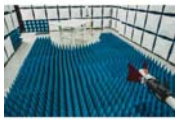
PCTEST ENGINEERING LABORATORY, INC.
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.pctest.com



MEASUREMENT REPORT
GSM / GPRS / EDGE / WCDMA

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

Date of Testing:
4/2/2018-4/16/2018
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M1804030060-02.ZNF

FCC ID:	**ZNFG710TM**
IC:	**2703C-G710AWM**
APPLICANT:	**LG Electronics MobileComm U.S.A**

Application Type:	Class II Permissive Change
Model:	LM-G710TM
Additional Model(s):	LMG710TM, G710TM, LM-G710AWM, LMG710AWM, G710AWM, LM-G710RM, LMG710RM, G710RM
HVIN:	LM-G710AWM, LMG710AWM, G710AWM
EUT Type:	Portable Handset
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 v03, KDB 648474 D03 v01r04
Class II Permissive Change:	Please see 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.

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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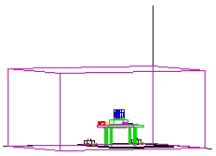
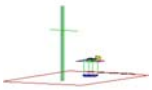


MEASUREMENT REPORT
GSM / GPRS / EDGE / WCDMA



Mode	FCC Rule Part	Tx Frequency (MHz)	ERP		EIRP	
			Max. Power (W)	Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)
GSM850	22H	824.2 - 848.8	0.352	25.46	0.577	27.61
EDGE850	22H	824.2 - 848.8	0.092	19.64	0.151	21.79
WCDMA850	22H	826.4 - 846.6	0.074	18.70	0.122	20.85
WCDMA1700	27	1712.4 - 1752.6			0.387	25.88
GSM1900	24E	1850.2 - 1909.8			1.392	31.44
EDGE1900	24E	1850.2 - 1909.8			0.413	26.16
WCDMA1900	24E	1852.4 - 1907.6			0.299	24.76

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 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 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: ZNFG710TM**. 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.: 09712, 09738

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 802.11b/g/n 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 v03. See Section 7.0 of this test report for a description of the radiated 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) ID: EP-PN920 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.

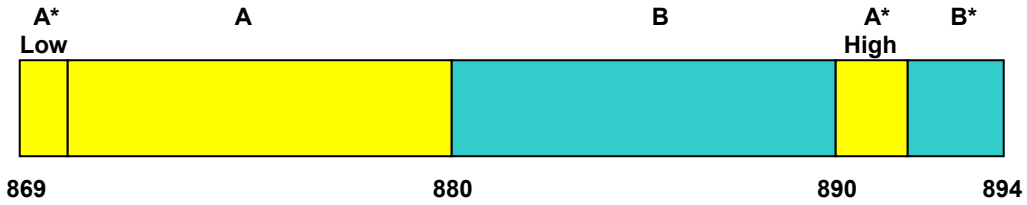
3.0 DESCRIPTION OF TESTS

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 v03) were used in the measurement of the EUT.

Deviation from Measurement Procedure……..None

3.2 Cellular - Base Frequency Blocks



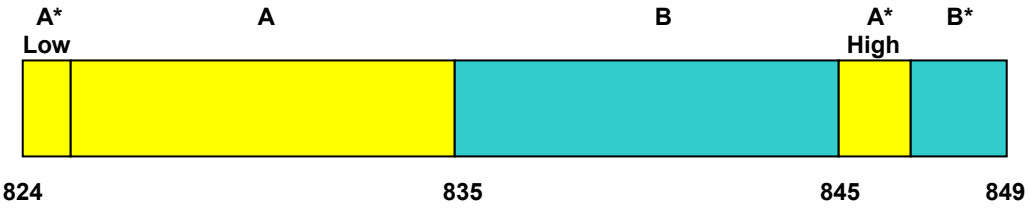
BLOCK 1: 869 – 880 MHz (A* Low + A)

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



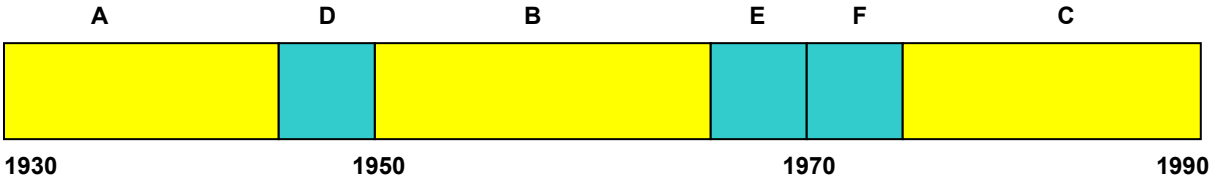
BLOCK 1: 824 – 835 MHz (A* Low + A)

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)

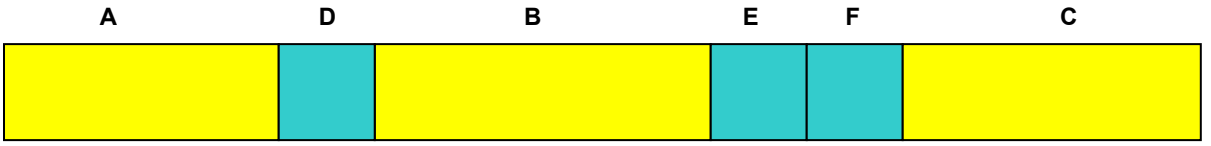
BLOCK 3: 1950 – 1965 MHz (B)

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)

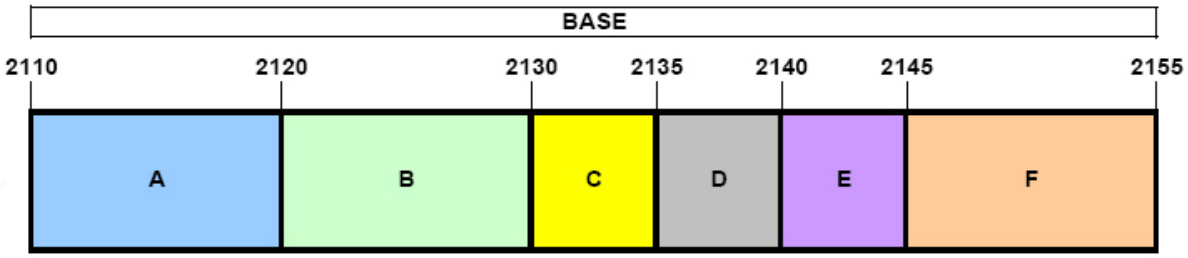
BLOCK 3: 1870 – 1885 MHz (B)

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)

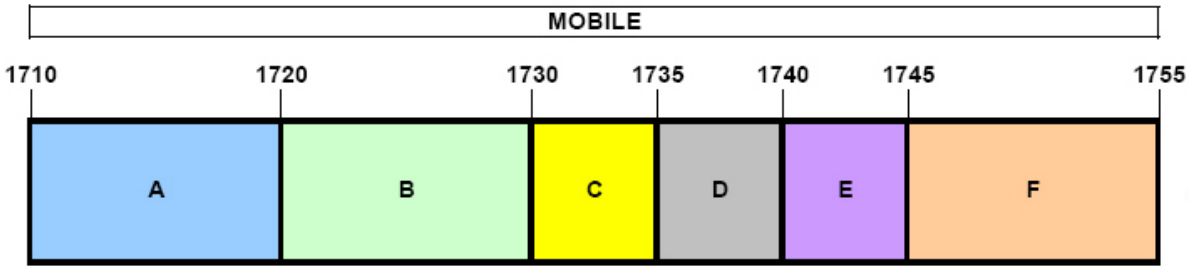
BLOCK 3: 2130 – 2135 MHz (C)

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 $_{[dB]}$.

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
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	10/10/2017	Biennial	10/10/2019	121034
EMCO	3160-09	Small Horn (18 - 26.5GHz)	8/23/2016	Biennial	8/23/2018	135427
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	12/1/2016	Biennial	12/1/2018	125518
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	4/26/2016	Biennial	4/26/2018	128337
Mini Circuits	TVA-11-422	RF Power Amp	N/A			QA1317001
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11208010032
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			100976
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	7/31/2017	Annual	7/31/2018	100348
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	8/11/2017	Annual	8/11/2018	103200
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	7/3/2017	Annual	7/3/2018	102135
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	7/3/2017	Annual	7/3/2018	102133
Seekonk	NC-100	Torque Wrench 5/16", 8" lbs	1/22/2018	Annual	1/22/2019	N/A
Sunol	DRH-118	Horn Antenna (1-18GHz)	8/11/2017	Biennial	8/11/2019	A050307

Table 5-1. Test Equipment

Notes:

1. Equipment with a calibration date of “N/A” shown in this list was not used to make direct calibrated measurements.

6.0 SAMPLE CALCULATIONS

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 MobileComm U.S.A

FCC ID: ZNFG710TM

Classification: PCS Licensed Transmitter Held to Ear (PCE)

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

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.

7.2 Radiated Power (ERP/EIRP)

§22.913(a)(5) 24.232(c) 27.50(d)(4) RSS-132(5.4) RSS-133(6.4) RSS-139(6.5)

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 v03 – 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.

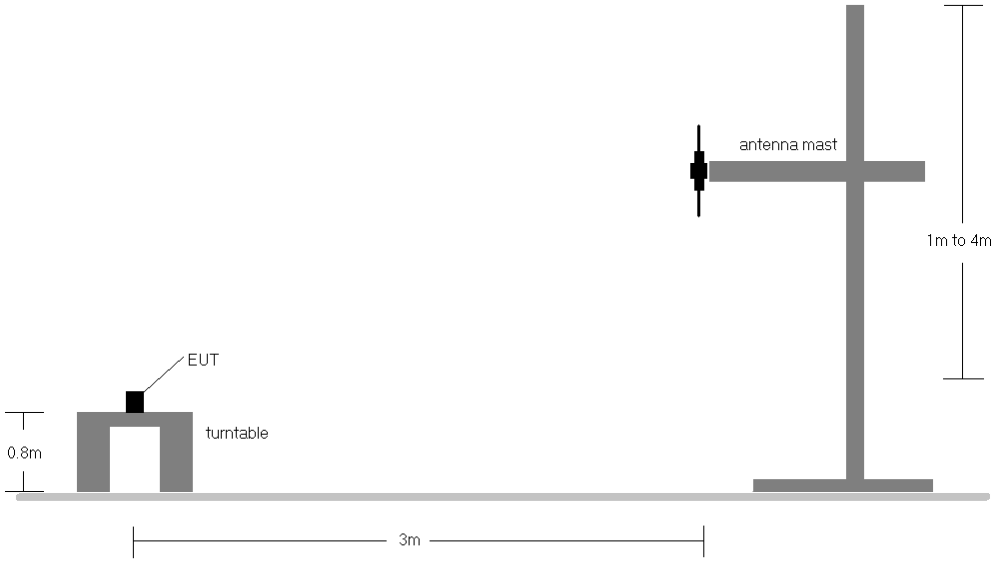


Figure 7-1. Radiated Test Setup <1GHz

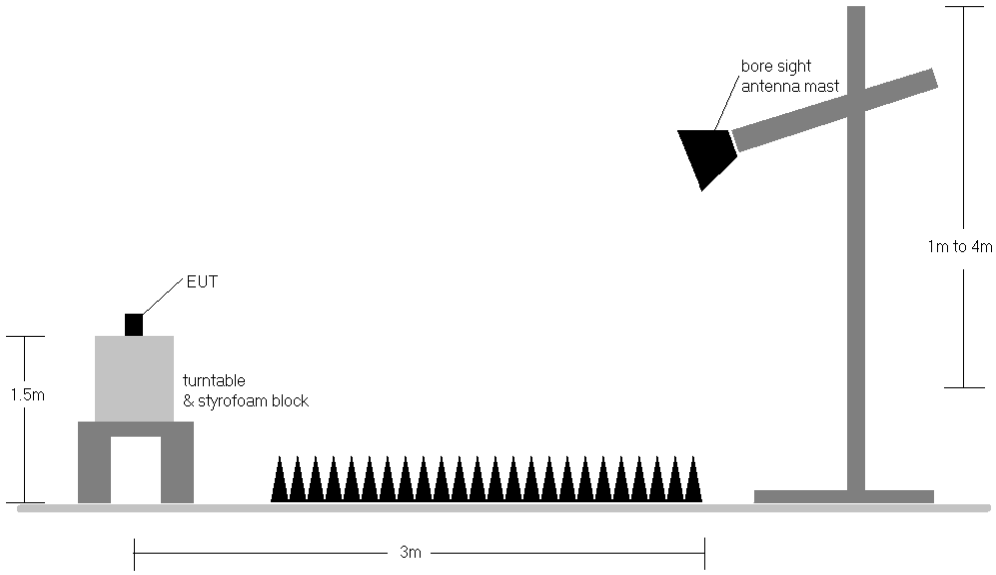


Figure 7-2. Radiated Test Setup >1GHz

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 GSM mode using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band.

2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."

3) This unit was tested with its standard battery.

4) 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	GSM850	H	150	105	26.08	1.50	25.43	0.349	38.45	-13.02	27.58	0.572	40.61	-13.03
836.60	GSM850	H	150	117	26.11	1.50	**25.46**	**0.352**	38.45	-12.99	**27.61**	**0.577**	40.61	-13.00
848.80	GSM850	H	150	103	24.77	1.50	24.12	0.258	38.45	-14.33	26.27	0.424	40.61	-14.34
836.60	GSM850	V	150	132	22.72	1.50	22.07	0.161	38.45	-16.38	24.22	0.264	40.61	-16.39
836.60	EDGE850	H	150	117	20.29	1.50	**19.64**	0.092	38.45	-18.81	**21.79**	**0.151**	40.61	-18.82
836.60	GSM850 (WCP)	H	150	217	25.93	1.50	25.28	0.337	38.45	-13.17	27.43	0.553	40.61	-13.18

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

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	H	150	103	19.35	1.50	**18.70**	38.45	-19.75	**20.85**	40.61	-19.76
836.60	WCDMA850	H	150	99	19.21	1.50	18.56	38.45	-19.89	20.71	40.61	-19.90
846.60	WCDMA850	H	150	109	18.54	1.50	17.89	38.45	-20.56	20.04	40.61	-20.57
826.40	WCDMA850	V	150	204	17.10	1.50	16.45	38.45	-22.00	18.60	40.61	-22.01
826.40	WCDMA850 (WCP)	H	150	100	19.32	1.50	18.67	38.45	-19.78	20.82	40.61	-19.79

Table 7-3. 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	150	350	20.33	5.55	**25.88**	**0.387**	30.00	-4.12
1732.60	WCDMA1700	H	150	353	19.69	5.41	25.10	0.323	30.00	-4.90
1752.60	WCDMA1700	H	150	6	20.08	5.27	25.35	0.343	30.00	-4.65
1712.40	WCDMA1700	V	150	36	16.99	5.55	22.54	0.179	30.00	-7.46
1712.40	WCDMA1700 (WCP)	H	150	30	19.80	5.55	25.35	0.342	30.00	-4.65

Table 7-4. 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	GSM1900	H	150	359	26.62	4.82	**31.44**	**1.392**	33.01	-1.58
1880.00	GSM1900	H	150	356	25.37	4.74	30.11	1.025	33.01	-2.90
1909.80	GSM1900	H	150	3	24.59	4.68	29.27	0.845	33.01	-3.74
1850.20	GSM1900	V	150	23	22.36	4.82	27.18	0.522	33.01	-5.83
1850.20	EDGE1900	H	150	359	21.34	4.82	**26.16**	0.413	33.01	-6.85
1850.20	GSM1900 (WCP)	H	150	125	26.53	4.82	31.35	1.364	33.01	-1.66

Table 7-5. EIRP (PCS GSM)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA1900	H	150	302	19.95	4.81	**24.76**	33.01	-8.25
1880.00	WCDMA1900	H	150	354	18.60	4.74	23.34	33.01	-9.67
1907.60	WCDMA1900	H	150	3	18.81	4.68	23.49	33.01	-9.52
1852.40	WCDMA1900	V	150	5	16.39	4.81	21.20	33.01	-11.81
1852.40	WCDMA1900 (WCP)	H	150	10	18.94	4.81	23.75	33.01	-9.26

Table 7-6. EIRP (PCS WCDMA)

7.3 Radiated Spurious Emissions Measurements

§2.1053 22.917(a) 24.238(a) 27.53(h) RSS-132(5.5) RSS-133(6.5) RSS-139(6.6)

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 v03 – 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.

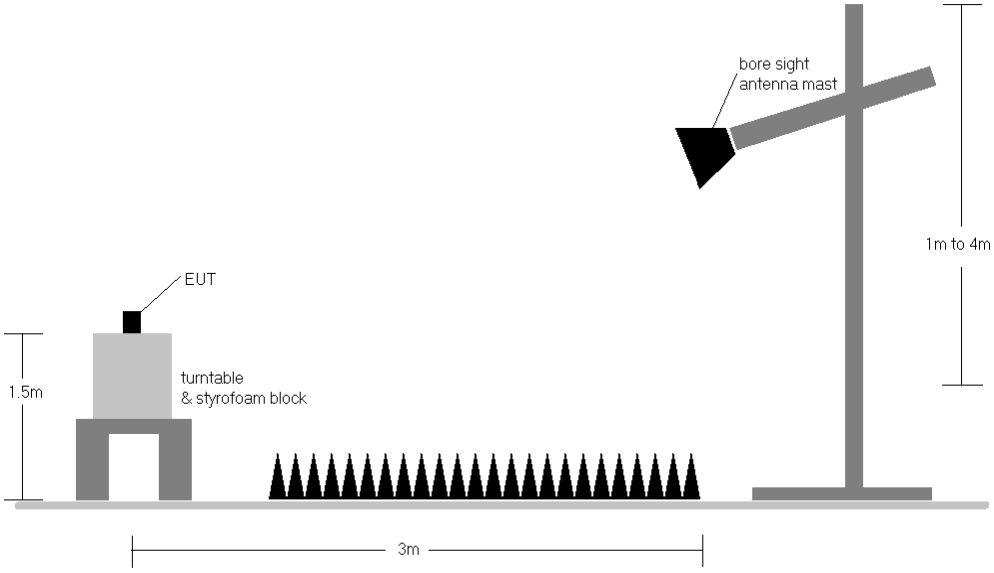


Figure 7-3. Test Instrument & Measurement Setup

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 GSM mode using a Power Control Level of "0" in the PCS Band and "5" in the Cellular Band.

2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1."

3) This unit was tested with its standard battery.

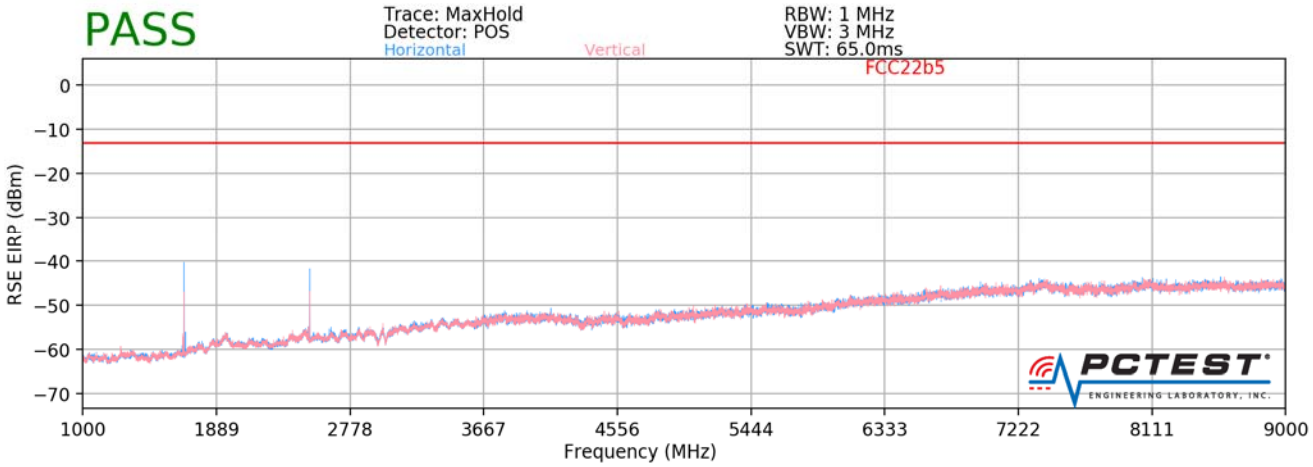
4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

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

6) 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.

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

Cellular GSM Mode



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

OPERATING FREQUENCY:	824.20	MHz
CHANNEL:	128	
MODULATION SIGNAL:	GSM (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	H	150	353	-50.50	4.81	-45.69	-32.7
2472.60	H	150	354	-39.53	4.99	-34.54	-21.5
3296.80	H	-	-	-62.75	6.24	-56.50	-43.5

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

OPERATING FREQUENCY:	836.60	MHz
CHANNEL:	190	
MODULATION SIGNAL:	GSM (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	H	150	2	-50.13	4.86	-45.27	-32.3
2509.80	H	150	1	-42.05	5.10	-36.95	-23.9
3346.40	H	-	-	-63.12	6.25	-56.87	-43.9

Table 7-8. Radiated Spurious Data (Cellular GSM Mode – Ch. 190)

OPERATING FREQUENCY:	848.80	MHz
CHANNEL:	251	
MODULATION SIGNAL:	GSM (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	H	150	0	-52.95	4.91	-48.04	-35.0
2546.40	H	150	1	-45.02	5.28	-39.74	-26.7
3395.20	H	-	-	-63.97	6.39	-57.58	-44.6

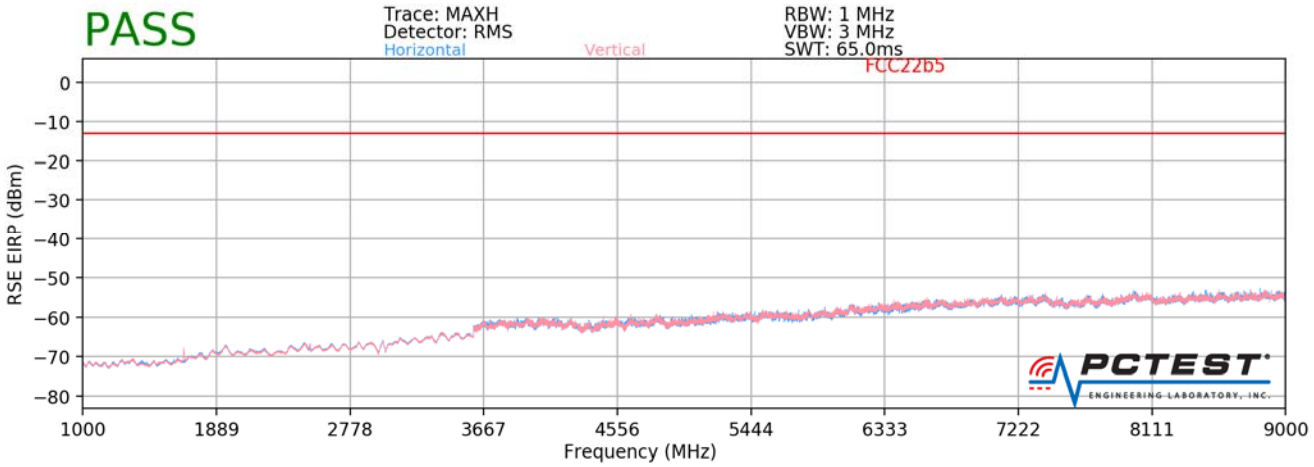
Table 7-9. Radiated Spurious Data (Cellular GSM Mode – Ch. 251)

OPERATING FREQUENCY:	836.60	MHz
CHANNEL:	190	
MODULATION SIGNAL:	GSM (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	H	150	183	-56.16	4.86	-51.30	-38.3
2509.80	H	150	122	-51.17	5.10	-46.07	-33.1
3346.40	H	-	-	-62.43	6.25	-56.18	-43.2

Table 7-10. Radiated Spurious Data with WCP (Cellular GSM Mode – Ch. 190)

Cellular WCDMA Mode



Plot 7-2. 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	154	130	-73.60	4.82	-68.78	-55.8
2479.20	V	104	117	-68.27	5.01	-63.26	-50.3
3305.60	V	-	-	-72.83	6.25	-66.58	-53.6

Table 7-11. 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	154	36	-73.45	4.86	-68.59	-55.6
2509.80	V	125	174	-71.64	5.10	-66.54	-53.5
3346.40	V	-	-	-72.85	6.25	-66.59	-53.6

Table 7-12. 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	100	132	-72.29	4.90	-67.39	-54.4
2539.80	V	132	177	-72.03	5.25	-66.79	-53.8
3386.40	V	-	-	-71.00	6.36	-64.64	-51.6

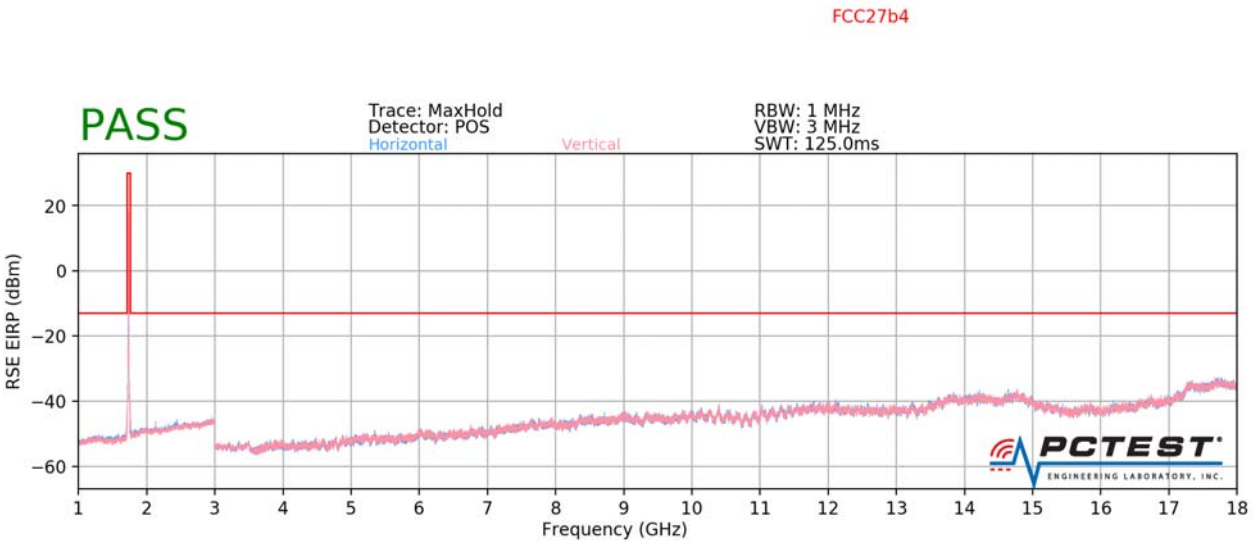
Table 7-13. Radiated Spurious Data (Cellular WCDMA Mode – Ch. 4233)

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	H	140	158	-74.56	4.82	-69.74	-56.7
2479.20	H	-	-	-72.85	5.01	-67.84	-54.8

Table 7-14. Radiated Spurious Data with WCP (Cellular WCDMA Mode – Ch. 4132)

AWS WCDMA Mode



Plot 7-3. 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	172	308	-63.42	6.47	-56.95	-44.0
5137.20	H	-	-	-70.71	8.43	-62.28	-49.3

Table 7-15. Radiated Spurious Data with WCP (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	130	142	-64.76	6.56	-58.20	-45.2
5197.80	H	-	-	-69.79	8.46	-61.33	-48.3

Table 7-16. Radiated Spurious Data witch WCP (AWS WCDMA Mode – Ch. 1413)

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

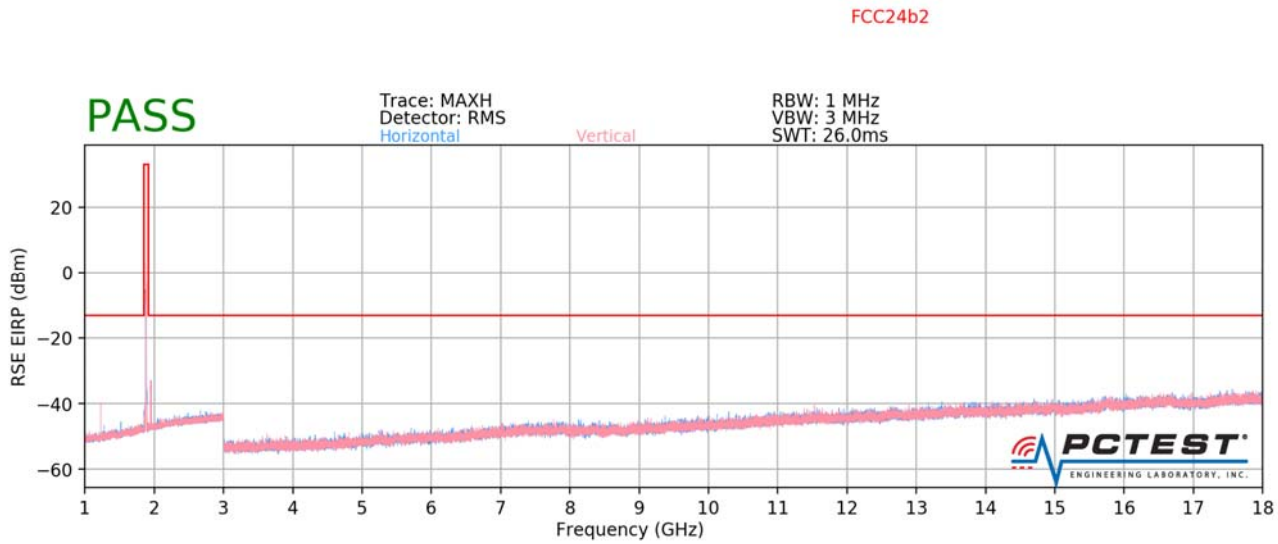
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3505.20	H	320	307	-65.02	6.59	-58.43	-45.4
5257.80	H	-	-	-70.93	8.41	-62.52	-49.5

Table 7-17. Radiated Spurious Data with WCP (AWS WCDMA Mode – Ch. 1513)

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	172	308	-69.02	6.47	-62.55	-49.6
5137.20	H	-	-	-70.83	8.43	-62.40	-49.4

Table 7-18. Radiated Spurious Data (AWS WCDMA Mode – Ch. 1312)



Plot 7-4. Radiated Spurious Plot (PCS GSM Mode)

OPERATING FREQUENCY:	1850.20	MHz
CHANNEL:	512	
MODULATION SIGNAL:	GSM (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	-	-	-62.03	6.76	-55.27	-42.3
5550.60	H	150	71	-54.03	8.43	-45.60	-32.6
7400.80	H	-	-	-58.45	8.26	-50.19	-37.2

Table 7-19. Radiated Spurious Data with WCP (PCS GSM Mode – Ch. 512)

OPERATING FREQUENCY:	1880.00	MHz
CHANNEL:	661	
MODULATION SIGNAL:	GSM (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	-	-	-61.96	6.84	-55.12	-42.1
5640.00	H	150	86	-52.56	8.52	-44.05	-31.0
7520.00	H	-	-	-56.93	8.44	-48.48	-35.5

Table 7-20. Radiated Spurious Data with WCP (PCS GSM Mode – Ch. 661)

OPERATING FREQUENCY:	1909.80	MHz
CHANNEL:	810	
MODULATION SIGNAL:	GSM (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	-	-	-61.41	7.00	-54.41	-41.4
5729.40	H	150	64	-53.06	8.58	-44.48	-31.5
7639.20	H	-	-	-56.95	8.56	-48.39	-35.4

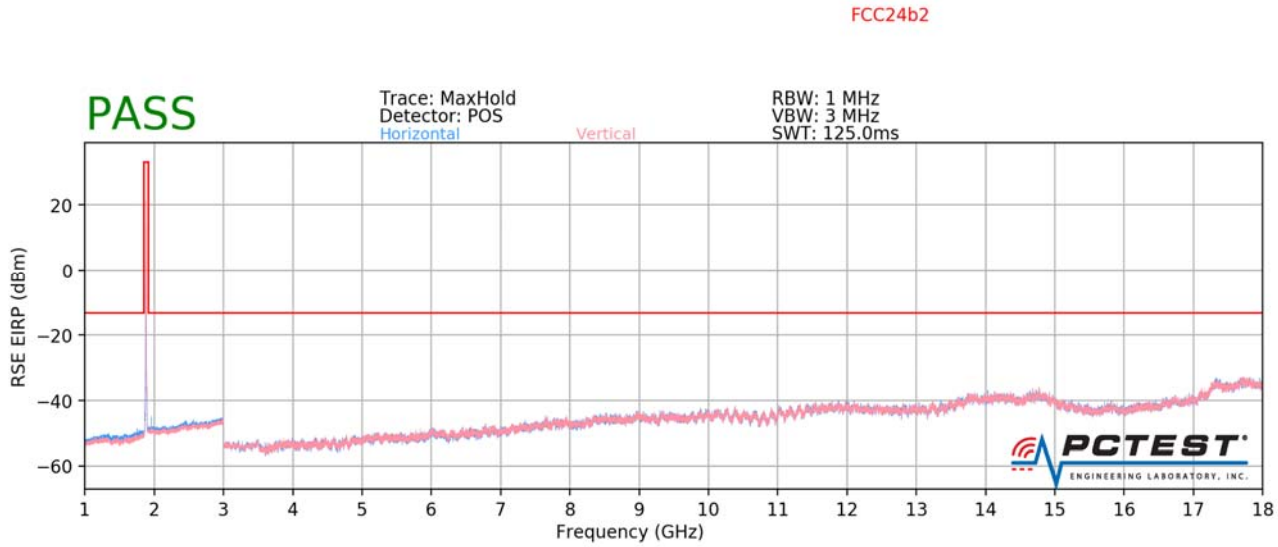
Table 7-21. Radiated Spurious Data with WCP (PCS GSM Mode – Ch. 810)

OPERATING FREQUENCY:	1850.20	MHz
CHANNEL:	512	
MODULATION SIGNAL:	GSM (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	-	-	-62.60	6.76	-55.84	-42.8
5550.60	H	-	-	-61.72	8.43	-53.28	-40.3

Table 7-22. Radiated Spurious Data (PCS GSM Mode – Ch. 512)

PCS WCDMA Mode



Plot 7-5. 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	117	181	-69.04	6.77	-62.28	-49.3
5557.20	H	-	-	-70.56	8.44	-62.13	-49.1

Table 7-23. Radiated Spurious Data with WCP (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	112	193	-69.90	6.84	-63.06	-50.1
5640.00	H	-	-	-70.65	8.52	-62.13	-49.1

Table 7-24. Radiated Spurious Data with WCP(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	124	163	-68.18	6.98	-61.20	-48.2
5722.80	H	-	-	-70.32	8.58	-61.74	-48.7

Table 7-25. Radiated Spurious Data with WCP (PCS WCDMA Mode – Ch. 9538)

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	-	-	-71.00	6.77	-64.24	-51.2
5557.20	H	-	-	-70.05	8.44	-61.62	-48.6

Table 7-26. Radiated Spurious Data (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: ZNFG710TM** 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.