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 22/24/27 Class II Permissive Change

Applicant Name:
LG Electronics USA
1000 Sylvan Avenue
Englewood Cliffs, NJ 07632
United States

Date of Testing:
August 16-17, 2010
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1008021249.BEJ

FCC ID:	**BEJMN180**
APPLICANT:	**LG ELECTRONICS USA**

Application Type:	Class II Permissive Change
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§2; §22(H), §24(E), §27(C)(L)
EUT Type:	Cellular/AWS/PCS CDMA Phone w/ BT
Model(s):	MN180, LG-MN180
Tx Frequency Range:	824.70 - 848.31MHz (Cell. CDMA) / 1711.25 - 1753.75MHz (AWS CDMA) / 1851.25 - 1908.75MHz (PCS CDMA)
Max. RF Output Power:	0.352 W ERP Cell. CDMA (25.47 dBm) 0.209 W EIRP AWS CDMA (23.21 dBm) 0.372 W EIRP PCS CDMA (25.7 dBm)
Test Device Serial No.:	*identical prototype* [S/N: N/A]
Class II Permissive Change:	Please see FCC Change Document
Original Grant Date:	06/01/2010

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 22 and EIRP for Part 24 and Part 27.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

ACCREDITED
TESTING LABORATORY
CERTIFICATE #2041.01

© 2010 PCTEST Engineering Laboratory, Inc.

TABLE OF CONTENTS

FCC PART 22, 24 & 27 MEASUREMENT REPORT 3

1.0 INTRODUCTION 4

1.1 SCOPE 4

1.2 TESTING FACILITY 4

2.0 PRODUCT INFORMATION 5

2.1 EQUIPMENT DESCRIPTION 5

2.2 EMI SUPPRESSION DEVICE(S)/MODIFICATIONS 5

2.3 LABELING REQUIREMENTS 5

3.0 DESCRIPTION OF TESTS 6

3.1 MEASUREMENT PROCEDURE 6

3.2 CELLULAR - BASE FREQUENCY BLOCKS 6

3.3 CELLULAR - MOBILE FREQUENCY BLOCKS 6

3.4 AWS - BASE FREQUENCY BLOCKS 7

3.5 AWS - MOBILE FREQUENCY BLOCKS 7

3.6 PCS - BASE FREQUENCY BLOCKS 7

3.7 PCS - MOBILE FREQUENCY BLOCKS 8

3.8 RADIATED POWER AND RADIATED SPURIOUS EMISSIONS 8

4.0 TEST EQUIPMENT CALIBRATION DATA 9

5.0 SAMPLE CALCULATIONS 10

6.0 TEST RESULTS 11

6.1 SUMMARY 11

6.2 EFFECTIVE RADIATED POWER OUTPUT DATA 12

6.3 EQUIVALENT ISOTROPIC RADIATED POWER OUTPUT DATA 13

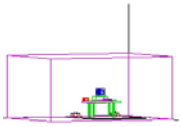
6.4 CELLULAR CDMA RADIATED MEASUREMENTS 14

6.5 AWS CDMA RADIATED MEASUREMENTS 17

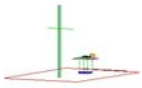
6.6 PCS CDMA RADIATED MEASUREMENTS 20

7.0 CONCLUSION 23

© 2010 PCTEST Engineering Laboratory, Inc.



MEASUREMENT REPORT
FCC Part 22 / 24 / 27



§2.1033 General Information

APPLICANT:	LG Electronics USA
APPLICANT ADDRESS:	1000 Sylvan Avenue
	Englewood Cliffs, NJ 07632
TEST SITE:	PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS:	6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S):	§2; §22(H), §24(E), §27(C)(L)
BASE MODEL:	MN180
FCC ID:	BEJMN180
FCC CLASSIFICATION:	PCS Licensed Transmitter Held to Ear (PCE)
MODE:	CDMA
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST:	August 16-17, 2010
TEST REPORT S/N:	0Y1008021249.BEJ

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.

© 2010 PCTEST Engineering Laboratory, Inc.

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 are, the Baltimore-Washington Internt'l (BWI) airport, the city of Baltimore and the Washington, DC area. (*See Figure 1-1*).

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

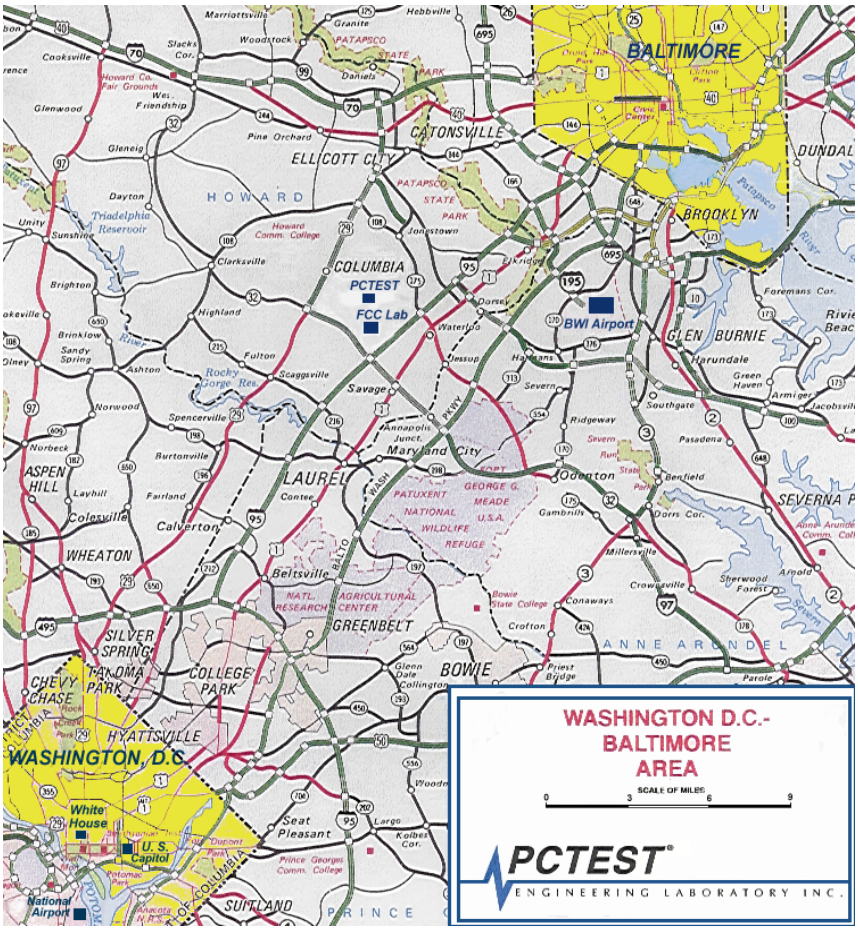


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

© 2010 PCTEST Engineering Laboratory, Inc.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Cellular/AWS/PCS CDMA Phone w/ BT FCC ID: BEJMN180**. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
LG / Model: MN180	BEJMN180	Cellular/AWS/PCS CDMA Phone w/ BT

Table 2-1. EUT Equipment Description

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.

© 2010 PCTEST Engineering Laboratory, Inc.

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.

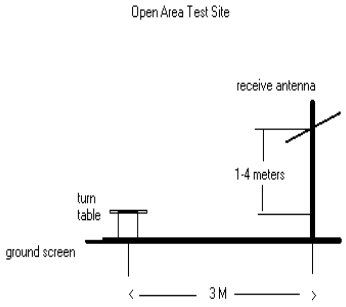
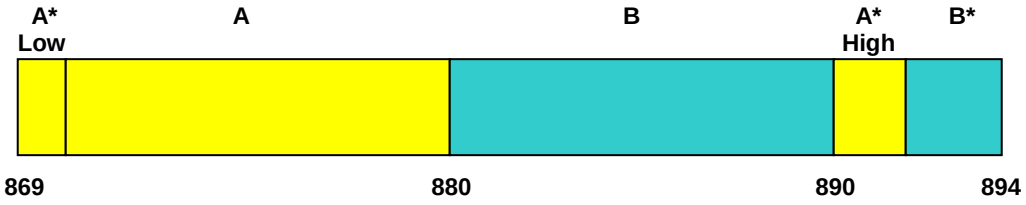


Figure 3-1. Diagram of 3-meter outdoor test range

Deviation from Measurement Procedure……..None

3.2 Cellular - Base Frequency Blocks



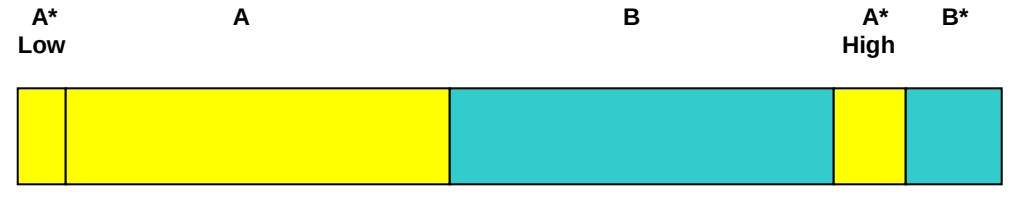
BLOCK 1: 869 – 880 MHz (A* Low + A)

BLOCK 2: 880 – 890 MHz (B)

BLOCK 3: 890 – 891.5 MHz (A* High)

BLOCK 4: 891.5 – 894 MHz (B*)

3.3 Cellular - Mobile Frequency Blocks



BLOCK 1: 824 – 835 MHz (A* Low + A)

BLOCK 2: 835 – 845 MHz (B)

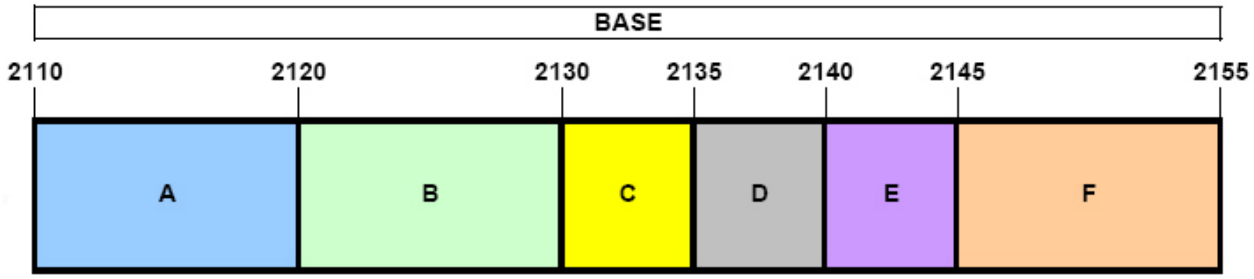
BLOCK 3: 845 – 846.5 MHz (A* High)

BLOCK 4: 846.5 – 849 MHz (B*)

© 2010 PCTEST Engineering Laboratory, Inc.

3.4 AWS - Base Frequency Blocks

§27.5(h)



BLOCK 1: 2110 – 2120 MHz (A)

BLOCK 2: 2120 – 2130 MHz (B)

BLOCK 3: 2130 – 2135 MHz (C)

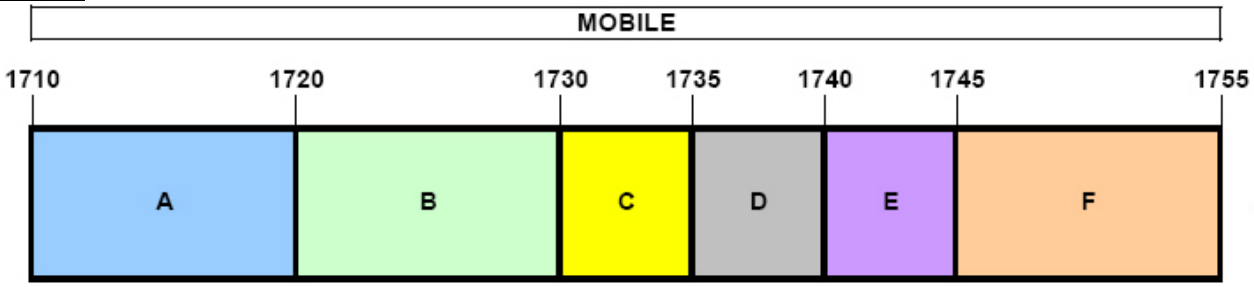
BLOCK 4: 2135 – 2140 MHz (D)

BLOCK 5: 2140 – 2145 MHz (E)

BLOCK 6: 2145 – 2155 MHz (E)

3.5 AWS - Mobile Frequency Blocks

§27.5(h)



BLOCK 1: 1710 – 1720 MHz (A)

BLOCK 2: 1720 – 1730 MHz (B)

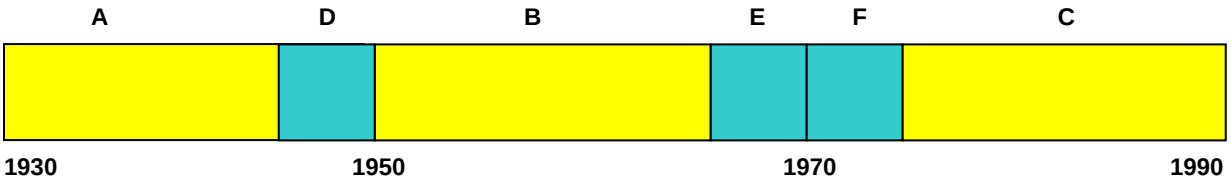
BLOCK 3: 1730 – 1735 MHz (C)

BLOCK 4: 1735 – 1740 MHz (D)

BLOCK 5: 1740 – 1745 MHz (E)

BLOCK 6: 1745 – 1755 MHz (F)

3.6 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 2: 1945 – 1950 MHz (D)

BLOCK 3: 1950 – 1965 MHz (B)

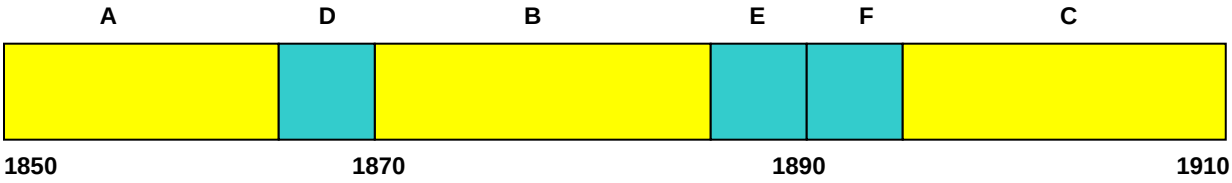
BLOCK 4: 1965 – 1970 MHz (E)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 6: 1975 – 1990 MHz (C)

© 2010 PCTEST Engineering Laboratory, Inc.

3.7 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 2: 1865 – 1870 MHz (D)

BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 5: 1890 – 1895 MHz (F)

BLOCK 6: 1895 – 1910 MHz (C)

3.8 Radiated Power and Radiated Spurious Emissions

§2.1053, 22.917(a), 22., 24.232(c), 24.238(a), §27.53(g)

Radiated power and radiated spurious 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 10th 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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

© 2010 PCTEST Engineering Laboratory, Inc.

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	11713A	Attenuation/Switch Driver	12/2/2009	Annual	12/2/2010	3439A02645
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	12/2/2009	Annual	12/2/2010	3008A00985
Agilent	85650A	Quasi-Peak Adapter	12/2/2009	Annual	12/2/2010	3303A01872
Agilent	85650A	Quasi-Peak Adapter	3/30/2010	Annual	3/30/2011	2043A00301
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	12/2/2009	Annual	12/2/2010	3638A08713
Agilent	8648D	(9kHz-4GHz) Signal Generator	9/19/2009	Biennial	9/19/2011	3613A00315
Agilent	E4407B	ESA Spectrum Analyzer	3/30/2010	Annual	3/30/2011	US39210313
Agilent	E4432B	ESG-D Series Signal Generator	9/10/2009	Annual	9/10/2010	US40053896
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	10/1/2009	Annual	10/1/2010	US42510244
Agilent	E5515C	Wireless Communications Test Set	9/10/2009	Annual	9/10/2010	GB46110872
Agilent	E5515C	Wireless Communications Test Set	9/11/2009	Annual	9/11/2010	GB46310798
Agilent	E5515C	Wireless Communications Test Set	8/25/2009	Annual	8/25/2010	GB41450275
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/30/2010	Annual	3/30/2011	MY45470194
Agilent	E8267C	Vector Signal Generator	9/29/2009	Biennial	9/29/2011	US42340152
Agilent	N9020A	MXA Signal Analyzer	10/22/2009	Annual	10/22/2010	US46470561
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	4/1/2010	Annual	4/1/2011	17620
Gigatronics	80701A	(0.05-18GHz) Power Sensor	9/9/2009	Annual	9/9/2010	1833460
Gigatronics	8651A	Universal Power Meter	9/9/2009	Annual	9/9/2010	8650319
K & L	11SH10	Band Pass Filter	N/A	Annual	N/A	1300/4000
K & L	11SH10	Band Pass Filter	N/A	Annual	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	9/11/2009	Annual	9/11/2010	836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator	6/21/2010	Annual	6/21/2011	833855/0010
Rohde & Schwarz	CMU200	Base Station Simulator	9/4/2009	Annual	9/4/2010	109892
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
Rohde & Schwarz	CMU200	Base Station Simulator	6/17/2010	Annual	6/17/2011	836536/0005
Rohde & Schwarz	FSQ 26	Spectrum Analyzer	9/19/2009	Annual	9/19/2010	200452
Rohde & Schwarz	CMW500	LTE Base Station Simulator	8/25/2009	Annual	8/25/2010	100976
Anritsu	ML2495A	Power Meter	10/12/2009	Annual	10/12/2010	941001

Table 4-1. Test Equipment

© 2010 PCTEST Engineering Laboratory, Inc.

5.0 SAMPLE CALCULATIONS

Spurious Radiated Emission - PCS Band

Example: Channel 25 PCS Mode 2nd Harmonic (3702.50 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 3702.50 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) = 50.3 dBc.

© 2010 PCTEST Engineering Laboratory, Inc.

6.0 TEST RESULTS

6.1 Summary

Company Name: LG Electronics USA

FCC ID: BEJMN180

FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)

Mode(s): CDMA

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
22.913(a)(2)	Effective Radiated Power	< 7 Watts max. ERP	RADIATED	PASS	Section 6.2
24.232(c), 27.50(d)(2)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 6.3
2.1053, 22.917(a), 24.238(a), 27.53(g)	Undesirable Emissions	< 43 + $10\log_{10}$ (P[Watts]) for all out-of-band emissions		PASS	Sections 6.4, 6.5, 6.6

Table 6-1. Summary of Test Results

© 2010 PCTEST Engineering Laboratory, Inc.

6.2 Effective Radiated Power Output Data

§22.913(a)(2)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Battery Type
824.70	CDMA850	-16.640	23.64	0.00	H	23.64	0.231	Standard
836.52	CDMA850	-16.530	23.75	0.00	H	23.75	0.237	Standard
848.31	CDMA850	-14.810	25.47	0.00	H	25.47	0.352	Standard

Table 6-2. Effective Radiated Power Output Data (Cellular Band)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

6.3 Equivalent Isotropic Radiated Power Output Data

§24.232(c), §27.50(d)(2)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1711.25	CDMA1700	-19.840	13.48	8.00	H	21.48	0.141	Standard
1732.50	CDMA1700	-18.630	14.69	8.00	H	22.69	0.186	Standard
1753.75	CDMA1700	-18.110	15.21	8.00	H	23.21	0.209	Standard

Table 6-3. Equivalent Isotropic Radiated Power Output Data (AWS Band)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
1851.25	CDMA1900	-15.570	17.57	8.00	H	25.57	0.361	Standard
1880.00	CDMA1900	-15.440	17.70	8.00	H	25.70	0.372	Standard
1908.75	CDMA1900	-16.010	17.13	8.00	H	25.13	0.326	Standard

Table 6-4. Equivalent Isotropic Radiated Power Output Data (PCS Band)

NOTES:

Equivalent Isotropic Radiated Power 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 Horn antenna was substituted in place of the EUT. This Horn 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 Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

6.4 Cellular CDMA Radiated Measurements

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	824.70	MHz		
CHANNEL:	1013			
MEASURED OUTPUT POWER:	25.470	dBm	=	0.352 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	38.47	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	-47.08	6.42	-40.67	H	66.1
2474.10	-31.21	6.42	-24.80	H	50.3
3298.80	-46.04	6.74	-39.30	H	64.8
4123.50	-57.79	7.55	-50.24	H	75.7
4948.20	-88.41	7.57	-80.84	H	106.3

Table 6-5. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

Cellular CDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	836.52	MHz		
CHANNEL:	384			
MEASURED OUTPUT POWER:	25.470	dBm	=	0.352 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	38.47	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.04	-54.76	6.43	-48.34	H	73.8
2509.56	-52.82	6.77	-46.05	H	71.5
3346.08	-57.81	7.55	-50.26	H	75.7
4182.60	-88.63	7.81	-80.82	H	106.3
5019.12	-87.30	9.02	-78.27	H	103.7

Table 6-6. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

Cellular CDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	848.31	MHz		
CHANNEL:	777			
MEASURED OUTPUT POWER:	25.470	dBm	=	0.352 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	38.47	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-51.02	6.44	-44.59	H	70.1
2544.93	-50.14	6.83	-43.31	H	68.8
3393.24	-52.33	7.55	-44.78	H	70.3
4241.55	-53.88	8.05	-45.83	H	71.3
5089.86	-86.78	8.92	-77.86	H	103.3

Table 6-7. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

6.5 AWS CDMA Radiated Measurements

§2.1053, 27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1711.25	MHz		
CHANNEL:	25			
MEASURED OUTPUT POWER:	23.210	dBm	=	0.209 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	36.21	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3422.50	-52.44	9.70	-42.74	H	65.9
5133.75	-46.62	11.00	-35.62	H	58.8
6845.00	-48.48	11.18	-37.30	H	60.5
8556.25	-79.68	11.63	-68.05	H	91.3
10267.50	-78.38	12.74	-65.64	H	88.8

Table 6-8. Radiated Spurious Data (AWS CDMA Mode – Ch. 25)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

AWS CDMA Radiated Measurements (Cont'd)

§2.1053, 27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1732.50	MHz		
CHANNEL:	450			
MEASURED OUTPUT POWER:	23.210	dBm	=	0.209 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	36.21	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3465.00	-48.36	9.70	-38.66	H	61.9
5197.50	-47.46	10.92	-36.55	H	59.8
6930.00	-48.99	11.08	-37.91	H	61.1
8662.50	-79.58	11.76	-67.83	H	91.0
10395.00	-78.34	12.83	-65.52	H	88.7

Table 6-9. Radiated Spurious Data (AWS CDMA Mode – Ch. 450)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

AWS CDMA Radiated Measurements (Cont'd)

§2.1053, 27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1753.75	MHz		
CHANNEL:	875			
MEASURED OUTPUT POWER:	23.210	dBm	=	0.209 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	36.21	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3507.50	-49.35	9.69	-39.66	H	62.9
5261.25	-46.16	10.83	-35.33	H	58.5
7015.00	-48.31	11.00	-37.31	H	60.5
8768.75	-79.49	11.88	-67.61	H	90.8
10522.50	-78.27	12.91	-65.36	H	88.6

Table 6-10. Radiated Spurious Data (AWS CDMA Mode – Ch. 875)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

6.6 PCS CDMA Radiated Measurements

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1851.25	MHz		
CHANNEL:	25			
MEASURED OUTPUT POWER:	25.700	dBm	=	0.372 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	38.70	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-47.06	9.49	-37.57	H	63.3
5553.75	-40.81	10.40	-30.42	H	56.1
7405.00	-48.16	11.08	-37.08	H	62.8
9256.25	-79.42	12.26	-67.16	H	92.9
11107.50	-76.62	13.19	-63.43	H	89.1

Table 6-11. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

PCS CDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1880.00	MHz		
CHANNEL:	600			
MEASURED OUTPUT POWER:	25.700	dBm	=	0.372 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	38.70	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-45.66	9.43	-36.22	H	61.9
5640.00	-39.99	10.24	-29.75	H	55.5
7520.00	-81.40	11.12	-70.29	H	96.0
9400.00	-79.51	12.32	-67.19	H	92.9
11280.00	-75.91	13.17	-62.74	H	88.4

Table 6-12. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

PCS CDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1908.75	MHz		
CHANNEL:	1175			
MEASURED OUTPUT POWER:	25.700	dBm	=	0.372 W
MODULATION SIGNAL:	CDMA (Internal)			
DISTANCE:	3	meters		
LIMIT:	43 + 10 log10 (W) =	38.70	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-45.78	9.37	-36.41	H	62.1
5726.25	-39.04	10.08	-28.96	H	54.7
7635.00	-48.71	11.21	-37.50	H	63.2
9543.75	-79.48	12.38	-67.10	H	92.8
11452.50	-75.21	13.15	-62.05	H	87.8

Table 6-13. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)

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 R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits. 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 in the clam shell open setup. The data reported in the table above was measured in this test setup.

© 2010 PCTEST Engineering Laboratory, Inc.

7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Cellular/AWS/PCS CDMA Phone w/ BT FCC ID: BEJMN180** complies with all the requirements of Parts 2, 22, 24, and 27 of the FCC rules.

© 2010 PCTEST Engineering Laboratory, Inc.