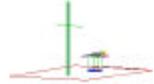




# PCTEST ENGINEERING LABORATORY, INC.

6660-B Dobbin Road, Columbia, MD 21045 USA  
Tel. 410.290.6652 / Fax 410.290.6554  
<http://www.pctestlab.com>



## MEASUREMENT REPORT FCC Part 27 LTE

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

**Date of Testing:**  
April 11-15, 2011  
**Test Site/Location:**  
PCTEST Lab., Columbia, MD, USA  
**Test Report Serial No.:**  
0Y1103150538.AK8

**FCC ID:** AK8PCG41312L  
**APPLICANT:** SONY CORPORATION

**Application Type:** Certification  
**FCC Classification:** Licensed Non-Broadcast Transmitter (TNB)  
**FCC Rule Part(s):** §2; §27  
**EUT Type:** 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band13  
LTE Laptop with BT and WLAN  
**Model(s):** PCG-41312L  
**Tx Frequency Range:** 782MHz (10MHz LTE – Band 13)  
779.5 – 784.5MHz (5MHz LTE – Band13)  
**Max. RF Output Power:** 0.048W (16.80 dBm) ERP (10MHz QPSK)  
0.052W (17.20 dBm) ERP (10MHz 16-QAM)  
0.047W (16.70 dBm) ERP (5MHz QPSK)  
0.048w (16.80 dBm) ERP (5MHz 16-QAM)  
**Test Device Serial No.:** *identical prototype* [S/N: 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 §2.947. 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:** Power output listed is ERP for Part 27.

*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

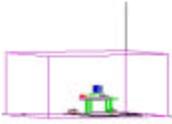


<b>FCC ID:</b> AK8PCG41312L		<b>FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1103150538.AK8	<b>Test Dates:</b> April 11-15, 2011	<b>EUT Type:</b> 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band13 LTE Laptop with BT and WLAN		Page 1 of 14

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# MEASUREMENT REPORT

## FCC Part 27



### §2.1033 General Information

**APPLICANT:** Sony Corporation  
**APPLICANT ADDRESS:** 1-7-1 Konan Minato-ku  
 Tokyo  
**TEST SITE:** PCTEST ENGINEERING LABORATORY, INC.  
**TEST SITE ADDRESS:** 6660-B Dobbin Road, Columbia, MD 21045 USA  
**FCC RULE PART(S):** §2; §27  
**BASE MODEL:** PCG-41312L  
**FCC ID:** AK8PCG41312L  
**FCC CLASSIFICATION:** Licensed Non-Broadcast Transmitter (TNB)  
**MODULATIONS:** QPSK, 16-QAM (Uplink)  
**FREQUENCY TOLERANCE:** Emission must remain in band  
**Test Device Serial No.:** N/A       Production     Pre-Production     Engineering  
**DATE(S) OF TEST:** April 11-15, 2011  
**TEST REPORT S/N:** 0Y1103150538.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.



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# 1.0 INTRODUCTION

## 1.1 Scope

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

## 1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity area, the Baltimore-Washington Intern't'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.

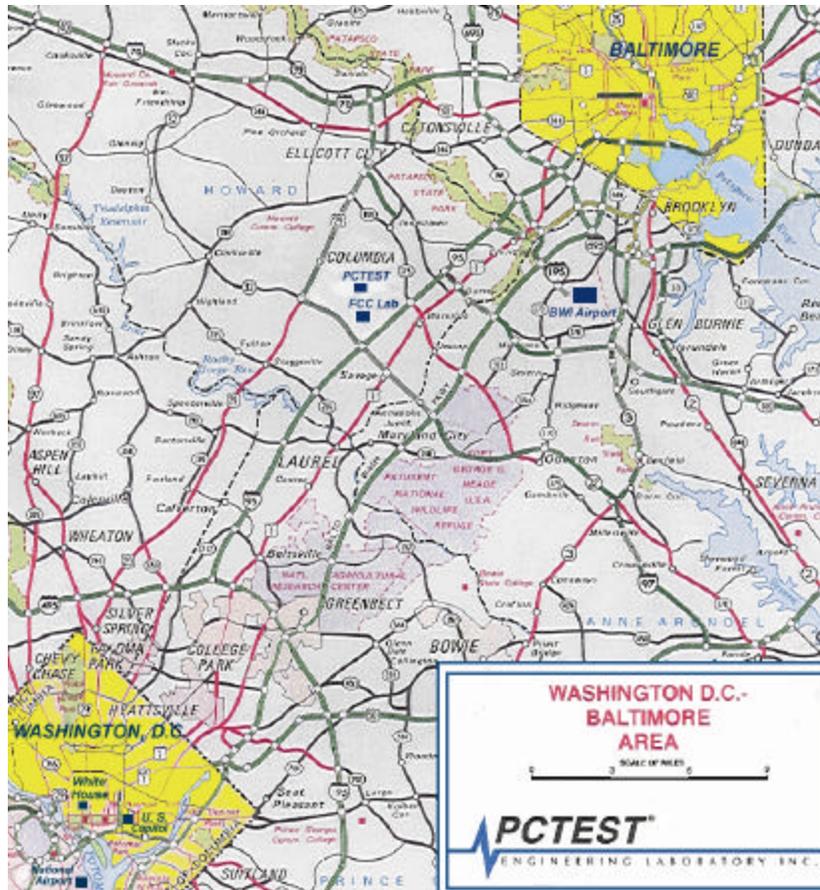


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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## 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 Band13 LTE Laptop with BT and WLAN FCC ID: AK8PCG41312L**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Sony / Model: PCG-41312L	AK8PCG41312L	850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band13 LTE Laptop with BT and WLAN

**Table 2-1. EUT Equipment Description**

A CMW500 call box was used to set the EUT to transmit at full power. Each available modulation type (i.e. QPSK, 16-QAM) and RB size/RB offset combination was tested to determine the configuration producing the highest power and the worst case emissions.

### 2.2 EMI Suppression Device(s)/Modifications

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

### 2.3 Labeling Requirements

Per 2.925

The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.

Per 15.19; Docket 95-19

In addition to this requirement, a device subject to certification shall be labeled as follows:

*This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

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).

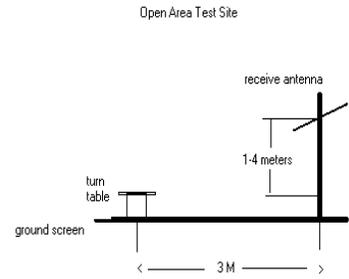
Please see attachment for FCC ID label and label location.

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## 3.0 DESCRIPTION OF TESTS

### 3.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure 3-1). The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This power level was recorded using a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded with the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.



**Figure 3-1. Diagram of 3-meter outdoor test range**

**Deviation from Measurement Procedure.....None**

### 3.2 Block C Frequency Range

**§27.5(b)(3)**

Two paired channels of 11 megahertz each are available for assignment in Block C in the 746-757 MHz and 776-787 MHz bands. In the event that no licenses for two channels in this Block C are assigned based on the results of the first auction in which such licenses were offered because the auction results do not satisfy the applicable reserve price, the spectrum in the 746-757 MHz and 776-787 MHz bands will instead be made available for assignment at a subsequent auction as follows: (i) Two paired channels of 6 megahertz each available for assignment in Block C1 in the 746-752 MHz and 776-782 MHz bands. (ii) Two paired channels of 5 megahertz each available for assignment in Block C2 in the 752-757 MHz and 782-787 MHz bands.

### 3.3 Radiated Power and Radiated Spurious Emissions

**§2.1053, §27.53(c)**

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This level is then measured with a broadband average power meter. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10<sup>th</sup> harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive average power meter reading. This spurious level is recorded with the power meter. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all configurations and the worst case radiated power is reported while transmitting with 25 resource blocks with an offset of 13 using QPSK modulation.

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## 4.0 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
-	263-10dB	(DC-18GHz) 10 dB Attenuator	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	8449B	(1-26.5GHz) Pre-Amplifier	2/8/2011	Annual	2/8/2012	3008A00985
Agilent	85650A	Quasi-Peak Adapter	4/2/2011	Annual	4/2/2012	3303A01872
Agilent	E4407B	ESA Spectrum Analyzer	4/6/2011	Annual	4/6/2012	US39210313
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	11/30/2010	Annual	11/30/2011	US42510244
Agilent	E5515C	Wireless Communications Test Set	10/11/2010	Annual	10/11/2011	GB46110872
Agilent	E5515C	Wireless Communications Test Set	10/8/2010	Annual	10/8/2011	GB46310798
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/30/2011	Annual	3/30/2012	MY45470194
Agilent	E8267C	Vector Signal Generator	10/11/2010	Annual	10/11/2011	US42340152
Agilent	N9020A	MXA Signal Analyzer	9/8/2010	Annual	9/8/2011	US46470561
Agilent	E5515C	Wireless Communications Test Set	2/8/2011	Annual	2/8/2012	GB45360985
Anritsu	ML2495A	Power Meter	10/13/2010	Annual	10/13/2011	941001
Compliance Design	Roberts	Dipole Set	4/7/2010	Biennial	4/7/2012	146
Compliance Design	Roberts	Dipole Set	4/7/2010	Biennial	4/7/2012	147
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
Espec	ESX-2CA	Environmental Chamber	2/8/2011	Annual	2/8/2012	17620
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
K & L	11SH10	Band Pass Filter	N/A		N/A	1300/4000
K & L	11SH10	Band Pass Filter	N/A		N/A	4000/12000
MiniCircuits	VHF-1300+	High Pass Filter	N/A		N/A	30716
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Pasternack	PE2208-6	Bidirectional Coupler	N/A		N/A	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	11/11/2010	Annual	11/11/2011	836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator	6/17/2010	Annual	6/17/2011	836536/0005
Rohde & Schwarz	FSQ 26	Spectrum Analyzer	8/28/2010	Annual	8/28/2011	200452
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	8/30/2010	Annual	8/30/2011	100976
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	3/11/2011	Annual	3/11/2012	103962
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Rx	7/17/2009	Biennial	7/17/2011	9105-2404
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Tx	7/17/2009	Biennial	7/17/2011	9105-2403
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/14/2009	Biennial	5/14/2011	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	7/17/2009	Biennial	7/17/2011	A051107

**Table 4-1. Test Equipment**

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Test Report S/N: 0Y1103150538.AK8	Test Dates: April 11-15, 2011	EUT Type: 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band13 LTE Laptop with BT and WLAN		Page 7 of 14

## 5.0 SAMPLE CALCULATIONS

### Emission Designator

#### QPSK Modulation

**Emission Designator = 8M62G7D**

LTE BW = 8.62 MHz  
 G = Phase Modulation  
 7 = Quantized/Digital Info  
 D = Amplitude/Angle Modulated

#### 16QAM Modulation

**Emission Designator = 8M45W7D**

LTE BW = 8.45 MHz  
 W = Amplitude/Angle Modulated  
 7 = Quantized/Digital Info  
 D = Combination (Audio/Data)

### Spurious Radiated Emission – LTE Band

#### **Example: Middle Channel LTE Mode 2<sup>nd</sup> Harmonic (1564 MHz)**

The average receive power meter reading at 3 meters with the EUT on the turntable was  $-81.0$  dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of  $-81.0$  dBm on the power meter. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So 6.1 dB is added to the signal generator reading of  $-30.9$  dBm yielding  $-24.80$  dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80).

FCC ID: AK8PCG41312L		FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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## 6.0 TEST RESULTS

### 6.1 Summary

Company Name: Sony Corporation  
 FCC ID: AK8PCG41312L  
 FCC Classification: Licensed Non-Broadcast Transmitter (TNB)  
 Mode(s): LTE

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
<b>TRANSMITTER MODE (Tx)</b>					
2.1049	Occupied Bandwidth	N/A	CONDUCTED	PASS	See Notes Below
2.1051, 27.53(c)(2), 27.53(c)(4)	Band Edge / Conducted Spurious Emissions (*)	< 43 + 10log <sub>10</sub> (P[Watts]) < 65 + 10log <sub>10</sub> (P[Watts]) in a 6.25kHz bandwidth for emissions in the 763 – 775MHz and 793 – 805MHz bands		PASS	
2.1046	Transmitter Conducted Output Power Measurements	N/A		N/A	
27.50(b)(10)	Effective Radiated Power	< 3 Watts max. ERP	RADIATED	PASS	Section 6.3
2.1053, 27.53(c)(2), 27.53(c)(4)	Undesirable Out-of-Band Emissions	< 43 + 10log <sub>10</sub> (P[Watts]) for all out-of-band emissions		PASS	Section 6.4
2.1053, 27.53(f)	Undesirable Emissions in the 1559 – 1610MHz band	< -40dBm/MHz EIRP (wideband) < -50dBm EIRP (narrowband)		PASS	Section 6.5

**Table 6-1. Summary of Test Results**

**Notes:**

- For out of band conducted spurious emissions (including those at the band edges), the emissions of both QPSK and 16-QAM modulations were investigated.
- Conducted test results can be found under the FCC Authorization database of granted applications for FCC Part 27 report for FCC ID: N7NMC7750. The data from that grant represent the EUT under worse 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		FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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## 6.2 Transmitter Conducted Output Power

§2.1046

The Sony 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band13 LTE Laptop with BT and WLAN FCC ID: AK8PCG41312L was connected to a Rohde and Schwarz LTE Radio Communication Tester (Model: CMW500). Conducted powers for the EUT were measured for different combinations of resource block sizes, resource block offsets, and MCS indices and the worst case is reported.

Frequency	CH	BW	Modulation	RB Size	RB Offset	Maximum Average Power [dBm]
782 MHz	23230	10 MHz	QPSK	1	0	23.56
			16QAM	1	0	22.96
			QPSK	1	49	23.15
			16QAM	1	49	22.70
			QPSK	25	13	22.19
			16QAM	25	13	21.96
			QPSK	50	0	22.05
			16QAM	50	0	20.99

Table 6-2. Maximum Average Conducted Output Power (10MHz Bandwidth)

Frequency	CH	BW	Modulation	RB Size	RB Offset	Maximum Average Power [dBm]
779.5	23206	5 MHz	QPSK	1	0	23.44
			16QAM	1	0	22.53
			QPSK	1	24	23.27
			16QAM	1	24	22.43
			QPSK	12	6	22.03
			16QAM	12	6	21.32
			QPSK	25	0	22.01
			16QAM	25	0	21.36
784.5	23254		QPSK	1	0	23.51
			16QAM	1	0	22.44
			QPSK	1	24	23.17
			16QAM	1	24	22.53
			QPSK	12	6	22.25
			16QAM	12	6	21.45
			QPSK	25	0	22.05
			16QAM	25	0	21.49

Table 6-3. Maximum Average Conducted Output Power (5MHz Bandwidth)



Figure 6-1. Conducted Output Power Test Setup Diagram

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### 6.3 Effective Radiated Power Output Data §27.50(b)(10)

Frequency [MHz]	Mod.	Bandwidth [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	PoI [H/V]	ERP [dBm]	ERP [Watts]	Power Source
782.00	QPSK	10	-16.800	16.80	0.00	H	16.80	0.048	Battery
782.00	16-QAM	10	-16.400	17.20	0.00	H	17.20	0.052	Battery

**Table 6-4. Effective Radiated Power Output Data (10MHz Bandwidth)**

Frequency [MHz]	Mod.	Bandwidth [MHz]	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	PoI [H/V]	ERP [dBm]	ERP [Watts]	Power Source
782.00	QPSK	5	-16.900	16.70	0.00	H	16.70	0.047	Battery
782.00	16-QAM	5	-16.800	16.80	0.00	H	16.80	0.048	Battery

**Table 6-5. Effective Radiated Power Output Data (5MHz Bandwidth)**

**NOTES:**

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This level is recorded using the power meter. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

This device was tested under all configurations and the worst case radiated spurious emissions are reported while transmitting with 1 resource block with an offset of 49 using QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found with the laptop sitting in the normal upright position. The data reported in the table above was measured in this test setup.

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## 6.4 LTE Radiated Measurements

§2.1053, §27.53(c)(2)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 782.00 MHz  
 MEASURED OUTPUT POWER: 17.200 dBm = 0.052 W  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10 MHz  
 DISTANCE: 3 meters  
 LIMIT:  $43 + 10 \log_{10}(W) =$  30.20 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2346.00	-67.62	8.84	-58.78	H	76.0
3128.00	-95.37	9.70	-85.67	H	102.9
3910.00	-91.66	9.29	-82.38	H	99.6
4692.00	-92.24	11.20	-81.04	H	98.2

**Table 6-6. Radiated Spurious Data (QPSK Modulation)**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the worst case radiated spurious emissions are reported while transmitting with 1 resource block with an offset of 49 using QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found with the laptop sitting in the normal upright position. The data reported in the table above was measured in this test setup.

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## 6.5 LTE Radiated Measurements in 1559 – 1610MHz Band §2.1053, §27.53(f)

### Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 782.00 MHz  
 MEASURED OUTPUT POWER: 17.200 dBm = 0.052 W  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10 MHz  
 DISTANCE: 3 meters  
 NARROWBAND EMISSION LIMIT: -50 dBm  
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

FREQUENCY (MHz)	EMISSION TYPE	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
1562.70	WIDEBAND	-73.89	8.53	-65.36	H	-25.36
1572.73	WIDEBAND	-68.38	8.54	-59.84	H	-19.84

**Table 6-7. Radiated Spurious Data**

#### NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all configurations and the worst case radiated power is reported while transmitting with 25 resource blocks with an offset of 13 using QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found with the laptop sitting in the normal upright position. The data reported in the table above was measured in this test setup.

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## 7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Sony 850/1900 GSM/GPRS/EDGE/WCDMA/HSPA/CDMA/EvDO and Band13 LTE Laptop with BT and WLAN FCC ID: AK8PCG41312L** complies with all the requirements of Parts 2 and 27 of the FCC rules.

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