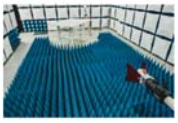
PCTEST ENGINEERING LABORATORY, INC.
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.pctest.com



# MEASUREMENT REPORT
## LTE

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

**Date of Testing:**
8/21 - 9/4/2018
**Test Site/Location:**
PCTEST Lab. Columbia, MD, USA
**Test Report Serial No.:**
1M1808210167-03.ZNF

| | |
|---|---|
| **FCC ID:** | **ZNFQ910QM** |
| **APPLICANT:** | **LG Electronics USA, Inc.** |

| | |
|---|---|
| **Application Type:** | Class II Permissive Change |
| **Model:** | LM-Q910QM |
| **Additional Model(s):** | LMQ910QM, Q910QM, LM-Q910UM, LMQ910UM, Q910UM |
| **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 |

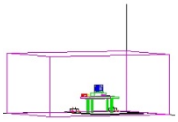
This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

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.

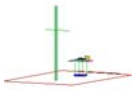
Randy Ortanez
President

ACCREDITED
TESTING CERT#2041.01

# TABLE OF CONTENTS



# 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 12 | 27 | 699.7 - 715.3 | 0.09 | 19.55 | 0.15 | 21.70 | QPSK |
| LTE Band 12 | 27 | 699.7 - 715.3 | 0.06 | 18.06 | 0.10 | 20.21 | 16QAM |
| LTE Band 12 | 27 | 699.7 - 715.3 | 0.05 | 16.93 | 0.08 | 19.08 | 64QAM |
| LTE Band 12 | 27 | 700.5 - 714.5 | 0.10 | 19.86 | 0.16 | 22.01 | QPSK |
| LTE Band 12 | 27 | 700.5 - 714.5 | 0.07 | 18.23 | 0.11 | 20.38 | 16QAM |
| LTE Band 12 | 27 | 700.5 - 714.5 | 0.05 | 17.28 | 0.09 | 19.43 | 64QAM |
| LTE Band 17/12 | 27 | 701.5 - 713.5 | 0.10 | 19.83 | 0.16 | 21.98 | QPSK |
| LTE Band 17/12 | 27 | 701.5 - 713.5 | 0.07 | 18.38 | 0.11 | 20.53 | 16QAM |
| LTE Band 17/12 | 27 | 701.5 - 713.5 | 0.05 | 17.31 | 0.09 | 19.46 | 64QAM |
| LTE Band 17/12 | 27 | 704 - 711 | 0.09 | 19.56 | 0.15 | 21.71 | QPSK |
| LTE Band 17/12 | 27 | 704 - 711 | 0.06 | 18.10 | 0.11 | 20.25 | 16QAM |
| LTE Band 17/12 | 27 | 704 - 711 | 0.05 | 17.04 | 0.08 | 19.19 | 64QAM |
| LTE Band 13 | 27 | 779.5 - 784.5 | 0.15 | 21.82 | 0.25 | 23.97 | QPSK |
| LTE Band 13 | 27 | 779.5 - 784.5 | 0.10 | 20.17 | 0.17 | 22.32 | 16QAM |
| LTE Band 13 | 27 | 779.5 - 784.5 | 0.08 | 19.18 | 0.14 | 21.33 | 64QAM |
| LTE Band 13 | 27 | 782 | 0.14 | 21.32 | 0.22 | 23.47 | QPSK |
| LTE Band 13 | 27 | 782 | 0.10 | 20.12 | 0.17 | 22.27 | 16QAM |
| LTE Band 13 | 27 | 782 | 0.09 | 19.44 | 0.14 | 21.59 | 64QAM |
| LTE Band 26/5 | 22H | 824.7 - 848.3 | 0.07 | 18.67 | 0.12 | 20.82 | QPSK |
| LTE Band 26/5 | 22H | 824.7 - 848.3 | 0.05 | 17.15 | 0.09 | 19.30 | 16QAM |
| LTE Band 26/5 | 22H | 824.7 - 848.3 | 0.04 | 16.11 | 0.07 | 18.26 | 64QAM |
| LTE Band 26/5 | 22H | 825.5 - 847.5 | 0.07 | 18.29 | 0.11 | 20.44 | QPSK |
| LTE Band 26/5 | 22H | 825.5 - 847.5 | 0.05 | 16.93 | 0.08 | 19.08 | 16QAM |
| LTE Band 26/5 | 22H | 825.5 - 847.5 | 0.04 | 15.83 | 0.06 | 17.98 | 64QAM |
| LTE Band 26/5 | 22H | 826.5 - 846.5 | 0.08 | 19.20 | 0.14 | 21.35 | QPSK |
| LTE Band 26/5 | 22H | 826.5 - 846.5 | 0.06 | 17.72 | 0.10 | 19.87 | 16QAM |
| LTE Band 26/5 | 22H | 826.5 - 846.5 | 0.05 | 16.77 | 0.08 | 18.92 | 64QAM |
| LTE Band 26/5 | 22H | 829 - 844 | 0.06 | 17.87 | 0.10 | 20.02 | QPSK |
| LTE Band 26/5 | 22H | 829 - 844 | 0.05 | 17.06 | 0.08 | 19.21 | 16QAM |
| LTE Band 26/5 | 22H | 829 - 844 | 0.04 | 15.72 | 0.06 | 17.87 | 64QAM |
| LTE Band 26 | 22H | 831.5 - 841.5 | 0.07 | 18.23 | 0.11 | 20.38 | QPSK |
| LTE Band 26 | 22H | 831.5 - 841.5 | 0.05 | 16.90 | 0.08 | 19.05 | 16QAM |
| LTE Band 26 | 22H | 831.5 - 841.5 | 0.04 | 15.98 | 0.07 | 18.13 | 64QAM |

**EUT Overview (<1GHz)**

| Mode | FCC Rule Part | Tx Frequency (MHz) | EIRP | | Modulation |
|---|---|---|---|---|---|
| | | | Max. Power (W) | Max. Power (dBm) | |
| LTE Band 66/4 | 27 | 1710.7 - 1779.3 | 0.21 | 23.30 | QPSK |
| LTE Band 66/4 | 27 | 1710.7 - 1779.3 | 0.14 | 21.40 | 16QAM |
| LTE Band 66/4 | 27 | 1710.7 - 1779.3 | 0.14 | 21.44 | 64QAM |
| LTE Band 66/4 | 27 | 1711.5 - 1778.5 | 0.21 | 23.18 | QPSK |
| LTE Band 66/4 | 27 | 1711.5 - 1778.5 | 0.13 | 21.29 | 16QAM |
| LTE Band 66/4 | 27 | 1711.5 - 1778.5 | 0.14 | 21.33 | 64QAM |
| LTE Band 66/4 | 27 | 1712.5 - 1777.5 | 0.20 | 23.09 | QPSK |
| LTE Band 66/4 | 27 | 1712.5 - 1777.5 | 0.14 | 21.35 | 16QAM |
| LTE Band 66/4 | 27 | 1712.5 - 1777.5 | 0.13 | 21.28 | 64QAM |
| LTE Band 66/4 | 27 | 1715 - 1775 | 0.20 | 23.05 | QPSK |
| LTE Band 66/4 | 27 | 1715 - 1775 | 0.13 | 21.04 | 16QAM |
| LTE Band 66/4 | 27 | 1715 - 1775 | 0.12 | 20.96 | 64QAM |
| LTE Band 66/4 | 27 | 1717.5 - 1772.5 | 0.20 | 22.94 | QPSK |
| LTE Band 66/4 | 27 | 1717.5 - 1772.5 | 0.13 | 21.30 | 16QAM |
| LTE Band 66/4 | 27 | 1717.5 - 1772.5 | 0.14 | 21.34 | 64QAM |
| LTE Band 66/4 | 27 | 1720 - 1770 | 0.20 | 22.91 | QPSK |
| LTE Band 66/4 | 27 | 1720 - 1770 | 0.12 | 20.80 | 16QAM |
| LTE Band 66/4 | 27 | 1720 - 1770 | 0.13 | 21.08 | 64QAM |
| LTE Band 25/2 | 24E | 1850.7 - 1914.3 | 0.10 | 20.19 | QPSK |
| LTE Band 25/2 | 24E | 1850.7 - 1914.3 | 0.09 | 19.47 | 16QAM |
| LTE Band 25/2 | 24E | 1850.7 - 1914.3 | 0.07 | 18.34 | 64QAM |
| LTE Band 25/2 | 24E | 1851.5 - 1913.5 | 0.11 | 20.29 | QPSK |
| LTE Band 25/2 | 24E | 1851.5 - 1913.5 | 0.09 | 19.37 | 16QAM |
| LTE Band 25/2 | 24E | 1851.5 - 1913.5 | 0.07 | 18.40 | 64QAM |
| LTE Band 25/2 | 24E | 1852.5 - 1912.5 | 0.11 | 20.34 | QPSK |
| LTE Band 25/2 | 24E | 1852.5 - 1912.5 | 0.08 | 19.20 | 16QAM |
| LTE Band 25/2 | 24E | 1852.5 - 1912.5 | 0.07 | 18.35 | 64QAM |
| LTE Band 25/2 | 24E | 1855 - 1910 | 0.11 | 20.48 | QPSK |
| LTE Band 25/2 | 24E | 1855 - 1910 | 0.09 | 19.61 | 16QAM |
| LTE Band 25/2 | 24E | 1855 - 1910 | 0.07 | 18.70 | 64QAM |
| LTE Band 25/2 | 24E | 1857.5 - 1907.5 | 0.11 | 20.30 | QPSK |
| LTE Band 25/2 | 24E | 1857.5 - 1907.5 | 0.09 | 19.36 | 16QAM |
| LTE Band 25/2 | 24E | 1857.5 - 1907.5 | 0.07 | 18.46 | 64QAM |
| LTE Band 25/2 | 24E | 1860 - 1905 | 0.10 | 20.05 | QPSK |
| LTE Band 25/2 | 24E | 1860 - 1905 | 0.08 | 19.13 | 16QAM |
| LTE Band 25/2 | 24E | 1860 - 1905 | 0.06 | 18.11 | 64QAM |
| LTE Band 30 | 27 | 2307.5 - 2312.5 | 0.07 | 18.67 | QPSK |
| LTE Band 30 | 27 | 2307.5 - 2312.5 | 0.05 | 16.57 | 16QAM |
| LTE Band 30 | 27 | 2307.5 - 2312.5 | 0.04 | 16.44 | 64QAM |
| LTE Band 30 | 27 | 2310 | 0.07 | 18.54 | QPSK |
| LTE Band 30 | 27 | 2310 | 0.04 | 16.53 | 16QAM |
| LTE Band 30 | 27 | 2310 | 0.05 | 16.64 | 64QAM |
| LTE Band 7 | 27 | 2502.5 - 2567.5 | 0.14 | 21.36 | QPSK |
| LTE Band 7 | 27 | 2502.5 - 2567.5 | 0.12 | 20.78 | 16QAM |
| LTE Band 7 | 27 | 2502.5 - 2567.5 | 0.10 | 19.90 | 64QAM |
| LTE Band 7 | 27 | 2505 - 2565 | 0.12 | 20.87 | QPSK |
| LTE Band 7 | 27 | 2505 - 2565 | 0.10 | 20.16 | 16QAM |
| LTE Band 7 | 27 | 2505 - 2565 | 0.07 | 18.72 | 64QAM |
| LTE Band 7 | 27 | 2507.5 - 2562.5 | 0.13 | 21.22 | QPSK |
| LTE Band 7 | 27 | 2507.5 - 2562.5 | 0.12 | 20.65 | 16QAM |
| LTE Band 7 | 27 | 2507.5 - 2562.5 | 0.08 | 18.95 | 64QAM |
| LTE Band 7 | 27 | 2510 - 2560 | 0.14 | 21.51 | QPSK |
| LTE Band 7 | 27 | 2510 - 2560 | 0.11 | 20.27 | 16QAM |
| LTE Band 7 | 27 | 2510 - 2560 | 0.08 | 19.11 | 64QAM |
| LTE Band 41 | 27 | 2498.5 - 2687.5 | 0.26 | 24.11 | QPSK |
| LTE Band 41 | 27 | 2498.5 - 2687.5 | 0.20 | 23.04 | 16QAM |
| LTE Band 41 | 27 | 2498.5 - 2687.5 | 0.20 | 23.08 | 64QAM |
| LTE Band 41 | 27 | 2501 - 2685 | 0.22 | 23.38 | QPSK |
| LTE Band 41 | 27 | 2501 - 2685 | 0.15 | 21.83 | 16QAM |
| LTE Band 41 | 27 | 2501 - 2685 | 0.12 | 20.93 | 64QAM |
| LTE Band 41 | 27 | 2503.5 - 2682.5 | 0.22 | 23.33 | QPSK |
| LTE Band 41 | 27 | 2503.5 - 2682.5 | 0.15 | 21.62 | 16QAM |
| LTE Band 41 | 27 | 2503.5 - 2682.5 | 0.11 | 20.52 | 64QAM |
| LTE Band 41 | 27 | 2506 - 2680 | 0.23 | 23.62 | QPSK |
| LTE Band 41 | 27 | 2506 - 2680 | 0.11 | 20.44 | 16QAM |
| LTE Band 41 | 27 | 2506 - 2680 | 0.13 | 21.21 | 64QAM |

## EUT Overview (>1GHz)

# 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: ZNFQ910QM**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

**Test Device Serial No.:** 19835, 19810, 19827

## 2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 802.11b/g/n/ac WLAN, 802.11a/n/ac UNII, Bluetooth (1x, EDR, LE), NFC

LTE Band 12 (698 - 716 MHz) overlaps the entire frequency range of LTE Band 17 (704 - 716 MHz). Therefore, test data provided in this report covers Band 17 as well as Band 12.

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.

## 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

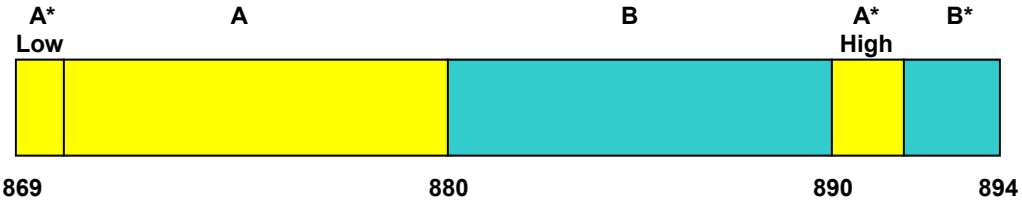
Two paired channels of 11 megahertz each are available for assignment in Block C in the 746-757 MHz and 776-787 MHz bands. In the event that no licenses for two channels in this Block C are assigned based on the results of the first auction in which such licenses were offered because the auction results 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:

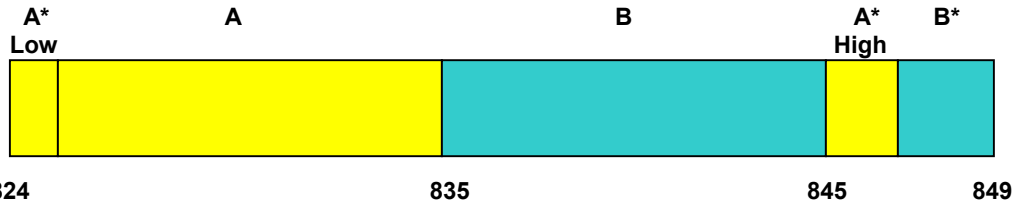
Block A: 698-704 MHz and 728-734 MHz;
Block B: 704-710 MHz and 734-740 MHz; and
Block C: 710-716 MHz and 740-746 MHz.

## 3.4 Cellular - Base Frequency Blocks



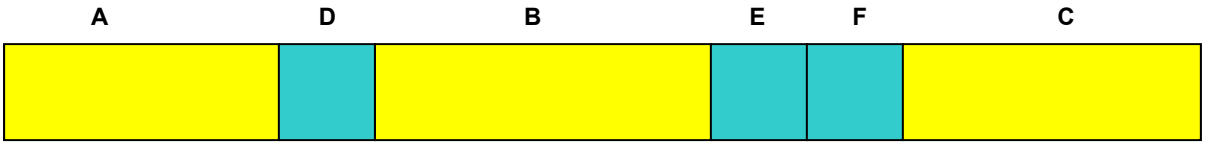

**BLOCK 1: 869 – 880 MHz (A* Low + A)**
**BLOCK 2: 880 – 890 MHz (B)**
**BLOCK 3: 890 – 891.5 MHz (A* High)**
**BLOCK 4: 891.5 – 894 MHz (B*)**

## 3.5 Cellular - Mobile Frequency Blocks



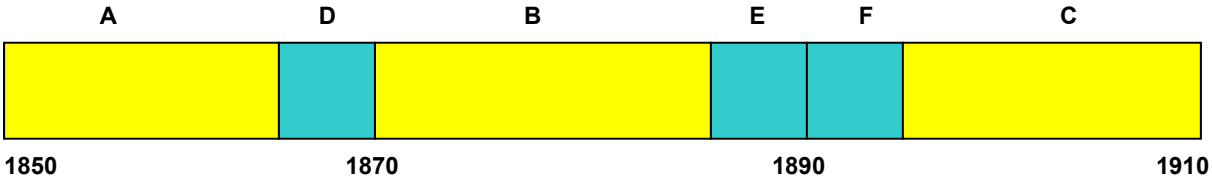

**BLOCK 1: 824 – 835 MHz (A* Low + A)**
**BLOCK 2: 835 – 845 MHz (B)**
**BLOCK 3: 845 – 846.5 MHz (A* High)**
**BLOCK 4: 846.5 – 849 MHz (B*)**

## 3.6 PCS - Base Frequency Blocks



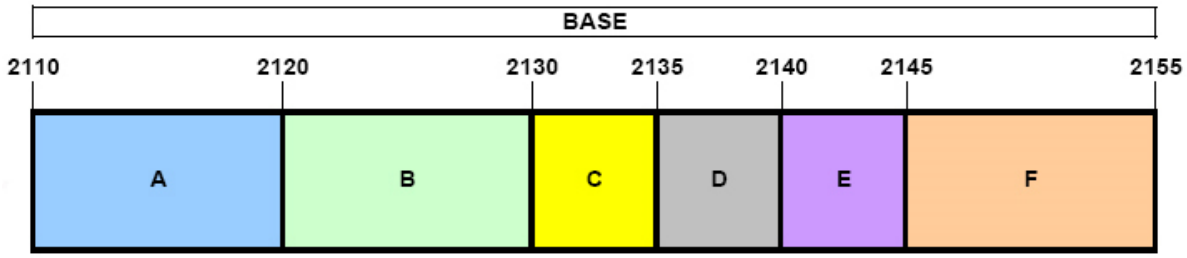

BLOCK 1: 1930 – 1945 MHz (A)
BLOCK 2: 1945 – 1950 MHz (D)
BLOCK 3: 1950 – 1965 MHz (B)
BLOCK 4: 1965 – 1970 MHz (E)
BLOCK 5: 1970 – 1975 MHz (F)
BLOCK 6: 1975 – 1990 MHz (C)

## 3.7 PCS - Mobile Frequency Blocks



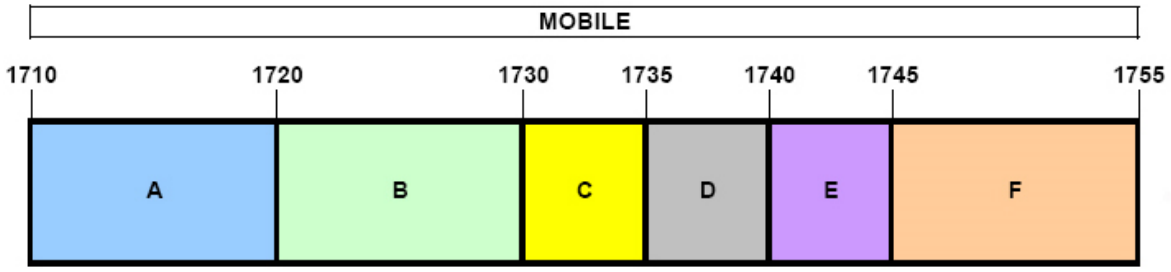

BLOCK 1: 1850 – 1865 MHz (A)
BLOCK 2: 1865 – 1870 MHz (D)
BLOCK 3: 1870 – 1885 MHz (B)
BLOCK 4: 1885 – 1890 MHz (E)
BLOCK 5: 1890 – 1895 MHz (F)
BLOCK 6: 1895 – 1910 MHz (C)

## 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 WCS – Mobile/Base Frequency Blocks

The following frequencies are available for WCS in the 2305-2320 MHz and 2345-2360 MHz bands:

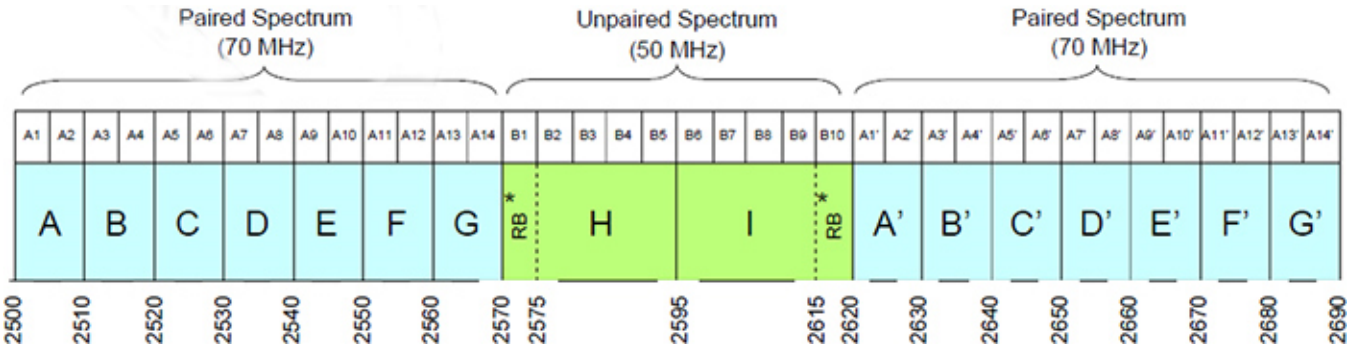
**BLOCK 1: 2305-2310 and 2350-2355 MHz (A)**

**BLOCK 2: 2310-2315 and 2355-236 MHz (B)**

**BLOCK 3: 2315-2320 MHz (C)**

**BLOCK 4: 2345-2350 MHz (D)**

## 3.11 BRS/EBS Frequency Block



## 3.12 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 + 10log$_{10}$(Power $_{[Watts]}$). For Band 7 and 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 + 10log$_{10}$(Power $_{[Watts]}$). For Band 30, the calculated $P_d$ levels are compared to the absolute spurious emission limit of -40dBm which is equivalent to the required minimum attenuation of 70 + 10log$_{10}$(Power $_{[Watts]}$).

# 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 | N9030A | PXA Signal Analyzer (44GHz) | 5/25/2018 | Annual | 5/25/2019 | MY52350166 |
| Com-Power | AL-130 | 9kHz - 30MHz Loop Antenna | 10/10/2017 | Biennial | 10/10/2019 | 121034 |
| EMCO | 3160-09 | Small Horn (18 - 26.5GHz) | 8/9/2018 | Biennial | 8/9/2020 | 135427 |
| EMCO | 3160-10 | Small Horn (26.5 - 40GHz) | 8/9/2018 | Biennial | 8/9/2020 | 130993 |
| ETS Lindgren | 3117 | 1-18 GHz DRG Horn (Medium) | 12/1/2016 | Biennial | 12/1/2018 | 125518 |
| ETS-Lindgren | 3164-10 | Quad Ridge Horn 400MHz - 10000MHz | 12/14/2016 | Biennial | 12/14/2018 | 166283 |
| Huber + Suhner | Sucoflex 102A | 40GHz Radiated Cable Set | 1/23/2018 | Annual | 1/23/2019 | 251425001 |
| Rohde & Schwarz | CMW500 | Radio Communication Tester | 11/3/2017 | Annual | 11/3/2018 | 100976 |
| Rohde & Schwarz | ESU40 | EMI Test Receiver (40GHz) | 8/9/2018 | Annual | 8/9/2019 | 100348 |
| Rohde & Schwarz | TS-PR26 | 18-26.5 GHz Pre-Amplifier | 1/24/2018 | Annual | 1/24/2019 | 100040 |
| Com-Power | TS-PR40 | 26.5-40 GHz Pre-Amplifier | 1/24/2018 | Annual | 1/24/2019 | 100037 |
| Rohde & Schwarz | TS-PR8 | Preamplifier-Antenna SYS; 30MHz-8GHz | 10/19/2017 | Annual | 10/19/2018 | 102324 |
| Rohde & Schwarz | TC-TA18 | Cross-Pol Antenna 400MHz-18GHz | 10/30/2017 | Annual | 10/30/2018 | 101058 |
| Rohde & Schwarz | SFUNIT-Rx | Shielded Filter Unit | 6/18/2018 | Annual | 6/18/2019 | 102134 |
| Schwarzbeck | UHA 9105 | Dipole Antenna (400 - 1GHz) Rx | 4/30/2018 | Biennial | 4/30/2020 | 9105-2404 |
| Seekonk | NC-100 | Torque Wrench 5/16", 8" lbs | N/A | | | 43961 |
| Sunol | JB5 | Bi-Log Antenna (30M - 5GHz) | 4/19/2018 | Biennial | 4/19/2020 | A051107 |

**Table 5-1. Test Equipment**

# 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: ZNFQ910QM

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 26/5) | < 7 Watts max. ERP | RADIATED | PASS | Section 7.2 |
| 27.50(b)(10)<br>27.50(c)(10) | Effective Radiated Power / Equivalent Isotropic Radiated Power (Band 12/17, 13) | < 3 Watts max. ERP | | | Section 7.2 |
| 24.232(c)<br>27.50(h)(2) | Equivalent Isotropic Radiated Power (Band 25/2, 7, 41) | < 2 Watts max. EIRP | | | Section 7.2 |
| 27.50(d)(4) | Equivalent Isotropic Radiated Power (Band 66/4) | < 1 Watts max. EIRP | | | Section 7.2 |
| 27.50(a)(3) | Equivalent Isotropic Radiated Power (Band 30) | < 0.25 Watts max. EIRP | | | Section 7.2 |
| 2.1053<br>22.917(a)<br>24.238(a)<br>27.53(c)<br>27.53(g)<br>27.53(h) | Undesirable Emissions | > 43 + 10log$_{10}$ (P[Watts]) for all out-of-band emissions | | | Section 7.3 |
| 27.53(f) | Undesirable Emissions (Band 13) | < -70 dBW/MHz (for wideband signals)<br>< -80 dBW (for discrete emissions less than 700Hz BW)<br>For all emissions in the band 1559 – 1610 MHz | | | Section 7.3 |
| 27.53(a) | Undesirable Emissions (Band 30) | > 70 + 10log$_{10}$ (P[Watts]) | | | Section 7.3 |
| 27.53(m) | Undesirable Emissions | 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.

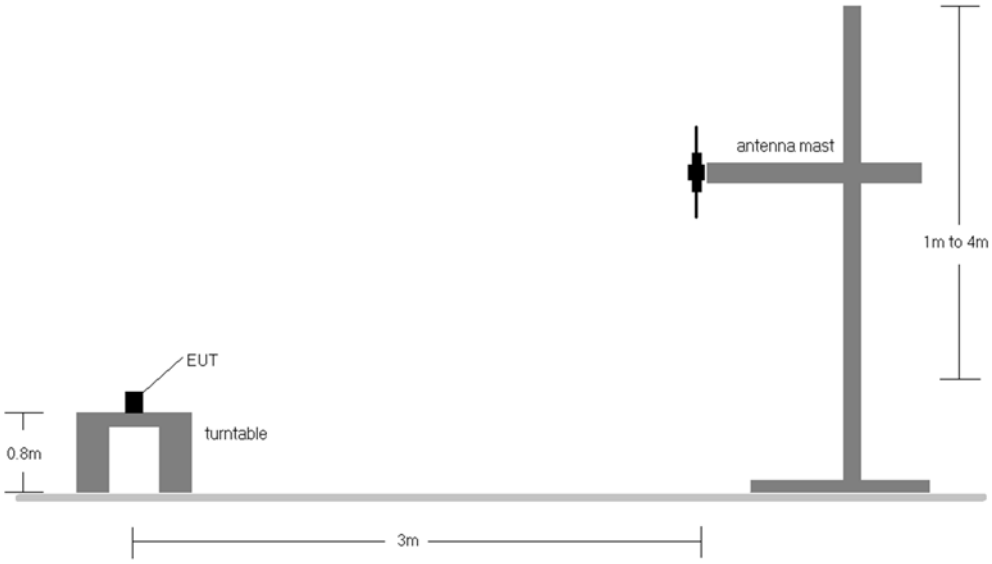



**Figure 7-1. Radiated Test Setup <1GHz**

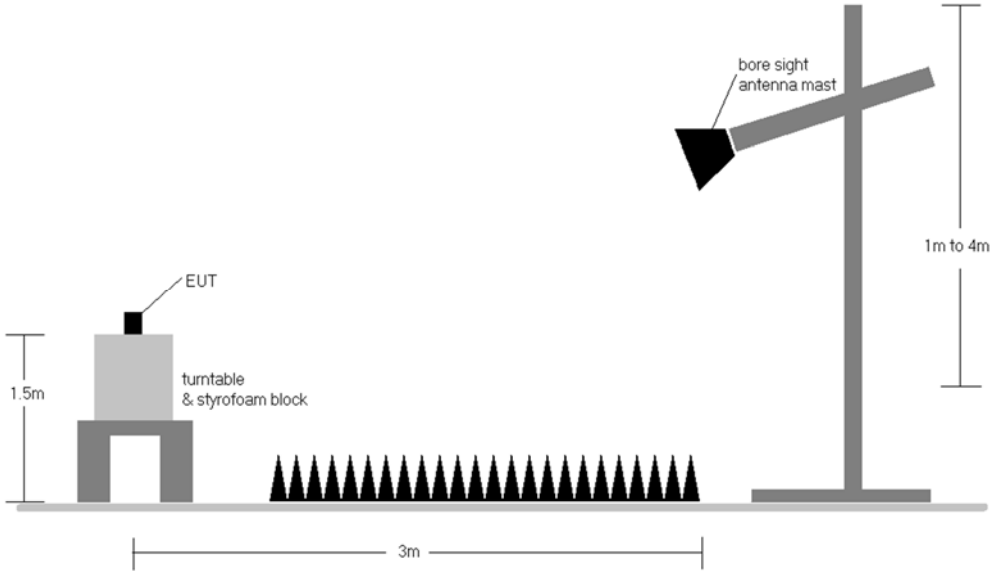



**Figure 7-2. Radiated Test Setup >1GHz**

## 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] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 699.70 | 1.4 | QPSK | H | 150 | 1 | 1 / 0 | 20.05 | 1.10 | 19.00 | 0.079 | 34.77 | -15.77 | 21.15 | 0.130 | 36.99 | -15.84 |
| 707.50 | 1.4 | QPSK | H | 150 | 1 | 1 / 0 | 20.10 | 1.13 | 19.08 | 0.081 | 34.77 | -15.69 | 21.23 | 0.133 | 36.99 | -15.76 |
| 715.30 | 1.4 | QPSK | H | 150 | 1 | 3 / 2 | 20.54 | 1.16 | **19.55** | 0.090 | 34.77 | -15.22 | **21.70** | 0.148 | 36.99 | -15.29 |
| 715.30 | 1.4 | 16-QAM | H | 150 | 1 | 1 / 0 | 19.05 | 1.16 | **18.06** | 0.064 | 34.77 | -16.71 | **20.21** | 0.105 | 36.99 | -16.78 |
| 715.30 | 1.4 | 64-QAM | H | 150 | 1 | 1 / 0 | 17.92 | 1.16 | **16.93** | 0.049 | 34.77 | -17.84 | **19.08** | 0.081 | 36.99 | -17.91 |
| 700.50 | 3 | QPSK | H | 150 | 359 | 1 / 0 | 20.13 | 1.10 | 19.08 | 0.081 | 34.77 | -15.69 | 21.23 | 0.133 | 36.99 | -15.76 |
| 707.50 | 3 | QPSK | H | 150 | 359 | 1 / 0 | 20.59 | 1.13 | 19.57 | 0.091 | 34.77 | -15.20 | 21.72 | 0.149 | 36.99 | -15.27 |
| 714.50 | 3 | QPSK | H | 150 | 359 | 1 / 0 | 20.85 | 1.16 | **19.86** | **0.097** | 34.77 | -14.91 | **22.01** | **0.159** | 36.99 | -14.98 |
| 714.50 | 3 | 16-QAM | H | 150 | 359 | 1 / 0 | 19.22 | 1.16 | **18.23** | 0.067 | 34.77 | -16.54 | **20.38** | 0.109 | 36.99 | -16.61 |
| 714.50 | 3 | 64-QAM | H | 150 | 359 | 1 / 0 | 18.27 | 1.16 | **17.28** | 0.053 | 34.77 | -17.49 | **19.43** | 0.088 | 36.99 | -17.56 |

**Table 7-2. 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] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 701.50 | 5 | QPSK | H | 150 | 1 | 1 / 0 | 20.47 | 1.11 | 19.43 | 0.088 | 34.77 | -15.35 | 21.58 | 0.144 | 36.99 | -15.41 |
| 707.50 | 5 | QPSK | H | 150 | 1 | 1 / 0 | 20.45 | 1.13 | 19.43 | 0.088 | 34.77 | -15.34 | 21.58 | 0.144 | 36.99 | -15.41 |
| 713.50 | 5 | QPSK | H | 150 | 1 | 1 / 0 | 20.83 | 1.15 | **19.83** | 0.096 | 34.77 | -14.94 | **21.98** | 0.158 | 36.99 | -15.01 |
| 713.50 | 5 | 16-QAM | H | 150 | 1 | 1 / 0 | 19.38 | 1.15 | **18.38** | 0.069 | 34.77 | -16.39 | **20.53** | 0.113 | 36.99 | -16.46 |
| 713.50 | 5 | 64-QAM | H | 150 | 1 | 1 / 0 | 18.31 | 1.15 | **17.31** | 0.054 | 34.77 | -17.46 | **19.46** | 0.088 | 36.99 | -17.53 |
| 704.00 | 10 | QPSK | H | 150 | 355 | 1 / 49 | 20.49 | 1.12 | 19.46 | 0.088 | 34.77 | -15.31 | 21.61 | 0.145 | 36.99 | -15.38 |
| 707.50 | 10 | QPSK | H | 150 | 355 | 1 / 49 | 20.05 | 1.13 | 19.03 | 0.080 | 34.77 | -15.74 | 21.18 | 0.131 | 36.99 | -15.81 |
| 711.00 | 10 | QPSK | H | 150 | 353 | 1 / 49 | 20.57 | 1.14 | **19.56** | 0.090 | 34.77 | -15.21 | **21.71** | 0.148 | 36.99 | -15.28 |
| 711.00 | 10 | 16-QAM | H | 150 | 353 | 1 / 49 | 19.11 | 1.14 | **18.10** | 0.065 | 34.77 | -16.67 | **20.25** | 0.106 | 36.99 | -16.74 |
| 711.00 | 10 | 64-QAM | H | 150 | 353 | 1 / 49 | 18.05 | 1.14 | **17.04** | 0.051 | 34.77 | -17.73 | **19.19** | 0.083 | 36.99 | -17.80 |
| 714.50 | 5 | QPSK | V | 150 | 39 | 1 / 0 | 19.29 | 1.16 | 18.30 | 0.068 | 34.77 | -16.47 | 20.45 | 0.111 | 36.99 | -16.54 |

**Table 7-3. ERP Data (Band 17/12)**

| 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 | V | 150 | 82 | 1 / 0 | 21.93 | 1.32 | 21.10 | 0.129 | 34.77 | -13.67 | 23.25 | 0.211 | 36.99 | -13.74 |
| 782.00 | 5 | QPSK | V | 150 | 82 | 1 / 0 | 22.43 | 1.33 | 21.61 | 0.145 | 34.77 | -13.16 | 23.76 | 0.238 | 36.99 | -13.23 |
| 784.50 | 5 | QPSK | V | 150 | 82 | 1 / 0 | 22.63 | 1.34 | **21.82** | **0.152** | 34.77 | -12.95 | **23.97** | **0.249** | 36.99 | -13.02 |
| 784.50 | 5 | 16-QAM | V | 150 | 82 | 1 / 0 | 20.98 | 1.34 | **20.17** | 0.104 | 34.77 | -14.60 | **22.32** | 0.171 | 36.99 | -14.67 |
| 784.50 | 5 | 64-QAM | V | 150 | 82 | 1 / 0 | 19.99 | 1.34 | **19.18** | 0.083 | 34.77 | -15.59 | **21.33** | 0.136 | 36.99 | -15.66 |
| 782.00 | 10 | QPSK | V | X90 | 150 | 1 / 0 | 22.14 | 1.33 | **21.32** | 0.135 | 34.77 | -13.45 | **23.47** | 0.222 | 36.99 | -13.52 |
| 782.00 | 10 | 16-QAM | V | X90 | 150 | 1 / 0 | 20.94 | 1.33 | **20.12** | 0.103 | 34.77 | -14.65 | **22.27** | 0.169 | 36.99 | -14.72 |
| 782.00 | 10 | 64-QAM | V | X90 | 150 | 1 / 0 | 20.26 | 1.33 | **19.44** | 0.088 | 34.77 | -15.33 | **21.59** | 0.144 | 36.99 | -15.40 |
| 784.50 | 5 | QPSK | H | 150 | 10 | 1 / 0 | 21.49 | 1.33 | 20.67 | 0.117 | 34.77 | -14.10 | 22.82 | 0.191 | 36.99 | -14.17 |

**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 | 150 | 8 | 1 / 5 | 18.56 | 1.50 | 17.91 | 0.062 | 38.45 | -20.54 | 20.06 | 0.101 | 40.61 | -20.55 |
| 836.50 | 1.4 | QPSK | H | 150 | 5 | 1 / 5 | 19.32 | 1.50 | **18.67** | 0.074 | 38.45 | -19.78 | **20.82** | 0.121 | 40.61 | -19.79 |
| 848.30 | 1.4 | QPSK | H | 150 | 8 | 1 / 0 | 18.58 | 1.50 | 17.93 | 0.062 | 38.45 | -20.52 | 20.08 | 0.102 | 40.61 | -20.53 |
| 836.50 | 1.4 | 16-QAM | H | 150 | 5 | 1 / 5 | 17.80 | 1.50 | **17.15** | 0.052 | 38.45 | -21.30 | **19.30** | 0.085 | 40.61 | -21.31 |
| 848.30 | 1.4 | 64-QAM | H | 150 | 8 | 1 / 0 | 16.76 | 1.50 | **16.11** | 0.041 | 38.45 | -22.34 | **18.26** | 0.067 | 40.61 | -22.35 |
| 825.50 | 3 | QPSK | H | 150 | 362 | 1 / 14 | 18.60 | 1.50 | 17.95 | 0.062 | 38.45 | -20.50 | 20.10 | 0.102 | 40.61 | -20.51 |
| 836.50 | 3 | QPSK | H | 150 | 9 | 1 / 14 | 18.94 | 1.50 | **18.29** | 0.067 | 38.45 | -20.16 | **20.44** | 0.111 | 40.61 | -20.17 |
| 847.50 | 3 | QPSK | H | 150 | 358 | 1 / 0 | 18.48 | 1.50 | 17.83 | 0.061 | 38.45 | -20.62 | 19.98 | 0.100 | 40.61 | -20.63 |
| 847.50 | 3 | 16-QAM | H | 150 | 358 | 1 / 0 | 17.58 | 1.50 | **16.93** | 0.049 | 38.45 | -21.52 | **19.08** | 0.081 | 40.61 | -21.53 |
| 847.50 | 3 | 64-QAM | H | 150 | 358 | 1 / 0 | 16.48 | 1.50 | **15.83** | 0.038 | 38.45 | -22.62 | **17.98** | 0.063 | 40.61 | -22.63 |
| 826.50 | 5 | QPSK | H | 150 | 1 | 1 / 24 | 19.14 | 1.50 | 18.49 | 0.071 | 38.45 | -19.96 | 20.64 | 0.116 | 40.61 | -19.97 |
| 836.50 | 5 | QPSK | H | 150 | 8 | 1 / 24 | 19.85 | 1.50 | **19.20** | **0.083** | 38.45 | -19.25 | **21.35** | **0.136** | 40.61 | -19.26 |
| 846.50 | 5 | QPSK | H | 150 | 7 | 1 / 0 | 19.10 | 1.50 | 18.45 | 0.070 | 38.45 | -20.00 | 20.60 | 0.115 | 40.61 | -20.01 |
| 836.50 | 5 | 16-QAM | H | 150 | 8 | 1 / 24 | 18.37 | 1.50 | **17.72** | 0.059 | 38.45 | -20.73 | **19.87** | 0.097 | 40.61 | -20.74 |
| 836.50 | 5 | 64-QAM | H | 150 | 8 | 1 / 24 | 17.42 | 1.50 | **16.77** | 0.048 | 38.45 | -21.68 | **18.92** | 0.078 | 40.61 | -21.69 |
| 829.00 | 10 | QPSK | H | 150 | 3 | 1 / 49 | 18.40 | 1.50 | 17.75 | 0.060 | 38.45 | -20.70 | 19.90 | 0.098 | 40.61 | -20.71 |
| 836.50 | 10 | QPSK | H | 150 | 10 | 1 / 49 | 18.52 | 1.50 | **17.87** | 0.061 | 38.45 | -20.58 | **20.02** | 0.100 | 40.61 | -20.59 |
| 844.00 | 10 | QPSK | H | 150 | 258 | 1 / 0 | 18.47 | 1.50 | 17.82 | 0.061 | 38.45 | -20.63 | 19.97 | 0.099 | 40.61 | -20.64 |
| 836.50 | 10 | 16-QAM | H | 150 | 10 | 1 / 49 | 17.71 | 1.50 | **17.06** | 0.051 | 38.45 | -21.39 | **19.21** | 0.083 | 40.61 | -21.40 |
| 829.00 | 10 | 64-QAM | H | 150 | 3 | 1 / 49 | 16.37 | 1.50 | **15.72** | 0.037 | 38.45 | -22.73 | **17.87** | 0.061 | 40.61 | -22.74 |
| 836.50 | 1.4 | QPSK | V | 150 | 104 | 1 / 24 | 16.09 | 1.50 | 15.44 | 0.035 | 38.45 | -23.01 | 17.59 | 0.057 | 40.61 | -23.02 |

**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 | 150 | 2 | 1 / 74 | 18.55 | 1.50 | 17.90 | 0.062 | 38.45 | -20.55 | 20.05 | 0.101 | 40.61 | -20.56 |
| 836.50 | 15 | QPSK | H | 150 | 6 | 1 / 0 | 18.25 | 1.50 | 17.60 | 0.058 | 38.45 | -20.85 | 19.75 | 0.094 | 40.61 | -20.86 |
| 841.50 | 15 | QPSK | H | 150 | 10 | 1 / 0 | 18.88 | 1.50 | **18.23** | 0.067 | 38.45 | -20.22 | **20.38** | 0.109 | 40.61 | -20.23 |
| 841.50 | 15 | 16-QAM | H | 150 | 10 | 1 / 0 | 17.55 | 1.50 | **16.90** | 0.049 | 38.45 | -21.55 | **19.05** | 0.080 | 40.61 | -21.56 |
| 841.50 | 15 | 64-QAM | H | 150 | 10 | 1 / 0 | 16.63 | 1.50 | **15.98** | 0.040 | 38.45 | -22.47 | **18.13** | 0.065 | 40.61 | -22.48 |

**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 | V | 150 | 313 | 3 / 2 | 17.74 | 5.56 | **23.30** | **0.214** | 30.00 | -6.70 |
| 1745.00 | 1.4 | QPSK | V | 150 | 313 | 3 / 2 | 16.83 | 5.32 | 22.15 | 0.164 | 30.00 | -7.85 |
| 1779.30 | 1.4 | QPSK | V | 150 | 313 | 3 / 2 | 16.81 | 5.09 | 21.90 | 0.155 | 30.00 | -8.10 |
| 1710.70 | 1.4 | 16-QAM | V | 150 | 313 | 3 / 2 | 15.84 | 5.56 | **21.40** | 0.138 | 30.00 | -8.60 |
| 1710.70 | 1.4 | 64-QAM | V | 150 | 313 | 3 / 2 | 15.88 | 5.56 | **21.44** | 0.139 | 30.00 | -8.56 |
| 1711.50 | 3 | QPSK | V | 150 | 313 | 1 / 0 | 17.63 | 5.55 | **23.18** | 0.208 | 30.00 | -6.82 |
| 1745.00 | 3 | QPSK | V | 150 | 313 | 1 / 0 | 16.77 | 5.32 | 22.09 | 0.162 | 30.00 | -7.91 |
| 1778.50 | 3 | QPSK | V | 150 | 313 | 1 / 0 | 16.93 | 5.10 | 22.03 | 0.159 | 30.00 | -7.97 |
| 1711.50 | 3 | 16-QAM | V | 150 | 313 | 1 / 0 | 15.74 | 5.55 | **21.29** | 0.135 | 30.00 | -8.71 |
| 1711.50 | 3 | 64-QAM | V | 150 | 313 | 1 / 0 | 15.78 | 5.55 | **21.33** | 0.136 | 30.00 | -8.67 |
| 1712.50 | 5 | QPSK | V | 150 | 313 | 1 / 0 | 17.54 | 5.55 | **23.09** | 0.203 | 30.00 | -6.91 |
| 1745.00 | 5 | QPSK | V | 150 | 313 | 1 / 0 | 16.79 | 5.32 | 22.11 | 0.163 | 30.00 | -7.89 |
| 1777.50 | 5 | QPSK | V | 150 | 313 | 1 / 0 | 16.71 | 5.10 | 21.81 | 0.152 | 30.00 | -8.19 |
| 1712.50 | 5 | 16-QAM | V | 150 | 313 | 1 / 0 | 15.80 | 5.55 | **21.35** | 0.136 | 30.00 | -8.65 |
| 1712.50 | 5 | 64-QAM | V | 150 | 313 | 1 / 0 | 15.73 | 5.55 | **21.28** | 0.134 | 30.00 | -8.72 |
| 1715.00 | 10 | QPSK | V | 150 | 311 | 1 / 0 | 17.52 | 5.53 | **23.05** | 0.202 | 30.00 | -6.95 |
| 1745.00 | 10 | QPSK | V | 150 | 315 | 1 / 0 | 16.39 | 5.32 | 21.71 | 0.148 | 30.00 | -8.29 |
| 1775.00 | 10 | QPSK | V | 150 | 314 | 1 / 0 | 16.35 | 5.12 | 21.47 | 0.140 | 30.00 | -8.53 |
| 1715.00 | 10 | 16-QAM | V | 150 | 311 | 1 / 0 | 15.51 | 5.53 | **21.04** | 0.127 | 30.00 | -8.96 |
| 1745.00 | 10 | 16-QAM | V | 150 | 315 | 1 / 0 | 14.41 | 5.32 | 19.73 | 0.094 | 30.00 | -10.27 |
| 1715.00 | 10 | 64-QAM | V | 150 | 311 | 1 / 0 | 15.43 | 5.53 | **20.96** | 0.125 | 30.00 | -9.04 |
| 1745.00 | 10 | 64-QAM | V | 150 | 315 | 1 / 0 | 14.39 | 5.32 | 19.71 | 0.094 | 30.00 | -10.29 |
| 1717.50 | 15 | QPSK | V | 150 | 310 | 1 / 0 | 17.43 | 5.51 | **22.94** | 0.197 | 30.00 | -7.06 |
| 1745.00 | 15 | QPSK | V | 150 | 310 | 1 / 0 | 16.66 | 5.32 | 21.98 | 0.158 | 30.00 | -8.02 |
| 1772.50 | 15 | QPSK | V | 150 | 310 | 1 / 0 | 16.77 | 5.14 | 21.91 | 0.155 | 30.00 | -8.09 |
| 1717.50 | 15 | 16-QAM | V | 150 | 310 | 1 / 0 | 15.79 | 5.51 | **21.30** | 0.135 | 30.00 | -8.70 |
| 1717.50 | 15 | 64-QAM | V | 150 | 310 | 1 / 0 | 15.83 | 5.51 | **21.34** | 0.136 | 30.00 | -8.66 |
| 1720.00 | 20 | QPSK | V | 150 | 317 | 1 / 0 | 17.42 | 5.49 | **22.91** | 0.196 | 30.00 | -7.09 |
| 1745.00 | 20 | QPSK | V | 150 | 317 | 1 / 0 | 16.60 | 5.32 | 21.92 | 0.156 | 30.00 | -8.08 |
| 1770.00 | 20 | QPSK | V | 150 | 317 | 1 / 0 | 16.53 | 5.15 | 21.68 | 0.147 | 30.00 | -8.32 |
| 1720.00 | 20 | 16-QAM | V | 150 | 317 | 1 / 0 | 15.31 | 5.49 | **20.80** | 0.120 | 30.00 | -9.20 |
| 1720.00 | 20 | 64-QAM | V | 150 | 317 | 1 / 0 | 15.59 | 5.49 | **21.08** | 0.128 | 30.00 | -8.92 |
| 1710.70 | 1.4 | QPSK | H | 150 | 95 | 3 / 2 | 16.38 | 5.56 | 21.94 | 0.156 | 30.00 | -8.06 |

**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 | 150 | 330 | 1 / 0 | 15.37 | 4.82 | **20.19** | 0.104 | 33.01 | -12.82 |
| 1882.50 | 1.4 | QPSK | H | 150 | 330 | 1 / 0 | 15.19 | 4.73 | 19.92 | 0.098 | 33.01 | -13.09 |
| 1914.30 | 1.4 | QPSK | H | 150 | 330 | 1 / 0 | 15.04 | 4.68 | 19.72 | 0.094 | 33.01 | -13.29 |
| 1850.70 | 1.4 | 16-QAM | H | 150 | 330 | 1 / 0 | 14.65 | 4.82 | **19.47** | 0.088 | 33.01 | -13.54 |
| 1850.70 | 1.4 | 64-QAM | H | 150 | 330 | 1 / 0 | 13.52 | 4.82 | **18.34** | 0.068 | 33.01 | -14.67 |
| 1851.50 | 3 | QPSK | H | 150 | 330 | 1 / 0 | 15.47 | 4.82 | **20.29** | 0.107 | 33.01 | -12.72 |
| 1882.50 | 3 | QPSK | H | 150 | 330 | 1 / 0 | 15.34 | 4.73 | 20.07 | 0.102 | 33.01 | -12.94 |
| 1913.50 | 3 | QPSK | H | 150 | 330 | 1 / 0 | 15.29 | 4.68 | 19.97 | 0.099 | 33.01 | -13.04 |
| 1851.50 | 3 | 16-QAM | H | 150 | 330 | 1 / 0 | 14.55 | 4.82 | **19.37** | 0.086 | 33.01 | -13.64 |
| 1851.50 | 3 | 64-QAM | H | 150 | 330 | 1 / 0 | 13.58 | 4.82 | **18.40** | 0.069 | 33.01 | -14.61 |
| 1852.50 | 5 | QPSK | H | 150 | 327 | 1 / 0 | 15.53 | 4.81 | **20.34** | 0.108 | 33.01 | -12.67 |
| 1882.50 | 5 | QPSK | H | 150 | 327 | 1 / 0 | 15.24 | 4.73 | 19.97 | 0.099 | 33.01 | -13.04 |
| 1912.50 | 5 | QPSK | H | 150 | 327 | 1 / 0 | 15.32 | 4.68 | 20.00 | 0.100 | 33.01 | -13.01 |
| 1852.50 | 5 | 16-QAM | H | 150 | 327 | 1 / 0 | 14.39 | 4.81 | **19.20** | 0.083 | 33.01 | -13.81 |
| 1852.50 | 5 | 64-QAM | H | 150 | 327 | 1 / 0 | 13.54 | 4.81 | **18.35** | 0.068 | 33.01 | -14.66 |
| 1855.00 | 10 | QPSK | H | 150 | 328 | 1 / 0 | 15.67 | 4.81 | **20.48** | **0.112** | 33.01 | -12.53 |
| 1882.50 | 10 | QPSK | H | 150 | 328 | 1 / 0 | 15.45 | 4.73 | 20.18 | 0.104 | 33.01 | -12.83 |
| 1910.00 | 10 | QPSK | H | 150 | 328 | 1 / 0 | 15.08 | 4.68 | 19.76 | 0.095 | 33.01 | -13.25 |
| 1855.00 | 10 | 16-QAM | H | 150 | 328 | 1 / 0 | 14.80 | 4.81 | **19.61** | 0.091 | 33.01 | -13.40 |
| 1855.00 | 10 | 64-QAM | H | 150 | 328 | 1 / 0 | 13.89 | 4.81 | **18.70** | 0.074 | 33.01 | -14.31 |
| 1857.50 | 15 | QPSK | H | 150 | 328 | 1 / 0 | 15.50 | 4.80 | **20.30** | 0.107 | 33.01 | -12.71 |
| 1882.50 | 15 | QPSK | H | 150 | 328 | 1 / 0 | 15.22 | 4.73 | 19.95 | 0.099 | 33.01 | -13.06 |
| 1907.50 | 15 | QPSK | H | 150 | 328 | 1 / 0 | 15.31 | 4.68 | 19.99 | 0.100 | 33.01 | -13.02 |
| 1857.50 | 15 | 16-QAM | H | 150 | 328 | 1 / 0 | 14.56 | 4.80 | **19.36** | 0.086 | 33.01 | -13.65 |
| 1857.50 | 15 | 64-QAM | H | 150 | 328 | 1 / 0 | 13.66 | 4.80 | **18.46** | 0.070 | 33.01 | -14.55 |
| 1860.00 | 20 | QPSK | H | 150 | 324 | 1 / 0 | 15.26 | 4.79 | **20.05** | 0.101 | 33.01 | -12.96 |
| 1882.50 | 20 | QPSK | H | 150 | 324 | 1 / 0 | 14.89 | 4.73 | 19.62 | 0.092 | 33.01 | -13.39 |
| 1905.00 | 20 | QPSK | H | 150 | 324 | 1 / 0 | 15.04 | 4.68 | 19.72 | 0.094 | 33.01 | -13.29 |
| 1860.00 | 20 | 16-QAM | H | 150 | 324 | 1 / 0 | 14.34 | 4.79 | **19.13** | 0.082 | 33.01 | -13.88 |
| 1860.00 | 20 | 64-QAM | H | 150 | 324 | 1 / 0 | 13.32 | 4.79 | **18.11** | 0.065 | 33.01 | -14.90 |
| 1855.00 | 10 | QPSK | V | 150 | 78 | 1 / 0 | 13.77 | 4.81 | 18.58 | 0.072 | 33.01 | -14.43 |

**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] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2307.50 | 5 | QPSK | V | 150 | 68 | 1 / 24 | 12.77 | 5.74 | 18.51 | 0.071 | 23.98 | -5.47 |
| 2312.50 | 5 | QPSK | V | 150 | 63 | 1 / 24 | 12.93 | 5.74 | **18.67** | **0.074** | 23.98 | -5.31 |
| 2312.50 | 5 | 16-QAM | V | 150 | 63 | 1 / 24 | 10.83 | 5.74 | **16.57** | 0.045 | 23.98 | -7.41 |
| 2312.50 | 5 | 64-QAM | V | 150 | 63 | 1 / 24 | 10.70 | 5.74 | 16.44 | 0.044 | 23.98 | -7.54 |
| 2310.00 | 10 | QPSK | V | 150 | 68 | 1 / 49 | 12.80 | 5.74 | **18.54** | 0.071 | 23.98 | -5.44 |
| 2310.00 | 10 | 16-QAM | V | 150 | 68 | 1 / 49 | 10.79 | 5.74 | 16.53 | 0.045 | 23.98 | -7.45 |
| 2310.00 | 10 | 64-QAM | V | 150 | 68 | 1 / 49 | 10.90 | 5.74 | 16.64 | 0.046 | 23.98 | -7.34 |
| 2312.50 | 5 | QPSK | H | 150 | 256 | 1 / 24 | 11.25 | 5.74 | 16.99 | 0.050 | 23.98 | -6.99 |

**Table 7-9. EIRP Data (Band 30)**

| 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] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2502.50 | 5 | QPSK | V | 150 | 82 | 1 / 12 | 14.45 | 5.74 | 20.19 | 0.104 | 33.01 | -12.82 |
| 2535.00 | 5 | QPSK | V | 150 | 100 | 1 / 0 | 14.58 | 5.86 | 20.44 | 0.111 | 33.01 | -12.57 |
| 2567.50 | 5 | QPSK | V | 150 | 242 | 1 / 0 | 15.38 | 5.98 | **21.36** | 0.137 | 33.01 | -11.65 |
| 2567.50 | 5 | 16-QAM | V | 150 | 242 | 1 / 0 | 14.80 | 5.98 | **20.78** | 0.120 | 33.01 | -12.23 |
| 2567.50 | 5 | 64-QAM | V | 150 | 242 | 1 / 0 | 13.92 | 5.98 | **19.90** | 0.098 | 33.01 | -13.11 |
| 2505.00 | 10 | QPSK | V | 150 | 85 | 1 / 0 | 14.59 | 5.75 | 20.34 | 0.108 | 33.01 | -12.67 |
| 2535.00 | 10 | QPSK | V | 150 | 77 | 1 / 49 | 14.11 | 5.86 | 19.97 | 0.099 | 33.01 | -13.04 |
| 2565.00 | 10 | QPSK | V | 150 | 255 | 1 / 0 | 14.90 | 5.97 | **20.87** | 0.122 | 33.01 | -12.14 |
| 2565.00 | 10 | 16-QAM | V | 150 | 255 | 1 / 0 | 14.19 | 5.97 | **20.16** | 0.104 | 33.01 | -12.85 |
| 2565.00 | 10 | 64-QAM | V | 150 | 255 | 1 / 0 | 12.75 | 5.97 | **18.72** | 0.074 | 33.01 | -14.29 |
| 2507.50 | 15 | QPSK | V | 150 | 109 | 1 / 0 | 14.78 | 5.76 | 20.54 | 0.113 | 33.01 | -12.47 |
| 2535.00 | 15 | QPSK | V | 150 | 84 | 1 / 36 | 14.07 | 5.86 | 19.93 | 0.098 | 33.01 | -13.08 |
| 2562.50 | 15 | QPSK | V | 150 | 245 | 1 / 0 | 15.26 | 5.96 | **21.22** | 0.132 | 33.01 | -11.79 |
| 2562.50 | 15 | 16-QAM | V | 150 | 245 | 1 / 0 | 14.69 | 5.96 | **20.65** | 0.116 | 33.01 | -12.36 |
| 2562.50 | 15 | 64-QAM | V | 150 | 245 | 1 / 0 | 12.99 | 5.96 | **18.95** | 0.079 | 33.01 | -14.06 |
| 2510.00 | 20 | QPSK | V | 150 | 131 | 1 / 0 | 15.33 | 5.77 | 21.10 | 0.129 | 33.01 | -11.91 |
| 2535.00 | 20 | QPSK | V | 150 | 131 | 1 / 0 | 14.87 | 5.86 | 20.73 | 0.118 | 33.01 | -12.28 |
| 2560.00 | 20 | QPSK | V | 150 | 239 | 1 / 0 | 15.56 | 5.95 | **21.51** | **0.142** | 33.01 | -11.50 |
| 2560.00 | 20 | 16-QAM | V | 150 | 239 | 1 / 0 | 14.32 | 5.95 | **20.27** | 0.106 | 33.01 | -12.74 |
| 2560.00 | 20 | 64-QAM | V | 150 | 239 | 1 / 0 | 13.16 | 5.95 | **19.11** | 0.082 | 33.01 | -13.90 |
| 2560.00 | 20 | QPSK | H | 150 | 280 | 1 / 0 | 15.08 | 5.95 | 21.03 | 0.127 | 33.01 | -11.98 |

**Table 7-10. EIRP Data (Band 7)**

| 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 | V | 150 | 85 | 1 / 12 | 17.11 | 5.73 | 22.84 | 0.192 | 33.01 | -10.17 |
| 2502.50 | 5 | QPSK | V | 150 | 85 | 1 / 12 | 18.37 | 5.74 | **24.11** | **0.258** | 33.01 | -8.90 |
| 2593.00 | 5 | QPSK | V | 150 | 259 | 1 / 12 | 17.17 | 6.07 | 23.24 | 0.211 | 33.01 | -9.77 |
| 2687.50 | 5 | QPSK | V | 150 | 49 | 1 / 12 | 15.95 | 6.48 | 22.43 | 0.175 | 33.01 | -10.58 |
| 2502.50 | 5 | 16-QAM | V | 150 | 85 | 1 / 12 | 17.30 | 5.74 | **23.04** | 0.201 | 33.01 | -9.97 |
| 2502.50 | 5 | 64-QAM | V | 150 | 85 | 1 / 12 | 14.70 | 5.74 | 20.44 | 0.111 | 33.01 | -12.57 |
| 2501.00 | 10 | QPSK | V | 150 | 87 | 1 / 49 | 16.95 | 5.73 | 22.68 | 0.186 | 33.01 | -10.33 |
| 2505.00 | 10 | QPSK | V | 150 | 87 | 1 / 49 | 16.93 | 5.75 | 22.68 | 0.185 | 33.01 | -10.33 |
| 2593.00 | 10 | QPSK | V | 150 | 259 | 1 / 25 | 17.31 | 6.07 | **23.38** | 0.218 | 33.01 | -9.63 |
| 2685.00 | 10 | QPSK | V | 150 | 45 | 1 / 49 | 16.00 | 6.47 | 22.47 | 0.177 | 33.01 | -10.54 |
| 2593.00 | 10 | 16-QAM | V | 150 | 259 | 1 / 25 | 14.24 | 6.07 | 20.31 | 0.107 | 33.01 | -12.70 |
| 2593.00 | 10 | 64-QAM | V | 150 | 259 | 1 / 25 | 11.66 | 6.07 | 17.73 | 0.059 | 33.01 | -15.28 |
| 2503.50 | 15 | QPSK | V | 150 | 86 | 1 / 36 | 16.05 | 5.74 | 21.79 | 0.151 | 33.01 | -11.22 |
| 2507.50 | 15 | QPSK | V | 150 | 86 | 1 / 74 | 17.57 | 5.76 | **23.33** | 0.215 | 33.01 | -9.68 |
| 2593.00 | 15 | QPSK | V | 150 | 266 | 1 / 36 | 17.03 | 6.07 | 23.10 | 0.204 | 33.01 | -9.91 |
| 2682.50 | 15 | QPSK | V | 150 | 124 | 1 / 0 | 15.98 | 6.46 | 22.44 | 0.176 | 33.01 | -10.57 |
| 2507.50 | 15 | 16-QAM | V | 150 | 86 | 1 / 74 | 15.86 | 5.76 | **21.62** | 0.145 | 33.01 | -11.39 |
| 2507.50 | 15 | 64-QAM | V | 150 | 86 | 1 / 74 | 14.76 | 5.76 | **20.52** | 0.113 | 33.01 | -12.49 |
| 2506.00 | 20 | QPSK | V | 150 | 86 | 1 / 50 | 17.87 | 5.75 | **23.62** | 0.230 | 33.01 | -9.39 |
| 2510.00 | 20 | QPSK | V | 150 | 86 | 1 / 0 | 17.76 | 5.77 | 23.53 | 0.225 | 33.01 | -9.48 |
| 2593.00 | 20 | QPSK | V | 150 | 259 | 1 / 50 | 17.17 | 6.07 | 23.24 | 0.211 | 33.01 | -9.77 |
| 2680.00 | 20 | QPSK | V | 150 | 44 | 1 / 50 | 16.16 | 6.45 | 22.61 | 0.182 | 33.01 | -10.40 |
| 2510.00 | 20 | 16-QAM | V | 150 | 86 | 1 / 0 | 9.96 | 5.77 | 15.73 | 0.037 | 33.01 | -17.28 |
| 2510.00 | 20 | 64-QAM | V | 150 | 86 | 1 / 0 | 12.58 | 5.77 | 18.35 | 0.068 | 33.01 | -14.66 |
| 2502.50 | 5 | QPSK | H | 150 | 272 | 1 / 12 | 17.28 | 6.07 | 23.35 | 0.216 | 33.01 | -9.66 |

**Table 7-11. EIRP Data (Band 41)**

## 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.

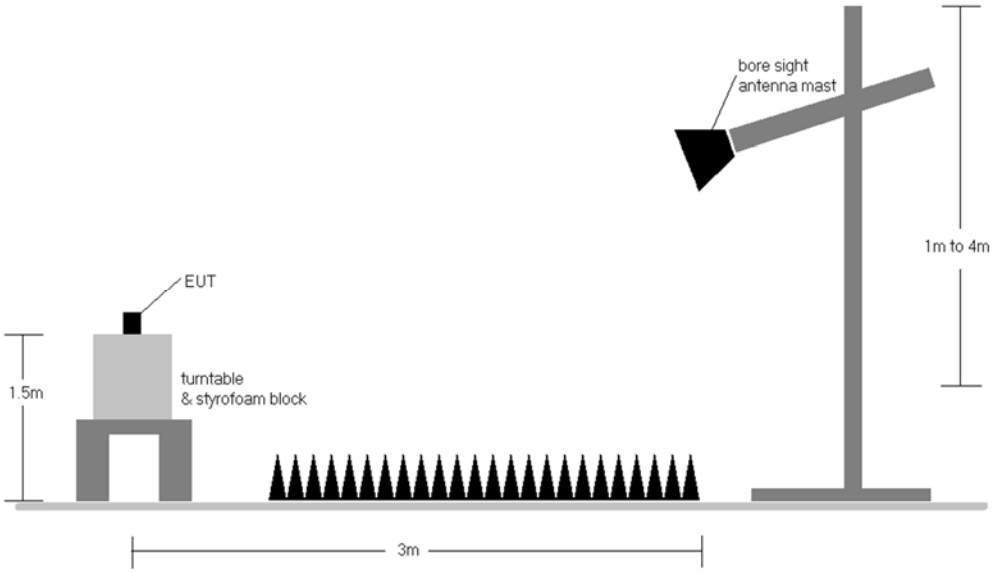



**Figure 7-3. Test Instrument & Measurement Setup**

## 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.

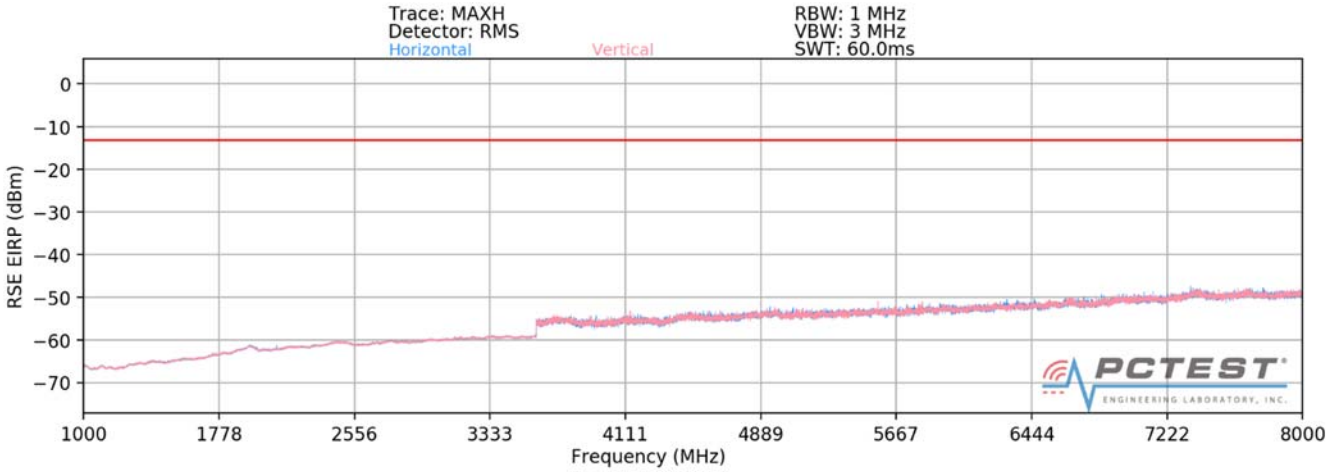
2) This unit was tested with its standard battery.

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 17/12




**Plot 7-1. Radiated Spurious Plot above 1GHz (Band 17/12)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 701.50 | MHz |
| CHANNEL: | 23035 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 1403.00 | V | 150 | 124 | -70.52 | 3.78 | -66.74 | -53.7 |
| 2104.50 | V | - | - | -69.17 | 4.80 | -64.36 | -51.4 |
| 2806.00 | V | - | - | -68.52 | 5.64 | -62.88 | -49.9 |

**Table 7-12. Radiated Spurious Data (Band 17/12 – Low Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 707.50 | MHz |
| CHANNEL: | 23095 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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 | V | 150 | 163 | -69.13 | 3.90 | -65.23 | -52.2 |
| 2122.50 | V | 150 | 355 | -66.84 | 4.78 | -62.06 | -49.1 |
| 2830.00 | V | - | - | -68.51 | 5.73 | -62.78 | -49.8 |
| 3537.50 | V | - | - | -68.29 | 6.54 | -61.74 | -48.7 |

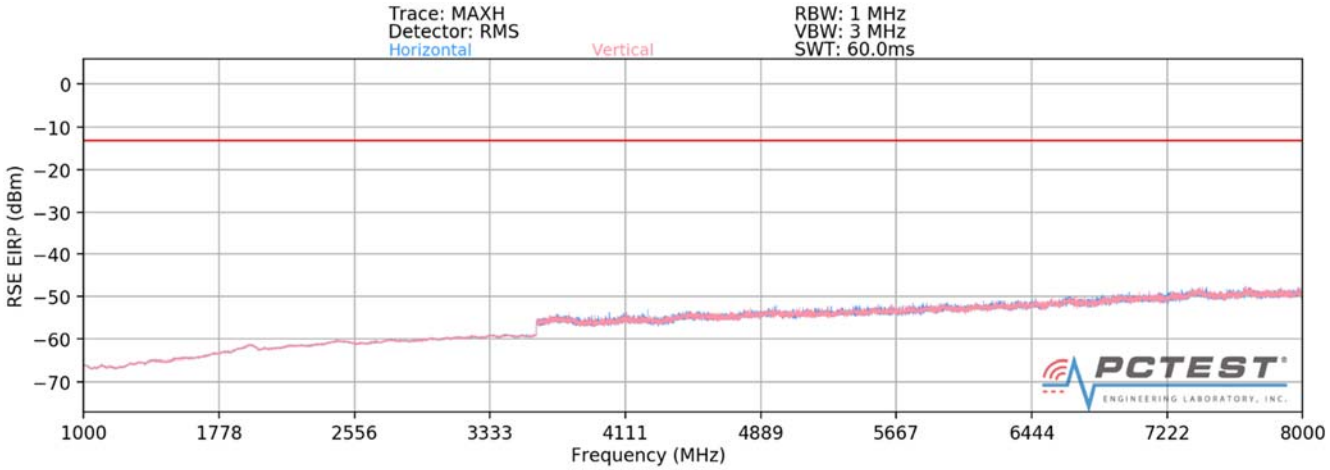
**Table 7-13. Radiated Spurious Data (Band 17/12 – Mid Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 713.50 | MHz |
| CHANNEL: | 23155 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 1427.00 | V | - | - | -70.84 | 4.03 | -66.82 | -53.8 |
| 2140.50 | V | - | - | -69.51 | 4.77 | -64.74 | -51.7 |

**Table 7-14. Radiated Spurious Data (Band 17/12 – High Channel)**

## Band 13




**Plot 7-2. Radiated Spurious Plot above 1GHz (Band 13)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 779.50 | MHz |
| CHANNEL: | 23205 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 2338.50 | H | 150 | 330 | -64.66 | 3.96 | -60.70 | -47.7 |
| 3118.00 | H | - | - | -66.94 | 5.34 | -61.60 | -48.6 |
| 3897.50 | H | - | - | -67.16 | 7.03 | -60.13 | -47.1 |

**Table 7-15. Radiated Spurious Data (Band 13 – Low Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 782.00 | MHz |
| CHANNEL: | 23230 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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 | 150 | 327 | -62.69 | 3.97 | -58.72 | -45.7 |
| 3128.00 | H | - | - | -66.77 | 5.36 | -61.41 | -48.4 |
| 3910.00 | H | - | - | -67.12 | 7.06 | -60.06 | -47.1 |

**Table 7-16. Radiated Spurious Data (Band 13 – Mid Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 784.50 | MHz |
| CHANNEL: | 23255 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 2353.50 | H | 127 | 357 | -63.71 | 3.99 | -59.72 | -46.7 |
| 3138.00 | H | - | - | -66.69 | 5.37 | -61.32 | -48.3 |
| 3922.50 | H | - | - | -67.23 | 7.10 | -60.12 | -47.1 |

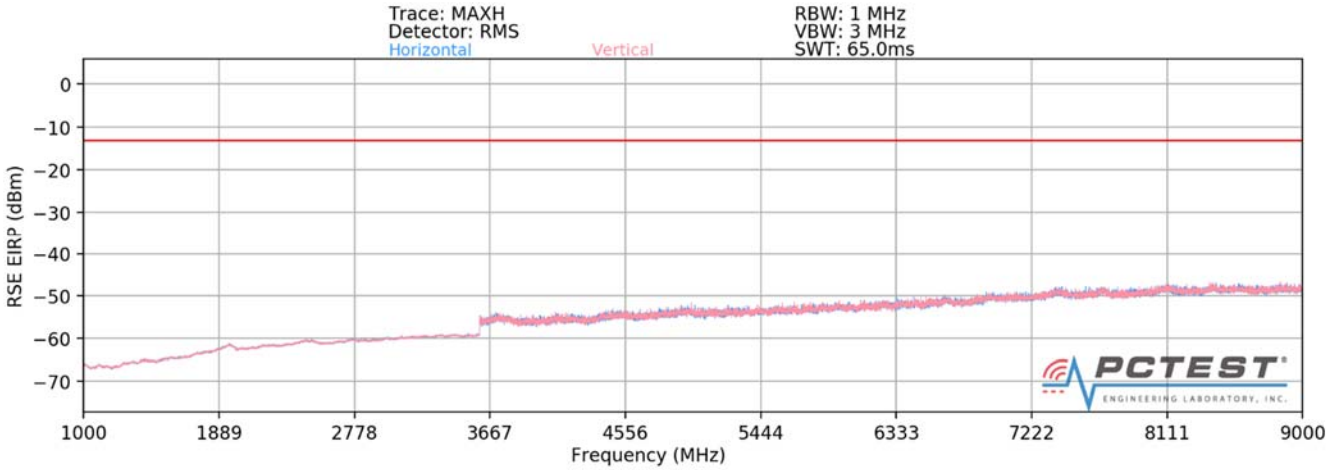
**Table 7-17. Radiated Spurious Data (Band 13 – High Channel)**

| | | |
|---|---|---|
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.00 | 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] |
|---|---|---|---|---|---|---|---|
| 1559.00 | H | - | - | -69.48 | 3.50 | -65.98 | -26.0 |
| 1564.00 | H | - | - | -70.17 | 3.50 | -66.67 | -26.7 |
| 1569.00 | H | - | - | -69.46 | 3.51 | -65.96 | -26.0 |

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

## Band 26/5




**Plot 7-3. Radiated Spurious Plot above 1GHz (Band 26/5)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 826.50 | MHz |
| CHANNEL: | 26815 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 1653.00 | H | - | - | -71.56 | 4.82 | -66.74 | -53.7 |
| 2479.50 | H | - | - | -68.11 | 5.01 | -63.10 | -50.1 |

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

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 836.50 | MHz |
| CHANNEL: | 26915 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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 | 17 | 228 | -69.31 | 4.86 | -64.45 | -51.4 |
| 2509.50 | H | 359 | 159 | -66.54 | 5.10 | -61.44 | -48.4 |
| 3346.00 | H | - | - | -67.96 | 6.25 | -61.71 | -48.7 |
| 4182.50 | H | - | - | -68.81 | 7.67 | -61.14 | -48.1 |

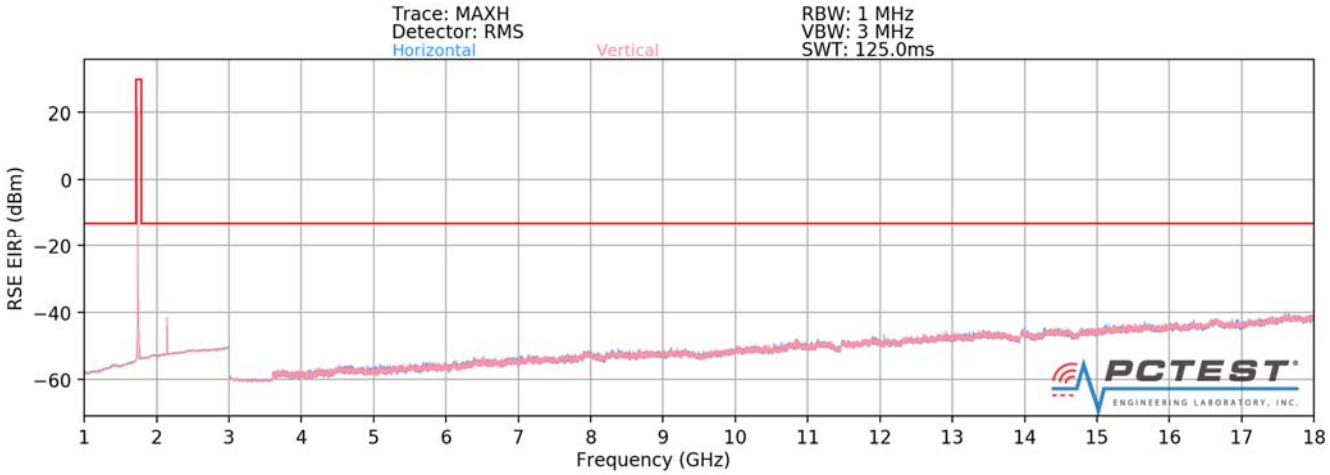
**Table 7-20. Radiated Spurious Data (Band 26/5 – Mid Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 846.50 | MHz |
| CHANNEL: | 27015 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 1693.00 | H | 351 | 227 | -69.63 | 4.90 | -64.72 | -51.7 |
| 2539.50 | H | - | - | -68.57 | 5.25 | -63.33 | -50.3 |
| 3386.00 | H | - | - | -68.39 | 6.36 | -62.02 | -49.0 |

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

## Band 66/4




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

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 1710.70 | MHz |
| CHANNEL: | 131979 | |
| 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] |
|---|---|---|---|---|---|---|---|
| 3421.40 | H | 150 | 247 | -64.91 | 6.16 | -58.75 | -45.7 |
| 5132.10 | H | - | - | -72.16 | 8.63 | -63.53 | -50.5 |
| 6842.80 | H | - | - | -66.06 | 8.75 | -57.31 | -44.3 |

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

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 1745.00 | MHz |
| CHANNEL: | 132322 | |
| 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] |
|---|---|---|---|---|---|---|---|
| 3490.00 | H | - | - | -67.92 | 6.29 | -61.63 | -48.6 |
| 5235.00 | H | 46 | 148 | -65.38 | 8.68 | -56.69 | -43.7 |
| 6980.00 | H | - | - | -65.24 | 8.71 | -56.53 | -43.5 |
| 8725.00 | H | - | - | -64.87 | 9.39 | -55.48 | -42.5 |

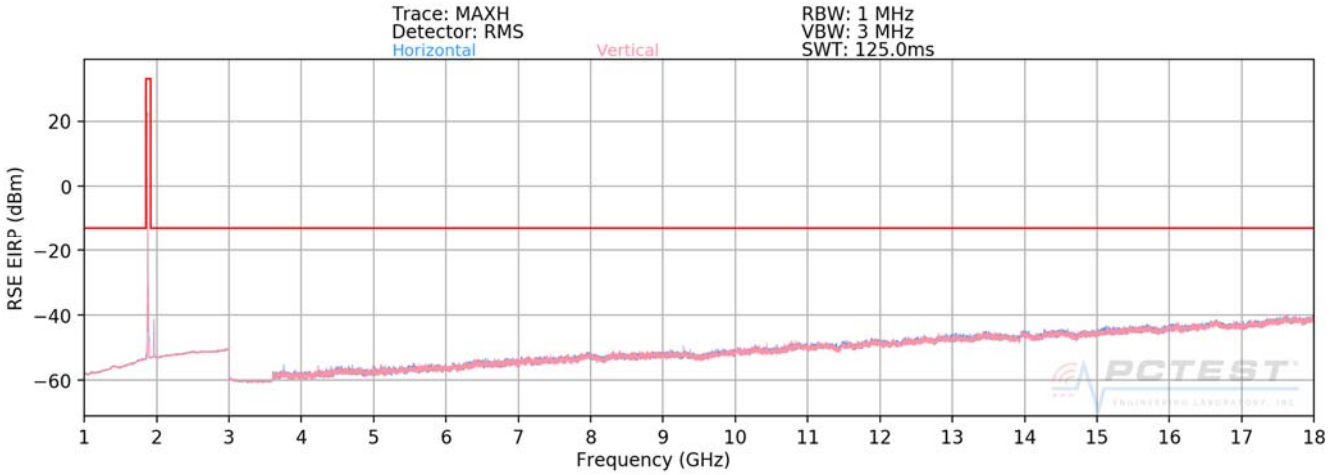
**Table 7-23. Radiated Spurious Data (Band 66/4 – Mid Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 1779.30 | MHz |
| CHANNEL: | 132665 | |
| 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] |
|---|---|---|---|---|---|---|---|
| 3558.60 | H | - | - | -67.11 | 6.29 | -60.81 | -47.8 |
| 5337.90 | H | - | - | -68.50 | 8.68 | -59.82 | -46.8 |

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

## Band 25/2




**Plot 7-5. Radiated Spurious Plot above 1GHz (Band 25/2)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 1855.00 | MHz |
| CHANNEL: | 26090 | |
| 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] |
|---|---|---|---|---|---|---|---|
| 3710.00 | H | 169 | 46 | -64.26 | 6.54 | -57.71 | -44.7 |
| 5565.00 | H | - | - | -66.03 | 8.70 | -57.33 | -44.3 |
| 7420.00 | H | - | - | -62.07 | 8.38 | -53.69 | -40.7 |

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

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 1882.50 | MHz |
| CHANNEL: | 26365 | |
| 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] |
|---|---|---|---|---|---|---|---|
| 3765.00 | H | 133 | 36 | -64.42 | 6.67 | -57.75 | -44.8 |
| 5647.50 | H | - | - | -66.42 | 8.80 | -57.62 | -44.6 |
| 7530.00 | H | - | - | -61.98 | 8.43 | -53.55 | -40.6 |

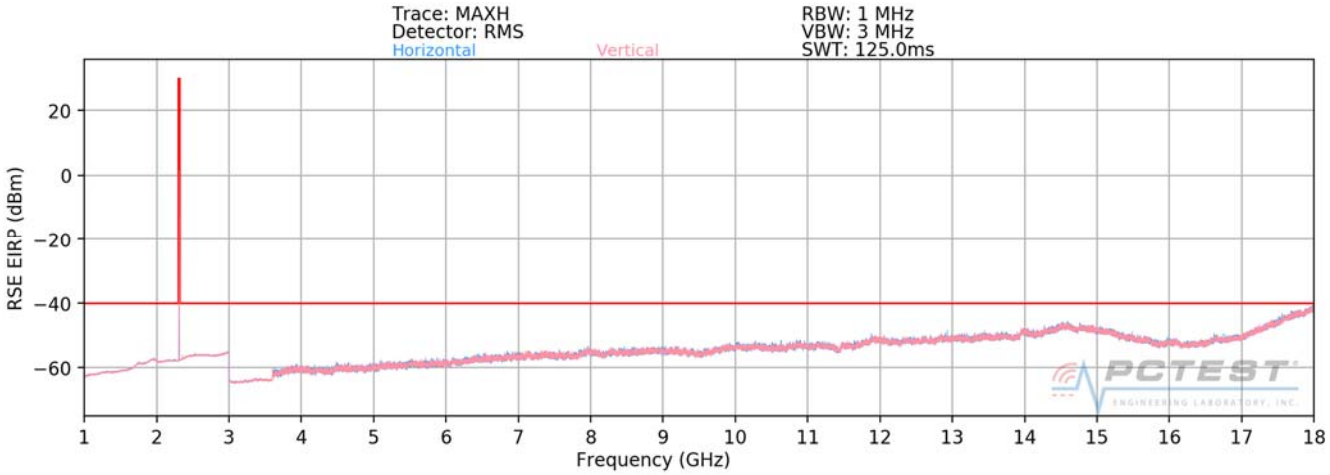
**Table 7-26. Radiated Spurious Data (Band 25/2 – Mid Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 1910.00 | MHz |
| CHANNEL: | 26640 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 10.0 | MHz |
| DISTANCE: | 3 | meters |
| LIMIT: | -13 | dBm |

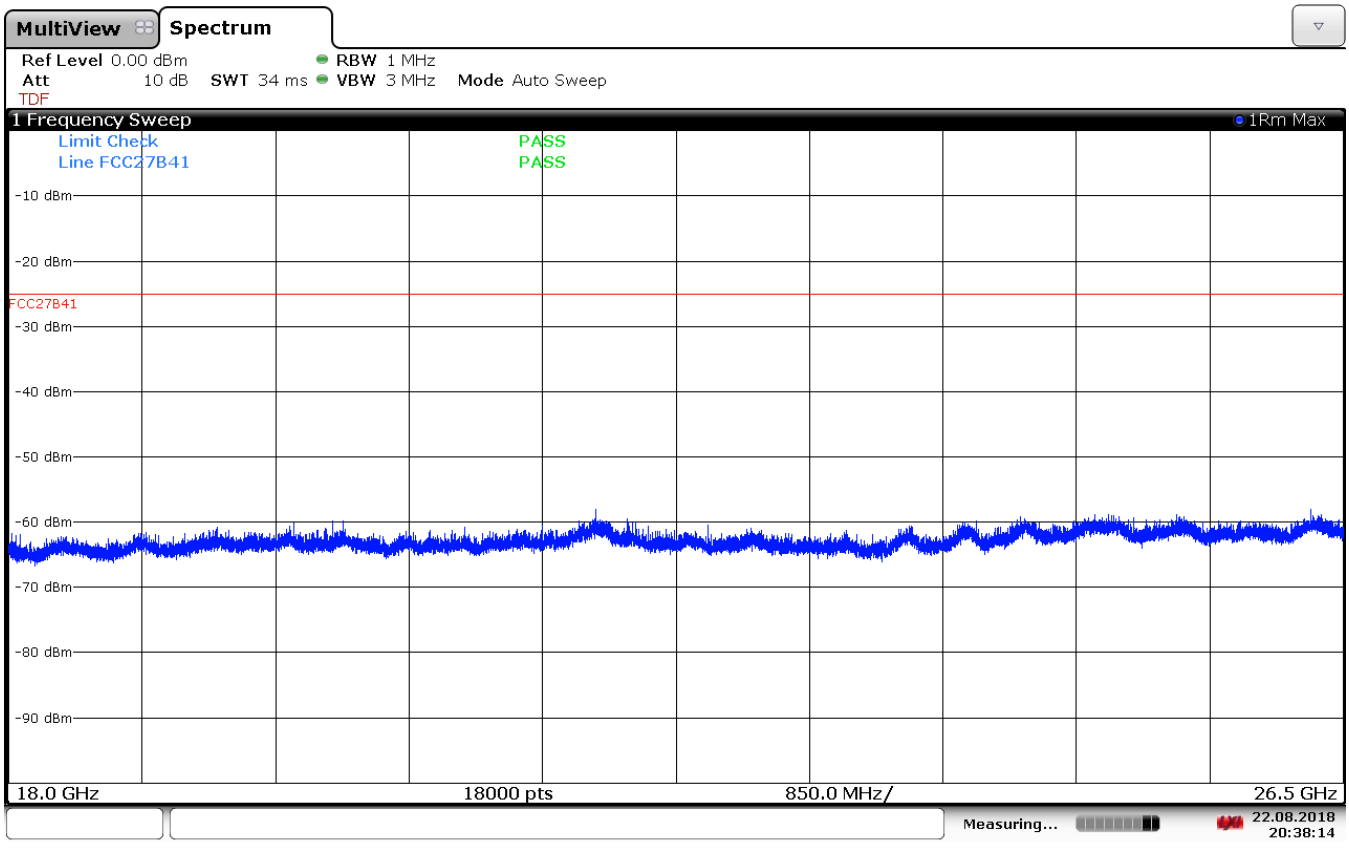
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| 3820.00 | H | - | - | -66.39 | 6.97 | -59.43 | -46.4 |
| 5730.00 | H | - | - | -66.14 | 8.74 | -57.40 | -44.4 |
| 7640.00 | H | - | - | -62.61 | 8.51 | -54.10 | -41.1 |

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

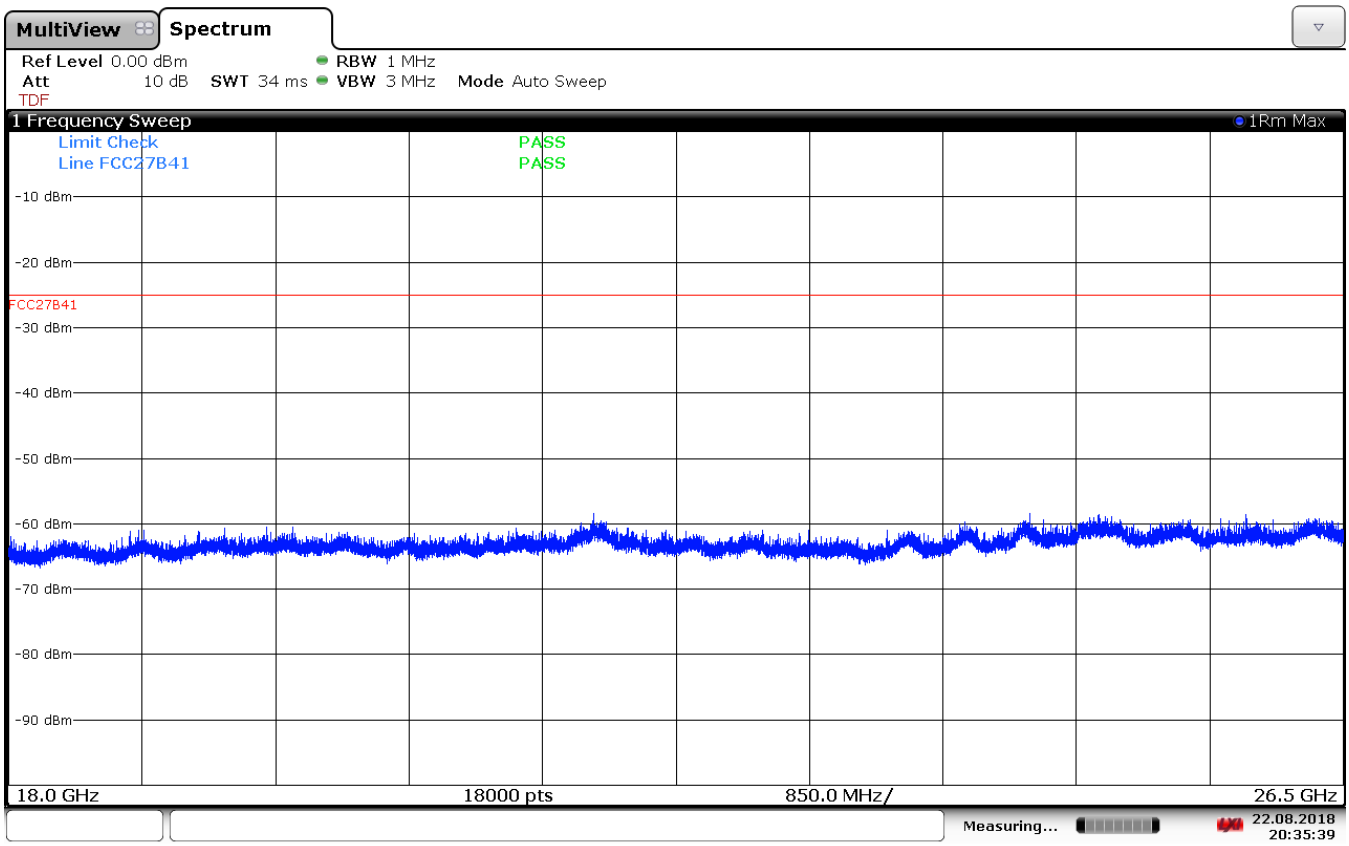
## Band 30




**Plot 7-6. Radiated Spurious Plot 1GHz - 18GHz (Band 30)**




**Plot 7-7. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30) – Horzontial**




**Plot 7-8. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30) - Vertical**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2307.50 | MHz |
| CHANNEL: | 27685 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | MHz |
| DISTANCE: | 3 | meters |
| LIMIT: | -40 | 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] |
|---|---|---|---|---|---|---|---|
| 4615.00 | V | 182 | 33 | -67.65 | 8.22 | -59.42 | -19.4 |
| 6922.50 | V | - | - | -66.31 | 8.69 | -57.62 | -17.6 |

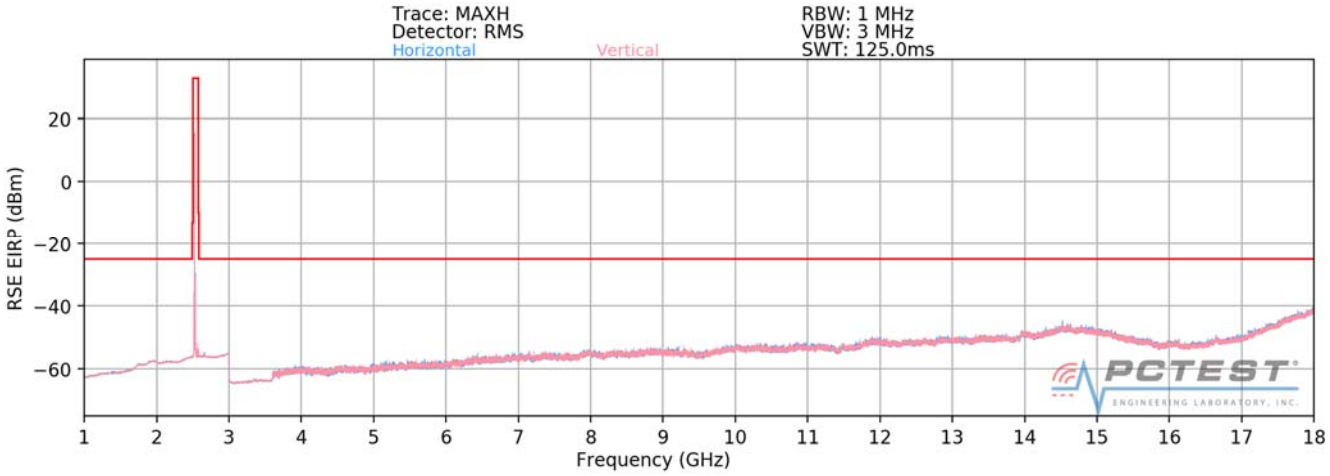
**Table 7-28. Radiated Spurious Data (Band 30 – Low Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2312.50 | MHz |
| CHANNEL: | 27735 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | MHz |
| DISTANCE: | 3 | meters |
| LIMIT: | -40 | dBm |

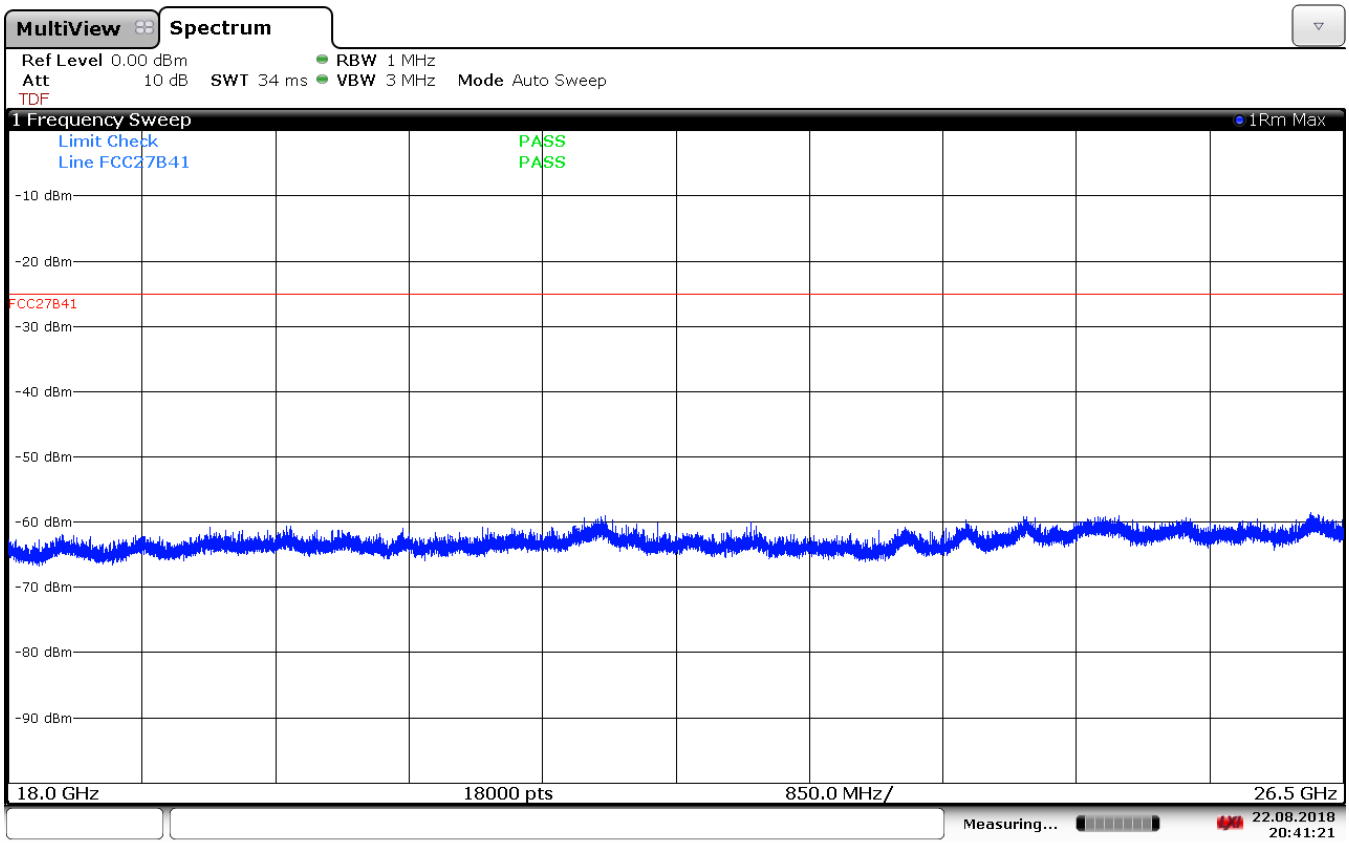
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| 4625.00 | V | 117 | 22 | -67.47 | 8.24 | -59.23 | -19.2 |
| 6937.50 | V | - | - | -65.89 | 8.68 | -57.21 | -17.2 |

**Table 7-29. Radiated Spurious Data (Band 30 – High Channel)**

## Band 7

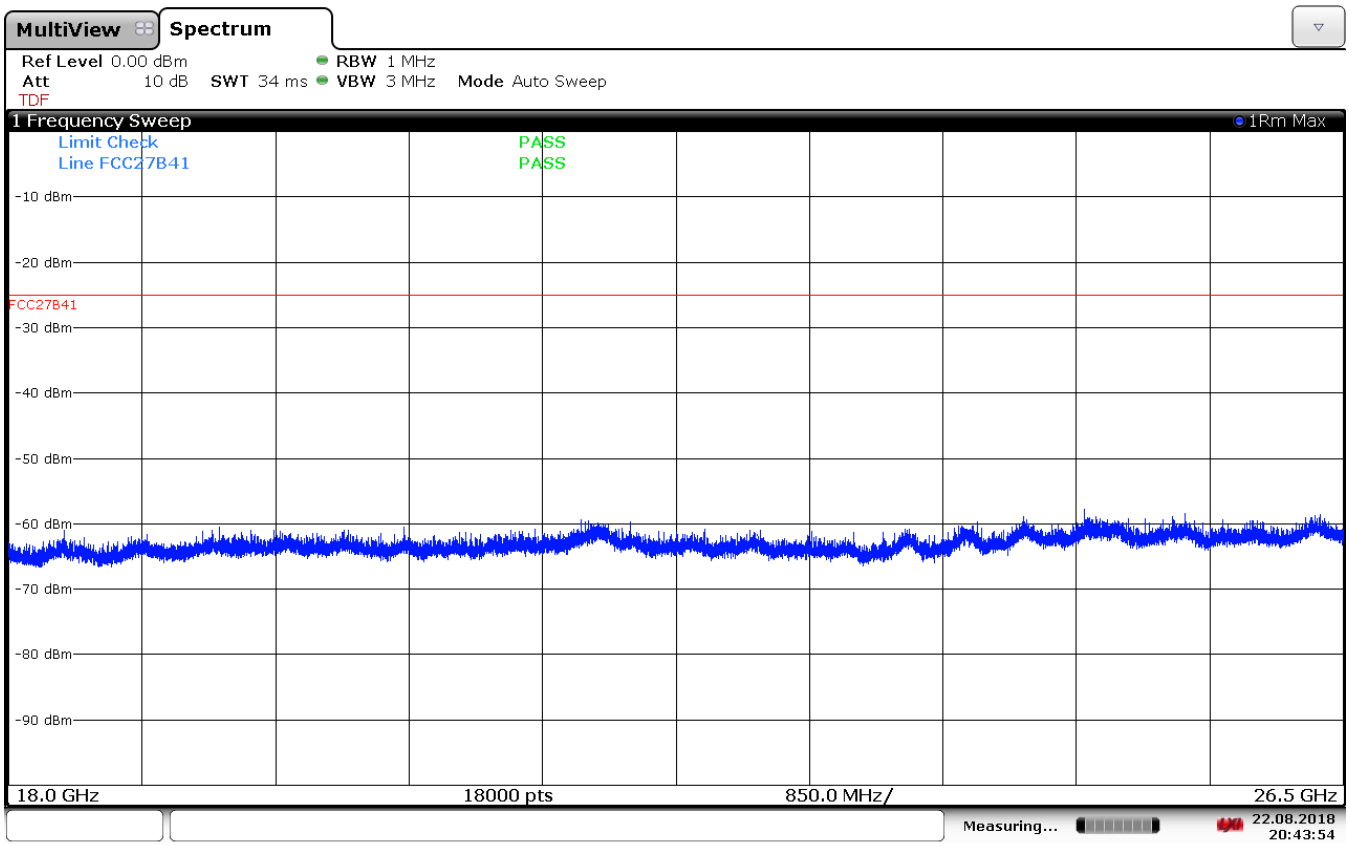



**Plot 7-9. Radiated Spurious Plot 1GHz - 18GHz (Band 7)**




**20:41:21 22.08.2018**

**Plot 7-10. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7) - Horzontial**




**Plot 7-11. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7) - Vertical**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2510.00 | MHz |
| CHANNEL: | 20850 | |
| 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] |
|---|---|---|---|---|---|---|---|
| 5020.00 | V | 192 | 52 | -65.64 | 8.53 | -57.11 | -32.1 |
| 7530.00 | V | - | - | -65.22 | 8.43 | -56.79 | -31.8 |
| 10040.00 | V | - | - | -63.93 | 9.82 | -54.11 | -29.1 |

**Table 7-30. Radiated Spurious Data (Band 7 – Low Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2535.00 | MHz |
| CHANNEL: | 21100 | |
| 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] |
|---|---|---|---|---|---|---|---|
| 5070.00 | V | 116 | 42 | -64.50 | 8.57 | -55.93 | -30.9 |
| 7605.00 | V | - | - | -65.01 | 8.45 | -56.55 | -31.6 |
| 10140.00 | V | - | - | -65.44 | 9.76 | -55.69 | -30.7 |

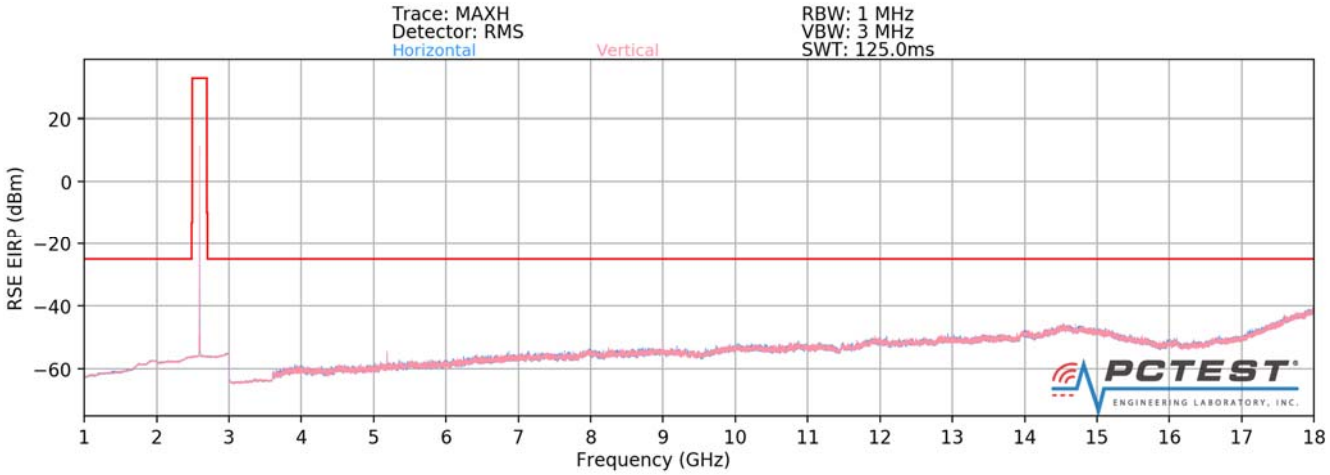
**Table 7-31. Radiated Spurious Data (Band 7 – Mid Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2560.00 | MHz |
| CHANNEL: | 21350 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 20.0 | MHz |
| DISTANCE: | 3 | meters |
| LIMIT: | -25 | dBm |

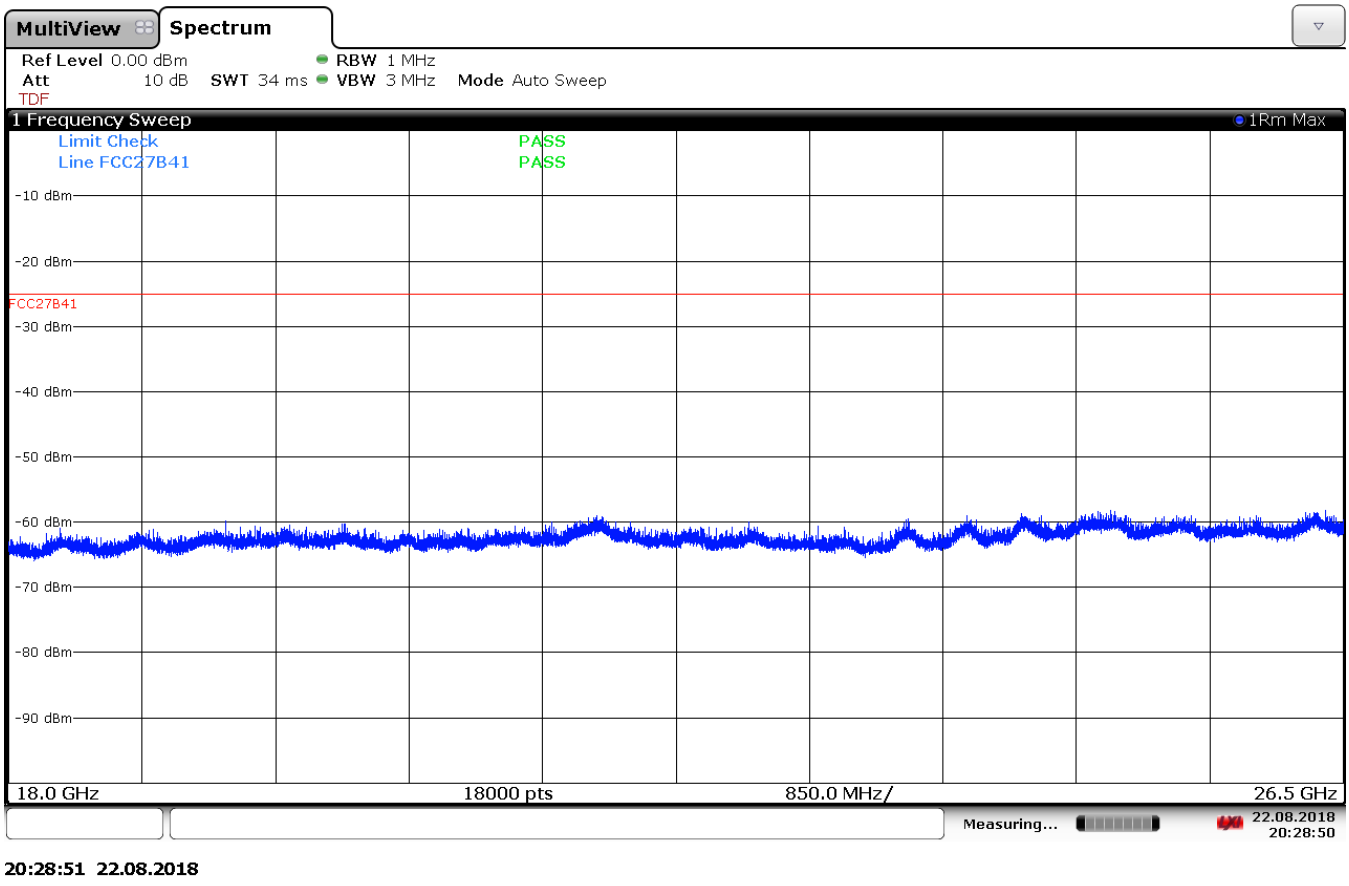
| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| 5120.00 | V | 102 | 42 | -64.70 | 8.63 | -56.07 | -31.1 |
| 7680.00 | V | - | - | -64.53 | 8.55 | -55.98 | -31.0 |
| 10240.00 | V | - | - | -63.75 | 9.63 | -54.12 | -29.1 |

**Table 7-32. Radiated Spurious Data (Band 7 – High Channel)**

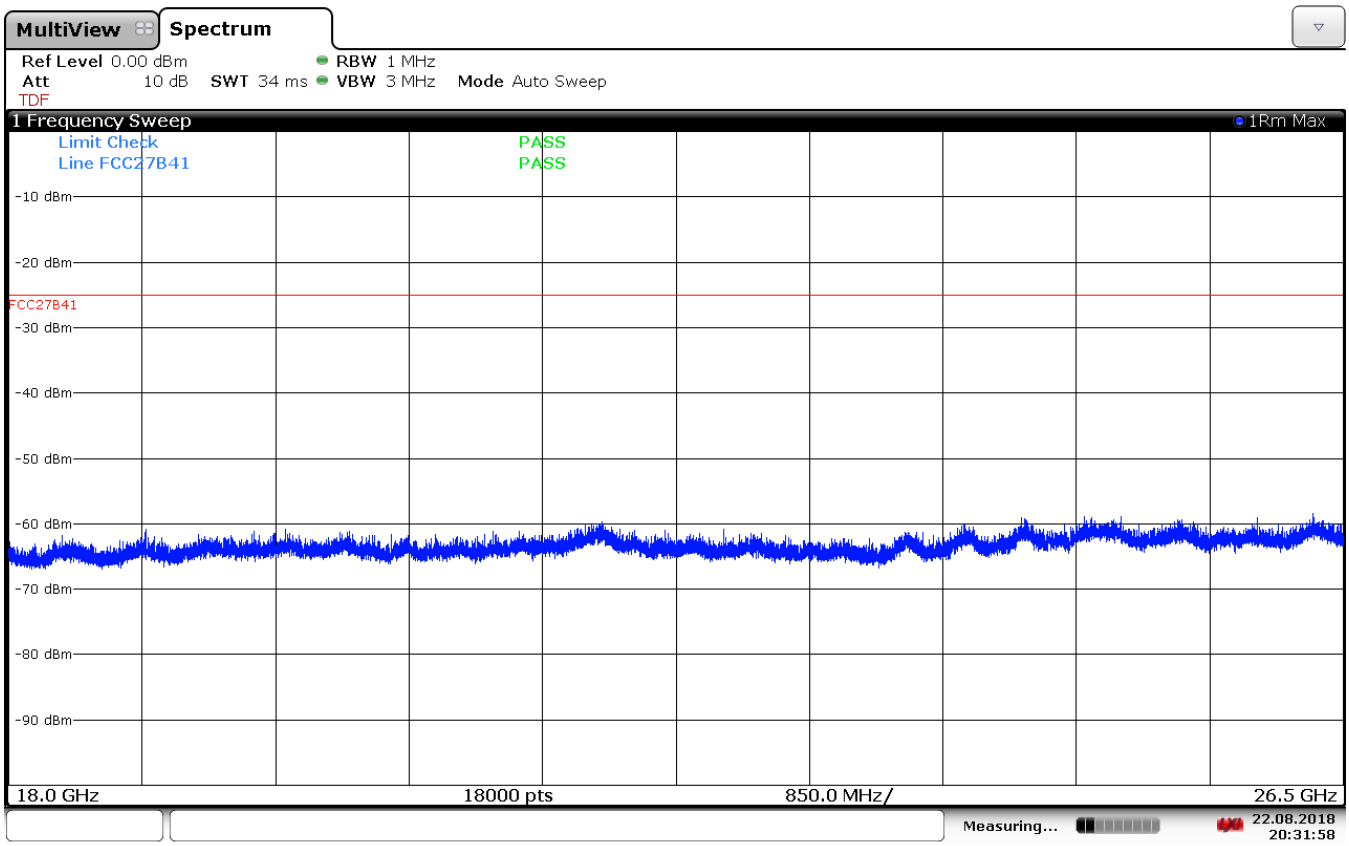
## Band 41




**Plot 7-12. Radiated Spurious Plot 1GHz - 18GHz (Band 41)**




**Plot 7-13. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41)**




**Plot 7-14. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2502.50 | MHz |
| CHANNEL: | 39715 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 5005.00 | V | 144 | 7 | -63.63 | 8.53 | -55.10 | -30.1 |
| 7507.50 | V | - | - | -63.00 | 8.49 | -54.51 | -29.5 |

**Table 7-33. Radiated Spurious Data (Band 41 – Low Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2593.00 | MHz |
| CHANNEL: | 40620 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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 | V | 106 | 10 | -61.45 | 8.67 | -52.78 | -27.8 |
| 7779.00 | V | 102 | 16 | -62.39 | 8.66 | -53.74 | -28.7 |
| 10372.00 | V | - | - | -62.25 | 9.59 | -52.66 | -27.7 |

**Table 7-34. Radiated Spurious Data (Band 41 – Mid Channel)**

| | | |
|---|---|---|
| OPERATING FREQUENCY: | 2687.50 | MHz |
| CHANNEL: | 41565 | |
| MODULATION SIGNAL: | QPSK | |
| BANDWIDTH: | 5.0 | 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] |
|---|---|---|---|---|---|---|---|
| 5375.00 | V | 102 | 22 | -56.33 | 8.66 | -47.67 | -22.7 |
| 8062.50 | V | 182 | 318 | -56.18 | 8.95 | -47.24 | -22.2 |
| 10750.00 | V | 126 | 335 | -59.20 | 9.26 | -49.94 | -24.9 |
| 13437.50 | V | - | - | -56.89 | 8.71 | -48.18 | -23.2 |

**Table 7-35. Radiated Spurious Data (Band 41 – High Channel)**

# 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFQ910QM** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.