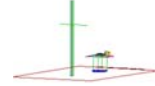




# PCTEST ENGINEERING LABORATORY, INC.

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



## MEASUREMENT REPORT

### FCC PART 15.247 / IC RSS-210 Bluetooth (Low Energy)

**Applicant Name:**  
LG Electronics MobileComm U.S.A  
1000 Sylvan Avenue  
Englewood Cliffs, NJ 07632  
United States

**Date of Testing:**  
January 17 - 22, 2013  
**Test Site/Location:**  
PCTEST Lab, Columbia, MD, USA  
**Test Report Serial No.:**  
0Y1301150085.ZNF

<b>FCC ID:</b>	<b>ZNFVS870</b>
<b>APPLICANT:</b>	<b>LG Electronics MobileComm U.S.A</b>



**Application Type:** Class II Permissive Change  
**Model:** VS870, LG-VS870, LGVS870, LG-AS870, LGAS870, AS870  
**EUT Type:** Portable Handset  
**Frequency Range:** 2402 - 2480 MHz  
**FCC Classification:** Digital Transmission System (DTS)  
**FCC Rule Part(s):** Part 15.247  
**IC Specification(s):** RSS-210 Issue 8  
**Test Procedure(s):** ANSI C63.10-2009  
**Class II Permissive Change:** Please see FCC change documents.  
**Original Grant Date:** January 22, 2013

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 C63.10-2009. 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.

  
 Randy Ortanez  
 President





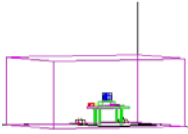
<b>FCC ID:</b> ZNFVS870		<b>FCC Pt. 15.247 BLUETOOTH (LE) TEST REPORT (CLASS II PERMISSIVE CHANGE)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1301150085.ZNF	<b>Test Dates:</b> January 17 - 22, 2013	<b>EUT Type:</b> Portable Handset		Page 1 of 17

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# MEASUREMENT REPORT

## FCC Part 15.247



### § 2.1033 General Information

**APPLICANT:** LG Electronics MobileComm U.S.A

**APPLICANT ADDRESS:** 1000 Sylvan Avenue  
Englewood Cliffs, NJ 07632, United States

**TEST SITE:** PCTEST ENGINEERING LABORATORY, INC.

**TEST SITE ADDRESS:** 6660-B Dobbin Road, Columbia, MD 21045 USA

**FCC RULE PART(S):** Part 15.247

**IC SPECIFICATION(S):** RSS-210 Issue 8

**FCC ID:** ZNFVS870

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

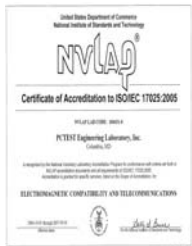
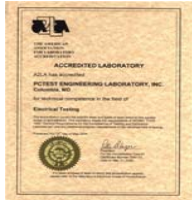
**FCC CLASSIFICATION:** Digital Transmission System (DTS)

**DATE(S) OF TEST:** January 17 - 22, 2013



**TEST REPORT S/N:** 0Y1301150085.ZNF

### 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> ZNFVS870	 <b>FCC Pt. 15.247 BLUETOOTH (LE) TEST REPORT</b> <b>(CLASS II PERMISSIVE CHANGE)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1301150085.ZNF	<b>Test Dates:</b> January 17 - 22, 2013	<b>EUT Type:</b> Portable Handset	Page 3 of 17

# 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 Internrt'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 C63.4-2009 on January 10, 2012.

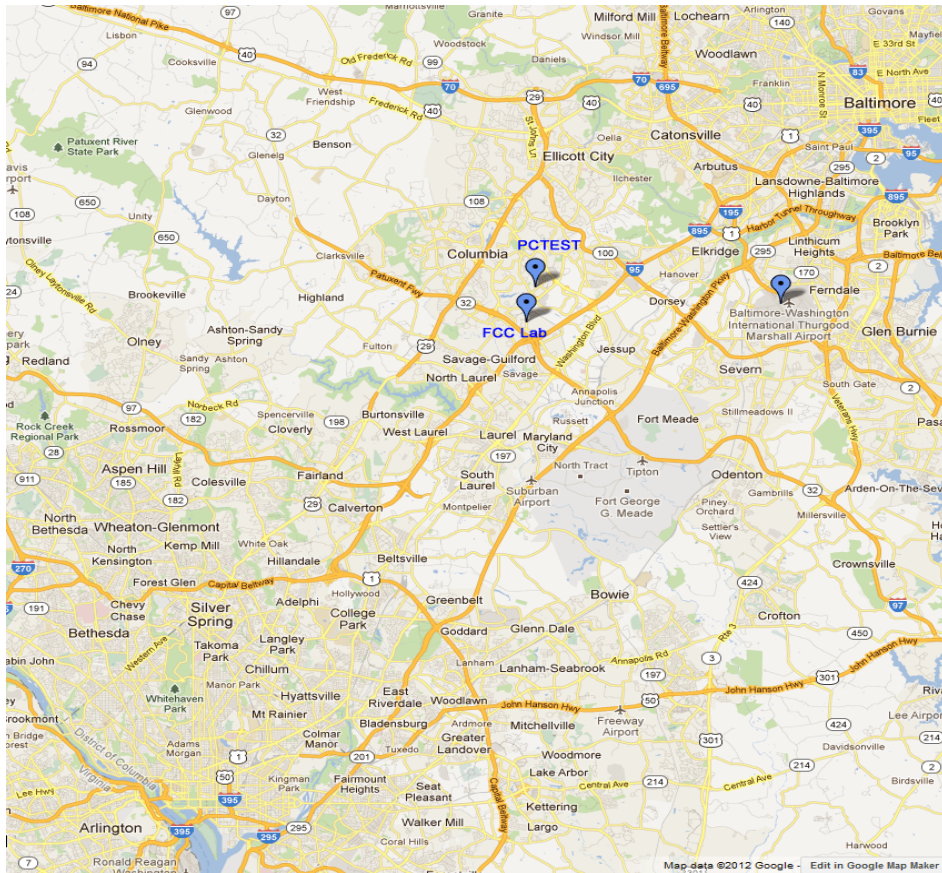


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Portable Handset FCC ID: ZNFVS870**. The data found in this test report was taken with the EUT operating in Bluetooth low energy mode. While in low energy mode, the Bluetooth transmitter hops pseudo-randomly between 40 channels, three of which are “advertising channels”. When the transmitter is hopping only between the three advertising channels, the EUT does not fall under the category of a “hopper” as defined in 15.247(a)(iii) which states that a “frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels.” As operation on only the advertising channels does not qualify the EUT as a hopper, the EUT is certified as a DTS device in this mode. The data found in this report is representative of the device when it transmits on its advertising channels. Typical Bluetooth operation is covered under the DSS report found with this application.

### 2.2 Device Capabilities

This device contains the following capabilities:

850/1900 CDMA/EvDO Rev0/A (BC0, BC1), Band 13 LTE, 802.11a/b/g/n WLAN (DTS/NIJ), Bluetooth (1x,EDR,LE)

### 2.3 Test Configuration

The LG Portable Handset FCC ID: ZNFVS870 was tested per the guidance of ANSI C63.10-2009. See Sections 3.2, and 6.1 of this test report for a description of the AC line conducted emissions, radiated emissions, and antenna port conducted emissions test setups, respectively.

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



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

### 2.5 Labeling Requirements

Per 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.



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## 3.0 DESCRIPTION OF TEST

### 3.1 Evaluation Procedure

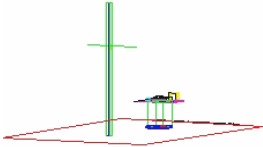
The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2009) was used in the measurement of the **LG Portable Handset FCC ID: ZNFVS870**.

Deviation from measurement procedure.....None

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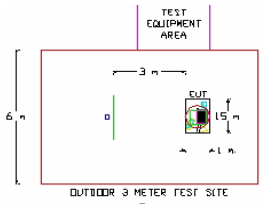


### 3.2 Radiated Emissions



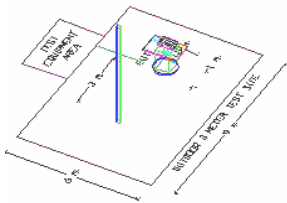
**Figure 3-1. 3-Meter Test Site**

The radiated test facilities consisted of an indoor semi-anechoic chamber used for exploratory measurements and an open area test site (OATS) used for final measurements. For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies higher than the upper frequency range of the broadband antenna used for testing, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used.



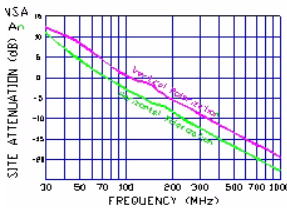
**Figure 3-2. Dimensions of Outdoor Test Site**

Exploratory measurements were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies producing the maximum emissions. 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 test set-up was placed on top of a 0.8 meter high non-metallic 1 x 1.5 meter table (see Figure 3 7). The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, turntable azimuth, and receive antenna height was noted for each frequency found. To record the exploratory measurements, the analyzers' detector function was set to peak mode and the bandwidth was set to 100kHz.



**Figure 3-3. Turntable and System Setup**

Final measurements were made on the OATS at 3 meter test range using calibrated, linearly polarized broadband or horn antennas (see Figure 3 5). The measurement area is situated on an 18 meter x 20 meter galvanized 1/2" hardware cloth as the conducting ground plane. This material is sewn together in sections 4 feet wide and 60 feet long. A total of eighteen sections are required to cover the entire measurement area. Sections are laid across the width of the pad, overlapped 1" and sewn and soldered together at intervals of 3" (7.6 cm.) The terrain of the test site is reasonably flat and level. Power and cable to the test site are buried 18" deep into the ground outside the perimeter of the site. An all-weather non-metallic housing is situated on a 2 x 3 meter area adjacent to the measurement area to house the test equipment (see Figure 3 6). The test set-up was again placed on top of the same a 0.8 meter high non-metallic 1 x 1.5 meter table on the OATS as used for exploratory measurements in the indoor chamber. The test set-up was re-configured to the same setup that was previously determined through exploratory measurements to have produced the worst case emissions. The spectrum analyzer was set to the frequencies found to have caused the highest radiated disturbances with respect to the limit during preliminary radiated measurements. The turntable containing the system was rotated through 360 degrees 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 re-maximized by varying: the mode of operation or resolution, clock or data exchange speed, scrolling H pattern to the EUT and/or support equipment, powering the monitor from the floor mounted outlet box and the computer aux AC outlet, if applicable, and changing the polarity of the receive antenna, whichever produced the worst-case emissions. To record the final measurements, the analyzer 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. For average measurements above 1GHz, the analyzer was set to peak detector with a reduced VBW setting (RBW = 1MHz, VBW = 1/THz, Where T = pulse width). Each emission reported was calibrated using a signal generator. The Theoretical Normalized Site Attenuation Curves for both horizontal and vertical polarization are shown in Figure 3 8.



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

Each emission was re-maximized by varying: the mode of operation or resolution, clock or data exchange speed, scrolling H pattern to the EUT and/or support equipment, powering the monitor from the floor mounted outlet box and the computer aux AC outlet, if applicable, and changing the polarity of the receive antenna, whichever produced the worst-case emissions. To record the final measurements, the analyzer 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. For average measurements above 1GHz, the analyzer was set to peak detector with a reduced VBW setting (RBW = 1MHz, VBW = 1/THz, Where T = pulse width). Each emission reported was calibrated using a signal generator. The Theoretical Normalized Site Attenuation Curves for both horizontal and vertical polarization are shown in Figure 3 8.

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## 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 antenna(s) of the Portable Handset are **permanently attached**.
- There are no provisions for connection to an external antenna.

### Conclusion:

The **LG Portable Handset FCC ID: ZNFVS870** unit complies with the requirement of §15.203.

Ch.	Frequency (MHz)
0	2402
:	:
19	2440
:	:
39	2480

**Table 4-1. Frequency / Channel Operations**

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## 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
-	BT1	Bluetooth Cable Set	1/15/2013	Annual	1/15/2014	N/A
-	RE1	Radiated Emissions Cable Set (UHF/EHF)	6/7/2011	Annual	6/7/2012	N/A
-	RE2	Radiated Emissions Cable Set (VHF/UHF)	2/13/2012	Annual	2/13/2013	N/A
Agilent	8447D	Broadband Amplifier	5/8/2012	Annual	5/8/2013	1937A03348
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	2/15/2012	Annual	2/15/2013	3008A00985
Agilent	85650A	Quasi-Peak Adapter	4/4/2012	Annual	4/4/2013	2043A00301
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	4/4/2012	Annual	4/4/2013	2542A11898
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/10/2012	Annual	10/10/2013	3613A00315
Agilent	N9038A	MXE EMI Receiver	8/5/2012	Annual	8/5/2013	MY51210133
Agilent	N9030A	PXA Signal Analyzer	2/23/2012	Annual	2/23/2013	MY49432391
Anritsu	MA2411B	Power Sensor	3/5/2012	Annual	3/5/2013	846215
Anritsu	ML2495A	Power Meter	10/13/2012	Annual	10/13/2013	1039008
Emco	3115	Horn Antenna (1-18GHz)	1/12/2012	Biennial	1/12/2014	9704-5182
Emco	3116	Horn Antenna (18 - 40GHz)	1/20/2012	Triennial	1/20/2015	9203-2178
Emco	3816/2	LISN	11/3/2012	Biennial	11/3/2014	9707-1079
Mini-Circuits	VHF-3100+	High Pass Filter	1/15/2013	Annual	1/15/2014	30841
Schwarzbeck	VULB-9161SE	Trilog Super Broadband Test Antenna	11/8/2011	Biennial	11/8/2013	9161-4075

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

<b>FCC ID:</b> ZNFVS870		<b>FCC Pt. 15.247 BLUETOOTH (LE) TEST REPORT (CLASS II PERMISSIVE CHANGE)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1301150085.ZNF	<b>Test Dates:</b> January 17 - 22, 2013	<b>EUT Type:</b> Portable Handset	Page 9 of 17	

## 6.0 TEST RESULTS

### 6.1 Summary



Company Name: LG Electronics MobileComm U.S.A  
 FCC ID: ZNFVS870  
 FCC Classification: Digital Transmission System (DTS)  
 Number of Channels: 40

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
<b>TRANSMITTER MODE (TX)</b>						
15.205 15.209	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)	RADIATED	PASS	Sections 6.2, 6.3

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

#### Notes:

- All modes of operation were investigated. The test results shown in the following sections represent the worst case emissions.

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## 6.2 Radiated Spurious Emission Measurements

§15.205, §15.209, §15.247(d); RSS-210 [A8.5]

### Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at maximum power and at the appropriate frequencies. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

***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 6-2 per Section 15.209.***

Frequency	Field Strength [ $\mu\text{V/m}$ ]	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 6-2. Radiated Limits**



### Test Procedures Used

ANSI C63.10-2009

### Test Settings

#### Average Field Strength Measurements

1. RBW = 1MHz
2. VBW = 3kHz (See Note 4 in “Test Notes” section below for reasoning)
3. Detector = peak
4. Sweep time = auto coupled
5. Number of points = 1001
6. Trace mode = max hold
7. Trace was allowed to stabilize

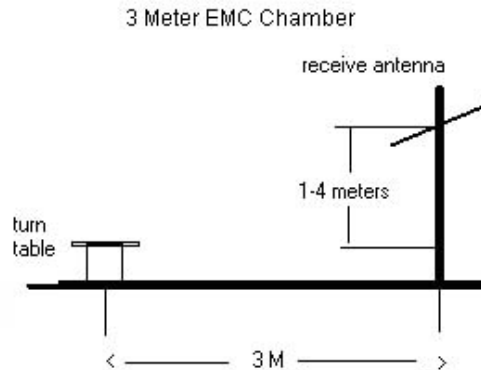
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### Peak Field Strength Measurements

1. RBW = 1MHz
2. VBW = 3MHz
3. Detector = peak
4. Sweep time = auto couple
5. Number of points = 1001
6. Trace mode = max hold
7. Trace was allowed to stabilize

### Test Setup



The EUT and measurement equipment were set up as shown in the diagram below.



**Figure 6-1. Test Instrument & Measurement Setup**

### Test Notes

1. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
2. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
3. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
4. Average measurements were recorded using a VBW of 3kHz. The rule of thumb used in order to avoid over-averaging is that the VBW must be  $\geq 1/t$ , where  $t$  = pulse width of emission. A VBW of 3kHz was found to be suitable to meet this guideline.
5. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

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6. Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
7. No significant radiated band edge emissions were found in the 2310 – 2390MHz restricted band.

### Sample Calculations



#### Determining Spurious Emissions Levels

- Field Strength Level  $_{[dB_{\mu V/m}]} = \text{Analyzer Level }_{[dBm]} + 107 + \text{AFCL }_{[dB/m]}$
- $\text{AFCL }_{[dB/m]} = \text{Antenna Factor }_{[dB/m]} + \text{Cable Loss }_{[dB]}$
- $\text{Margin }_{[dB]} = \text{Field Strength Level }_{[dB_{\mu V/m}]} - \text{Limit }_{[dB_{\mu V/m}]}$

#### Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 6.8 was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain}$$

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**Radiated Spurious Emission Measurements (Cont'd)**  
**§15.205, §15.209, §15.247(d); RSS-210 [A8.5]**

Bluetooth Mode: LE  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2402MHz  
 Channel: 0



Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol [H/V]	AFCL [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4804.00	-106.69	Avg	H	34.44	34.75	53.98	-19.23
4804.00	-96.78	Peak	H	34.44	44.66	73.98	-29.32
12010.00	-135.00	Avg	H	45.56	17.56	53.98	-36.41
12010.00	-125.00	Peak	H	45.56	27.56	73.98	-46.41

**Table 6-3. Radiated Measurements @ 3 meters**

Bluetooth Mode: LE  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2440MHz  
 Channel: 19

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol [H/V]	AFCL [dB]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
4880.00	-107.05	Avg	H	34.52	34.47	53.98	-19.51
4880.00	-96.57	Peak	H	34.52	44.95	73.98	-29.03
7320.00	-135.00	Avg	H	39.06	11.06	53.98	-42.92
7320.00	-125.00	Peak	H	39.06	21.06	73.98	-52.92
12200.00	-135.00	Avg	H	46.19	18.19	53.98	-35.79
12200.00	-125.00	Peak	H	46.19	28.19	73.98	-45.79

**Table 6-4. Radiated Measurements @ 3 meters**

FCC ID: ZNFVS870		FCC Pt. 15.247 BLUETOOTH (LE) TEST REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0Y1301150085.ZNF	Test Dates: January 17 - 22, 2013	EUT Type: Portable Handset		Page 14 of 17





**Radiated Spurious Emission Measurements (Cont'd)**  
§15.205, §15.209, §15.247(d); RSS-210 [A8.5]

Bluetooth Mode: LE  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2480MHz  
 Channel: 39

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol [H/V]	AFCL [dB]	Field Strength [dB $\mu$ V/m]	Limit [dB $\mu$ V/m]	Margin [dB]
4960.00	-106.31	Avg	H	34.68	35.37	53.98	-18.61
4960.00	-95.83	Peak	H	34.68	45.85	73.98	-28.13
7440.00	-135.00	Avg	H	39.06	11.06	53.98	-42.92
7440.00	-125.00	Peak	H	39.06	21.06	73.98	-52.92
12400.00	-135.00	Avg	H	45.94	17.94	53.98	-36.03
12400.00	-125.00	Peak	H	45.94	27.94	73.98	-46.03

**Table 6-5. Radiated Measurements @ 3 meters**

<b>FCC ID:</b> ZNFVS870		<b>FCC Pt. 15.247 BLUETOOTH (LE) TEST REPORT (CLASS II PERMISSIVE CHANGE)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1301150085.ZNF	<b>Test Dates:</b> January 17 - 22, 2013	<b>EUT Type:</b> Portable Handset		Page 15 of 17

### 6.3 Radiated Restricted Band Edge Measurements

§15.205, §15.209, §15.247(d); RSS-210 [A8.5]

Bluetooth Mode: LE  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2402MHz  
 Channel: 0



Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol [H/V]	AFCL [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
2364.64	-105.84	Avg	H	36.29	37.44	53.98	-16.54
2364.64	-91.05	Peak	H	36.29	52.23	73.98	-21.75
2374.04	-106.08	Avg	H	36.29	37.21	53.98	-16.77
2374.04	-96.23	Peak	H	36.29	47.06	73.98	-26.92
2385.92	-105.69	Avg	H	36.29	37.60	53.98	-16.38
2385.92	-96.66	Peak	H	36.29	46.63	73.98	-27.35

**Table 6-6. Radiated Restricted Band Edge Measurements (2310 – 2390MHz)**

Bluetooth Mode: LE  
 Distance of Measurements: 3 Meters  
 Operating Frequency: 2480MHz  
 Channel: 39



Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol [H/V]	AFCL [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
2483.53	-101.47	Avg	H	36.29	41.81	53.98	-12.17
2483.53	-92.15	Peak	H	36.29	51.13	73.98	-22.85
2483.99	-102.58	Avg	H	36.29	40.71	53.98	-13.27
2483.99	-96.35	Peak	H	36.29	46.94	73.98	-27.04
2484.32	-101.80	Avg	H	36.29	41.49	53.98	-12.49
2484.32	-95.66	Peak	H	36.29	47.63	73.98	-26.35

**Table 6-7. Radiated Restricted Band Edge Measurements (2483.5 – 2500MHz)**

FCC ID: ZNFVS870		FCC Pt. 15.247 BLUETOOTH (LE) TEST REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: 0Y1301150085.ZNF	Test Dates: January 17 - 22, 2013	EUT Type: Portable Handset		Page 16 of 17

## 7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFVS870** is in compliance with Part 15C of the FCC Rules and RSS-210 of the Industry Canada Rules.

<b>FCC ID:</b> ZNFVS870		<b>FCC Pt. 15.247 BLUETOOTH (LE) TEST REPORT (CLASS II PERMISSIVE CHANGE)</b>		<b>Reviewed by:</b> Quality Manager
<b>Test Report S/N:</b> 0Y1301150085.ZNF	<b>Test Dates:</b> January 17 - 22, 2013	<b>EUT Type:</b> Portable Handset		Page 17 of 17