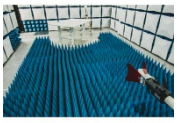
PCTEST ENGINEERING LABORATORY, INC.
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.pctest.com



MEASUREMENT REPORT
LTE

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

Date of Testing:
7/22 - 8/12/2019
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M1907220127-03.ZNF

FCC ID:	**ZNFX320PM**
APPLICANT:	**LG Electronics USA, Inc.**

Application Type:	Class II Permissive Change
Model:	LM-X320PM
Additional Model(s):	LMX320PM, X320PM
EUT Type:	Portable Handset
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	22, 24, & 27
Test Procedure(s):	ANSI C63.26-2015, ANSI/TIA-603-E-2016, KDB 971168 D01 v03r01
Class II Permissive Change:	Please see FCC change document
Original Grant Date:	8/09/2019

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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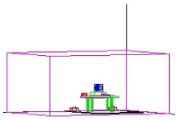
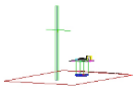


MEASUREMENT REPORT
FCC Part 22, 24, & 27



Mode	FCC Rule Part	Tx Frequency (MHz)	ERP		EIRP		Modulation
			Max. Power (W)	Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)	
LTE Band 71	27	665.5 - 695.5	0.044	16.39			QPSK
LTE Band 71	27	665.5 - 695.5	0.036	15.60			16QAM
LTE Band 71	27	665.5 - 695.5	0.029	14.61			64QAM
LTE Band 71	27	668 - 693	0.044	16.46			QPSK
LTE Band 71	27	668 - 693	0.037	15.71			16QAM
LTE Band 71	27	668 - 693	0.029	14.56			64QAM
LTE Band 71	27	670.5 - 690.5	0.044	16.44			QPSK
LTE Band 71	27	670.5 - 690.5	0.036	15.54			16QAM
LTE Band 71	27	670.5 - 690.5	0.029	14.64			64QAM
LTE Band 71	27	673 - 688	0.043	16.37			QPSK
LTE Band 71	27	673 - 688	0.035	15.46			16QAM
LTE Band 71	27	673 - 688	0.028	14.47			64QAM
LTE Band 12	27	699.7 - 715.3	0.061	17.85	0.100	20.00	QPSK
LTE Band 12	27	699.7 - 715.3	0.047	16.71	0.077	18.86	16QAM
LTE Band 12	27	699.7 - 715.3	0.037	15.74	0.062	17.89	64QAM
LTE Band 12	27	700.5 - 714.5	0.063	17.97	0.103	20.12	QPSK
LTE Band 12	27	700.5 - 714.5	0.052	17.17	0.086	19.32	16QAM
LTE Band 12	27	700.5 - 714.5	0.042	16.21	0.069	18.36	64QAM
LTE Band 12	27	701.5 - 713.5	0.062	17.94	0.102	20.09	QPSK
LTE Band 12	27	701.5 - 713.5	0.051	17.11	0.084	19.26	16QAM
LTE Band 12	27	701.5 - 713.5	0.040	16.07	0.066	18.22	64QAM
LTE Band 12	27	704 - 711	0.062	17.90	0.101	20.05	QPSK
LTE Band 12	27	704 - 711	0.044	16.44	0.072	18.59	16QAM
LTE Band 12	27	704 - 711	0.035	15.46	0.058	17.61	64QAM
LTE Band 13	27	779.5 - 784.5	0.072	18.60	0.119	20.75	QPSK
LTE Band 13	27	779.5 - 784.5	0.060	17.81	0.099	19.96	16QAM
LTE Band 13	27	779.5 - 784.5	0.048	16.82	0.079	18.97	64QAM
LTE Band 13	27	782	0.071	18.53	0.117	20.68	QPSK
LTE Band 13	27	782	0.064	18.03	0.104	20.18	16QAM
LTE Band 13	27	782	0.055	17.37	0.090	19.52	64QAM
LTE Band 26	22H	824.7 - 848.3	0.097	19.86	0.159	22.01	QPSK
LTE Band 26	22H	824.7 - 848.3	0.079	18.98	0.130	21.13	16QAM
LTE Band 26	22H	824.7 - 848.3	0.063	17.98	0.103	20.13	64QAM
LTE Band 26	22H	825.5 - 847.5	0.099	19.95	0.162	22.10	QPSK
LTE Band 26	22H	825.5 - 847.5	0.082	19.13	0.134	21.28	16QAM
LTE Band 26	22H	825.5 - 847.5	0.064	18.08	0.105	20.23	64QAM
LTE Band 26	22H	826.5 - 846.5	0.097	19.85	0.158	22.00	QPSK
LTE Band 26	22H	826.5 - 846.5	0.079	19.00	0.130	21.15	16QAM
LTE Band 26	22H	826.5 - 846.5	0.064	18.06	0.105	20.21	64QAM
LTE Band 26	22H	829 - 844	0.100	20.01	0.164	22.16	QPSK
LTE Band 26	22H	829 - 844	0.081	19.09	0.133	21.24	16QAM
LTE Band 26	22H	829 - 844	0.066	18.17	0.108	20.32	64QAM
LTE Band 26	22H	831.5 - 841.5	0.098	19.90	0.160	22.05	QPSK
LTE Band 26	22H	831.5 - 841.5	0.072	18.60	0.119	20.75	16QAM
LTE Band 26	22H	831.5 - 841.5	0.058	17.60	0.094	19.75	64QAM

EUT Overview (<1 GHz)

Mode	FCC Rule Part	Tx Frequency (MHz)	EIRP		Modulation
			Max. Power (W)	Max. Power (dBm)	
LTE Band 66/4	27	1710.7 - 1779.3	0.276	24.40	QPSK
LTE Band 66/4	27	1710.7 - 1779.3	0.227	23.55	16QAM
LTE Band 66/4	27	1710.7 - 1779.3	0.180	22.54	64QAM
LTE Band 66/4	27	1711.5 - 1778.5	0.273	24.36	QPSK
LTE Band 66/4	27	1711.5 - 1778.5	0.229	23.59	16QAM
LTE Band 66/4	27	1711.5 - 1778.5	0.179	22.53	64QAM
LTE Band 66/4	27	1712.5 - 1777.5	0.266	24.24	QPSK
LTE Band 66/4	27	1712.5 - 1777.5	0.225	23.51	16QAM
LTE Band 66/4	27	1712.5 - 1777.5	0.176	22.46	64QAM
LTE Band 66/4	27	1715 - 1775	0.267	24.27	QPSK
LTE Band 66/4	27	1715 - 1775	0.220	23.42	16QAM
LTE Band 66/4	27	1715 - 1775	0.181	22.57	64QAM
LTE Band 66/4	27	1717.5 - 1772.5	0.290	24.63	QPSK
LTE Band 66/4	27	1717.5 - 1772.5	0.242	23.83	16QAM
LTE Band 66/4	27	1717.5 - 1772.5	0.191	22.80	64QAM
LTE Band 66/4	27	1720 - 1770	0.278	24.43	QPSK
LTE Band 66/4	27	1720 - 1770	0.221	23.43	16QAM
LTE Band 66/4	27	1720 - 1770	0.188	22.74	64QAM
LTE Band 25/2	24E	1850.7 - 1914.3	0.243	23.86	QPSK
LTE Band 25/2	24E	1850.7 - 1914.3	0.197	22.95	16QAM
LTE Band 25/2	24E	1850.7 - 1914.3	0.154	21.87	64QAM
LTE Band 25/2	24E	1851.5 - 1913.5	0.244	23.87	QPSK
LTE Band 25/2	24E	1851.5 - 1913.5	0.201	23.03	16QAM
LTE Band 25/2	24E	1851.5 - 1913.5	0.154	21.89	64QAM
LTE Band 25/2	24E	1852.5 - 1912.5	0.264	24.22	QPSK
LTE Band 25/2	24E	1852.5 - 1912.5	0.227	23.56	16QAM
LTE Band 25/2	24E	1852.5 - 1912.5	0.171	22.34	64QAM
LTE Band 25/2	24E	1855 - 1910	0.255	24.06	QPSK
LTE Band 25/2	24E	1855 - 1910	0.210	23.22	16QAM
LTE Band 25/2	24E	1855 - 1910	0.171	22.32	64QAM
LTE Band 25/2	24E	1857.5 - 1907.5	0.248	23.94	QPSK
LTE Band 25/2	24E	1857.5 - 1907.5	0.206	23.13	16QAM
LTE Band 25/2	24E	1857.5 - 1907.5	0.161	22.07	64QAM
LTE Band 25/2	24E	1860 - 1905	0.299	24.76	QPSK
LTE Band 25/2	24E	1860 - 1905	0.248	23.95	16QAM
LTE Band 25/2	24E	1860 - 1905	0.197	22.96	64QAM

EUT Overview (Mid Bands)

Mode	FCC Rule Part	Tx Frequency (MHz)	EIRP		Modulation
			Max. Power (W)	Max. Power (dBm)	
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.406	26.09	QPSK
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.311	24.93	16QAM
LTE Band 41 (PC2)	27	2498.5 - 2687.5	0.265	24.24	64QAM
LTE Band 41 (PC2)	27	2501 - 2685	0.463	26.65	QPSK
LTE Band 41 (PC2)	27	2501 - 2685	0.392	25.93	16QAM
LTE Band 41 (PC2)	27	2501 - 2685	0.278	24.44	64QAM
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.427	26.30	QPSK
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.334	25.23	16QAM
LTE Band 41 (PC2)	27	2503.5 - 2682.5	0.291	24.64	64QAM
LTE Band 41 (PC2)	27	2506 - 2680	0.482	26.83	QPSK
LTE Band 41 (PC2)	27	2506 - 2680	0.402	26.04	16QAM
LTE Band 41 (PC2)	27	2506 - 2680	0.363	25.60	64QAM
LTE Band 41 (PC3)	27	2498.5 - 2687.5	0.199	22.99	QPSK
LTE Band 41 (PC3)	27	2498.5 - 2687.5	0.165	22.18	16QAM
LTE Band 41 (PC3)	27	2498.5 - 2687.5	0.156	21.94	64QAM
LTE Band 41 (PC3)	27	2501 - 2685	0.207	23.16	QPSK
LTE Band 41 (PC3)	27	2501 - 2685	0.167	22.23	16QAM
LTE Band 41 (PC3)	27	2501 - 2685	0.129	21.11	64QAM
LTE Band 41 (PC3)	27	2503.5 - 2682.5	0.202	23.06	QPSK
LTE Band 41 (PC3)	27	2503.5 - 2682.5	0.186	22.68	16QAM
LTE Band 41 (PC3)	27	2503.5 - 2682.5	0.137	21.35	64QAM
LTE Band 41 (PC3)	27	2506 - 2680	0.260	24.15	QPSK
LTE Band 41 (PC3)	27	2506 - 2680	0.218	23.39	16QAM
LTE Band 41 (PC3)	27	2506 - 2680	0.190	22.78	64QAM

EUT Overview (High Bands)

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: ZNFX320PM**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

Test Device Serial No.: 13574

2.2 Device Capabilities

This device contains the following capabilities:

800/850/1900 CDMA (BC0, BC1, BC10), 850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA, Multi-band LTE, 802.11b/g/n WLAN, Bluetooth (1x, EDR, LE)

LTE Band 26 (814.7 – 849 MHz) overlaps the entire frequency range of LTE Band 5 (824 – 849 MHz). Therefore, test data provided in this report covers Band 5 and the portion of Band 26 subject to Part 22.

LTE Band 66 (1710 - 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz). Therefore, test data provided in this report covers Band 4 as well as Band 66.

LTE Band 25 (1850 - 1915 MHz) overlaps the entire frequency range of LTE Band 2 (1850 - 1910 MHz). Therefore, test data provided in this report covers Band 2 as well as Band 25.

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.

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 Measurement Procedure

The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-E-2016) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" (KDB 971168 D01 v03r01) were used in the measurement of the EUT.

3.2 Block C Frequency Range

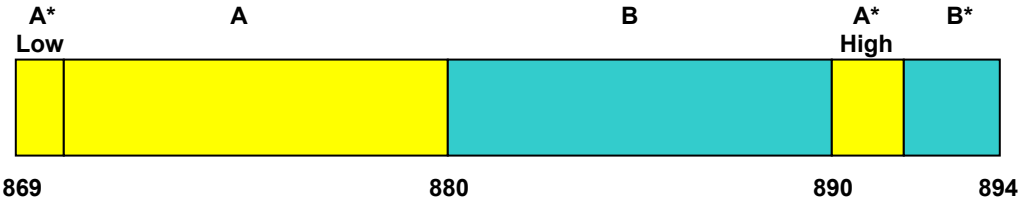
Two paired channels of 11 megahertz each are available for assignment in Block C in the 746-757 MHz and 776-787 MHz bands. In the event that no licenses for two channels in this Block C are assigned based on the results of the first auction in which such licenses were offered because the auction results do not satisfy the applicable reserve price, the spectrum in the 746-757 MHz and 776-787 MHz bands will instead be made available for assignment at a subsequent auction as follows: (i) Two paired channels of 6 megahertz each available for assignment in Block C1 in the 746-752 MHz and 776-782 MHz bands. (ii) Two paired channels of 5 megahertz each available for assignment in Block C2 in the 752-757 MHz and 782-787 MHz bands.

3.3 Block A Frequency Range

698-746 MHz band. The following frequencies are available for licensing pursuant to this part in the 698-746 MHz band: (1) Three paired channel blocks of 12 megahertz each are available for assignment as follows:

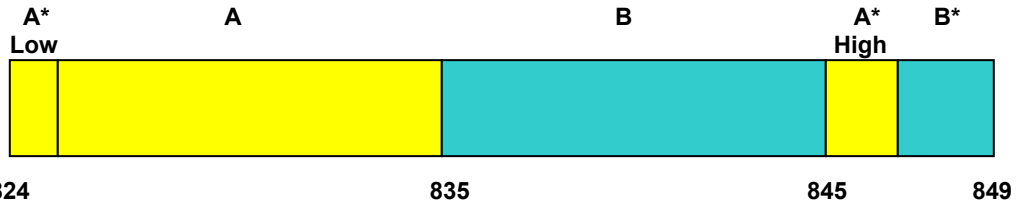
Block A: 698-704 MHz and 728-734 MHz;
Block B: 704-710 MHz and 734-740 MHz; and
Block C: 710-716 MHz and 740-746 MHz.

3.4 Cellular - Base Frequency Blocks



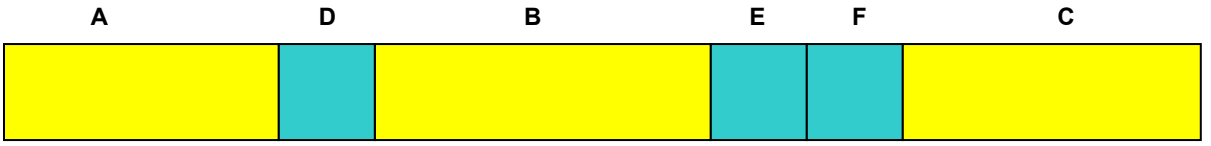
BLOCK 1: 869 – 880 MHz (A* Low + A)
BLOCK 2: 880 – 890 MHz (B)
BLOCK 3: 890 – 891.5 MHz (A* High)
BLOCK 4: 891.5 – 894 MHz (B*)

3.5 Cellular - Mobile Frequency Blocks



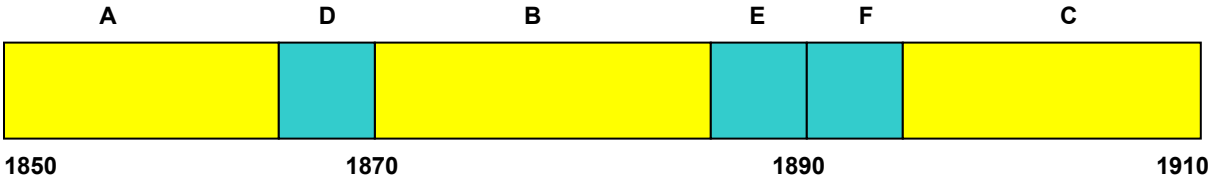
BLOCK 1: 824 – 835 MHz (A* Low + A)
BLOCK 2: 835 – 845 MHz (B)
BLOCK 3: 845 – 846.5 MHz (A* High)
BLOCK 4: 846.5 – 849 MHz (B*)

3.6 PCS - Base Frequency Blocks



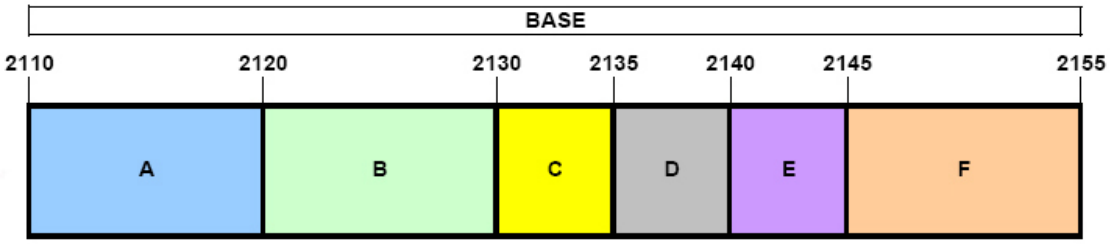
BLOCK 1: 1930 – 1945 MHz (A)
BLOCK 2: 1945 – 1950 MHz (D)
BLOCK 3: 1950 – 1965 MHz (B)
BLOCK 4: 1965 – 1970 MHz (E)
BLOCK 5: 1970 – 1975 MHz (F)
BLOCK 6: 1975 – 1990 MHz (C)

3.7 PCS - Mobile Frequency Blocks



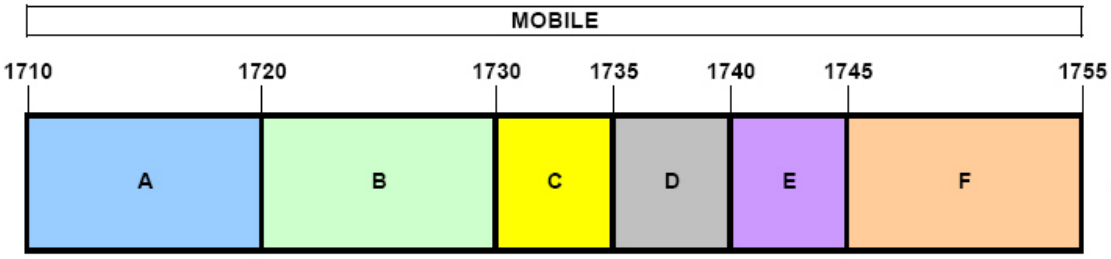
BLOCK 1: 1850 – 1865 MHz (A)
BLOCK 2: 1865 – 1870 MHz (D)
BLOCK 3: 1870 – 1885 MHz (B)
BLOCK 4: 1885 – 1890 MHz (E)
BLOCK 5: 1890 – 1895 MHz (F)
BLOCK 6: 1895 – 1910 MHz (C)

3.8 AWS - Base Frequency Blocks



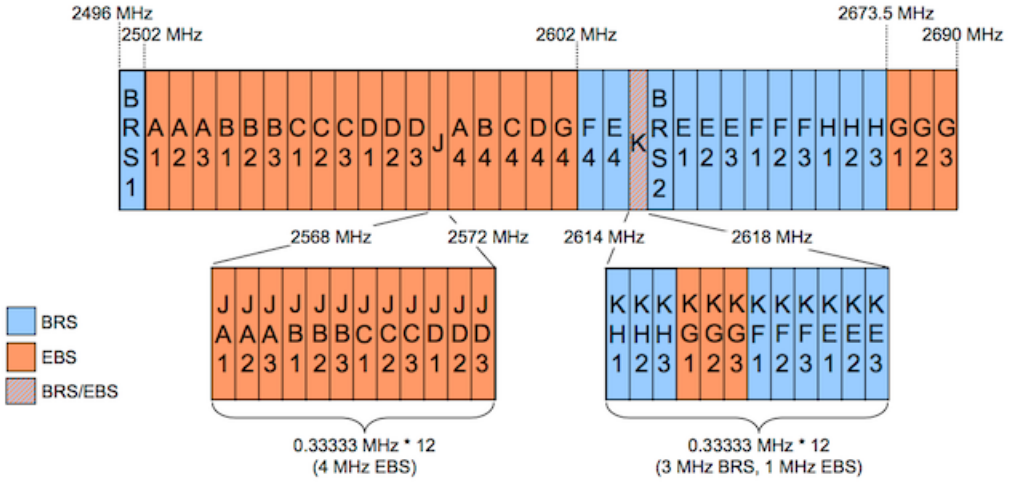
BLOCK 1: 2110 – 2120 MHz (A)
BLOCK 2: 2120 – 2130 MHz (B)
BLOCK 3: 2130 – 2135 MHz (C)
BLOCK 4: 2135 – 2140 MHz (D)
BLOCK 5: 2140 – 2145 MHz (E)
BLOCK 6: 2145 – 2155 MHz (F)

3.9 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)

3.10 BRS/EBS Frequency Block



3.11 Radiated Power and Radiated Spurious Emissions

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. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration band set to the emissions’ occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168 D01 v03r01.

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 $_{[dB]}$.

The calculated P_d levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + 10 $\log_{10}$(Power $_{[Watts]}$). For Band 41, the calculated P_d levels are compared to the absolute spurious emission limit of -25dBm which is equivalent to the required minimum attenuation of 55 + 10 $\log_{10}$(Power $_{[Watts]}$).

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.

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)
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
Agilent	N9020A	MXA Signal Analyzer	4/20/2019	Annual	4/20/2020	US46470561
Agilent	N9038A	MXE EMI Receiver	7/17/2019	Annual	7/17/2020	MY51210133
Agilent	N9030A	PXA Signal Analyzer (44GHz)	6/12/2019	Annual	6/12/2020	MY52350166
Anritsu	MT8821C	Radio Communication Analyzer	3/6/2019	Annual	3/6/2020	6201381794
Com-Power	PAM-103	Pre-Amplifier (1-1000MHz)	5/10/2019	Annual	5/10/2020	441112
EMCO	3160-09	Small Horn (18 - 26.5GHz)	8/9/2018	Biennial	8/9/2020	135427
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	2/14/2019	Biennial	2/14/2021	125518
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	2/22/2019	Biennial	2/22/2021	128338
ETS-Lindgren	3115	Double Ridged Guide Horn 750MHz - 18GHz	3/28/2018	Biennial	3/28/2020	150693
Rohde & Schwarz	CMW500	Radio Communication Tester	11/14/2018	Annual	11/14/2019	100976
Rohde & Schwarz	CMW500	Radio Communication Tester	6/26/2019	Annual	6/26/2020	112347
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	9/19/2018	Annual	9/19/2019	100040
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	7/11/2019	Annual	7/11/2020	102134
Seekonk	NC-100	Torque Wrench (8" lb)	5/10/2018	Biennial	5/10/2020	N/A
Sunol	DRH-118	Horn Antenna (1-18GHz)	8/11/2017	Biennial	8/11/2019	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	4/19/2018	Biennial	4/19/2020	A051107
Sunol	DRH-118	Horn Antenna (1-18 GHz)	8/11/2017	Biennial	8/11/2019	A042511

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.

6.0 SAMPLE CALCULATIONS

Spurious Radiated Emission – LTE Band

Example: Middle Channel LTE Mode 2nd Harmonic (1564 MHz)

The average 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 analzyer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 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).

7.0 TEST RESULTS

7.1 Summary

Company Name: LG Electronics USA, Inc.

FCC ID: ZNFX320PM

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

Mode(s): LTE

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
22.913(a)(5)	Effective Radiated Power / Equivalent Isotropic Radiated Power (Band 5/26)	< 7 Watts max. ERP	RADIATED	PASS	Section 7.2
27.50(b)(10) 27.50(c)(10)	Effective Radiated Power / Equivalent Isotropic Radiated Power (Band 71, 12, 13)	< 3 Watts max. ERP			Section 7.2
24.232(c) 27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2/25, 41)	< 2 Watts max. EIRP			Section 7.2
27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4/66)	< 1 Watts max. EIRP			Section 7.2
2.1053 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	Undesirable Emissions (Band 12,13, 26/5, 66/4, 25/2)	> 43 + 10 $\log_{10}$ (P[Watts]) for all out-of-band emissions			Section 7.3
27.53(f)	Undesirable Emissions (Band 13)	< -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions less than 700Hz BW) For all emissions in the band 1559 – 1610 MHz			Section 7.3
27.53(m)	Undesirable Emissions (Band 41)	Undesirable emissions must meet the limits detailed in 27.53(m)			Section 7.3

Table 7-1. Summary of Radiated 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)

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 its maximum duty cycle, 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.

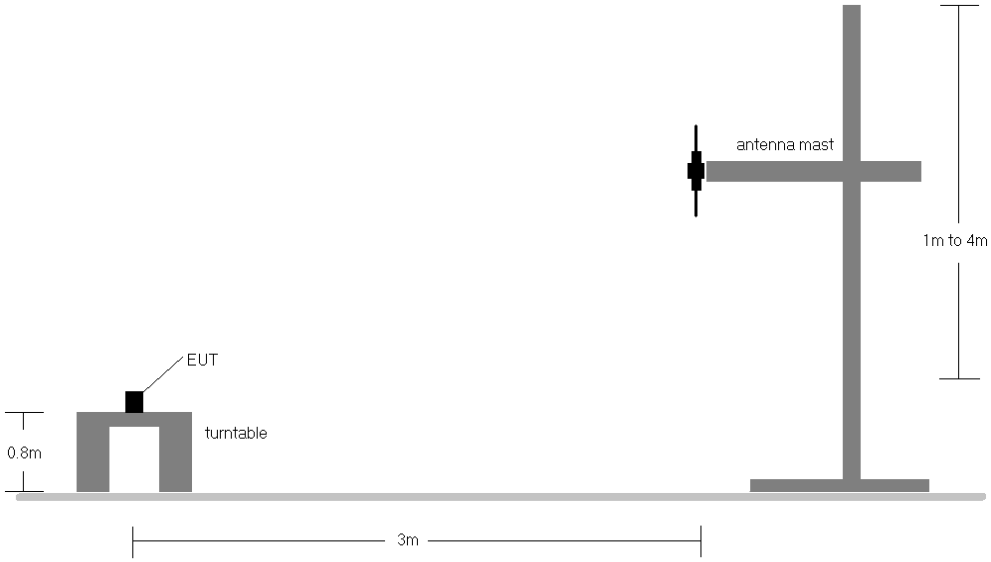


Figure 7-1. Radiated Test Setup <1GHz

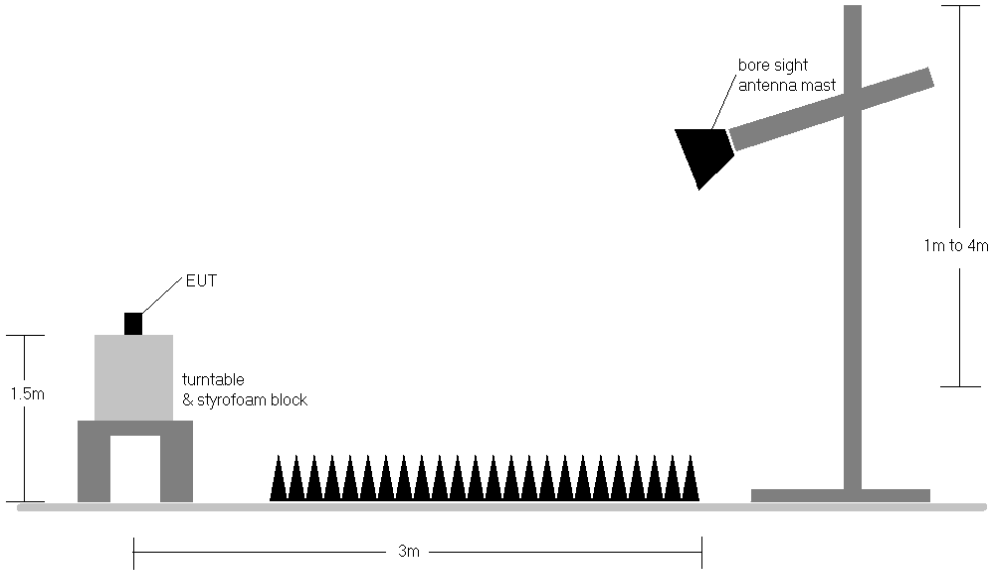


Figure 7-2. Radiated Test Setup >1GHz

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) This unit was tested with its standard battery.

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
665.50	5	QPSK	H	181	186	1 / 24	12.66	2.90	15.56	0.036	34.77	-19.21
680.50	5	QPSK	H	182	201	1 / 0	12.23	3.20	15.43	0.035	34.77	-19.34
695.50	5	QPSK	H	172	167	1 / 0	13.09	3.30	**16.39**	0.044	34.77	-18.38
695.50	5	16-QAM	H	172	167	1 / 0	12.30	3.30	**15.60**	0.036	34.77	-19.17
695.50	5	64-QAM	H	172	167	1 / 0	11.31	3.30	**14.61**	0.029	34.77	-20.16
668.00	10	QPSK	H	180	167	1 / 49	12.68	2.90	15.58	0.036	34.77	-19.19
680.50	10	QPSK	H	190	180	1 / 0	12.40	3.20	15.60	0.036	34.77	-19.17
693.00	10	QPSK	H	174	167	1 / 0	13.16	3.30	**16.46**	0.044	34.77	-18.31
693.00	10	16-QAM	H	174	167	1 / 0	12.41	3.30	**15.71**	0.037	34.77	-19.06
693.00	10	64-QAM	H	174	167	1 / 0	11.26	3.30	**14.56**	0.029	34.77	-20.21
670.50	15	QPSK	H	168	164	1 / 74	12.54	3.00	15.54	0.036	34.77	-19.23
680.50	15	QPSK	H	182	184	1 / 0	12.38	3.20	15.58	0.036	34.77	-19.19
690.50	15	QPSK	H	186	170	1 / 0	13.14	3.30	**16.44**	0.044	34.77	-18.33
690.50	15	16-QAM	H	186	170	1 / 0	12.24	3.30	**15.54**	0.036	34.77	-19.23
690.50	15	64-QAM	H	186	170	1 / 0	11.34	3.30	**14.64**	0.029	34.77	-20.13
673.00	20	QPSK	H	178	177	1 / 99	14.51	3.10	15.46	0.035	34.77	-19.31
680.50	20	QPSK	H	182	184	1 / 0	14.46	3.20	15.51	0.036	34.77	-19.26
688.00	20	QPSK	H	182	175	1 / 0	15.22	3.30	**16.37**	0.043	34.77	-18.40
688.00	20	16-QAM	H	182	175	1 / 0	14.31	3.30	**15.46**	0.035	34.77	-19.31
688.00	20	64-QAM	H	182	175	1 / 0	13.32	3.30	**14.47**	0.028	34.77	-20.30
693.00	10	QPSK	V	239	309	1 / 0	16.49	3.30	17.64	**0.058**	34.77	-17.13

Table 7-2. ERP Data (Band 71)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	H	168	194	1 / 5	16.00	3.40	17.25	0.053	34.77	-17.52	19.40	0.087	36.99	-17.59
707.50	1.4	QPSK	H	168	196	1 / 5	16.35	3.65	**17.85**	0.061	34.77	-16.92	**20.00**	0.100	36.99	-16.99
715.30	1.4	QPSK	H	162	193	1 / 5	15.82	3.70	17.37	0.055	34.77	-17.40	19.52	0.090	36.99	-17.47
715.30	1.4	16-QAM	H	162	193	1 / 5	15.16	3.70	16.71	0.047	34.77	-18.06	18.86	0.077	36.99	-18.13
715.30	1.4	64-QAM	H	162	193	1 / 5	14.19	3.70	15.74	0.037	34.77	-19.03	17.89	0.062	36.99	-19.10
700.50	3	QPSK	H	168	194	1 / 14	16.03	3.40	17.28	0.053	34.77	-17.49	19.43	0.088	36.99	-17.56
707.50	3	QPSK	H	168	196	1 / 14	16.47	3.65	**17.97**	**0.063**	34.77	-16.80	**20.12**	**0.103**	36.99	-16.87
714.50	3	QPSK	H	162	193	1 / 14	15.88	3.70	17.43	0.055	34.77	-17.34	19.58	0.091	36.99	-17.41
707.50	3	16-QAM	H	168	196	1 / 14	15.67	3.65	**17.17**	0.052	34.77	-17.60	**19.32**	0.086	36.99	-17.67
707.50	3	64-QAM	H	168	196	1 / 14	14.71	3.65	**16.21**	0.042	34.77	-18.56	**18.36**	0.069	36.99	-18.63
701.50	5	QPSK	H	168	194	1 / 24	15.96	3.40	17.21	0.053	34.77	-17.56	19.36	0.086	36.99	-17.63
707.50	5	QPSK	H	168	196	1 / 24	16.44	3.65	**17.94**	0.062	34.77	-16.83	**20.09**	0.102	36.99	-16.90
713.50	5	QPSK	H	162	193	1 / 24	15.78	3.70	17.33	0.054	34.77	-17.44	19.48	0.089	36.99	-17.51
707.50	5	16-QAM	H	168	196	1 / 24	15.61	3.65	**17.11**	0.051	34.77	-17.66	**19.26**	0.084	36.99	-17.73
707.50	5	64-QAM	H	168	196	1 / 24	14.57	3.65	**16.07**	0.040	34.77	-18.70	**18.22**	0.066	36.99	-18.77
704.00	10	QPSK	H	168	194	1 / 49	15.91	3.50	17.26	0.053	34.77	-17.51	19.41	0.087	36.99	-17.58
707.50	10	QPSK	H	168	196	1 / 49	16.40	3.65	**17.90**	0.062	34.77	-16.87	**20.05**	0.101	36.99	-16.94
711.00	10	QPSK	H	162	193	1 / 49	15.83	3.70	17.38	0.055	34.77	-17.39	19.53	0.090	36.99	-17.46
707.50	10	16-QAM	H	168	196	1 / 49	14.94	3.65	**16.44**	0.044	34.77	-18.33	**18.59**	0.072	36.99	-18.40
707.50	10	64-QAM	H	168	196	1 / 49	13.96	3.65	**15.46**	0.035	34.77	-19.31	**17.61**	0.058	36.99	-19.38
707.50	3	QPSK	V	215	307	1 / 14	16.32	3.65	17.82	0.061	34.77	-16.95	19.97	0.099	36.99	-17.02

Table 7-3. ERP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	H	234	271	1 / 24	14.89	5.80	18.54	0.071	34.77	-16.23	20.69	0.117	36.99	-16.30
782.00	5	QPSK	H	250	274	1 / 24	14.95	5.80	**18.60**	**0.072**	34.77	-16.17	**20.75**	**0.119**	36.99	-16.24
784.50	5	QPSK	H	241	280	1 / 24	14.75	5.90	18.50	0.071	34.77	-16.27	20.65	0.116	36.99	-16.34
782.00	5	16-QAM	H	250	274	1 / 24	14.16	5.80	**17.81**	0.060	34.77	-16.96	**19.96**	0.099	36.99	-17.03
782.00	5	64-QAM	H	250	274	1 / 24	13.17	5.80	**16.82**	0.048	34.77	-17.95	**18.97**	0.079	36.99	-18.02
782.00	10	QPSK	H	244	286	1 / 49	14.88	5.80	**18.53**	0.071	34.77	-16.24	**20.68**	0.117	36.99	-16.31
782.00	10	16-QAM	H	244	286	1 / 49	14.38	5.80	**18.03**	0.064	34.77	-16.74	**20.18**	0.104	36.99	-16.81
782.00	10	64-QAM	H	244	286	1 / 49	13.72	5.80	**17.37**	0.055	34.77	-17.40	**19.52**	0.090	36.99	-17.47
782.00	5	QPSK	V	242	247	1 / 24	14.69	5.80	18.34	0.068	34.77	-16.43	20.49	0.112	36.99	-16.50

Table 7-4. ERP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	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	1.4	QPSK	H	230	241	1 / 5	15.27	6.70	19.82	0.096	38.45	-18.63	21.97	0.157	40.61	-18.64
836.50	1.4	QPSK	H	202	235	1 / 5	15.31	6.70	**19.86**	0.097	38.45	-18.59	**22.01**	0.159	40.61	-18.60
848.30	1.4	QPSK	H	251	263	1 / 5	15.16	6.70	19.71	0.094	38.45	-18.74	21.86	0.153	40.61	-18.75
836.50	1.4	16-QAM	H	202	235	1 / 5	14.43	6.70	**18.98**	0.079	38.45	-19.47	**21.13**	0.130	40.61	-19.48
836.50	1.4	64-QAM	H	202	235	1 / 5	13.43	6.70	**17.98**	0.063	38.45	-20.47	**20.13**	0.103	40.61	-20.48
825.50	3	QPSK	H	212	255	1 / 14	15.33	6.70	19.88	0.097	38.45	-18.57	22.03	0.160	40.61	-18.58
836.50	3	QPSK	H	235	232	1 / 14	15.40	6.70	**19.95**	0.099	38.45	-18.50	**22.10**	0.162	40.61	-18.51
847.50	3	QPSK	H	250	224	1 / 14	15.28	6.65	19.78	0.095	38.45	-18.67	21.93	0.156	40.61	-18.68
836.50	3	16-QAM	H	235	232	1 / 14	14.58	6.70	**19.13**	0.082	38.45	-19.32	**21.28**	0.134	40.61	-19.33
836.50	3	64-QAM	H	235	232	1 / 14	13.53	6.70	**18.08**	0.064	38.45	-20.37	**20.23**	0.105	40.61	-20.38
826.50	5	QPSK	H	222	230	1 / 24	15.30	6.70	**19.85**	0.097	38.45	-18.60	**22.00**	0.158	40.61	-18.61
836.50	5	QPSK	H	246	241	1 / 24	15.29	6.70	19.84	0.096	38.45	-18.61	21.99	0.158	40.61	-18.62
846.50	5	QPSK	H	240	236	1 / 24	15.20	6.60	19.65	0.092	38.45	-18.80	21.80	0.151	40.61	-18.81
826.50	5	16-QAM	H	222	230	1 / 24	14.45	6.70	**19.00**	0.079	38.45	-19.45	**21.15**	0.130	40.61	-19.46
826.50	5	64-QAM	H	222	230	1 / 24	13.51	6.70	**18.06**	0.064	38.45	-20.39	**20.21**	0.105	40.61	-20.40
829.00	10	QPSK	H	229	239	1 / 49	15.46	6.70	**20.01**	**0.100**	38.45	-18.44	**22.16**	**0.164**	40.61	-18.45
836.50	10	QPSK	H	248	301	1 / 49	15.39	6.70	19.94	0.099	38.45	-18.51	22.09	0.162	40.61	-18.52
844.00	10	QPSK	H	256	224	1 / 49	15.33	6.60	19.78	0.095	38.45	-18.67	21.93	0.156	40.61	-18.68
829.00	10	16-QAM	H	229	239	1 / 49	14.54	6.70	**19.09**	0.081	38.45	-19.36	**21.24**	0.133	40.61	-19.37
829.00	10	64-QAM	H	229	239	1 / 49	13.62	6.70	**18.17**	0.066	38.45	-20.28	**20.32**	0.108	40.61	-20.29
829.00	10	QPSK	V	273	96	1 / 49	7.59	6.70	12.14	0.016	38.45	-26.31	14.29	0.027	40.61	-26.32

Table 7-5. ERP Data (Band 26/5)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
831.50	15	QPSK	H	233	234	1 / 74	15.35	6.70	**19.90**	0.098	38.45	-18.55	**22.05**	0.160	40.61	-18.56
836.50	15	QPSK	H	235	232	1 / 74	15.28	6.70	19.83	0.096	38.45	-18.62	21.98	0.158	40.61	-18.63
841.50	15	QPSK	H	245	228	1 / 74	15.22	6.60	19.67	0.093	38.45	-18.78	21.82	0.152	40.61	-18.79
841.50	15	16-QAM	H	245	228	1 / 74	14.15	6.60	**18.60**	0.072	38.45	-19.85	**20.75**	0.119	40.61	-19.86
841.50	15	64-QAM	H	245	228	1 / 74	13.15	6.60	**17.60**	0.058	38.45	-20.85	**19.75**	0.094	40.61	-20.86

Table 7-6. ERP Data (Band 26)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	H	114	211	1 / 5	14.96	9.44	**24.40**	0.276	30.00	-5.60
1745.00	1.4	QPSK	H	106	213	1 / 0	14.54	9.23	23.77	0.238	30.00	-6.23
1779.30	1.4	QPSK	H	108	219	1 / 5	15.01	9.26	24.27	0.267	30.00	-5.73
1710.70	1.4	16-QAM	H	114	211	1 / 5	14.11	9.44	**23.55**	0.227	30.00	-6.45
1710.70	1.4	64-QAM	H	114	211	1 / 5	13.10	9.44	**22.54**	0.180	30.00	-7.46
1711.50	3	QPSK	H	107	206	1 / 14	14.93	9.44	**24.36**	0.273	30.00	-5.64
1745.00	3	QPSK	H	111	198	1 / 0	14.47	9.23	23.70	0.234	30.00	-6.30
1778.50	3	QPSK	H	109	202	1 / 14	15.06	9.26	24.32	0.270	30.00	-5.68
1711.50	3	16-QAM	H	107	206	1 / 14	14.16	9.44	**23.59**	0.229	30.00	-6.41
1711.50	3	64-QAM	H	107	206	1 / 14	13.10	9.44	**22.53**	0.179	30.00	-7.47
1712.50	5	QPSK	H	104	205	1 / 24	14.81	9.43	**24.24**	0.266	30.00	-5.76
1745.00	5	QPSK	H	116	204	1 / 0	14.42	9.23	23.65	0.232	30.00	-6.35
1777.50	5	QPSK	H	108	204	1 / 24	14.96	9.26	24.22	0.264	30.00	-5.78
1712.50	5	16-QAM	H	104	205	1 / 24	14.08	9.43	**23.51**	0.225	30.00	-6.49
1712.50	5	64-QAM	H	104	205	1 / 24	13.03	9.43	**22.46**	0.176	30.00	-7.54
1715.00	10	QPSK	H	106	211	1 / 49	14.84	9.42	24.25	0.266	30.00	-5.75
1745.00	10	QPSK	H	109	220	1 / 0	14.40	9.23	23.63	0.231	30.00	-6.37
1775.00	10	QPSK	H	103	217	1 / 49	15.02	9.25	**24.27**	0.267	30.00	-5.73
1775.00	10	16-QAM	H	103	217	1 / 49	14.17	9.25	**23.42**	0.220	30.00	-6.58
1775.00	10	64-QAM	H	103	217	1 / 49	13.32	9.25	**22.57**	0.181	30.00	-7.43
1717.50	15	QPSK	H	100	205	1 / 74	15.22	9.40	24.62	0.290	30.00	-5.38
1745.00	15	QPSK	H	101	204	1 / 0	14.83	9.23	24.06	0.255	30.00	-5.94
1772.50	15	QPSK	H	102	204	1 / 74	15.38	9.25	**24.63**	**0.290**	30.00	-5.37
1772.50	15	16-QAM	H	102	204	1 / 74	14.58	9.25	**23.83**	0.242	30.00	-6.17
1772.50	15	64-QAM	H	102	204	1 / 74	13.55	9.25	**22.80**	0.191	30.00	-7.20
1720.00	20	QPSK	H	100	205	1 / 99	15.05	9.38	**24.43**	0.278	30.00	-5.57
1745.00	20	QPSK	H	101	204	1 / 0	15.04	9.23	24.27	0.267	30.00	-5.73
1770.00	20	QPSK	H	102	204	1 / 99	15.08	9.24	24.32	0.270	30.00	-5.68
1720.00	20	16-QAM	H	100	205	1 / 99	14.05	9.38	**23.43**	0.221	30.00	-6.57
1720.00	20	64-QAM	H	100	205	1 / 99	13.36	9.38	**22.74**	0.188	30.00	-7.26
1772.50	15	QPSK	V	367	72	1 / 74	11.71	9.25	20.96	0.125	30.00	-9.04

Table 7-7. EIRP Data (Band 66/4)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	100	5	1 / 5	12.63	9.48	22.11	0.163	33.01	-10.90
1882.50	1.4	QPSK	H	100	332	1 / 5	13.92	9.94	**23.86**	0.243	33.01	-9.16
1914.30	1.4	QPSK	H	100	5	1 / 5	12.91	10.29	23.20	0.209	33.01	-9.81
1882.50	1.4	16-QAM	H	100	332	1 / 5	13.01	9.94	**22.95**	0.197	33.01	-10.07
1882.50	1.4	64-QAM	H	100	332	1 / 5	11.93	9.94	**21.87**	0.154	33.01	-11.15
1851.50	3	QPSK	H	102	4	1 / 0	12.85	9.50	22.35	0.172	33.01	-10.66
1882.50	3	QPSK	H	115	13	1 / 14	13.60	9.94	23.54	0.226	33.01	-9.48
1913.50	3	QPSK	H	100	7	1 / 0	13.58	10.29	**23.87**	0.244	33.01	-9.15
1913.50	3	16-QAM	H	100	7	1 / 0	12.74	10.29	**23.03**	0.201	33.01	-9.99
1913.50	3	64-QAM	H	100	7	1 / 0	11.60	10.29	**21.89**	0.154	33.01	-11.13
1852.50	5	QPSK	H	102	359	1 / 0	13.12	9.51	22.63	0.183	33.01	-10.38
1882.50	5	QPSK	H	102	5	1 / 0	13.13	9.94	23.07	0.203	33.01	-9.95
1912.50	5	QPSK	H	117	14	1 / 0	13.94	10.28	**24.22**	0.264	33.01	-8.79
1912.50	5	16-QAM	H	117	14	1 / 0	13.28	10.28	**23.56**	0.227	33.01	-9.45
1912.50	5	64-QAM	H	117	14	1 / 0	12.06	10.28	**22.34**	0.171	33.01	-10.67
1855.00	10	QPSK	H	102	352	1 / 49	12.67	9.55	22.22	0.167	33.01	-10.79
1882.50	10	QPSK	H	102	5	1 / 49	13.07	9.94	23.01	0.200	33.01	-10.01
1910.00	10	QPSK	H	117	5	1 / 49	13.80	10.26	**24.06**	0.255	33.01	-8.95
1910.00	10	16-QAM	H	117	5	1 / 49	12.96	10.26	**23.22**	0.210	33.01	-9.79
1910.00	10	64-QAM	H	117	5	1 / 49	12.06	10.26	**22.32**	0.171	33.01	-10.69
1857.50	15	QPSK	H	100	357	1 / 74	13.04	9.58	22.62	0.183	33.01	-10.39
1882.50	15	QPSK	H	100	2	1 / 0	13.24	9.94	23.18	0.208	33.01	-9.84
1907.50	15	QPSK	H	115	9	1 / 74	13.70	10.24	**23.94**	0.248	33.01	-9.07
1907.50	15	16-QAM	H	115	9	1 / 74	12.89	10.24	**23.13**	0.206	33.01	-9.88
1907.50	15	64-QAM	H	115	9	1 / 74	11.83	10.24	**22.07**	0.161	33.01	-10.94
1860.00	20	QPSK	H	124	200	1 / 0	14.88	9.62	24.50	0.282	33.01	-8.51
1882.50	20	QPSK	H	111	202	1 / 99	14.65	9.94	24.59	0.287	33.01	-8.43
1905.00	20	QPSK	H	157	194	1 / 0	14.54	10.22	**24.76**	**0.299**	33.01	-8.25
1905.00	20	16-QAM	H	157	194	1 / 0	13.73	10.22	**23.95**	0.248	33.01	-9.06
1882.50	20	64-QAM	H	111	202	1 / 99	13.02	9.94	**22.96**	0.197	33.01	-10.06
1905.00	20	QPSK	V	100	240	1 / 0	14.38	10.22	24.60	0.288	33.01	-8.41

Table 7-8. EIRP Data (Band 25/2)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	H	113	49	1 / 0	15.64	9.43	25.07	0.322	33.01	-7.94
2593.00	5	QPSK	H	105	40	1 / 24	15.77	9.55	25.32	0.341	33.01	-7.69
2687.50	5	QPSK	H	102	43	1 / 0	16.27	9.82	**26.09**	0.406	33.01	-6.92
2687.50	5	16-QAM	H	102	43	1 / 0	15.11	9.82	**24.93**	0.311	33.01	-8.08
2687.50	5	64-QAM	H	102	43	1 / 0	14.42	9.82	**24.24**	0.265	33.01	-8.77
2501.00	10	QPSK	H	115	46	1 / 0	15.37	9.43	24.80	0.302	33.01	-8.21
2593.00	10	QPSK	H	100	38	1 / 0	17.10	9.55	**26.65**	0.463	33.01	-6.36
2685.00	10	QPSK	H	100	39	1 / 0	15.43	9.82	25.25	0.335	33.01	-7.76
2593.00	10	16-QAM	H	100	38	1 / 0	16.38	9.55	**25.93**	0.392	33.01	-7.08
2593.00	10	64-QAM	H	100	38	1 / 0	14.89	9.55	**24.44**	0.278	33.01	-8.57
2503.50	15	QPSK	H	117	42	1 / 74	15.88	9.43	25.31	0.339	33.01	-7.70
2593.00	15	QPSK	H	100	38	1 / 0	16.75	9.55	**26.30**	0.427	33.01	-6.71
2682.50	15	QPSK	H	102	40	1 / 74	15.61	9.83	25.44	0.350	33.01	-7.57
2593.00	15	16-QAM	H	100	38	1 / 0	15.68	9.55	**25.23**	0.334	33.01	-7.78
2593.00	15	64-QAM	H	100	38	1 / 0	15.09	9.55	**24.64**	0.291	33.01	-8.37
2506.00	20	QPSK	H	109	43	1 / 99	16.63	9.42	26.05	0.403	33.01	-6.96
2593.00	20	QPSK	H	103	51	1 / 0	16.94	9.55	26.49	0.446	33.01	-6.52
2680.00	20	QPSK	H	105	30	1 / 99	17.00	9.83	**26.83**	**0.482**	33.01	-6.18
2680.00	20	16-QAM	H	105	30	1 / 99	16.21	9.83	**26.04**	0.402	33.01	-6.97
2680.00	20	64-QAM	H	105	30	1 / 99	15.77	9.83	**25.60**	0.363	33.01	-7.41
2680.00	20	QPSK	V	351	102	1 / 99	15.12	9.83	24.95	0.313	33.01	-8.06

Table 7-9. EIRP Data (Band 41 – PC2)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	H	100	40	1 / 0	12.75	9.43	22.18	0.165	33.01	-10.83
2593.00	5	QPSK	H	100	38	1 / 0	13.34	9.55	22.89	0.195	33.01	-10.12
2687.50	5	QPSK	H	100	39	1 / 0	13.17	9.82	**22.99**	0.199	33.01	-10.02
2593.00	5	16-QAM	H	100	38	1 / 0	12.63	9.55	**22.18**	0.165	33.01	-10.83
2593.00	5	64-QAM	H	100	38	1 / 0	12.39	9.55	**21.94**	0.156	33.01	-11.07
2501.00	10	QPSK	H	102	46	1 / 49	12.51	9.43	21.94	0.156	33.01	-11.07
2593.00	10	QPSK	H	100	41	1 / 49	13.61	9.55	**23.16**	0.207	33.01	-9.85
2685.00	10	QPSK	H	100	42	1 / 0	13.26	9.82	23.08	0.203	33.01	-9.93
2593.00	10	16-QAM	H	100	41	1 / 49	12.68	9.55	**22.23**	0.167	33.01	-10.78
2593.00	10	64-QAM	H	100	41	1 / 49	11.56	9.55	**21.11**	0.129	33.01	-11.90
2503.50	15	QPSK	H	102	45	1 / 74	13.01	9.43	22.44	0.175	33.01	-10.57
2593.00	15	QPSK	H	100	43	1 / 0	13.51	9.55	**23.06**	0.202	33.01	-9.95
2682.50	15	QPSK	H	100	42	1 / 74	12.53	9.83	22.36	0.172	33.01	-10.65
2593.00	15	16-QAM	H	100	43	1 / 0	13.13	9.55	**22.68**	0.186	33.01	-10.33
2503.50	15	64-QAM	H	102	45	1 / 74	11.71	9.43	**21.14**	0.130	33.01	-11.87
2506.00	20	QPSK	H	103	48	1 / 99	14.01	9.42	23.43	0.221	33.01	-9.58
2593.00	20	QPSK	H	116	38	1 / 99	14.60	9.55	**24.15**	**0.260**	33.01	-8.86
2680.00	20	QPSK	H	117	38	1 / 0	14.13	9.83	23.96	0.249	33.01	-9.05
2593.00	20	16-QAM	H	116	38	1 / 99	13.84	9.55	**23.39**	0.218	33.01	-9.62
2593.00	20	64-QAM	H	116	38	1 / 99	13.23	9.55	**22.78**	0.190	33.01	-10.23
2593.00	20	QPSK	V	328	273	1 / 99	10.35	9.55	19.90	0.098	33.01	-13.11

Table 7-10. EIRP Data (Band 41 – PC3)

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 vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

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.

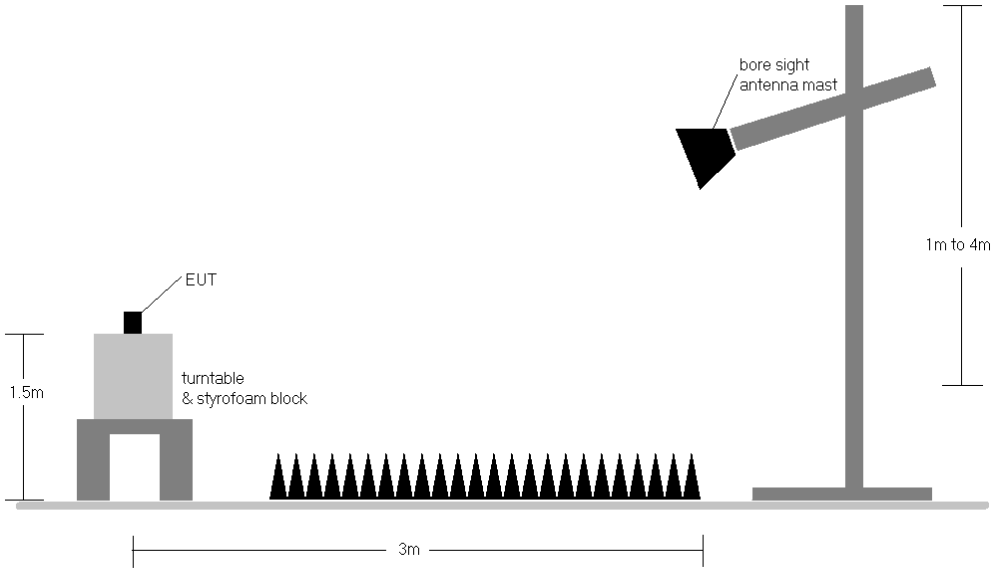


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

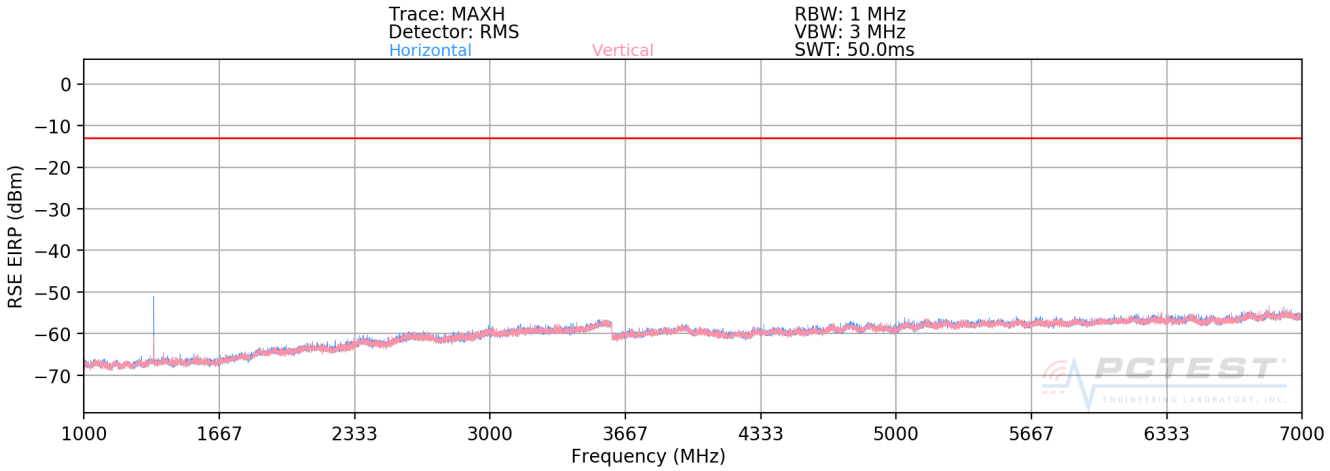
2) This unit was tested with its standard battery.

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

4) 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.

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

Band 71



Plot 7-1. Radiated Spurious Plot above 1GHz (Band 71)

OPERATING FREQUENCY:	673.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
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]
1346.00	H	168	117	-57.22	7.47	-49.75	-36.7
2019.00	H	171	132	-66.06	8.68	-57.38	-44.4
2692.00	H	-	-	-70.97	9.99	-60.98	-48.0
3365.00	H	-	-	-71.26	9.66	-61.60	-48.6
4038.00	H	-	-	-72.49	9.84	-62.64	-49.6

Table 7-11. Radiated Spurious Data (Band 71 – Low Channel)

OPERATING FREQUENCY:	680.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
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]
1361.00	H	184	296	-60.21	7.48	-52.72	-39.7
2041.50	H	183	311	-71.47	8.76	-62.71	-49.7
2722.00	H	-	-	-72.55	10.08	-62.47	-49.5
3402.50	H	-	-	-69.83	9.80	-60.03	-47.0
4083.00	H	-	-	-66.98	10.05	-56.92	-43.9

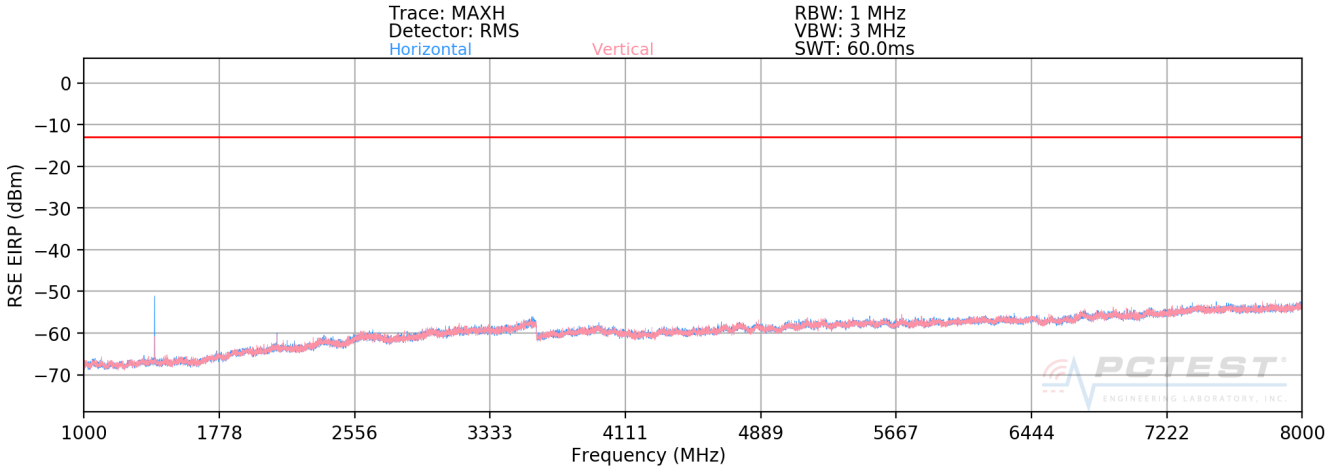
Table 7-12. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY:	688.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
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]
1376.00	H	172	300	-59.01	7.46	-51.55	-38.5
2064.00	H	169	278	-71.20	8.80	-62.39	-49.4
2752.00	H	-	-	-72.76	10.17	-62.59	-49.6
3440.00	H	-	-	-69.01	9.84	-59.17	-46.2
4128.00	H	-	-	-67.65	10.18	-57.47	-44.5

Table 7-13. Radiated Spurious Data (Band 71 – High Channel)

Band 12



Plot 7-2. Radiated Spurious Plot above 1GHz (Band 12)

OPERATING FREQUENCY:	700.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	MHz
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]
1401.00	H	329	360	-59.64	7.54	-52.10	-39.1
2101.50	H	329	58	-71.61	8.85	-62.76	-49.8
2802.00	H	316	61	-70.46	10.12	-60.34	-47.3
3502.50	H	-	-	-68.26	9.91	-58.35	-45.4
4203.00	H	-	-	-72.44	10.50	-61.94	-48.9

Table 7-14. Radiated Spurious Data (Band 12 – Low Channel)

OPERATING FREQUENCY:	707.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	MHz
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]
1415.00	H	154	322	-55.68	7.63	-48.05	-35.0
2122.50	H	168	82	-69.91	8.86	-61.05	-48.1
2830.00	H	154	78	-69.78	10.10	-59.69	-46.7
3537.50	H	-	-	-68.15	9.90	-58.26	-45.3
4245.00	H	-	-	-68.78	10.58	-58.20	-45.2

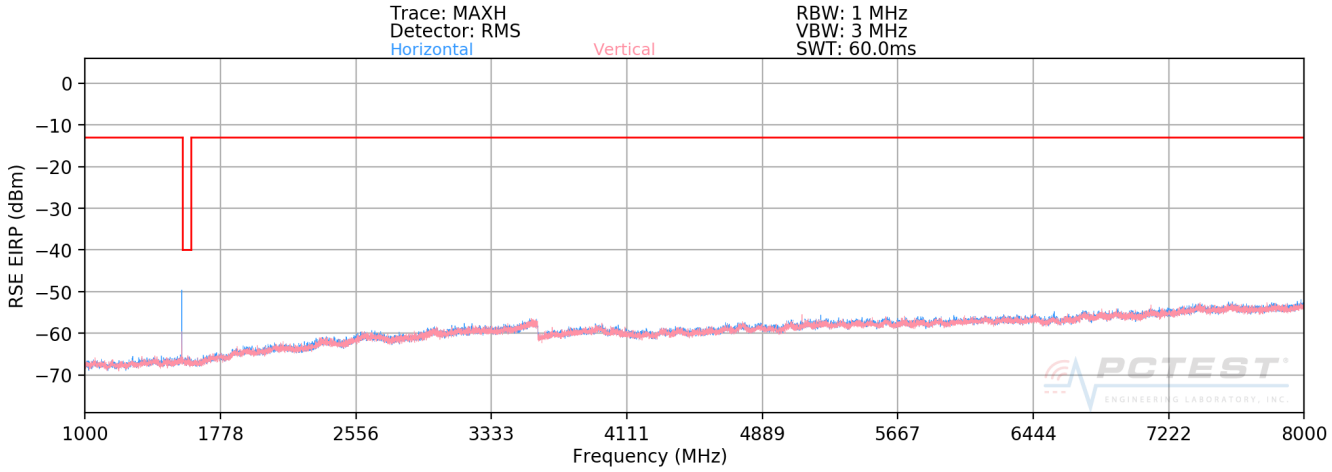
Table 7-15. Radiated Spurious Data (Band 12 – Mid Channel)

OPERATING FREQUENCY:	714.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	MHz
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]
1429.00	H	398	356	-57.76	7.72	-50.04	-37.0
2143.50	H	355	270	-70.60	8.87	-61.73	-48.7
2858.00	H	324	289	-69.79	10.07	-59.72	-46.7
3572.50	H	-	-	-70.30	9.89	-60.41	-47.4
4287.00	H	-	-	-67.75	10.65	-57.10	-44.1

Table 7-16. Radiated Spurious Data (Band 12 – High Channel)

Band 13



Plot 7-3. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY:	782.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
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]
2346.00	H	165	315	-67.97	9.43	-58.54	-45.5
3128.00	H	178	330	-69.21	9.34	-59.86	-46.9
3910.00	H	-	-	-71.45	9.37	-62.08	-49.1
4692.00	H	-	-	-72.91	10.93	-61.98	-49.0

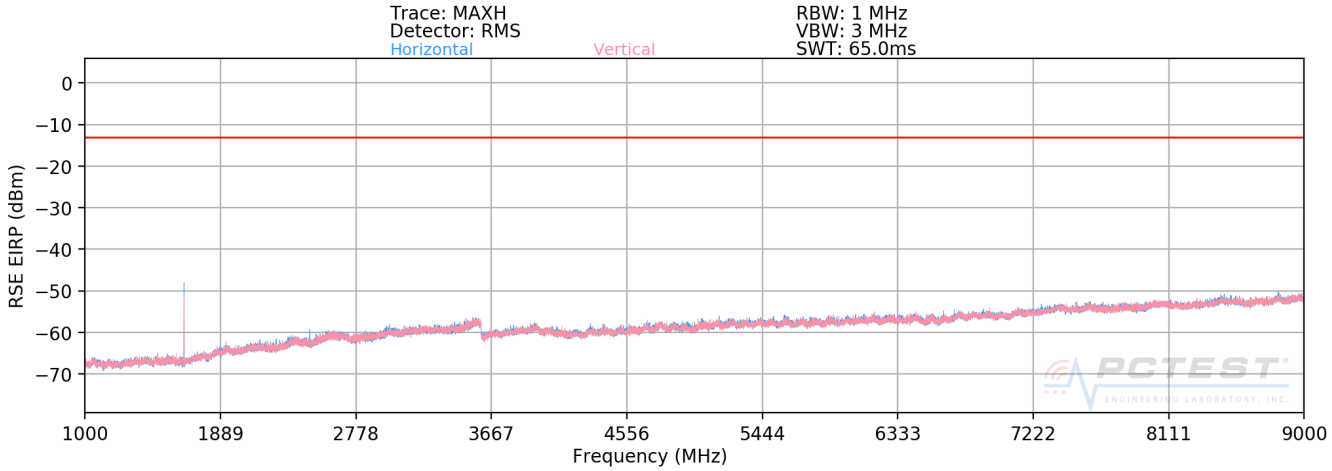
Table 7-17. Radiated Spurious Data (Band 13 – Mid Channel)

MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

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]
1564.00	H	127	311	-58.83	8.53	-50.30	-10.3

Table 7-18. Radiated Spurious Data (Band 13 - 1559-1610MHz Band)

Band 26/5



Plot 7-4. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY:	825.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	MHz
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]
1651.00	H	154	307	-53.34	8.95	-44.39	-31.4
2476.50	H	143	322	-66.07	9.73	-56.34	-43.3
3302.00	H	133	337	-67.74	9.59	-58.15	-45.1
4127.50	H	-	-	-74.60	10.25	-64.34	-51.3
4953.00	H	-	-	-72.82	10.93	-61.89	-48.9

Table 7-19. Radiated Spurious Data (Band 26/5 – Low Channel)

OPERATING FREQUENCY:	836.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	MHz
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]
1673.00	H	145	306	-52.53	8.95	-43.58	-30.6
2509.50	H	153	310	-66.29	9.75	-56.53	-43.5
3346.00	H	-	-	-69.97	9.60	-60.36	-47.4
4182.50	H	-	-	-73.99	10.34	-63.65	-50.6

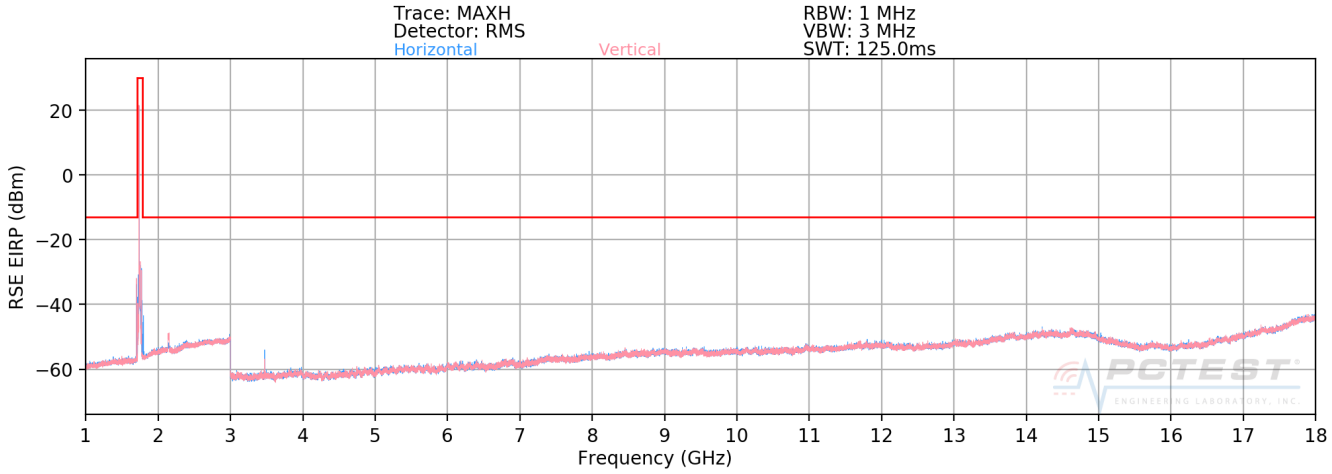
Table 7-20. Radiated Spurious Data (Band 26/5 – Mid Channel)

OPERATING FREQUENCY:	847.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	3.0	MHz
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]
1695.00	H	139	302	-51.09	8.95	-42.14	-29.1
2542.50	H	136	317	-63.07	9.75	-53.32	-40.3
3390.00	H	-	-	-68.86	9.67	-59.19	-46.2
4237.50	H	-	-	-73.41	10.44	-62.97	-50.0
5085.00	H	-	-	-72.16	10.80	-61.36	-48.4

Table 7-21. Radiated Spurious Data (Band 26/5 – High Channel)

Band 66/4



Plot 7-5. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY:	1720.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
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]
3440.00	H	132	7	-59.60	9.84	-49.75	-36.8
5160.00	H	127	9	-70.14	10.71	-59.43	-46.4
6880.00	H	126	44	-68.13	11.68	-56.45	-43.5
8600.00	H	-	-	-65.17	11.08	-54.09	-41.1
10320.00	H	-	-	-66.72	12.38	-54.34	-41.3

Table 7-22. Radiated Spurious Data (Band 66/4 – Low Channel)

OPERATING FREQUENCY:	1745.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
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]
3490.00	H	122	2	-59.89	9.91	-49.98	-37.0
5235.00	H	118	17	-69.16	10.73	-58.42	-45.4
6980.00	H	121	36	-68.94	11.82	-57.12	-44.1
8725.00	H	-	-	-65.71	11.00	-54.72	-41.7
10470.00	H	-	-	-66.25	12.58	-53.67	-40.7

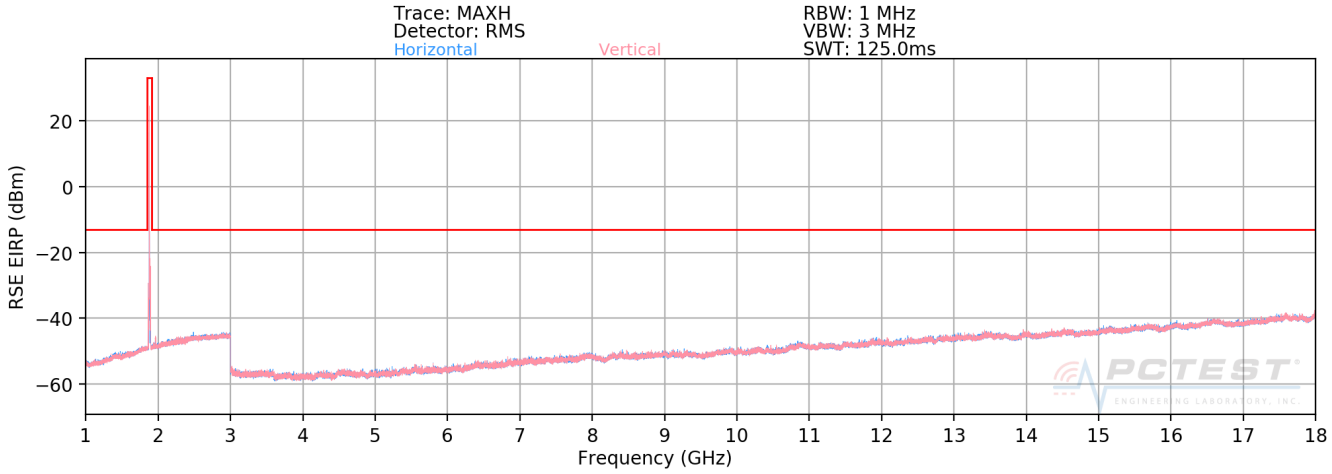
Table 7-23. Radiated Spurious Data (Band 66/4 – Mid Channel)

OPERATING FREQUENCY:	1770.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
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]
3540.00	H	112	17	-59.39	9.89	-49.50	-36.5
5310.00	H	123	32	-67.60	10.69	-56.91	-43.9
7080.00	H	115	11	-63.71	11.79	-51.93	-38.9
8850.00	H	-	-	-64.83	11.00	-53.84	-40.8
10620.00	H	-	-	-66.26	12.58	-53.68	-40.7

Table 7-24. Radiated Spurious Data (Band 66/4 – High Channel)

Band 25



Plot 7-6. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY:	1850.70	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	1.4	MHz
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]
3701.40	V	-	-	-64.33	6.56	-57.77	-44.8
5552.10	V	-	-	-63.49	8.72	-54.77	-41.8

Table 7-25. Radiated Spurious Data (Band 25/2 – Low Channel)

OPERATING FREQUENCY:	1882.50	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	1.4	MHz
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]
3765.00	V	-	-	-65.61	6.70	-58.91	-45.9
5647.50	V	105	166	-63.84	8.83	-55.02	-42.0
7530.00	V	-	-	-61.71	8.46	-53.25	-40.3
9412.50	V	-	-	-59.33	9.32	-50.01	-37.0

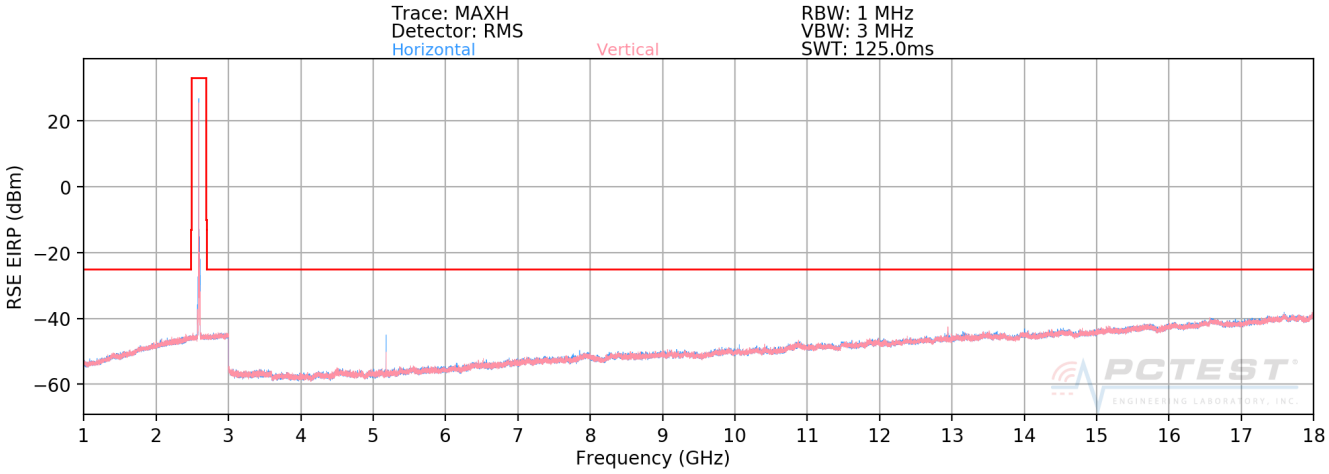
Table 7-26. Radiated Spurious Data (Band 25/2 – Mid Channel)

OPERATING FREQUENCY:	1914.30	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	1.4	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

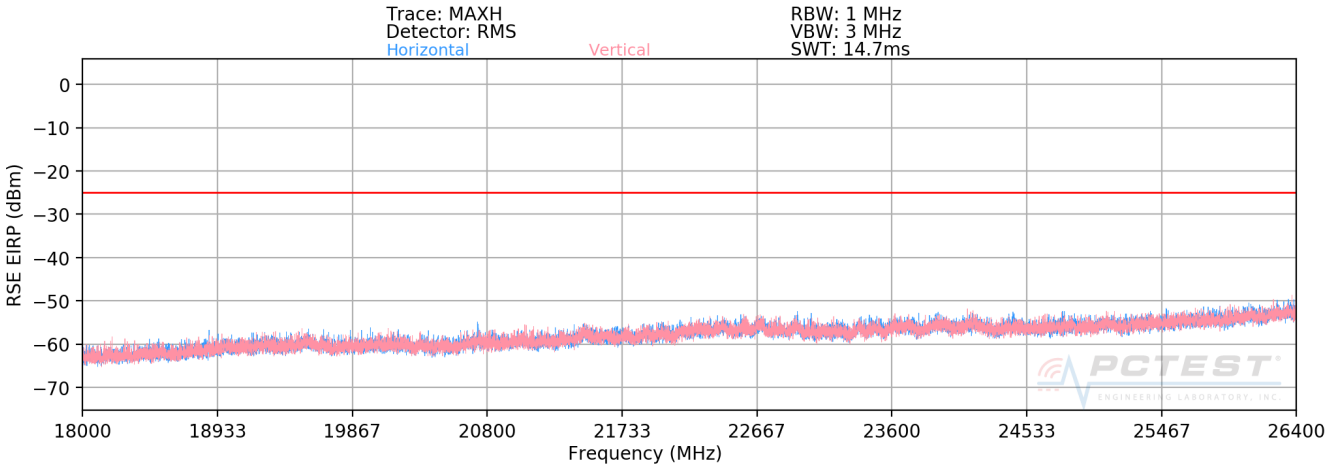
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3828.60	V	-	-	-64.58	7.05	-57.52	-44.5
5742.90	V	195	339	-62.50	8.77	-53.73	-40.7
7657.20	V	-	-	-60.93	8.56	-52.37	-39.4
9571.50	V	-	-	-60.02	9.44	-50.58	-37.6

Table 7-27. Radiated Spurious Data (Band 25/2 – High Channel)

Band 41 PC2



Plot 7-7. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC2)



Plot 7-8. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC2)

OPERATING FREQUENCY:	2506.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	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]
5012.00	H	121	154	-45.96	8.75	-37.21	-12.2
7518.00	H	-	-	-53.73	9.32	-44.42	-19.4
10024.00	H	-	-	-49.84	9.80	-40.04	-15.0
12530.00	H	243	22	-40.90	8.87	-32.03	-7.0
15036.00	H	-	-	-40.60	8.84	-31.75	-6.8

Table 7-28. Radiated Spurious Data (Band 41 PC2 – Low Channel)

OPERATING FREQUENCY:	2593.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	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]
5186.00	H	102	123	-45.88	9.03	-36.85	-11.9
7779.00	H	-	-	-53.55	9.29	-44.26	-19.3
10372.00	H	-	-	-48.15	9.50	-38.65	-13.6
12965.00	H	231	12	-40.72	8.75	-31.96	-7.0
15558.00	H	-	-	-38.75	8.47	-30.28	-5.3

Table 7-29. Radiated Spurious Data (Band 41 PC2 – Mid Channel)

OPERATING FREQUENCY:	2680.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	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]
5360.00	H	282	301	-50.04	8.99	-41.05	-16.1
8040.00	H	-	-	-52.66	9.35	-43.30	-18.3
10720.00	H	-	-	-47.53	9.39	-38.13	-13.1
13400.00	H	349	22	-41.18	8.67	-32.51	-7.5

Table 7-30. Radiated Spurious Data (Band 41 PC2 – High Channel)

OPERATING FREQUENCY:	2593.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	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]
5186.00	H	100	19	-58.61	9.03	-49.59	-24.6
7779.00	H	-	-	-57.23	9.29	-47.94	-22.9
10372.00	H	-	-	-54.60	9.50	-45.10	-20.1
12965.00	H	241	166	-54.10	8.75	-45.34	-20.3
15558.00	H	-	-	-46.32	8.47	-37.85	-12.9

Table 7-31. Radiated Spurious Data (Band 41 PC3 – Mid Channel)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFX320PM** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.