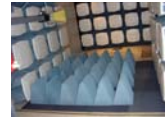




PCTEST ENGINEERING LABORATORY, INC.

7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.pctestlab.com



MEASUREMENT REPORT FCC Part 24 LTE

Applicant Name:
Samsung Electronics Co., Ltd.
416 Maetan 3-Dong, Yeongtong-gu
Suwon-si, Gyeonggi-do
443-742, Republic of Korea

Date of Testing:
11/26/2012 - 11/28/2012
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1211151647.A3L


| | |
|-------------------|--------------------------------------|
| FCC ID : | A3LSPHP600 |
| APPLICANT: | SAMSUNG ELECTRONICS CO., LTD. |

FCC Classification: PCS Licensed Transmitter (PCB)
FCC Rule Part(s): §2; §24
EUT Type: Portable Tablet
Model(s): SPH-P600
Test Device Serial No.: *identical prototype* [S/N: #79]



| Mode | Tx Frequency (MHz) | Emission Designator | Modulation | ERP/EIRP | |
|-------------|--------------------|---------------------|------------|----------------|------------------|
| | | | | Max. Power (W) | Max. Power (dBm) |
| LTE Band 25 | 1852.5 - 1912.5 | 4M48G7D | QPSK | 0.104 | 20.18 |
| LTE Band 25 | 1852.5 - 1912.5 | 4M50W7D | 16QAM | 0.080 | 19.01 |

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.

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




Randy Ortanez
President

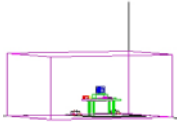


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| FCC ID: A3LSPHP600 |  | FCC Pt. 24 LTE MEASUREMENT REPORT (CERTIFICATION) |  | Reviewed by: Quality Manager |
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T A B L E O F C O N T E N T S

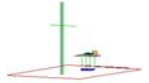
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MEASUREMENT REPORT

FCC Part 24

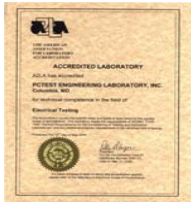


§2.1033 General Information



APPLICANT: Samsung Electronics Co., Ltd.
APPLICANT ADDRESS: 416 Maetan 3-Dong, Yeongtong-gu
 Suwon-si, Gyeonggi-do, 443-742 , Republic of Korea
TEST SITE: PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS: 7185 Oakland Mills Road, Columbia, MD 21045 USA
FCC RULE PART(S): §2; §24
BASE MODEL: SPH-P600
FCC ID: A3LSPHP600
FCC CLASSIFICATION: PCS Licensed Transmitter (PCB)
Test Device Serial No.: #79 Production Pre-Production Engineering
DATE(S) OF TEST: 11/26/2012 - 11/28/2012
TEST REPORT S/N: 0Y1211151647.A3L

Test Facility / Accreditations

Measurements were performed at **PCTEST Engineering Lab. located in Columbia, MD 21045, U.S.A.**



- PCTEST facility is an FCC registered (PCTEST Reg. No. 159966) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules.
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

| | | | | |
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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity, the Baltimore-Washington Internt'l (BWI) airport, the city of Baltimore and the Washington, DC area. (See Figure 1-1).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The site coordinates are 39° 10'23" N latitude and 76° 49'50" W longitude. The facility is 0.4 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on February 15, 2012.

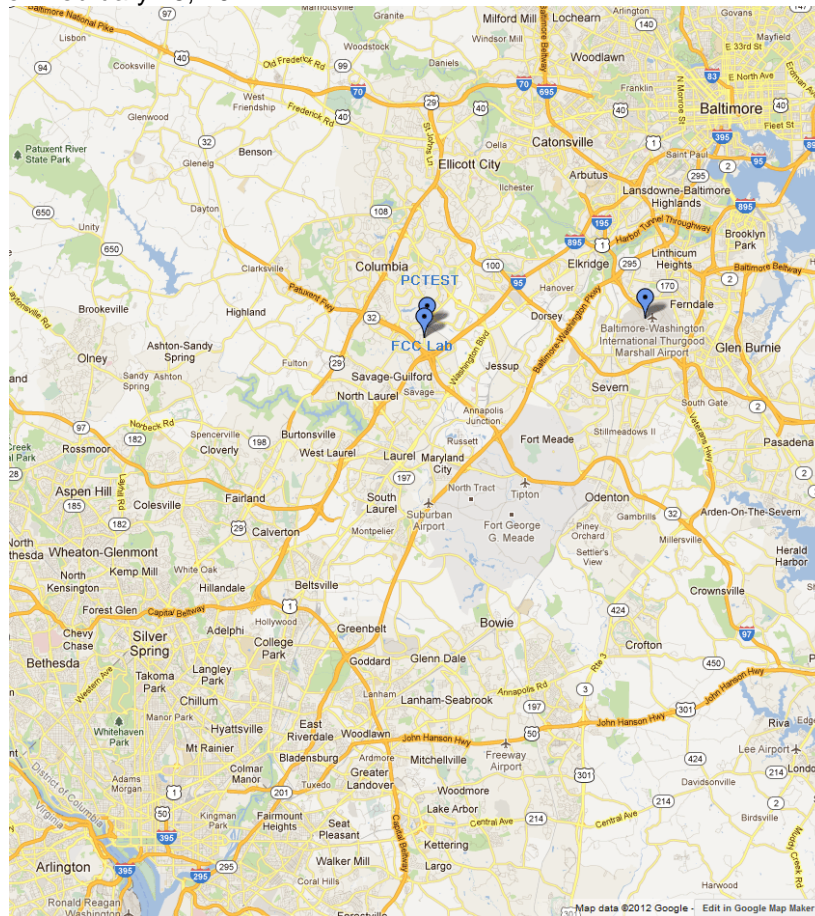


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

| | | | | |
|--------------------------------------|--|--|--|---------------------------------|
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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Tablet FCC ID: A3LSPHP600**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 CDMA/EvDO Rev 0/A (BC0, BC1, BC10), 850/1900 GSM/GPRS/EDGE, 850/1900 WCDMA/HSPA, Band 25 (5 Mhz) LTE, 802.11a/b/g/n WLAN (DTS/NII), Bluetooth (1x,EDR, LE)



2.3 EMI Suppression Device(s)/Modifications

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

2.4 Labeling Requirements

Per 2.925

The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.

| | | | | |
|--------------------------------------|---|--|---|---------------------------------|
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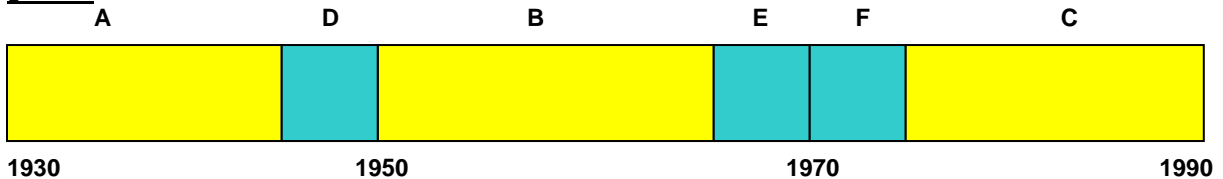
3.0 DESCRIPTION OF TESTS

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-C-2004) was used in the measurement of the **Samsung Portable Tablet FCC ID: A3LSPHP600**.

3.2 PCS - Base Frequency Blocks

§24.229

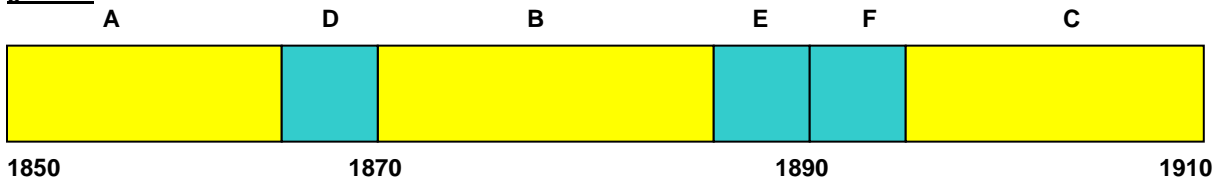


BLOCK 1: 1930 – 1945 MHz (A)
 BLOCK 2: 1945 – 1950 MHz (D)
 BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 4: 1965 – 1970 MHz (E)
 BLOCK 5: 1970 – 1975 MHz (F)
 BLOCK 6: 1975 – 1990 MHz (C)

3.3 PCS - Mobile Frequency Blocks

§24.229



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)

3.4 Occupied Bandwidth



§2.1049

The implementation of this test is performed by the spectrum analyzer’s occupied bandwidth function. The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured.

3.5 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051 §24.238(a)(b)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. On any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater for PCS band,. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of



| | | | | |
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| FCC ID: A3LSPHP600 |  PCTEST ENGINEERING LABORATORY, INC. | FCC Pt. 24 LTE MEASUREMENT REPORT (CERTIFICATION) |  SAMSUNG | Reviewed by: Quality Manager |
| Test Report S/N: 0Y1211151647.A3L | Test Dates: 11/26/2012 - 11/28/2012 | EUT Type: Portable Tablet | Page 6 of 26 | |

the emission bandwidth of the fundamental emission of the transmitter may be employed for PCS band,. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

3.6 Peak-Average Ratio

§24.232(d)

A peak to average ratio measurement is performed at the conducted port of the EUT. For LTE signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

| | | | | |
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3.7 Radiated Power and Radiated Spurious Emissions

§2.1053, 24.232(c), 24.238(a)

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. For measurements above 1GHz 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 below 1GHz, the absorbers are removed. An ETS Lindgren Model 2188 raised turntable is used for radiated measurement. It 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. A 78cm high PVC support structure is placed on top of the turntable. A ¾" (~1.9cm) sheet of high density polyethylene is used as the table top and is placed on top of the PVC supports to bring the total height of the table to 80cm.



The equipment under test was transmitting while connected to its integral antenna and is placed on a wooden turntable 80cm above the ground plane and 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.

Per the guidance of ANSI/TIA-603-C-2004, 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 $P_g [dBm] - \text{cable loss} [dB]$.

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 $43 + 10\log_{10}(\text{Power}_{[Watts]})$ specified in 22.917(a) and 24.238(a).

| | | | | |
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3.7 Frequency Stability / Temperature Variation

§2.1055 §24.235



The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification – The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block for Part 24.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A sufficient stabilization period at each temperature shall be used prior to each frequency requirement.



| | | | | |
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4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

| Manufacturer | Model | Description | Cal Date | Cal Interval | Cal Due | Serial Number |
|-----------------|-----------|--|------------|--------------|------------|---------------|
| - | LTX1 | Licensed Transmitter Cable Set | 1/25/2012 | Annual | 1/25/2013 | N/A |
| - | RE1 | Radiated Emissions Cable Set (UHF/EHF) | 7/10/2012 | Annual | 7/10/2013 | N/A |
| Agilent | E8257D | (250kHz-20GHz) Signal Generator | 4/5/2012 | Annual | 4/5/2013 | MY45470194 |
| Agilent | N9020A | MXA Signal Analyzer | 10/9/2012 | Annual | 10/9/2013 | US46470561 |
| Anritsu | MA2411B | Pulse Sensor | 9/19/2012 | Annual | 9/19/2013 | 1027293 |
| Anritsu | ML2495A | Power Meter | 10/11/2012 | Annual | 10/11/2013 | 1039008 |
| Espec | ESX-2CA | Environmental Chamber | 4/4/2012 | Annual | 4/4/2013 | 17620 |
| ETS Lindgren | 3117 | 1-18 GHz DRG Horn (Medium) | 7/22/2011 | Biennial | 7/22/2013 | 125518 |
| ETS Lindgren | 3164-08 | Quad Ridge Horn Antenna | 11/7/2012 | Biennial | 11/7/2014 | 128338 |
| Mini-Circuits | VHF-3100+ | High Pass Filter | 1/15/2012 | Annual | 1/15/2013 | 30841 |
| Rohde & Schwarz | CMW500 | LTE Radio Communication Tester | 10/7/2011 | Biennial | 10/7/2013 | 103962 |
| Rohde & Schwarz | TS-PR18 | 1-18 GHz Pre-Amplifier | 6/26/2012 | Annual | 6/26/2013 | 100071 |
| Rohde & Schwarz | ESU26 | EMI Test Receiver | 12/15/2011 | Annual | 12/15/2012 | 100342 |
| Rohde & Schwarz | CMW500 | LTE Radio Communication Tester | 3/5/2012 | Annual | 3/5/2013 | 102060 |
| Seekonk | NC-100 | Torque Wrench (8" lb) | 3/5/2012 | Triennial | 3/5/2015 | N/A |
| Sunol | JB5 | Bi-Log Antenna (30M - 5GHz) | 1/26/2012 | Biennial | 1/26/2014 | A051107 |

Table 4-1. Test Equipment

| | | | | | |
|--------------------------------------|---|--|--|---|---------------------------------|
| FCC ID: A3LSPHP600 |  | FCC Pt. 24 LTE MEASUREMENT REPORT (CERTIFICATION) | |  | Reviewed by: Quality Manager |
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5.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz
 G = Phase Modulation
 7 = Quantized/Digital Info
 D = Amplitude/Angle Modulated

16QAM Modulation



Emission Designator = 8M45W7D

LTE BW = 8.45 MHz
 W = Amplitude/Angle Modulated
 7 = Quantized/Digital Info
 D = Combination (Audio/Data)

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 analyzer. 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).

| | | | |
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6.0 TEST RESULTS

6.1 Summary



Company Name: Samsung Electronics Co., Ltd.
 FCC ID: A3LSPHP600
 FCC Classification: PCS Licensed Transmitter (PCB)
 Mode(s): LTE

| FCC Part Section(s) | Test Description | Test Limit | Test Condition | Result | Reference |
|---------------------|---|--|----------------|--------|------------------------|
| 2.1049 | Occupied Bandwidth | N/A | CONDUCTED | PASS | Section 7.0 |
| 2.1051 24.238(a) | Band Edge / Conducted Spurious Emissions | $< 43 + 10\log_{10}(P[\text{Watts}])$ at Band Edge and for all out-of-band emissions | | PASS | Section 7.0 |
| 24.232(d) | Peak-Average Ratio | $< 13 \text{ dB}$ | | PASS | Section 7.0 |
| 2.1046 | Transmitter Conducted Output Power | N/A | | PASS | See RF Exposure Report |
| 24.232(c) | Equivalent Isotropic Radiated Power (Band 25) | $< 2 \text{ Watts max. EIRP}$ | RADIATED | PASS | Section 6.2 |
| 2.1053 24.238(a) | Undesirable Emissions | $< 43 + 10\log_{10}(P[\text{Watts}])$ for all out-of-band emissions | | PASS | Section 6.3 |
| 2.1055 | Frequency Stability | Fundamental emissions stay within authorized frequency block | | PASS | Section 6.4 |

Table 6-1. Summary of Test Results

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots shown in Section 7.0 were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.

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6.2 Equivalent Isotropic Radiated Power (EIRP)



§24.232(c)

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod. | Battery | RB Size/Offset | Substitute Level [dBm] | Antenna Gain [dBi] | Pol [H/V] | EIRP [dBm] | EIRP [Watts] | Margin [dB] |
|-----------------|-------------------------|--------|----------|----------------|------------------------|--------------------|-----------|------------|--------------|-------------|
| 1852.50 | 5 | QPSK | Standard | 1/0 | 9.75 | 8.56 | H | 18.31 | 0.068 | -14.70 |
| 1882.50 | 5 | QPSK | Standard | 1/0 | 11.63 | 8.55 | H | 20.18 | 0.104 | -12.83 |
| 1912.50 | 5 | QPSK | Standard | 1/0 | 11.28 | 8.53 | H | 19.81 | 0.096 | -13.20 |
| 1852.50 | 5 | 16-QAM | Standard | 1/0 | 8.49 | 8.56 | H | 17.05 | 0.051 | -15.96 |
| 1882.50 | 5 | 16-QAM | Standard | 1/0 | 10.46 | 8.55 | H | 19.01 | 0.080 | -14.00 |
| 1912.50 | 5 | 16-QAM | Standard | 1/0 | 10.26 | 8.53 | H | 18.79 | 0.076 | -14.22 |

Table 6-2. EIRP Data (Band 25)

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, RB sizes and offsets, and channel bandwidth configurations and the worst case emissions are reported with 1 RB, 0 offset.
2. This unit was tested with its standard battery.
3. The worst case test configuration was found in the horizontal setup.

| | | | | |
|--------------------------------------|---|--|---|---------------------------------|
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6.3 Band 25 Radiated Spurious Emissions §2.1053 §24.238(a) RSS-133(6.5.1)

Field Strength of SPURIOUS Radiation



OPERATING FREQUENCY: 2500.70 MHz
 MEASURED OUTPUT POWER: 18.31 dBm = 0.068 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 31.31 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBi) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 5001.40 | -56.66 | 8.40 | -48.26 | H | 66.57 |
| 7502.10 | -83.61 | 10.63 | -72.98 | H | 91.29 |
| 10002.80 | -82.54 | 11.84 | -70.70 | H | 89.01 |
| 12503.50 | -82.05 | 13.29 | -68.76 | H | 87.06 |
| 15004.20 | -75.28 | 13.50 | -61.78 | H | 80.09 |
| 17504.90 | -74.83 | 13.68 | -61.15 | H | 79.46 |

Table 6-3. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, RB sizes and offsets, and channel bandwidth configurations and the worst case emissions are reported with 1 RB, 0 offset.
2. This unit was tested with its standard battery.
3. The worst case test configuration was found in the horizontal setup.

| | | | | |
|--------------------------------------|---|---|---|---------------------------------|
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Band 25 Radiated Spurious Measurements (continued)
§2.1053 §24.238(a) RSS-133(6.5.1)

Field Strength of SPURIOUS Radiation



OPERATING FREQUENCY: 2535.00 MHz
 MEASURED OUTPUT POWER: 20.18 dBm = 0.104 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 33.18 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBi) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 5070.00 | -54.58 | 8.44 | -46.14 | H | 66.32 |
| 7605.00 | -83.46 | 10.66 | -72.80 | H | 92.98 |
| 10140.00 | -82.49 | 11.94 | -70.56 | H | 90.73 |
| 12675.00 | -81.86 | 13.23 | -68.63 | H | 88.80 |
| 15210.00 | -77.71 | 13.48 | -64.23 | H | 84.40 |
| 17745.00 | -74.49 | 13.84 | -60.65 | H | 80.83 |

Table 6-4. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, RB sizes and offsets, and channel bandwidth configurations and the worst case emissions are reported with 1 RB, 0 offset.
2. This unit was tested with its standard battery.
3. The worst case test configuration was found in the horizontal setup.

| | | | | |
|--------------------------------------|---|---|---|---------------------------------|
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Band 25 Radiated Spurious Measurements (continued)
§2.1053 §24.238(a) RSS-133(6.5.1)

Field Strength of SPURIOUS Radiation



OPERATING FREQUENCY: 2569.30 MHz
 MEASURED OUTPUT POWER: 19.81 dBm = 0.096 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 32.81 dBc

| FREQUENCY (MHz) | LEVEL @ ANTENNA TERMINALS (dBm) | SUBSTITUTE ANTENNA GAIN (dBi) | SPURIOUS EMISSION LEVEL (dBm) | POL (H/V) | (dBc) |
|-----------------|---------------------------------|-------------------------------|-------------------------------|-----------|-------|
| 5138.60 | -53.96 | 8.57 | -45.38 | H | 65.20 |
| 7707.90 | -83.32 | 10.69 | -72.63 | H | 92.44 |
| 10277.20 | -82.56 | 12.07 | -70.49 | H | 90.31 |
| 12846.50 | -81.55 | 13.20 | -68.35 | H | 88.16 |
| 15415.80 | -78.21 | 13.42 | -64.79 | H | 84.61 |
| 17985.10 | -74.21 | 14.04 | -60.17 | H | 79.99 |

Table 6-5. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, RB sizes and offsets, and channel bandwidth configurations and the worst case emissions are reported with 1 RB, 0 offset.
2. This unit was tested with its standard battery.
3. The worst case test configuration was found in the horizontal setup.

| | | | | |
|--------------------------------------|---|---|---|---------------------------------|
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6.4 Band 25 Frequency Stability Measurements

§2.1055 §22.355 §24.229 §24.235 RSS-133(6.3)



OPERATING FREQUENCY: 1,882,500,000 Hz
 CHANNEL: 26365
 REFERENCE VOLTAGE: 3.7 VDC

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|-------------|-------------|------------|----------------|-----------------|---------------|
| 100 % | 3.70 | + 20 (Ref) | 1,882,499,987 | -13 | -0.00000071 |
| 100 % | | - 30 | 1,882,499,996 | -4 | -0.00000019 |
| 100 % | | - 20 | 1,882,499,992 | -8 | -0.00000041 |
| 100 % | | - 10 | 1,882,499,991 | -9 | -0.00000048 |
| 100 % | | 0 | 1,882,499,983 | -17 | -0.00000088 |
| 100 % | | + 10 | 1,882,499,995 | -5 | -0.00000027 |
| 100 % | | + 20 | 1,882,499,998 | -2 | -0.00000010 |
| 100 % | | + 30 | 1,882,499,987 | -13 | -0.00000071 |
| 100 % | | + 40 | 1,882,499,999 | -1 | -0.00000007 |
| 100 % | | + 50 | 1,882,499,984 | -16 | -0.00000085 |
| 115 % | 4.26 | + 20 | 1,882,499,996 | -4 | -0.00000024 |
| 85 % | 3.40 | + 20 | 1,882,499,998 | -2 | -0.00000013 |

Table 6-6. Frequency Stability Data (Band 25)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

| | | | | |
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Band 25 Frequency Stability Measurements (Cont'd)

§2.1055 §22.355 §24.229 §24.235 RSS-133(6.3)

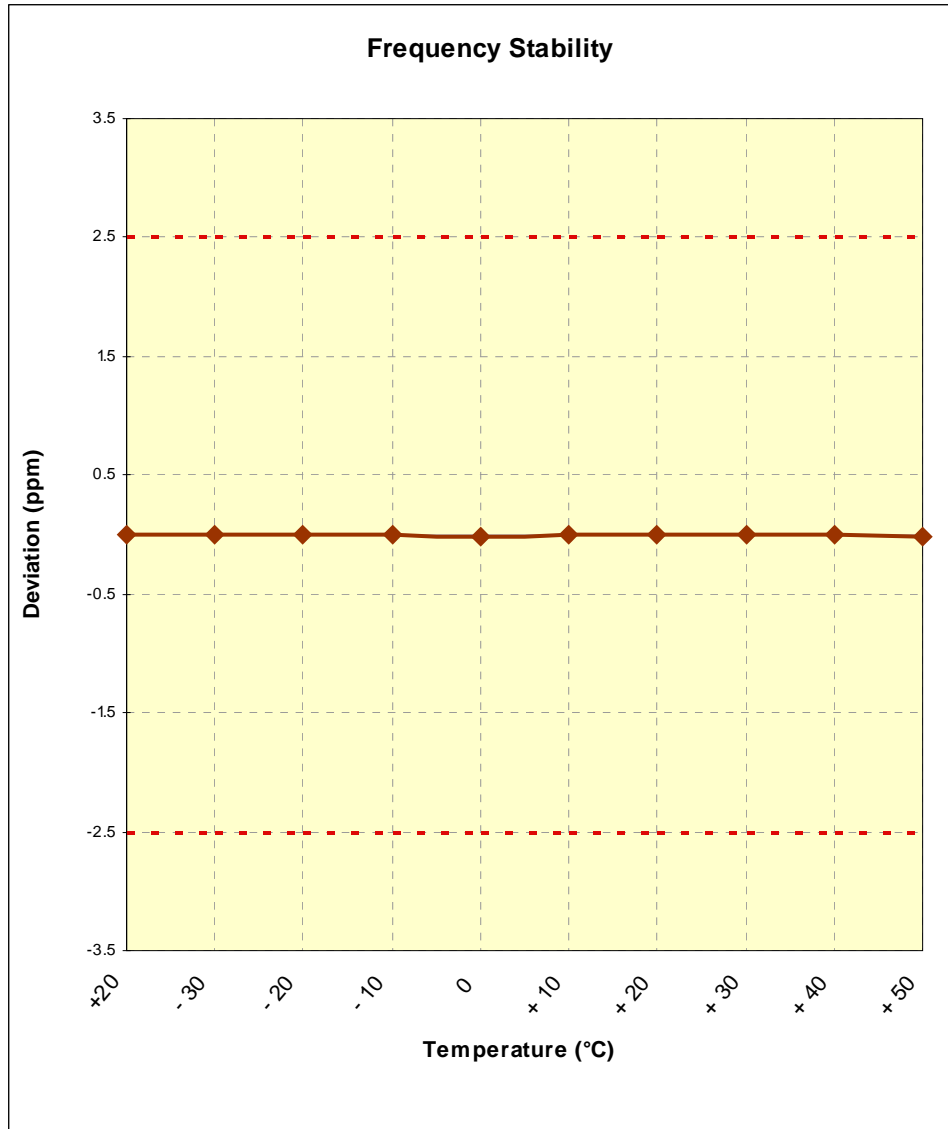


Figure 6-1. Frequency Stability Graph (Band 25)

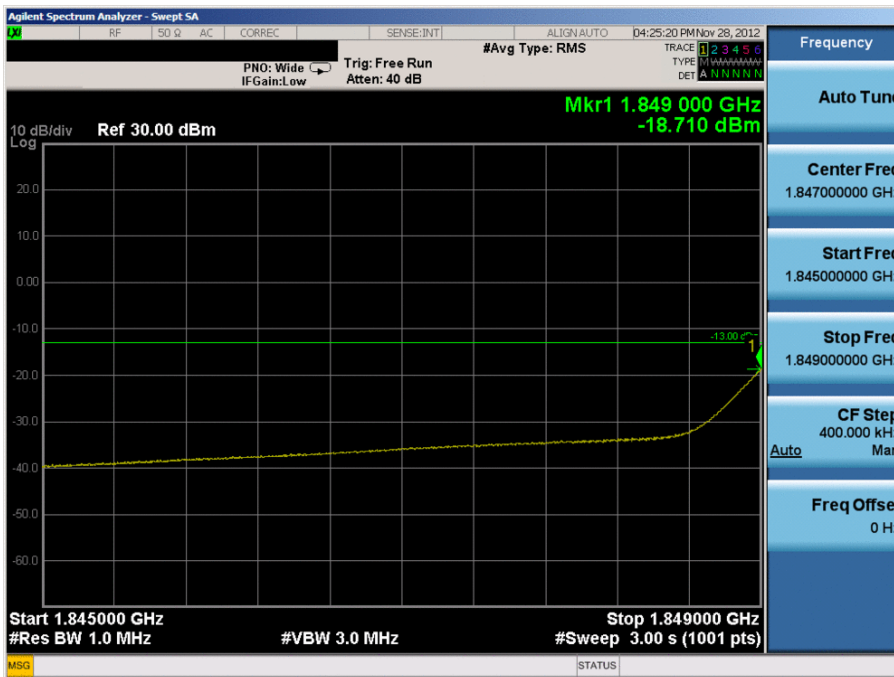
| | | | | |
|--------------------------------------|--|--|---------------|---------------------------------|
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7.0 BAND 25 PLOTS OF EMISSIONS

Note: All bandwidths, RB configurations, and modulations were investigated. The worst case test results are reported below.

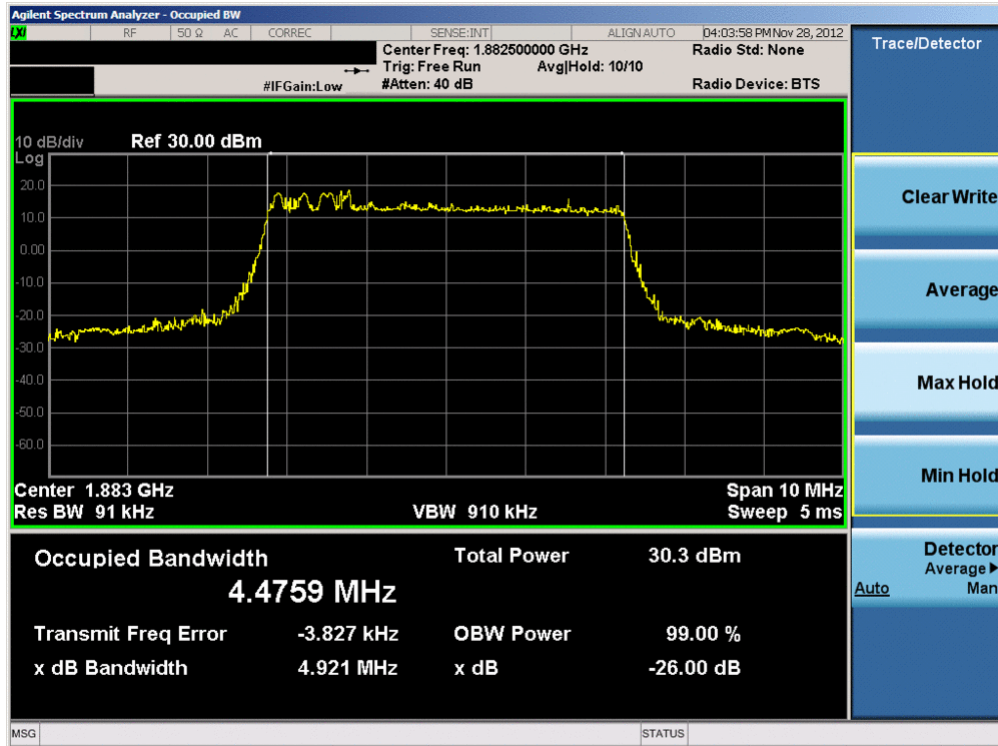


Plot 7-1. Lower Band Edge Plot (5.0MHz QPSK – RB Size 25)

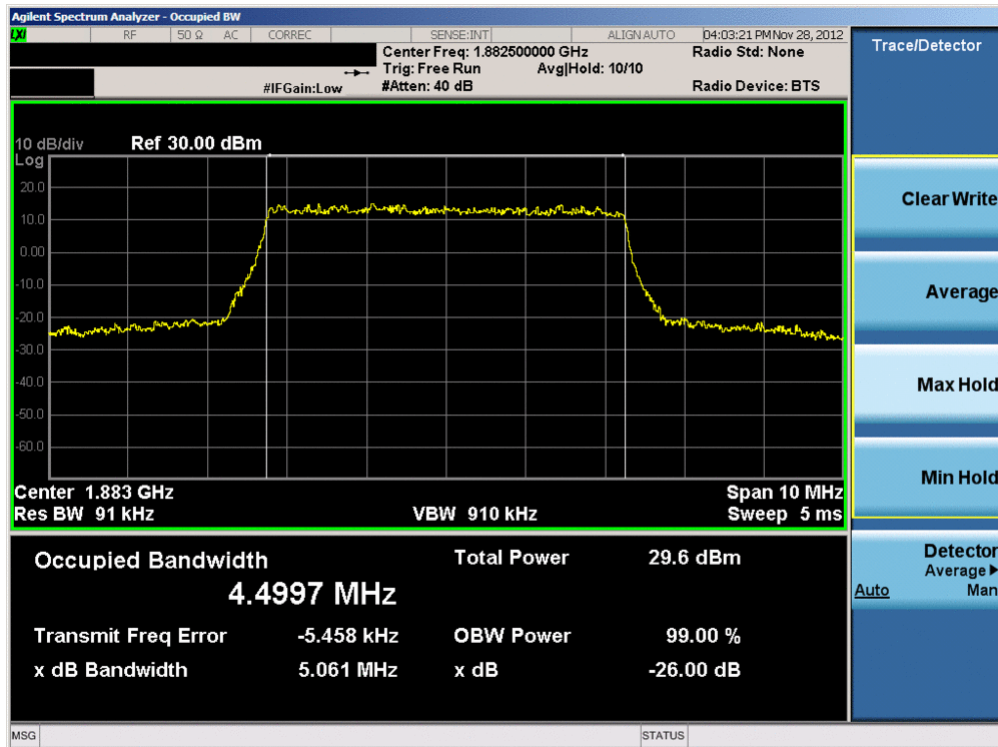


Plot 7-2. Lower Extended Band Edge Plot (5.0MHz QPSK – RB Size 25)

| | | | | |
|--------------------------------------|--|--|---------------|---------------------------------|
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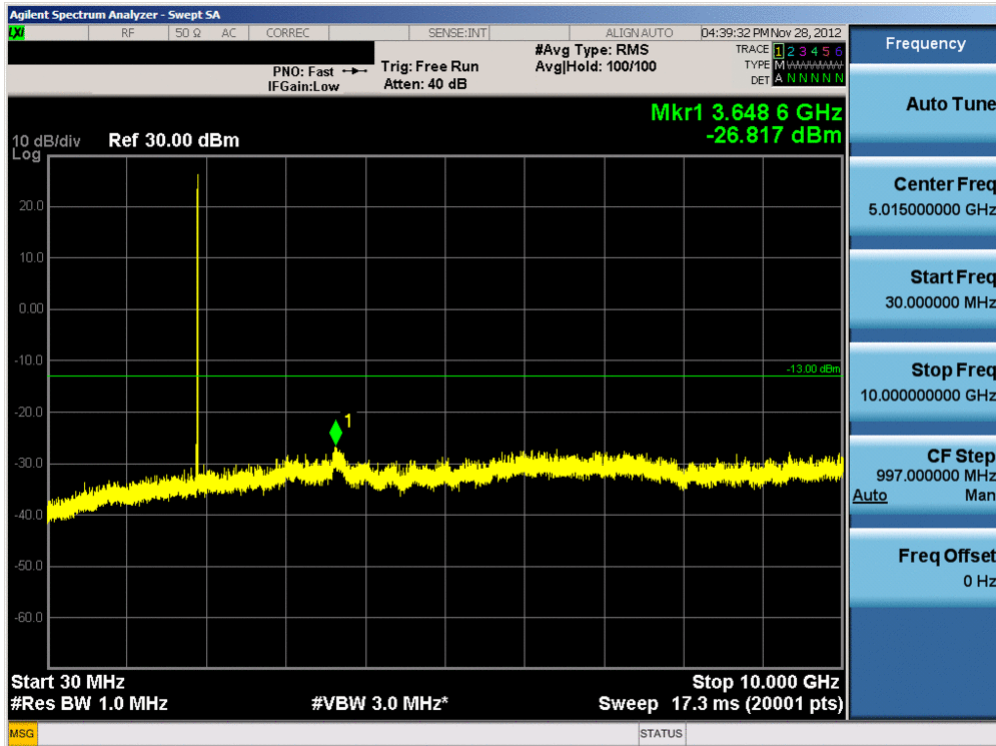


Plot 7-3. Occupied Bandwidth Plot (5.0MHz QPSK – RB Size 25)

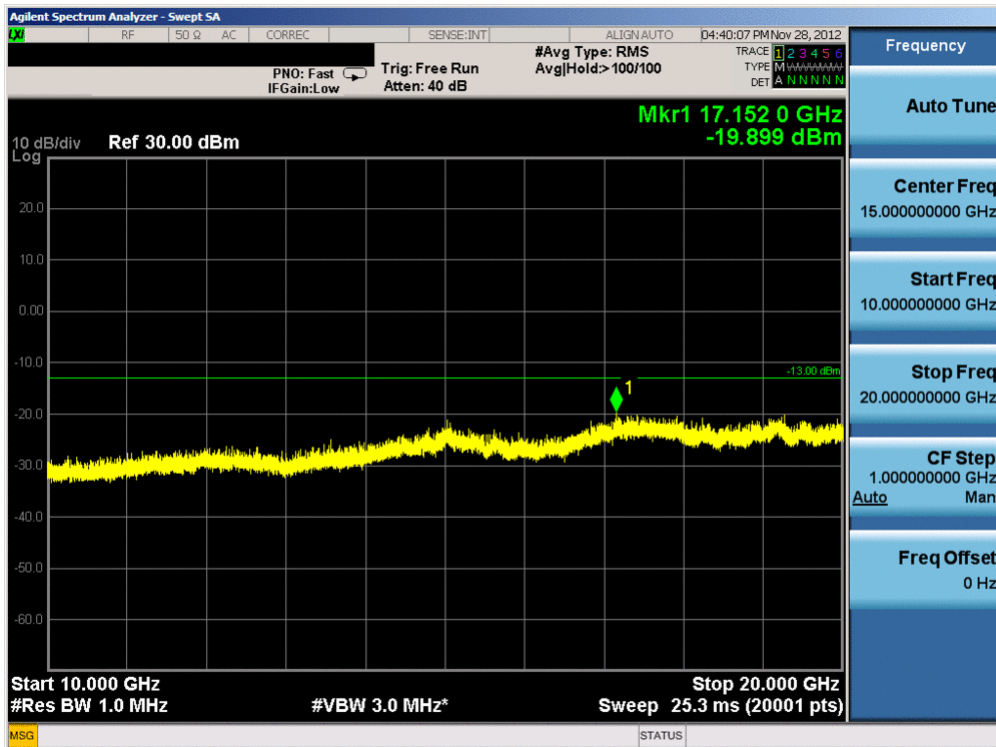


Plot 7-4. Occupied Bandwidth Plot (5.0MHz 16-QAM – RB Size 25)

| | | | | |
|--------------------------------------|--|--|--|---------------------------------|
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Plot 7-9. Conducted Spurious Plot (5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

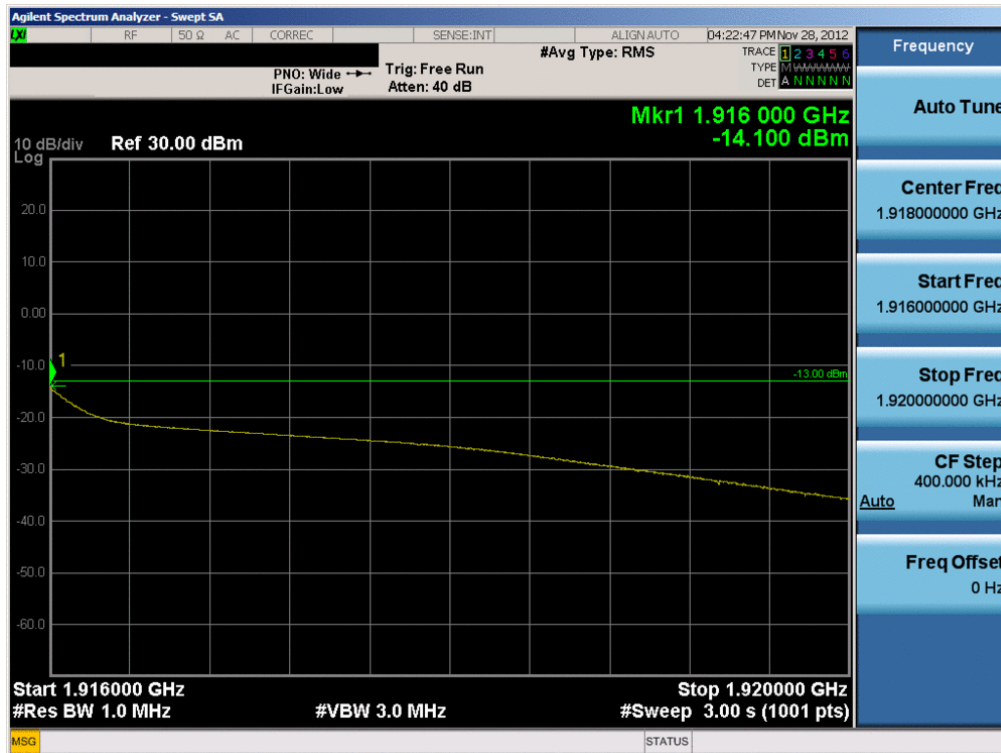


Plot 7-10. Conducted Spurious Plot (5.0MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

| | | | | |
|--------------------------------------|--|--|--|---------------------------------|
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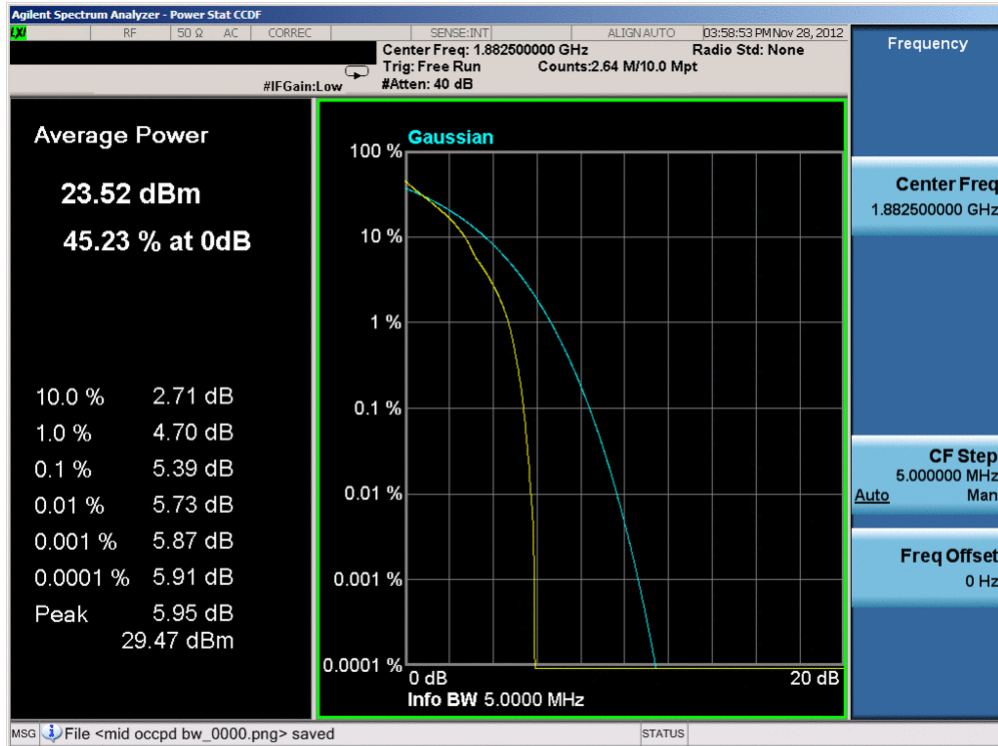


Plot 7-11. Upper Band Edge Plot (5.0MHz QPSK – RB Size 25)

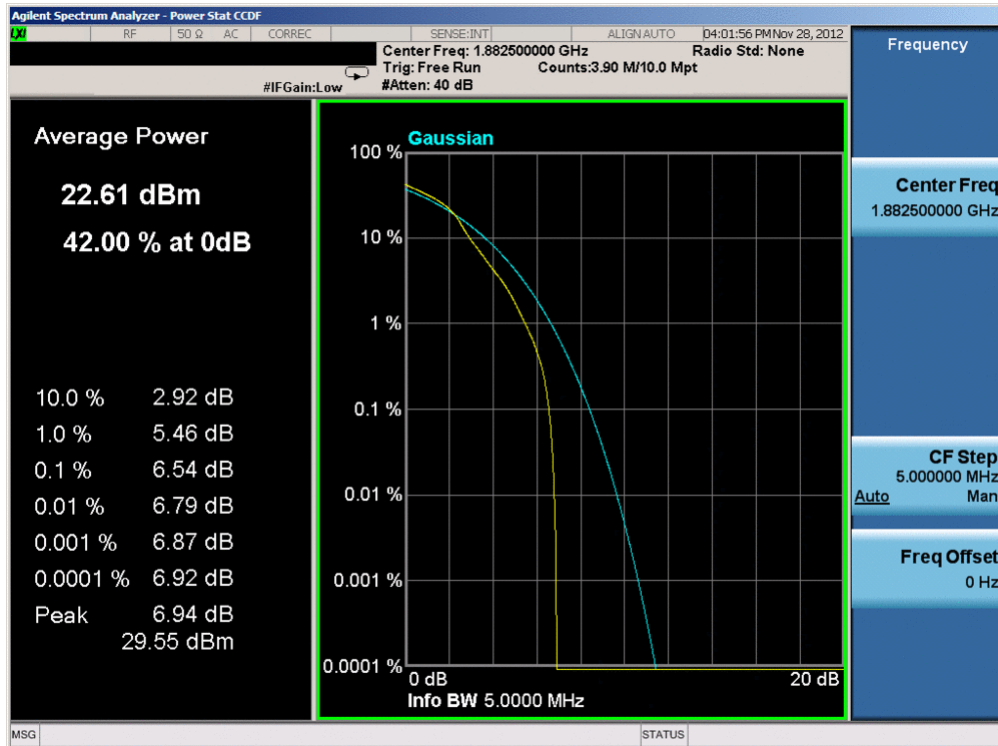


Plot 7-12. Upper Extended Band Edge Plot (5.0MHz QPSK – RB Size 25)

| | | | | |
|--------------------------------------|--|--|--|---------------------------------|
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Plot 7-13. PAR Plot (5.0MHz QPSK – RB Size 25)





Plot 7-14. PAR Plot (5.0MHz 16-QAM – RB Size 25)

| | | | | |
|--------------------------------------|--|--|--|---------------------------------|
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Tablet FCC ID: A3LSPHP600** complies with all the requirements of Parts 2, 24 of the FCC rules for LTE operation only.

| | | | | |
|---|---|--|---|--|
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