



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 WLAN 802.11a/b/g/n

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

Date of Testing:
September 25 - 26, 2012
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0Y1209201378.ZNF

| | |
|-------------------|--|
| FCC ID: | ZNFE971 |
| APPLICANT: | LG Electronics MobileComm U.S.A |

Application Type: Class II Permissive Change
Model(s): E971, LGE971, LG-E971
EUT Type: Portable Handset
FCC Classification: Digital Transmission System (DTS)
FCC Rule Part(s): Part 15.247
IC Specification(s): RSS-210 Issue 8
Test Procedure(s): ANSI C63.4-2003/2009, ANSI C63.10-2009, KDB 558074
Class II Permissive Change: Please see FCC change document.
Original Grant Date: October 18, 2012

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 C63.4-2003/2009, ANSI C63.10-2009, and KDB 558074. 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.

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

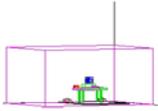


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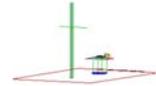
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MEASUREMENT REPORT

FCC Part 15.247

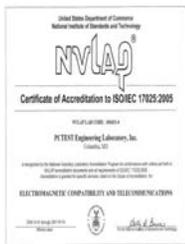
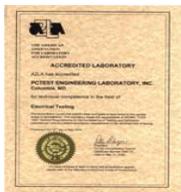


§ 2.1033 General Information

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
MODEL NAME: E971
FCC ID: ZNFE971
Test Device Serial No.: 207KPJP000228 Production Pre-Production Engineering
FCC CLASSIFICATION: Digital Transmission System (DTS)
DATE(S) OF TEST: September 25 - 26, 2012
TEST REPORT S/N: 0Y1209201378.ZNF

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, 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 (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, 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 C63.4-2003/2009 on January 10, 2012.

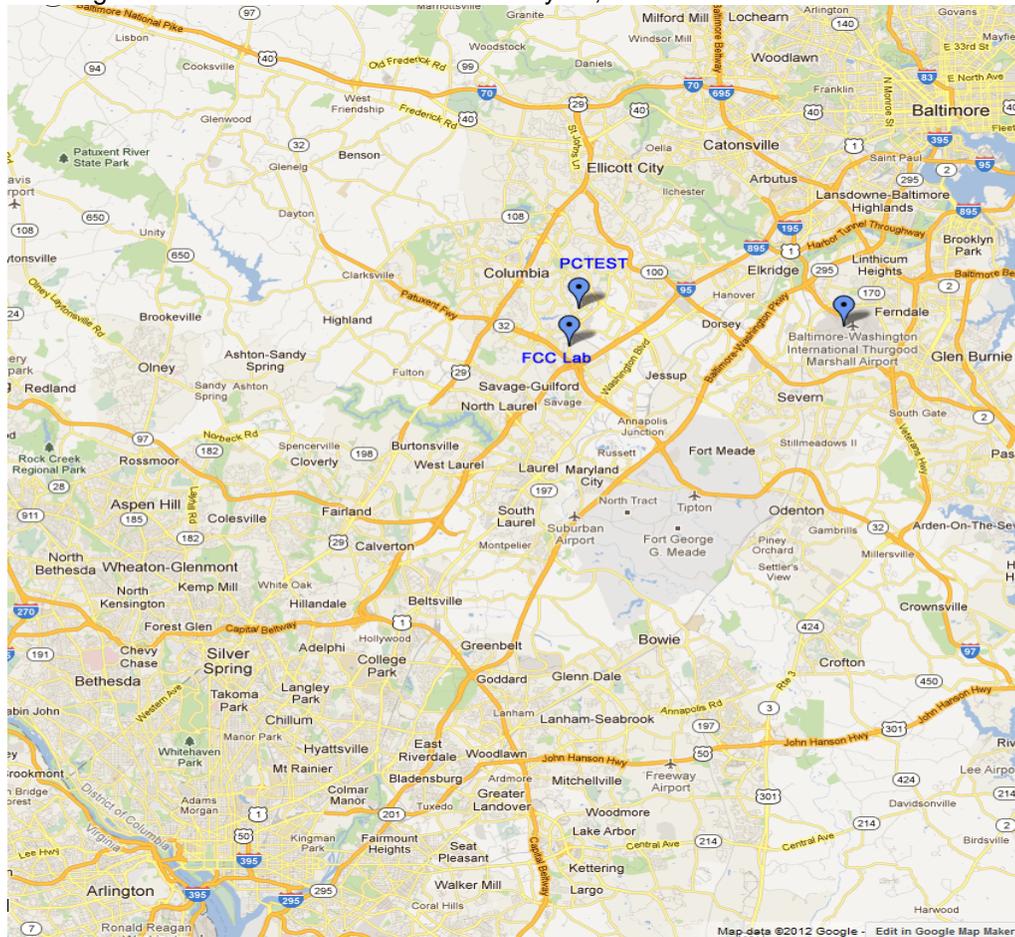


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

| | | | | |
|--------------------------------------|---|---|---|---------------------------------|
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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Portable Handset FCC ID: ZNFE971**. The test data contained in this report pertains only to the emissions due to the EUT's DTS transmitter.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1900 WCDMA, Band 7, 17 LTE, 802.11a/b/g/n WLAN (DTS/NII), Bluetooth (1x,EDR, LE), NFC

Note: 5GHz WLAN (DTS/NII) operation is possible in 20MHz and 40MHz channel bandwidths.

2.3 Test Configuration

The LG Portable Handset FCC ID: ZNFE971 was tested per the guidance of ANSI C63.10-2009 and KDB 558074. KDB 558074 was used in its entirety throughout the testing for this device. See 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 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.

| | | | | |
|--------------------------------------|---|---|---|---------------------------------|
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3.0 DESCRIPTION OF TEST

3.1 Evaluation Procedure

The measurement procedures 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), the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2009), and the guidance provided in KDB 558074 were used in the measurement of the **LG Portable Handset FCC ID: ZNFE971**.

Deviation from measurement procedure.....None

| | | | | |
|--------------------------------------|---|---|---|---------------------------------|
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3.2 Radiated Emissions

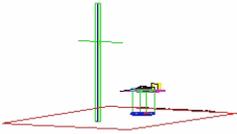


Figure 3-1. 3-Meter Test Site

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.

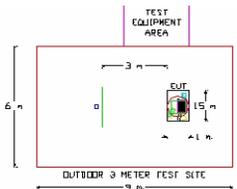


Figure 3-2. Dimensions of Outdoor Test Site

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 3-3). 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.

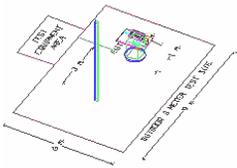


Figure 3-3. Turntable and System Setup

Final measurements were made on the OATS at 3 meter test range using calibrated, linearly polarized broadband or horn antennas (see Figure 3-1). 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 3-2). 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, measurement procedure "RBAVG1" in Section 5.4.2.2.2.1 of KDB 558074 was used. 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 3-4.

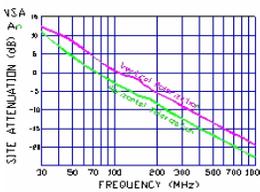


Figure 3-4. Normalized Site Attenuation Curves (H&V)

| | | | | |
|--------------------------------------|--|---|----|---------------------------------|
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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 antennas of the Portable Handset are **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

The **LG Portable Handset FCC ID: ZNFE971** unit complies with the requirement of §15.203.

| Ch. | Frequency (MHz) | Ch. | Frequency (MHz) |
|-----|-----------------|-----|-----------------|
| 1 | 2412 | 7 | 2442 |
| 2 | 2417 | 8 | 2447 |
| 3 | 2422 | 9 | 2452 |
| 4 | 2427 | 10 | 2457 |
| 5 | 2432 | 11 | 2462 |
| 6 | 2437 | | |

| Ch. | BW (MHz) | Frequency (MHz) |
|-----|----------|-----------------|
| 149 | 20 | 5745 |
| 151 | 20 / 40 | 5755 |
| 153 | 20 | 5765 |
| 155 | 20 / 40 | 5775 |
| 157 | 20 | 5785 |

| Ch. | BW (MHz) | Frequency (MHz) |
|-----|----------|-----------------|
| 159 | 20 / 40 | 5795 |
| 161 | 20 | 5805 |
| 163 | 20 / 40 | 5815 |
| 165 | 20 | 5825 |
| | | |

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 |
|---------------|-------------|--|------------|--------------|------------|---------------|
| - | RE1 | Radiated Emissions Cable Set (UHF/EHF) | 6/7/2012 | Annual | 6/7/2013 | N/A |
| - | WL25-1 | Conducted WLAN Cable Set (25GHz) | 2/13/2012 | Annual | 2/13/2013 | N/A |
| - | 40G-1R | 40GHz Radiated Cable Set | 2/23/2012 | Annual | 2/23/2013 | N/A |
| - | WL40-1 | Conducted WLAN Cable Set (40GHz) | 2/24/2012 | Annual | 2/24/2013 | 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 | 10/10/2011 | Annual | 10/10/2012 | 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 | 10/13/2011 | Annual | 10/13/2012 | 1039008 |
| Emco | 3115 | Horn Antenna (1-18GHz) | 1/12/2012 | Biennial | 1/12/2014 | 9704-5182 |
| Emco | 3115 | Horn Antenna (1-18GHz) | 4/8/2010 | Biennial | 4/8/2012 | 9205-3874 |
| Emco | 3116 | Horn Antenna (18 - 40GHz) | 1/20/2012 | Triennial | 1/20/2015 | 9203-2178 |
| Emco | 3816/2 | LISN | 11/3/2010 | Biennial | 11/3/2012 | 9707-1079 |
| Mini-Circuits | VHF-3100+ | High Pass Filter | 1/15/2012 | Annual | 1/15/2013 | 30841 |
| Mini-Circuits | VHF-3100+ | High Pass Filter | 2/7/2012 | Annual | 2/7/2013 | 31144 |
| Mini-Circuits | VHF-8400+ | 3.4GHz - 9.9GHz High Pass Filter | 2/28/2012 | Annual | 2/28/2013 | 31048 |
| Schwarzbeck | VULB-9161SE | Trilog Super Broadband Test Antenna | 11/8/2011 | Biennial | 11/8/2013 | 9161-4075 |
| Sunol | DRH-118 | Horn Antenna (1 - 18GHz) | 7/5/2011 | Biennial | 7/5/2013 | A050307 |

Table 5-1. Annual Test Equipment Calibration Schedule

| | | | | |
|---|---|---|---|--|
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6.0 TEST RESULTS

6.1 Summary

Company Name: LG Electronics MobileComm U.S.A
 FCC ID: ZNFE971
 FCC Classification: Digital Transmission System (DTS)
 Data Rate(s) Tested: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps (b)
6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps (a/g)
6.5/7.2Mbps, 13/14.4Mbps, 19.5/21.7Mbps, 26/28.9Mbps, 39/43.3Mbps,
52/57.8Mbps, 58.5/65Mbps, 65/72.2Mbps (n – 20MHz)
13.5/15Mbps, 27/30Mbps, 40.5/45Mbps, 54/60Mbps, 81/90Mbps, 108/120Mbps,
121.5/135Mbps, 135/150Mbps (n – 40MHz)

| FCC Part Section(s) | RSS Section(s) | Test Description | Test Limit | Test Condition | Test Result | Reference |
|------------------------------|----------------|---|--|----------------|-------------|-------------------|
| TRANSMITTER MODE (TX) | | | | | | |
| 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 | RADIATED | PASS | Sections 6.2, 6.3 |

Table 6-1. Summary of Test Results

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables and attenuators.

| | | | | |
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6.2 Radiated Spurious Emission Measurements

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

The EUT was tested from 9kHz up to the tenth 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. 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.

All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section. All measurements shown in this section were obtained using traditional radiated test methods as defined in C63.10-2009. The optional test procedures for antenna port conducted measurements of unwanted emissions per the guidance of KDB 558074 were not used to evaluate this device.

| 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

Sample Calculation

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

| | | | | |
|--------------------------------------|---|---|---|---------------------------------|
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Radiated Spurious Emission Measurements (Cont'd)

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

Worst Case Mode: 802.11b

Worst Case Transfer Rate: 1 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 01

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Po. [H/V] | AFCL [dB/m] | Field Strength [dB μ V/m] | Limit [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|----------|-----------|-------------|-------------------------------|----------------------|-------------|
| 4824.00 | -107.42 | Avg | H | 42.07 | 41.65 | 53.98 | -12.33 |
| 4824.00 | -96.07 | Peak | H | 42.07 | 53.00 | 73.98 | -20.98 |
| 12060.00 | -135.00 | Avg | H | 58.60 | 30.60 | 53.98 | -23.38 |
| 12060.00 | -125.00 | Peak | H | 58.60 | 40.60 | 73.98 | -33.38 |

Table 6-3. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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 μ V/m (54dB μ /m) at 3 meters radiated.

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Radiated Spurious Emission Measurements (Cont'd)

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

Worst Case Mode: 802.11b

Worst Case Transfer Rate: 1 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2437MHz

Channel: 06

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dB μ V/m] | Limit [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------------|----------------------|-------------|
| 4874.00 | -107.09 | Avg | H | 42.15 | 42.06 | 53.98 | -11.92 |
| 4874.00 | -96.62 | Peak | H | 42.15 | 52.53 | 73.98 | -21.45 |
| 7311.00 | -135.00 | Avg | H | 48.80 | 20.80 | 53.98 | -33.18 |
| 7311.00 | -125.00 | Peak | H | 48.80 | 30.80 | 73.98 | -43.18 |
| 12185.00 | -135.00 | Avg | H | 59.06 | 31.06 | 53.98 | -22.92 |
| 12185.00 | -125.00 | Peak | H | 59.06 | 41.06 | 73.98 | -32.92 |

Table 6-4. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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 μ V/m (54dB μ /m) at 3 meters radiated.

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Radiated Spurious Emission Measurements (Cont'd)

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

Worst Case Mode: 802.11b

Worst Case Transfer Rate: 1 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz

Channel: 11

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dB μ V/m] | Limit [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------------|----------------------|-------------|
| 4924.00 | -106.93 | Avg | H | 42.27 | 42.34 | 53.98 | -11.64 |
| 4924.00 | -96.72 | Peak | H | 42.27 | 52.55 | 73.98 | -21.43 |
| 7386.00 | -135.00 | Avg | H | 48.80 | 20.80 | 53.98 | -33.18 |
| 7386.00 | -125.00 | Peak | H | 48.80 | 30.80 | 73.98 | -43.18 |
| 12310.00 | -135.00 | Avg | H | 59.16 | 31.16 | 53.98 | -22.82 |
| 12310.00 | -125.00 | Peak | H | 59.16 | 41.16 | 73.98 | -32.82 |

Table 6-5. Radiated Measurements @ 3 meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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 μ V/m (54dB μ /m) at 3 meters radiated.

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

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meters
 Operating Frequency: 5745MHz
 Channel: 149

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|---------------------------------|-------------------------|----------------|-------------|
| 11490.00 | -107.57 | Avg | H | 56.81 | -9.54 | 46.7 | 53.98 | -7.29 |
| 11490.00 | -97.37 | Peak | H | 56.81 | -9.54 | 56.9 | 73.98 | -17.09 |
| 22980.00 | -135.00 | Avg | H | 38.97 | -9.54 | 11.0 | 53.98 | -43.01 |
| 22980.00 | -125.00 | Peak | H | 38.97 | -9.54 | 21.0 | 73.98 | -53.01 |

Table 6-6. Radiated Measurements @ 1 meter

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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.

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Radiated Spurious Emission Measurements (Cont'd)

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

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meters

Operating Frequency: 5785MHz

Channel: 157

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dB μ V/m] | Limit [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|---------------------------------|-------------------------------|----------------------|-------------|
| 11570.00 | -107.58 | Avg | H | 56.32 | -9.54 | 46.2 | 53.98 | -7.78 |
| 11570.00 | -96.73 | Peak | H | 56.32 | -9.54 | 57.0 | 73.98 | -16.93 |

Table 6-7. Radiated Measurements @ 1 meter

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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 μ V/m (54dB μ /m) at 3 meters radiated.

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Radiated Spurious Emission Measurements (Cont'd)

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

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Distance Correction Factor [dB] | Field Strength [dB μ V/m] | Limit [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|---------------------------------|-------------------------------|----------------------|-------------|
| 11650.00 | -107.46 | Avg | H | 56.05 | -9.54 | 46.0 | 53.98 | -7.93 |
| 11650.00 | -96.41 | Peak | H | 56.05 | -9.54 | 57.1 | 73.98 | -16.88 |

Table 6-8. Radiated Measurements @ 1 meter

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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 μ V/m (54dB μ /m) at 3 meters radiated.

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6.3 Radiated Restricted Band Edge Measurements §15.205 / §15.209; RSS-210 [A8.5]

Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2412MHz

Channel: 1

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dB μ V/m] | Limit [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------------|----------------------|-------------|
| 2354.24 | -106.09 | Avg | H | 36.29 | 37.19 | 53.98 | -16.79 |
| 2354.24 | -96.96 | Peak | H | 36.29 | 46.32 | 73.98 | -27.66 |
| 2387.28 | -102.81 | Avg | H | 36.29 | 40.47 | 53.98 | -13.51 |
| 2387.28 | -92.35 | Peak | H | 36.29 | 50.93 | 73.98 | -23.05 |
| 2390.00 | -96.27 | Avg | H | 36.29 | 47.02 | 53.98 | -6.96 |
| 2390.00 | -83.06 | Peak | H | 36.29 | 60.23 | 73.98 | -13.75 |

Table 6-9. Radiated Restricted Band Measurements at 3-meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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 μ V/m (54dB μ /m) at 3 meters radiated.

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Radiated Restricted Band Edge Measurements (Cont'd)

§15.205 / §15.209; RSS-210 [A8.5]

Worst Case Mode: 802.11g

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 2462MHz

Channel: 11

| Frequency [MHz] | Analyzer Level [dBm] | Detector | Pol. [H/V] | AFCL [dB/m] | Field Strength [dB μ V/m] | Limit [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|----------|------------|-------------|-------------------------------|----------------------|-------------|
| 2483.53 | -94.41 | Avg | H | 36.29 | 48.87 | 53.98 | -5.11 |
| 2483.53 | -79.22 | Peak | H | 36.29 | 64.06 | 73.98 | -9.92 |
| 2483.76 | -95.13 | Avg | H | 36.29 | 48.15 | 53.98 | -5.83 |
| 2483.76 | -79.28 | Peak | H | 36.29 | 64.00 | 73.98 | -9.98 |
| 2484.31 | -96.47 | Avg | H | 36.29 | 46.82 | 53.98 | -7.16 |
| 2484.31 | -81.57 | Peak | H | 36.29 | 61.72 | 73.98 | -12.26 |

Table 6-10. Radiated Restricted Band Measurements at 3-meters

NOTES:

- All emissions shown lie in the restricted bands specified in §15.205 are below the limit shown in Table 6-2.
- For frequencies > 1GHz, average measurements are recorded using the RBAVG1 measurement procedure of KDB 558074 using RBW = 1MHz, VBW = 3MHz, RMS detector, 1001 measurement points, and a 3 second sweep time. Peak measurements are recorded using RBW = 1MHz, VBW = 3MHz and a peak detector.
- 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 10th harmonic and the worst-case emissions are reported. No significant emissions were found beyond the second 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 μ V/m (54dB μ /m) at 3 meters radiated.

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7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFE971** is in compliance with Part 15C of the FCC Rules and RSS-210 of the Industry Canada Rules.

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