



PCTEST ENGINEERING LABORATORY, INC.

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MEASUREMENT REPORT

FCC Part 27

Applicant Name:

Samsung Electronics, Co. Ltd.
18600 Broadwick St.
Rancho Dominguez, CA 90220
United States

Date of Testing:

08/09 - 10/07/2011

Test Site/Location:

PCTEST Lab., Columbia, MD, USA

Test Report Serial No.:

0Y1108101398.A3L

FCC ID: A3LSGHI957

APPLICANT: SAMSUNG ELECTRONICS, CO. LTD.

Application Type:

Certification

FCC Classification:

PCS Licensed Transmitter (PCB)

FCC Rule Part(s):

§2; §27

EUT Type:

Tablet

Model(s):

SGH-I957

Tx Frequency Range:

1712.5 - 1752.5MHz (5MHz BW AWS), 1715 - 1750MHz (10MHz BW AWS),
706.5 - 713.5MHz (5MHz BW Band 17), 709 - 711MHz (10MHz BW Band 17)

Max. RF Output Power:

0.127 W EIRP (5MHz BW, QPSK, AWS Band) (21.03 dBm)
0.089 W EIRP (5MHz BW, 16-QAM, AWS Band) (19.47 dBm)
0.145 W EIRP (10MHz BW, QPSK, AWS Band) (21.61 dBm)
0.133 W EIRP (10MHz BW, 16-QAM, AWS Band) (21.24 dBm)
0.091 W ERP (5MHz BW, QPSK, Band 17) (19.58 dBm)
0.073 W ERP (5MHz BW, 16-QAM, Band 17) (18.61 dBm)
0.087 W ERP (10MHz BW, QPSK, Band 17) (19.41 dBm)
0.067 W ERP (10MHz BW, 16-QAM, Band 17) (18.26 dBm)

Emission Designator(s):

4M47G7D (5MHz BW, QPSK, AWS), 4M49W7D (5MHz BW, 16-QAM, AWS),
8M96G7D (10MHz BW, QPSK, AWS), 8M92W7D (10MHz BW, 16-QAM, AWS),
4M50G7D (5MHz BW, QPSK, Band 17), 4M51W7D (5MHz BW, 16-QAM, Band 17),
8M98G7D (10MHz BW, QPSK, Band 17), 8M95W7D (10MHz BW, 16-QAM, Band 17)

Test Device Serial No.:

identical prototype [S/N: QF-7]

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. 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

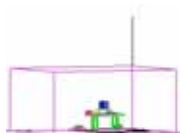


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MEASUREMENT REPORT

FCC Part 27



§2.1033 General Information

APPLICANT: Samsung Electronics, Co. Ltd.
APPLICANT ADDRESS: 18600 Broadwick St.
 Rancho Dominguez, CA 90220, United States
TEST SITE: PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS: 6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S): §2; §27
BASE MODEL: SGH-I957
FCC ID: A3LSGHI957
FCC CLASSIFICATION: PCS Licensed Transmitter (PCB)
EMISSION DESIGNATOR(S): 4M47G7D (5MHz BW, QPSK, AWS), 4M49W7D (5MHz BW, 16-QAM, AWS),
 8M96G7D (10MHz BW, QPSK, AWS), 8M92W7D (10MHz BW, 16-QAM, AWS),
 4M50G7D (5MHz BW, QPSK, Band 17), 4M51W7D (5MHz BW, 16-QAM, Band 17),
 8M98G7D (10MHz BW, QPSK, Band 17), 8M95W7D (10MHz BW, 16-QAM, Band 17)
FREQUENCY TOLERANCE: $\pm 0.00025\%$ (2.5 ppm)
Test Device Serial No.: QF-7 ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST: 08/09 - 10/07/2011
TEST REPORT S/N: 0Y1108101398.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. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (2451A-1).
- 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 and Industry Canada Rules.
- 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 facility is an IC registered (2451A-1) test laboratory with the site description on file at Industry Canada.
- 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.

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity area, 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 in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. 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 January 28, 2009.

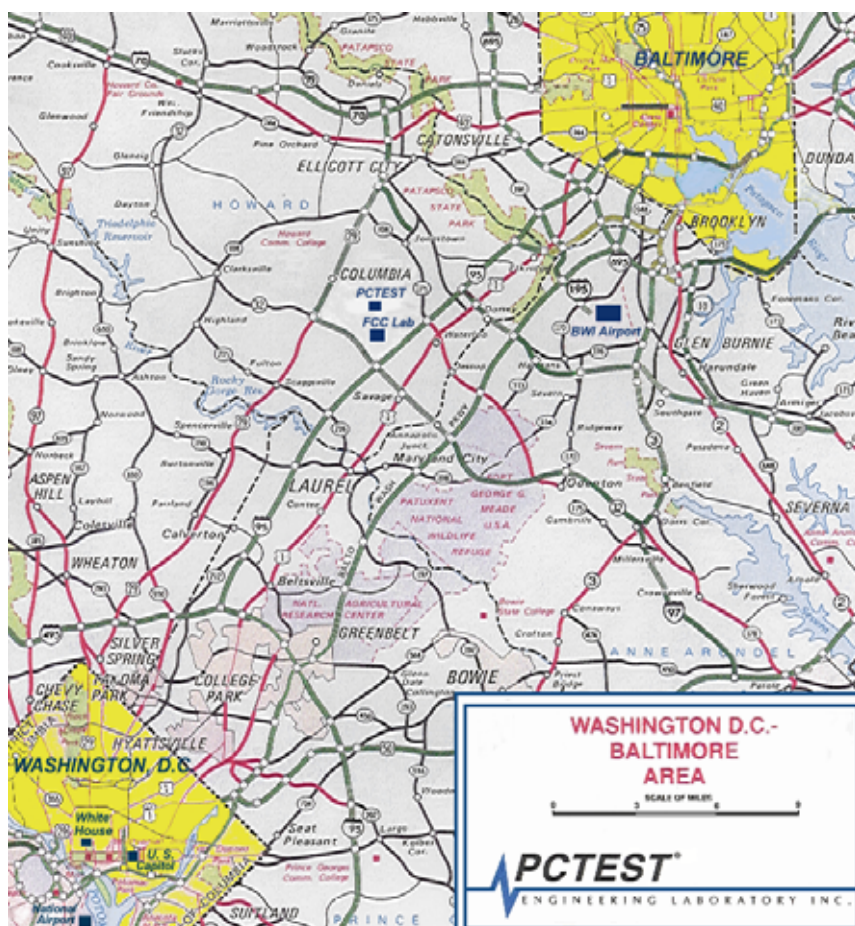


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Tablet FCC ID: A3LSGHI957**. The test data contained in this report pertains only to the emissions due to the EUT's LTE function. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Samsung / Model: SGH-I957	A3LSGHI957	Tablet

Table 2-1. EUT Equipment Description

The EUT is capable of LTE operations in Band 4 (1710 – 1755MHz) and Band 17 (704 – 716MHz).

2.2 EMI Suppression Device(s)/Modifications

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

2.3 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.

Per 15.19; Docket 95-19

In addition to this requirement, a device subject to certification shall be labeled as follows:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

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3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (See Figure 3-1). The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This power level was recorded using a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded with the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

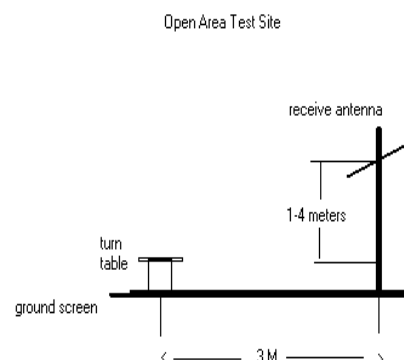


Figure 3-1. Diagram of 3-meter outdoor test range

Deviation from Measurement Procedure.....None

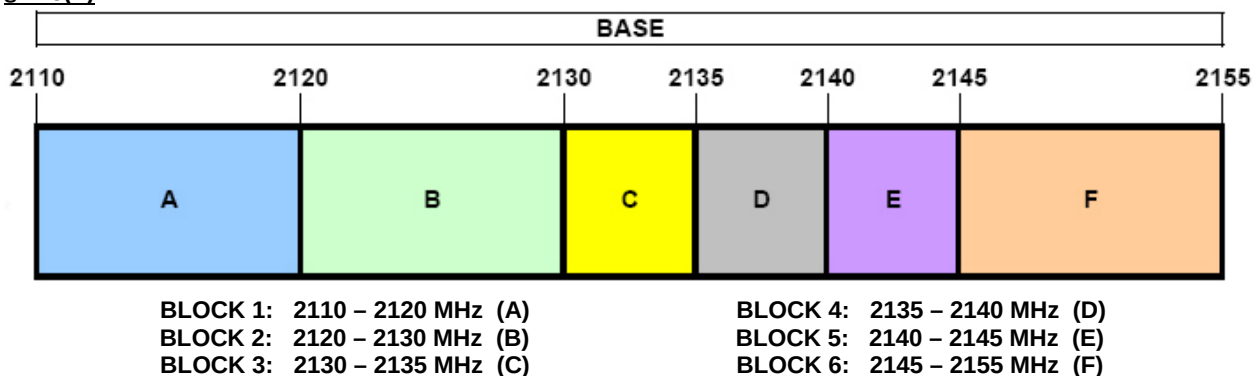
3.2 Occupied Bandwidth Emission Limits

§2.1049, §27.53(h)(1)

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. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1 percent of the selected span as is possible without being below 1 percent. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual. The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 percent of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded. The span between the two recorded frequencies is the occupied bandwidth.

3.3 AWS - Base Frequency Blocks

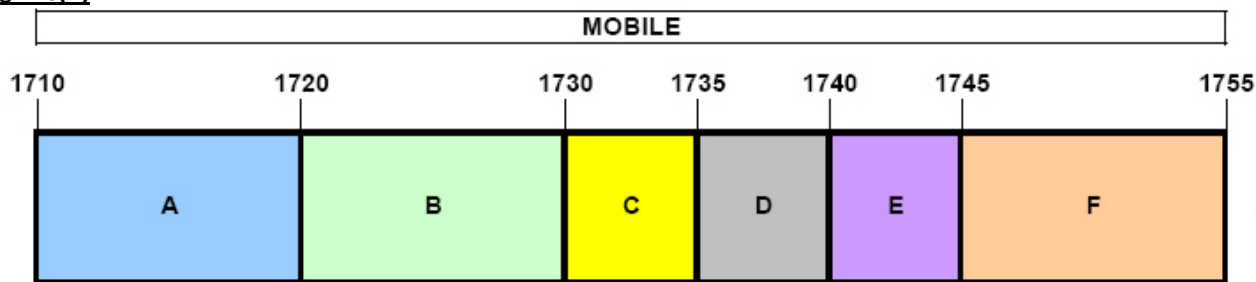
§27.5(h)



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3.4 AWS - Mobile Frequency Blocks

§27.5(h)



BLOCK 1: 1710 – 1720 MHz (A)

BLOCK 4: 1735 – 1740 MHz (D)

BLOCK 2: 1720 – 1730 MHz (B)

BLOCK 5: 1740 – 1745 MHz (E)

BLOCK 3: 1730 – 1735 MHz (C)

BLOCK 6: 1745 – 1755 MHz (F)

3.5 Block B and C Frequency Range (704–710 and 710–716 MHz)

§27.5(c)

Three paired channel blocks of 12 MHz 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. Two unpaired channel blocks of 6 MHz each are available for assignment as follows: Block D: 716-722 MHz; and Block E: 722-728 MHz.

3.6 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, §27.53(g), §27.53(h)

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. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. 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.

For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

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3.7 Radiated Power and Radiated Spurious Emissions

§2.1053, §27.53(c), §27.53(d)

Radiated power and radiated spurious emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This level is then measured with a broadband average power meter. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive average power meter reading. This spurious level is recorded with the power meter. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation.

3.8 Peak-Average Ratio

§27.50(d)(5)

A peak to average ratio measurement is performed at the conducted port of the EUT. 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.

3.9 Frequency Stability / Temperature Variation

§2.1055, §27.54

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. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency.

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 period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

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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
-	263-10dB	(DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
-	No.166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	2/8/2011	Annual	2/8/2012	3008A00985
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/8/2011	Annual	4/8/2012	MY45470194
Agilent	E8267C	Vector Signal Generator	10/11/2010	Annual	10/11/2011	US42340152
Agilent	N9020A	MXA Signal Analyzer	10/8/2010	Annual	10/8/2011	US46470561
Agilent	N9038A	MXE EMI Receiver	8/5/2011	Annual	8/5/2012	MY51210133
Anritsu	ML2495A	Power Meter	10/13/2010	Annual	10/13/2011	941001
Anritsu	MA2411B	Pulse Sensor	N/A		N/A	1027293
Espec	ESX-2CA	Environmental Chamber	4/21/2011	Annual	4/21/2012	17620
MiniCircuits	VHF-1300+	High Pass Filter	N/A		N/A	30716
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Pasternack	PE2208-6	Bidirectional Coupler	N/A		N/A	N/A
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	3/11/2011	Annual	3/11/2012	103962
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Rx	10/17/2009	Biennial	10/17/2011	9105-2404
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Tx	10/17/2009	Biennial	10/17/2011	9105-2403
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	7/5/2011	Biennial	7/5/2013	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	10/17/2009	Biennial	10/17/2011	A051107
Sunol	DRH-118	Horn Antenna (1-18 GHz)	6/17/2011	Biennial	6/17/2013	A042511

Table 4-1. Test Equipment

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5.0 SAMPLE CALCULATIONS

Emission Designator

Emission Designator = 4M25G7D

QPSK BW = 4.25 MHz

G = Phase Modulation

7 = Two or more channels containing quantized or digital information

D = Data transmission, telemetry, telecommand

Emission Designator = 3M35W7D

16-QAM BW = 3.35 MHz

W = Quadrature Amplitude Modulation

7 = Two or more channels containing quantized or digital information

D = Data transmission, telemetry, telecommand

Spurious Radiated Emission – AWS Band

Example: Channel 20150 AWS Mode 2nd Harmonic (3460.0 MHz)

The average receive power meter 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 terminal is adjusted to produce a reading of –81.0 dBm on the power meter. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3460.0 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) = 50.3 dBc.

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6.0 TEST RESULTS

6.1 Summary

Company Name: Samsung Electronics, Co. Ltd.
 FCC ID: A3LSGHI957
 FCC Classification: PCS Licensed Transmitter (PCB)
 Mode(s): LTE

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
2.1049, 27.53(h)(1)	Occupied Bandwidth	N/A	CONDUCTED	PASS	Sections 7.0, 8.0
2.1051, 27.53(g), 27.53(h)	Band Edge / Conducted Spurious Emissions	$< 43 + 10\log_{10} (P[\text{Watts}])$ at Band Edge and for all out-of-band emissions		PASS	Sections 7.0, 8.0
27.50(d)(5)	Peak-Average Ratio	$< 13 \text{ dB}$		PASS	Sections 7.0, 8.0
2.1046	Transmitter Conducted Output Power	N/A		PASS	Section 6.2
27.50(c)(9)	Effective Radiated Power (Band 17)	$< 3 \text{ Watts max. ERP}$	RADIATED	PASS	Section 6.4
27.50(d)(4)	Equivalent Isotropic Radiated Power (AWS)	$< 1 \text{ Watts max. EIRP}$		PASS	Section 6.3
2.1053, 27.53(g), 27.53(h)	Undesirable Emissions	$< 43 + 10\log_{10} (P[\text{Watts}])$ for all out-of-band emissions		PASS	Section 6.5, 6.6
2.1055, 27.54	Frequency Stability	$< 2.5 \text{ ppm}$		PASS	Section 6.7, 6.8

Table 6-1. Summary of Test Results

NOTES:

The following notes refer to the conducted plots shown in Sections 7.0 and 8.0 of this report. These configurations were chosen because they produced the worst case emissions for their respective tests.

- All band edge plots were performed with the EUT transmitting with 1RB at the outermost offset (Offset 0 for lower band edge and maximum offset for upper band edge).
- All out of band conducted spurious emissions 1MHz removed from the band edge, occupied bandwidth, and peak-to-average ratio plots were performed with the EUT transmitting with the maximum number of RB's for each channel bandwidth.
- All out of band conducted spurious emissions plots were performed with the EUT transmitting with 1RB and an RB offset of 0.

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6.2 Transmitter Conducted Output Power

§2.1046

The **Samsung Tablet FCC ID: A3LSGHI957** was connected to a Rohde & Schwarz CMW500 LTE eNodeB simulator. The EUT was configured to transmit continuously using different resource block configurations for all available channel bandwidths with QPSK and 16-QAM modulations in Band 4 and Band 17 in order to determine the maximum conducted output power.

All conducted power measurements were recorded from the CMW500. The test setup is as shown below.



Figure 6-1. Test Setup Diagram

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Transmitter Conducted Output Power (Cont'd)

§2.1046

Freq. (Mhz)	Uplink Channel Number	Modulation	Bandwidth	# of Resource Blocks	Resource Block Offset	Target Power [dB]	MPR Allowed by 3GPP	Target MPR [dB]	Maximum Average Power [dBm]
1712.5	19975	QPSK	5 MHz	1	0	22.7	0	0	22.85
1712.5	19975	16QAM	5 MHz	1	0	21.7	0-1	1	21.65
1712.5	19975	QPSK	5 MHz	1	24	22.7	0	0	22.75
1712.5	19975	16QAM	5 MHz	1	24	21.7	0-1	1	21.51
1712.5	19975	QPSK	5 MHz	12	6	21.7	0-1	1	21.98
1712.5	19975	16QAM	5 MHz	12	6	20.7	0-2	2	21.00
1712.5	19975	QPSK	5 MHz	25	0	21.7	0-1	1	22.01
1712.5	19975	16QAM	5 MHz	25	0	21.7	0-2	1	21.56
1732.5	20175	QPSK	5 MHz	1	0	22.7	0	0	22.79
1732.5	20175	16QAM	5 MHz	1	0	21.7	0-1	1	21.66
1732.5	20175	QPSK	5 MHz	1	24	22.7	0	0	22.67
1732.5	20175	16QAM	5 MHz	1	24	21.7	0-1	1	21.63
1732.5	20175	QPSK	5 MHz	12	6	21.7	0-1	1	21.81
1732.5	20175	16QAM	5 MHz	12	6	20.7	0-2	2	20.93
1732.5	20175	QPSK	5 MHz	25	0	21.7	0-1	1	21.78
1732.5	20175	16QAM	5 MHz	25	0	21.7	0-2	1	21.43
1752.5	20375	QPSK	5 MHz	1	0	22.7	0	0	22.78
1752.5	20375	16QAM	5 MHz	1	0	21.7	0-1	1	21.58
1752.5	20375	QPSK	5 MHz	1	24	22.7	0	0	22.67
1752.5	20375	16QAM	5 MHz	1	24	21.7	0-1	1	21.53
1752.5	20375	QPSK	5 MHz	12	6	21.7	0-1	1	21.87
1752.5	20375	16QAM	5 MHz	12	6	20.7	0-2	2	20.90
1752.5	20375	QPSK	5 MHz	25	0	21.7	0-1	1	21.91
1752.5	20375	16QAM	5 MHz	25	0	21.7	0-2	1	21.40

Table 6-2. Maximum Conducted Output Power (AWS Band, 5MHz BW)

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION) 			Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet		Page 13 of 55

Transmitter Conducted Output Power (Cont'd)

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Freq. (Mhz)	Uplink Channel Number	Modulation	Bandwidth	# of Resource Blocks	Resource Block Offset	Target Power [dB]	MPR Allowed by 3GPP	Target MPR [dB]	Maximum Average Power [dBm]
1715	20000	QPSK	10 MHz	1	0	22.7	0	0	23.00
1715	20000	16QAM	10 MHz	1	0	21.7	0-1	1	21.55
1715	20000	QPSK	10 MHz	1	49	22.7	0	0	22.88
1715	20000	16QAM	10 MHz	1	49	21.7	0-1	1	21.45
1715	20000	QPSK	10 MHz	25	13	21.7	0-1	1	21.89
1715	20000	16QAM	10 MHz	25	13	21.7	0-2	1	21.38
1715	20000	QPSK	10 MHz	50	0	21.7	0-1	1	21.94
1715	20000	16QAM	10 MHz	50	0	20.7	0-2	2	20.99
1732.5	20175	QPSK	10 MHz	1	0	22.7	0	0	22.54
1732.5	20175	16QAM	10 MHz	1	0	21.7	0-1	1	21.60
1732.5	20175	QPSK	10 MHz	1	49	22.7	0	0	22.70
1732.5	20175	16QAM	10 MHz	1	49	21.7	0-1	1	21.52
1732.5	20175	QPSK	10 MHz	25	13	21.7	0-1	1	21.81
1732.5	20175	16QAM	10 MHz	25	13	21.7	0-2	1	21.44
1732.5	20175	QPSK	10 MHz	50	0	21.7	0-1	1	21.83
1732.5	20175	16QAM	10 MHz	50	0	20.7	0-2	2	20.98
1750	20350	QPSK	10 MHz	1	0	22.7	0	0	22.82
1750	20350	16QAM	10 MHz	1	0	21.7	0-1	1	21.64
1750	20350	QPSK	10 MHz	1	49	22.7	0	0	22.72
1750	20350	16QAM	10 MHz	1	49	21.7	0-1	1	21.54
1750	20350	QPSK	10 MHz	25	13	21.7	0-1	1	21.94
1750	20350	16QAM	10 MHz	25	13	21.7	0-2	1	21.50
1750	20350	QPSK	10 MHz	50	0	21.7	0-1	1	22.02
1750	20350	16QAM	10 MHz	50	0	20.7	0-2	2	21.02

Table 6-3. Maximum Conducted Output Power (AWS Band, 10MHz BW)

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION) 			Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet		Page 14 of 55

Transmitter Conducted Output Power (Cont'd)

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Freq. (Mhz)	Uplink Channel Number	Modulation	Bandwidth	# of Resource Blocks	Resource Block Offset	Target Power [dB]	MPR Allowed by 3GPP	Target MPR [dB]	Maximum Average Power [dBm]
706.5	23755	QPSK	5 MHz	1	0	22.2	0	0	22.61
706.5	23755	16QAM	5 MHz	1	0	21.2	0-1	1	21.35
706.5	23755	QPSK	5 MHz	1	24	22.2	0	0	22.33
706.5	23755	16QAM	5 MHz	1	24	21.2	0-1	1	21.17
706.5	23755	QPSK	5 MHz	12	6	21.2	0-1	1	21.45
706.5	23755	16QAM	5 MHz	12	6	20.2	0-2	2	20.52
706.5	23755	QPSK	5 MHz	25	0	21.2	0-1	1	21.40
706.5	23755	16QAM	5 MHz	25	0	21.2	0-2	1	21.11
710	23790	QPSK	5 MHz	1	0	22.2	0	0	22.51
710	23790	16QAM	5 MHz	1	0	21.2	0-1	1	21.23
710	23790	QPSK	5 MHz	1	24	22.2	0	0	22.48
710	23790	16QAM	5 MHz	1	24	21.2	0-1	1	21.21
710	23790	QPSK	5 MHz	12	6	21.2	0-1	1	21.54
710	23790	16QAM	5 MHz	12	6	20.2	0-2	2	20.49
710	23790	QPSK	5 MHz	25	0	21.2	0-1	1	21.55
710	23790	16QAM	5 MHz	25	0	21.2	0-2	1	21.04
713.5	23825	QPSK	5 MHz	1	0	22.2	0	0	22.63
713.5	23825	16QAM	5 MHz	1	0	21.2	0-1	1	21.35
713.5	23825	QPSK	5 MHz	1	24	22.2	0	0	22.55
713.5	23825	16QAM	5 MHz	1	24	21.2	0-1	1	21.17
713.5	23825	QPSK	5 MHz	12	6	21.2	0-1	1	21.84
713.5	23825	16QAM	5 MHz	12	6	20.2	0-2	2	20.63
713.5	23825	QPSK	5 MHz	25	0	21.2	0-1	1	21.77
713.5	23825	16QAM	5 MHz	25	0	21.2	0-2	1	21.18

Table 6-4. Maximum Conducted Output Power (Band 17, 5MHz BW)

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION) 			Reviewed by: Quality Manager
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Transmitter Conducted Output Power (Cont'd)

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Freq. (Mhz)	Uplink Channel Number	Modulation	Bandwidth	# of Resource Blocks	Resource Block Offset	Target Power [dB]	MPR Allowed by 3GPP	Target MPR [dB]	Maximum Average Power [dBm]
709	23755	QPSK	10 MHz	1	0	22.2	0	0	22.49
709	23755	16QAM	10 MHz	1	0	21.2	0-1	1	21.27
709	23755	QPSK	10 MHz	1	49	22.2	0	0	22.31
709	23755	16QAM	10 MHz	1	49	21.2	0-1	1	21.14
709	23755	QPSK	10 MHz	25	13	21.2	0-1	1	21.47
709	23755	16QAM	10 MHz	25	13	21.2	0-2	1	20.95
709	23755	QPSK	10 MHz	50	0	21.2	0-1	1	21.53
709	23755	16QAM	10 MHz	50	0	20.2	0-2	2	20.56
710	23790	QPSK	10 MHz	1	0	22.2	0	0	22.22
710	23790	16QAM	10 MHz	1	0	21.2	0-1	1	21.01
710	23790	QPSK	10 MHz	1	49	22.2	0	0	22.23
710	23790	16QAM	10 MHz	1	49	21.2	0-1	1	21.10
710	23790	QPSK	10 MHz	25	13	21.2	0-1	1	21.57
710	23790	16QAM	10 MHz	25	13	21.2	0-2	1	20.99
710	23790	QPSK	10 MHz	50	0	21.2	0-1	1	21.55
710	23790	16QAM	10 MHz	50	0	20.2	0-2	2	20.50
711	23825	QPSK	10 MHz	1	0	22.2	0	0	22.27
711	23825	16QAM	10 MHz	1	0	21.2	0-1	1	21.03
711	23825	QPSK	10 MHz	1	49	22.2	0	0	22.19
711	23825	16QAM	10 MHz	1	49	21.2	0-1	1	20.92
711	23825	QPSK	10 MHz	25	13	21.2	0-1	1	21.56
711	23825	16QAM	10 MHz	25	13	21.2	0-2	1	20.97
711	23825	QPSK	10 MHz	50	0	21.2	0-1	1	21.25
711	23825	16QAM	10 MHz	50	0	20.2	0-2	2	20.44

Table 6-5. Maximum Conducted Output Power (Band 17, 10MHz BW)

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION) 			Reviewed by: Quality Manager
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6.3 Equivalent Isotropic Radiated Power Output Data §27.50(d)(4)

	Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Power
Band IV LTE	1712.50	5	QPSK	1 / 0	-18.22	12.95	8.08	H	21.03	0.127	Battery
	1732.50	5	QPSK	1 / 0	-18.84	12.33	7.97	H	20.30	0.107	Battery
	1752.50	5	QPSK	1 / 11	-18.42	12.75	7.86	H	20.61	0.115	Battery
	1712.50	5	16-QAM	1 / 24	-19.83	11.34	8.08	H	19.42	0.087	Battery
	1732.50	5	16-QAM	1 / 12	-20.27	10.90	7.97	H	18.87	0.077	Battery
	1752.50	5	16-QAM	1 / 0	-19.56	11.61	7.86	H	19.47	0.089	Battery
	1715.00	10	QPSK	1 / 49	-18.04	13.13	8.08	H	21.21	0.132	Battery
	1732.50	10	QPSK	1 / 0	-17.53	13.64	7.97	H	21.61	0.145	Battery
	1750.00	10	QPSK	1 / 28	-17.86	13.31	7.86	H	21.17	0.131	Battery
	1715.00	10	16-QAM	1 / 49	-18.01	13.16	8.08	H	21.24	0.133	Battery
	1732.50	10	16-QAM	1 / 26	-18.03	13.14	7.97	H	21.11	0.129	Battery
	1750.00	10	16-QAM	1 / 0	-18.36	12.81	7.86	H	20.67	0.117	Battery

Table 6-6. Equivalent Isotropic Radiated Power Output Data (Band 4)

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This level is recorded using the power meter. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal setup. The data reported in the table above was measured in this test setup.

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6.4 Effective Radiated Power Output Data

§27.50(c)(9)

	Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	RB Size/Offset	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Power
Band XVII LTE	706.50	5	QPSK	1 / 0	-16.21	19.23	0.00	H	19.23	0.084	Battery
	710.00	5	QPSK	1 / 16	-16.59	18.85	0.00	H	18.85	0.077	Battery
	713.50	5	QPSK	1 / 7	-15.86	19.58	0.00	H	19.58	0.091	Battery
	706.50	5	16-QAM	1 / 0	-16.94	18.50	0.00	H	18.50	0.071	Battery
	710.00	5	16-QAM	1 / 24	-16.83	18.61	0.00	H	18.61	0.073	Battery
	713.50	5	16-QAM	1 / 0	-17.21	18.23	0.00	H	18.23	0.067	Battery
	709.00	10	QPSK	1 / 44	-16.77	18.67	0.00	H	18.67	0.074	Battery
	710.00	10	QPSK	1 / 14	-16.44	19.00	0.00	H	19.00	0.079	Battery
	711.00	10	QPSK	1 / 0	-16.03	19.41	0.00	H	19.41	0.087	Battery
	709.00	10	16-QAM	1 / 0	-17.24	18.20	0.00	H	18.20	0.066	Battery
	710.00	10	16-QAM	1 / 19	-17.18	18.26	0.00	H	18.26	0.067	Battery
	711.00	10	16-QAM	1 / 13	-17.41	18.03	0.00	H	18.03	0.064	Battery

Table 6-7. Effective Radiated Power Output Data (Band 17)

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This level is recorded using the power meter. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal setup. The data reported in the table above was measured in this test setup.

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6.5 Band 4 (AWS) LTE Radiated Measurements

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1715.00 MHz
 CHANNEL: 20000
 MEASURED OUTPUT POWER: 21.610 dBm = 0.145 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 34.61 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3430.00	-38.65	9.34	-29.31	H	50.9
5145.00	-46.74	10.96	-35.79	H	57.4
6860.00	-84.44	10.52	-73.93	H	95.5
8575.00	-80.92	11.07	-69.85	H	91.5

Table 6-8. Radiated Spurious Data (10MHz BW, QPSK, AWS Band – Ch. 20000)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal position. The data reported in the table above was measured in this test setup.

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Band 4 (AWS) LTE Radiated Measurements (Cont'd)

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1732.50 MHz
 CHANNEL: 20175
 MEASURED OUTPUT POWER: 21.610 dBm = 0.145 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 34.61 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3465.00	-47.27	9.47	-37.81	H	59.4
5197.50	-49.64	10.87	-38.77	H	60.4
6930.00	-84.63	10.68	-73.95	H	95.6
8662.50	-80.98	11.25	-69.74	H	91.3

Table 6-9. Radiated Spurious Data (10MHz BW, QPSK, AWS Band – Ch. 20175)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal position. The data reported in the table above was measured in this test setup.

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Band 4 (AWS) LTE Radiated Measurements (Cont'd)

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1750.00 MHz
 CHANNEL: 20350
 MEASURED OUTPUT POWER: 21.610 dBm = 0.145 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 34.61 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3500.00	-41.41	9.54	-31.87	H	53.5
5250.00	-47.93	10.69	-37.25	H	58.9
7000.00	-84.78	10.81	-73.98	H	95.6
8750.00	-81.12	11.40	-69.71	H	91.3

Table 6-10. Radiated Spurious Data (10MHz BW, QPSK, AWS Band – Ch. 20350)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal position. The data reported in the table above was measured in this test setup.

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6.6 Band 17 LTE Radiated Measurements

§2.1053, §27.53(q)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 706.50 MHz
 CHANNEL: 23755
 MEASURED OUTPUT POWER: 19.580 dBm = 0.091 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) = 32.58$ dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1413.00	-45.84	5.80	-40.04	H	60.5
2119.50	-46.05	6.48	-39.57	H	60.0
2826.00	-93.98	7.70	-86.28	H	106.7
3532.50	-90.77	7.47	-83.29	H	103.7

Table 6-11. Radiated Spurious Data (5MHz BW, QPSK, Band 17 – Ch. 23755)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal position. The data reported in the table above was measured in this test setup.

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION) 			Reviewed by: Quality Manager
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Band 17 LTE Radiated Measurements (Cont'd)

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 710.00 MHz
 CHANNEL: 23790
 MEASURED OUTPUT POWER: 19.580 dBm = 0.091 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 32.58 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1420.00	-45.56	5.84	-39.72	H	60.2
2130.00	-47.78	6.48	-41.30	H	61.7
2840.00	-93.90	7.69	-86.21	H	106.6
3550.00	-90.76	7.50	-83.26	H	103.7

Table 6-12. Radiated Spurious Data (5MHz BW, QPSK, Band 17 – Ch. 23790)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal position. The data reported in the table above was measured in this test setup.

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet			Page 23 of 55

Band 17 LTE Radiated Measurements (Cont'd)

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 713.50 MHz
 CHANNEL: 23825
 MEASURED OUTPUT POWER: 19.580 dBm = 0.091 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 32.58 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1427.00	-47.83	5.87	-41.96	H	62.4
2140.50	-48.20	6.48	-41.72	H	62.2
2854.00	-93.82	7.67	-86.14	H	106.6
3567.50	-90.75	7.53	-83.22	H	103.6

Table 6-13. Radiated Spurious Data (5MHz BW, QPSK, Band 17 – Ch. 23825)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested under all modulations and channel bandwidth configurations and the worst case spurious emissions are reported in Band 4 using 10MHz Bandwidth and in Band 17 using 5MHz Bandwidth. For both Band 4 and 17, the worst case emissions employed 1RB (with offset 0) and QPSK modulation. This unit was tested with its standard battery. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal position. The data reported in the table above was measured in this test setup.

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet			Page 24 of 55

6.7 Band 4 (AWS) LTE Frequency Stability Measurements

§2.1055, §27.54

OPERATING FREQUENCY: 1,732,500,000 Hz

CHANNEL: 20175

REFERENCE VOLTAGE: 5 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	5.00	+ 20 (Ref)	1,732,500,006	6	0.000000
100 %		- 30	1,732,500,002	2	0.000000
100 %		- 20	1,732,500,015	15	0.000001
100 %		- 10	1,732,500,020	20	0.000001
100 %		0	1,732,499,996	-4	0.000000
100 %		+ 10	1,732,499,998	-2	0.000000
100 %		+ 20	1,732,499,983	-17	-0.000001
100 %		+ 30	1,732,500,004	4	0.000000
100 %		+ 40	1,732,500,034	34	0.000002
100 %		+ 50	1,732,499,994	-6	0.000000
115 %	5.75	+ 20	1,732,499,994	-6	0.000000
85 %	4.25	+ 20	1,732,500,000	0	0.000000

Table 6-14. Frequency Stability Data (10MHz BW, QPSK, Band 4 (AWS) – Ch. 20175)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Band 4 (AWS) LTE Frequency Stability Measurements (Cont'd)

§2.1055, §27.54

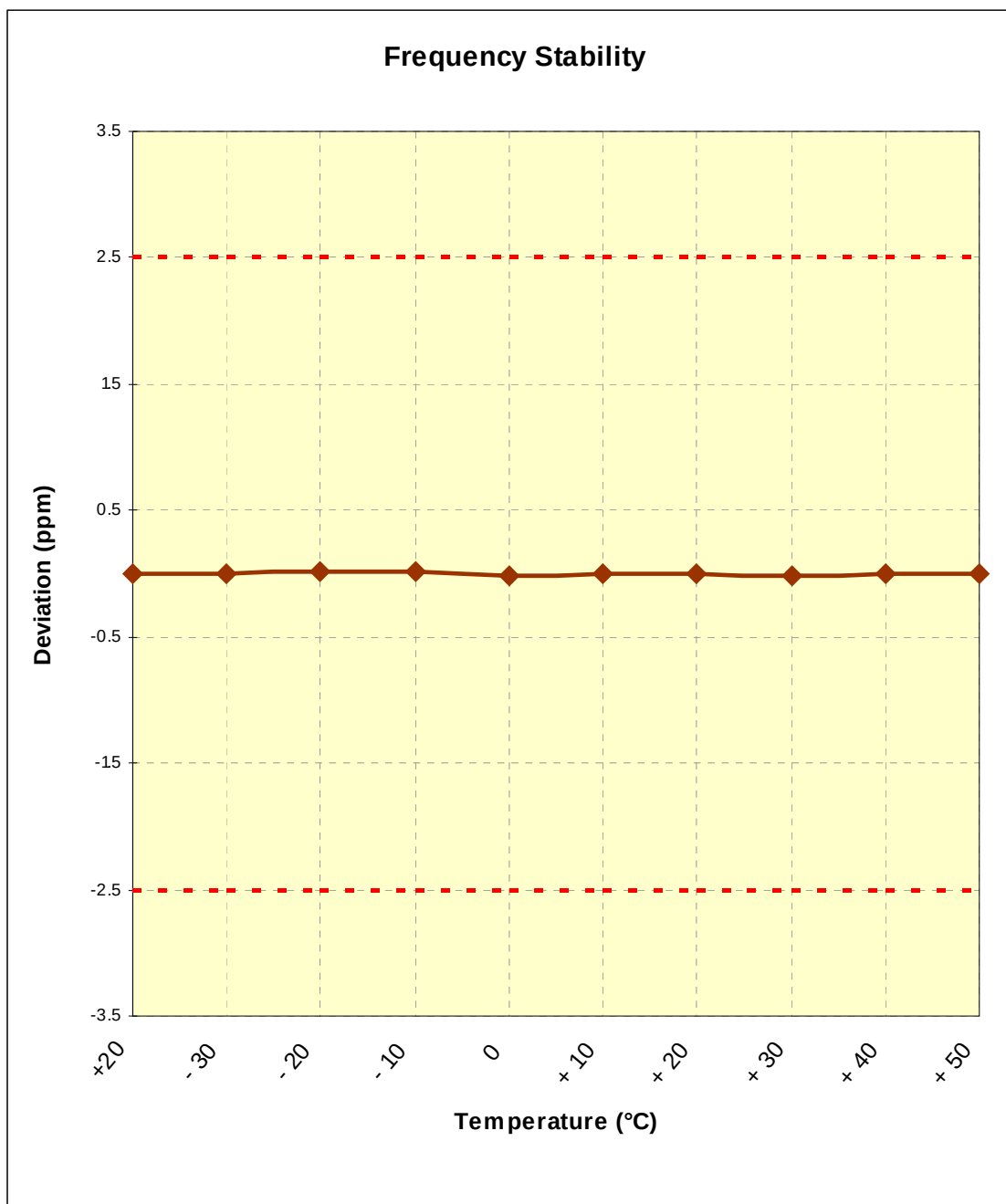


Figure 6-2. Frequency Stability Graph (10MHz BW, QPSK, Band 4 (AWS) – Ch. 20175)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION) 	Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet	Page 26 of 55	

6.8 Band 17 LTE Frequency Stability Measurements

\$2.1055, \$27.54

OPERATING FREQUENCY: 710,000,000 Hz

CHANNEL: 23790

REFERENCE VOLTAGE: 5 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	5.00	+ 20 (Ref)	710,000,003	3	0.000000
100 %		- 30	710,000,006	6	0.000001
100 %		- 20	709,999,977	-23	-0.000003
100 %		- 10	709,999,983	-17	-0.000002
100 %		0	710,000,005	5	0.000001
100 %		+ 10	710,000,027	27	0.000004
100 %		+ 20	710,000,031	31	0.000004
100 %		+ 30	710,000,004	4	0.000001
100 %		+ 40	710,000,019	19	0.000003
100 %		+ 50	709,999,974	-26	-0.000004
115 %	5.75	+ 20	709,999,979	-21	-0.000003
85 %	4.25	+ 20	710,000,005	5	0.000001

Table 6-15. Frequency Stability Data (5MHz BW, QPSK, Band 17 – Ch. 23790)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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PCS LTE Frequency Stability Measurements (Cont'd)

§2.1055, §27.54

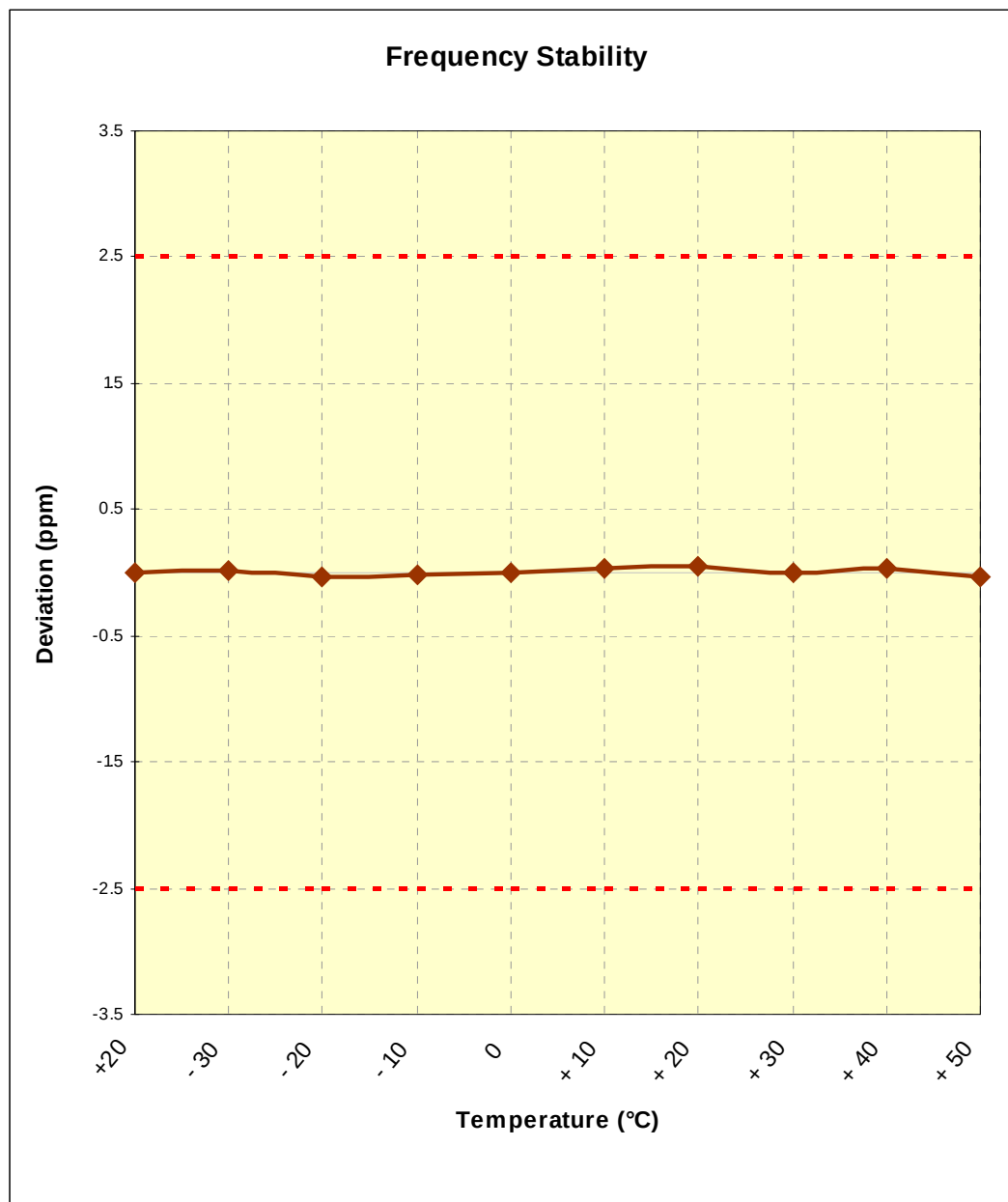
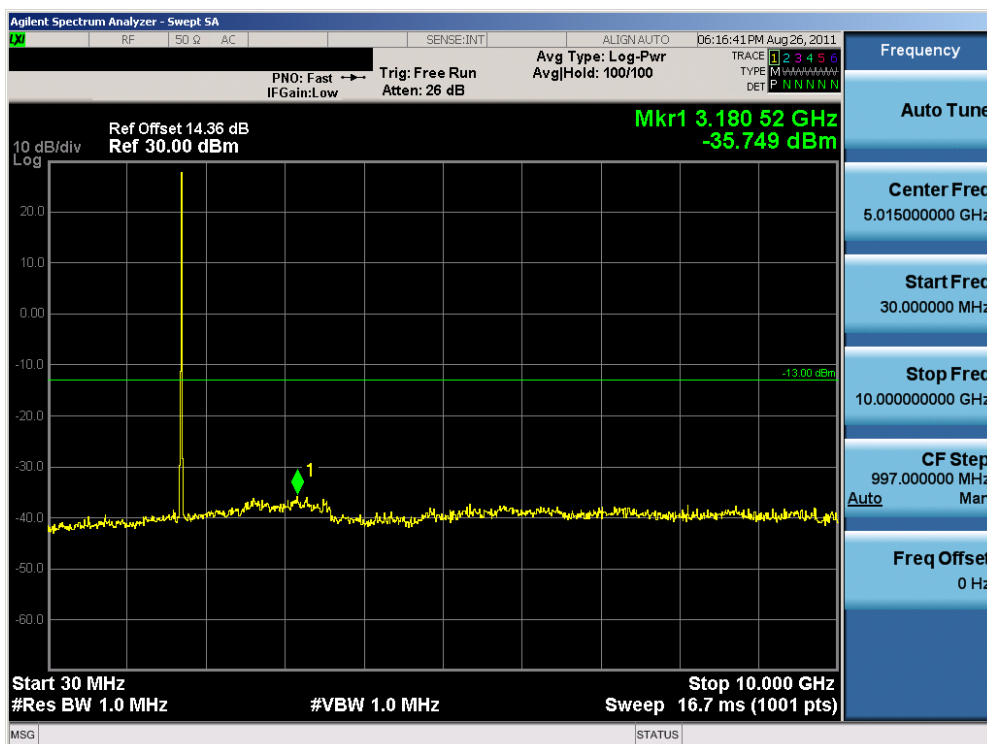


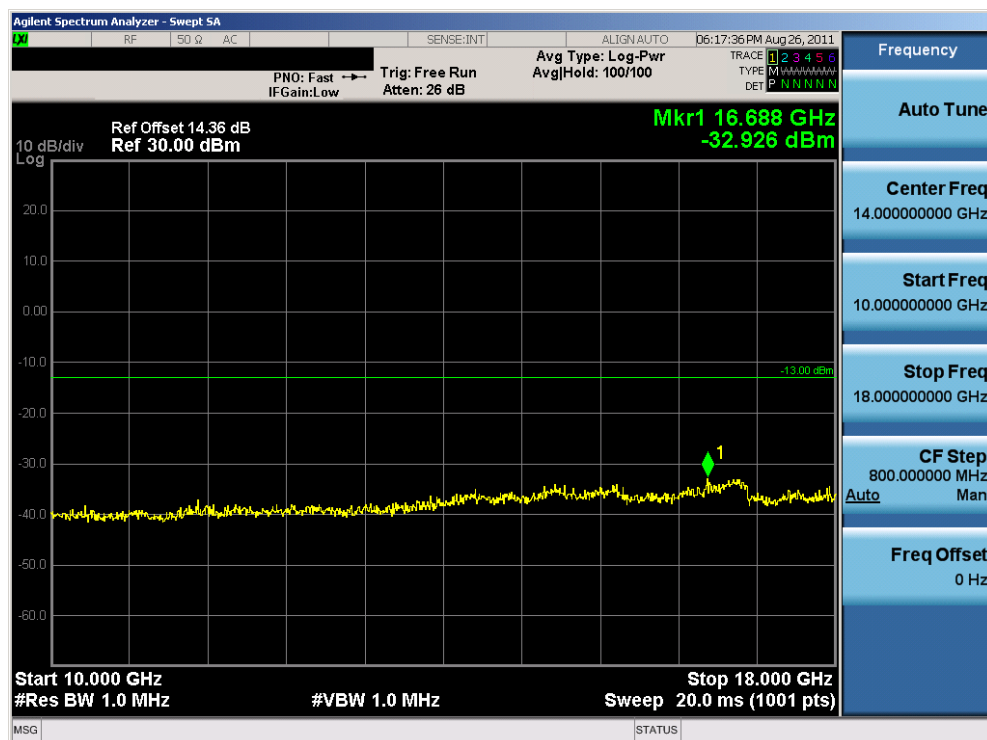
Figure 6-3. Frequency Stability Graph (5MHz BW, QPSK, Band 17 – Ch. 23790)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION) 	Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet	Page 28 of 55	

7.0 PLOT(S) OF EMISSIONS – AWS BAND

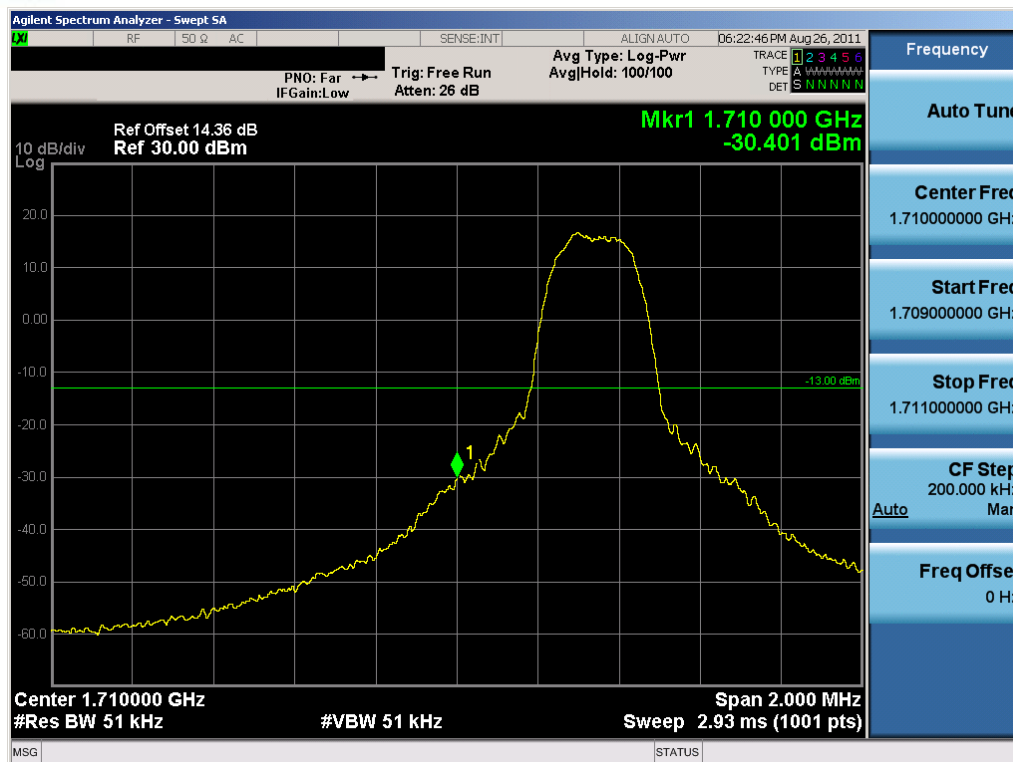


Plot 7-1. Conducted Spurious Plot (5MHz BW, QPSK, AWS Band – Low Channel)

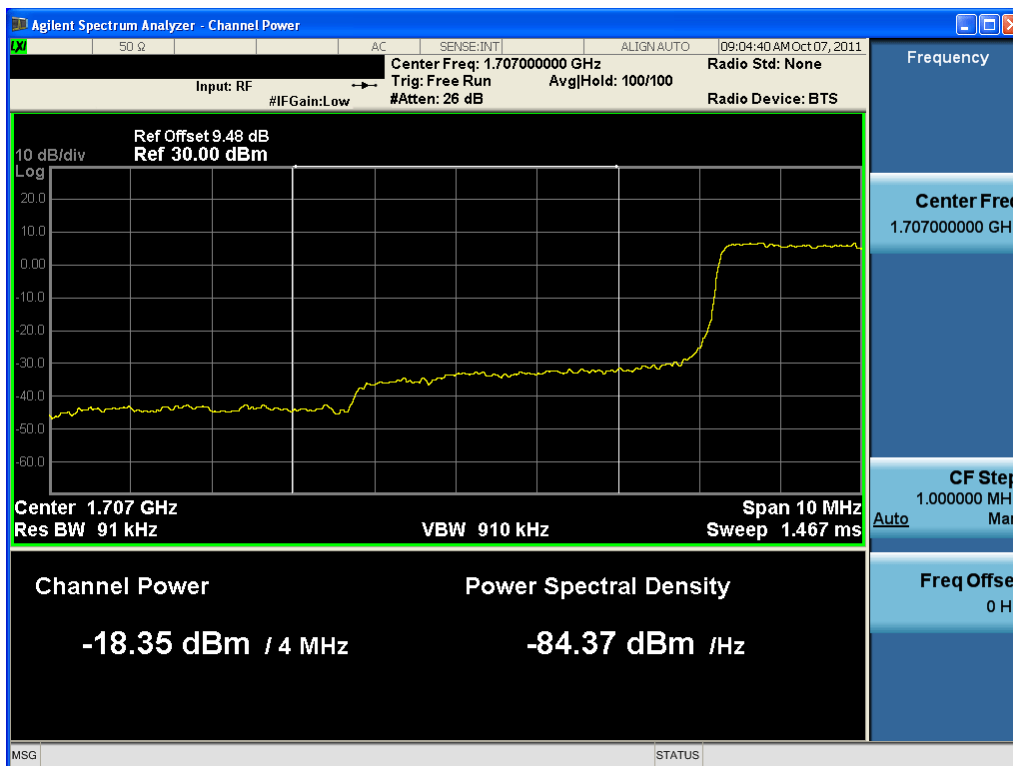


Plot 7-2. Conducted Spurious Plot (5MHz BW, QPSK, AWS Band – Low Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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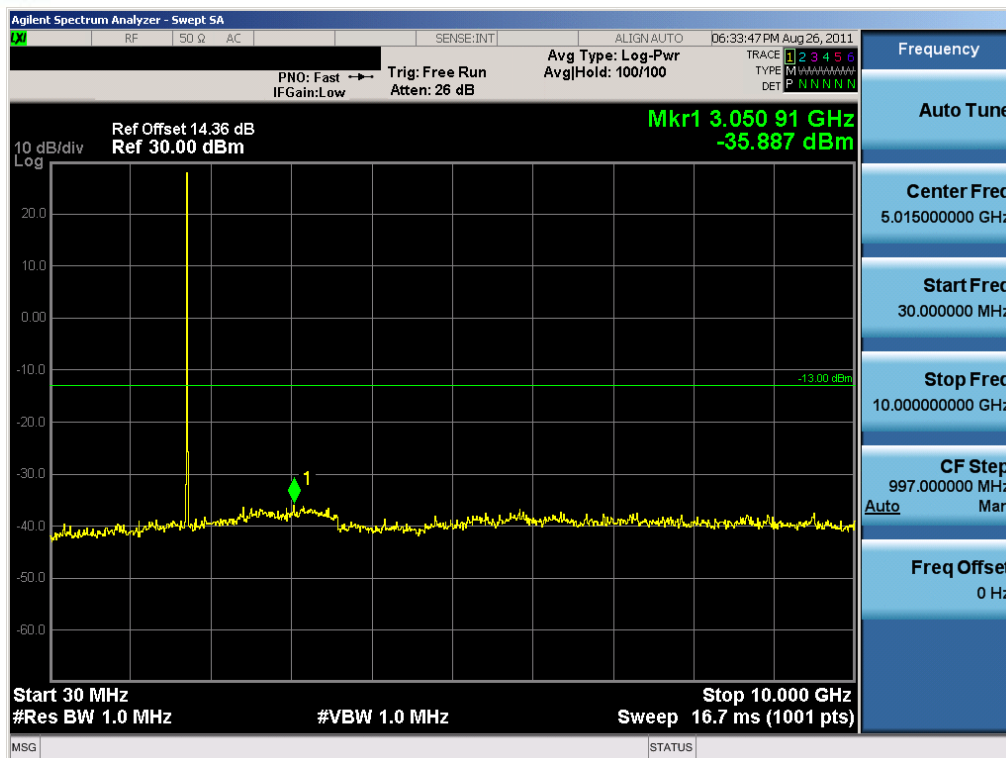


Plot 7-3. Band Edge Plot (5MHz BW, QPSK, AWS Band – Low Channel)

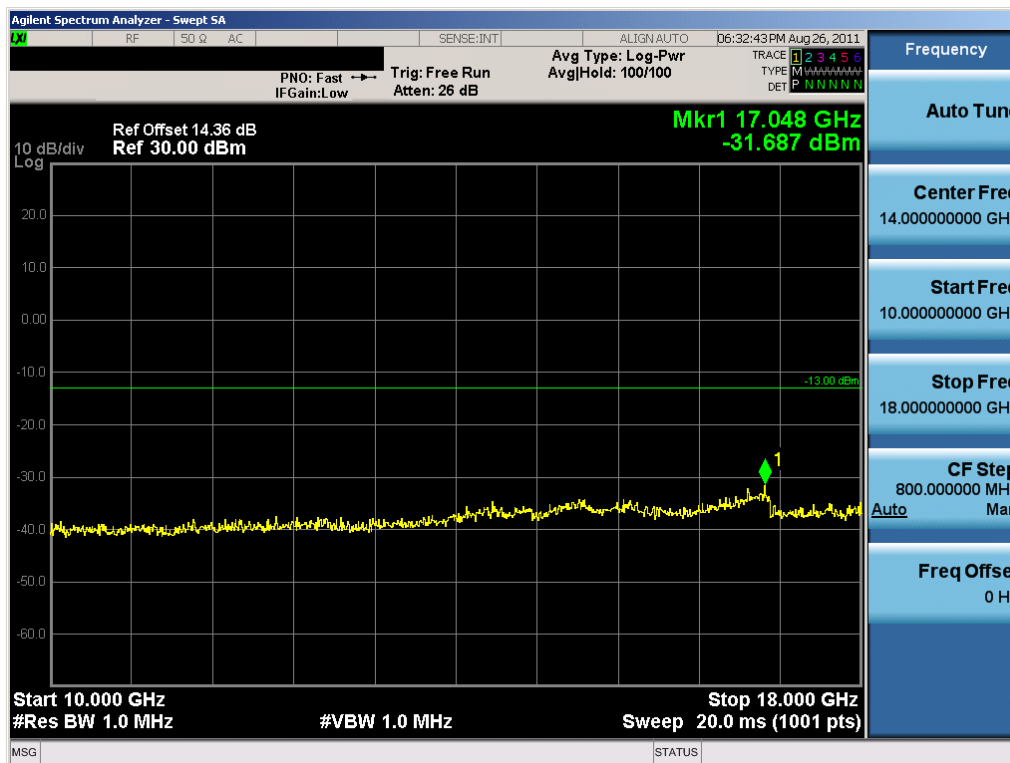


Plot 7-4. Extended Band Edge Plot (5MHz BW, QPSK, AWS Band – Low Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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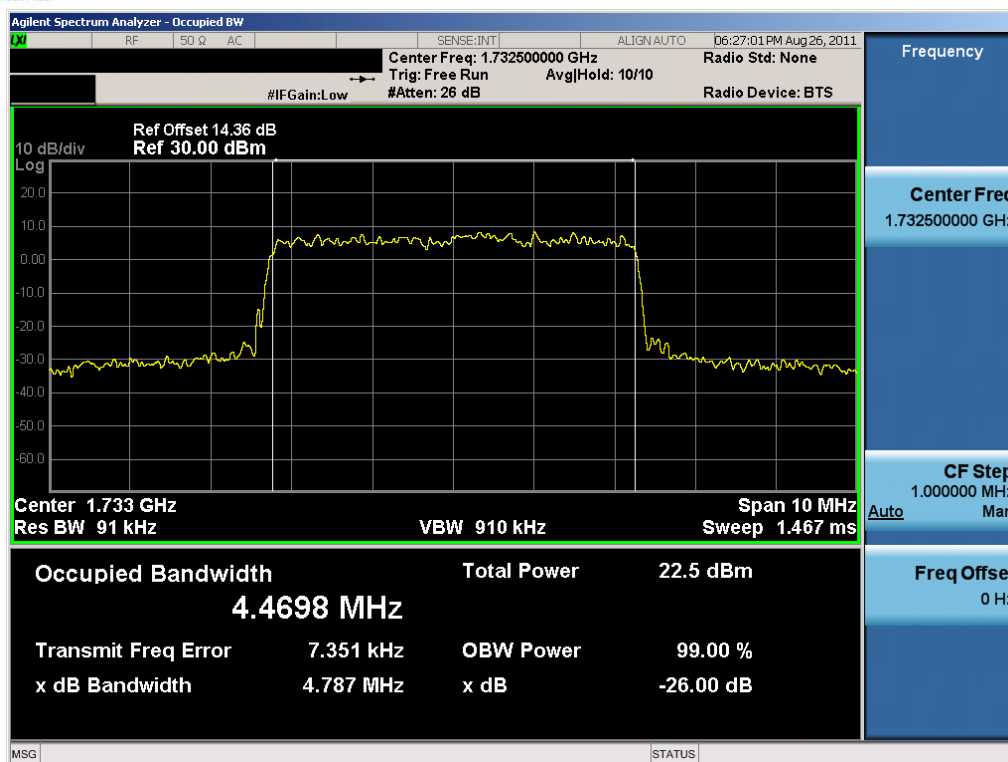


Plot 7-5. Conducted Spurious Plot (5MHz BW, QPSK, AWS Band – Mid Channel)

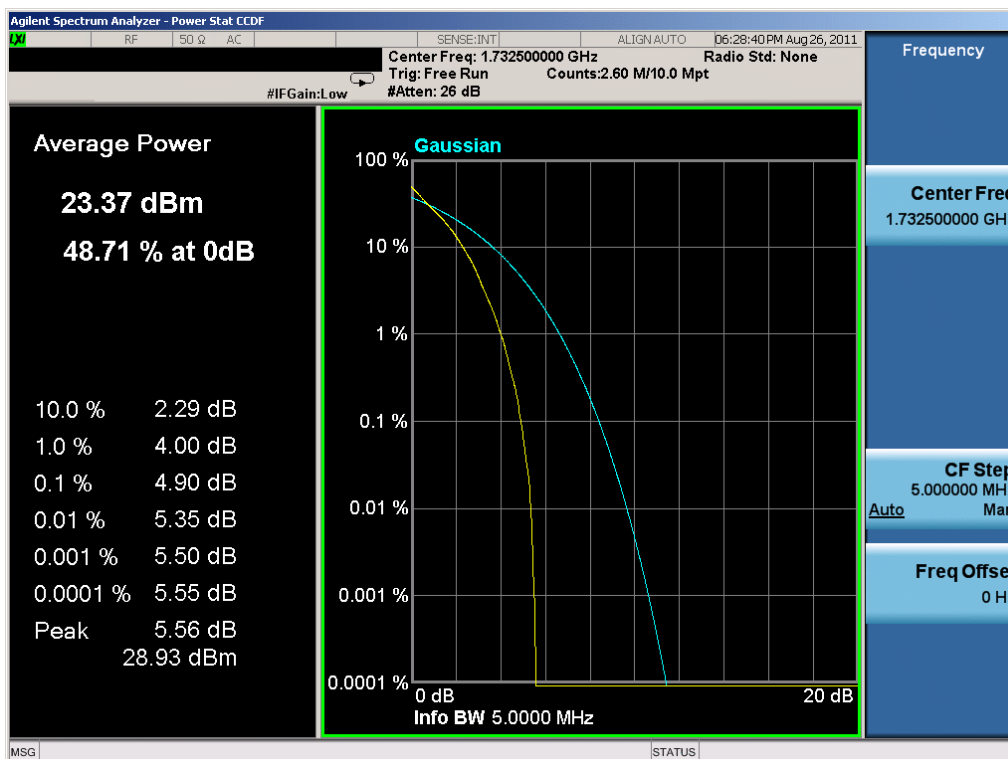


Plot 7-6. Conducted Spurious Plot (5MHz BW, QPSK, AWS Band – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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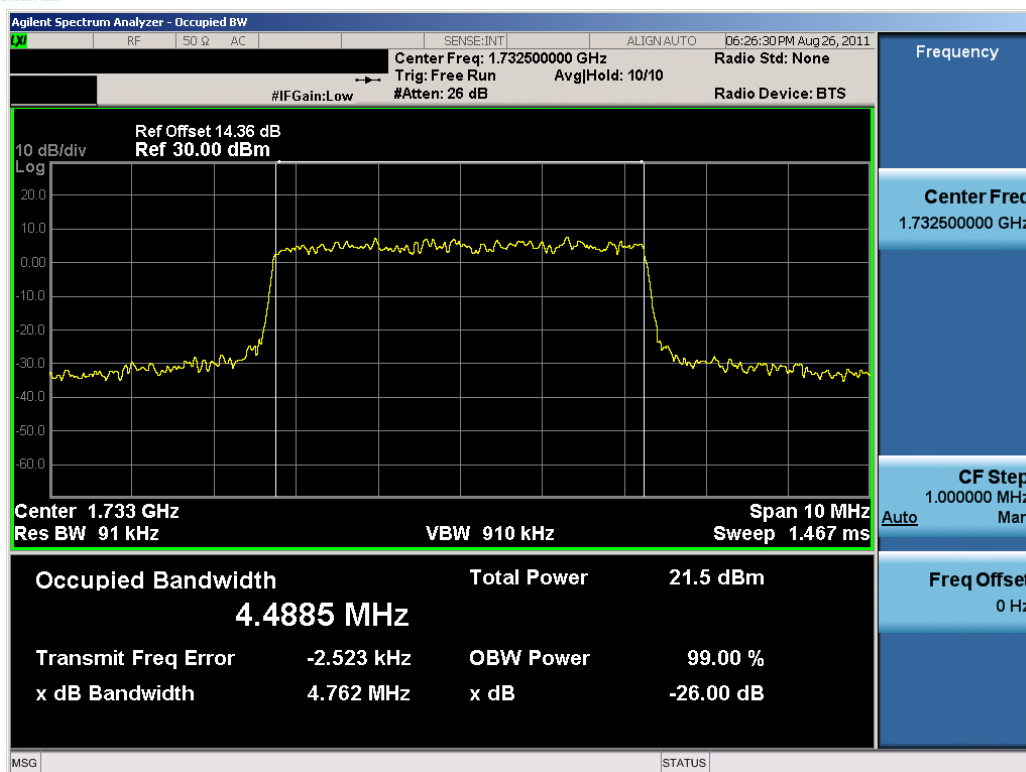


Plot 7-7. Occupied Bandwidth Plot (5MHz BW, QPSK, AWS Band – Mid Channel)

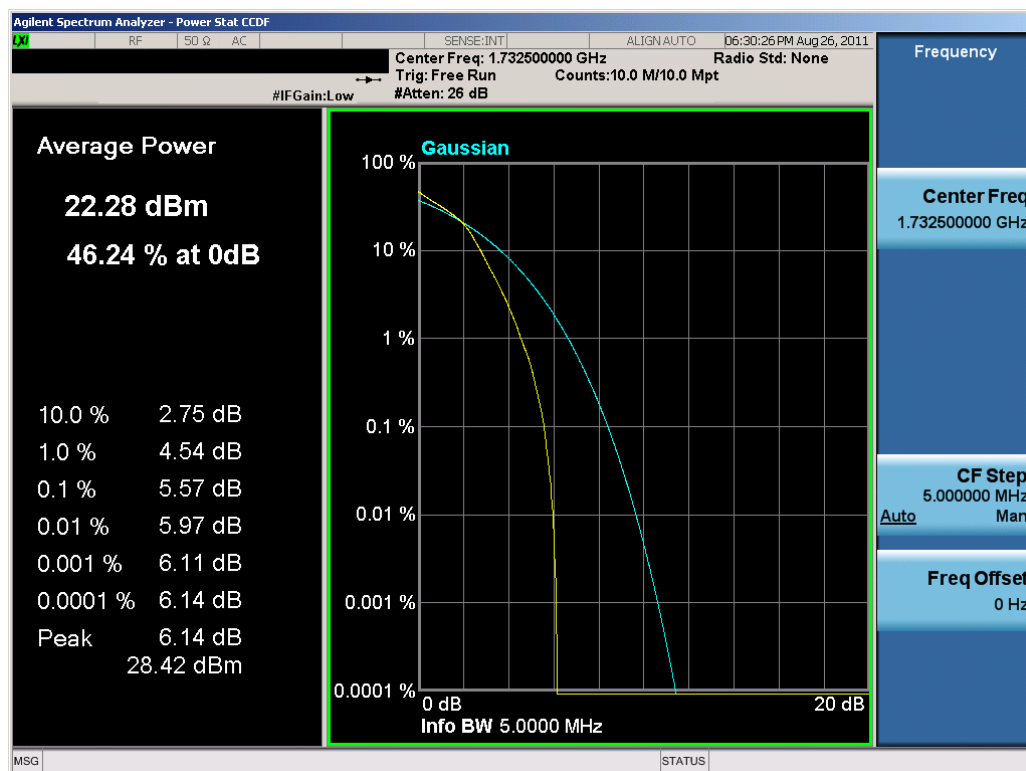


Plot 7-8. Peak-Average Ratio Plot (5MHz BW, QPSK, AWS Band – Mid Channel)

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		 Reviewed by: Quality Manager
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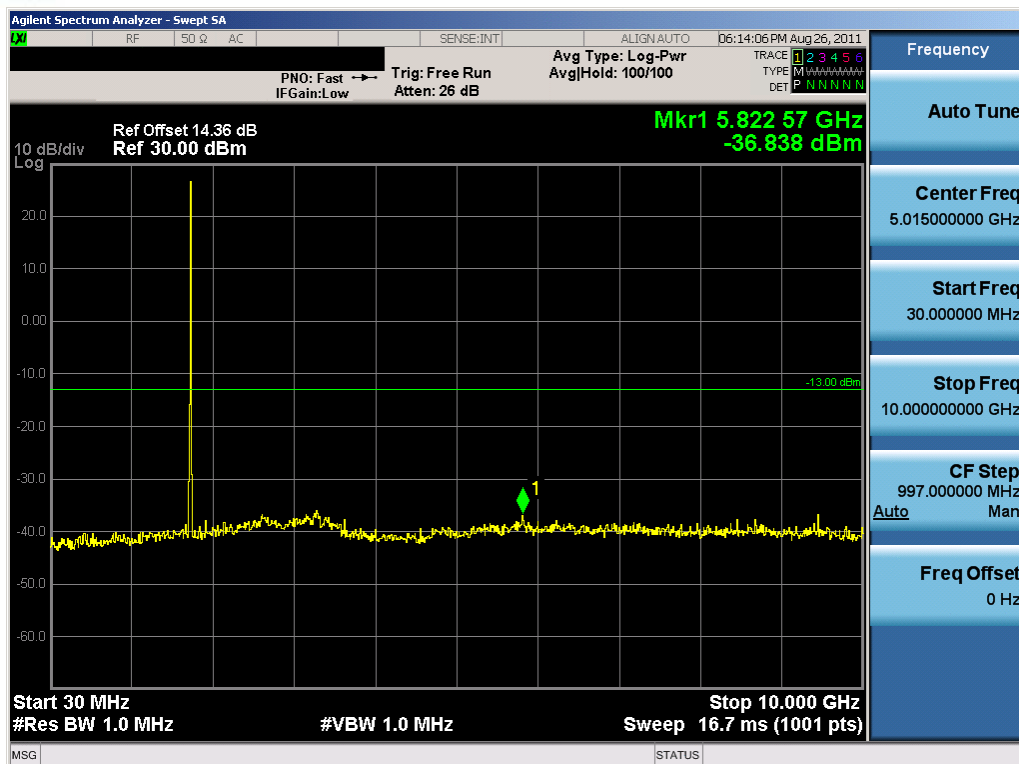


Plot 7-9. Occupied Bandwidth Plot (5MHz BW, 16-QAM, AWS Band – Mid Channel)

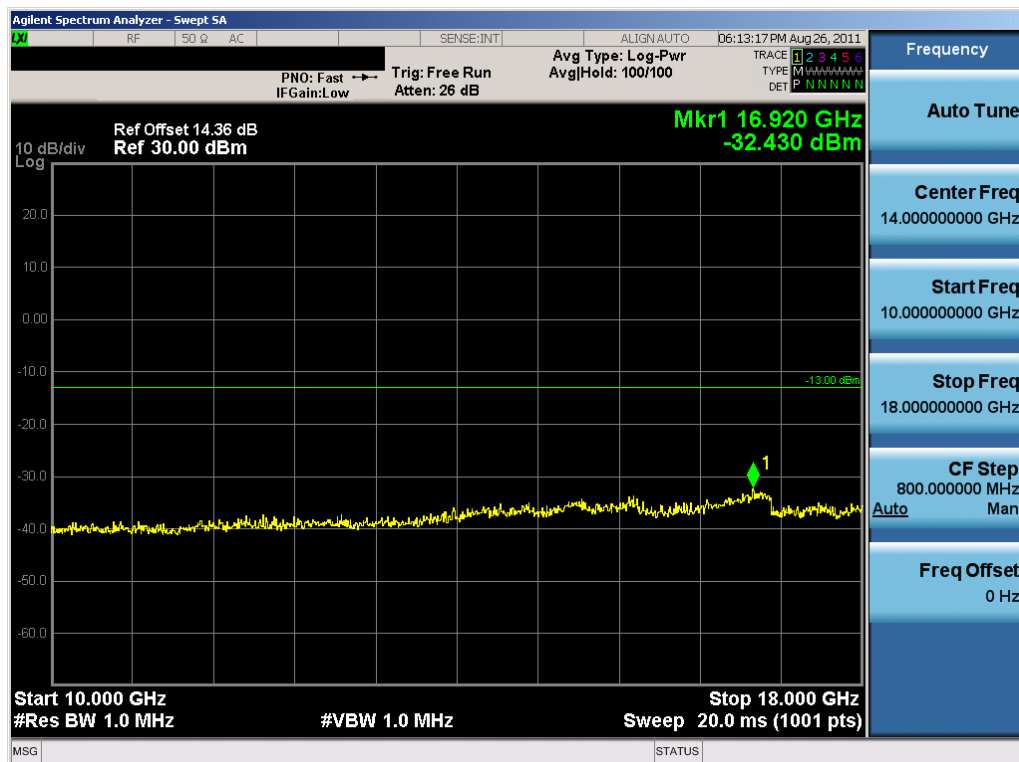


Plot 7-10. Peak-Average Ratio Plot (5MHz BW, 16-QAM, AWS Band – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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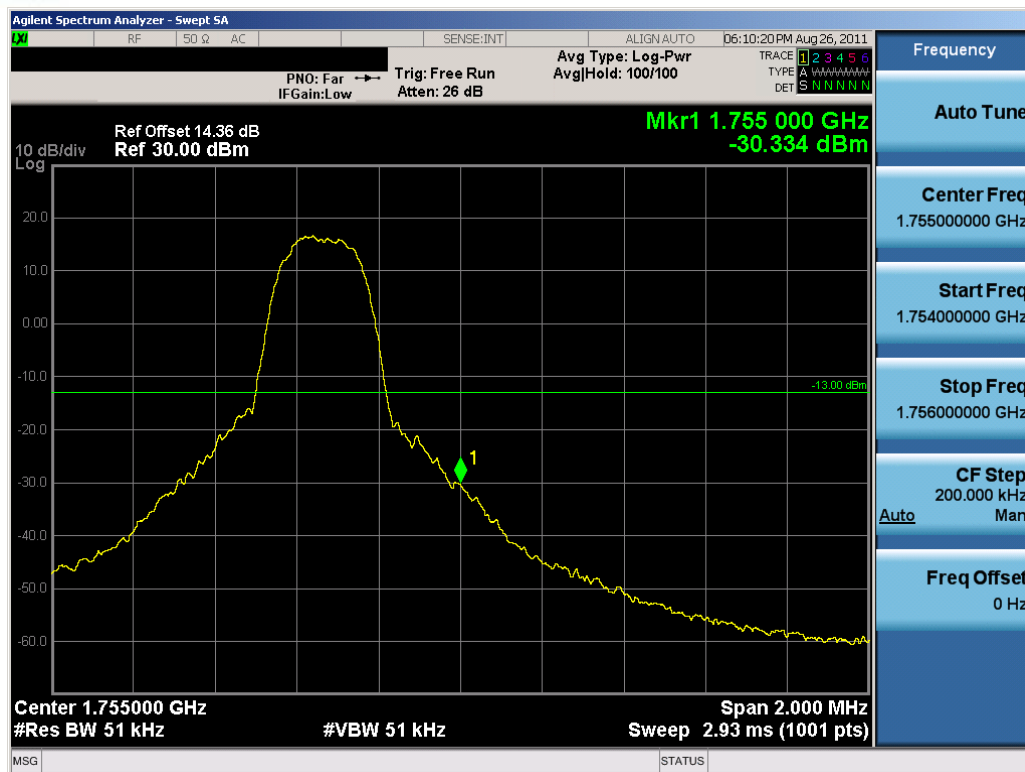


Plot 7-11. Conducted Spurious Plot (5MHz BW, QPSK, AWS Band – High Channel)



Plot 7-12. Conducted Spurious Plot (5MHz BW, QPSK, AWS Band – High Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet	Page 34 of 55		

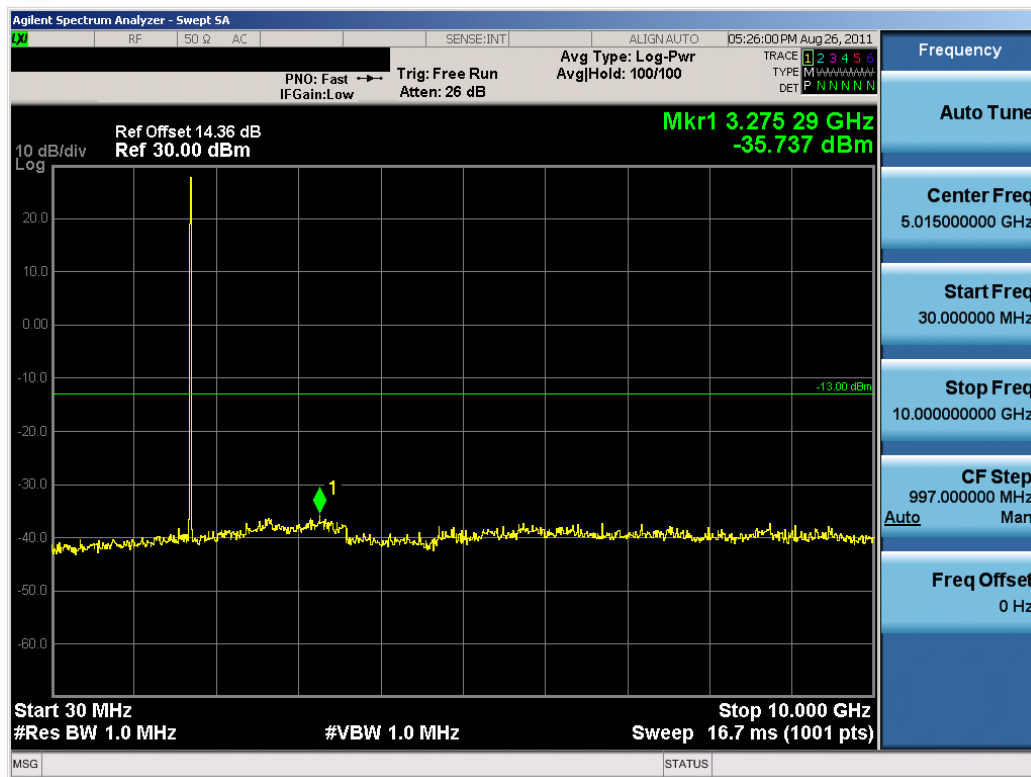


Plot 7-13. Band Edge Plot (5MHz BW, QPSK, AWS Band – High Channel)

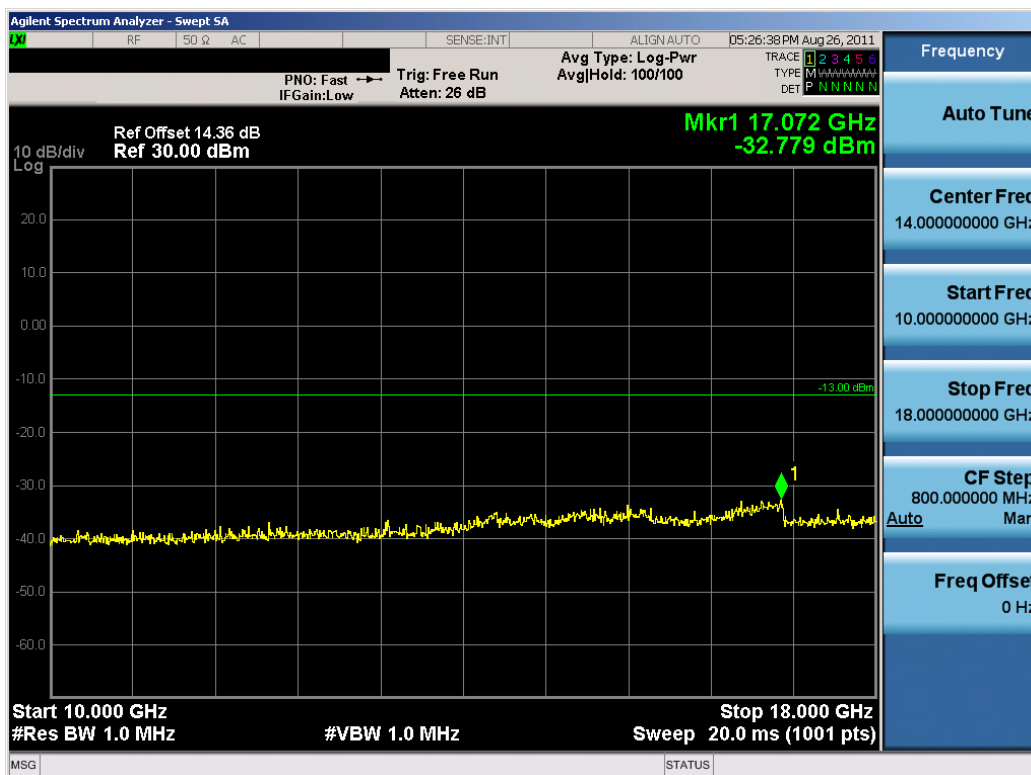


Plot 7-14. Extended Band Edge Plot (5MHz BW, QPSK, AWS Band – High Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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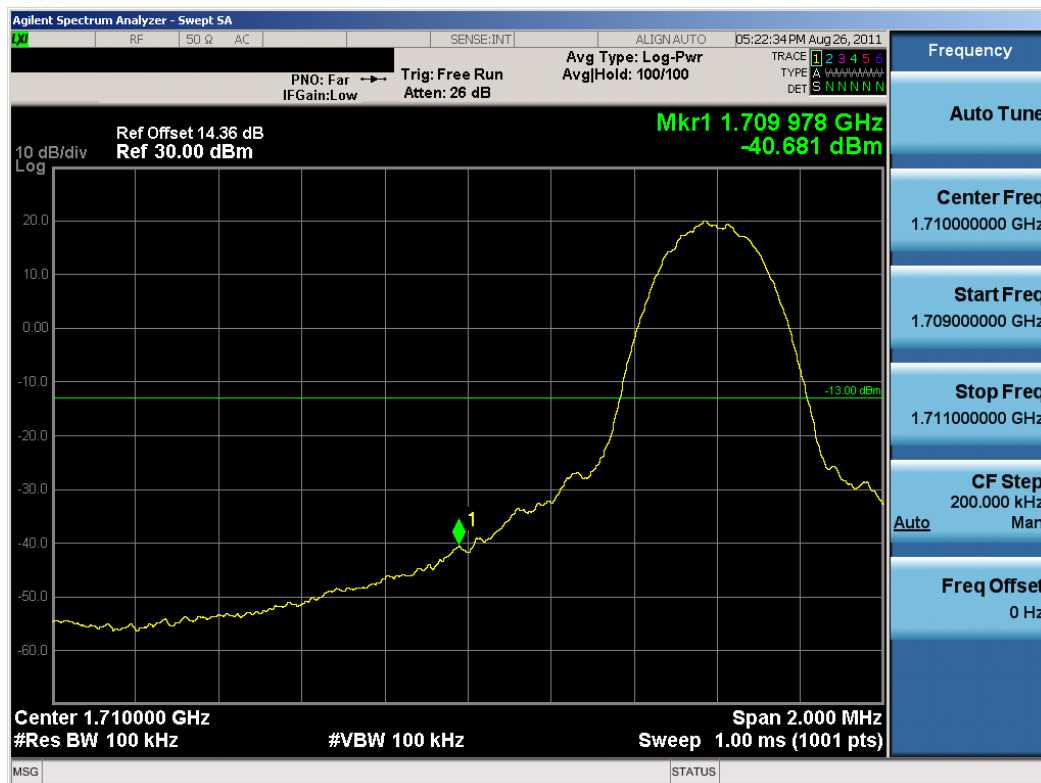


Plot 7-15. Conducted Spurious Plot (10MHz BW, QPSK, AWS Band – Low Channel)

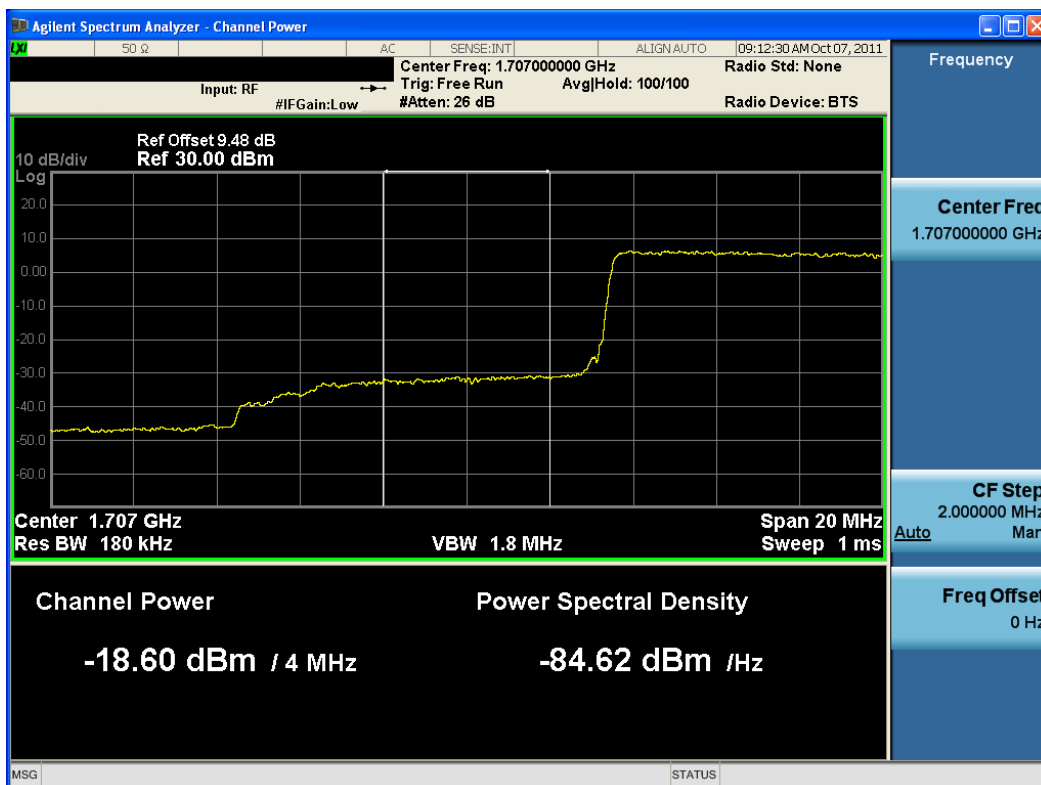


Plot 7-16. Conducted Spurious Plot (10MHz BW, QPSK, AWS Band – Low Channel)

FCC ID: A3LSGH1957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet	Page 36 of 55	

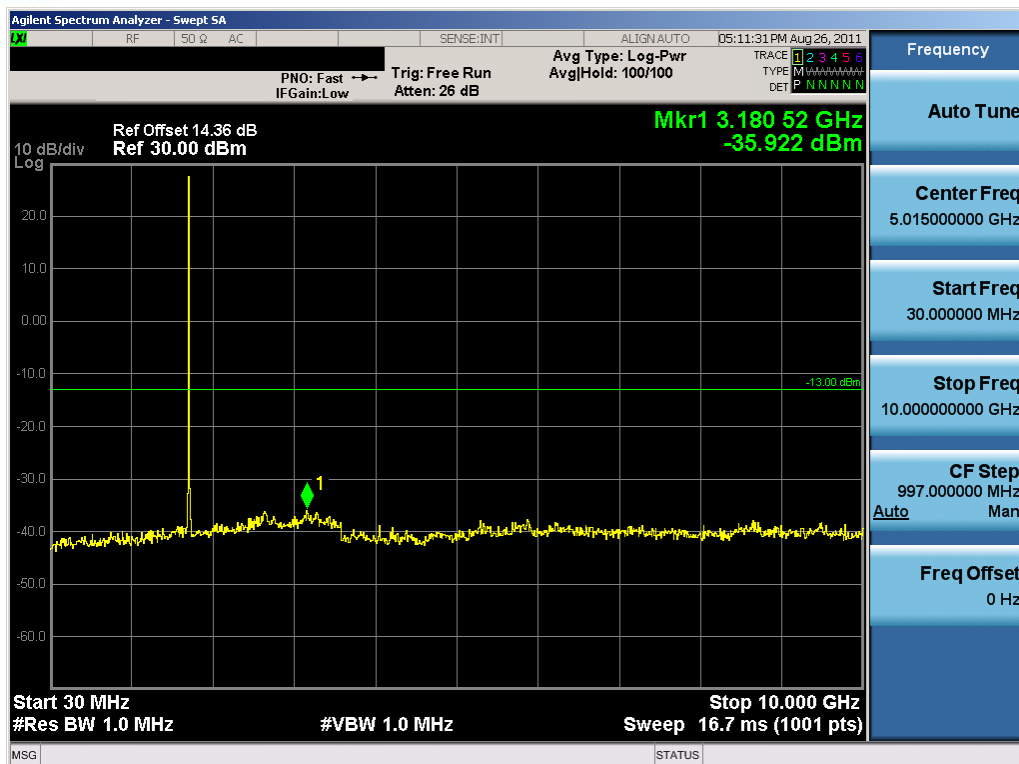


Plot 7-17. Band Edge Plot (10MHz BW, QPSK, AWS Band – Low Channel)

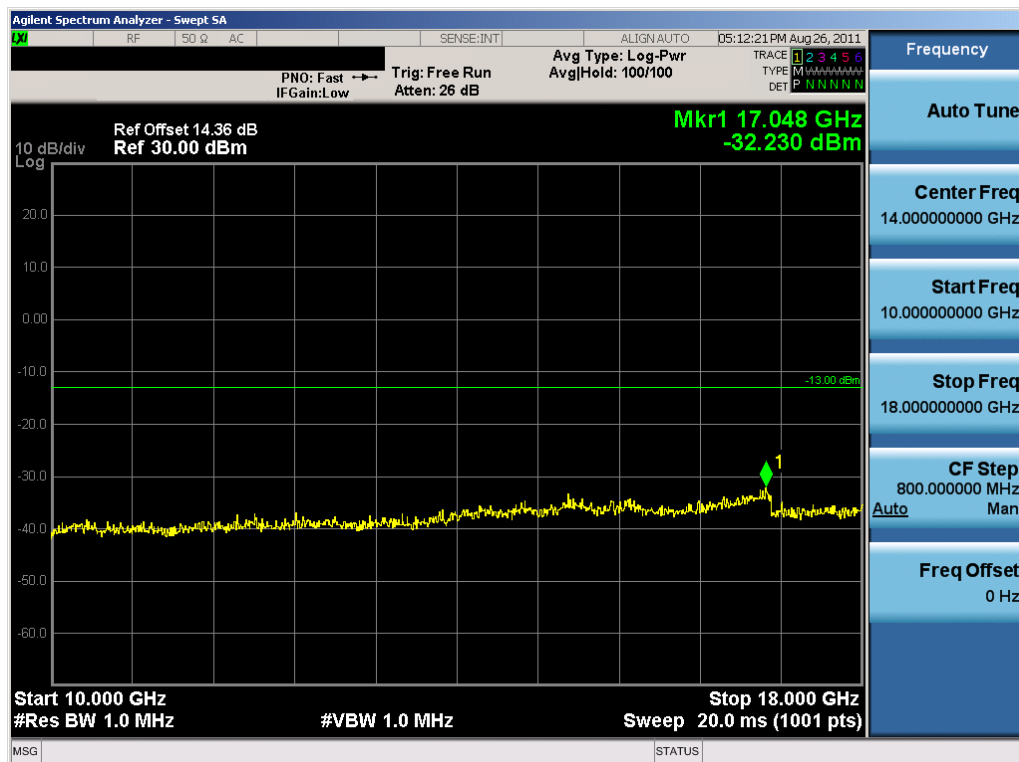


Plot 7-18. Extended Band Edge Plot (10MHz BW, QPSK, AWS Band – Low Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet			Page 37 of 55

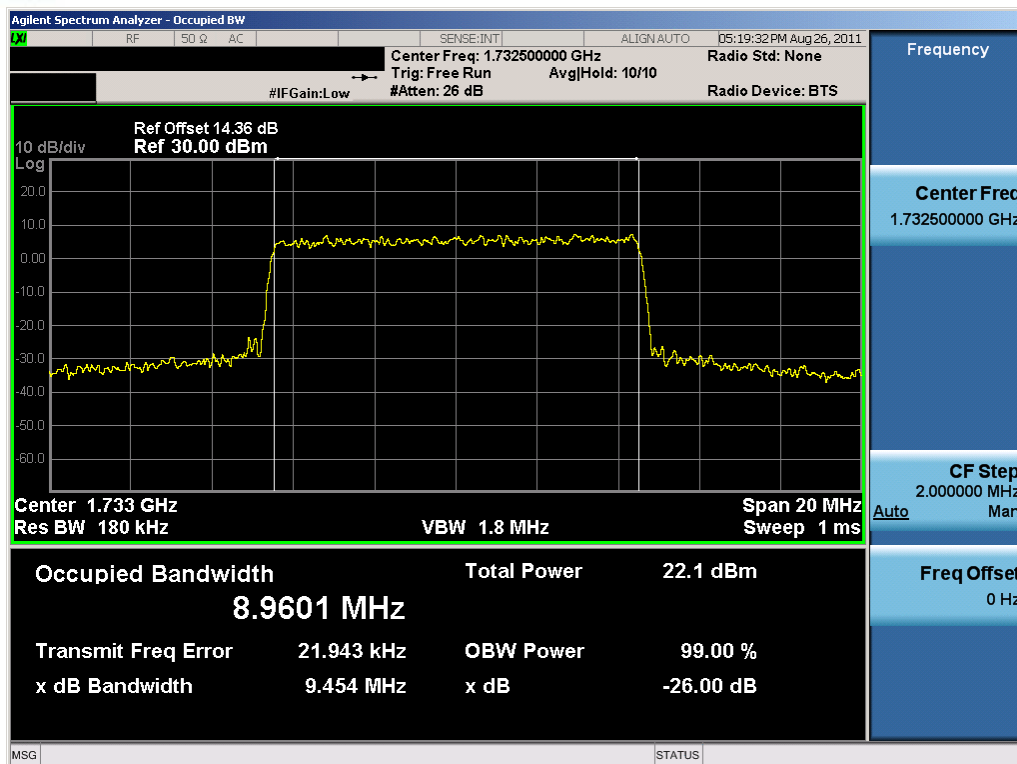


Plot 7-19. Conducted Spurious Plot (10MHz BW, QPSK, AWS Band – Mid Channel)

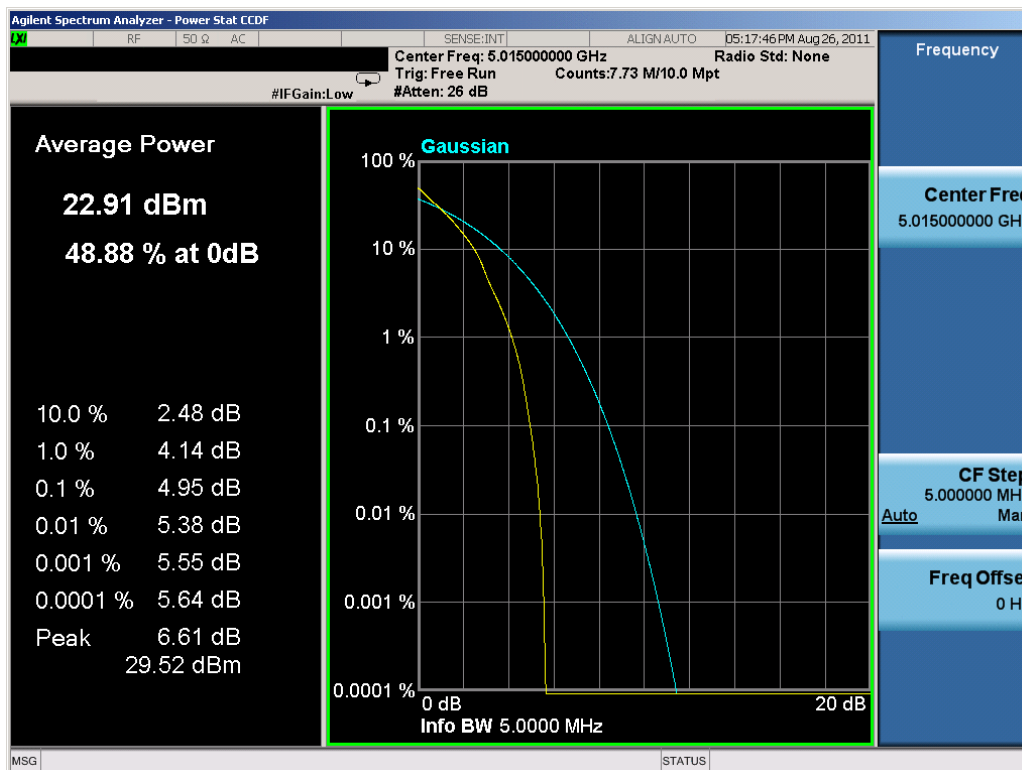


Plot 7-20. Conducted Spurious Plot (10MHz BW, QPSK, AWS Band – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet	Page 38 of 55		

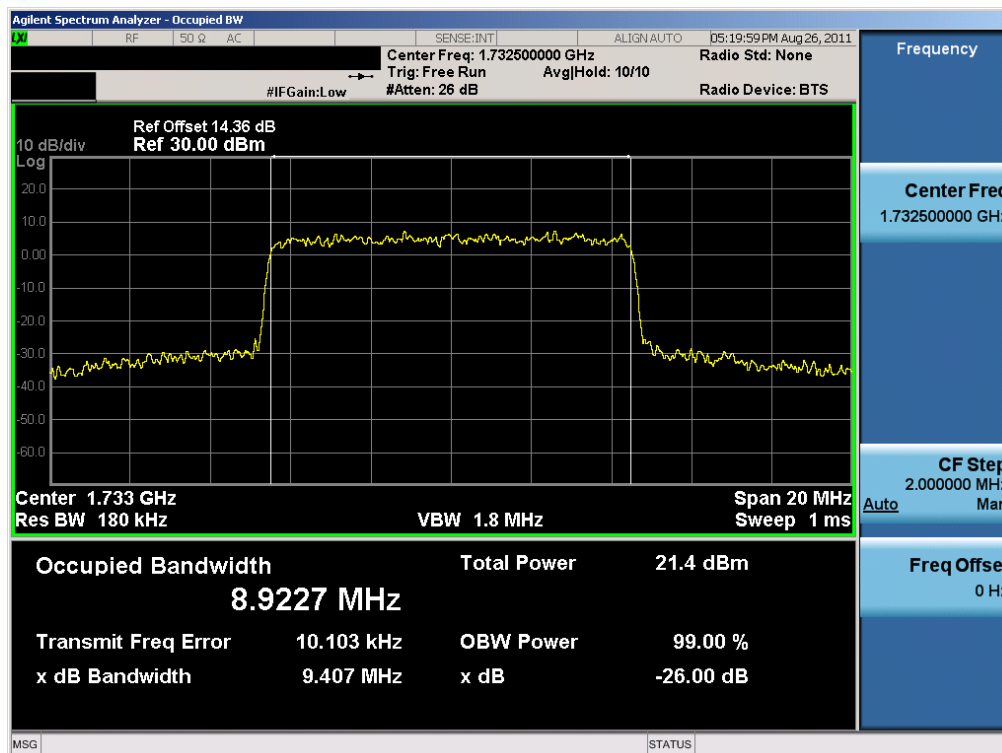


Plot 7-21. Occupied Bandwidth Plot (10MHz BW, QPSK, AWS Band – Mid Channel)

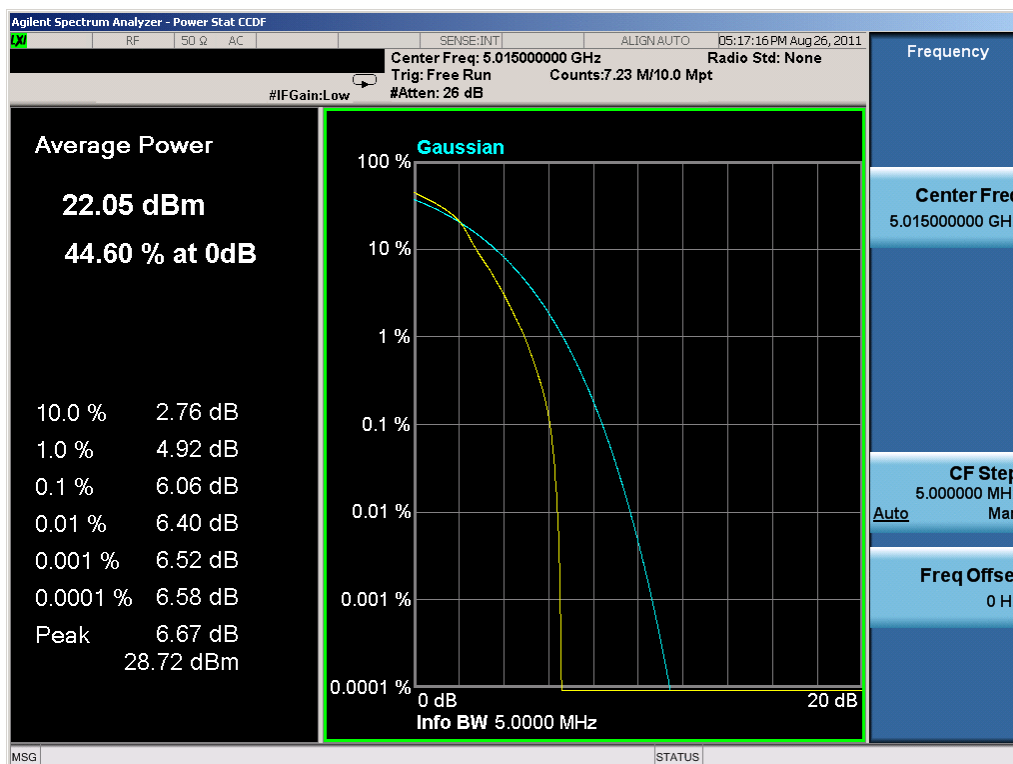


Plot 7-22. Peak-Average Ratio Plot (10MHz BW, QPSK, AWS Band – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet			Page 39 of 55

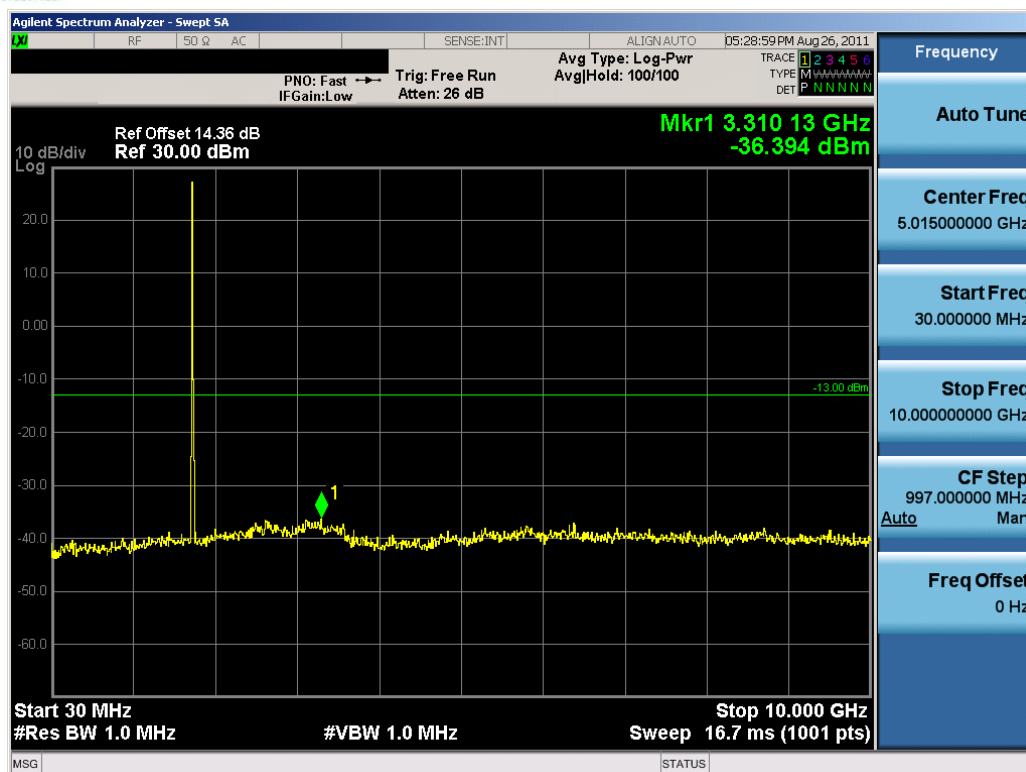


Plot 7-23. Occupied Bandwidth Plot (10MHz BW, 16-QAM, AWS Band – Mid Channel)

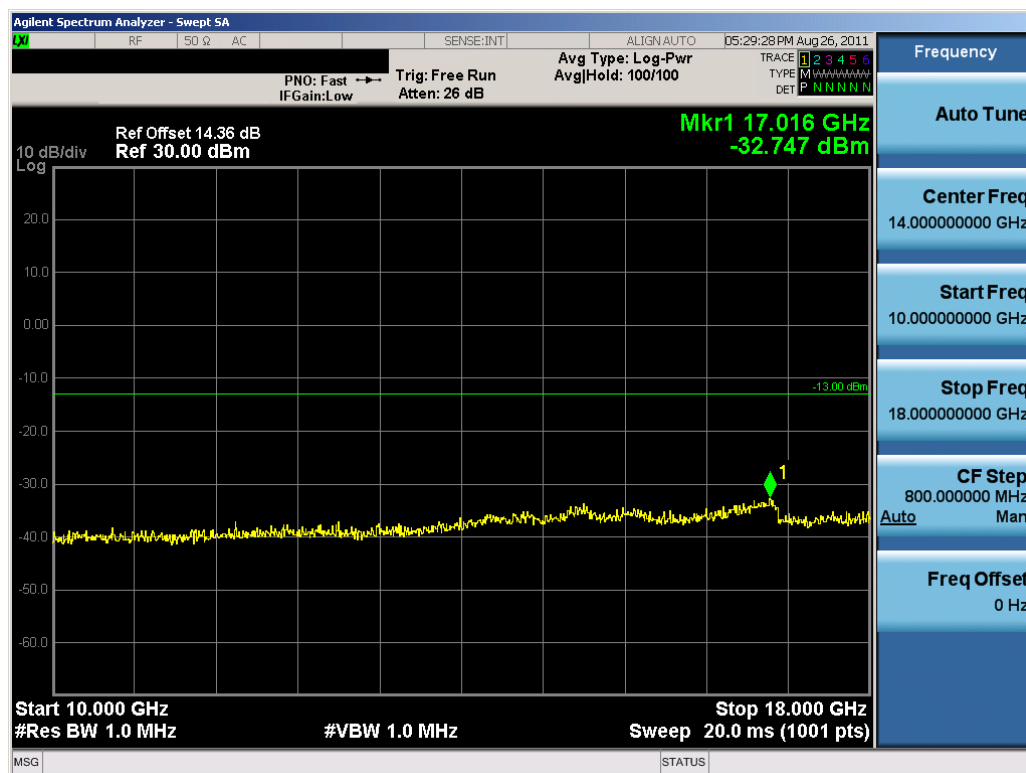


Plot 7-24. Peak-Average Ratio Plot (10MHz BW, 16-QAM, AWS Band – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet			Page 40 of 55

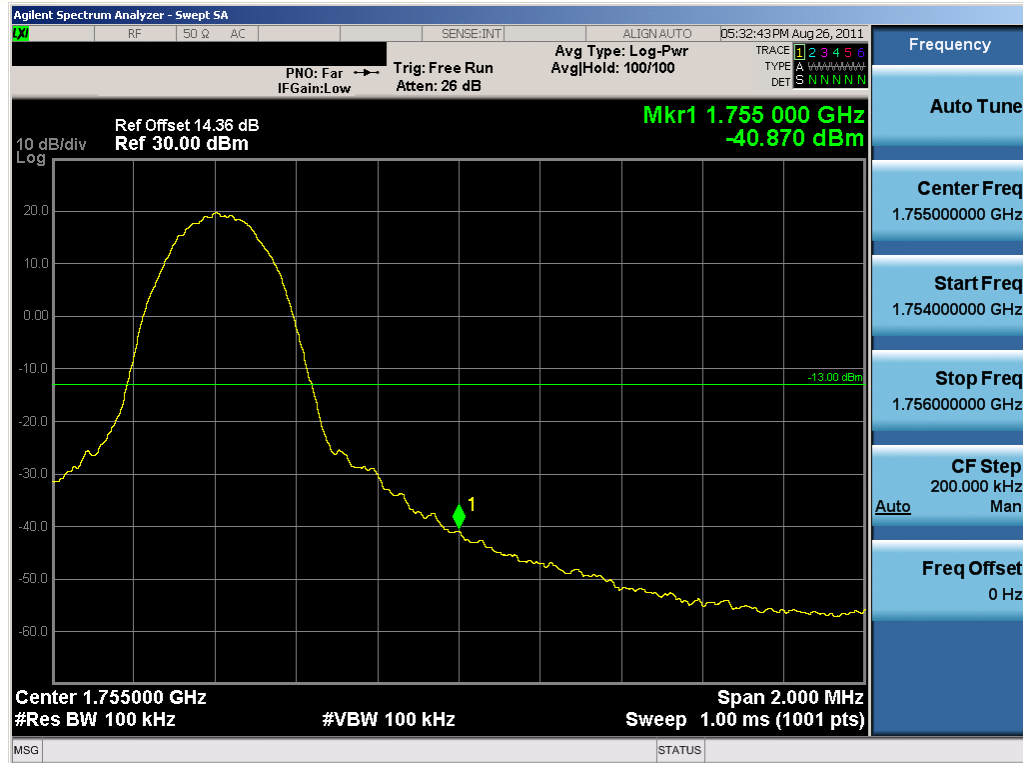


Plot 7-25. Conducted Spurious Plot (10MHz BW, QPSK, AWS Band – High Channel)



Plot 7-26. Conducted Spurious Plot (10MHz BW, QPSK, AWS Band – High Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet	Page 41 of 55		



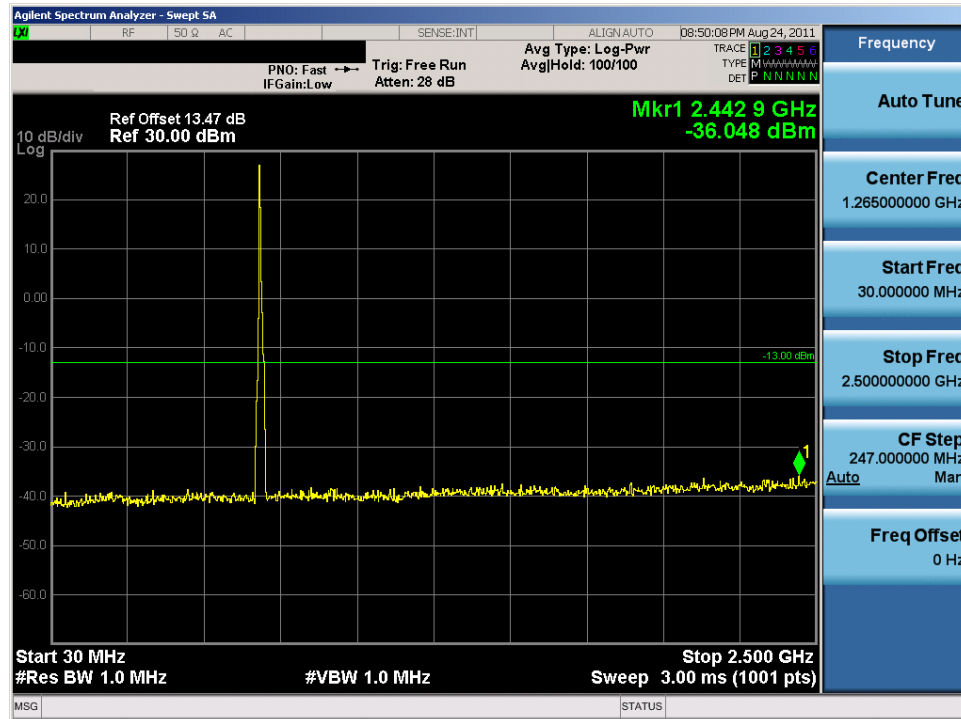
Plot 7-27. Band Edge Plot (10MHz BW, QPSK, AWS Band – High Channel)



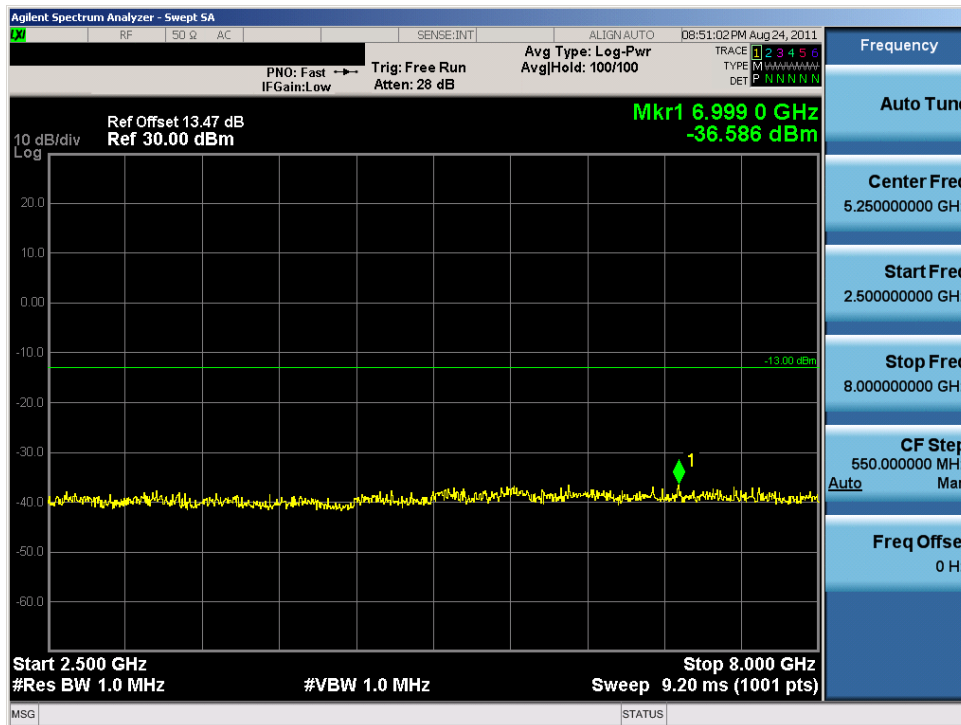
Plot 7-28. Extended Band Edge Plot (10MHz BW, QPSK, AWS Band – High Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet	Page 42 of 55		

8.0 PLOT(S) OF EMISSIONS – BAND 17

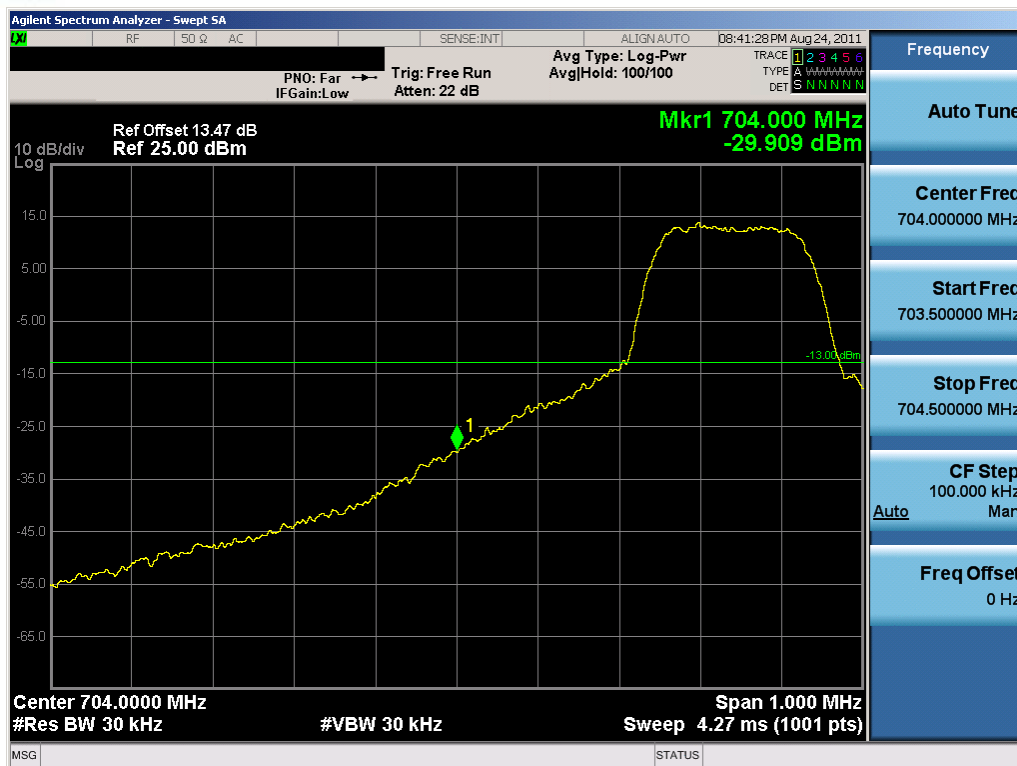


Plot 8-1. Conducted Spurious Plot (5MHz BW, QPSK, Band 17 – Low Channel)



Plot 8-2. Conducted Spurious Plot (5MHz BW, QPSK, Band 17 – Low Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1108101398.A3L	Test Dates: 08/09 - 10/07/2011	EUT Type: Tablet			Page 43 of 55

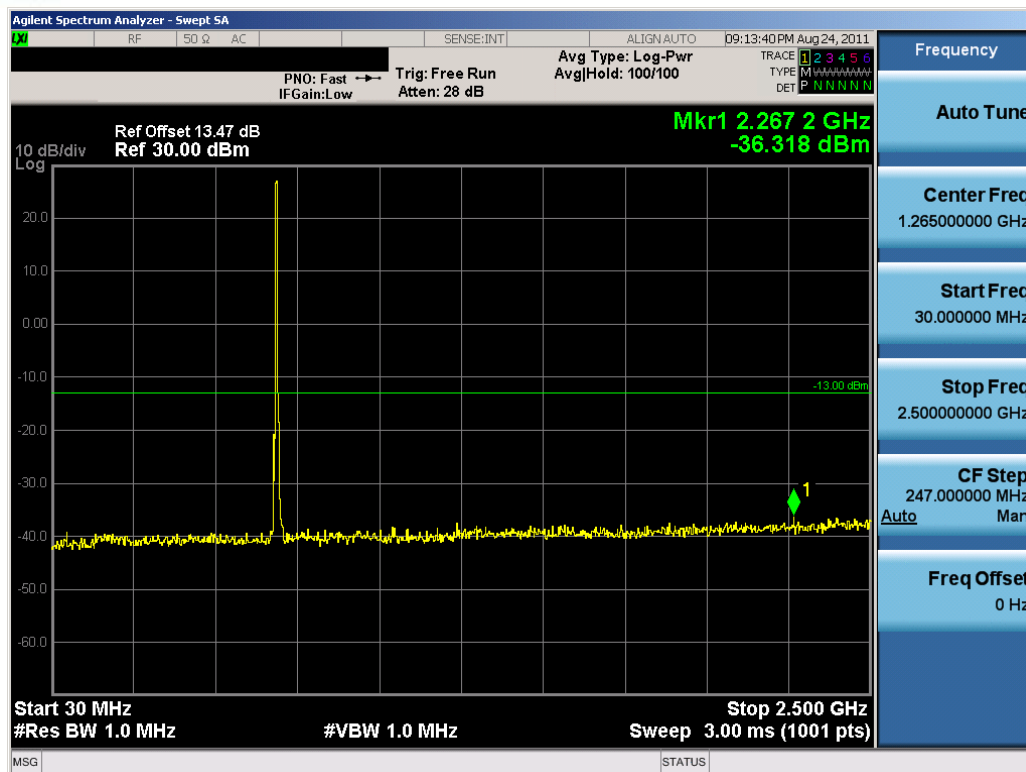


Plot 8-3. Band Edge Plot (5MHz BW, QPSK, Band 17 – Low Channel)

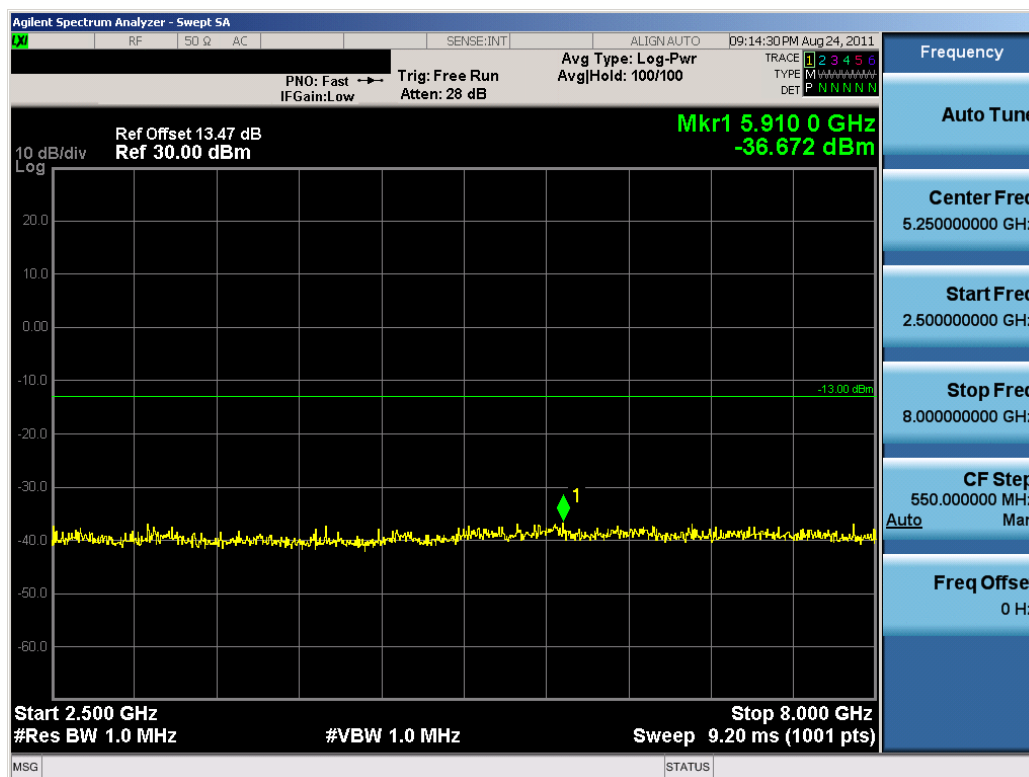


Plot 8-4. Extended Band Edge Plot (5MHz BW, QPSK, Band 17 – Low Channel)

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		 Reviewed by: Quality Manager
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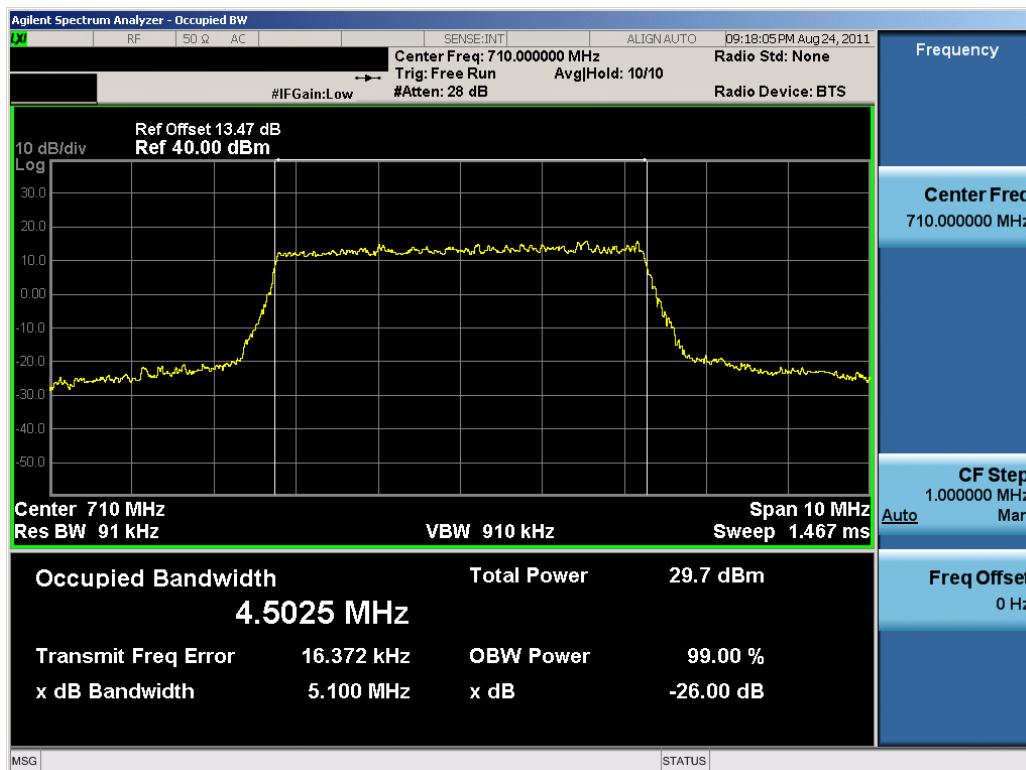


Plot 8-5. Conducted Spurious Plot (5MHz BW, QPSK, Band 17 – Mid Channel)

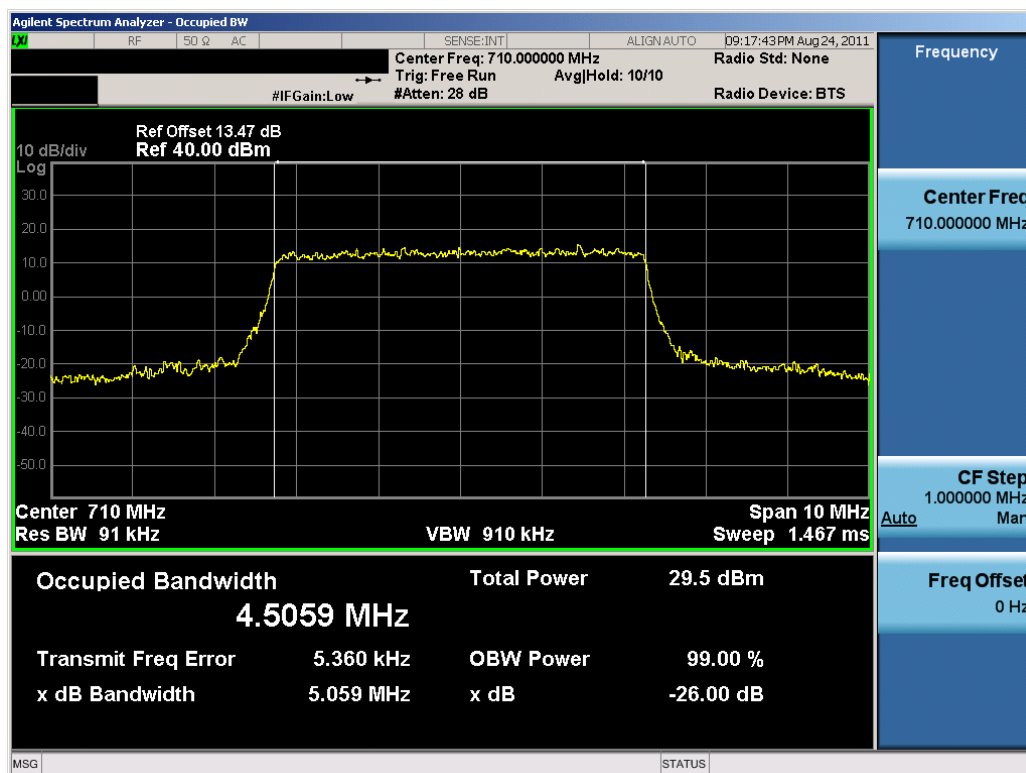


Plot 8-6. Conducted Spurious Plot (5MHz BW, QPSK, Band 17 – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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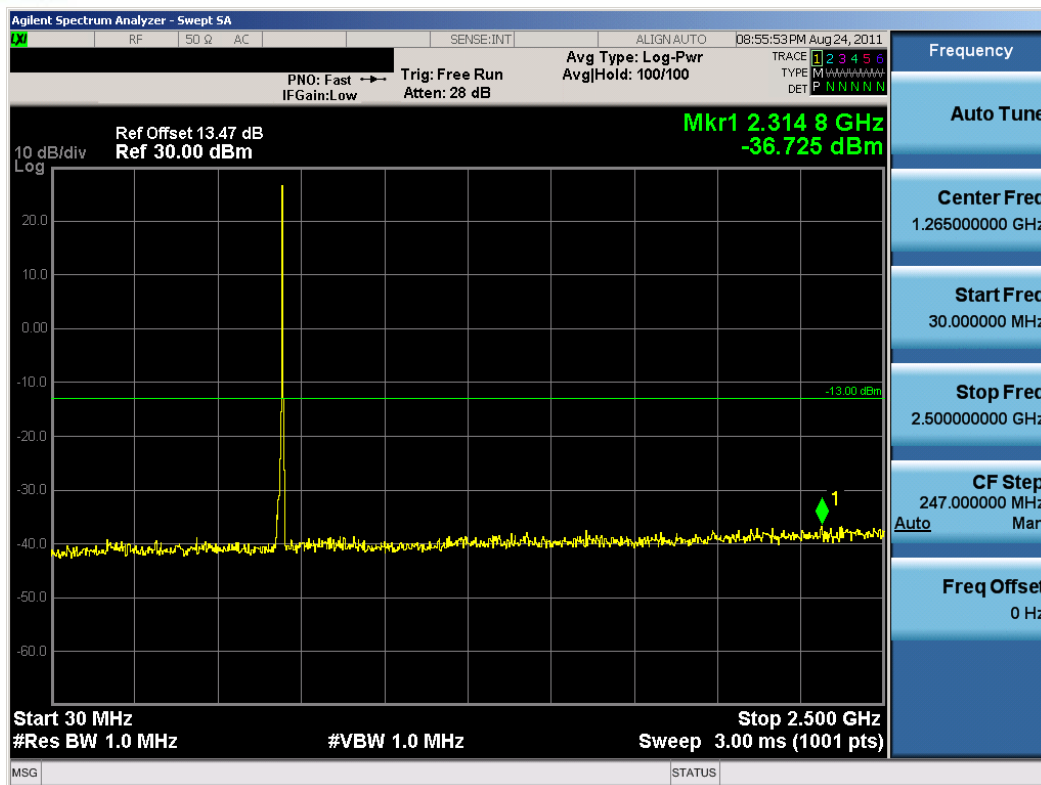


Plot 8-7. Occupied Bandwidth Plot (5MHz BW, QPSK, Band 17 – Mid Channel)

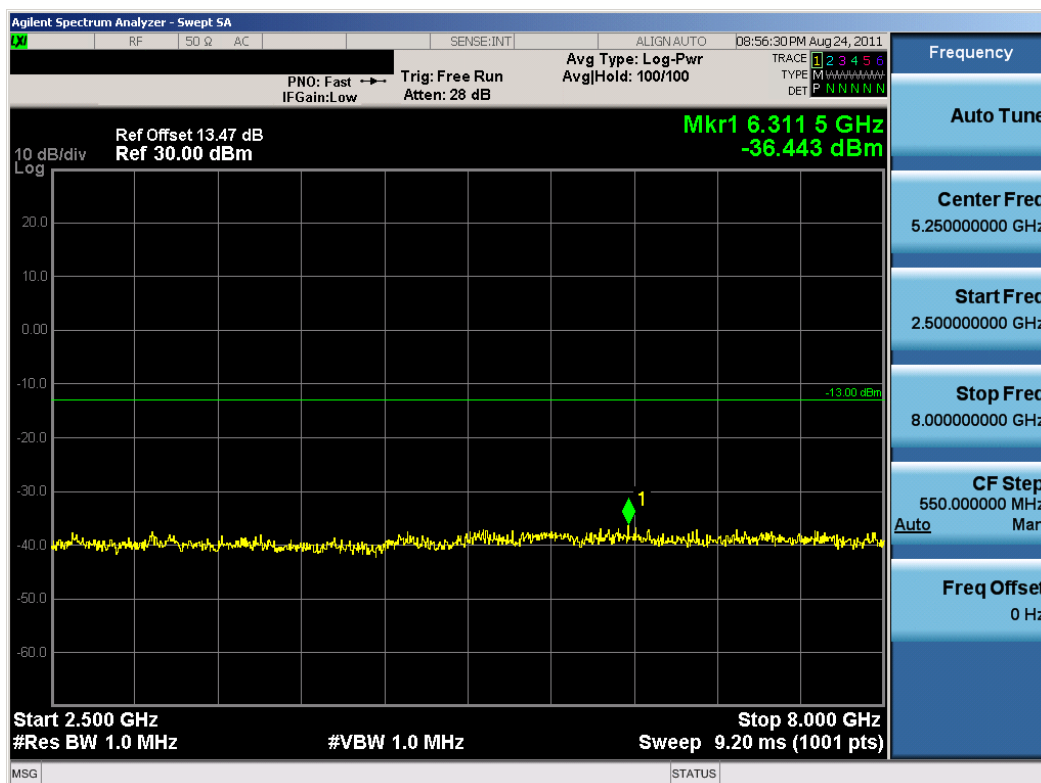


Plot 8-8. Occupied Bandwidth Plot (5MHz BW, 16-QAM, Band 17 – Mid Channel)

FCC ID: A3LSGHI957	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Plot 8-9. Conducted Spurious Plot (5MHz BW, QPSK, Band 17 – High Channel)

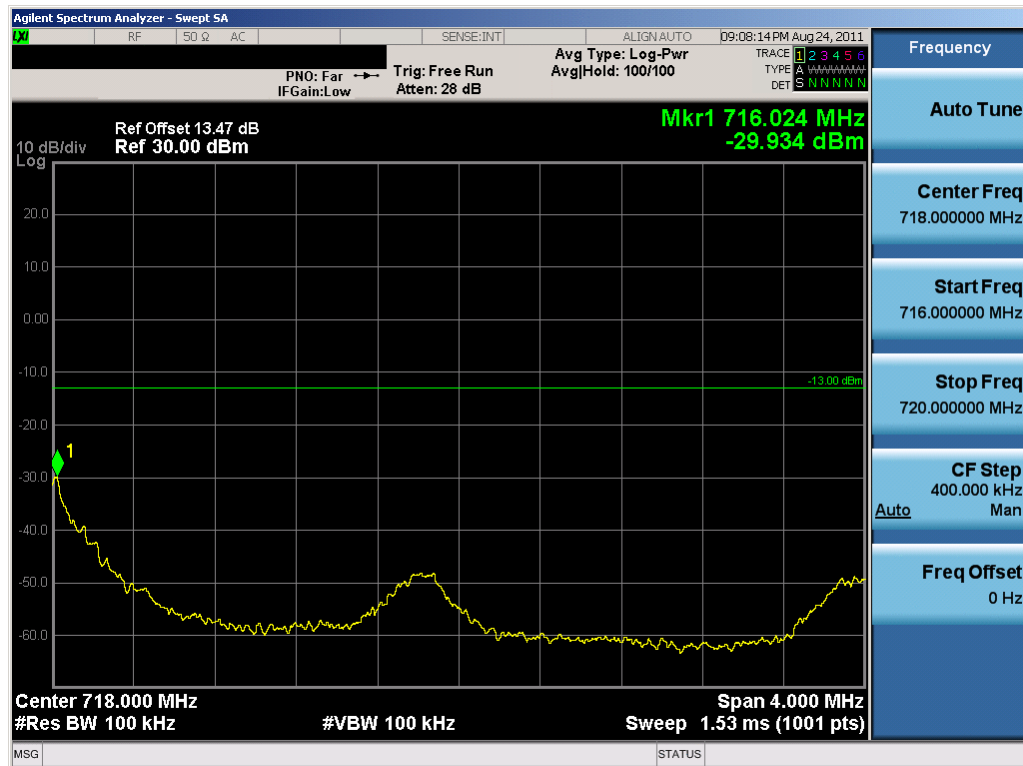


Plot 8-10. Conducted Spurious Plot (5MHz BW, QPSK, Band 17 – High Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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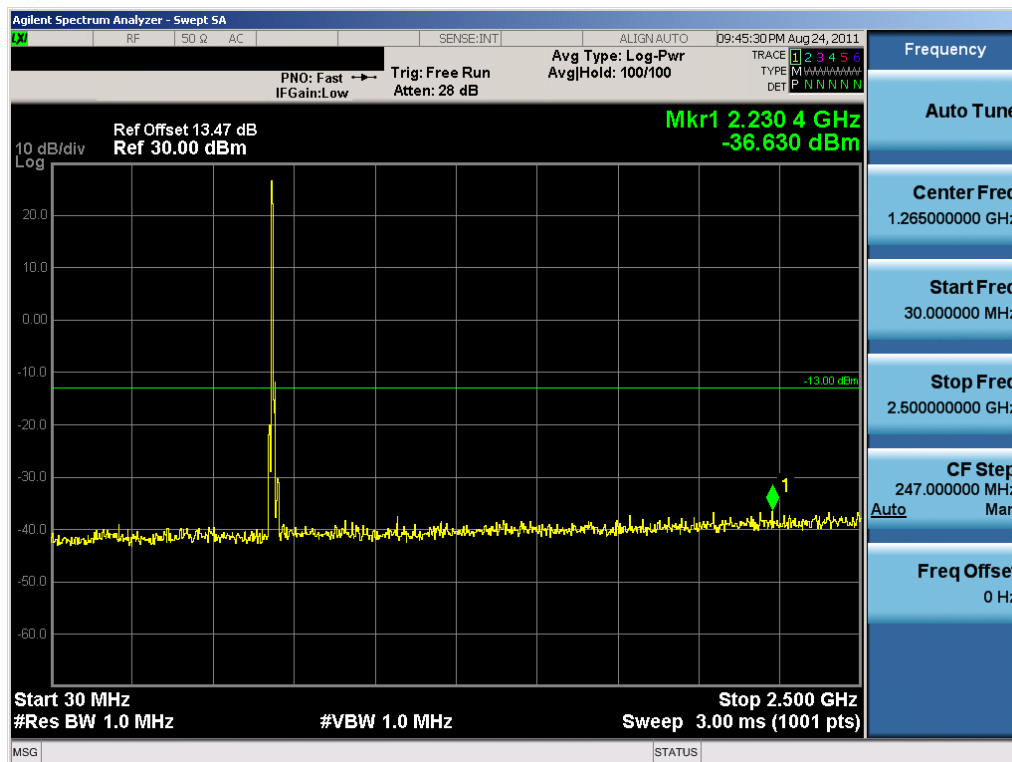


Plot 8-11. Band Edge Plot (5MHz BW, QPSK, Band 17 – High Channel)

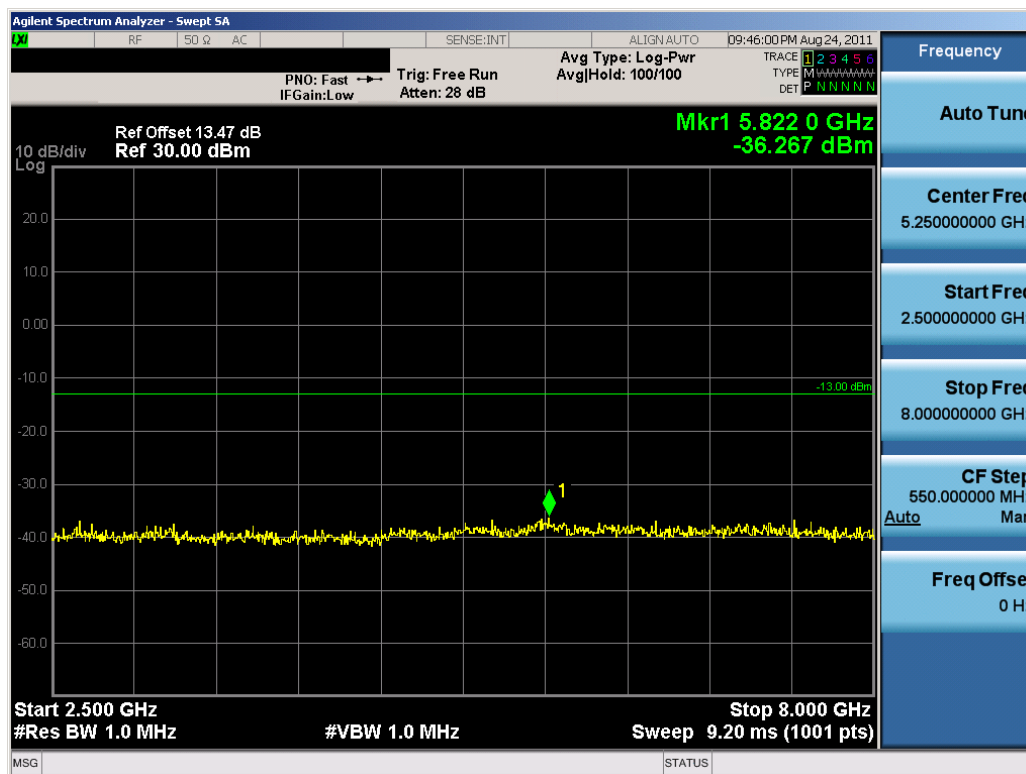


Plot 8-12. Extended Band Edge Plot (5MHz BW, QPSK, Band 17 – High Channel)

FCC ID: A3LSGHI957	 FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
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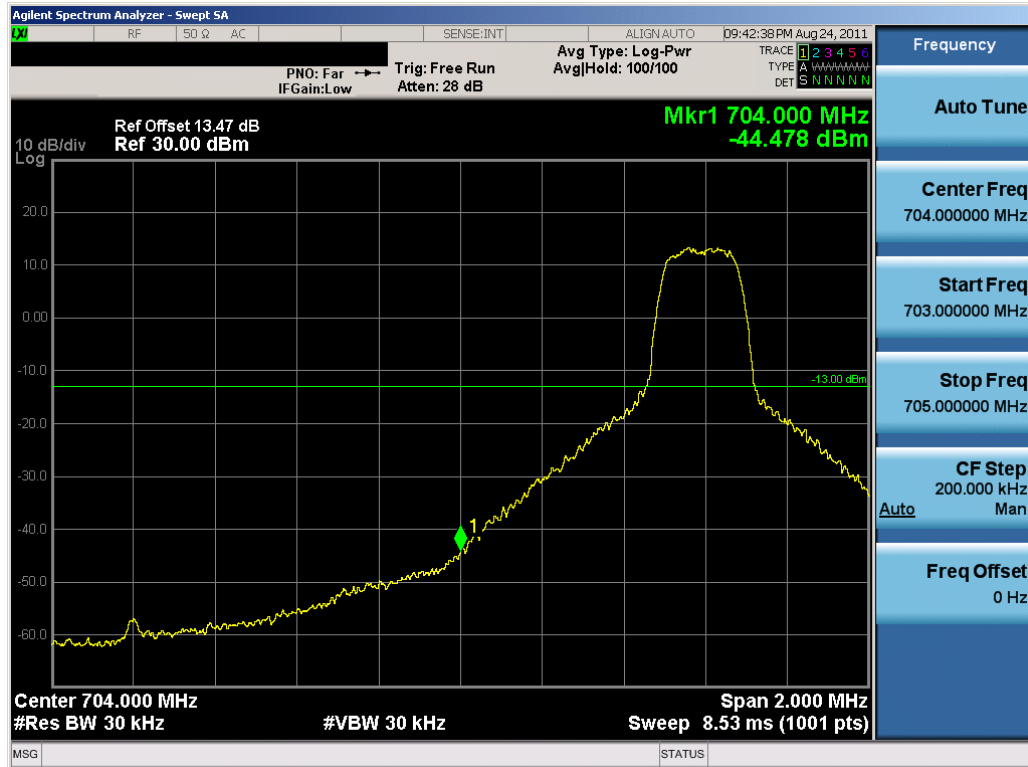


Plot 8-13. Conducted Spurious Plot (10MHz BW, QPSK, Band 17 – Low Channel)

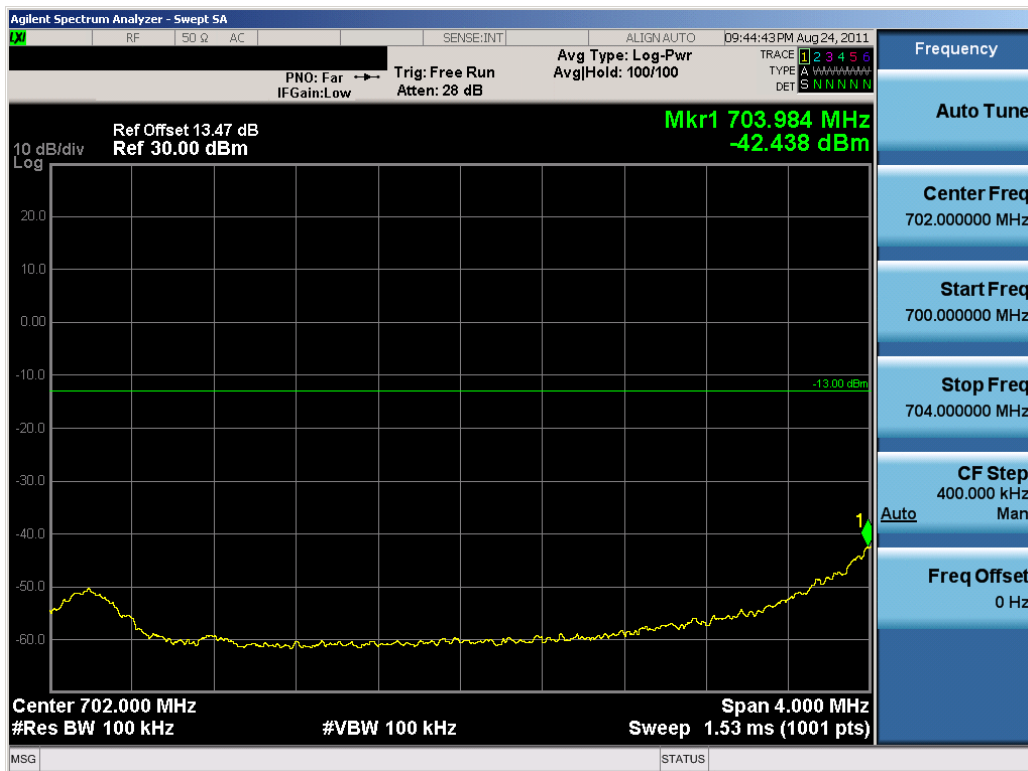


Plot 8-14. Conducted Spurious Plot (10MHz BW, QPSK, Band 17 – Low Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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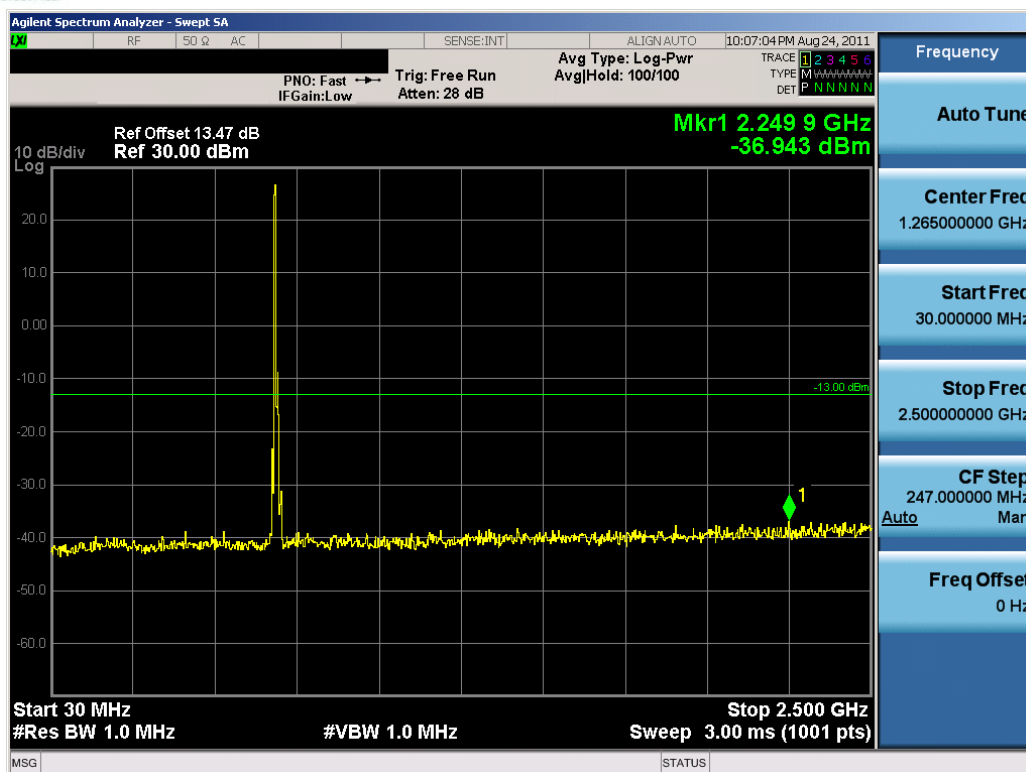


Plot 8-15. Band Edge Plot (10MHz BW, QPSK, Band 17 – Low Channel)

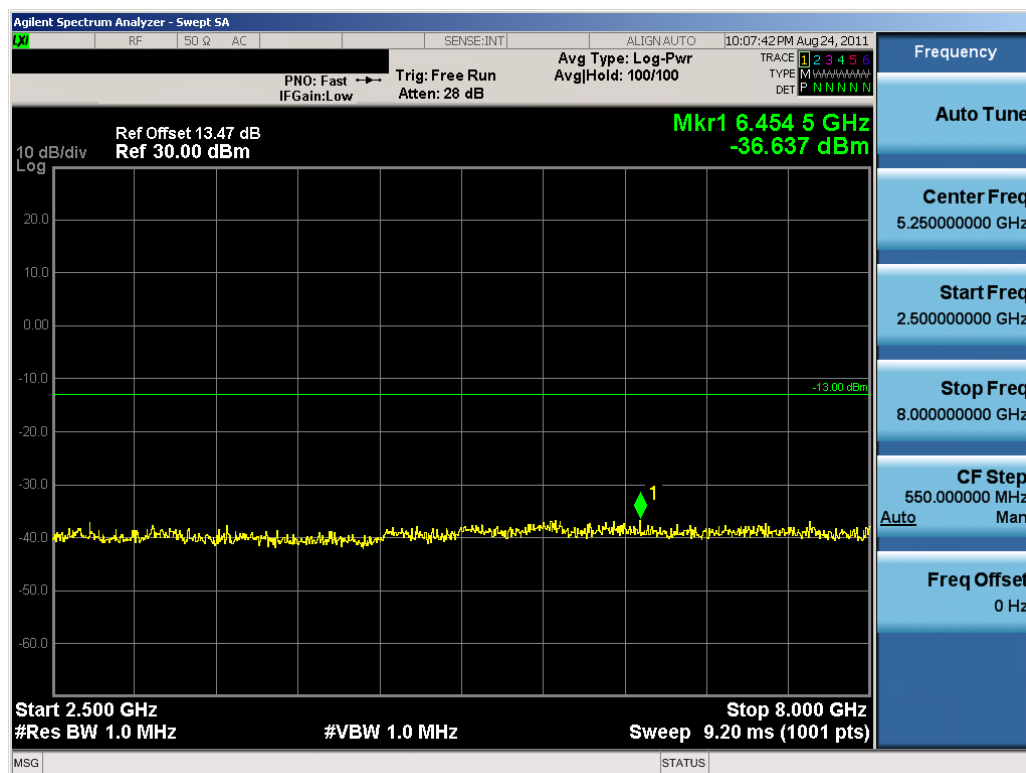


Plot 8-16. Extended Band Edge Plot (10MHz BW, QPSK, Band 17 – Low Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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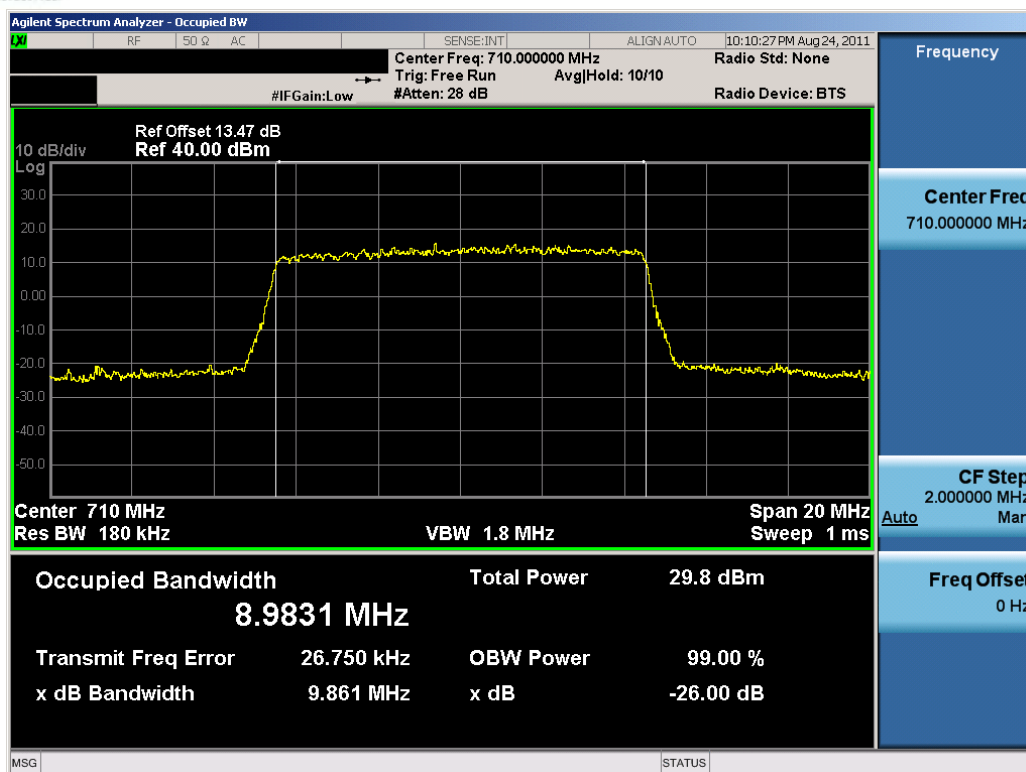


Plot 8-17. Conducted Spurious Plot (10MHz BW, QPSK, Band 17 – Mid Channel)

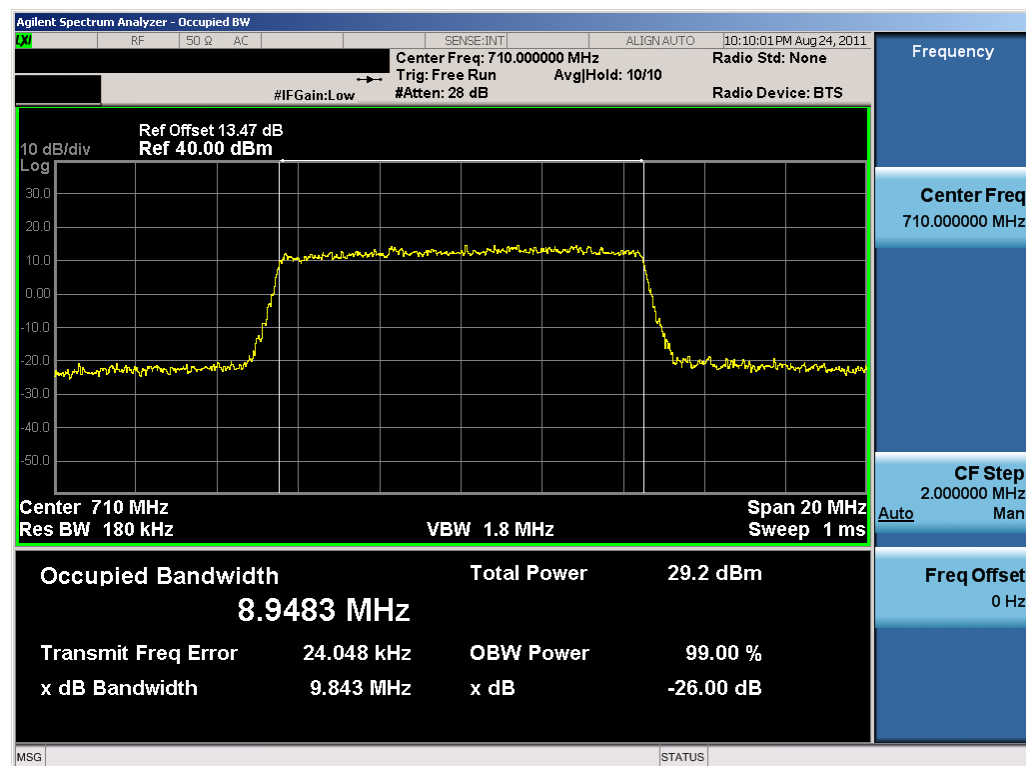


Plot 8-18. Conducted Spurious Plot (10MHz BW, QPSK, Band 17 – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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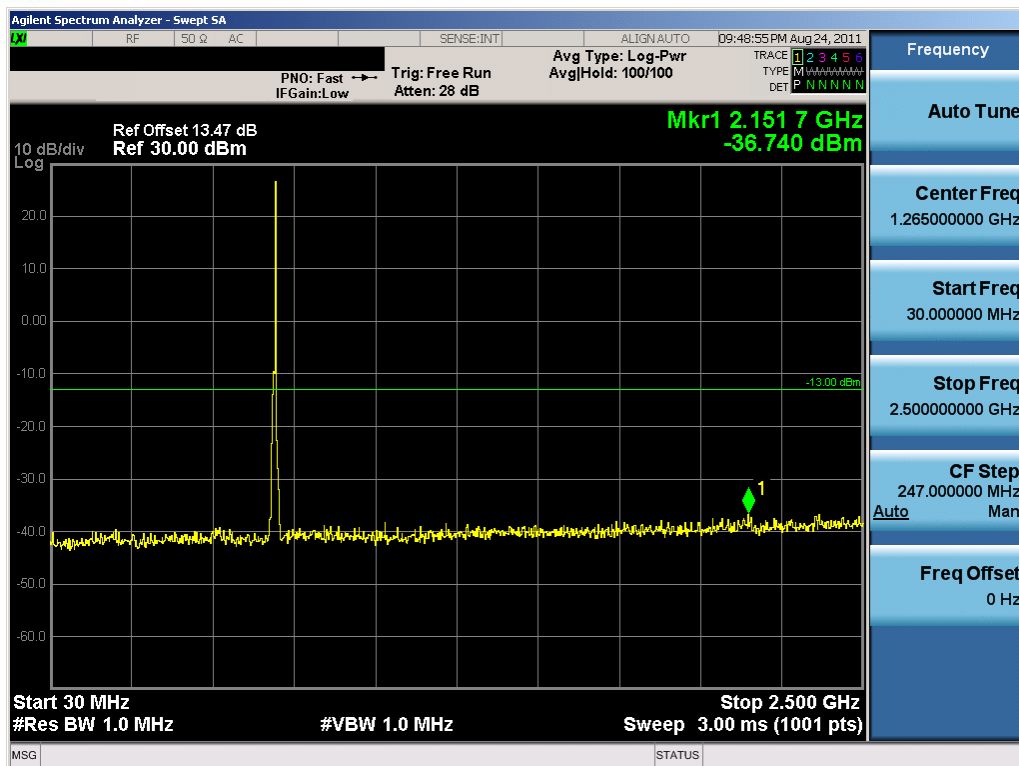


Plot 8-19. Occupied Bandwidth Plot (10MHz BW, QPSK, Band 17 – Mid Channel)

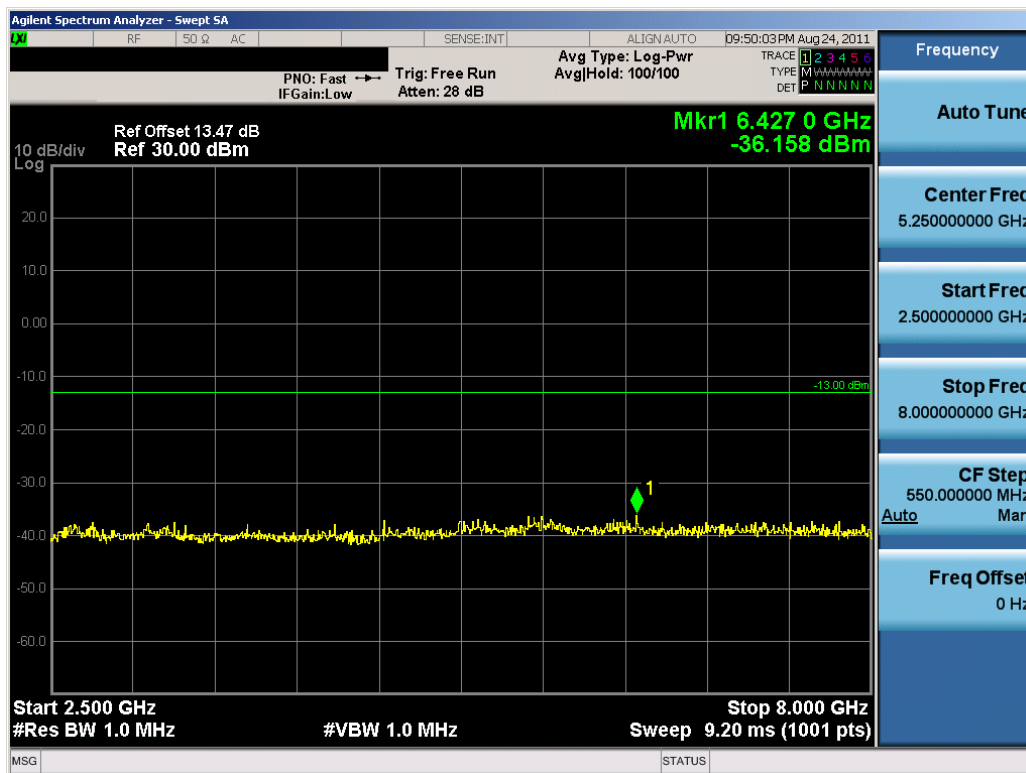


Plot 8-20. Occupied Bandwidth Plot (10MHz BW, 16-QAM, Band 17 – Mid Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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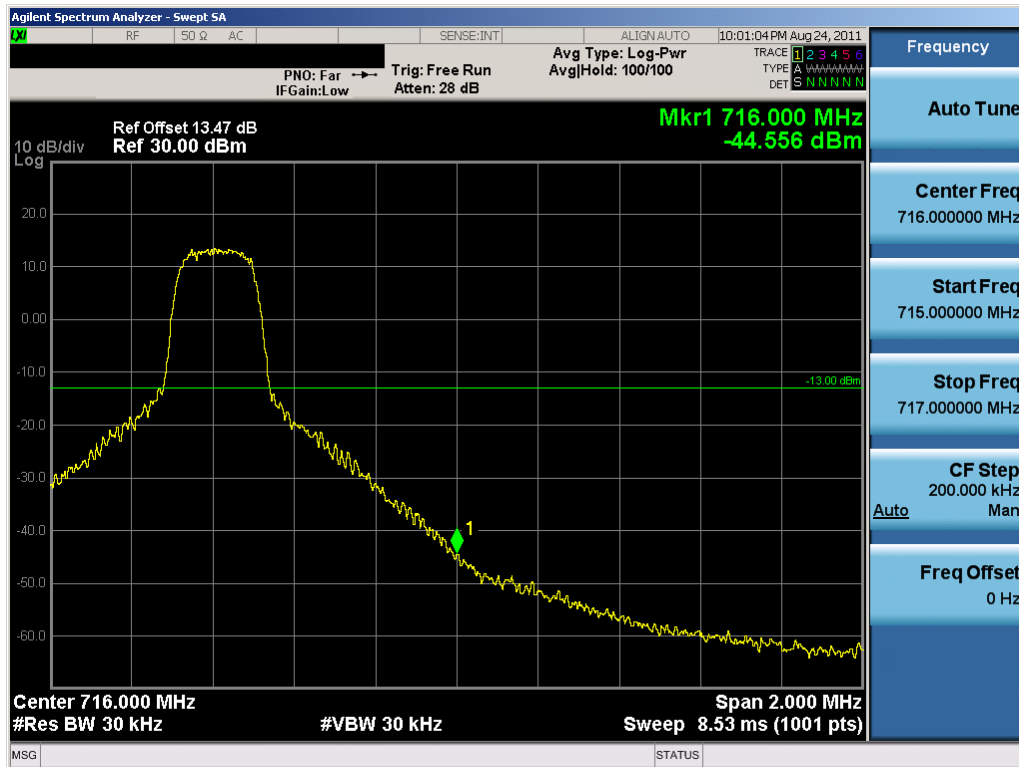


Plot 8-21. Conducted Spurious Plot (10MHz BW, QPSK, Band 17 – High Channel)

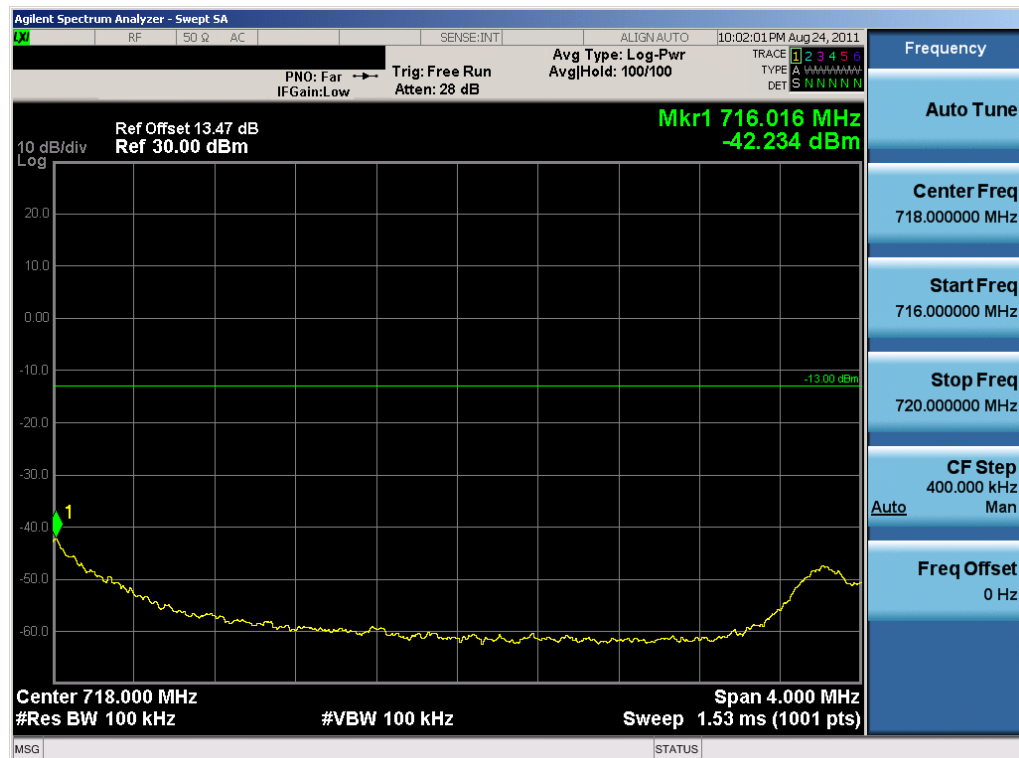


Plot 8-22. Conducted Spurious Plot (10MHz BW, QPSK, Band 17 – High Channel)

FCC ID: A3LSGHI957			FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Plot 8-23. Band Edge Plot (10MHz BW, QPSK, Band 17 – High Channel)



Plot 8-24. Extended Band Edge Plot (10MHz BW, QPSK, Band 17 – High Channel)

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9.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Tablet FCC ID: A3LSGHI957** complies with all the requirements of Parts 2 and 27 of the FCC rules for LTE operation only.

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