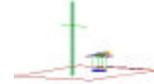




# PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA  
Tel. 410.290.6652 / Fax 410.290.6654  
http://www.pctestlab.com



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

**Applicant Name:**  
Sony Corporation  
1-7-1 Konan  
Minato-ku  
108-0075  
Japan

**Date of Testing:**  
Mar. 31 - Apr. 4, 2011  
**Test Site/Location:**  
PCTEST Lab, Columbia, MD, USA  
**Test Report Serial No.:**  
0Y1103150541.AK8

<b>FCC ID:</b>	<b>AK8PCG41312L</b>
<b>APPLICANT:</b>	<b>Sony Corporation</b>

**Application Type:** Certification  
**Model(s):** PCG-41312L  
**EUT Type:** 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN  
**Max. RF Output Power:** 30.41 mW (14.83 dBm) Conducted (802.11a UNII Band I) - 20MHz BW (Chain A)  
31.7 mW (15.01 dBm) Conducted (802.11a UNII Band II) - 20MHz BW (Chain A)  
36.14 mW (15.58 dBm) Conducted (802.11a UNII Band III) - 20MHz BW (Chain A)  
30.13 mW (14.79 dBm) Conducted (802.11n UNII Band I) - 20MHz BW (Chain A)  
30.55 mW (14.85 dBm) Conducted (802.11n UNII Band II) - 20MHz BW (Chain A)  
35.48 mW (15.5 dBm) Conducted (802.11n UNII Band III) - 20MHz BW (Chain A)  
25.06 mW (13.99 dBm) Conducted (802.11n UNII Band I) - 40MHz BW (Chain A)  
27.16 mW (14.34 dBm) Conducted (802.11n UNII Band II) - 40MHz BW (Chain A)  
26.49 mW (14.23 dBm) Conducted (802.11n UNII Band III) - 40MHz BW (Chain A)  
39.99 mW (16.02 dBm) Conducted (802.11a UNII Band I) - 20MHz BW (Chain B)  
35.48 mW (16.06 dBm) Conducted (802.11a UNII Band II) - 20MHz BW (Chain B)  
40.36 mW (16.86 dBm) Conducted (802.11a UNII Band III) - 20MHz BW (Chain B)  
39.99 mW (15.5 dBm) Conducted (802.11n UNII Band I) - 20MHz BW (Chain B)  
48.53 mW (16.02 dBm) Conducted (802.11n UNII Band II) - 20MHz BW (Chain B)  
47.53 mW (16.77 dBm) Conducted (802.11n UNII Band III) - 20MHz BW (Chain B)  
26.98 mW (14.31 dBm) Conducted (802.11n UNII Band I) - 40MHz BW (Chain B)  
32.73 mW (15.15 dBm) Conducted (802.11n UNII Band II) - 40MHz BW (Chain B)  
35.32 mW (15.48 dBm) Conducted (802.11n UNII Band III) - 40MHz BW (Chain B)  
34.07 mW (15.323 dBm) Aggregate Conducted (802.11n UNII Band I) - 20MHz BW  
38.84 mW (15.893 dBm) Aggregate Conducted (802.11n UNII Band II) - 20MHz BW  
42.17 mW (16.25 dBm) Aggregate Conducted (802.11n UNII Band III) - 20MHz BW  
28.97 mW (14.619 dBm) Aggregate Conducted (802.11n UNII Band I) - 40MHz BW  
29.29 mW (14.668 dBm) Aggregate Conducted (802.11n UNII Band II) - 40MHz BW  
38.59 mW (15.865 dBm) Aggregate Conducted (802.11n UNII Band III) - 40MHz BW  
**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  
**IC Specification:** RSS-210 Issue 8  
**Test Device Serial No.:** N/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

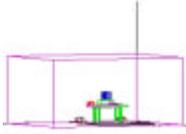


<b>FCC ID:</b> AK8PCG41312L		<b>FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1103150541.AK8	<b>Test Dates:</b> Mar. 31 - Apr. 4, 2011	<b>EUT Type:</b> 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 1 of 63

# TABLE OF CONTENTS

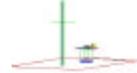
FCC PART 15.407 MEASUREMENT REPORT .....		3
1.0 INTRODUCTION .....		4
1.1 SCOPE .....		4
1.2 PCTEST TEST LOCATION .....		4
2.0 PRODUCT INFORMATION .....		5
2.1 EQUIPMENT DESCRIPTION .....		5
2.2 EMI SUPPRESSION DEVICE(S)/MODIFICATIONS .....		5
2.3 LABELING REQUIREMENTS .....		5
3.0 DESCRIPTION OF TEST .....		6
3.1 EVALUATION PROCEDURE .....		6
3.2 RADIATED EMISSIONS .....		6
4.0 ANTENNA REQUIREMENTS .....		7
5.0 TEST EQUIPMENT CALIBRATION DATA .....		8
6.0 TEST RESULTS .....		9
6.1 SUMMARY .....		9
6.2 OUTPUT POWER MEASUREMENT – 802.11A/N (UNII I) – 20MHZ .....		10
6.3 OUTPUT POWER MEASUREMENT – 802.11A/N (UNII II) – 20MHZ .....		13
6.4 OUTPUT POWER MEASUREMENT – 802.11A/N (UNII III) – 20MHZ .....		16
6.5 OUTPUT POWER MEASUREMENT – 802.11A/N (UNII I) – 40MHZ .....		19
6.6 OUTPUT POWER MEASUREMENT – 802.11A/N (UNII II) – 40MHZ .....		22
6.7 OUTPUT POWER MEASUREMENT – 802.11A/N (UNII III) – 40MHZ .....		25
6.8 PEAK POWER SPECTRAL DENSITY (MIMO) .....		28
6.9 RADIATED SPURIOUS EMISSION MEASUREMENTS .....		29
6.10 RADIATED BAND EDGE MEASUREMENTS .....		48
6.11 RADIATED RESTRICTED BAND EDGE MEASUREMENTS .....		54
7.0 CONCLUSION .....		63

<b>FCC ID:</b> AK8PCG41312L		<b>FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1103150541.AK8	<b>Test Dates:</b> Mar. 31 - Apr. 4, 2011	<b>EUT Type:</b> 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDo and Band 13 LTE Laptop with Bluetooth and WLAN	Page 2 of 63	



# MEASUREMENT REPORT

## FCC Part 15.407



### § 2.1033 General Information

**APPLICANT:** Sony Corporation

**APPLICANT ADDRESS:** 1-7-1 Konan  
Minato-ku

**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:** PCG-41312L

**FCC ID:** AK8PCG41312L

**Test Device Serial No.:** N/A       Production     Pre-Production     Engineering

**FCC CLASSIFICATION:** Unlicensed National Information Infrastructure (UNII)

**DATE(S) OF TEST:** Mar. 31 - Apr. 4, 2011

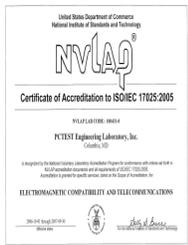
**TEST REPORT S/N:** 0Y1103150541.AK8

### 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.



<b>FCC ID:</b> AK8PCG41312L	 <b>FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1103150541.AK8	<b>Test Dates:</b> Mar. 31 - Apr. 4, 2011	<b>EUT Type:</b> 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 3 of 63

# 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 area, the Baltimore-Washington Intern'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.

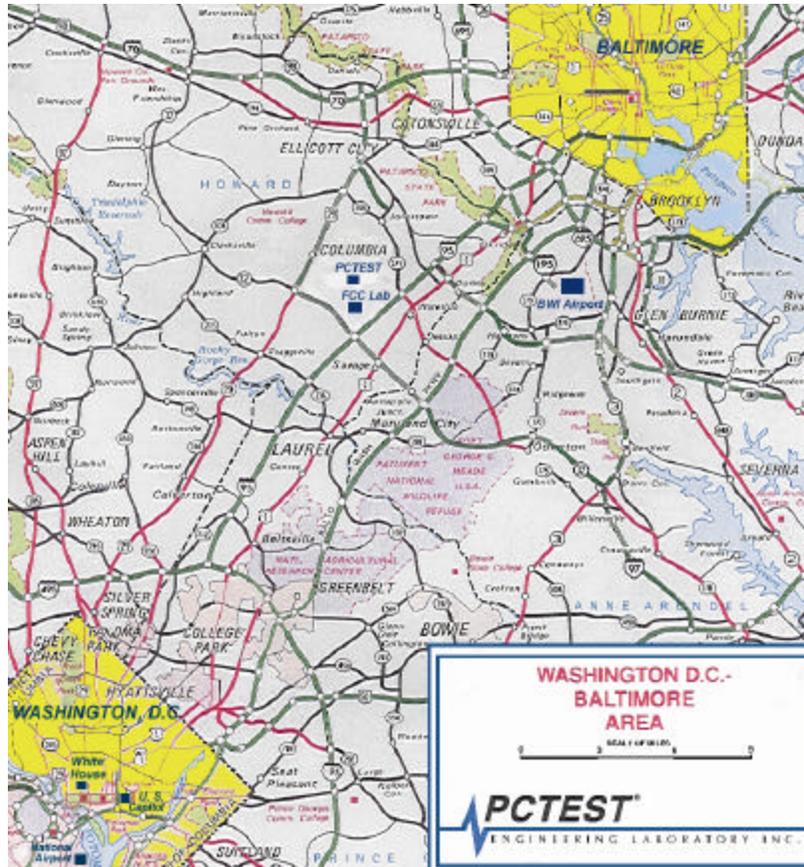


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 4 of 63

## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Sony 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN FCC ID: AK8PCG41312L**. The EUT consisted of the following component(s):

Manufacturer / Model	FCC ID	Description
Sony / Model: PCG-41312L	AK8PCG41312L	850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth 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.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 5 of 63	

## 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 **Sony 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN FCC ID: AK8PCG41312L.**

Deviation from measurement procedure.....None

### 3.2 Radiated Emissions

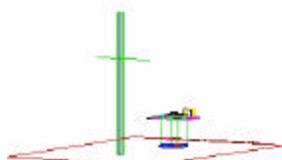


Figure 3-1. 3-Meter Test Site

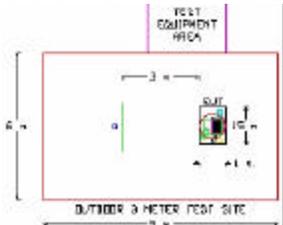


Figure 3-2. Dimensions of Outdoor Test Site

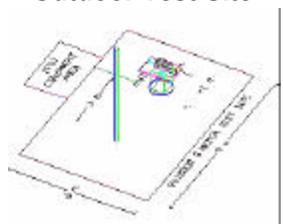


Figure 3-3. Turntable and System Setup

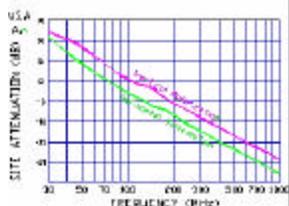


Figure 3-4. Normalized Site Attenuation Curves (H&V)

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 3-1). 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 3-2). 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 3-3). 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 3-4.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 6 of 63

## 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 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN are **permanently attached**.
- There are no provisions for connection to an external antenna.

**Conclusion:**

The **Sony 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN FCC ID: AK8PCG41312L** 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**

FCC ID: AK8PCG41312L		<b>FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)</b>		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 7 of 63	

## 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	JB5	Bi-Log Antenna (30M - 5GHz)	7/17/2009	Biennial	7/17/2011	A051107

**Table 5-1. Annual Test Equipment Calibration Schedule**

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 8 of 63

## 6.0 TEST RESULTS

### 6.1 Summary

Company Name: Sony Corporation  
 FCC ID: AK8PCG41312L  
 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
<b>TRANSMITTER MODE (TX)</b>						
N/A	RSS-210 [A8.1]	26 dB Bandwidth	> 500kHz	CONDUCTED	PASS	See Note Below
15.407(a)(6)	RSS-210 [A8.1(2)]	Peak Excursion	< 13 dB/MHz maximum difference		PASS	
15.407(g)	RSS-210 [A8.1(2)]	Frequency Stability	N/A		PASS	
15.407 (a)(1), (5)	RSS-210 [A8.1(2)]	Peak Power Spectral Density (MIMO)	< 4 dBm/MHz (5150-5250) < 11dBm/MHz (5250-5350) < 11dBm/MHz (5470-5725)		PASS	Section 6.8
15.407 (a)(1)	RSS-210 [A8.4(2)]	Maximum Conducted Output Power	< 4 + 10log <sub>10</sub> (BW) dBm (5150-5250) < 11 + 10log <sub>10</sub> (B) dBm (5250-5350) < 11 + 10log <sub>10</sub> (B) dBm (5470-5725)		PASS	Section 6.2, 6.3, 6.4, 6.5, 6.6, 6.7
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	See Note Below
<b>RECEIVER MODE (RX) / DIGITAL EMISSIONS</b>						
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. Conducted test results can be found under the FCC Authorization database of granted applications for FCC Part 15E report for FCC ID: PD962230ANH and PD962230ANHU. The data from that grant represent the EUT under worst case test settings. The Sony Laptop FCC ID: AK8PCG41312L contains the identical module, but is set at lower power settings than the worst case test conditions. The data remains applicable in this test report.

FCC ID: AK8PCG41312L	 <b>FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)</b>			Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		

## 6.2 Output Power Measurement – 802.11a/n (UNII I) – 20MHz §15.407 (a)(1)

### Chain A:

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(30.8) = 18.89\text{dBm}$  which is 16.99dBm.*

Freq [MHz]	Channel	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5180	36	6	13.43
		9	13.06
		12	13.36
		18	13.33
		24	13.22
		36	12.86
		48	13.18
		54	11.42
5200	40	6	14.83
		9	14.82
		12	14.75
		18	14.76
		24	14.61
		36	14.55
		48	13.76
		54	11.53
5240	48	6	14.64
		9	14.63
		12	14.55
		18	14.61
		24	14.79
		36	14.30
		48	13.54
		54	11.39

Table 6-2. UNII Band I (802.11a) Conducted Output Power Measurements

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5180	36	HT0	6.5/7.2	13.31
		HT1	13/14.4	13.12
		HT2	19.5/21.7	13.20
		HT3	26/28.9	13.18
		HT4	39/43.3	13.12
		HT5	52/57.8	13.05
		HT6	58.5/65	11.30
		HT7	65/72.2	9.34
5200	40	HT0	6.5/7.2	14.79
		HT1	13/14.4	14.64
		HT2	19.5/21.7	14.70
		HT3	26/28.9	14.61
		HT4	39/43.3	14.52
		HT5	52/57.8	13.70
		HT6	58.5/65	11.50
		HT7	65/72.2	9.66
5240	48	HT0	6.5/7.2	14.56
		HT1	13/14.4	14.46
		HT2	19.5/21.7	14.48
		HT3	26/28.9	14.47
		HT4	39/43.3	14.45
		HT5	52/57.8	13.53
		HT6	58.5/65	11.32
		HT7	65/72.2	9.47

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

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 10 of 63

**Chain B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(27.9) = 18.45\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	Data Rate [Mbps]	20MHz BW Average Power [dBm]		
5180	36	6	14.43		
		9	14.39		
		12	14.12		
		18	14.14		
		24	14.32		
		36	14.14		
		48	14.28		
		54	12.32		
		5200	40	6	15.92
				9	15.47
12	15.11				
18	15.61				
24	15.37				
36	15.81				
48	14.15				
54	12.17				
5240	48	6	15.63		
		9	16.00		
		12	15.98		
		18	16.02		
		24	15.80		
		36	15.89		
		48	14.74		
		54	12.62		

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

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5180	36	HT0	6.5/7.2	14.01
		HT1	13/14.4	14.40
		HT2	19.5/21.7	14.47
		HT3	26/28.9	14.48
		HT4	39/43.3	14.00
		HT5	52/57.8	14.14
		HT6	58.5/65	12.36
		HT7	65/72.2	10.56
5200	40	HT0	6.5/7.2	14.57
		HT1	13/14.4	14.43
		HT2	19.5/21.7	14.97
		HT3	26/28.9	15.49
		HT4	39/43.3	15.18
		HT5	52/57.8	14.39
		HT6	58.5/65	12.36
		HT7	65/72.2	10.92
5240	48	HT0	6.5/7.2	15.50
		HT1	13/14.4	15.36
		HT2	19.5/21.7	15.41
		HT3	26/28.9	15.43
		HT4	39/43.3	15.47
		HT5	52/57.8	14.53
		HT6	58.5/65	13.03
		HT7	65/72.2	10.65

**Table 6-5. UNII Band I (802.11n) Conducted Output Power Measurements**

### Chain A + B:

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(21) = 17.22\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Power (Chain A) [dBm]	20MHz BW Power (Chain B) [dBm]	20MHz BW Aggregate Power [dBm]		
5180	36	HT8	27/30	12.00	12.32	15.17		
		HT9	54/60	12.02	12.34	15.19		
		HT10	80/90	11.60	12.32	14.99		
		HT11	108/120	11.83	12.28	15.07		
		HT12	162/180	11.80	12.41	15.13		
		HT13	216/240	11.81	12.25	15.05		
		HT14	243/270	11.79	12.13	14.97		
		HT15	270/300	10.37	10.85	13.63		
		5200	40	HT8	27/30	11.84	12.49	15.19
				HT9	54/60	11.86	12.40	15.15
				HT10	80/90	11.59	12.44	15.05
				HT11	108/120	11.71	12.69	15.24
				HT12	162/180	11.67	12.37	15.04
				HT13	216/240	11.73	12.55	15.17
				HT14	243/270	11.78	12.54	15.19
HT15	270/300			10.44	11.16	13.83		
5240	48			HT8	27/30	11.81	12.71	15.29
				HT9	54/60	11.77	12.74	15.29
				HT10	80/90	11.68	12.70	15.23
				HT11	108/120	11.63	12.60	15.15
				HT12	162/180	11.79	12.74	15.30
				HT13	216/240	11.79	12.78	15.32
				HT14	243/270	11.68	12.78	15.28
		HT15	270/300	10.31	11.45	13.93		

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

### 6.3 Output Power Measurement – 802.11a/n (UNII II) – 20MHz §15.407 (a)(1)

#### Chain A:

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 + 10\log_{10}(32.5) = 26.12\text{dBm}$  which is 23.98dBm.**

Freq [MHz]	Channel	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5260	52	6	14.64
		9	14.57
		12	14.54
		18	14.55
		24	14.28
		36	14.26
		48	13.40
		54	11.65
		5280	56
9	14.72		
12	14.68		
18	14.72		
24	14.56		
36	14.52		
48	13.64		
54	11.43		
5320	64		
		9	14.92
		12	14.85
		18	14.87
		24	14.71
		36	14.65
		48	13.72
		54	11.56

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

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5260	52	HT0	6.5/7.2	14.85
		HT1	13/14.4	14.30
		HT2	19.5/21.7	14.35
		HT3	26/28.9	14.25
		HT4	39/43.3	14.18
		HT5	52/57.8	13.30
		HT6	58.5/65	11.55
		HT7	65/72.2	9.75
5280	56	HT0	6.5/7.2	14.63
		HT1	13/14.4	14.48
		HT2	19.5/21.7	14.56
		HT3	26/28.9	14.58
		HT4	39/43.3	14.50
		HT5	52/57.8	13.57
		HT6	58.5/65	11.43
		HT7	65/72.2	9.58
5320	64	HT0	6.5/7.2	14.81
		HT1	13/14.4	14.64
		HT2	19.5/21.7	14.74
		HT3	26/28.9	14.68
		HT4	39/43.3	14.58
		HT5	52/57.8	13.60
		HT6	58.5/65	11.41
		HT7	65/72.2	10.06

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

**Chain B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11+10\log_{10}(23.8) = 24.77\text{dBm}$  which is 23.98dBm.**

Freq [MHz]	Channel	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5260	52	6	15.57
		9	15.76
		12	15.61
		18	15.70
		24	15.45
		36	15.48
		48	14.74
		54	12.96
5280	56	6	15.78
		9	15.75
		12	15.79
		18	15.70
		24	15.59
		36	15.58
		48	14.85
		54	13.09
5320	64	6	16.06
		9	15.98
		12	15.96
		18	16.05
		24	16.00
		36	15.74
		48	14.98
		54	12.71

**Table 6-9. UNII Band II (802.11a) Conducted Output Power Measurements**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5260	52	HT0	6.5/7.2	15.71
		HT1	13/14.4	15.16
		HT2	19.5/21.7	15.30
		HT3	26/28.9	15.35
		HT4	39/43.3	15.63
		HT5	52/57.8	14.49
		HT6	58.5/65	12.79
		HT7	65/72.2	10.59
5280	56	HT0	6.5/7.2	15.65
		HT1	13/14.4	15.61
		HT2	19.5/21.7	15.58
		HT3	26/28.9	15.60
		HT4	39/43.3	15.56
		HT5	52/57.8	15.09
		HT6	58.5/65	13.06
		HT7	65/72.2	11.24
5320	64	HT0	6.5/7.2	16.02
		HT1	13/14.4	15.82
		HT2	19.5/21.7	15.91
		HT3	26/28.9	15.96
		HT4	39/43.3	15.66
		HT5	52/57.8	15.23
		HT6	58.5/65	12.65
		HT7	65/72.2	10.96

**Table 6-10. UNII Band II (802.11n) Conducted Output Power Measurements**

**Chain A+B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $11\text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 + 10\log_{10}(21.3) = 24.28\text{dBm}$  which is 23.98dBm.***

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Power (Chain A) [dBm]	20MHz BW Power (Chain B) [dBm]	20MHz BW Aggregate Power [dBm]
5260	52	HT8	27/30	11.45	12.62	15.08
		HT9	54/60	11.28	12.46	14.92
		HT10	80/90	11.49	12.39	14.97
		HT11	108/120	11.58	12.42	15.03
		HT12	162/180	11.48	12.53	15.05
		HT13	216/240	11.63	12.66	15.19
		HT14	243/270	11.25	12.65	15.02
		HT15	270/300	9.76	11.14	13.51
5280	56	HT8	27/30	11.60	12.63	15.16
		HT9	54/60	11.61	12.68	15.19
		HT10	80/90	11.51	12.67	15.14
		HT11	108/120	11.61	12.72	15.21
		HT12	162/180	11.61	12.77	15.24
		HT13	216/240	11.60	12.49	15.08
		HT14	243/270	11.66	12.49	15.11
		HT15	270/300	10.32	11.16	13.77
5320	64	HT8	27/30	12.23	13.45	15.89
		HT9	54/60	11.96	13.46	15.78
		HT10	80/90	12.13	13.43	15.84
		HT11	108/120	12.24	13.13	15.72
		HT12	162/180	12.05	13.12	15.63
		HT13	216/240	12.21	13.34	15.82
		HT14	243/270	12.10	12.89	15.52
		HT15	270/300	10.15	11.76	14.04

**Table 6-11. UNII Band II (802.11n) Conducted Output Power Measurements**

## 6.4 Output Power Measurement – 802.11a/n (UNII III) – 20MHz §15.407 (a)(1)

### Chain A:

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 + 10\log_{10}(33.5) = 26.25\text{dBm}$  which is 23.98dBm.***

Freq [MHz]	Channel	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5500	100	6	15.40
		9	15.58
		12	15.35
		18	15.22
		24	15.00
		36	14.96
		48	14.14
		54	12.11
5600	120	6	14.31
		9	14.20
		12	14.10
		18	13.97
		24	13.98
		36	13.90
		48	13.16
		54	10.87
5700	140	6	14.11
		9	14.07
		12	14.05
		18	14.11
		24	14.02
		36	14.03
		48	13.35
		54	11.01

Table 6-12. UNII Band III (802.11a) Conducted Output Power Measurements

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5500	100	HT0	6.5/7.2	15.28
		HT1	13/14.4	15.08
		HT2	19.5/21.7	15.39
		HT3	26/28.9	15.29
		HT4	39/43.3	15.50
		HT5	52/57.8	14.15
		HT6	58.5/65	12.37
		HT7	65/72.2	10.63
5600	120	HT0	6.5/7.2	13.98
		HT1	13/14.4	14.12
		HT2	19.5/21.7	14.16
		HT3	26/28.9	14.12
		HT4	39/43.3	13.94
		HT5	52/57.8	13.00
		HT6	58.5/65	11.01
		HT7	65/72.2	9.22
5700	140	HT0	6.5/7.2	14.02
		HT1	13/14.4	13.92
		HT2	19.5/21.7	13.98
		HT3	26/28.9	13.99
		HT4	39/43.3	14.06
		HT5	52/57.8	13.31
		HT6	58.5/65	11.04
		HT7	65/72.2	9.01

Table 6-13. UNII Band III (802.11n) Conducted Output Power Measurements

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 16 of 63		

**Chain B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 + 10\log_{10}(29.6) = 25.71\text{dBm}$  which is 23.98dBm.**

Freq [MHz]	Channel	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5500	100	6	16.81
		9	16.85
		12	16.82
		18	16.86
		24	16.77
		36	16.67
		48	15.83
		54	13.95
5600	120	6	15.48
		9	15.46
		12	15.45
		18	15.47
		24	15.33
		36	15.46
		48	14.47
		54	12.44
5700	140	6	15.16
		9	15.13
		12	15.18
		18	15.21
		24	15.17
		36	15.13
		48	14.51
		54	12.49

**Table 6-14. UNII Band III (802.11a) Conducted Output Power Measurements**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Average Power [dBm]
5500	100	HT0	6.5/7.2	16.60
		HT1	13/14.4	16.38
		HT2	19.5/21.7	16.20
		HT3	26/28.9	16.76
		HT4	39/43.3	16.77
		HT5	52/57.8	15.40
		HT6	58.5/65	13.51
		HT7	65/72.2	12.05
5600	120	HT0	6.5/7.2	15.41
		HT1	13/14.4	15.36
		HT2	19.5/21.7	15.45
		HT3	26/28.9	15.47
		HT4	39/43.3	15.13
		HT5	52/57.8	14.34
		HT6	58.5/65	12.22
		HT7	65/72.2	10.06
5700	140	HT0	6.5/7.2	15.27
		HT1	13/14.4	15.10
		HT2	19.5/21.7	15.19
		HT3	26/28.9	14.82
		HT4	39/43.3	15.25
		HT5	52/57.8	14.36
		HT6	58.5/65	11.91
		HT7	65/72.2	10.56

**Table 6-15. UNII Band III (802.11n) Conducted Output Power Measurements**

**Chain A+B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $11 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 11 + 10\log_{10}(21.1) = 24.24\text{dBm}$  which is 23.98dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	20MHz BW Power (Chain A) [dBm]	20MHz BW Power (Chain B) [dBm]	20MHz BW Aggregate Power [dBm]
5500	100	HT8	27/30	12.40	13.80	16.17
		HT9	54/60	12.40	13.77	16.15
		HT10	80/90	12.39	13.95	16.25
		HT11	108/120	12.46	13.81	16.20
		HT12	162/180	12.41	13.92	16.24
		HT13	216/240	12.41	13.85	16.20
		HT14	243/270	12.50	13.48	16.03
		HT15	270/300	11.33	12.28	14.84
5600	120	HT8	27/30	11.10	11.94	14.55
		HT9	54/60	11.08	11.91	14.53
		HT10	80/90	10.77	11.89	14.38
		HT11	108/120	10.86	11.74	14.33
		HT12	162/180	10.96	11.82	14.42
		HT13	216/240	11.02	11.96	14.53
		HT14	243/270	10.73	12.03	14.44
		HT15	270/300	9.60	10.32	12.99
5700	140	HT8	27/30	10.72	12.37	14.63
		HT9	54/60	10.76	12.41	14.67
		HT10	80/90	10.73	12.52	14.73
		HT11	108/120	10.92	12.44	14.76
		HT12	162/180	10.67	12.20	14.51
		HT13	216/240	10.74	12.31	14.61
		HT14	243/270	10.31	12.30	14.43
		HT15	270/300	8.80	10.75	12.89

**Table 6-16. UNII Band III (802.11n) Conducted Output Power Measurements**

## 6.5 Output Power Measurement – 802.11a/n (UNII I) – 40MHz §15.407 (a)(1)

### Chain A:

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4\text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(39.3) = 19.94\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Average Power [dBm]
5190	38	HT0	6.5/7.2	9.99
		HT1	13/14.4	9.95
		HT2	19.5/21.7	9.93
		HT3	26/28.9	9.82
		HT4	39/43.3	9.95
		HT5	52/57.8	9.97
		HT6	58.5/65	10.04
		HT7	65/72.2	10.02
5230	46	HT0	6.5/7.2	13.57
		HT1	13/14.4	13.90
		HT2	19.5/21.7	13.99
		HT3	26/28.9	13.93
		HT4	39/43.3	13.54
		HT5	52/57.8	13.19
		HT6	58.5/65	11.58
		HT7	65/72.2	9.73

Table 6-17. UNII Band I (802.11n) Conducted Output Power Measurements

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 19 of 63

**Chain B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4\text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(39.3) = 19.94\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Average Power [dBm]
5190	38	HT0	6.5/7.2	10.55
		HT1	13/14.4	10.83
		HT2	19.5/21.7	9.86
		HT3	26/28.9	9.85
		HT4	39/43.3	10.00
		HT5	52/57.8	9.66
		HT6	58.5/65	9.80
		HT7	65/72.2	9.62
5230	46	HT0	6.5/7.2	13.81
		HT1	13/14.4	14.31
		HT2	19.5/21.7	14.15
		HT3	26/28.9	13.95
		HT4	39/43.3	13.84
		HT5	52/57.8	13.25
		HT6	58.5/65	11.07
		HT7	65/72.2	9.66

**Table 6-18. UNII Band I (802.11n) Conducted Output Power Measurements**

### Chain A + B:

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(39) = 19.91\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Power (Chain A) [dBm]	40MHz BW Power (Chain B) [dBm]	40MHz BW Aggregate Power [dBm]		
5190	38	HT8	27/30	9.85	10.96	13.45		
		HT9	54/60	9.90	10.29	13.11		
		HT10	80/90	9.60	10.51	13.09		
		HT11	108/120	9.99	10.38	13.20		
		HT12	162/180	9.69	10.11	12.92		
		HT13	216/240	9.79	10.06	12.94		
		HT14	243/270	9.70	9.94	12.83		
		HT15	270/300	10.20	9.98	13.10		
		5230	46	HT8	27/30	10.45	12.10	14.36
				HT9	54/60	11.02	12.10	14.60
				HT10	80/90	11.03	12.12	14.62
				HT11	108/120	10.40	11.87	14.21
				HT12	162/180	10.69	11.80	14.29
				HT13	216/240	10.69	11.85	14.32
				HT14	243/270	11.03	11.82	14.45
HT15	270/300			9.48	10.08	12.80		

**Table 6-19. UNII Band I (802.11n) Conducted Output Power Measurements**

**6.6 Output Power Measurement – 802.11a/n (UNII II) – 40MHz**  
**§15.407 (a)(1)**

**Chain A:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4\text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(39.3) = 19.94\text{dBm}$  which is 16.99dBm.***

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Average Power [dBm]
5270	54	HT0	6.5/7.2	14.34
		HT1	13/14.4	14.31
		HT2	19.5/21.7	14.25
		HT3	26/28.9	14.09
		HT4	39/43.3	14.29
		HT5	52/57.8	13.90
		HT6	58.5/65	11.84
		HT7	65/72.2	10.05
5310	62	HT0	6.5/7.2	11.28
		HT1	13/14.4	11.29
		HT2	19.5/21.7	11.28
		HT3	26/28.9	11.24
		HT4	39/43.3	11.30
		HT5	52/57.8	11.35
		HT6	58.5/65	11.42
		HT7	65/72.2	10.21

**Table 6-20. UNII Band II (802.11n) Conducted Output Power Measurements**

**Chain B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4\text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(39.4) = 19.95\text{dBm}$  which is 16.99dBm.***

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Average Power [dBm]
5270	54	HT0	6.5/7.2	14.87
		HT1	13/14.4	14.94
		HT2	19.5/21.7	15.15
		HT3	26/28.9	14.51
		HT4	39/43.3	14.51
		HT5	52/57.8	13.47
		HT6	58.5/65	11.60
		HT7	65/72.2	10.26
5310	62	HT0	6.5/7.2	11.66
		HT1	13/14.4	11.69
		HT2	19.5/21.7	11.51
		HT3	26/28.9	11.36
		HT4	39/43.3	11.31
		HT5	52/57.8	11.23
		HT6	58.5/65	11.25
		HT7	65/72.2	10.35

**Table 6-21. UNII Band II (802.11n) Conducted Output Power Measurements**

**Chain A + B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(39) = 19.91\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Power (Chain A) [dBm]	40MHz BW Power (Chain B) [dBm]	40MHz BW Aggregate Power [dBm]		
5270	54	HT8	27/30	10.87	12.01	14.49		
		HT9	54/60	10.25	11.73	14.06		
		HT10	80/90	11.14	12.12	14.67		
		HT11	108/120	10.59	11.48	14.07		
		HT12	162/180	11.14	11.38	14.27		
		HT13	216/240	10.79	11.47	14.15		
		HT14	243/270	11.11	11.52	14.33		
		HT15	270/300	9.32	9.73	12.54		
		5310	62	HT8	27/30	10.86	11.67	14.29
				HT9	54/60	10.03	11.88	14.06
				HT10	80/90	10.51	11.74	14.18
				HT11	108/120	10.47	11.61	14.09
				HT12	162/180	10.68	11.45	14.09
				HT13	216/240	10.64	11.47	14.09
				HT14	243/270	10.77	11.03	13.91
HT15	270/300			9.89	10.32	13.12		

**Table 6-22. UNII Band II (802.11n) Conducted Output Power Measurements**

## 6.7 Output Power Measurement – 802.11a/n (UNII III) – 40MHz

§15.407 (a)(1)

### Chain A:

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(53.7) = 21.3\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Average Power [dBm]
5510	102	HT0	6.5/7.2	13.82
		HT1	13/14.4	13.74
		HT2	19.5/21.7	13.56
		HT3	26/28.9	13.68
		HT4	39/43.3	13.76
		HT5	52/57.8	13.78
		HT6	58.5/65	12.22
		HT7	65/72.2	10.77
5590	118	HT0	6.5/7.2	13.96
		HT1	13/14.4	14.23
		HT2	19.5/21.7	14.13
		HT3	26/28.9	14.05
		HT4	39/43.3	14.11
		HT5	52/57.8	13.33
		HT6	58.5/65	11.35
		HT7	65/72.2	9.39
5670	134	HT0	6.5/7.2	13.90
		HT1	13/14.4	13.88
		HT2	19.5/21.7	13.87
		HT3	26/28.9	13.79
		HT4	39/43.3	13.83
		HT5	52/57.8	13.07
		HT6	58.5/65	11.14
		HT7	65/72.2	9.64

Table 6-23. UNII Band III (802.11n) Conducted Output Power Measurements

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN			Page 25 of 63

**Chain B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4\text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(53.4) = 21.28\text{dBm}$  which is 16.99dBm.***

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Average Power [dBm]
5510	102	HT0	6.5/7.2	14.43
		HT1	13/14.4	14.70
		HT2	19.5/21.7	14.63
		HT3	26/28.9	14.34
		HT4	39/43.3	14.23
		HT5	52/57.8	14.18
		HT6	58.5/65	12.57
		HT7	65/72.2	11.04
5590	118	HT0	6.5/7.2	15.48
		HT1	13/14.4	15.41
		HT2	19.5/21.7	15.35
		HT3	26/28.9	14.78
		HT4	39/43.3	14.71
		HT5	52/57.8	13.51
		HT6	58.5/65	11.89
		HT7	65/72.2	9.93
5670	134	HT0	6.5/7.2	14.91
		HT1	13/14.4	14.88
		HT2	19.5/21.7	15.10
		HT3	26/28.9	14.50
		HT4	39/43.3	14.51
		HT5	52/57.8	13.72
		HT6	58.5/65	11.25
		HT7	65/72.2	9.76

**Table 6-24. UNII Band III (802.11n) Conducted Output Power Measurements**

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 26 of 63		

**Chain A + B:**

A transmitter antenna terminal of EUT is connected to the input of a RF power sensor. Measurement is made using the average detector of the broadband power meter 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  $4 \text{ dBm} + 10\log_{10}(26\text{dB BW}) = 4 + 10\log_{10}(39) = 19.91\text{dBm}$  which is 16.99dBm.**

Freq [MHz]	Channel	MCS Index	Data Rate [Mbps]	40MHz BW Power (Chain A) [dBm]	40MHz BW Power (Chain B) [dBm]	40MHz BW Aggregate Power [dBm]		
5510	102	HT8	27/30	11.91	13.63	15.86		
		HT9	54/60	11.74	13.55	15.75		
		HT10	80/90	11.77	13.46	15.71		
		HT11	108/120	12.23	12.93	15.60		
		HT12	162/180	12.04	12.48	15.28		
		HT13	216/240	11.57	12.68	15.17		
		HT14	243/270	11.87	12.56	15.24		
		HT15	270/300	11.06	11.21	14.15		
		5590	118	HT8	27/30	10.21	12.59	14.57
				HT9	54/60	10.55	12.52	14.66
				HT10	80/90	10.23	12.37	14.44
				HT11	108/120	10.25	12.31	14.41
				HT12	162/180	10.39	11.79	14.16
				HT13	216/240	10.25	11.44	13.90
				HT14	243/270	10.44	11.56	14.05
HT15	270/300			9.27	10.26	12.80		
5670	134	HT8	27/30	11.27	12.39	14.88		
		HT9	54/60	10.98	11.39	14.20		
		HT10	80/90	10.92	11.81	14.40		
		HT11	108/120	11.32	11.34	14.34		
		HT12	162/180	11.42	11.63	14.54		
		HT13	216/240	11.50	11.48	14.50		
		HT14	243/270	10.64	11.03	13.85		
		HT15	270/300	9.49	9.69	12.60		

**Table 6-25. UNII Band III (802.11n) Conducted Output Power Measurements**

## 6.8 Peak Power Spectral Density (MIMO)

### §15.407 (a)(1)

The peak power spectral density (PPSD) in this section is reported with the EUT transmitting with both transmitters (Chain A and Chain B) simultaneously in a completely uncorrelated fashion. Per Method #2 of the FCC KDB Publication 662911 titled "Emissions Testing of Transmitters with Multiple Outputs in the Same Band" dated April 4, 2011, the PPSD of each individual output is adjusted by a factor of  $10\log(N)$ , where N is the number of outputs. In the case of this EUT, the PPSD data reported in the original certification for this module under FCC ID: PD962230ANH is increased by 3dB ( $N = 2$ ) and then compared to the PPSD limit in each respective UNII band for both 20MHz and 40MHz operation.

#### Chain A and B (MIMO) - Band 1

	Chain A PSD (dBm/MHz)	Level + 10 Log (N) (MIMO)	FCC Limit (dBm/MHz)	Margin (dB)	Chain B (dBm/MHz)	Level + 10 Log (N) (MIMO)	FCC Limit (dBm/MHz)	Margin (dB)
20MHz BW								
5180	0.8	3.81	4	-0.19	0.4	3.41	4	-0.59
5200	0.5	3.51	4	-0.49	0.6	3.61	4	-0.39
5240	0.4	3.41	4	-0.59	0.5	3.51	4	-0.49
40MHz BW								
5190	-4.9	-1.89	4	-5.89	-4.5	-1.49	4	-5.49
5230	-1.6	1.41	4	-2.59	-1.5	1.51	4	-2.49

Table 6-26. UNII Band 1 Peak Power Spectral Density (MIMO Operation)

#### Chain A and B (MIMO) - Band 2

	Chain A PSD (dBm/MHz)	Level + 10 Log (N) (MIMO)	FCC Limit (dBm/MHz)	Margin (dB)	Chain B (dBm/MHz)	Level + 10 Log (N) (MIMO)	FCC Limit (dBm/MHz)	Margin (dB)
20MHz BW								
5260	0.0	3.01	4	-0.99	-0.1	2.91	4	-1.09
5300	0.4	3.41	4	-0.59	-0.1	2.91	4	-1.09
5320	0.3	3.31	4	-0.69	0.4	3.41	4	-0.59
40MHz BW								
5270	-2.7	0.31	4	-3.69	-2.5	0.51	4	-3.49
5310	-2.6	0.41	4	-3.59	-3.0	0.01	4	-3.99

Table 6-27. UNII Band 1 Peak Power Spectral Density (MIMO Operation)

#### Chain A and B (MIMO) - Band 3

	Chain A PSD (dBm/MHz)	Level + 10 Log (N) (MIMO)	FCC Limit (dBm/MHz)	Margin (dB)	Chain B (dBm/MHz)	Level + 10 Log (N) (MIMO)	FCC Limit (dBm/MHz)	Margin (dB)
20MHz BW								
5500	0.2	3.21	4	-0.79	0.8	3.81	4	-0.19
5600	0.3	3.31	4	-0.69	0.9	3.91	4	-0.09
5700	-0.2	2.81	4	-1.19	-0.3	2.71	4	-1.29
40MHz BW								
5510	-2.0	1.01	4	-2.99	-2.0	1.01	4	-2.99
5550	-2.0	1.01			-1.6	1.41		
5670	-2.7	0.31	4	-3.69	-2.5	0.51	4	-3.49

Table 6-28. UNII Band 1 Peak Power Spectral Density (MIMO Operation)

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 28 of 63

## 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 10<sup>th</sup> 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 6-29 per Section 15.209.

**Note:** All data rates and antennas were investigated for radiated spurious emissions. Transmissions from the Main antenna (Chain A) produced the worst case emissions while RF emissions from the Auxiliary (Chain B) and Simultaneous transmission of the Main and Auxiliary Antennas produced lower emissions. Radiated spurious emissions that were not at the band edges were found to be at their highest with the EUT transmitting with a 20MHz channel bandwidth.

Frequency	Field Strength [mV/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 6-29. Radiated Limits**

### Sample Calculation

- Field Strength Level [dB<sub>μ</sub>V/m] = Analyzer Level [dBm] + 107 + AFCL [dB]

### Notes:

- AFCL = Antenna Factor [dB] + Cable Loss [dB]

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 29 of 63		

**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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10360.00	-100.59	Peak	V	47.47	-9.54	44.34	68.20	-23.86
* 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 6-30. Radiated Measurements @ 1 meter (Chain A)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10360.00	-100.32	Peak	V	47.47	-9.54	44.61	68.20	-23.59
* 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 6-31. Radiated Measurements @ 1 meter (Chain B)**

**Radiated Spurious Emission Measurements (Cont'd)**  
**§15.407(b)(1), (2), (3), §15.205 & §15.209**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10360.00	-100.15	Peak	V	47.47	-9.54	44.78	68.20	-23.42
* 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 6-32. Radiated Measurements @ 1 meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 31 of 63	

**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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10400.00	-96.65	Peak	V	47.50	-9.54	48.30	68.20	-19.90
* 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 6-33. Radiated Measurements @ 1 meter (Chain A)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10400.00	-96.26	Peak	V	47.50	-9.54	48.69	68.20	-19.51
* 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 6-34. Radiated Measurements @ 1 meter (Chain B)**

**Radiated Spurious Emission Measurements (Cont'd)**  
§15.407(b)(1), (2), (3), §15.205 & §15.209

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10400.00	-96.75	Peak	V	47.50	-9.54	48.20	68.20	-20.00
* 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 6-35. Radiated Measurements @ 1 meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN			

**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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10480.00	-96.93	Peak	V	47.55	-9.54	48.08	68.20	-20.12
* 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 6-36. Radiated Measurements @ 1 meter (Chain A)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10480.00	-96.52	Peak	V	47.55	-9.54	48.49	68.20	-19.71
* 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 6-37. Radiated Measurements @ 1 meter (Chain B)**

**Radiated Spurious Emission Measurements (Cont'd)**  
**§15.407(b)(1), (2), (3), §15.205 & §15.209**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10480.00	-97.04	Peak	V	47.55	-9.54	47.97	68.20	-20.23
* 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 6-38. Radiated Measurements @ 1 meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN			

**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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10520.00	-96.90	Peak	V	47.72	-9.54	48.27	68.20	-19.93
* 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 6-39. Radiated Measurements @ 1 meter (Chain A)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10520.00	-96.32	Peak	V	47.72	-9.54	48.85	68.20	-19.35
* 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 6-40. Radiated Measurements @ 1 meter (Chain B)**

**Radiated Spurious Emission Measurements (Cont'd)**  
**§15.407(b)(1), (2), (3), §15.205 & §15.209**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10520.00	-96.44	Peak	V	47.72	-9.54	48.73	68.20	-19.47
* 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 6-41. Radiated Measurements @ 1 meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN			

## 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10560.00	-96.88	Peak	V	47.78	-9.54	48.36	68.20	-19.84
* 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 6-42. Radiated Measurements @ 1 meter (Chain A)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10560.00	-97.00	Peak	V	47.78	-9.54	48.24	68.20	-19.96
* 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 6-43. Radiated Measurements @ 1 meter (Chain B)**

**Radiated Spurious Emission Measurements (Cont'd)**  
**§15.407(b)(1), (2), (3), §15.205 & §15.209**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
10560.00	-96.94	Peak	V	47.78	-9.54	48.30	68.20	-19.90
* 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 6-44. Radiated Measurements @ 1 meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 39 of 63

## 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 10640.00	-105.49	Average	V	47.91	-9.54	39.88	53.98	-14.10
* 10640.00	-96.65	Peak	V	47.91	-9.54	48.72	73.98	-25.26
* 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
* 26600.00	-125.00	Peak	V	60.20	0.00	42.20	68.20	-26.00

**Table 6-45. Radiated Measurements @ 1 meter (Chain A)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 10640.00	-106.35	Average	V	47.91	-9.54	39.02	53.98	-14.96
* 10640.00	-96.47	Peak	V	47.91	-9.54	48.90	73.98	-25.08
* 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
* 26600.00	-125.00	Peak	V	60.20	0.00	42.20	68.20	-26.00

**Table 6-46. Radiated Measurements @ 1 meter (Chain B)**

**Radiated Spurious Emission Measurements (Cont'd)**  
**§15.407(b)(1), (2), (3), §15.205 & §15.209**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
* 10640.00	-106.24	Average	V	47.91	-9.54	39.13	53.98	-14.85
* 10640.00	-97.41	Peak	V	47.91	-9.54	47.96	73.98	-26.02
* 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
* 26600.00	-125.00	Peak	V	60.20	0.00	42.20	68.20	-26.00

**Table 6-47. Radiated Measurements @ 1 meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated.

FCC ID: AK8PCG41312L			FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN			

## 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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11000.00	-105.93	Average	V	48.47	-9.54	40.00	53.98	-13.98
* 11000.00	-96.96	Peak	V	48.47	-9.54	48.97	73.98	-25.01
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 6-48. Radiated Measurements at 1-meter (Chain A)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11000.00	-105.99	Average	V	48.47	-9.54	39.94	53.98	-14.04
* 11000.00	-97.69	Peak	V	48.47	-9.54	48.24	73.98	-25.74
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 6-49. Radiated Measurements at 1-meter (Chain B)**

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN			

**Radiated Spurious Emission Measurements (Cont'd)**  
§15.407(b)(1), (2), (3), §15.205 & §15.209

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11000.00	-105.95	Average	V	48.47	-9.54	39.98	53.98	-14.00
* 11000.00	-95.98	Peak	V	48.47	-9.54	49.95	73.98	-24.03
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 6-50. Radiated Measurements at 1-meter (MIMO Chain A + B)**

**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 6-29.
4. Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
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 10<sup>th</sup> 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.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 43 of 63	

### 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11200.00	-106.20	Average	V	48.92	-9.54	40.18	53.98	-13.80
* 11200.00	-97.53	Peak	V	48.92	-9.54	48.85	73.98	-25.13
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 6-51. Radiated Measurements at 1-meter (Chain A)

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11200.00	-106.25	Average	V	48.92	-9.54	40.13	53.98	-13.85
* 11200.00	-96.05	Peak	V	48.92	-9.54	50.33	73.98	-23.65
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 6-52. Radiated Measurements at 1-meter (Chain B)

**Radiated Spurious Emission Measurements (Cont'd)**  
**§15.407(b)(1), (2), (3), §15.205 & §15.209**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11200.00	-106.31	Average	V	48.92	-9.54	40.07	53.98	-13.91
* 11200.00	-96.80	Peak	V	48.92	-9.54	49.58	73.98	-24.40
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 6-53. Radiated Measurements at 1-meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 45 of 63

### 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11400.00	-106.47	Average	V	49.36	-9.54	40.35	53.98	-13.63
* 11400.00	-97.06	Peak	V	49.36	-9.54	49.76	73.98	-24.22
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 6-54. Radiated Measurements at 1-meter (Chain A)

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11400.00	-106.52	Average	V	49.36	-9.54	40.30	53.98	-13.68
* 11400.00	-96.63	Peak	V	49.36	-9.54	50.19	73.98	-23.79
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 6-55. Radiated Measurements at 1-meter (Chain B)

**Radiated Spurious Emission Measurements (Cont'd)**  
§15.407(b)(1), (2), (3), §15.205 & §15.209

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
* 11400.00	-106.51	Average	V	49.36	-9.54	40.31	53.98	-13.67
* 11400.00	-96.80	Peak	V	49.36	-9.54	50.02	73.98	-23.96
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 6-56. Radiated Measurements at 1-meter (MIMO Chain A + B)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- 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 6-29.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 µV/m (54dBµ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 47 of 63

## 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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5469.70	-80.28	Peak	H	44.01	-9.54	61.19	68.20	-7.01
5468.90	-80.91	Peak	H	44.01	-9.54	60.55	68.20	-7.65
5467.30	-80.66	Peak	H	44.00	-9.54	60.80	68.20	-7.40

**Table 6-57. Radiated Measurements at 1-meter – Chain A (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5469.10	-75.58	Peak	H	44.00	-9.54	65.88	68.20	-2.32
5468.70	-76.58	Peak	H	44.01	-9.54	64.88	68.20	-3.32
5468.40	-78.42	Peak	H	44.00	-9.54	63.04	68.20	-5.16

**Table 6-58. Radiated Measurements at 1-meter – Chain A (40MHz)**

### NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dBμV/m @ 3m)
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 48 of 63

## 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: 5500MHz

Channel: 100

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5469.00	-82.21	Peak	H	44.01	-9.54	59.26	68.20	-8.94
5468.90	-84.42	Peak	H	44.01	-9.54	57.04	68.20	-11.16
5467.30	-83.98	Peak	H	44.00	-9.54	57.48	68.20	-10.72

**Table 6-59. Radiated Measurements at 1-meter – Chain B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5468.80	-76.67	Peak	H	44.00	-9.54	64.80	68.20	-3.40
5468.40	-80.13	Peak	H	44.01	-9.54	61.33	68.20	-6.87
5466.90	-80.61	Peak	H	44.00	-9.54	60.85	68.20	-7.35

**Table 6-60. Radiated Measurements at 1-meter – Chain B (40MHz)**

### NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dBμV/m @ 3m)
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission – was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 49 of 63

## 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: 5500MHz

Channel: 100

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5469.80	-82.23	Peak	H	44.01	-9.54	59.24	68.20	-8.96
5469.20	-82.36	Peak	H	44.01	-9.54	59.10	68.20	-9.10
5467.20	-81.58	Peak	H	44.00	-9.54	59.88	68.20	-8.32

**Table 6-61. Radiated Measurements at 1-meter – Chain A+B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5469.40	-75.60	Peak	H	44.00	-9.54	65.86	68.20	-2.34
5468.90	-77.60	Peak	H	44.01	-9.54	63.86	68.20	-4.34
5468.30	-76.75	Peak	H	44.00	-9.54	64.71	68.20	-3.49

**Table 6-62. Radiated Measurements at 1-meter – Chain A+B (40MHz)**

**NOTES:**

1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dBμV/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. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
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 10<sup>th</sup> 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.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 50 of 63	

## 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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5725.70	-82.05	Peak	H	45.17	-9.54	60.58	68.20	-7.62

**Table 6-63. Radiated Measurements at 1-meter – Chain A (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5725.00	-84.31	Peak	H	45.17	-9.54	58.32	68.20	-9.88

**Table 6-64. Radiated Measurements at 1-meter – Chain A (40MHz)**

### NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m @ 3m)
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 51 of 63

## 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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5725.00	-84.00	Peak	H	45.17	-9.54	58.63	68.20	-9.57

Table 6-65. Radiated Measurements at 1-meter – Chain B (20MHz)

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5725.00	-76.14	Peak	H	45.17	-9.54	66.49	68.20	-1.71

Table 6-66. Radiated Measurements at 1-meter – Chain B (40MHz)

### NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dBμV/m @ 3m)
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 52 of 63

## 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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5725.00	-76.99	Peak	H	45.17	-9.54	65.64	68.20	-2.56

**Table 6-67. Radiated Measurements at 1-meter – Chain A+B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5725.00	-87.59	Peak	H	45.17	-9.54	55.04	68.20	-13.16

**Table 6-68. Radiated Measurements at 1-meter – Chain A+B (40MHz)**

### NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m @ 3m)
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 53 of 63

## 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 [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5137.25	-106.20	Average	H	42.56	-9.54	33.82	53.98	-20.16
5137.25	-87.82	Peak	H	42.56	-9.54	52.20	73.98	-21.78
5142.10	-103.81	Average	H	42.58	-9.54	36.23	53.98	-17.75
5142.10	-85.49	Peak	H	42.58	-9.54	54.55	73.98	-19.43
5148.50	-98.13	Average	H	42.61	-9.54	41.94	53.98	-12.04
5148.50	-82.40	Peak	H	42.61	-9.54	57.67	73.98	-16.31

**Table 6-69. Radiated Restricted Band Measurements at 1-meter – Chain A (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5135.75	-98.29	Average	H	42.55	-9.54	41.72	53.98	-12.26
5135.75	-81.86	Peak	H	42.55	-9.54	58.15	73.98	-15.83
5141.00	-96.19	Average	H	42.58	-9.54	43.84	53.98	-10.14
5141.00	-80.20	Peak	H	42.58	-9.54	59.83	73.98	-14.15
5148.80	-89.57	Average	H	42.61	-9.54	50.50	53.98	-3.48
5148.80	-75.86	Peak	H	42.61	-9.54	64.21	73.98	-9.77

**Table 6-70. Radiated Restricted Band Measurements at 1-meter – Chain A (40MHz)**

### NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 54 of 63

## 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:	5180MHz
Channel:	36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5135.00	-106.53	Average	H	42.55	-9.54	33.48	53.98	-20.50
5135.00	-90.71	Peak	H	42.55	-9.54	49.30	73.98	-24.68
5142.50	-103.84	Average	H	42.58	-9.54	36.20	53.98	-17.78
5142.50	-86.04	Peak	H	42.58	-9.54	54.00	73.98	-19.98
5148.80	-99.45	Average	H	42.61	-9.54	40.62	53.98	-13.36
5148.80	-83.01	Peak	H	42.61	-9.54	57.06	73.98	-16.92

**Table 6-71. Radiated Restricted Band Measurements at 1-meter – Chain B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5135.75	-103.73	Average	H	42.55	-9.54	36.28	53.98	-17.70
5135.75	-86.15	Peak	H	42.55	-9.54	53.86	73.98	-20.12
5141.75	-101.54	Average	H	42.58	-9.54	38.49	53.98	-15.49
5141.75	-85.94	Peak	H	42.58	-9.54	54.09	73.98	-19.89
5149.00	-94.12	Average	H	42.61	-9.54	45.95	53.98	-8.03
5149.00	-80.01	Peak	H	42.61	-9.54	60.06	73.98	-13.92

**Table 6-72. Radiated Restricted Band Measurements at 1-meter – Chain B (40MHz)**

**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. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
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 10<sup>th</sup> 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.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN	Page 55 of 63	

## 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:	5180MHz
Channel:	36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5140.60	-103.40	Average	H	42.58	-9.54	36.63	53.98	-17.35
5140.60	-88.13	Peak	H	42.58	-9.54	51.90	73.98	-22.08
5145.00	-99.43	Average	H	42.60	-9.54	40.63	53.98	-13.35
5145.00	-86.18	Peak	H	42.60	-9.54	53.88	73.98	-20.10
5150.00	-95.71	Average	H	42.62	-9.54	44.37	53.98	-9.61
5150.00	-82.69	Peak	H	42.62	-9.54	57.39	73.98	-16.59

**Table 6-73. Radiated Restricted Band Measurements at 1-meter – Chain A+B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5139.10	-94.84	Average	H	42.57	-9.54	45.18	53.98	-8.80
5139.10	-79.95	Peak	H	42.57	-9.54	60.07	73.98	-13.91
5143.20	-91.87	Average	H	42.59	-9.54	48.18	53.98	-5.80
5143.20	-79.01	Peak	H	42.59	-9.54	61.04	73.98	-12.94
5150.00	-87.89	Average	H	42.62	-9.54	52.19	53.98	-1.79
5150.00	-76.55	Peak	H	42.62	-9.54	63.53	73.98	-10.45

**Table 6-74. Radiated Restricted Band Measurements at 1-meter – Chain A+B (40MHz)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 56 of 63

## 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5350.80	-105.76	Average	H	43.50	-9.54	35.20	53.98	-18.78
5350.80	-90.06	Peak	H	43.50	-9.54	50.90	73.98	-23.08
5355.00	-107.35	Average	H	43.52	-9.54	33.63	53.98	-20.35
5355.00	-91.33	Peak	H	43.52	-9.54	49.65	73.98	-24.33
5360.45	-108.05	Average	H	43.54	-9.54	32.95	53.98	-21.03
5360.45	-90.81	Peak	H	43.54	-9.54	50.19	73.98	-23.79

**Table 6-75. Radiated Restricted Band Measurements at 1-meter – Chain A (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5352.00	-100.10	Average	H	43.51	-9.54	40.87	53.98	-13.11
5352.00	-86.04	Peak	H	43.51	-9.54	54.93	73.98	-19.05
5357.00	-106.10	Average	H	43.53	-9.54	34.89	53.98	-19.09
5357.00	-89.93	Peak	H	43.53	-9.54	51.06	73.98	-22.92
5361.80	-108.49	Average	H	43.55	-9.54	32.52	53.98	-21.46
5361.80	-95.03	Peak	H	43.55	-9.54	45.98	73.98	-28.00

**Table 6-76. Radiated Restricted Band Measurements at 1-meter – Chain A (40MHz)**

**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. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
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 10<sup>th</sup> 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.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 57 of 63

## 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5351.10	-101.12	Average	H	43.50	-9.54	39.84	53.98	-14.14
5351.10	-85.94	Peak	H	43.50	-9.54	55.02	73.98	-18.96
5357.70	-106.33	Average	H	43.53	-9.54	34.66	53.98	-19.32
5357.70	-89.81	Peak	H	43.53	-9.54	51.18	73.98	-22.80
5362.10	-107.64	Average	H	43.55	-9.54	33.37	53.98	-20.61
5362.10	-91.55	Peak	H	43.55	-9.54	49.46	73.98	-24.52

**Table 6-77. Radiated Restricted Band Measurements at 1-meter – Chain B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5352.20	-95.10	Average	H	43.51	-9.54	45.87	53.98	-8.11
5352.20	-80.91	Peak	H	43.51	-9.54	60.06	73.98	-13.92
5354.60	-99.99	Average	H	43.52	-9.54	40.99	53.98	-12.99
5354.60	-83.55	Peak	H	43.52	-9.54	57.43	73.98	-16.55
5357.70	-101.51	Average	H	43.53	-9.54	39.48	53.98	-14.50
5357.70	-84.74	Peak	H	43.53	-9.54	56.25	73.98	-17.73

**Table 6-78. Radiated Restricted Band Measurements at 1-meter – Chain B (40MHz)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 58 of 63

## 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5350.55	-103.64	Average	H	43.50	-9.54	37.32	53.98	-16.66
5350.55	-89.69	Peak	H	43.50	-9.54	51.27	73.98	-22.71
5356.30	-105.85	Average	H	43.53	-9.54	35.13	53.98	-18.85
5356.30	-91.17	Peak	H	43.53	-9.54	49.81	73.98	-24.17
5359.60	-107.03	Average	H	43.54	-9.54	33.97	53.98	-20.01
5359.60	-92.15	Peak	H	43.54	-9.54	48.85	73.98	-25.13

**Table 6-79. Radiated Restricted Band Measurements at 1-meter – Chain A+B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5353.00	-99.55	Average	H	43.51	-9.54	41.42	53.98	-12.56
5353.00	-86.88	Peak	H	43.51	-9.54	54.09	73.98	-19.89
5356.00	-102.73	Average	H	43.52	-9.54	38.25	53.98	-15.73
5356.00	-89.44	Peak	H	43.52	-9.54	51.54	73.98	-22.44
5359.00	-104.79	Average	H	43.54	-9.54	36.20	53.98	-17.78
5359.00	-91.42	Peak	H	43.54	-9.54	49.57	73.98	-24.41

**Table 6-80. Radiated Restricted Band Measurements at 1-meter – Chain A+B (40MHz)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 59 of 63

## 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5450.90	-107.87	Average	H	43.93	-9.54	33.52	53.98	-20.46
5450.90	-88.26	Peak	H	43.93	-9.54	53.13	73.98	-20.85
5452.80	-107.81	Average	H	43.94	-9.54	33.58	53.98	-20.39
5452.80	-86.93	Peak	H	43.94	-9.54	54.46	73.98	-19.51
5459.40	-103.92	Average	H	43.97	-9.54	37.50	53.98	-16.48
5459.40	-85.95	Peak	H	43.97	-9.54	55.47	73.98	-18.51

**Table 6-81. Radiated Restricted Band Measurements at 1-meter – Chain A (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5449.00	-96.73	Average	H	43.92	-9.54	44.65	53.98	-9.33
5449.00	-81.99	Peak	H	43.92	-9.54	59.39	73.98	-14.59
5454.80	-94.49	Average	H	43.95	-9.54	46.91	53.98	-7.07
5454.80	-78.34	Peak	H	43.95	-9.54	63.06	73.98	-10.92
5458.90	-91.36	Average	H	43.96	-9.54	50.06	53.98	-3.92
5458.90	-77.32	Peak	H	43.96	-9.54	64.10	73.98	-9.88

**Table 6-82. Radiated Restricted Band Measurements at 1-meter – Chain A (40MHz)**

**NOTES:**

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- Data shown is for worst case mode and data rate. All modes (802.11a and 802.11n) were evaluated.
- Peak Measurements > 1GHz using RBW = VBW = 1MHz. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to the 10<sup>th</sup> harmonic and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 60 of 63

### 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5393.10	-108.88	Average	H	43.68	-9.54	32.26	53.98	-21.72
5393.10	-93.43	Peak	H	43.68	-9.54	47.71	73.98	-26.27
5452.50	-108.82	Average	H	43.94	-9.54	32.57	53.98	-21.41
5452.50	-91.62	Peak	H	43.94	-9.54	49.77	73.98	-24.21
5457.00	-106.75	Average	H	43.96	-9.54	34.66	53.98	-19.32
5457.00	-89.56	Peak	H	43.96	-9.54	51.85	73.98	-22.13

**Table 6-83. Radiated Restricted Band Measurements at 1-meter – Chain B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5451.20	-100.13	Average	H	43.93	-9.54	41.26	53.98	-12.72
5451.20	-84.72	Peak	H	43.93	-9.54	56.67	73.98	-17.31
5455.60	-98.56	Average	H	43.95	-9.54	42.85	53.98	-11.13
5455.60	-82.18	Peak	H	43.95	-9.54	59.23	73.98	-14.75
5459.10	-97.72	Average	H	43.96	-9.54	43.70	53.98	-10.28
5459.10	-81.96	Peak	H	43.96	-9.54	59.46	73.98	-14.52

**Table 6-84. Radiated Restricted Band Measurements at 1-meter – Chain B (40MHz)**

**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. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
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 10<sup>th</sup> 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.

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 61 of 63

## 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 [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5447.00	-109.29	Average	H	43.91	-9.54	32.08	53.98	-21.90
5447.00	-92.50	Peak	H	43.91	-9.54	48.87	73.98	-25.11
5453.00	-108.42	Average	H	43.94	-9.54	32.98	53.98	-21.00
5453.00	-93.29	Peak	H	43.94	-9.54	48.11	73.98	-25.87
5460.00	-105.52	Average	H	43.97	-9.54	35.90	53.98	-18.08
5460.00	-89.62	Peak	H	43.97	-9.54	51.80	73.98	-22.18

**Table 6-85. Radiated Restricted Band Measurements at 1-meter – Chain A+B (20MHz)**

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBmV/m]	Limit [dBmV/m]	Margin [dB]
5448.45	-98.81	Average	H	43.92	-9.54	42.57	53.98	-11.41
5448.45	-83.96	Peak	H	43.92	-9.54	57.42	73.98	-16.56
5454.80	-96.18	Average	H	43.95	-9.54	45.22	53.98	-8.76
5454.80	-83.25	Peak	H	43.95	-9.54	58.15	73.98	-15.83
5459.45	-93.80	Average	H	43.97	-9.54	47.62	53.98	-6.36
5459.45	-79.92	Peak	H	43.97	-9.54	61.50	73.98	-12.48

**Table 6-86. Radiated Restricted Band Measurements at 1-meter – Chain A+B (40MHz)**

**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. Average measurements >1GHz using RBW = 1MHz, VBW = 10Hz.
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 10<sup>th</sup> 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

FCC ID: AK8PCG41312L		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 62 of 63

## 7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Sony 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN FCC ID: AK8PCG41312L** is in compliance with Part 15E of the FCC Rules and RSS-210 of the Industry Canada Rules.

FCC ID: AK8PCG41312L		<b>FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)</b>		Reviewed by: Quality Manager
Test Report S/N: 0Y1103150541.AK8	Test Dates: Mar. 31 - Apr. 4, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band 13 LTE Laptop with Bluetooth and WLAN		Page 63 of 63