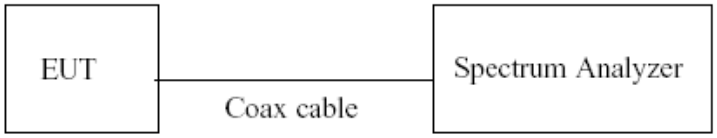
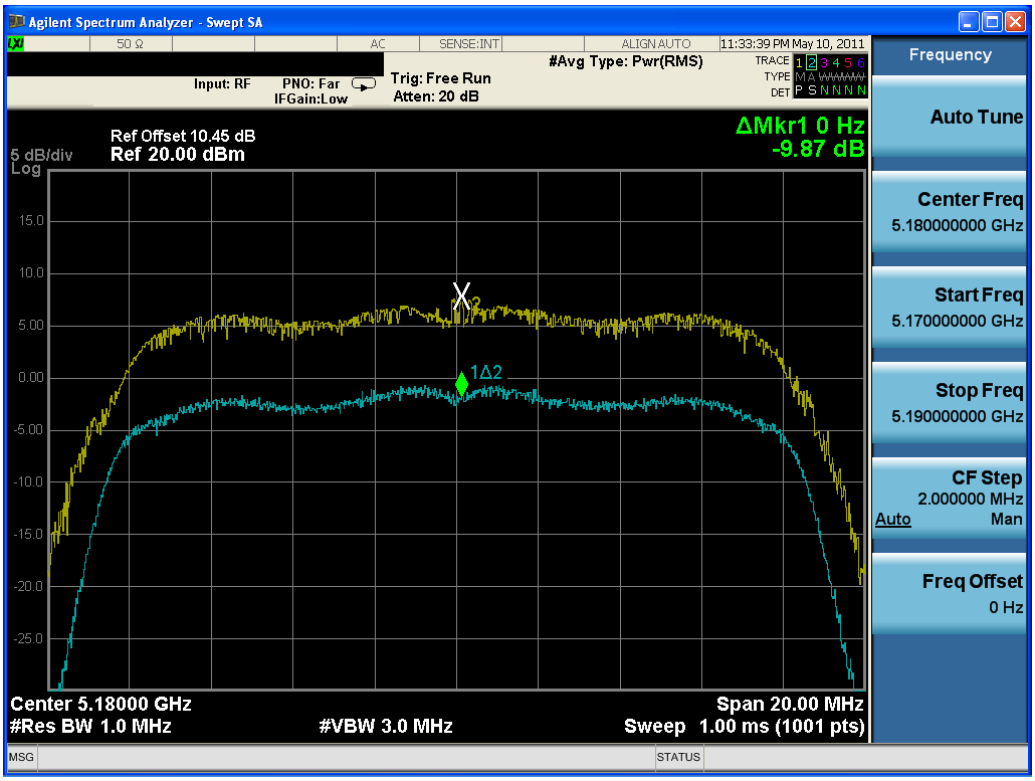
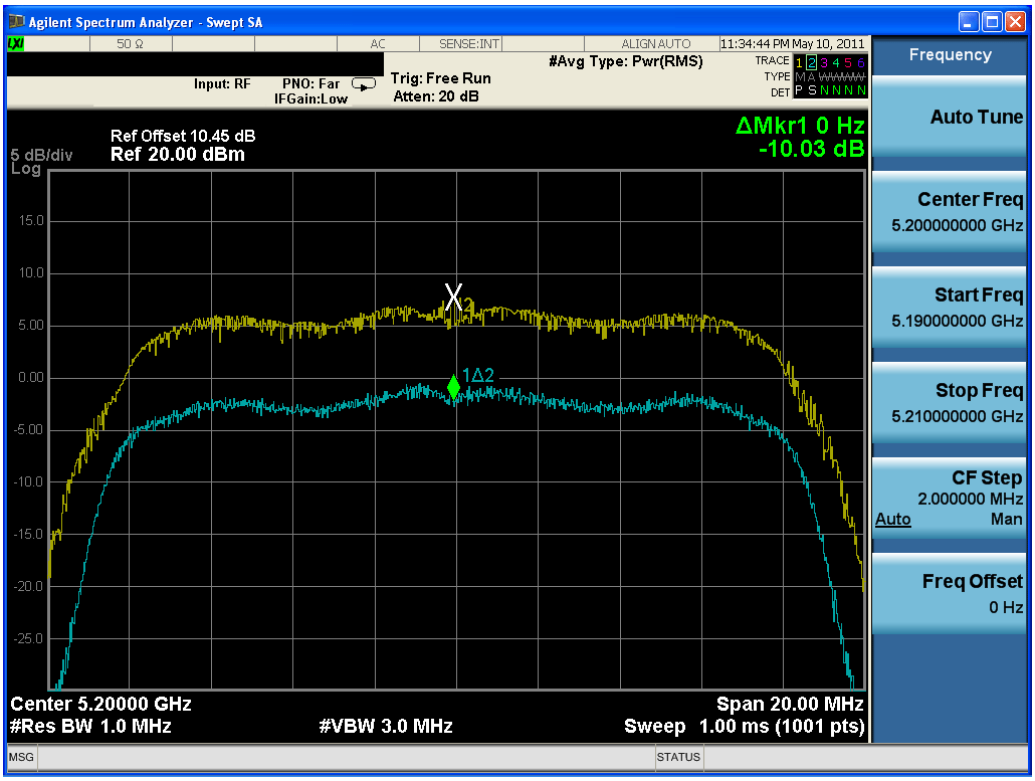


Figure 6-3. Test Instrument & Measurement Setup

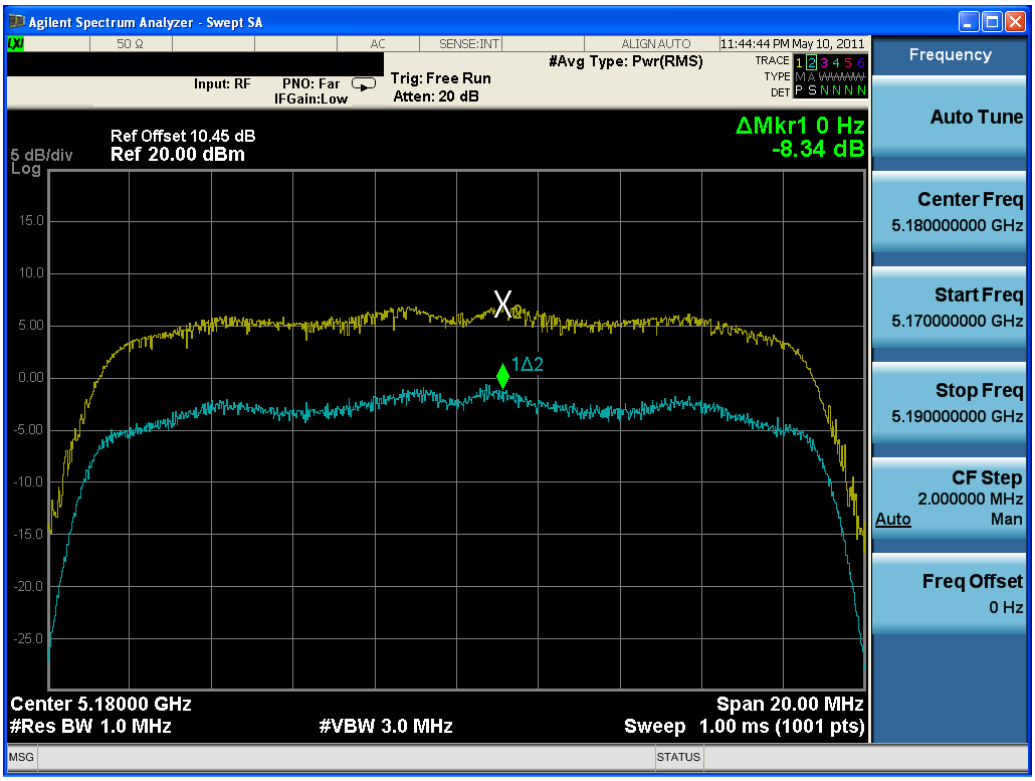


Plot 6-37. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 36)

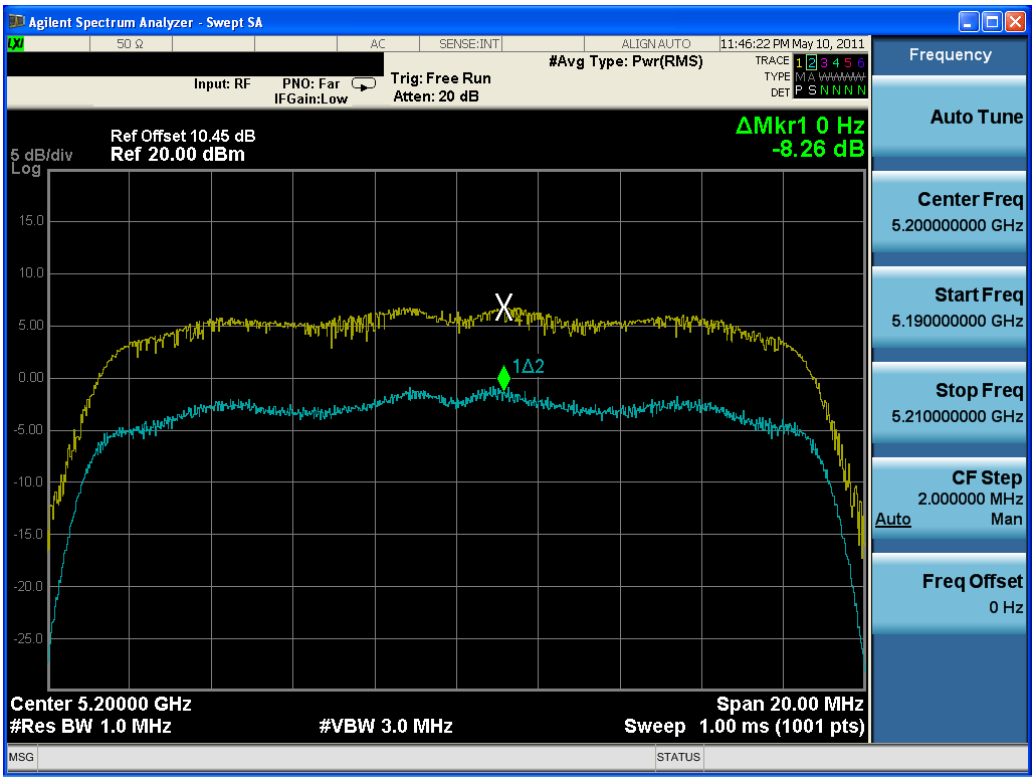


Plot 6-38. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 40)

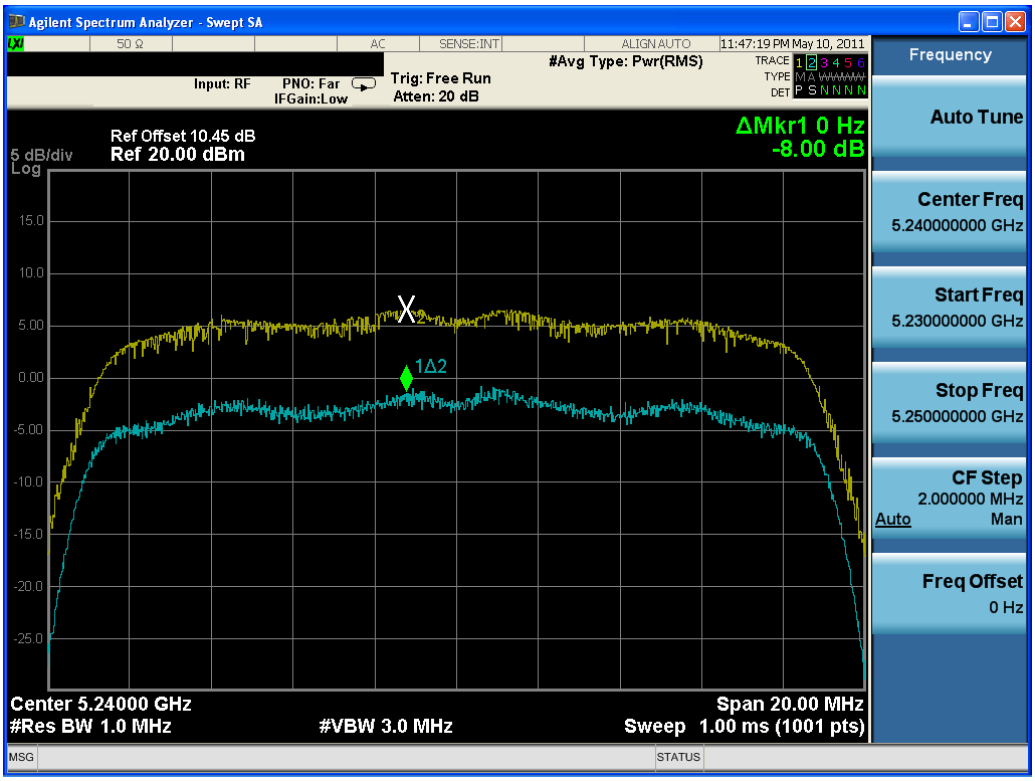
Plot 6-39. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 48)



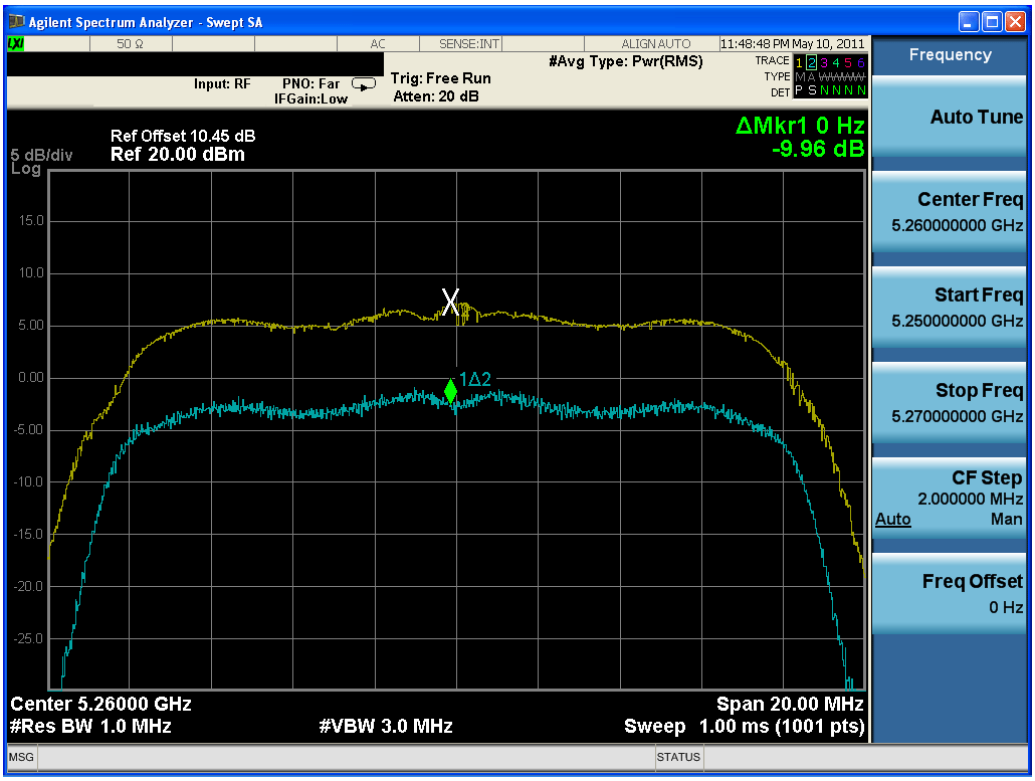
Plot 6-40. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 36)



Plot 6-41. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 40)

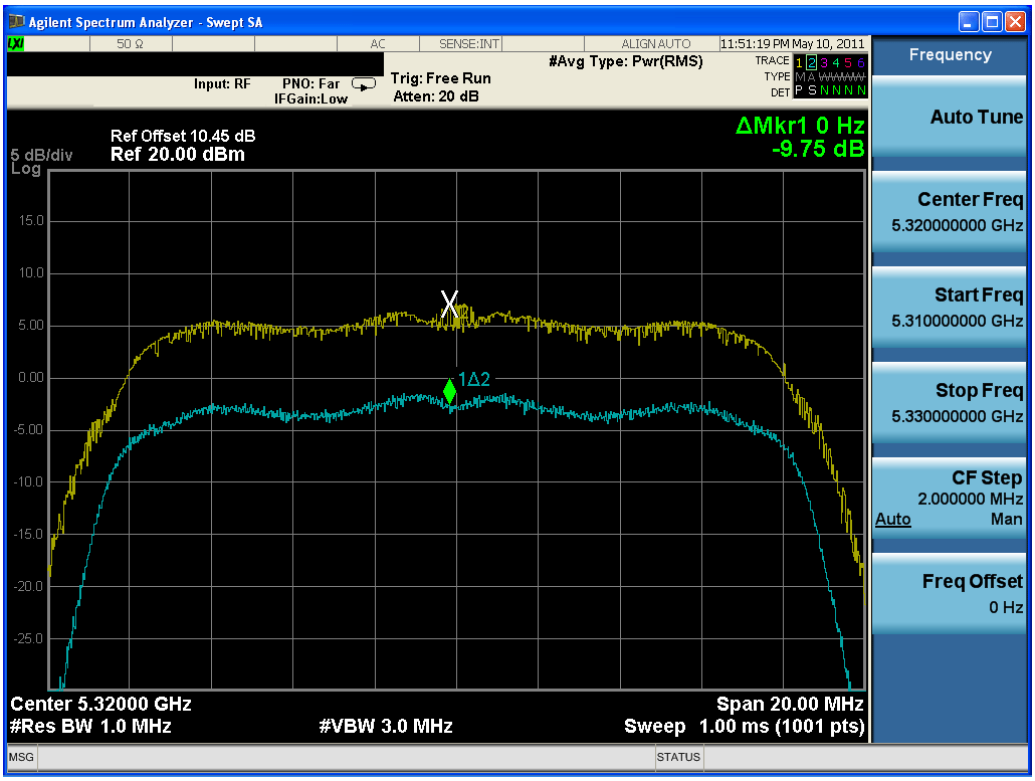


Plot 6-42. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 48)



Plot 6-43. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 52)

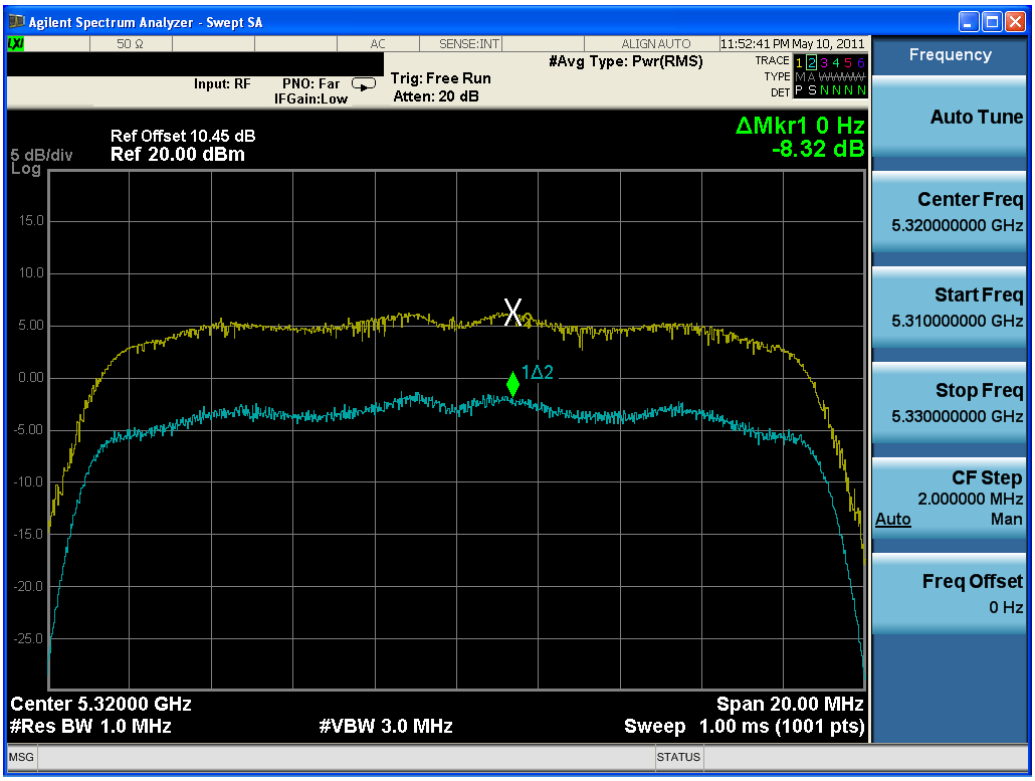
Plot 6-44. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 56)



Plot 6-45. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 64)

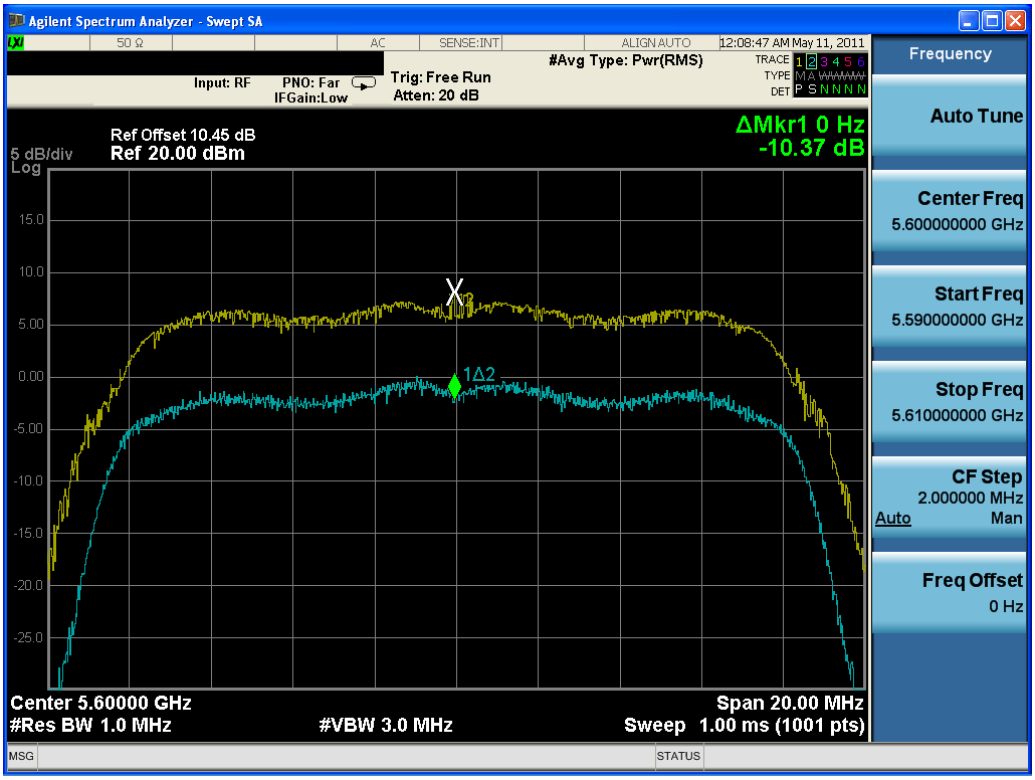
Plot 6-46. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 52)

Plot 6-47. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 56)

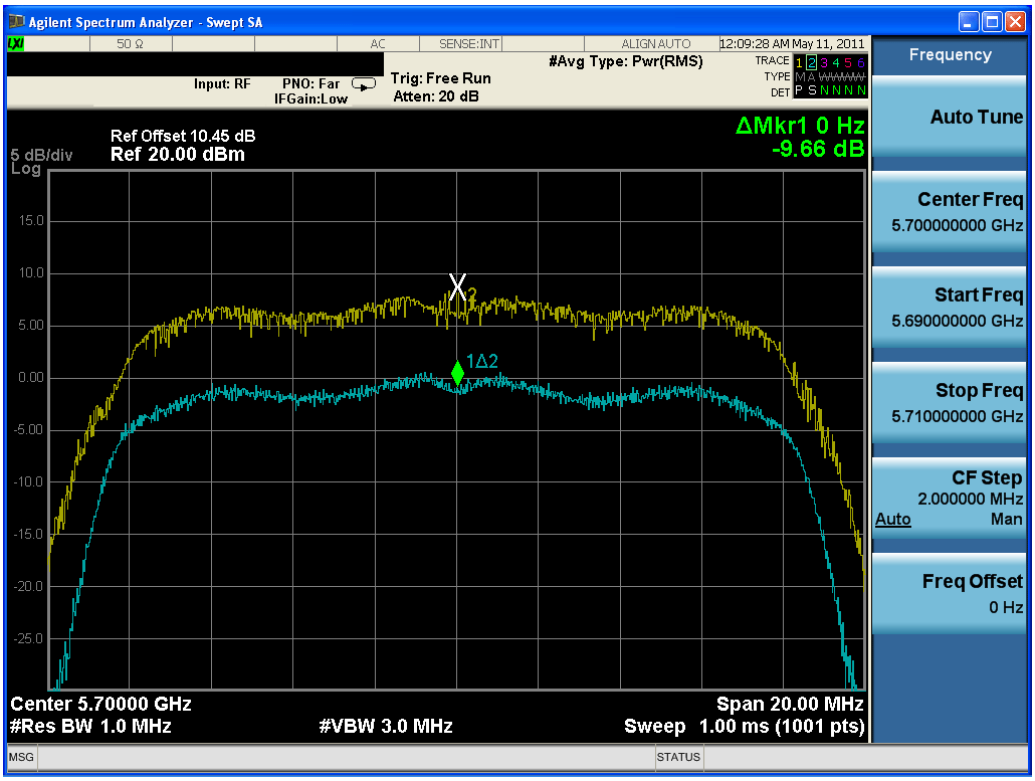


Plot 6-48. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 64)

Plot 6-49. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 100)

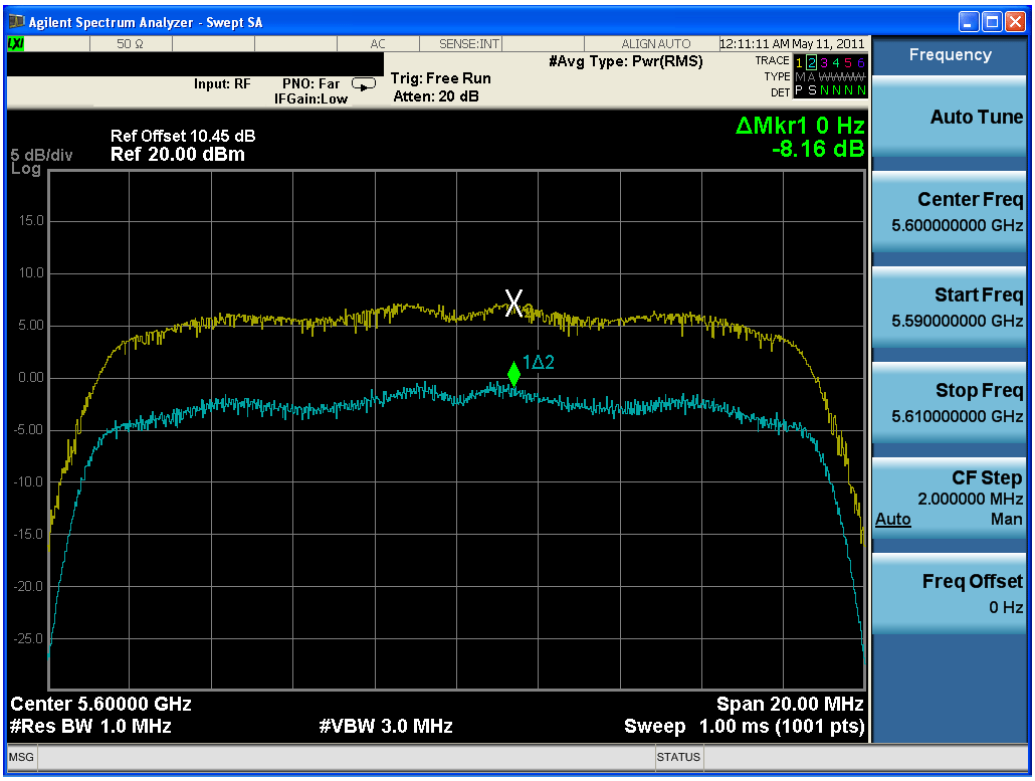


Plot 6-50. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 120)

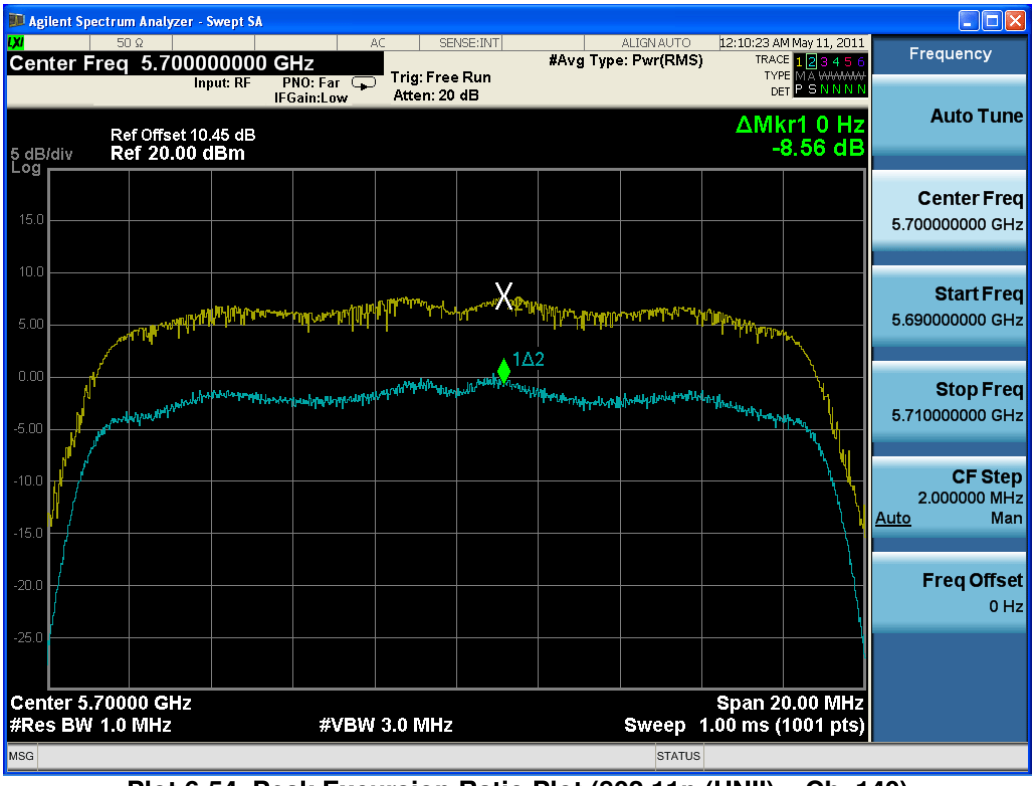


Plot 6-51. Peak Excursion Ratio Plot (802.11a (UNII) – Ch. 140)

Plot 6-52. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 100)



Plot 6-53. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 120)



Plot 6-54. Peak Excursion Ratio Plot (802.11n (UNII) – Ch. 140)

6.8 Frequency Stability

§15.407(g)

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

OPERATING FREQUENCY: 5,180,000,000 Hz

CHANNEL: 36

REFERENCE VOLTAGE: 5 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	5.00	+ 20 (Ref)	5,180,000,017	17	0.000000
100 %		- 30	5,179,999,977	-23	0.000000
100 %		- 20	5,180,000,010	10	0.000000
100 %		- 10	5,180,000,017	17	0.000000
100 %		0	5,179,999,982	-18	0.000000
100 %		+ 10	5,180,000,022	22	0.000000
100 %		+ 20	5,179,999,975	-25	0.000000
100 %		+ 30	5,179,999,984	-16	0.000000
100 %		+ 40	5,179,999,987	-13	0.000000
100 %		+ 50	5,179,999,981	-19	0.000000
115 %	5.75	+ 20	5,179,999,987	-13	0.000000
BATT. ENDPOINT	4.30	+ 20	5,179,999,985	-15	0.000000

Table 6-11. Frequency Stability Measurements for UNII Band Ch. 36

Frequency Stability (Cont'd)

§15.407(g)

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

OPERATING FREQUENCY: 5,260,000,000 Hz

CHANNEL: 52

REFERENCE VOLTAGE: 5 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	5.00	+ 20 (Ref)	5,259,999,986	-14	0.000000
100 %		- 30	5,259,999,990	-10	0.000000
100 %		- 20	5,260,000,020	20	0.000000
100 %		- 10	5,259,999,990	-10	0.000000
100 %		0	5,259,999,978	-22	0.000000
100 %		+ 10	5,260,000,015	15	0.000000
100 %		+ 20	5,259,999,980	-20	0.000000
100 %		+ 30	5,260,000,019	19	0.000000
100 %		+ 40	5,260,000,022	22	0.000000
100 %		+ 50	5,260,000,023	23	0.000000
115 %	5.75	+ 20	5,260,000,017	17	0.000000
BATT. ENDPOINT	4.30	+ 20	5,260,000,020	20	0.000000

Table 6-12. Frequency Stability Measurements for UNII Band Ch. 52

Frequency Stability (Cont'd)

§15.407(g)

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

OPERATING FREQUENCY: 5,600,000,000 Hz

CHANNEL: 120

REFERENCE VOLTAGE: 5 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	5.00	+ 20 (Ref)	5,599,999,980	-20	0.000000
100 %		- 30	5,599,999,984	-16	0.000000
100 %		- 20	5,599,999,986	-14	0.000000
100 %		- 10	5,600,000,018	18	0.000000
100 %		0	5,599,999,988	-12	0.000000
100 %		+ 10	5,600,000,020	20	0.000000
100 %		+ 20	5,600,000,011	11	0.000000
100 %		+ 30	5,600,000,017	17	0.000000
100 %		+ 40	5,599,999,990	-10	0.000000
100 %		+ 50	5,599,999,987	-13	0.000000
115 %	5.75	+ 20	5,599,999,977	-23	0.000000
BATT. ENDPOINT	4.30	+ 20	5,599,999,982	-18	0.000000

Table 6-13. Frequency Stability Measurements for UNII Band Ch. 120

6.9 Radiated Spurious Emission Measurements

§15.407(b)(1), (2), (3), (6), §15.205, §15.209

The EUT was tested from 9kHz and up to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHZ. Above 1 GHz, peak measurements were taken using RBW = VBW = 1MHz and linearly polarized horn antennas and average measurements were taken using RBW = VBW = 10Hz. All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-14 per Section 15.209.

Frequency	Field Strength [µV/m]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 6-14. Radiated Limits

Sample Calculation

- Field Strength Level $_{[dB\mu V/m]}$ = Analyzer Level $_{[dBm]}$ + 107 + AFCL $_{[dB]}$

Notes:

- AFCL = Antenna Factor $_{[dB]}$ + Cable Loss $_{[dB]}$

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5180MHz

Channel: 36

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10360.00	-98.52	Peak	V	47.47	-9.54	46.41	68.20	-21.79
*	15540.00	-135.00	Average	V	54.83	0.00	26.83	53.98	-27.15
*	15540.00	-125.00	Peak	V	54.83	0.00	36.83	73.98	-37.15
*	20720.00	-135.00	Average	V	58.41	0.00	30.41	53.98	-23.57
*	20720.00	-125.00	Peak	V	58.41	0.00	40.41	73.98	-33.57
	25900.00	-125.00	Peak	V	60.26	0.00	42.26	68.20	-25.94

Table 6-15. Radiated Measurements @ 1 meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5200MHz

Channel: 40

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10400.00	-99.14	Peak	V	47.50	-9.54	45.81	68.20	-22.39
*	15600.00	-135.00	Average	V	54.87	0.00	26.87	53.98	-27.11
*	15600.00	-125.00	Peak	V	54.87	0.00	36.87	73.98	-37.11
*	20800.00	-135.00	Average	V	58.47	0.00	30.47	53.98	-23.51
*	20800.00	-125.00	Peak	V	58.47	0.00	40.47	73.98	-33.51
	26000.00	-125.00	Peak	V	60.28	0.00	42.28	68.20	-25.92

Table 6-16. Radiated Measurements @ 1 meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5240MHz

Channel: 48

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10480.00	-100.07	Peak	V	47.55	-9.54	44.94	68.20	-23.26
*	15720.00	-135.00	Average	V	54.95	0.00	26.95	53.98	-27.03
*	15720.00	-125.00	Peak	V	54.95	0.00	36.95	73.98	-37.03
*	20960.00	-135.00	Average	V	58.60	0.00	30.60	53.98	-23.38
*	20960.00	-125.00	Peak	V	58.60	0.00	40.60	73.98	-33.38
	26200.00	-125.00	Peak	V	60.24	0.00	42.24	68.20	-25.96

Table 6-17. Radiated Measurements @ 1 meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5260MHz

Channel: 52

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10520.00	-98.45	Peak	V	47.72	-9.54	46.72	68.20	-21.48
*	15780.00	-135.00	Average	V	55.52	0.00	27.52	53.98	-26.45
*	15780.00	-125.00	Peak	V	55.52	0.00	37.52	73.98	-36.45
*	21040.00	-135.00	Average	V	58.65	0.00	30.65	53.98	-23.33
*	21040.00	-125.00	Peak	V	58.65	0.00	40.65	73.98	-33.33
	26300.00	-125.00	Peak	V	60.22	0.00	42.22	68.20	-25.98

Table 6-18. Radiated Measurements @ 1 meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5280MHz

Channel: 56

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
	10560.00	-99.63	Peak	V	47.78	-9.54	45.61	68.20	-22.59
*	15840.00	-135.00	Average	V	55.56	0.00	27.56	53.98	-26.42
*	15840.00	-125.00	Peak	V	55.56	0.00	37.56	73.98	-36.42
*	21120.00	-135.00	Average	V	58.70	0.00	30.70	53.98	-23.28
*	21120.00	-125.00	Peak	V	58.70	0.00	40.70	73.98	-33.28
	26400.00	-125.00	Peak	V	60.20	0.00	42.20	68.20	-26.00

Table 6-19. Radiated Measurements @ 1 meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5320MHz

Channel: 64

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	10640.00	-110.89	Average	V	47.91	-9.54	34.48	53.98	-19.50
*	10640.00	-100.46	Peak	V	47.91	-9.54	44.91	73.98	-29.07
*	15960.00	-135.00	Average	V	55.64	0.00	27.64	53.98	-26.34
*	15960.00	-125.00	Peak	V	55.64	0.00	37.64	73.98	-36.34
*	21280.00	-135.00	Average	V	58.80	0.00	30.80	53.98	-23.18
*	21280.00	-125.00	Peak	V	58.80	0.00	40.80	73.98	-33.18

Table 6-20. Radiated Measurements @ 1 meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode:	802.11a
Transfer Rate:	6 Mbps
Distance of Measurements:	1 Meter
Operating Frequency:	5500MHz
Channel:	100

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11000.00	-110.61	Average	V	48.47	-9.54	35.32	53.98	-18.66
*	11000.00	-99.62	Peak	V	48.47	-9.54	46.31	73.98	-27.67
	16500.00	-125.00	Peak	V	55.64	0.00	37.64	68.20	-30.56
	22000.00	-125.00	Peak	V	58.82	0.00	40.82	68.20	-27.38
	27500.00	-125.00	Peak	V	60.47	0.00	42.47	68.20	-25.73

Table 6-21. Radiated Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5600MHz

Channel: 120

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11200.00	-110.75	Average	V	48.92	-9.54	35.63	53.98	-18.35
*	11200.00	-99.67	Peak	V	48.92	-9.54	46.71	73.98	-27.27
	16800.00	-125.00	Peak	V	56.87	0.00	38.87	68.20	-29.33
*	22400.00	-135.00	Average	V	59.06	0.00	31.06	53.98	-22.92
*	22400.00	-125.00	Peak	V	59.06	0.00	41.06	73.98	-32.92
	28000.00	-125.00	Peak	V	60.46	0.00	42.46	68.20	-25.74

Table 6-22. Radiated Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1), (2), (3), §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5700MHz

Channel: 140

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
*	11400.00	-111.09	Average	V	49.36	-9.54	35.73	53.98	-18.25
*	11400.00	-100.12	Peak	V	49.36	-9.54	46.70	73.98	-27.28
	17100.00	-125.00	Peak	V	56.84	0.00	38.84	68.20	-29.36
*	22800.00	-135.00	Average	V	59.29	0.00	31.29	53.98	-22.69
*	22800.00	-125.00	Peak	V	59.29	0.00	41.29	73.98	-32.69
	28500.00	-125.00	Peak	V	60.26	0.00	42.26	68.20	-25.94

Table 6-23. Radiated Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-14.

4. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

5. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

6. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

7. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

8. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

9. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

6.10 Radiated Band Edge Measurements

§15.407(b)(3), (5) §15.205 & §15.209

Mode:	802.11a
Transfer Rate:	6 Mbps
Distance of Measurements:	1 Meter
Operating Frequency:	5500MHz
Channel:	100

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
5469.00	-90.06	Peak	H	44.00	-9.54	51.40	68.20	-16.80

Table 6-24. Radiated Band Edge Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dBµ/m @ 3m)

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

6. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

8. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Band Edge Measurements (Cont'd)

§15.407(b)(3), (5) §15.205 & §15.209

Mode:	802.11a
Transfer Rate:	6 Mbps
Distance of Measurements:	1 Meter
Operating Frequency:	5700MHz
Channel:	140

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
5725.00	-86.28	Peak	H	45.17	-9.54	56.34	68.20	-11.86

Table 6-25. Radiated Band Edge Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dBµ/m @ 3m)

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

6. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

8. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

6.11 Radiated Restricted Band Edge Measurements

§15.407(b)(1), (2), (3), (5), (6) §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5180MHz

Channel: 36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
5020.00	-96.45	Average	H	42.03	-9.54	43.04	53.98	-10.94
5020.00	-85.22	Peak	H	42.03	-9.54	54.27	73.98	-19.71
5070.00	-101.30	Average	H	42.26	-9.54	38.41	53.98	-15.57
5070.00	-92.48	Peak	H	42.26	-9.54	47.23	73.98	-26.75
5150.00	-100.89	Average	H	42.62	-9.54	39.19	53.98	-14.79
5150.00	-88.83	Peak	H	42.62	-9.54	51.25	73.98	-22.73

Table 6-26. Radiated Restricted Band Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

6. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

8. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Restricted Band Edge Measurements (Cont'd)

§15.407(b)(1), (2), (3), (5), (6) §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5320MHz

Channel: 64

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
5351.00	-99.90	Average	H	43.50	-9.54	41.06	53.98	-12.92
5351.00	-88.71	Peak	H	43.50	-9.54	52.25	73.98	-21.73
5368.00	-101.59	Average	H	43.58	-9.54	39.44	53.98	-14.54
5368.00	-88.93	Peak	H	43.58	-9.54	52.10	73.98	-21.88
5432.00	-99.45	Average	H	43.85	-9.54	41.86	53.98	-12.12
5432.00	-89.33	Peak	H	43.85	-9.54	51.98	73.98	-22.00

Table 6-27. Radiated Restricted Band Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

6. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

8. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

Radiated Restricted Band Edge Measurements (Cont'd)

§15.407(b)(1), (2), (3), (5), (6) §15.205 & §15.209

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5500MHz

Channel: 100

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
5428.00	-107.20	Average	H	43.83	-9.54	34.09	53.98	-19.89
5428.00	-95.63	Peak	H	43.83	-9.54	45.66	73.98	-28.32
5444.00	-106.81	Average	H	43.90	-9.54	34.55	53.98	-19.43
5444.00	-95.61	Peak	H	43.90	-9.54	45.75	73.98	-28.23
5455.00	-106.14	Average	H	43.95	-9.54	35.26	53.98	-18.72
5455.00	-94.32	Peak	H	43.95	-9.54	47.08	73.98	-26.90

Table 6-28. Radiated Restricted Band Measurements at 1-meter

NOTES:

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.

2. Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.

3. Peak Measurements > 1GHz using RBW = VBW = 1MHz.

4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.

5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

6. The spectrum is measured from 9kHz to the 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.

7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.

8. Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

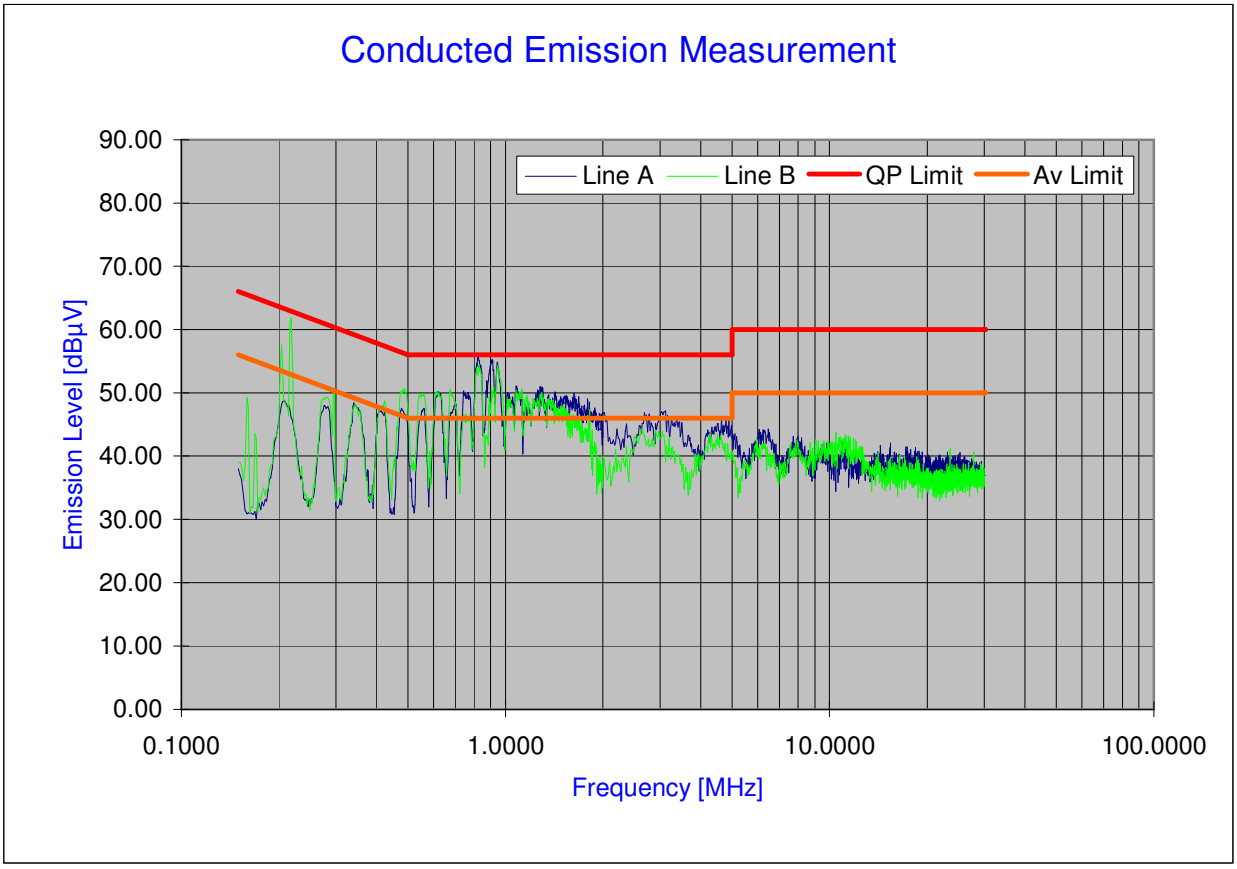
6.12 Line-Conducted Test Data

§15.207

PCTEST Engineering Laboratory Inc.

Company : Samsung Electronics, Co. Ltd.
Model Number : GT-P7310
FCC ID Code : A3LGTP7310
Standard : FCC Part 15C, 15.207

Power Source : AC120V/60Hz
Tested Date : 05/12/2011
Note : Tested with 802.11a UNII Band 1 ON



Ver.1.1 ©PCTEST 2006.08

Plot 6-55. Line Conducted Plot with 802.11a (UNII-I Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

Line-Conducted Test Data (Cont'd)

§15.207

No.	Line	Frequency [MHz]	Factor [dB]	QP [dBµV]	Limit [dBµV]	Margin [dB]	Average [dBµV]	Limit [dBµV]	Margin [dB]
1	A	0.615	6.99	47.02	56.00	-8.98	35.90	46.00	-10.10
2	A	0.745	7.01	46.08	56.00	-9.92	32.14	46.00	-13.86
3	A	0.826	7.02	52.50	56.00	-3.50	34.26	46.00	-11.74
4	A	0.906	7.03	51.17	56.00	-4.83	39.94	46.00	-6.06
5	A	0.945	7.03	51.35	56.00	-4.65	34.10	46.00	-11.90
6	A	1.083	7.05	47.98	56.00	-8.02	32.62	46.00	-13.38
7	A	1.256	7.08	46.31	56.00	-9.69	30.90	46.00	-15.10
8	A	1.287	7.08	47.16	56.00	-8.84	31.86	46.00	-14.14
9	A	1.317	7.08	47.09	56.00	-8.91	31.85	46.00	-14.15
10	A	1.422	7.10	45.51	56.00	-10.49	29.36	46.00	-16.64
11	B	0.206	6.87	45.46	63.36	-17.90	35.54	53.36	-17.82
12	B	0.217	6.87	44.80	63.31	-18.51	34.77	53.31	-18.54
13	B	0.476	6.96	47.24	56.42	-9.18	34.45	46.42	-11.97
14	B	0.610	6.99	46.77	56.00	-9.23	33.29	46.00	-12.71
15	B	0.679	7.00	47.36	56.00	-8.64	30.24	46.00	-15.76
16	B	0.826	7.02	51.24	56.00	-4.76	33.25	46.00	-12.75
17	B	0.915	7.03	47.27	56.00	-8.73	32.11	46.00	-13.89
18	B	0.948	7.03	51.42	56.00	-4.58	33.39	46.00	-12.61
19	B	1.099	7.05	46.64	56.00	-9.36	28.84	46.00	-17.16
20	B	1.112	7.06	46.61	56.00	-9.39	28.72	46.00	-17.28

Table 6-29. Line Conducted Data with 802.11a (UNII-I Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

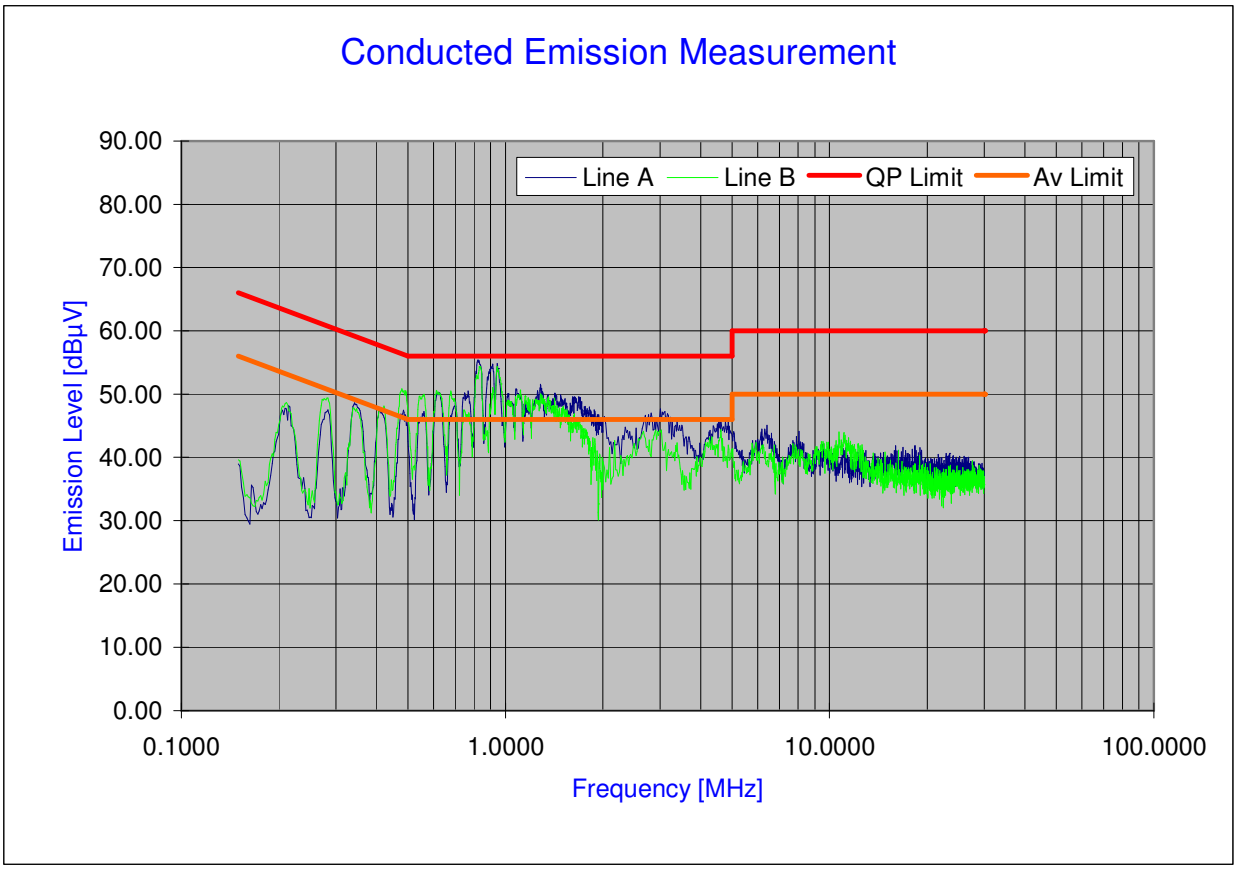
Line-Conducted Test Data (Cont'd)

§15.207

PCTEST Engineering Laboratory Inc.

Company : Samsung Electronics, Co. Ltd.
Model Number : GT-P7310
FCC ID Code : A3LGTP7310
Standard : FCC Part 15C, 15.207

Power Source : AC120V/60Hz
Tested Date : 05/12/2011
Note : Tested with 802.11a UNII Band 2 ON



Ver.1.1 ©PCTEST 2006.08

Plot 6-56. Line Conducted Plot with 802.11a (UNII-II Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

Line-Conducted Test Data (Cont'd)

§15.207

No.	Line	Frequency [MHz]	Factor [dB]	QP [dBµV]	Limit [dBµV]	Margin [dB]	Average [dBµV]	Limit [dBµV]	Margin [dB]
1	A	0.615	6.99	47.14	56.00	-8.86	36.51	46.00	-9.49
2	A	0.765	7.01	46.32	56.00	-9.68	34.38	46.00	-11.62
3	A	0.823	7.02	52.24	56.00	-3.76	34.81	46.00	-11.19
4	A	0.906	7.03	51.26	56.00	-4.74	39.24	46.00	-6.76
5	A	0.945	7.03	51.57	56.00	-4.43	33.72	46.00	-12.28
6	A	1.020	7.04	45.80	56.00	-10.20	32.94	46.00	-13.06
7	A	1.083	7.05	48.14	56.00	-7.86	32.40	46.00	-13.60
8	A	1.287	7.08	47.11	56.00	-8.89	31.59	46.00	-14.41
9	A	1.416	7.10	45.55	56.00	-10.45	30.74	46.00	-15.26
10	A	1.617	7.12	45.36	56.00	-10.64	31.68	46.00	-14.32
11	B	0.475	6.96	47.53	56.42	-8.89	34.35	46.42	-12.07
12	B	0.546	6.98	47.52	56.00	-8.48	31.56	46.00	-14.44
13	B	0.610	6.99	46.94	56.00	-9.06	34.39	46.00	-11.61
14	B	0.680	7.00	47.92	56.00	-8.08	30.26	46.00	-15.74
15	B	0.826	7.02	51.45	56.00	-4.55	33.89	46.00	-12.11
16	B	0.915	7.03	46.99	56.00	-9.01	32.85	46.00	-13.15
17	B	0.948	7.03	51.48	56.00	-4.52	33.44	46.00	-12.56
18	B	1.111	7.06	46.67	56.00	-9.33	29.11	46.00	-16.89
19	B	1.152	7.06	44.55	56.00	-11.45	26.10	46.00	-19.90
20	B	1.287	7.08	45.84	56.00	-10.16	29.55	46.00	-16.45

Table 6-30. Line Conducted Data with 802.11a (UNII-II Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

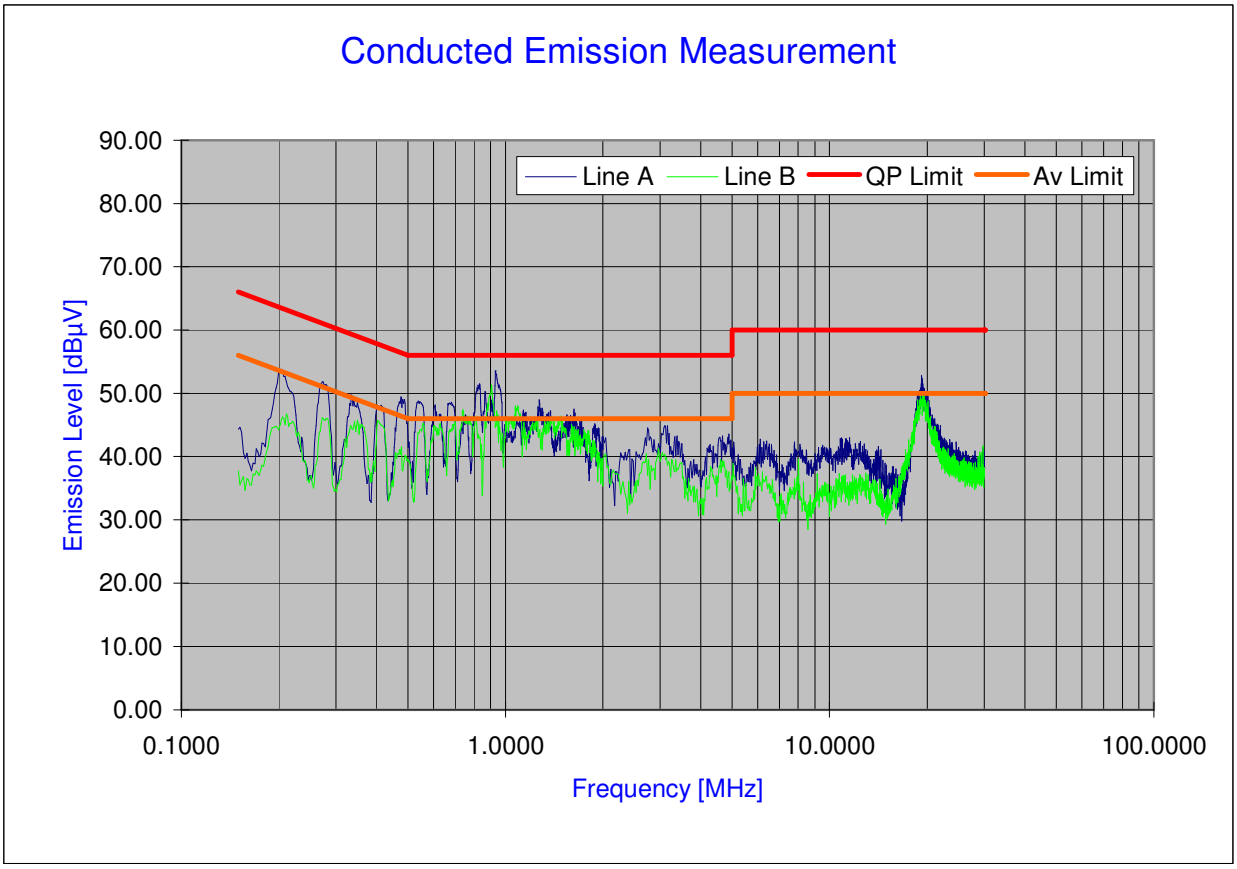
Line-Conducted Test Data (Cont'd)

§15.207

PCTEST Engineering Laboratory Inc.

Company : Samsung Electronics, Co. Ltd.
Model Number : GT-P7310
FCC ID Code : A3LGTP7310
Standard : FCC Part 15C, 15.207

Power Source : AC120V/60Hz
Tested Date : 05/12/2011
Note : Tested with 802.11a UNII Band 3 ON



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Plot 6-57. Line Conducted Plot with 802.11a (UNII-III Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

Line-Conducted Test Data (Cont'd)

§15.207

No.	Line	Frequency [MHz]	Factor [dB]	QP [dBµV]	Limit [dBµV]	Margin [dB]	Average [dBµV]	Limit [dBµV]	Margin [dB]
1	A	0.476	6.96	43.32	56.41	-13.09	32.14	46.41	-14.27
2	A	0.541	6.98	45.58	56.00	-10.42	30.73	46.00	-15.27
3	A	0.603	6.99	42.95	56.00	-13.05	32.58	46.00	-13.42
4	A	0.674	7.00	45.61	56.00	-10.39	29.70	46.00	-16.30
5	A	0.832	7.02	49.01	56.00	-6.99	34.27	46.00	-11.73
6	A	0.866	7.02	44.03	56.00	-11.97	32.51	46.00	-13.49
7	A	0.911	7.03	45.55	56.00	-10.45	31.94	46.00	-14.06
8	A	0.938	7.03	49.96	56.00	-6.04	35.02	46.00	-10.98
9	A	1.277	7.08	41.78	56.00	-14.22	31.06	46.00	-14.94
10	A	19.216	8.42	44.37	60.00	-15.63	32.13	50.00	-17.87
11	B	0.751	7.01	42.62	56.00	-13.38	28.52	46.00	-17.48
12	B	0.772	7.01	43.54	56.00	-12.46	29.61	46.00	-16.39
13	B	0.807	7.02	42.53	56.00	-13.47	26.92	46.00	-19.08
14	B	0.904	7.03	46.54	56.00	-9.46	33.67	46.00	-12.33
15	B	0.940	7.03	42.18	56.00	-13.82	26.61	46.00	-19.39
16	B	1.078	7.05	44.77	56.00	-11.23	27.30	46.00	-18.70
17	B	1.098	7.05	44.73	56.00	-11.27	26.92	46.00	-19.08
18	B	1.393	7.09	42.12	56.00	-13.88	28.05	46.00	-17.95
19	B	1.473	7.10	42.21	56.00	-13.79	26.41	46.00	-19.59
20	B	19.052	8.48	44.26	60.00	-15.74	33.05	50.00	-16.95

Table 6-31. Line Conducted Data with 802.11a (UNII-III Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

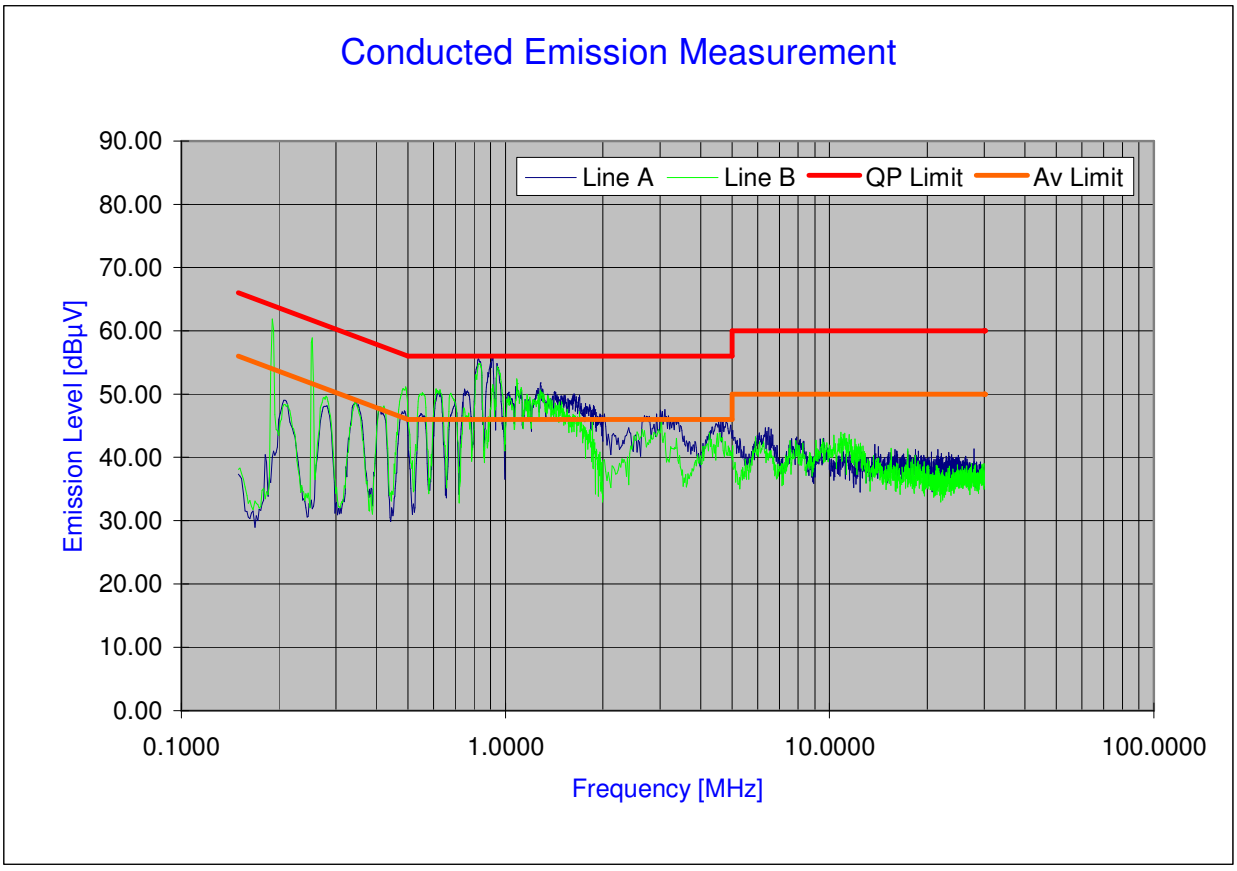
Line-Conducted Test Data (Cont'd)

§15.207

PCTEST Engineering Laboratory Inc.

Company : Samsung Electronics, Co. Ltd.
Model Number : GT-P7310
FCC ID Code : A3LGTP7310
Standard : FCC Part 15C, 15.207

Power Source : AC120V/60Hz
Tested Date : 05/12/2011
Note : Tested with 802.11n UNII Band 1 ON



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Plot 6-58. Line Conducted Plot with 802.11n (UNII-I Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6.5/7.2Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

Line-Conducted Test Data (Cont'd)

§15.207

No.	Line	Frequency [MHz]	Factor [dB]	QP [dBµV]	Limit [dBµV]	Margin [dB]	Average [dBµV]	Limit [dBµV]	Margin [dB]
1	A	0.619	6.99	47.63	56.00	-8.37	36.46	46.00	-9.54
2	A	0.749	7.01	47.28	56.00	-8.72	32.57	46.00	-13.43
3	A	0.825	7.02	52.79	56.00	-3.21	34.26	46.00	-11.74
4	A	0.907	7.03	51.84	56.00	-4.16	38.56	46.00	-7.44
5	A	0.945	7.03	51.69	56.00	-4.31	34.27	46.00	-11.73
6	A	1.018	7.04	46.75	56.00	-9.25	32.80	46.00	-13.20
7	A	1.083	7.05	48.37	56.00	-7.63	32.58	46.00	-13.42
8	A	1.259	7.08	46.75	56.00	-9.25	31.30	46.00	-14.70
9	A	1.287	7.08	47.44	56.00	-8.56	31.62	46.00	-14.38
10	A	1.414	7.10	46.21	56.00	-9.79	30.59	46.00	-15.41
11	B	0.206	6.87	45.87	63.35	-17.48	33.54	53.35	-19.81
12	B	0.272	6.90	46.70	61.05	-14.35	24.72	51.05	-26.33
13	B	0.481	6.96	47.95	56.33	-8.38	34.73	46.33	-11.60
14	B	0.613	6.99	47.86	56.00	-8.14	34.01	46.00	-11.99
15	B	0.826	7.02	51.62	56.00	-4.38	34.03	46.00	-11.97
16	B	0.915	7.03	47.30	56.00	-8.70	32.86	46.00	-13.14
17	B	0.948	7.03	51.79	56.00	-4.21	33.71	46.00	-12.29
18	B	1.096	7.05	46.68	56.00	-9.32	29.28	46.00	-16.72
19	B	1.112	7.06	47.45	56.00	-8.55	29.08	46.00	-16.92
20	B	1.287	7.08	46.34	56.00	-9.66	29.23	46.00	-16.77

Table 6-32. Line Conducted Data with 802.11n (UNII-I Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6.5/7.2Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

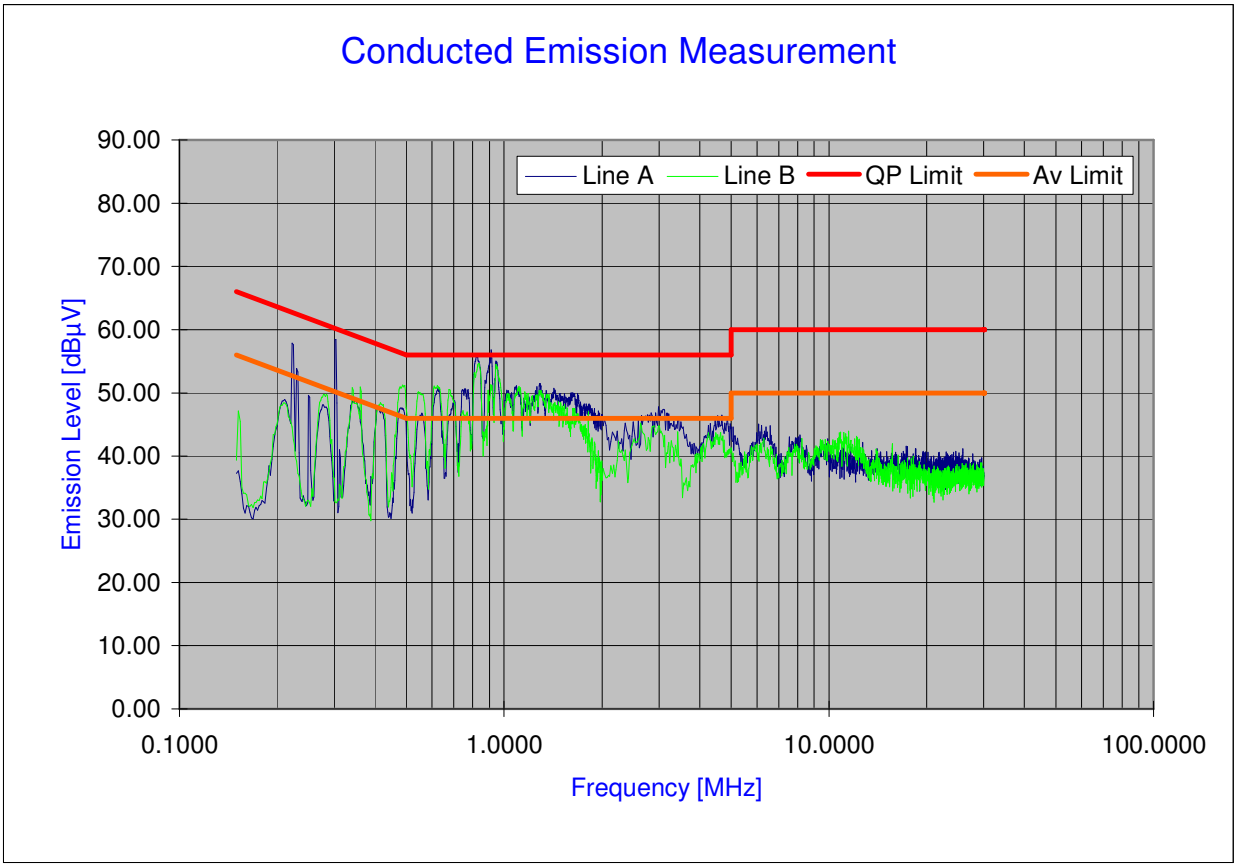
Line-Conducted Test Data (Cont'd)

§15.207

PCTEST Engineering Laboratory Inc.

Company : Samsung Electronics, Co. Ltd.
Model Number : GT-P7310
FCC ID Code : A3LGTP7310
Standard : FCC Part 15C, 15.207

Power Source : AC120V/60Hz
Tested Date : 05/12/2011
Note : Tested with 802.11n UNII Band 2 ON



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Plot 6-59. Line Conducted Plot with 802.11n (UNII-II Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6.5/7.2Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

Line-Conducted Test Data (Cont'd)

§15.207

No.	Line	Frequency [MHz]	Factor [dB]	QP [dBµV]	Limit [dBµV]	Margin [dB]	Average [dBµV]	Limit [dBµV]	Margin [dB]
1	A	0.207	6.87	46.00	63.35	-17.35	35.42	53.35	-17.93
2	A	0.288	6.91	35.52	60.59	-25.07	22.08	50.59	-28.51
3	A	0.621	6.99	47.70	56.00	-8.30	36.52	46.00	-9.48
4	A	0.826	7.02	52.72	56.00	-3.28	32.95	46.00	-13.05
5	A	0.893	7.03	51.05	56.00	-4.95	36.94	46.00	-9.06
6	A	0.906	7.03	52.04	56.00	-3.96	39.50	46.00	-6.50
7	A	0.945	7.03	51.82	56.00	-4.18	33.09	46.00	-12.91
8	A	1.083	7.05	48.55	56.00	-7.45	32.38	46.00	-13.62
9	A	1.260	7.08	47.15	56.00	-8.85	31.97	46.00	-14.03
10	A	1.287	7.08	47.46	56.00	-8.54	29.25	46.00	-16.75
11	B	0.481	6.96	48.22	56.32	-8.10	32.33	46.32	-13.99
12	B	0.546	6.98	48.20	56.00	-7.80	31.78	46.00	-14.22
13	B	0.614	6.99	48.07	56.00	-7.93	34.39	46.00	-11.61
14	B	0.680	7.00	48.24	56.00	-7.76	30.39	46.00	-15.61
15	B	0.826	7.02	51.68	56.00	-4.32	33.95	46.00	-12.05
16	B	0.911	7.03	47.74	56.00	-8.26	33.86	46.00	-12.14
17	B	0.912	7.03	47.65	56.00	-8.35	33.18	46.00	-12.82
18	B	0.949	7.03	51.85	56.00	-4.15	33.22	46.00	-12.78
19	B	1.112	7.06	47.51	56.00	-8.49	29.28	46.00	-16.72
20	B	1.288	7.08	46.51	56.00	-9.49	29.27	46.00	-16.73

Table 6-33. Line Conducted Data with 802.11n (UNII-II Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6.5/7.2Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

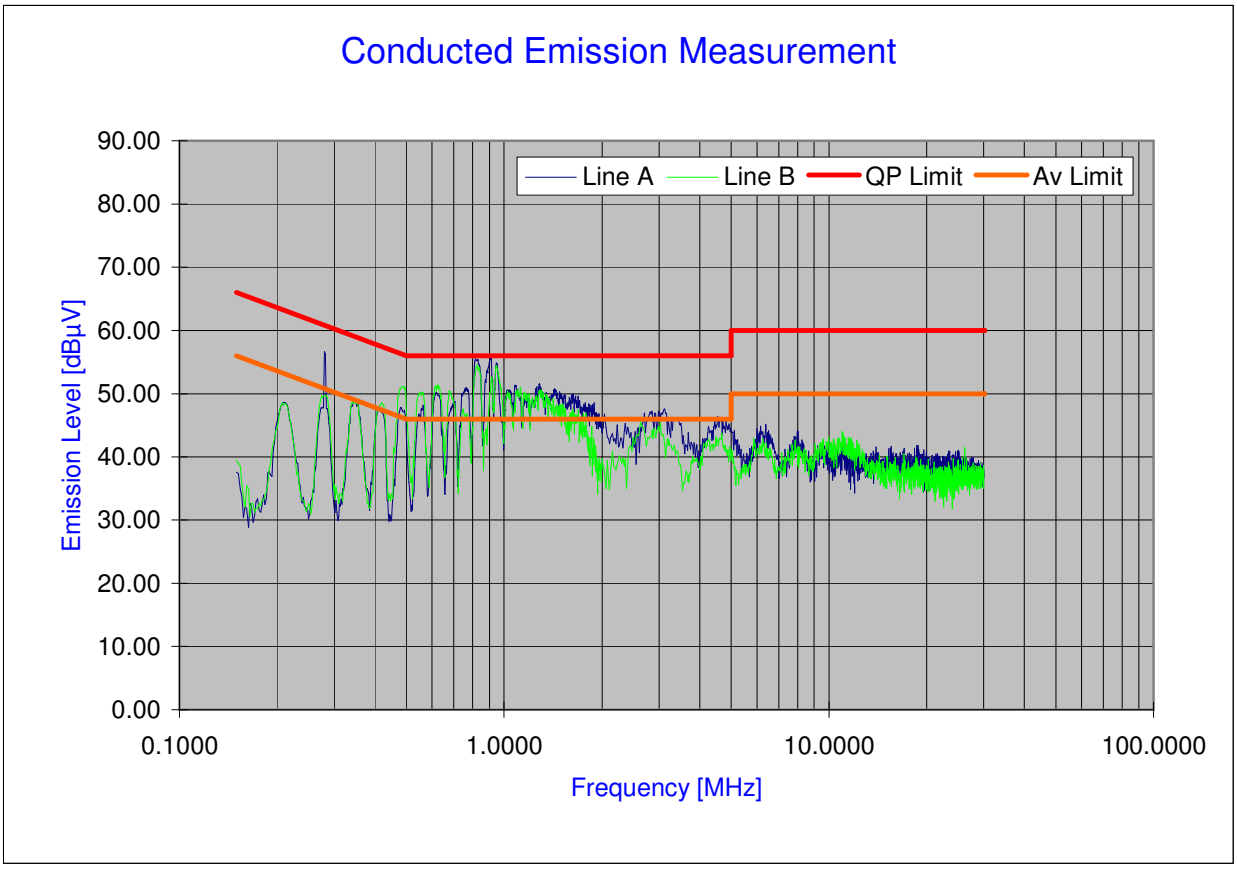
Line-Conducted Test Data (Cont'd)

§15.207

PCTEST Engineering Laboratory Inc.

Company : Samsung Electronics, Co. Ltd.
Model Number : GT-P7310
FCC ID Code : A3LGTP7310
Standard : FCC Part 15C, 15.207

Power Source : AC120V/60Hz
Tested Date : 05/12/2011
Note : Tested with 802.11n UNII Band 3 ON



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Plot 6-60. Line Conducted Plot with 802.11n (UNII-III Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6.5/7.2Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

Line-Conducted Test Data (Cont'd)

§15.207

No.	Line	Frequency [MHz]	Factor [dB]	QP [dBµV]	Limit [dBµV]	Margin [dB]	Average [dBµV]	Limit [dBµV]	Margin [dB]
1	A	0.278	6.90	45.66	60.89	-15.23	38.62	50.89	-12.27
2	A	0.748	7.01	47.91	56.00	-8.09	33.83	46.00	-12.17
3	A	0.826	7.02	52.77	56.00	-3.23	33.80	46.00	-12.20
4	A	0.908	7.03	52.49	56.00	-3.51	38.62	46.00	-7.38
5	A	0.945	7.03	51.82	56.00	-4.18	33.70	46.00	-12.30
6	A	1.018	7.04	47.44	56.00	-8.56	32.84	46.00	-13.16
7	A	1.083	7.05	48.58	56.00	-7.42	32.68	46.00	-13.32
8	A	1.286	7.08	47.56	56.00	-8.44	31.54	46.00	-14.46
9	A	1.412	7.09	46.56	56.00	-9.44	30.83	46.00	-15.17
10	A	1.480	7.10	45.93	56.00	-10.07	30.17	46.00	-15.83
11	B	0.481	6.96	48.60	56.33	-7.73	34.55	46.33	-11.78
12	B	0.615	6.99	48.44	56.00	-7.56	34.43	46.00	-11.57
13	B	0.680	7.00	48.33	56.00	-7.67	30.71	46.00	-15.29
14	B	0.826	7.02	51.89	56.00	-4.11	34.12	46.00	-11.88
15	B	0.912	7.03	48.14	56.00	-7.86	33.08	46.00	-12.92
16	B	0.949	7.03	51.98	56.00	-4.02	33.59	46.00	-12.41
17	B	1.019	7.04	45.86	56.00	-10.14	30.16	46.00	-15.84
18	B	1.100	7.06	47.35	56.00	-8.65	28.88	46.00	-17.12
19	B	1.112	7.06	47.63	56.00	-8.37	28.52	46.00	-17.48
20	B	1.288	7.08	46.81	56.00	-9.19	28.57	46.00	-17.43

Table 6-34. Line Conducted Data with 802.11n (UNII-III Band)

Notes:

1. All Modes of operation were investigated and the worst-case emissions are reported using 6.5/7.2Mbps.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. Line A = Phase; Line B = Neutral
4. Traces shown in plot made using a peak detector.
5. Deviations to the Specifications: None.

7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Tablet with BT and WLAN FCC ID: A3LGTP7310** is in compliance with Part 15E of the FCC Rules and RSS-210 of the Industry Canada Rules.