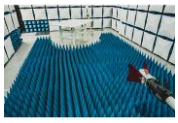
PCTEST ENGINEERING LABORATORY, INC.
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.pctest.com



MEASUREMENT REPORT
GSM / GPRS / EDGE / CDMA / WCDMA

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

Date of Testing:
1/15/2019 - 2/7/2019
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M1901080002-02-R1.ZNF

FCC ID:	**ZNFG820UM**
IC:	**2703C-G820UM**
APPLICANT:	**LG Electronics USA, Inc.**

Application Type:	Class II Permissive Change
Model:	LM-G820UM
Additional Model(s):	LM-G820UM, LMG820UM, G820UM, LM-G820TM, LMG820TM, G820TM, LM-G820QM, LMG820QM, G820QM, LM-G820QM5, LMG820QM5, G820QM5, LM-G820QM6, LMG820QM6, G820QM6
HVIN:	LM-G820UM, LMG820UM, G820UM
EUT Type:	Portable Handset
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	22, 24, & 27
ISED Specification:	RSS-132, RSS-133, RSS-139
Test Procedure(s):	ANSI C63.26-2015, ANSI/TIA-603-E-2016, KDB 971168 D01 v03r01, KDB 648474 D03 v01r04
Class II Permissive Change:	Please see FCC Change Document

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.

This revised Test Report (S/N: 1M1901080002-02-R1.ZNF) supersedes and replaces the previously issued test report (S/N: 1M1901080002-02.ZNF) on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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

ACCREDITED
TESTING CERT#2041.01

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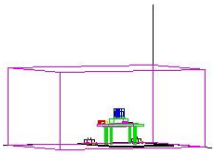
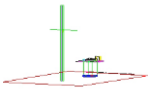


MEASUREMENT REPORT
GSM / GPRS / EDGE / CDMA / WCDMA



Mode	FCC Rule Part	Tx Frequency (MHz)	ERP		EIRP		Emission Designator
			Max. Power (W)	Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)	
GPRS850	22H	824.2 - 848.8	0.388	25.89	0.637	28.04	249KGXW
EDGE850	22H	824.2 - 848.8	0.070	18.44	0.115	20.59	243KG7W
CDMA850	22H	824.70 - 848.31	0.044	16.39	0.072	18.54	1M29F9W
WCDMA850	22H	826.4 - 846.6	0.050	16.98	0.082	19.13	4M16F9W
WCDMA1700	27	1712.4 - 1752.6			0.169	22.28	4M17F9W
GPRS1900	24E	1850.2 - 1909.8			0.177	22.49	242KGXW
EDGE1900	24E	1850.2 - 1909.8			0.046	16.61	245KG7W
CDMA1900	24E	1851.25 - 1908.75			0.159	22.01	1M28F9W
WCDMA1900	24E	1852.4 - 1907.6			0.142	21.51	4M17F9W

EUT Overview

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 Innovation, Science and Economic Development Canada.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO 17025-2005 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.

- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).

- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **LG Portable Handset FCC ID: ZNFG820UM**. The test data contained in this report pertains only to the emissions due to the EUT's 2G/3G licensed transmitters.

Test Device Serial No.: 03849

2.2 Device Capabilities

This device contains the following capabilities:

800/850/1900 CDMA/EvDO Rev0/A, 1x Advanced (BC0, BC1, BC10), 850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 802.11b/g/n/ac WLAN, 802.11a/n/ac UNII, Bluetooth (1x, EDR, LE), NFC

2.3 Test Configuration

The EUT was tested per the guidance of ANSI/TIA-603-E-2016 and KDB 971168 D01 v03r01. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) Model: PWMA-W815A while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

2.4 EMI Suppression Device(s)/Modifications

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

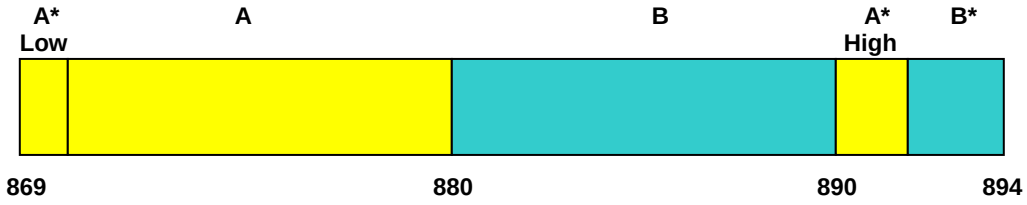
3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-E-2016) and "Measurement Guidance for Certification of Licensed Digital Transmitters" (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

Deviation from Measurement Procedure……..None

3.2 Cellular - Base Frequency Blocks



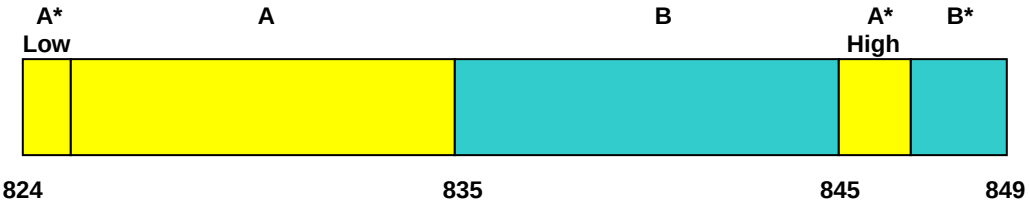
BLOCK 1: 869 – 880 MHz (A* Low + A)

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



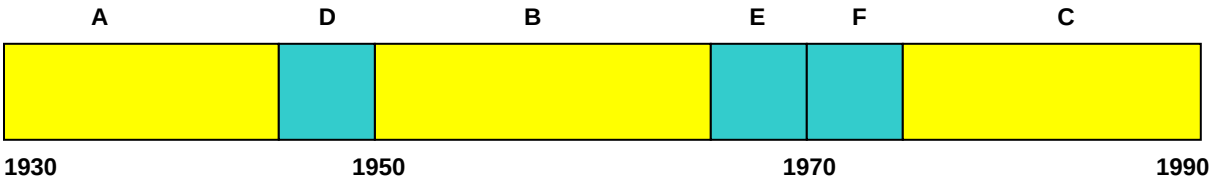
BLOCK 1: 824 – 835 MHz (A* Low + A)

BLOCK 2: 835 – 845 MHz (B)

BLOCK 3: 845 – 846.5 MHz (A* High)

BLOCK 4: 846.5 – 849 MHz (B*)

3.4 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 2: 1945 – 1950 MHz (D)

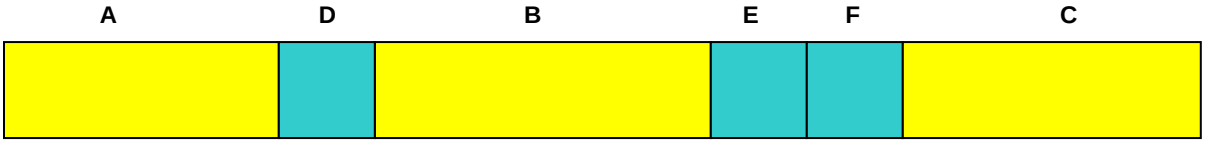
BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 4: 1965 – 1970 MHz (E)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 6: 1975 – 1990 MHz (C)

3.5 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 2: 1865 – 1870 MHz (D)

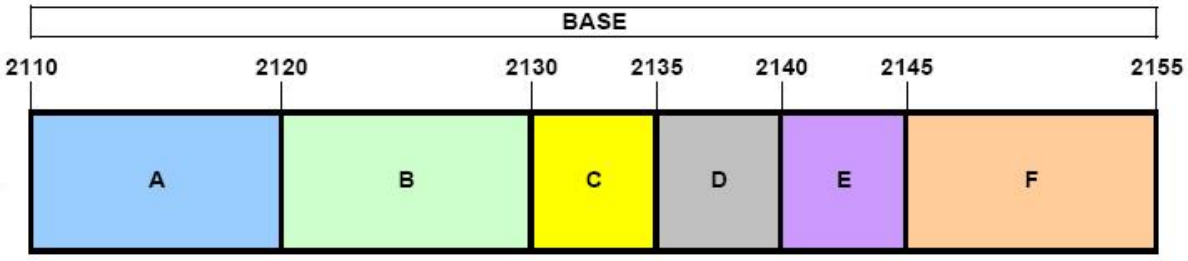
BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 5: 1890 – 1895 MHz (F)

BLOCK 6: 1895 – 1910 MHz (C)

3.6 AWS - Base Frequency Blocks



BLOCK 1: 2110 – 2120 MHz (A)

BLOCK 2: 2120 – 2130 MHz (B)

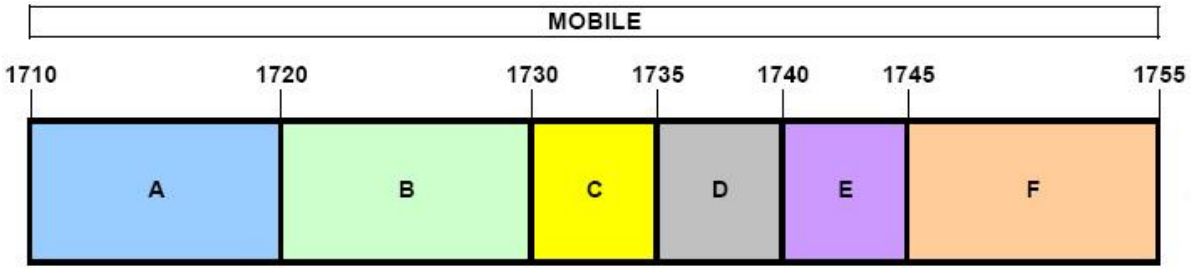
BLOCK 3: 2130 – 2135 MHz (C)

BLOCK 4: 2135 – 2140 MHz (D)

BLOCK 5: 2140 – 2145 MHz (E)

BLOCK 6: 2145 – 2155 MHz (F)

3.7 AWS - Mobile Frequency Blocks



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)

3.8 Radiated Measurements

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

Per the guidance of ANSI/TIA-603-E-2016, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$P_{d\ [dBm]} = P_{g\ [dBm]} - \text{cable loss}_{\ [dB]} + \text{antenna gain}_{\ [dBd/dBi]}$$

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_{g\ [dBm]}$ – cable loss $_{[dB]}$.

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 474788 D01.

Radiated power and radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI/TIA-603-E-2016.

4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	LTx3	LIcensed Transmitter Cable Set	8/23/2018	Annual	8/23/2019	LTx3
Agilent	E5515C	Wireless Communications Test Set	1/29/2016	Triennial	2/29/2019	GB46310798
Agilent	E5515C	Wireless Communications Test Set	3/4/2016	Triennial	3/4/2019	GB45360985
Agilent	N9020A	MXA Signal Analyzer	1/24/2018	Annual	2/24/2019	US46470561
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	10/10/2017	Biennial	10/10/2019	121034
Com-Power	PAM-103	Pre-Amplifier (1-1000MHz)	9/17/2018	Annual	9/17/2019	441119
Espec	ESX-2CA	Environmental Chamber	3/28/2018	Annual	3/28/2019	17620
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/28/2018	Biennial	3/28/2020	128337
Mini Circuits	TVA-11-422	RF Power Amp	N/A			QA1317001
Mini-Circuits	PWR-SEN-4RMS	USB Power Sensor	3/30/2018	Annual	3/30/2019	11210140001
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11208010032
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11403100002
Rohde & Schwarz	CMU200	Base Station Simulator	5/18/2018	Annual	5/18/2019	109892
Rohde & Schwarz	CMW500	Radio Communication Tester	6/8/2018	Annual	6/8/2019	112347
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	5/21/2018	Annual	5/21/2019	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	8/9/2018	Annual	8/9/2019	100348
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	6/18/2018	Annual	6/18/2019	102134
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	9/19/2018	Annual	9/19/2019	100040
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	4/30/2018	Biennial	4/30/2020	9105-2404
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Tx	4/30/2018	Biennial	4/30/2020	9105-2403
Seekonk	NC-100	Torque Wrench (8" lb)	5/10/2018	Biennial	5/10/2020	N/A
Sunol	DRH-118	Horn Antenna (1-18 GHz)	8/11/2017	Biennial	8/11/2019	A042511
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	4/19/2018	Biennial	4/19/2020	A051107

Table 5-1. Test Equipment

Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. Equipment with a calibration date of “N/A” shown in this list was not used to make direct calibrated measurements.

6.0 SAMPLE CALCULATIONS

GPRS Emission Designator

Emission Designator = 250KGXW

GPRS BW = 250 kHz
G = Phase Modulation
X = Cases not otherwise covered
W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 250KG7W

EDGE BW = 250 kHz
G = Phase Modulation
7 = Quantized/Digital Info
W = Combination (Audio/Data)

CDMA Emission Designator

Emission Designator = 1M25F9W

CDMA BW = 1.25 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data)

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive spectrum analyzer 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 spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.50 dBm so this harmonic was 25.50 dBm – (-24.80) = 50.3 dBc.

7.0 TEST RESULTS

7.1 Summary

Company Name: LG Electronics USA, Inc.

FCC ID: ZNFG820UM

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

Mode(s): GSM / GPRS / EDGE / CDMA / WCDMA

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
22.913(a)(5)	RSS-132(5.4)	Effective Radiated Power	< 7 Watts max. ERP	RADIATED	PASS	Section 7.2
24.232(c)	RSS-133(6.4)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 7.2
27.50(d)(4)	RSS-139(6.5)	Equivalent Isotropic Radiated Power	< 1 Watts max. EIRP		PASS	Section 7.2
2.1053 22.917(a) 24.238(a) 27.53(h)	RSS-132(5.5) RSS-133(6.5) RSS-139(6.6)	Radiated Spurious Emissions	> 43 + $\log_{10}$ (P[Watts]) for all out-of-band emissions		PASS	Section 7.3

Table 7-1. 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 were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT 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, attenuators, and couplers.
4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "2G/3G Automation," Version 3.9.

7.2 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Setup

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

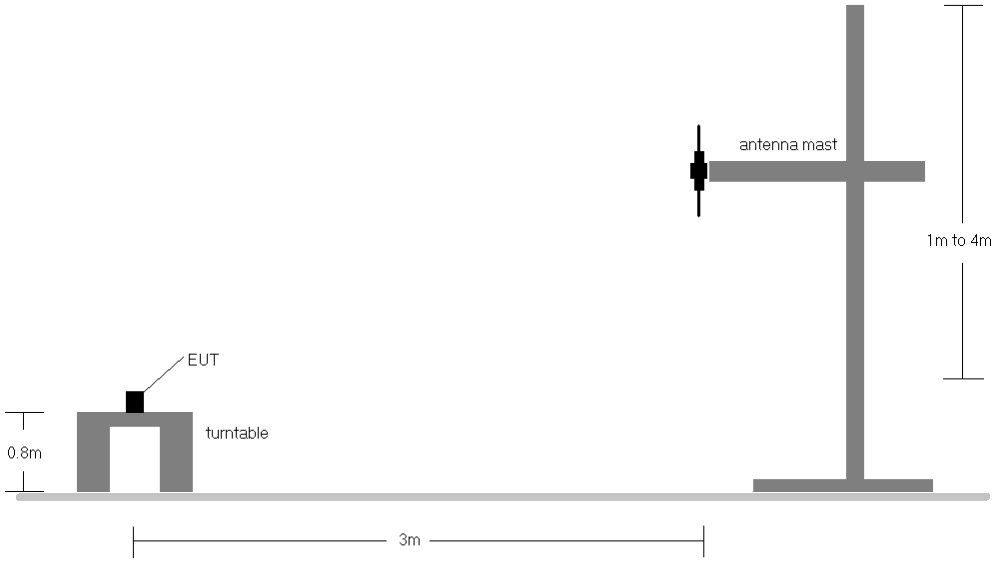


Figure 7-1. Radiated Test Setup <1GHz

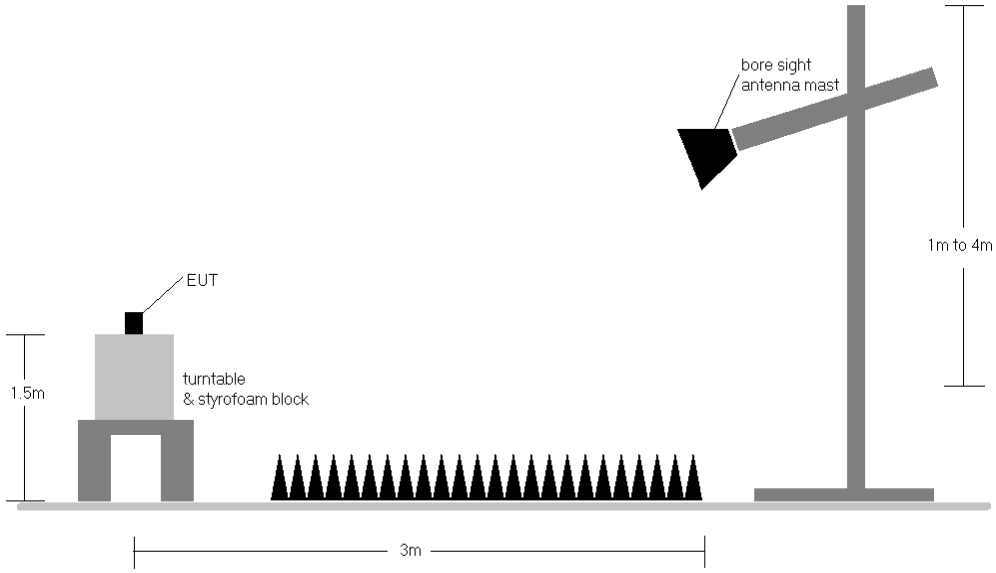


Figure 7-2. Radiated Test Setup >1GHz

Test Notes

1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.

2) This device employs UMTS technology with WCDMA (AMR/RMC), HSDPA, and HSUPA capabilities. For WCDMA and HSUPA transmission, all configurations were investigated and the worst case UMTS emissions were found in RMC WCDMA mode at 12.2kbps with HSDPA inactive and TPC bits all set to "1."

3) This device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.

4) This unit was tested with its standard battery.

5) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.20	GPRS850	V	154	116	21.74	6.30	**25.89**	**0.388**	38.45	-12.56	**28.04**	**0.637**	40.61	-12.57
836.60	GPRS850	V	160	111	20.32	6.35	24.52	0.283	38.45	-13.93	26.67	0.465	40.61	-13.94
848.80	GPRS850	V	129	73	19.66	6.40	23.91	0.246	38.45	-14.54	26.06	0.404	40.61	-14.55
824.20	GPRS850	H	115	64	18.17	6.30	22.32	0.171	38.45	-16.13	24.47	0.280	40.61	-16.14
824.20	EDGE850	V	154	116	14.29	6.30	**18.44**	0.070	38.45	-20.01	**20.59**	**0.115**	40.61	-20.02
824.20	GPRS850 (WCP)	V	171	340	17.23	6.30	21.38	0.137	38.45	-17.07	23.53	0.225	40.61	-17.08

Table 7-2. ERP/EIRP (Cellular GPRS)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	CDMA850	V	132	138	12.24	6.30	**16.39**	**0.044**	38.45	-22.06	**18.54**	**0.072**	40.61	-22.06
836.52	CDMA850	V	111	96	10.67	6.35	14.87	0.031	38.45	-23.58	17.02	0.050	40.61	-23.59
848.31	CDMA850	V	149	101	10.76	6.40	15.01	0.032	38.45	-23.44	17.16	0.052	40.61	-23.45
824.70	CDMA850	H	100	95	11.67	6.75	16.27	0.042	38.45	-22.18	18.42	0.070	40.61	-22.19
824.70	CDMA850 (WCP)	V	151	89	7.25	6.30	11.40	0.014	38.45	-27.05	13.55	0.023	40.61	-27.05

Table 7-3. ERP/EIRP (Cellular CDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	V	165	113	12.82	6.31	**16.98**	**0.050**	38.45	-21.47	**19.13**	**0.082**	40.61	-21.48
836.60	WCDMA850	V	142	108	12.66	6.35	16.86	0.049	38.45	-21.59	19.01	0.080	40.61	-21.60
846.60	WCDMA850	V	153	111	12.40	6.39	16.64	0.046	38.45	-21.81	18.79	0.076	40.61	-21.81
826.40	WCDMA850	H	100	87	11.59	6.31	15.75	0.038	38.45	-22.70	17.90	0.062	40.61	-22.71
826.40	WCDMA850 (WCP)	V	177	345	5.07	6.31	9.23	0.008	38.45	-29.22	11.38	0.014	40.61	-29.23

Table 7-4. ERP/EIRP (Cellular WCDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1712.40	WCDMA1700	H	172	227	13.68	8.16	21.84	0.153	30.00	-8.16
1732.60	WCDMA1700	H	132	222	13.16	8.18	21.34	0.136	30.00	-8.66
1752.60	WCDMA1700	H	119	222	14.08	8.20	**22.28**	**0.169**	30.00	-7.72
1752.60	WCDMA1700	V	237	294	11.57	8.01	19.58	0.091	30.00	-10.42
1752.60	WCDMA1700 (WCP)	H	113	204	10.60	8.20	18.80	0.076	30.00	-11.20

Table 7-5. EIRP (AWS WCDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.20	GPRS1900	H	102	224	14.12	8.37	**22.49**	**0.177**	33.01	-10.52
1880.00	GPRS1900	H	100	218	13.69	8.41	22.10	0.162	33.01	-10.91
1909.80	GPRS1900	H	119	232	13.02	8.46	21.48	0.141	33.01	-11.53
1850.20	GPRS1900	V	118	307	13.50	8.37	21.87	0.154	33.01	-11.14
1850.20	EDGE1900	H	102	224	8.24	8.37	**16.61**	0.046	33.01	-16.40
1850.20	GPRS1900 (WCP)	H	328	206	10.38	8.37	18.75	0.075	33.01	-14.26

Table 7-6. EIRP (PCS GPRS)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1851.25	CDMA1900	H	188	238	12.61	8.37	20.98	0.125	33.01	-12.03
1880.00	CDMA1900	H	101	236	13.60	8.41	**22.01**	**0.159**	33.01	-11.00
1908.75	CDMA1900	H	129	235	11.02	8.46	19.48	0.089	33.01	-13.53
1880.00	CDMA1900	V	146	207	10.86	8.72	19.58	0.091	33.01	-13.43
1880.00	CDMA1900 (WCP)	H	199	324	11.95	8.41	20.36	0.109	33.01	-12.65

Table 7-7. EIRP (PCS CDMA)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA1900	H	115	235	12.82	8.37	21.19	0.132	33.01	-11.82
1880.00	WCDMA1900	H	100	238	13.10	8.41	**21.51**	**0.142**	33.01	-11.50
1907.60	WCDMA1900	H	170	238	11.13	8.46	19.59	0.091	33.01	-13.42
1880.00	WCDMA1900	V	100	336	10.95	8.59	19.54	0.090	33.01	-13.47
1880.00	WCDMA1900 (WCP)	H	102	222	5.72	8.41	14.13	0.026	33.01	-18.88

Table 7-8. EIRP (PCS WCDMA)

7.3 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

Test Setup

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

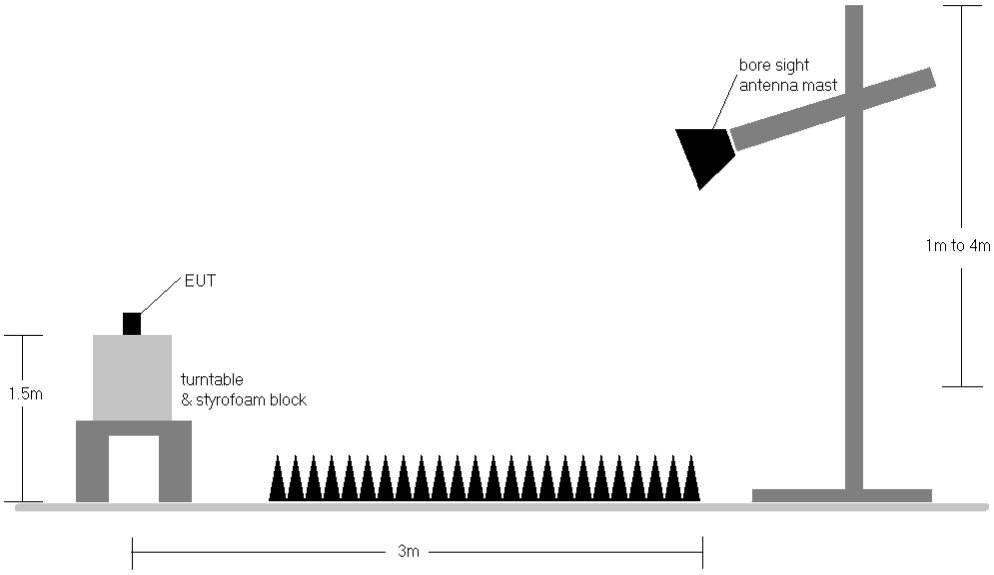


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest power is reported in GPRS mode while transmitting with one slot active.

2) This device employs UMTS technology with WCDMA (AMR/RMC), HSDPA, and HSUPA capabilities. For WCDMA and HSUPA transmission, all configurations were investigated and the worst case UMTS emissions were found in RMC WCDMA mode at 12.2kbps with HSDPA inactive and TPC bits all set to "1."

3) This device was tested under all RC and SO combinations and the worst case is reported with RC3/SO55 with "All Up" power control bits.

4) This unit was tested with its standard battery.

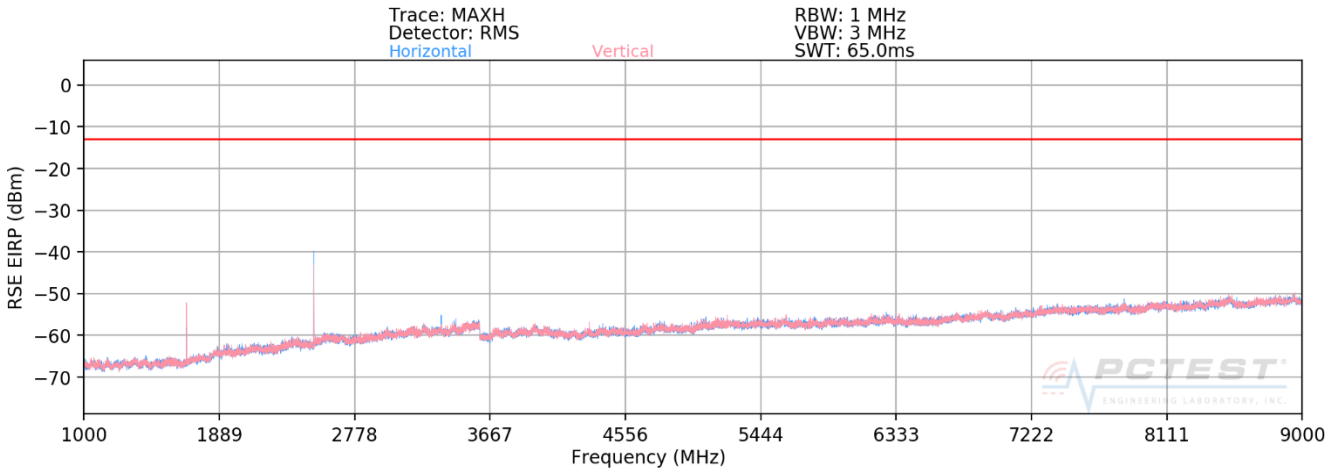
5) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

6) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

7) 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.

8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Cellular GPRS Mode



Plot 7-1. Radiated Spurious Plot (Cellular GPRS Mode)

OPERATING FREQUENCY:	824.20	MHz
CHANNEL:	128	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1648.40	V	106	323	-47.19	3.07	-44.12	-31.1
2472.60	V	254	220	-36.58	3.82	-32.76	-19.8
3296.80	V	174	189	-57.82	6.00	-51.82	-38.8
4121.00	V	101	23	-58.13	7.67	-50.45	-37.5
4945.20	V	-	-	-58.99	8.72	-50.27	-37.3
5769.40	V	-	-	-59.94	9.09	-50.85	-37.8
6593.60	V	-	-	-57.86	9.22	-48.64	-35.6

Table 7-9. Radiated Spurious Data (Cellular GPRS Mode – Ch. 128)

OPERATING FREQUENCY:	836.60	MHz
CHANNEL:	190	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.20	V	112	356	-48.19	3.10	-45.09	-32.1
2509.80	V	213	107	-34.07	4.02	-30.05	-17.0
3346.40	V	108	36	-54.86	6.03	-48.83	-35.8
4183.00	V	238	343	-58.54	7.79	-50.75	-37.7
5019.60	V	-	-	-59.99	8.78	-51.21	-38.2
5856.20	V	-	-	-59.41	9.18	-50.23	-37.2
6692.80	V	-	-	-57.31	9.43	-47.88	-34.9

Table 7-10. Radiated Spurious Data (Cellular GPRS Mode – Ch. 190)

OPERATING FREQUENCY:	848.80	MHz
CHANNEL:	251	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1697.60	V	237	234	-51.12	3.15	-47.97	-35.0
2546.40	V	127	51	-35.11	4.15	-30.96	-18.0
3395.20	V	358	14	-55.62	6.24	-49.38	-36.4
4244.00	V	278	349	-59.67	7.97	-51.69	-38.7
5092.80	V	-	-	-58.61	8.88	-49.73	-36.7
5941.60	V	-	-	-59.15	9.31	-49.85	-36.8
6790.40	V	-	-	-58.71	9.45	-49.27	-36.3

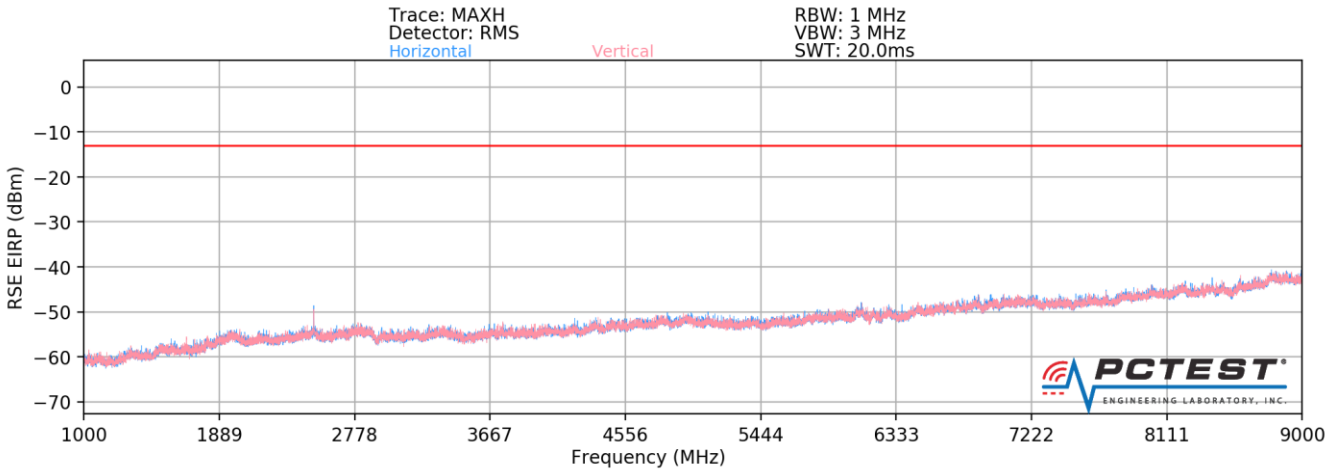
Table 7-11. Radiated Spurious Data (Cellular GPRS Mode – Ch. 251)

OPERATING FREQUENCY:	824.20	MHz
CHANNEL:	128	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1648.40	V	246	120	-51.45	3.07	-48.38	-35.4
2472.60	V	167	240	-56.44	3.82	-52.62	-39.6
3296.80	V	-	-	-69.73	6.00	-63.73	-50.7
4121.00	V	-	-	-70.45	7.67	-62.77	-49.8
4945.20	V	-	-	-70.99	8.72	-62.27	-49.3

Table 7-12. Radiated Spurious Data with WCP (Cellular GPRS Mode – Ch. 251)

Cellular CDMA Mode



Plot 7-2. Radiated Spurious Plot (Cellular CDMA Mode)

OPERATING FREQUENCY:	824.70	MHz
CHANNEL:	1013	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1649.40	V	113	368	-65.98	3.08	-62.91	-49.9
2474.10	V	108	100	-62.41	3.84	-58.57	-45.6
3298.80	V	-	-	-69.63	6.00	-63.63	-50.6
4123.50	V	-	-	-70.80	7.68	-63.12	-50.1

Table 7-13. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)

OPERATING FREQUENCY:	836.52	MHz
CHANNEL:	384	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.04	V	114	370	-65.42	3.10	-62.32	-49.3
2509.56	V	115	42	-59.85	4.02	-55.84	-42.8
3346.08	V	-	-	-68.89	6.03	-62.86	-49.9
4182.60	V	-	-	-70.99	7.79	-63.19	-50.2
5019.12	V	-	-	-70.08	8.78	-61.30	-48.3

Table 7-14. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)

OPERATING FREQUENCY:	848.31	MHz
CHANNEL:	777	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1696.62	V	115	354	-67.99	3.15	-64.84	-51.8
2544.93	V	117	75	-60.27	4.14	-56.13	-43.1
3393.24	V	-	-	-69.58	6.23	-63.36	-50.4
4241.55	V	-	-	-71.00	7.96	-63.03	-50.0
5089.86	V	-	-	-71.38	8.88	-62.50	-49.5

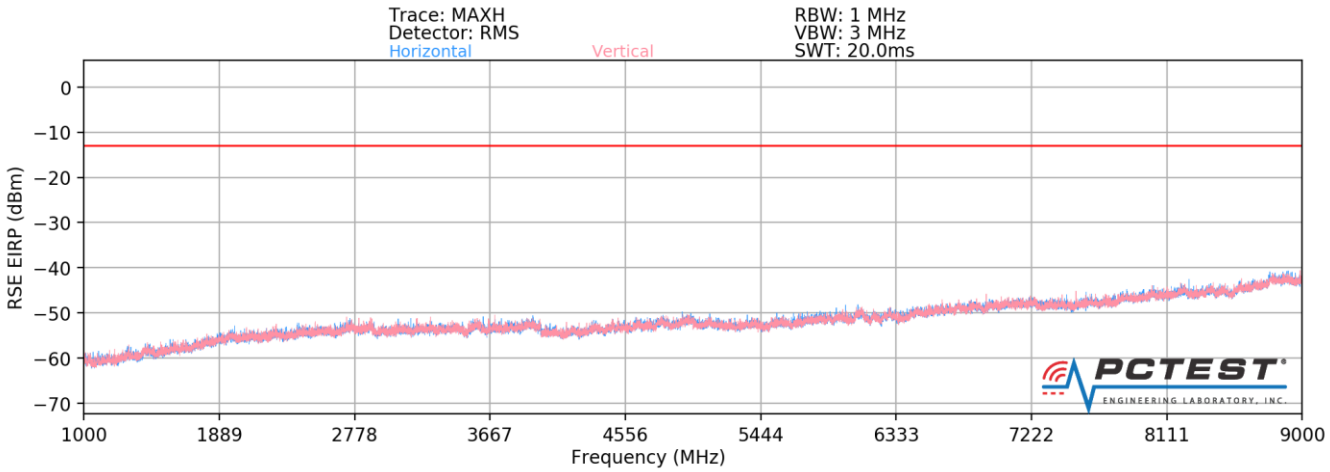
Table 7-15. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

OPERATING FREQUENCY:	824.70	MHz
CHANNEL:	1013	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1649.40	V	-	-	-69.28	3.08	-66.21	-53.2
2474.10	V	129	234	-65.93	3.84	-62.09	-49.1
3298.80	V	-	-	-69.52	6.00	-63.52	-50.5
4123.50	V	-	-	-70.72	7.68	-63.04	-50.0
4948.20	V	-	-	-70.95	8.72	-62.23	-49.2

Table 7-16. Radiated Spurious Data with WCP (Cellular CDMA Mode – Ch. 384)

Cellular WCDMA Mode



Plot 7-3. Radiated Spurious Plot (Cellular WCDMA Mode)

OPERATING FREQUENCY:	826.40	MHz
CHANNEL:	4132	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1652.80	V	165	3	-67.65	3.09	-64.56	-51.6
2479.20	V	111	21	-58.99	3.91	-55.08	-42.1
3305.60	V	-	-	-69.65	6.00	-63.64	-50.6
4132.00	V	-	-	-70.78	7.72	-63.06	-50.1

Table 7-17. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4132)

OPERATING FREQUENCY:	836.60	MHz
CHANNEL:	4183	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.20	V	101	215	-67.16	3.10	-64.06	-51.1
2509.80	V	121	34	-58.78	4.02	-54.76	-41.8
3346.40	V	-	-	-69.21	6.03	-63.18	-50.2
4183.00	V	-	-	-70.98	7.79	-63.19	-50.2

Table 7-18. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4183)

OPERATING FREQUENCY:	846.60	MHz
CHANNEL:	4233	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1693.20	V	115	15	-68.16	3.17	-64.99	-52.0
2539.80	V	101	20	-59.52	4.13	-55.40	-42.4
3386.40	V	-	-	-69.53	6.20	-63.33	-50.3
4233.00	V	-	-	-71.05	7.93	-63.12	-50.1

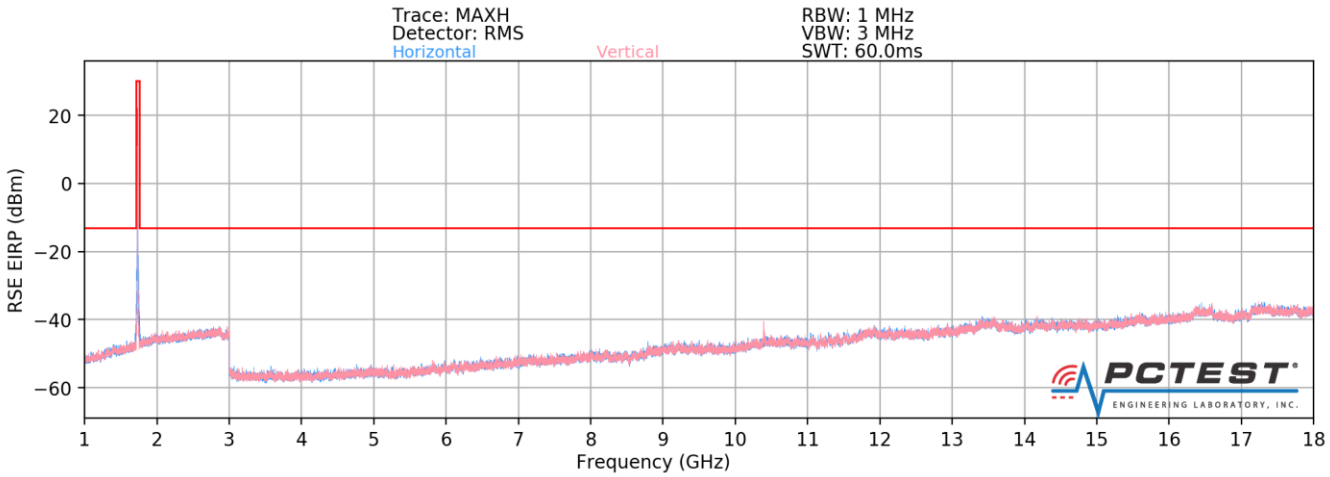
Table 7-19. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)

OPERATING FREQUENCY:	826.40	MHz
CHANNEL:	4132	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1652.80	V	134	84	-68.45	3.09	-65.36	-52.4
2479.20	V	167	352	-59.10	3.91	-55.19	-42.2
3305.60	V	-	-	-70.30	6.00	-64.29	-51.3
4132.00	V	-	-	-70.05	7.72	-62.33	-49.3

Table 7-20. Radiated Spurious Data with WCP (Cellular WCDMA Mode – Ch. 4233)

AWS WCDMA Mode



Plot 7-4. Radiated Spurious Plot (AWS WCDMA Mode)

OPERATING FREQUENCY:	1712.40	MHz
CHANNEL:	1312	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3424.80	H	-	-	-67.91	6.27	-61.63	-48.6
5137.20	H	-	-	-69.69	8.94	-60.75	-47.7
6849.60	H	-	-	-67.11	9.44	-57.66	-44.7

Table 7-21. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1312)

OPERATING FREQUENCY:	1732.60	MHz
CHANNEL:	1413	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3465.20	H	-	-	-67.91	6.35	-61.56	-48.6
5197.80	H	-	-	-69.67	9.05	-60.62	-47.6
6930.40	H	-	-	-67.19	9.38	-57.81	-44.8

Table 7-22. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1413)

OPERATING FREQUENCY:	1752.60	MHz
CHANNEL:	1513	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3505.20	H	-	-	-68.66	6.50	-62.16	-49.2
5257.80	H	-	-	-69.51	8.96	-60.55	-47.6
7010.40	H	-	-	-67.50	9.14	-58.36	-45.4

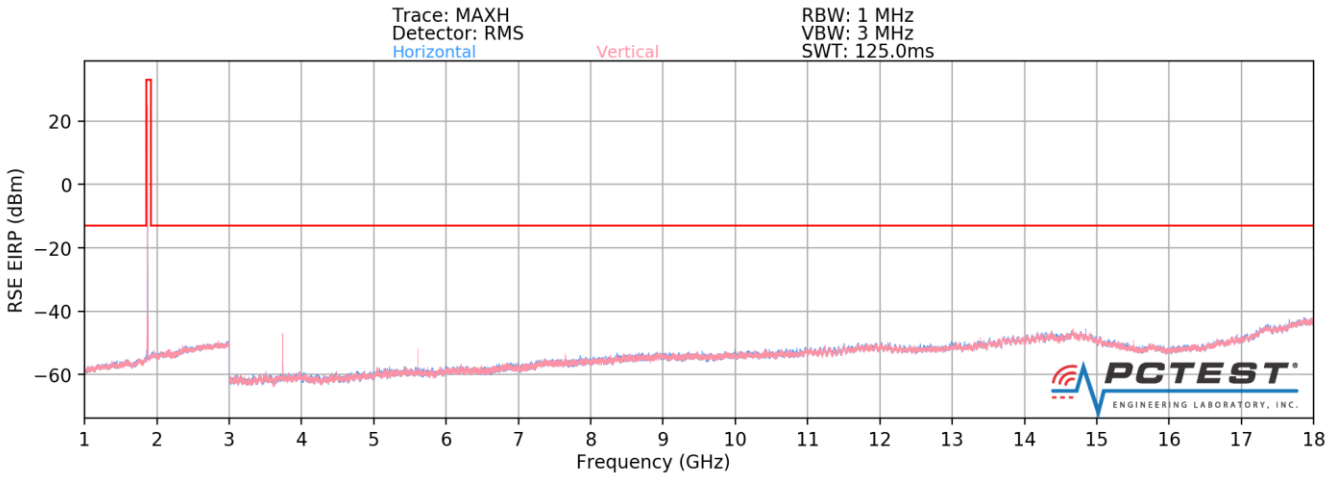
Table 7-23. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1513)

OPERATING FREQUENCY:	1752.60	MHz
CHANNEL:	1513	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3505.20	H	-	-	-69.06	6.50	-62.56	-49.6
5257.80	H	-	-	-69.59	8.96	-60.63	-47.6
7010.40	H	-	-	-67.10	9.14	-57.96	-45.0

Table 7-24. Radiated Spurious Data with WCP (AWS WCDMA Mode – Ch. 1413)

PCS GPRS Mode



Plot 7-5. Radiated Spurious Plot (PCS GPRS Mode)

OPERATING FREQUENCY:	1850.20	MHz
CHANNEL:	512	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3700.40	H	289	339	-50.58	6.89	-43.69	-30.7
5550.60	H	163	331	-54.56	9.02	-45.54	-32.5
7400.80	H	-	-	-54.40	9.21	-45.19	-32.2
9251.00	H	-	-	-50.42	9.45	-40.97	-28.0
11101.20	H	-	-	-47.43	9.44	-38.00	-25.0

Table 7-25. Radiated Spurious Data (PCS GPRS Mode – Ch. 512)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	661	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	H	229	52	-51.44	6.93	-44.51	-31.5
5640.00	H	201	24	-56.60	9.15	-47.45	-34.4
7520.00	H	-	-	-56.44	9.31	-47.12	-34.1
9400.00	H	-	-	-54.40	9.49	-44.91	-31.9
11280.00	H	-	-	-51.18	9.48	-41.70	-28.7

Table 7-26. Radiated Spurious Data (PCS GPRS Mode – Ch. 661)

OPERATING FREQUENCY:	1909.80	MHz
CHANNEL:	810	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3819.60	H	140	329	-50.89	7.11	-43.79	-30.8
5729.40	H	156	267	-56.26	9.03	-47.23	-34.2
7639.20	H	-	-	-53.76	9.29	-44.47	-31.5
9549.00	H	-	-	-54.46	9.43	-45.03	-32.0
11458.80	H	-	-	-53.33	9.49	-43.84	-30.8

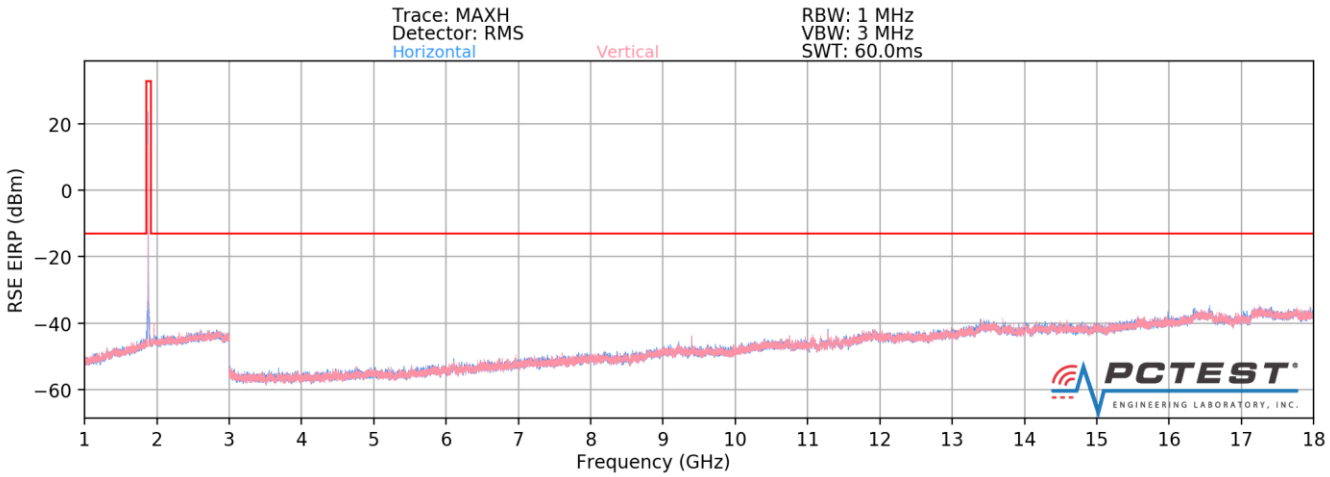
Table 7-27. Radiated Spurious Data (PCS GPRS Mode – Ch. 810)

OPERATING FREQUENCY:	1850.20	MHz
CHANNEL:	512	
MODULATION SIGNAL:	GPRS (GMSK)	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3700.40	H	120	24	-51.83	6.89	-44.94	-31.9
5550.60	H	132	278	-58.38	9.02	-49.36	-36.4
7400.80	H	-	-	-54.25	9.21	-45.04	-32.0
9251.00	H	-	-	-54.62	9.45	-45.17	-32.2
11101.20	H	-	-	-53.03	9.44	-43.60	-30.6

Table 7-28. Radiated Spurious Data with WCP (PCS GPRS Mode – Ch. 512)

PCS CDMA Mode



Plot 7-6. Radiated Spurious Plot (PCS CDMA Mode)

OPERATING FREQUENCY:	1851.25	MHz
CHANNEL:	25	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3702.50	V	-	-	-67.92	6.89	-61.02	-48.0
5553.75	V	-	-	-68.85	9.02	-59.83	-46.8
7405.00	V	-	-	-66.06	9.22	-56.84	-43.8
9256.25	V	101	236	-59.86	9.45	-50.41	-37.4
11107.50	V	106	119	-57.07	9.44	-47.63	-34.6
12958.75	V	-	-	-57.80	8.76	-49.04	-36.0

Table 7-29. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	600	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	V	-	-	-68.69	6.93	-61.76	-48.8
5640.00	V	-	-	-68.24	9.15	-59.09	-46.1
7520.00	V	-	-	-65.88	9.31	-56.56	-43.6
9400.00	V	108	234	-57.16	9.49	-47.67	-34.7
11280.00	V	-	-	-61.05	9.48	-51.57	-38.6
13160.00	V	-	-	-56.69	8.71	-47.98	-35.0

Table 7-30. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)

OPERATING FREQUENCY:	1908.75	MHz
CHANNEL:	1175	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3817.50	V	-	-	-68.32	7.10	-61.22	-48.2
5726.25	V	-	-	-68.94	9.03	-59.91	-46.9
7635.00	V	-	-	-65.71	9.29	-56.43	-43.4
9543.75	V	108	233	-50.71	9.44	-41.27	-28.3
11452.50	V	-	-	-61.97	9.50	-52.47	-39.5
13361.25	V	-	-	-56.90	8.72	-48.18	-35.2

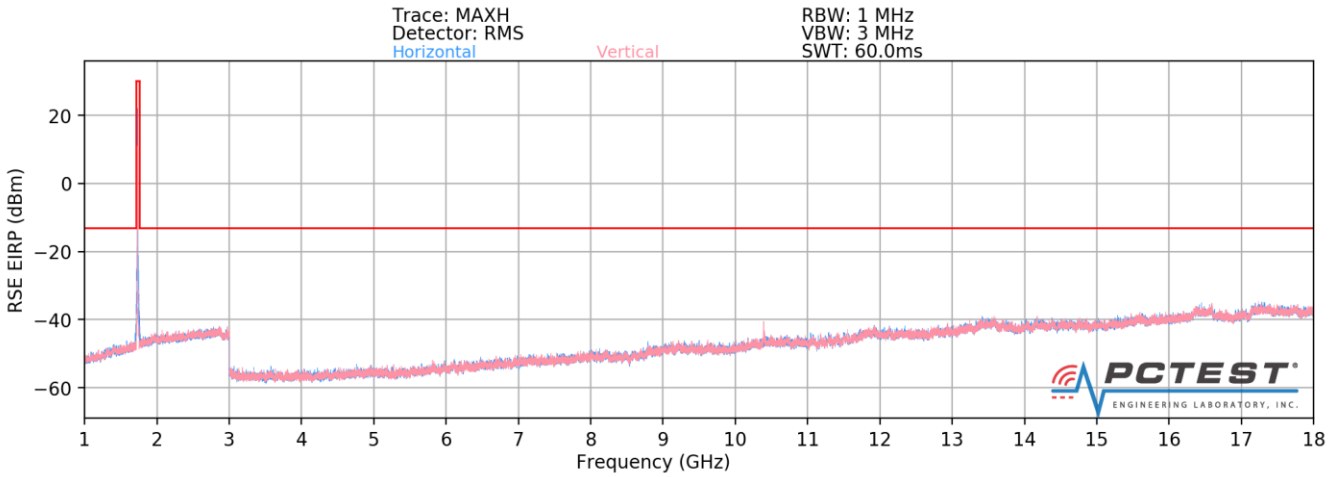
Table 7-31. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	600	
MODULATION SIGNAL:	CDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	V	-	-	-68.79	6.93	-61.86	-48.9
5640.00	V	-	-	-69.26	9.15	-60.11	-47.1
7520.00	V	-	-	-64.88	9.31	-55.56	-42.6
9400.00	V	180	355	-60.50	9.49	-51.01	-38.0
11280.00	V	-	-	-60.85	9.48	-51.37	-38.4
13160.00	V	-	-	-56.93	8.71	-48.22	-35.2

Table 7-32. Radiated Spurious Data with WCP (PCS CDMA Mode – Ch. 600)

PCS WCDMA Mode



Plot 7-7. Radiated Spurious Plot (PCS WCDMA Mode)

OPERATING FREQUENCY:	1852.40	MHz
CHANNEL:	9262	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3704.80	H	-	-	-68.30	6.89	-61.41	-48.4
5557.20	H	-	-	-68.94	9.03	-59.91	-46.9
7409.60	H	-	-	-66.42	9.23	-57.19	-44.2

Table 7-33. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9262)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	9400	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	H	-	-	-68.95	6.93	-62.02	-49.0
5640.00	H	-	-	-69.31	9.15	-60.16	-47.2
7520.00	H	-	-	-66.34	9.31	-57.02	-44.0

Table 7-34. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9400)

OPERATING FREQUENCY:	1907.60	MHz
CHANNEL:	9538	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3815.20	H	-	-	-68.55	7.09	-61.46	-48.5
5722.80	H	-	-	-69.25	9.04	-60.21	-47.2
7630.40	H	-	-	-65.80	9.28	-56.52	-43.5

Table 7-35. Radiated Spurious Data (PCS WCDMA Mode – Ch. 9538)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	9400	
MODULATION SIGNAL:	WCDMA	
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3760.00	H	-	-	-68.97	6.93	-62.04	-49.0
5640.00	H	-	-	-69.47	9.15	-60.32	-47.3
7520.00	H	-	-	-65.87	9.31	-56.55	-43.6

Table 7-36. Radiated Spurious Data with WCP (PCS WCDMA Mode – Ch. 9262)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFG820UM** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules and RSS-132, RSS-133, RSS-139 of the Innovation, Science and Economic Development Canada Rules.