



MEASUREMENT REPORT

FCC Part 22, 24 & 27 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:

07/31 - 08/09/2012

Test Site/Location:

PCTEST Lab., Columbia, MD, USA

Test Report Serial No.:

0Y1207230998.A3L

FCC ID : A3LSCHR530M

APPLICANT: SAMSUNG ELECTRONICS CO., LTD.

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

FCC Rule Part(s):

§2; §22; §24; §27

EUT Type:

Portable Handset

Model(s):

SCH-R530M

Test Device Serial No.:

identical prototype [S/N: 2]

Mode	Channel Bandwidth (MHz)	Tx Frequency (MHz)	Modulation	Emission Designator	EIRP	
					Max. Power (W)	Max. Power (dBm)
LTE Band 4	1.4	1710.7 - 1754.3	QPSK	1M09G7D	0.108	20.32
LTE Band 4	1.4	1710.7 - 1754.3	16QAM	1M09W7D	0.085	19.30
LTE Band 4	3	1711.5 - 1753.5	QPSK	2M69G7D	0.112	20.49
LTE Band 4	3	1711.5 - 1753.5	16QAM	2M68W7D	0.083	19.18
LTE Band 4	5	1712.5 - 1752.5	QPSK	4M48G7D	0.111	20.44
LTE Band 4	5	1712.5 - 1752.5	16QAM	4M48W7D	0.087	19.38
LTE Band 4	10	1715 - 1750	QPSK	8M95G7D	0.137	21.37
LTE Band 4	10	1715 - 1750	16QAM	8M95W7D	0.103	20.13
LTE Band 2	1.4	1850.7 - 1909.3	QPSK	1M09G7D	0.245	23.89
LTE Band 2	1.4	1850.7 - 1909.3	16QAM	1M09W7D	0.219	23.40
LTE Band 2	3	1851.5 - 1908.5	QPSK	2M69G7D	0.154	21.87
LTE Band 2	3	1851.5 - 1908.5	16QAM	2M69W7D	0.148	21.72
LTE Band 2	5	1852.5 - 1907.5	QPSK	4M48G7D	0.172	22.35
LTE Band 2	5	1852.5 - 1907.5	16QAM	4M48W7D	0.169	22.28
LTE Band 2	10	1855 - 1905	QPSK	8M97G7D	0.164	22.14
LTE Band 2	10	1855 - 1905	16QAM	8M96W7D	0.161	22.08

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

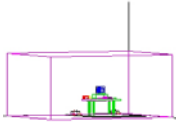


FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 1 of 81

TABLE OF CONTENTS

FCC PART 24, 27 MEASUREMENT REPORT	4
1.0 INTRODUCTION	4
1.1 SCOPE	4
1.2 TESTING FACILITY	4
2.0 PRODUCT INFORMATION.....	5
2.1 EQUIPMENT DESCRIPTION	5
2.2 DEVICE CAPABILITIES.....	5
2.3 EMI SUPPRESSION DEVICE(S)/MODIFICATIONS	5
2.4 LABELING REQUIREMENTS.....	5
3.0 DESCRIPTION OF TESTS	6
3.1 MEASUREMENT PROCEDURE	6
3.2 PCS - BASE FREQUENCY BLOCKS.....	6
3.3 PCS - MOBILE FREQUENCY BLOCKS.....	6
3.4 AWS - BASE FREQUENCY BLOCKS	6
3.5 AWS - MOBILE FREQUENCY BLOCKS	7
3.6 OCCUPIED BANDWIDTH	7
3.7 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL.....	7
3.8 PEAK-AVERAGE RATIO.....	7
3.9 RADIATED POWER AND RADIATED SPURIOUS EMISSIONS	8
3.10 FREQUENCY STABILITY / TEMPERATURE VARIATION	9
4.0 TEST EQUIPMENT CALIBRATION DATA	10
5.0 SAMPLE CALCULATIONS	11
6.0 TEST RESULTS.....	12
6.1 SUMMARY.....	12
6.2 EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - BAND 4 LTE.....	13
6.3 EQUIVALENT ISOTROPIC RADIATED POWER (EIRP) - BAND 2 LTE.....	14
6.4 BAND 4 RADIATED SPURIOUS EMISSIONS	15
6.5 BAND 2 RADIATED SPURIOUS EMISSIONS	18
6.6 BAND 4 FREQUENCY STABILITY MEASUREMENTS.....	21
6.7 BAND 2 FREQUENCY STABILITY MEASUREMENTS.....	23
7.0 BAND 4 PLOTS OF EMISSIONS.....	25
8.0 BAND 2 PLOTS OF EMISSIONS.....	53
9.0 CONCLUSION.....	81

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 2 of 81



MEASUREMENT REPORT

FCC Part 24 & 27

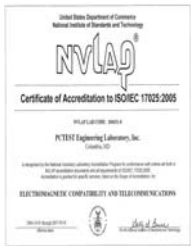
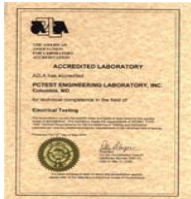


§2.1033 General Information

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; §27
BASE MODEL: SCH-R530M
FCC ID: A3LSCHR530M
FCC CLASSIFICATION: PCS Licensed Transmitter Held to Ear (PCE)
FREQUENCY TOLERANCE: $\pm 0.00025\%$ (2.5 ppm)
Test Device Serial No.: 2 ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST: 07/31 - 08/09/2012
TEST REPORT S/N: 0Y1207230998.A3L

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab. located in Columbia, MD 21046, 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.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 3 of 81

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.

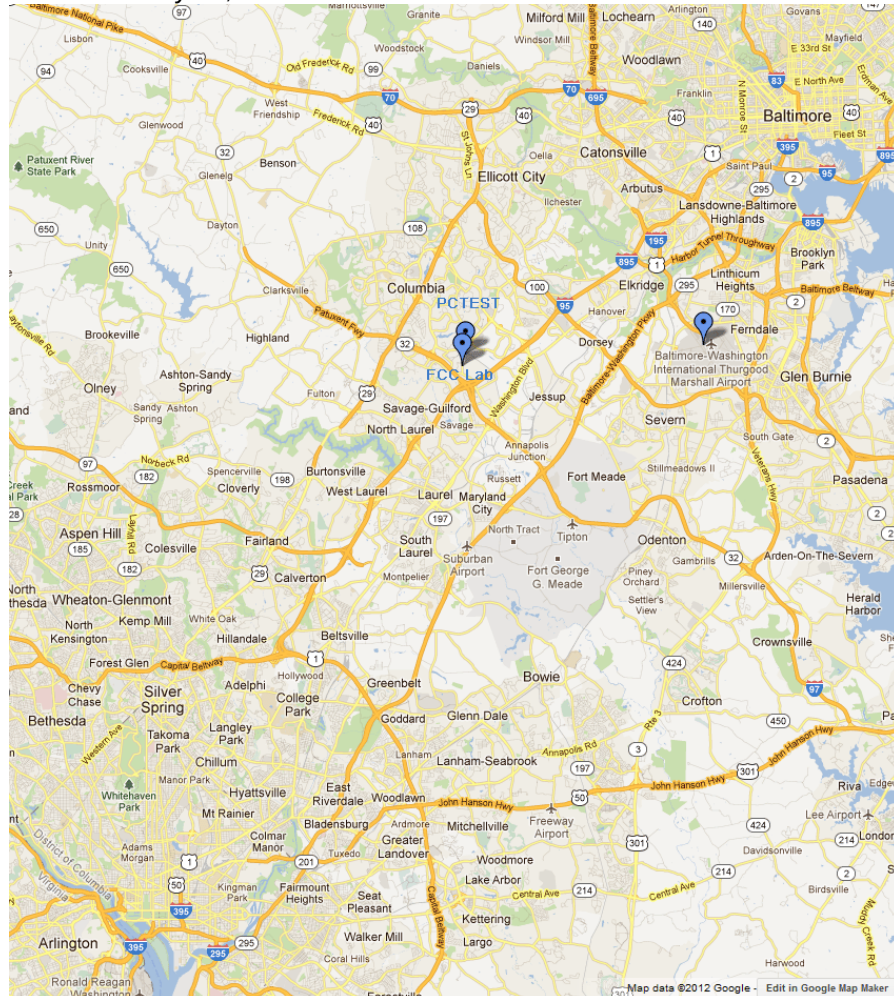


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 4 of 81

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSCHR530M**. 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:

850/1700/1900 CDMA/EvDO Rev0/A (BC0, BC15, BC1), Band 2, 4 LTE, 802.11a/b/g/n WLAN (DTS/NII), Bluetooth (1x,EDR, LE), NFC

Note: This device is capable of SVLTE transmission. Please see Section 3.9 for additional information.

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..

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.

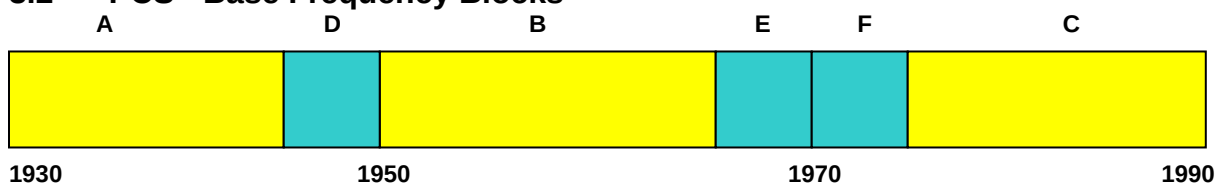
FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 5 of 81

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 Handset** FCC ID: **A3LSCHR530M**.

3.2 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 4: 1965 – 1970 MHz (E)

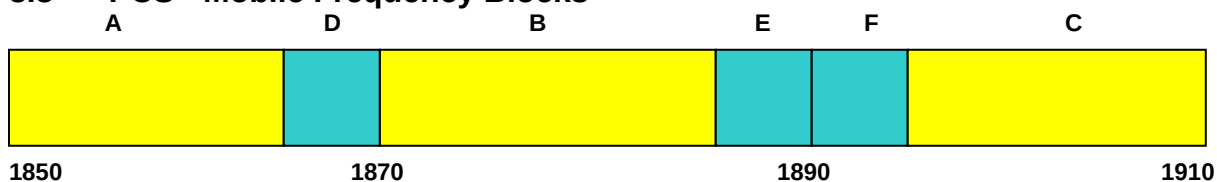
BLOCK 2: 1945 – 1950 MHz (D)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 6: 1975 – 1990 MHz (C)

3.3 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 2: 1865 – 1870 MHz (D)

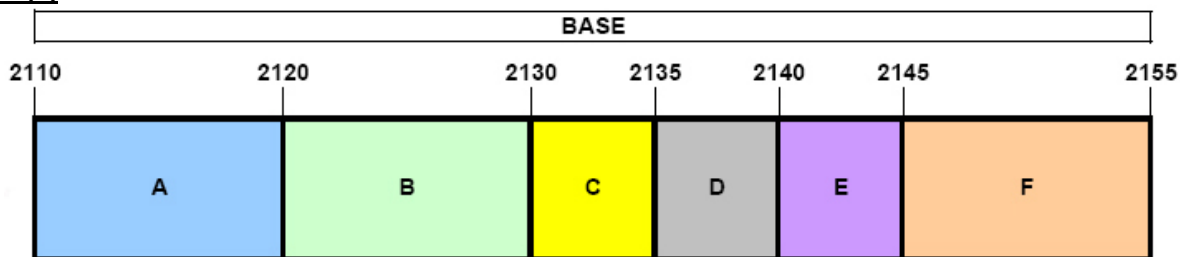
BLOCK 5: 1890 – 1895 MHz (F)

BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 6: 1895 – 1910 MHz (C)

3.4 AWS - Base Frequency Blocks

§27.5(h)



BLOCK 1: 2110 – 2120 MHz (A)

BLOCK 4: 2135 – 2140 MHz (D)

BLOCK 2: 2120 – 2130 MHz (B)

BLOCK 5: 2140 – 2145 MHz (E)

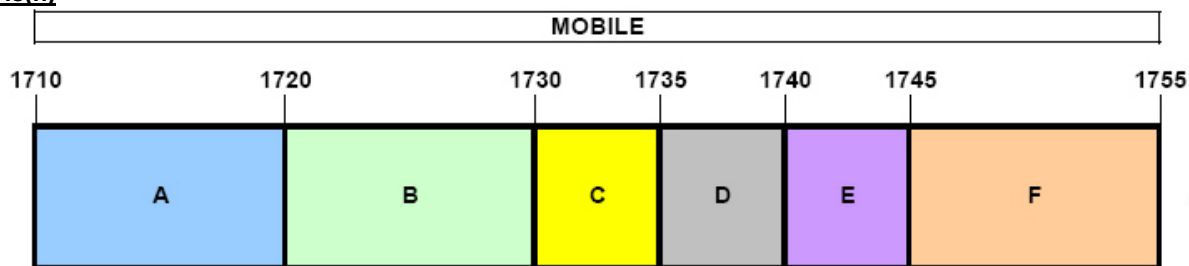
BLOCK 3: 2130 – 2135 MHz (C)

BLOCK 6: 2145 – 2155 MHz (F)

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 6 of 81

3.5 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)

3.6 Occupied Bandwidth

§2.1049, RSS-Gen (4.6.1)

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.

3.7 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, 24.238(a)(b), §27.53(h); RSS-133 (6.5.1)

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.

3.8 Peak-Average Ratio

§24.232(d), §27.50(d)(5), RSS-133 (6.4), RSS-139 (6.4)

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.

FCC ID: A3LSCHR530M			FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset			Page 7 of 81

3.9 Radiated Power and Radiated Spurious Emissions

§2.1053, 24.232(c), 24.238(a), §27.53(h), 27.50(d)(4), 27.50(c)(10); RSS-133 (6.5.1), RSS-139 (6.5)

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:

$$P_d \text{ [dBm]} = P_g \text{ [dBm]} - \text{cable loss [dB]} + \text{antenna gain [dBd/dBi]}$$

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 $P_g \text{ [dBm]} - \text{cable loss [dB]}$.

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 $43 + 10\log_{10}(\text{Power}_{\text{[Watts]}})$ specified in 24.238(a) and 27.53(h).

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 8 of 81

SVLTE

This device is capable of operating in SVLTE mode in the following cases:

No.	Capable Transmit Configurations
1	1X CDMA 850 Voice + LTE 1700 MHz Data
2	1X CDMA 1700 Voice + LTE 1700 MHz Data
3	1X CDMA 1900 Voice + LTE 1700 MHz Data
4	1X CDMA 850 Voice + LTE 1900 MHz Data
5	1X CDMA 1700 Voice + LTE 1900 MHz Data
6	1X CDMA 1900 Voice + LTE 1900 MHz Data

Table 3-1. SVLTE Transmit Configurations

All modes of SVLTE operation were investigated. It was determined that this device did not produce any intermodulation products that were within 25dB of the spurious emission limit so the emissions are not shown in this report.

3.10 Frequency Stability / Temperature Variation

§2.1055, 24.235, §27.54; RSS-133 (6.3), RSS-139 (6.3)

The frequency stability of the transmitter is measured by:

- Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- 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 and 27. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency for Part 22.

Time Period and Procedure:

- The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 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.
- 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.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 9 of 81

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
-	RE2	Radiated Emissions Cable Set (VHF/UHF)	2/13/2012	Annual	2/13/2013	N/A
Agilent	8447D	Broadband Amplifier	5/8/2012	Annual	5/8/2013	1937A03348
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/5/2012	Annual	4/5/2013	MY45470194
Agilent	N9020A	MXA Signal Analyzer	10/10/2011	Annual	10/10/2012	US46470561
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	3160-09	18-26.5 GHz Standard Gain Horn	5/30/2012	Biennial	5/30/2014	135427
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	10/1/2010	Biennial	10/1/2012	128337
Mini-Circuits	VHF-3100+	High Pass Filter	1/15/2012	Annual	1/15/2013	30841
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	8/25/2011	Annual	8/25/2012	100976
Rohde & Schwarz	TS-PR18	1-18 GHz Pre-Amplifier	6/26/2012	Annual	6/26/2013	100071
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	5/30/2012	Annual	5/30/2013	100040
Rohde & Schwarz	ESU26	EMI Test Receiver	12/15/2011	Annual	12/15/2012	100342
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	11/14/2011	Biennial	11/14/2013	9105-2404
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	1/26/2012	Biennial	1/26/2014	A051107

Table 4-1. Test Equipment

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 10 of 81

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).

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 11 of 81

6.0 TEST RESULTS

6.1 Summary

Company Name: Samsung Electronics Co., Ltd.
 FCC ID: A3LSCHR530M
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): LTE

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Result	Reference
TRANSMITTER MODE (TX)						
2.1049	RSS-Gen (4.6.1) RSS-133 (2.3)	Occupied Bandwidth	N/A	CONDUCTED	PASS	Sections 7.0, 8.0
2.1051, 24.238(a), 27.53(h)	RSS-133 (6.5.1) RSS-139 (6.5)	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
24.232(d), 27.50(d)(5)	RSS-133 (6.4) RSS-139 (6.4)	Peak-Average Ratio	$< 13 \text{ dB}$		PASS	Sections 7.0, 8.0
2.1046	RSS-133 (4.1) RSS-139 (4.1)	Transmitter Conducted Output Power	N/A		PASS	See RF Exposure Report
24.232(c)	RSS-133 (6.4) [SRSP-510 (5.1.2)]	Equivalent Isotropic Radiated Power (Band 2)	$< 2 \text{ Watts max. EIRP}$	RADIATED	PASS	Section 6.3
27.50(d)(4)	RSS-139 (6.4)	Equivalent Isotropic Radiated Power (Band 4)	$< 1 \text{ Watts max. EIRP}$		PASS	Section 6.2
2.1053, 27.53(h), 24.238(a)	RSS-133 (6.5.1) RSS-139 (6.5)	Undesirable Emissions	$< 43 + 10\log_{10}(P[\text{Watts}])$ for all out-of-band emissions		PASS	Sections 6.4, 6.5
2.1055, 27.54, 24.235	RSS-133 (6.3) RSS-139 (6.3)	Frequency Stability	$< \text{fundamental emissions stay within authorized frequency block (Part 24, 27)}$		PASS	Sections 6.6, 6.7

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 Sections 7.0 and 8.0 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.

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 12 of 81

6.2 Equivalent Isotropic Radiated Power (EIRP) - Band 4 LTE

§27.50(d)(4); RSS-139 (6.4)

	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]
Band IV LTE	1710.70	1.4	QPSK	Standard	3 / 2	10.18	8.47	H	18.65	0.073	-11.35
	1732.50	1.4	QPSK	Standard	1 / 5	11.78	8.54	H	20.32	0.108	-9.68
	1754.30	1.4	QPSK	Standard	3 / 2	11.35	8.60	H	19.95	0.099	-10.05
	1710.70	1.4	16-QAM	Standard	3 / 2	9.20	8.47	H	17.67	0.058	-12.33
	1732.50	1.4	16-QAM	Standard	1 / 5	10.76	8.54	H	19.30	0.085	-10.70
	1754.30	1.4	16-QAM	Standard	3 / 2	10.40	8.60	H	19.00	0.079	-11.00
	1711.50	3	QPSK	Standard	1 / 14	8.63	8.47	H	17.10	0.051	-12.90
	1732.50	3	QPSK	Standard	1 / 14	11.95	8.54	H	20.49	0.112	-9.51
	1753.50	3	QPSK	Standard	1 / 0	11.42	8.60	H	20.02	0.100	-9.98
	1711.50	3	16-QAM	Standard	1 / 14	7.29	8.47	H	15.76	0.038	-14.24
	1732.50	3	16-QAM	Standard	1 / 14	10.64	8.54	H	19.18	0.083	-10.82
	1753.50	3	16-QAM	Standard	1 / 0	10.38	8.60	H	18.98	0.079	-11.02
	1712.50	5	QPSK	Standard	1 / 24	7.42	8.47	H	15.89	0.039	-14.11
	1732.50	5	QPSK	Standard	1 / 24	11.90	8.54	H	20.44	0.111	-9.56
	1752.50	5	QPSK	Standard	1 / 24	11.07	8.60	H	19.67	0.093	-10.33
	1712.50	5	16-QAM	Standard	1 / 24	6.29	8.47	H	14.76	0.030	-15.24
	1732.50	5	16-QAM	Standard	1 / 24	10.84	8.54	H	19.38	0.087	-10.62
	1752.50	5	16-QAM	Standard	1 / 24	9.92	8.60	H	18.52	0.071	-11.48
	1715.00	10	QPSK	Standard	1 / 49	7.82	8.47	H	16.29	0.043	-13.71
	1732.50	10	QPSK	Standard	1 / 49	12.70	8.54	H	21.24	0.133	-8.76
	1750.00	10	QPSK	Standard	1 / 49	12.77	8.60	H	21.37	0.137	-8.63
	1715.00	10	16-QAM	Standard	1 / 49	6.50	8.47	H	14.97	0.031	-15.03
	1732.50	10	16-QAM	Standard	1 / 49	11.59	8.54	H	20.13	0.103	-9.87
	1750.00	10	16-QAM	Standard	1 / 49	10.41	8.60	H	19.01	0.080	-10.99

Table 6-2. EIRP Data (Band 4)

NOTES:

1. This device was tested under all modulations, channel bandwidths, and RB size/offset configurations. The highest radiated power was found for each channel bandwidth in the RB size and RB Offset configuration specified in the table above.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M			FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset			Page 13 of 81

6.3 Equivalent Isotropic Radiated Power (EIRP) - Band 2 LTE

§24.232(c); RSS-133 (6.4)

	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]
Band II LTE	1850.70	1.4	QPSK	Standard	1 / 5	15.33	8.56	H	23.89	0.245	-9.12
	1880.00	1.4	QPSK	Standard	1 / 5	12.65	8.55	H	21.20	0.132	-11.81
	1909.30	1.4	QPSK	Standard	1 / 5	13.90	8.54	H	22.44	0.175	-10.57
	1850.70	1.4	16-QAM	Standard	1 / 5	14.84	8.56	H	23.40	0.219	-9.61
	1880.00	1.4	16-QAM	Standard	1 / 5	12.36	8.55	H	20.91	0.123	-12.10
	1909.30	1.4	16-QAM	Standard	1 / 5	13.46	8.54	H	22.00	0.158	-11.01
	1851.50	3	QPSK	Standard	1 / 14	12.73	8.56	H	21.29	0.134	-11.72
	1880.00	3	QPSK	Standard	1 / 14	13.32	8.55	H	21.87	0.154	-11.14
	1908.50	3	QPSK	Standard	1 / 14	11.49	8.54	H	20.03	0.101	-12.98
	1851.50	3	16-QAM	Standard	1 / 14	12.07	8.56	H	20.63	0.116	-12.38
	1880.00	3	16-QAM	Standard	1 / 14	13.17	8.55	H	21.72	0.148	-11.29
	1908.50	3	16-QAM	Standard	1 / 14	11.39	8.54	H	19.93	0.098	-13.08
	1852.50	5	QPSK	Standard	12 / 6	13.79	8.56	H	22.35	0.172	-10.66
	1880.00	5	QPSK	Standard	1 / 24	11.32	8.55	H	19.87	0.097	-13.14
	1907.50	5	QPSK	Standard	12 / 6	12.42	8.54	H	20.96	0.125	-12.05
	1852.50	5	16-QAM	Standard	12 / 6	13.72	8.56	H	22.28	0.169	-10.73
	1880.00	5	16-QAM	Standard	1 / 24	10.97	8.55	H	19.52	0.089	-13.49
	1907.50	5	16-QAM	Standard	12 / 6	12.48	8.54	H	21.02	0.126	-11.99
	1855.00	10	QPSK	Standard	1 / 0	13.58	8.56	H	22.14	0.164	-10.87
	1880.00	10	QPSK	Standard	1 / 49	12.46	8.55	H	21.01	0.126	-12.00
	1905.00	10	QPSK	Standard	1 / 49	12.06	8.54	H	20.60	0.115	-12.41
	1855.00	10	16-QAM	Standard	1 / 0	13.52	8.56	H	22.08	0.161	-10.93
	1880.00	10	16-QAM	Standard	1 / 49	12.38	8.55	H	20.93	0.124	-12.08
	1905.00	10	16-QAM	Standard	1 / 49	12.09	8.54	H	20.63	0.116	-12.38

Table 6-3. EIRP Data (Band 2)

NOTES:

1. This device was tested under all modulations, channel bandwidths, and RB size/offset configurations. The highest radiated power was found for each channel bandwidth in the RB size and RB Offset configuration specified in the table above.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 			Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 14 of 81

6.4 Band 4 Radiated Spurious Emissions

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1710.70 MHz
 CHANNEL: 19957
 MEASURED OUTPUT POWER: 18.65 dBm = 0.073 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 31.65 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3421.40	-43.75	8.09	-35.66	H	54.31
5132.10	-45.07	10.21	-34.86	H	53.51
6842.80	-46.00	11.31	-34.69	H	53.34
8553.50	-47.46	13.02	-34.44	H	53.09
10264.20	-47.49	13.01	-34.48	H	53.13

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, channel bandwidths, and RB size/offset configurations and the worst case emissions are reported with 1 RB and 0 RB Offset using 1.4MHz channel bandwidth.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 15 of 81

Band 4 Radiated Spurious Measurements (continued)

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1732.50 MHz
 CHANNEL: 20175
 MEASURED OUTPUT POWER: 20.32 dBm = 0.108 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 33.32 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3465.00	-45.62	8.26	-37.35	H	57.67
5197.50	-48.86	10.26	-38.60	H	58.93
6930.00	-38.41	11.42	-26.99	H	47.31
8662.50	-45.54	13.07	-32.47	H	52.79
10395.00	-46.16	13.12	-33.05	H	53.37

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, channel bandwidths, and RB size/offset configurations and the worst case emissions are reported with 1 RB and 0 RB Offset using 1.4MHz channel bandwidth.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 16 of 81

Band 4 Radiated Spurious Measurements (continued)

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1754.30 MHz
 CHANNEL: 20393
 MEASURED OUTPUT POWER: 19.95 dBm = 0.099 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) = 32.95$ dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3508.60	-41.43	8.40	-33.03	H	52.98
5262.90	-44.48	10.32	-34.16	H	54.11
7017.20	-42.66	11.51	-31.15	H	51.09
8771.50	-47.20	13.11	-34.09	H	54.04
10525.80	-41.19	13.20	-27.99	H	47.94

Table 6-6. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, channel bandwidths, and RB size/offset configurations and the worst case emissions are reported with 1 RB and 0 RB Offset using 1.4MHz channel bandwidth.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 17 of 81

6.5 Band 2 Radiated Spurious Emissions

§2.1053, 24.238(a); RSS-133 (6.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1850.70 MHz
 CHANNEL: 18607
 MEASURED OUTPUT POWER: 23.89 dBm = 0.245 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 36.89 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3701.40	-41.46	8.40	-33.06	H	56.95
5552.10	-32.23	10.63	-21.60	H	45.49
7402.80	-37.51	11.84	-25.68	H	49.56
9253.50	-48.12	13.29	-34.83	H	58.71
11104.20	-44.96	13.50	-31.46	H	55.34

Table 6-7. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, channel bandwidths, and RB size/offset configurations and the worst case emissions are reported with 1 RB and 0 RB Offset using 1.4MHz channel bandwidth.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 18 of 81

Band 2 Radiated Spurious Measurements (continued)

§2.1053, 24.238(a); RSS-133 (6.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 18900
 MEASURED OUTPUT POWER: 21.20 dBm = 0.132 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) = 34.20$ dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-35.38	8.42	-26.96	H	48.16
5640.00	-35.33	10.66	-24.67	H	45.87
7520.00	-44.00	11.92	-32.08	H	53.27
9400.00	-49.58	13.24	-36.34	H	57.54
11280.00	-47.14	13.49	-33.65	H	54.85

Table 6-8. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, channel bandwidths, and RB size/offset configurations and the worst case emissions are reported with 1 RB and 0 RB Offset using 1.4MHz channel bandwidth.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 19 of 81

Band 2 Radiated Spurious Measurements (continued)

§2.1053, 24.238(a); RSS-133 (6.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 1909.30 MHz
 CHANNEL: 19193
 MEASURED OUTPUT POWER: 22.44 dBm = 0.175 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) = 35.44$ dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3818.60	-37.42	8.55	-28.87	H	51.31
5727.90	-27.48	10.69	-16.79	H	39.23
7637.20	-36.61	12.05	-24.56	H	47.00
9546.50	-39.02	13.20	-25.82	H	48.25
11455.80	-46.88	13.43	-33.45	H	55.89

Table 6-9. Radiated Spurious Data

NOTES:

1. This device was tested under all bandwidths, and RB configurations, and modulations. This device was tested under all modulations, channel bandwidths, and RB size/offset configurations and the worst case emissions are reported with 1 RB and 0 RB Offset using 1.4MHz channel bandwidth.
2. This unit was tested with its standard battery (Model: EB-L1G6LLZ) which incorporates an RFID antenna.
3. The worst case test configuration was found in the horizontal setup.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 20 of 81

6.6 Band 4 Frequency Stability Measurements

§2.1055, 27.54; RSS-139 (6.3)

OPERATING FREQUENCY: 1,732,500,000 Hz

CHANNEL: 20175

REFERENCE VOLTAGE: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,732,499,994	-6	0.000000
100 %		- 30	1,732,500,008	8	0.000000
100 %		- 20	1,732,500,015	15	0.000001
100 %		- 10	1,732,499,993	-7	0.000000
100 %		0	1,732,500,016	16	0.000001
100 %		+ 10	1,732,499,996	-4	0.000000
100 %		+ 20	1,732,500,010	10	0.000001
100 %		+ 30	1,732,500,005	5	0.000000
100 %		+ 40	1,732,499,981	-19	-0.000001
100 %		+ 50	1,732,500,014	14	0.000001
115 %	4.37	+ 20	1,732,500,019	19	0.000001
85 %	3.50	+ 20	1,732,499,993	-7	0.000000

Table 6-10. Frequency Stability Data (Band 4)

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 21 of 81	

Band 4 Frequency Stability Measurements (Cont'd)

§2.1055, 27.54; RSS-139 (6.3)

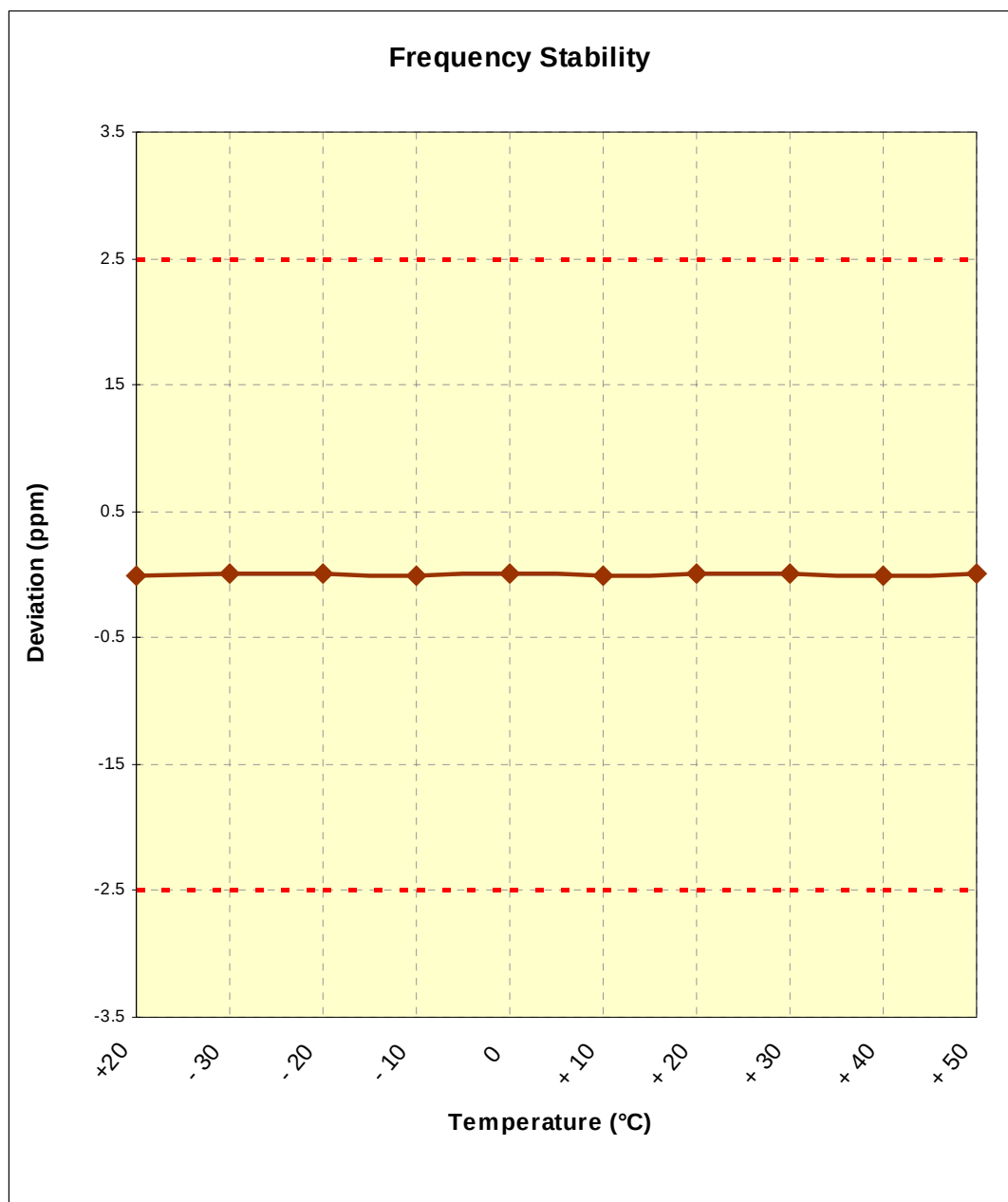


Figure 6-1. Frequency Stability Graph (Band 4)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 22 of 81

6.7 Band 2 Frequency Stability Measurements

§2.1055, 24.235, RSS-133 (6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 18900

REFERENCE VOLTAGE: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,880,000,013	13	0.000001
100 %		- 30	1,879,999,984	-16	-0.000001
100 %		- 20	1,880,000,011	11	0.000001
100 %		- 10	1,879,999,979	-21	-0.000001
100 %		0	1,879,999,985	-15	-0.000001
100 %		+ 10	1,879,999,992	-8	0.000000
100 %		+ 20	1,879,999,991	-9	0.000000
100 %		+ 30	1,879,999,981	-19	-0.000001
100 %		+ 40	1,880,000,014	14	0.000001
100 %		+ 50	1,879,999,994	-6	0.000000
115 %	4.37	+ 20	1,879,999,980	-20	-0.000001
85 %	3.50	+ 20	1,880,000,005	5	0.000000

Table 6-11. Frequency Stability Data (Band 2)

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 23 of 81	

Band 2 Frequency Stability Measurements (Cont'd)
§2.1055, 24.235, RSS-133 (6.3)

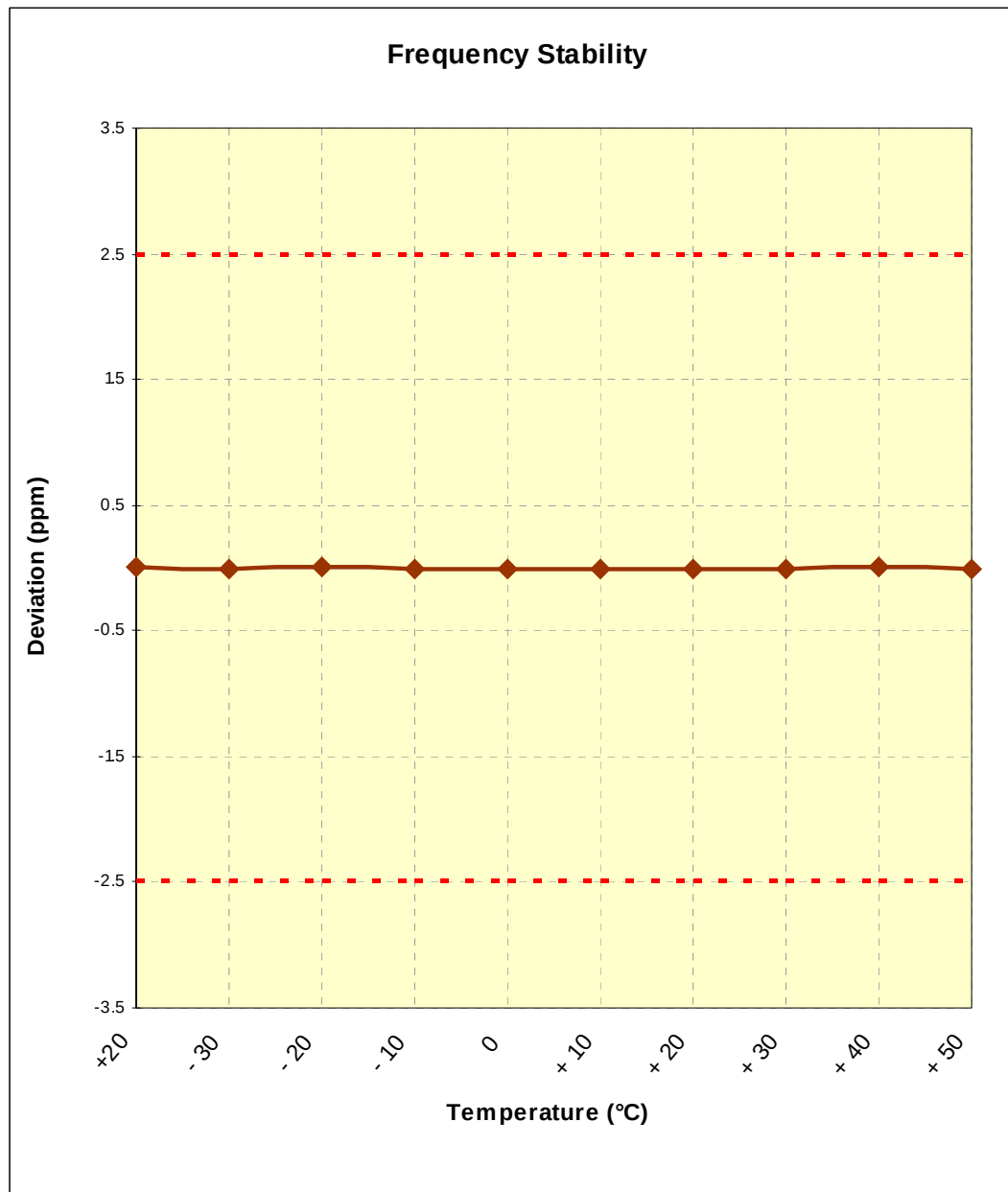
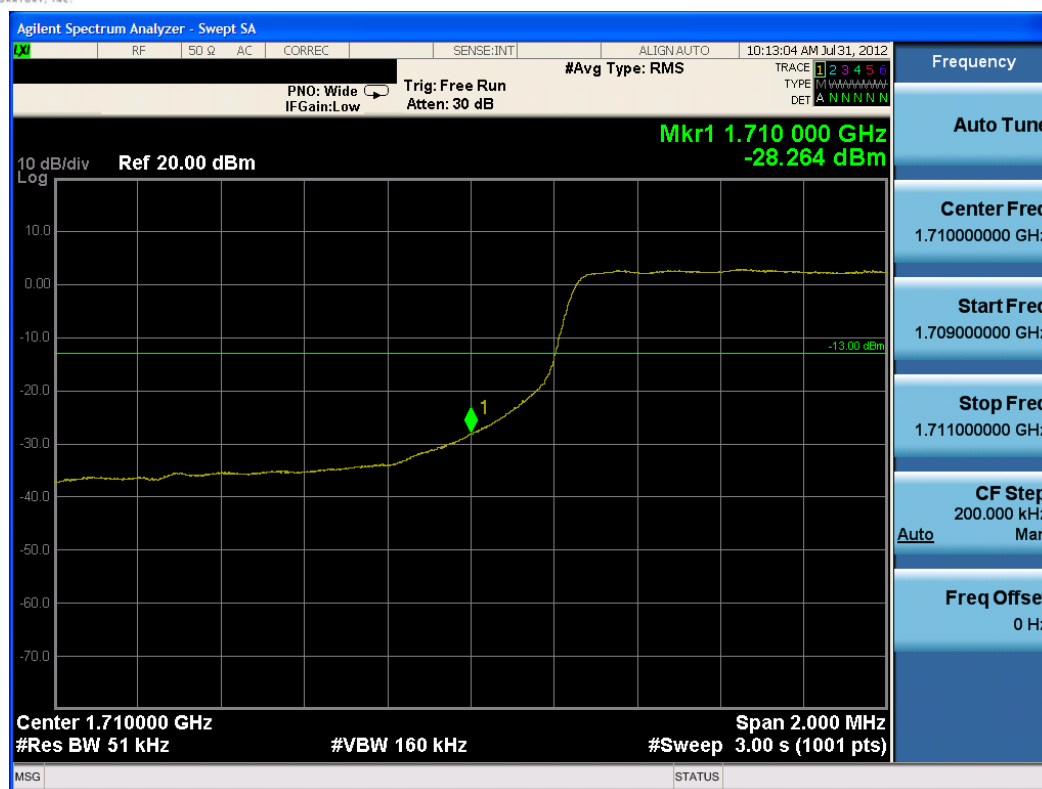
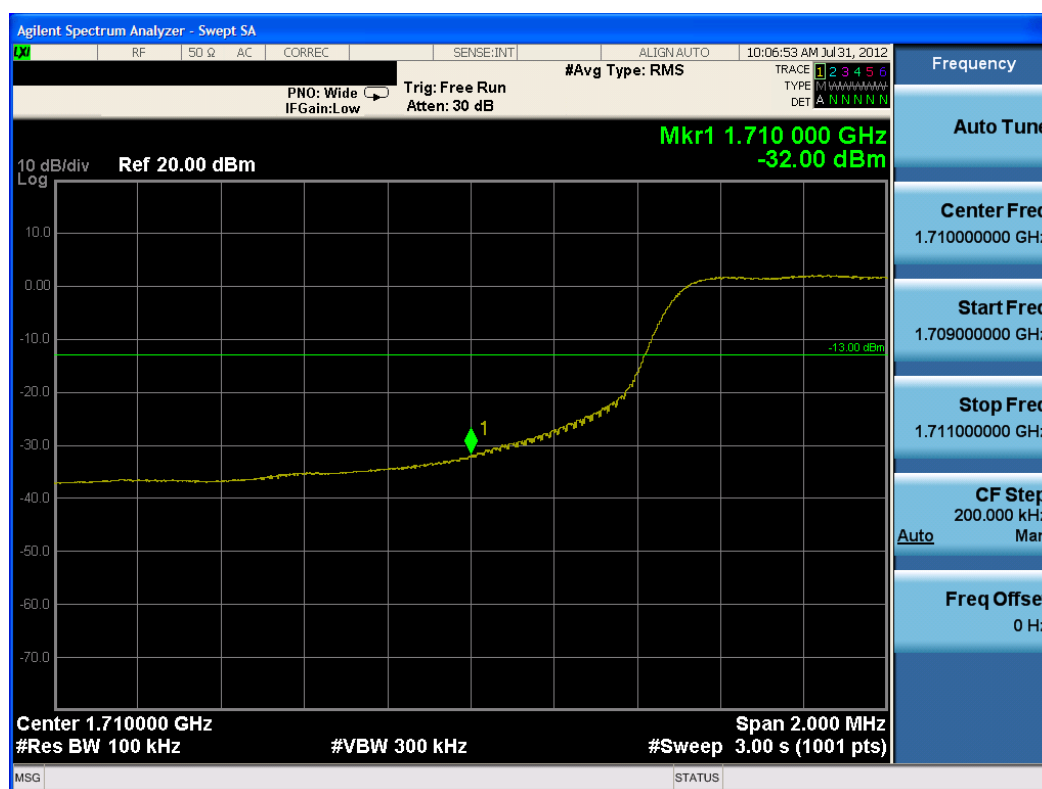


Figure 6-2. Frequency Stability Graph (Band 2)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 24 of 81

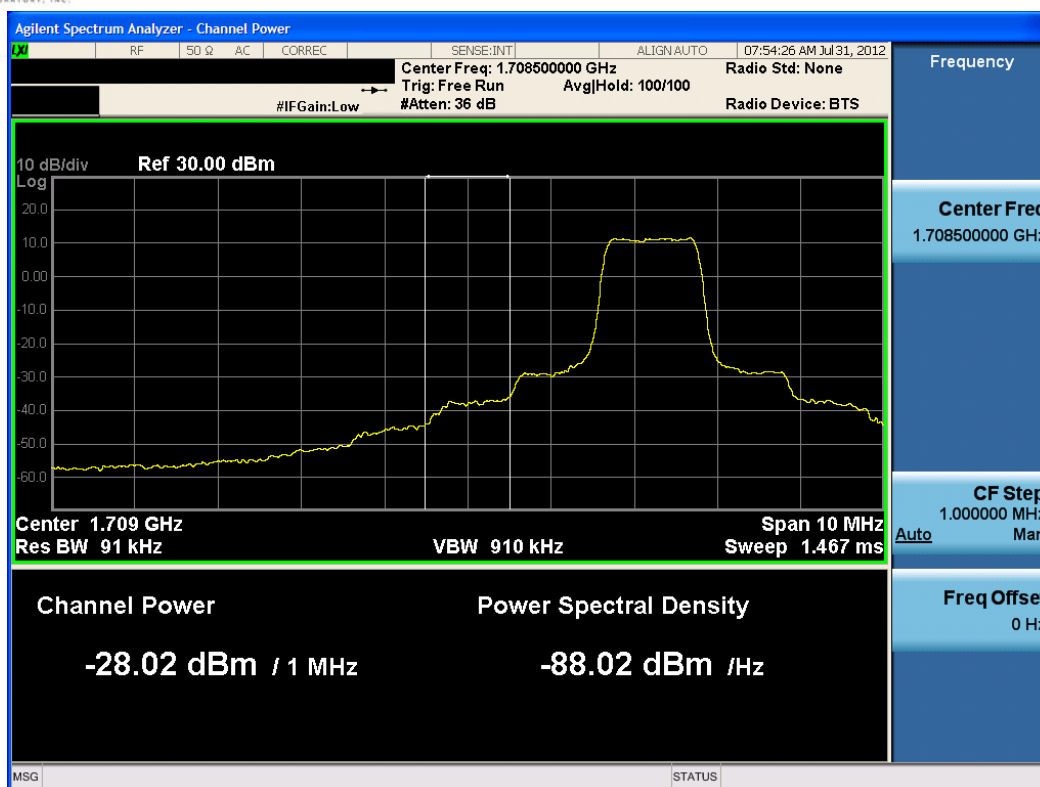


Plot 7-3. Lower Band Edge Plot (5MHz QPSK – RB Size 25)

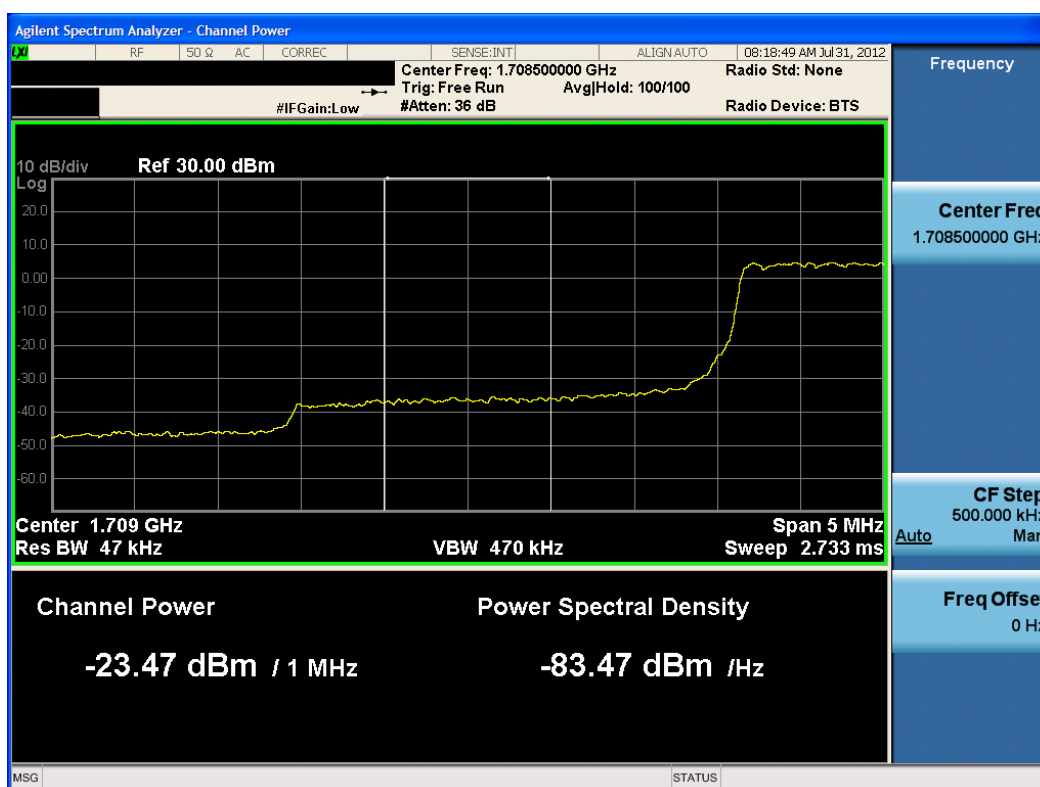


Plot 7-4. Lower Band Edge Plot (10MHz QPSK – RB Size 50)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 26 of 81

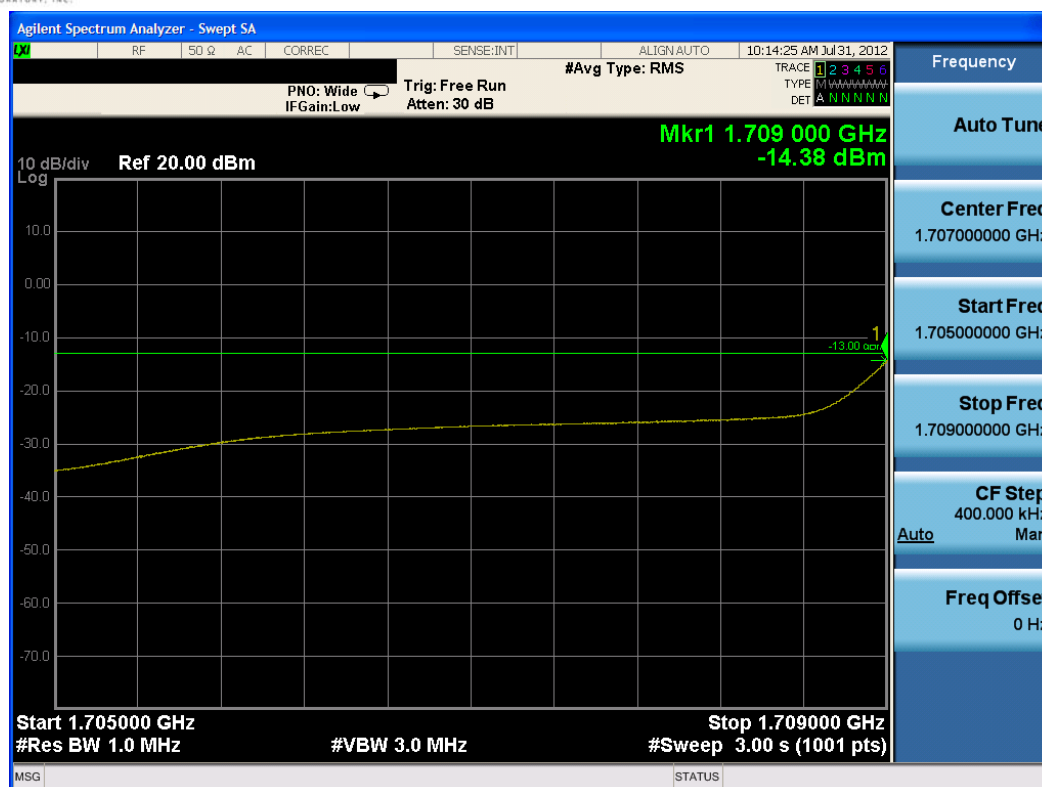


Plot 7-5. Lower Extended Band Edge Plot (1.4MHz QPSK- RB Size 6)

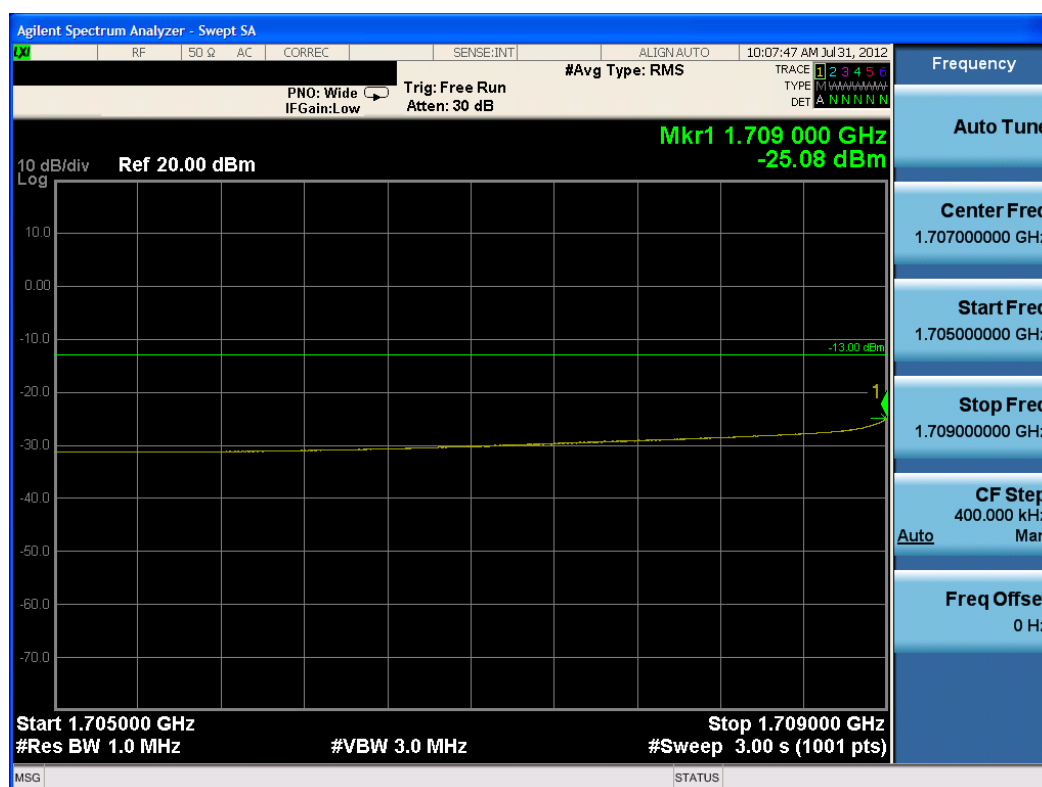


Plot 7-6. Lower Extended Band Edge Plot (3MHz QPSK- RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 27 of 81

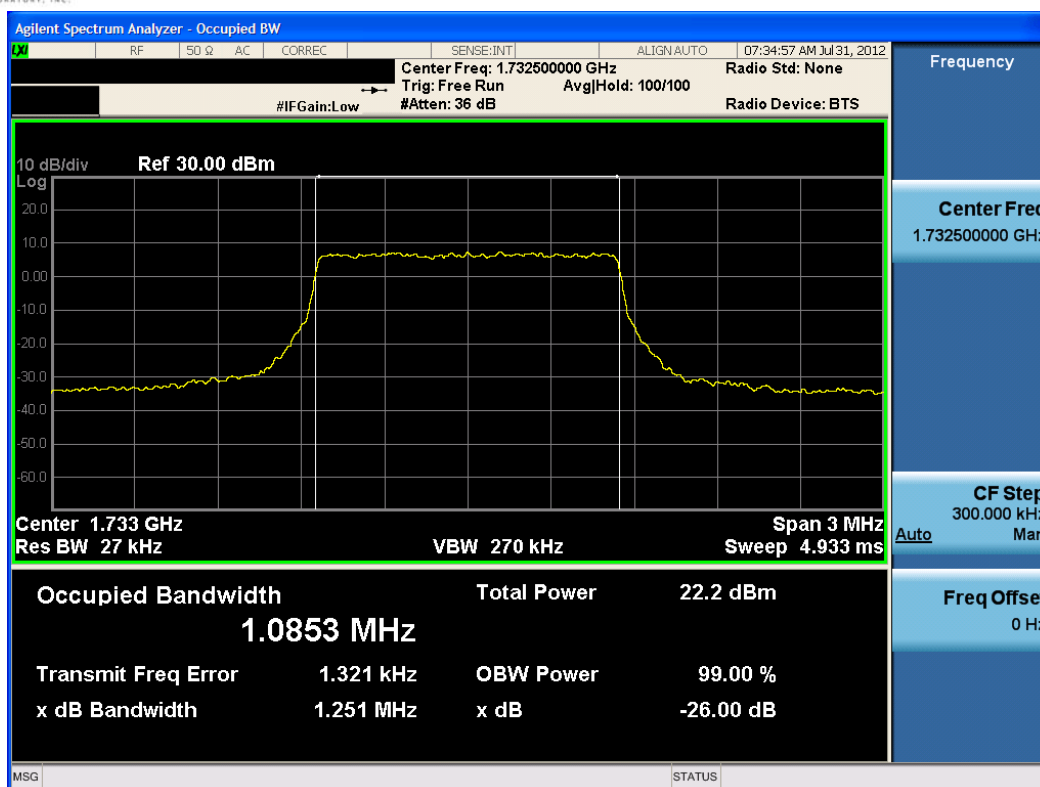


Plot 7-7. Lower Extended Band Edge Plot (5MHz QPSK– RB Size 25)

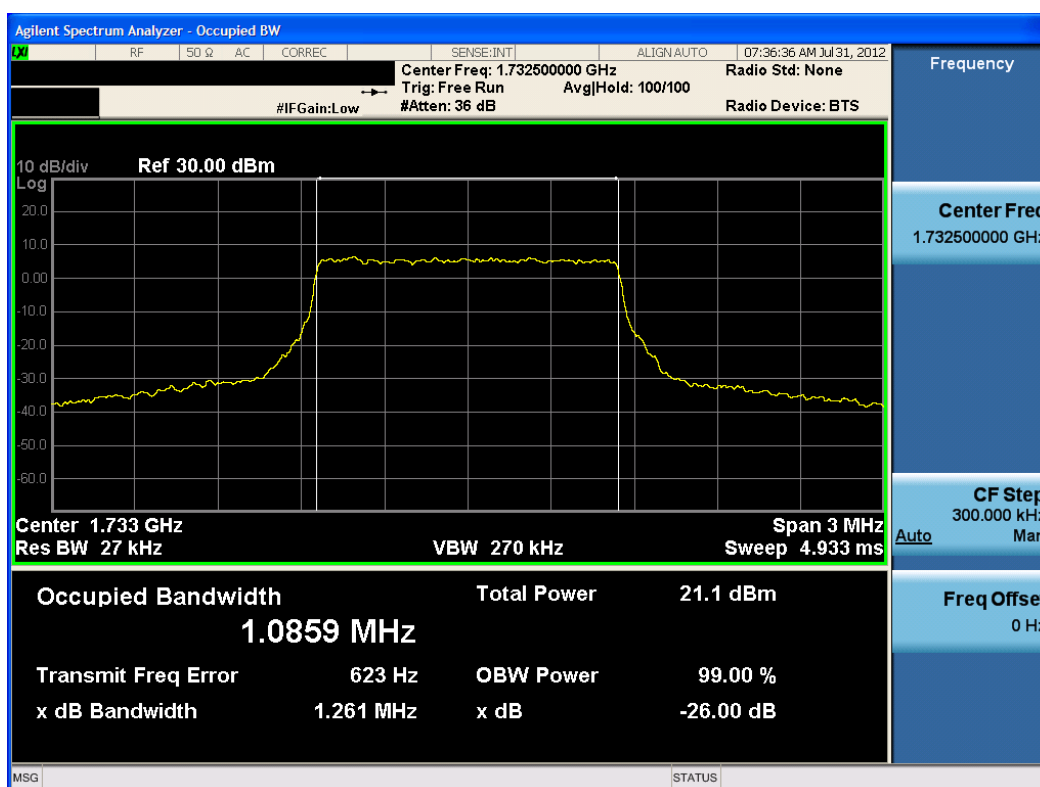


Plot 7-8. Lower Extended Band Edge Plot (10MHz QPSK– RB Size 50)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 28 of 81

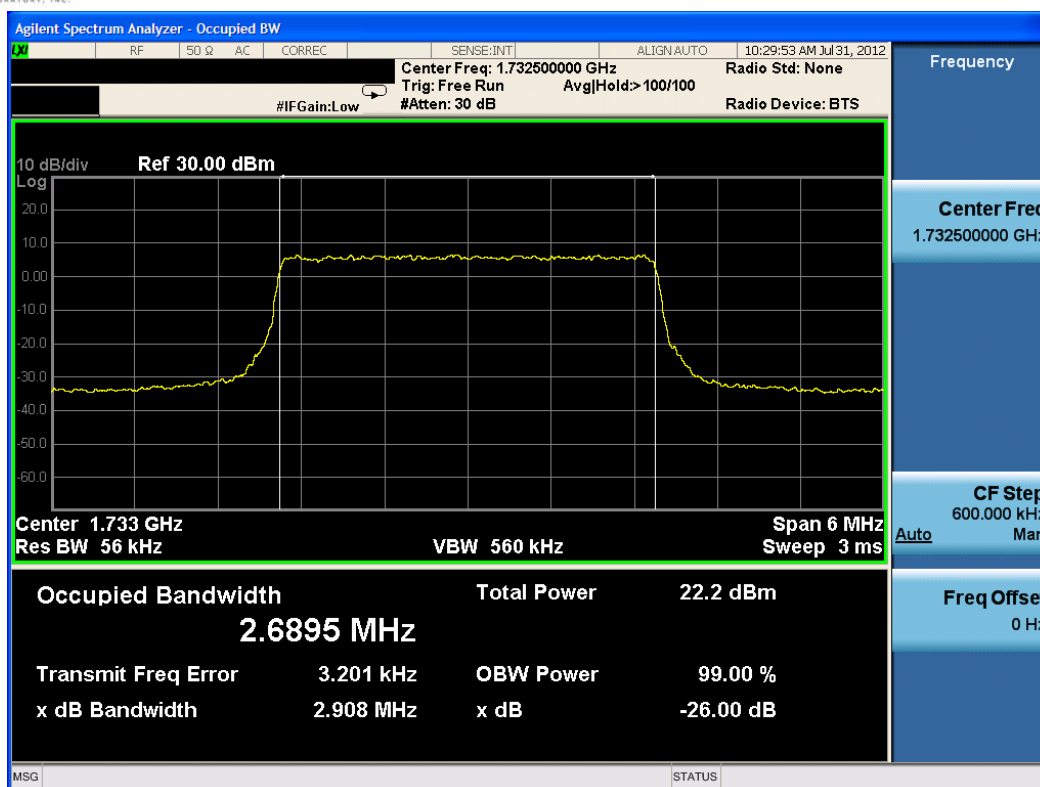


Plot 7-9. Occupied Bandwidth Plot (1.4MHz QPSK – RB Size 6)

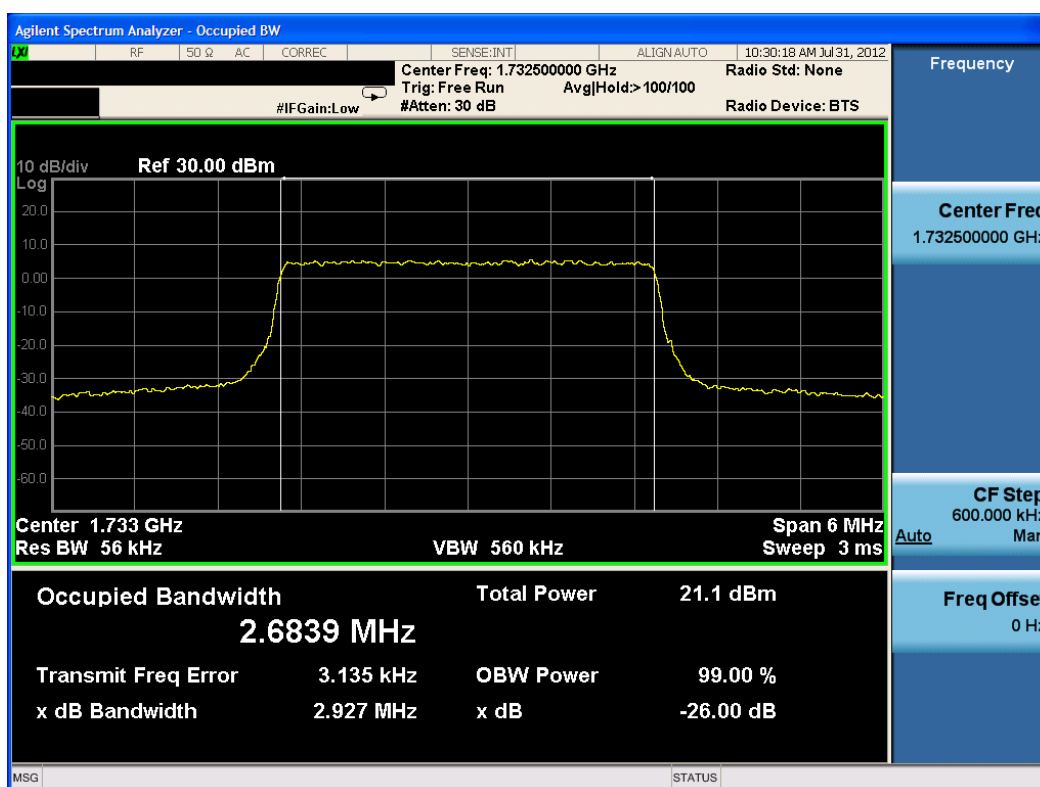


Plot 7-10. Occupied Bandwidth Plot (1.4MHz 16-QAM – RB Size 6)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 29 of 81

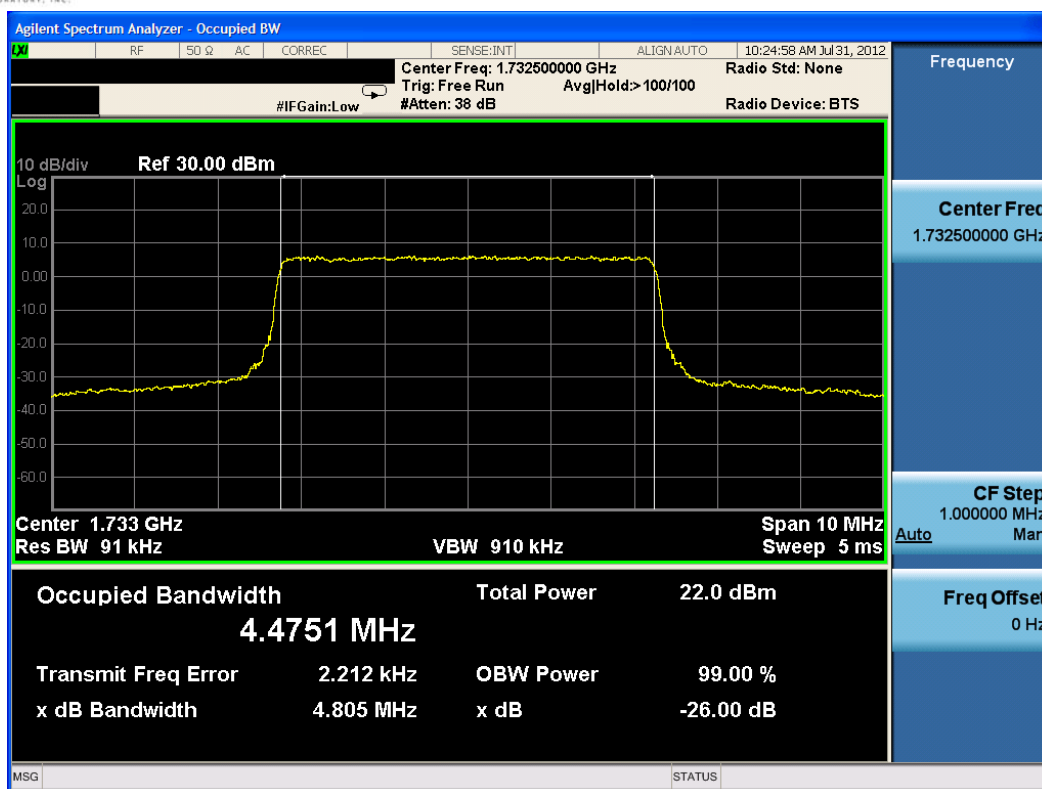


Plot 7-11. Occupied Bandwidth Plot (3MHz QPSK – RB Size 15)

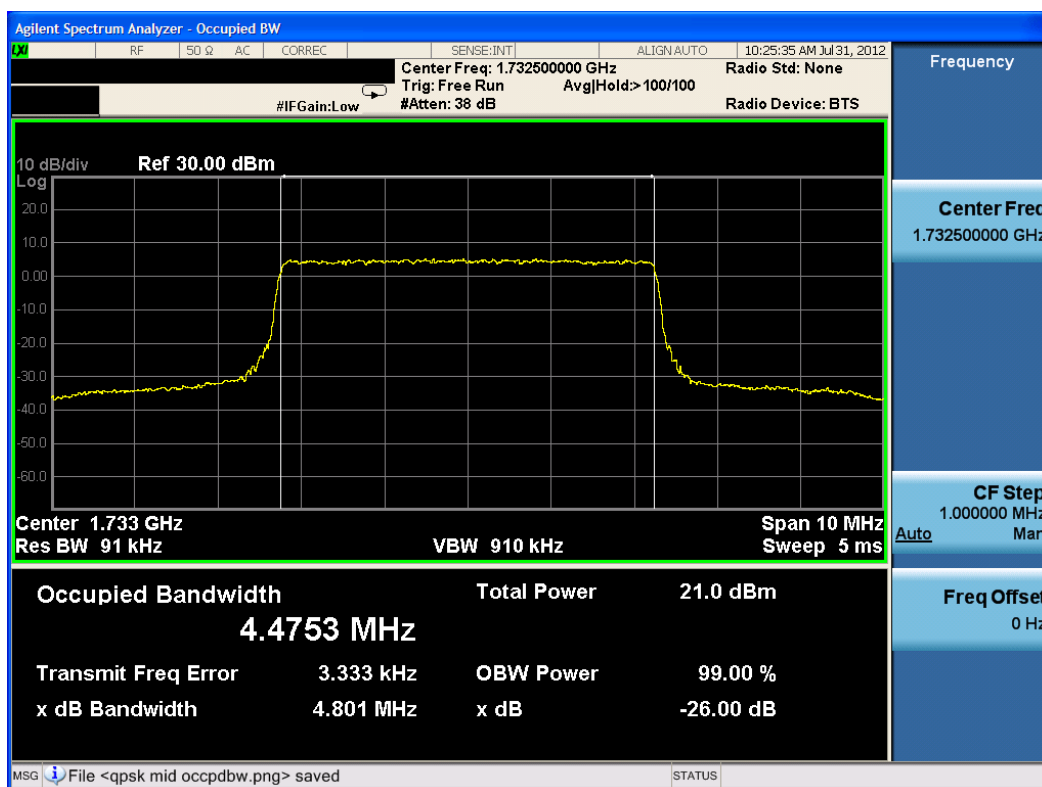


Plot 7-12. Occupied Bandwidth Plot (3MHz 16-QAM – RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 30 of 81

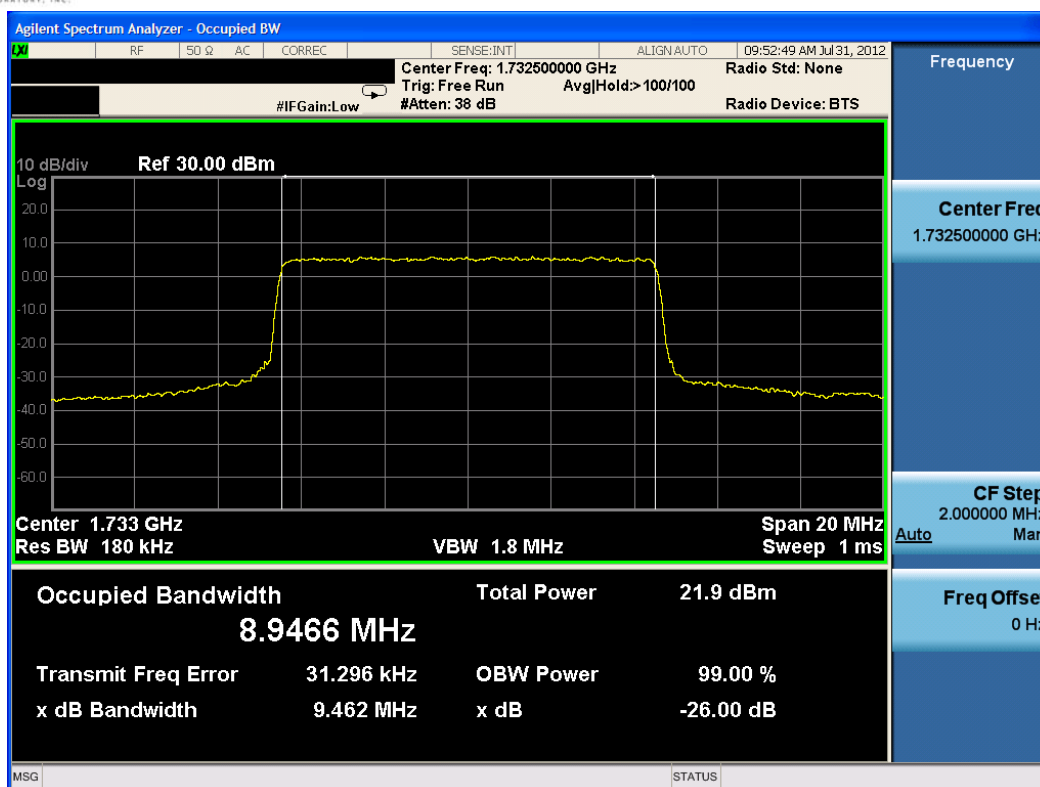


Plot 7-13. Occupied Bandwidth Plot (5MHz QPSK – RB Size 25)

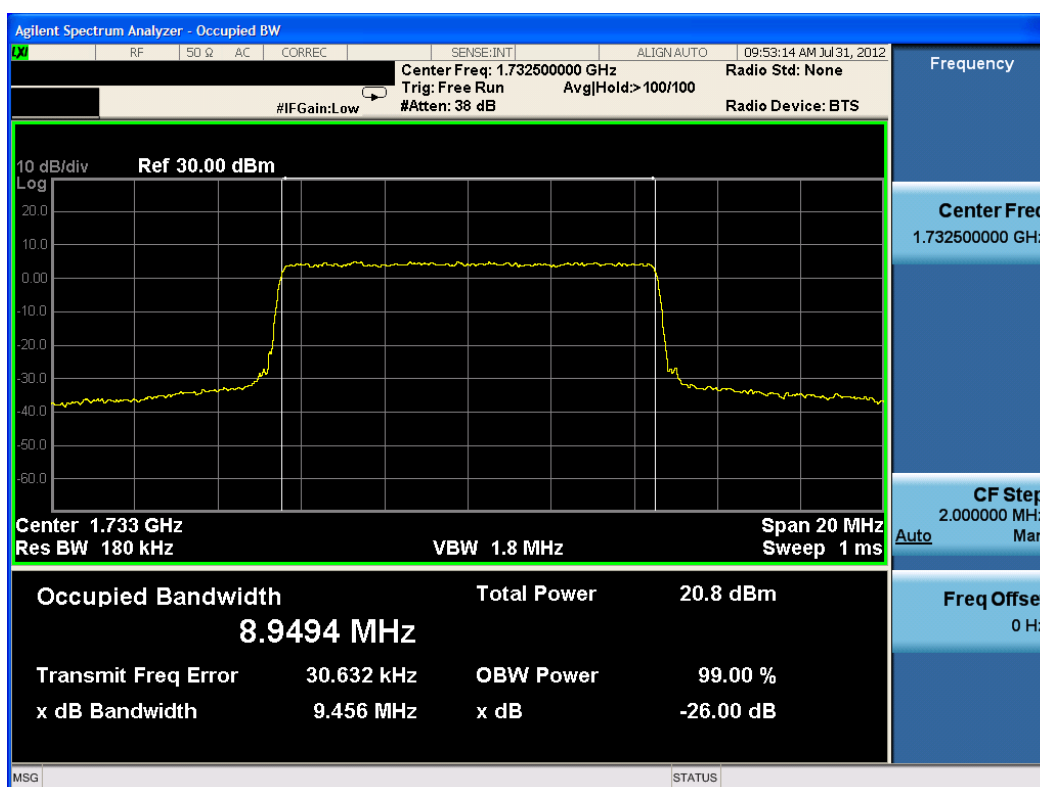


Plot 7-14. Occupied Bandwidth Plot (5MHz 16-QAM – RB Size 25)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 31 of 81

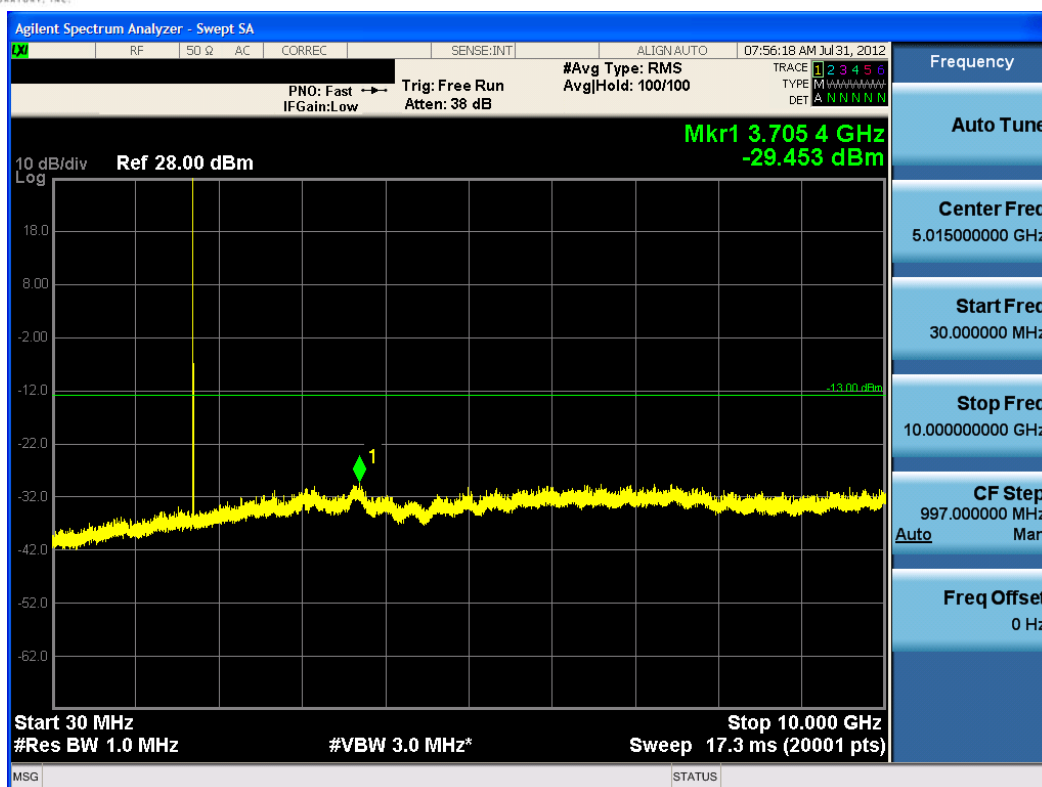


Plot 7-15. Occupied Bandwidth Plot (10MHz QPSK – RB Size 50)

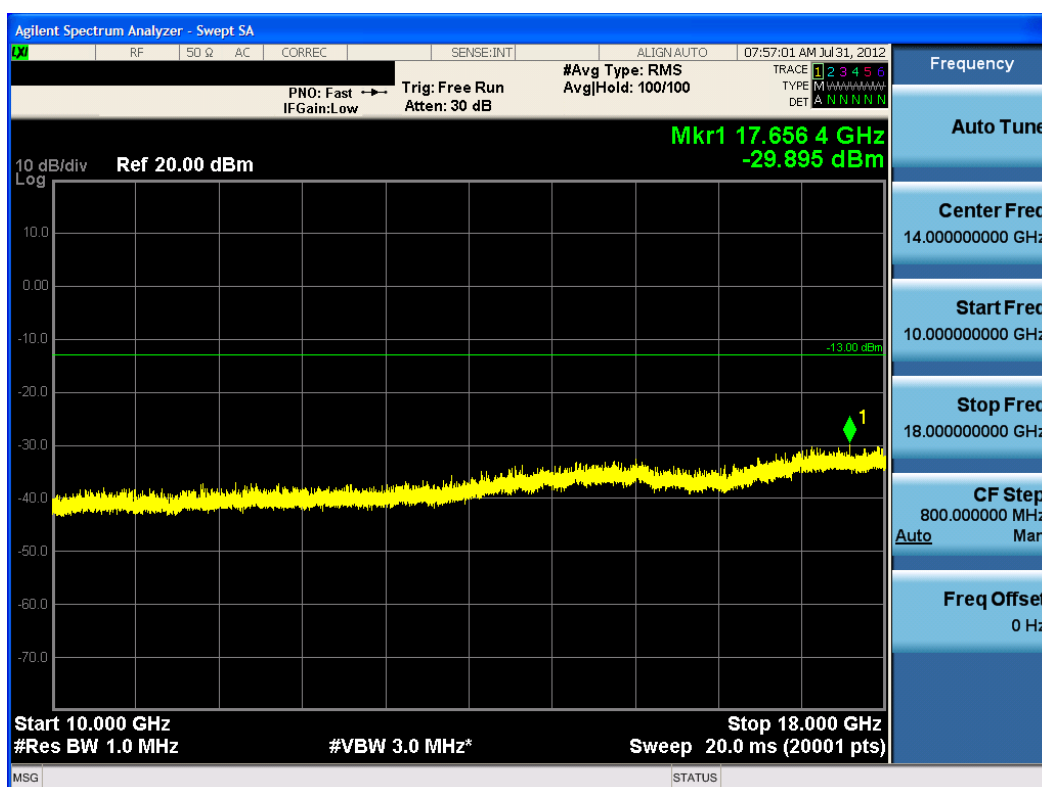


Plot 7-16. Occupied Bandwidth Plot (10MHz 16-QAM – RB Size 50)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 32 of 81

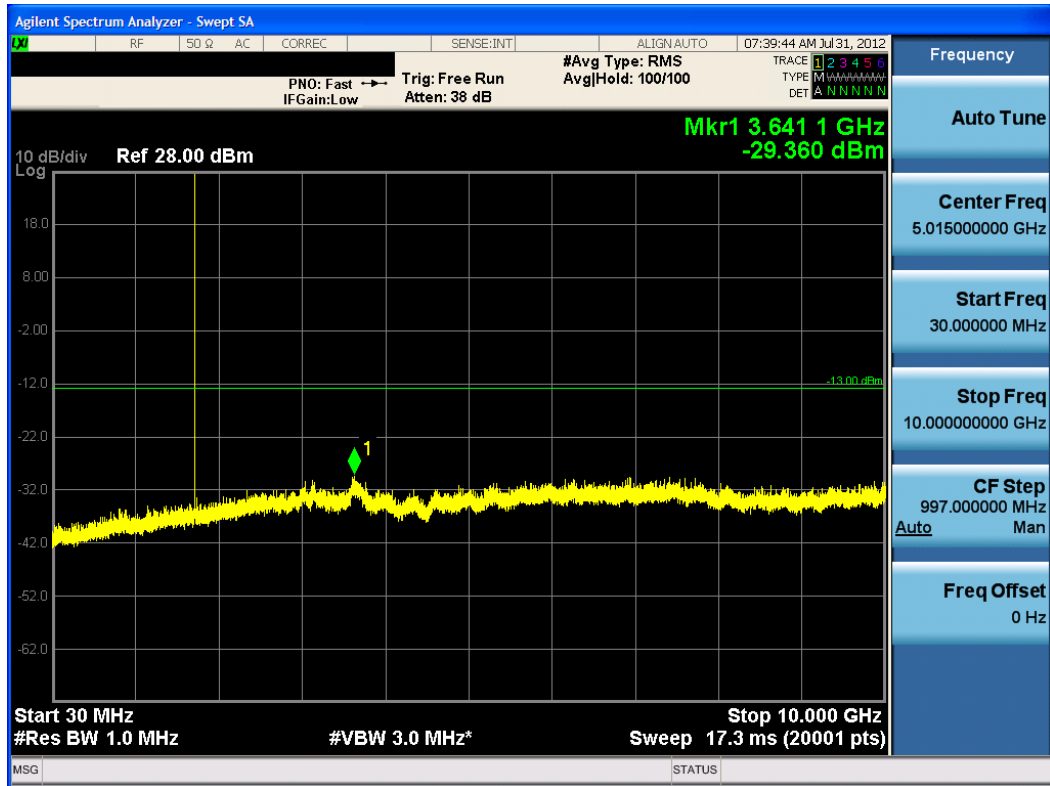


Plot 7-17. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

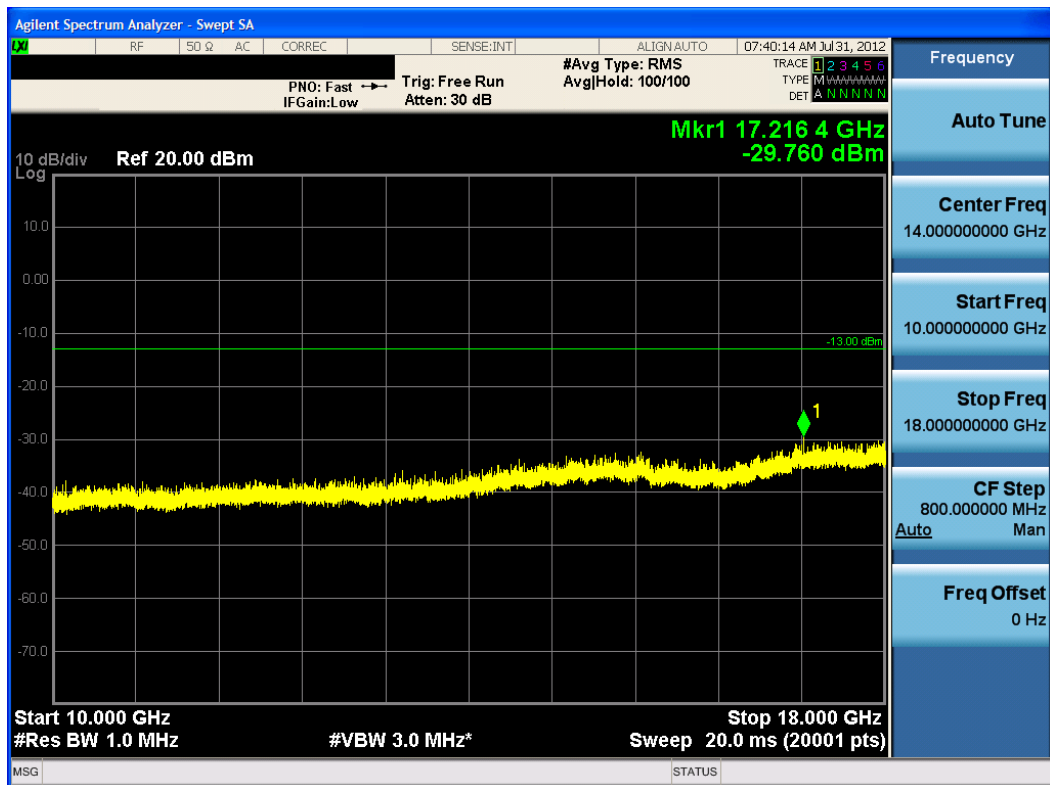


Plot 7-18. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 33 of 81

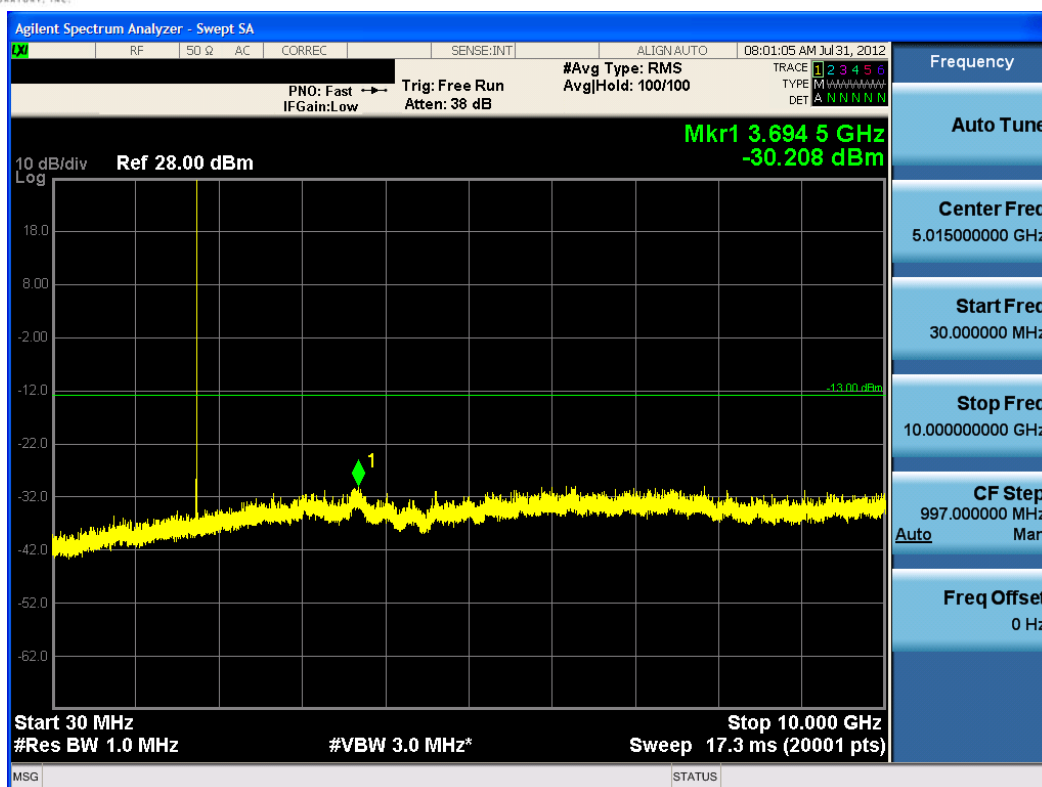


Plot 7-19. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

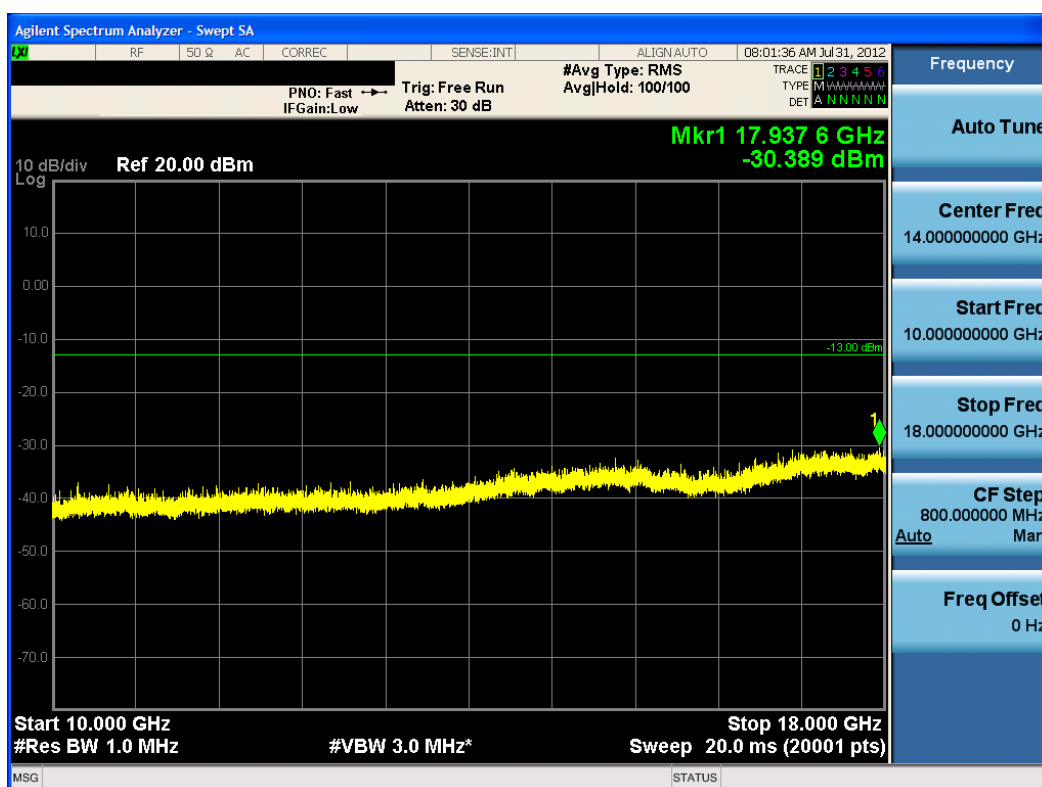


Plot 7-20. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 34 of 81

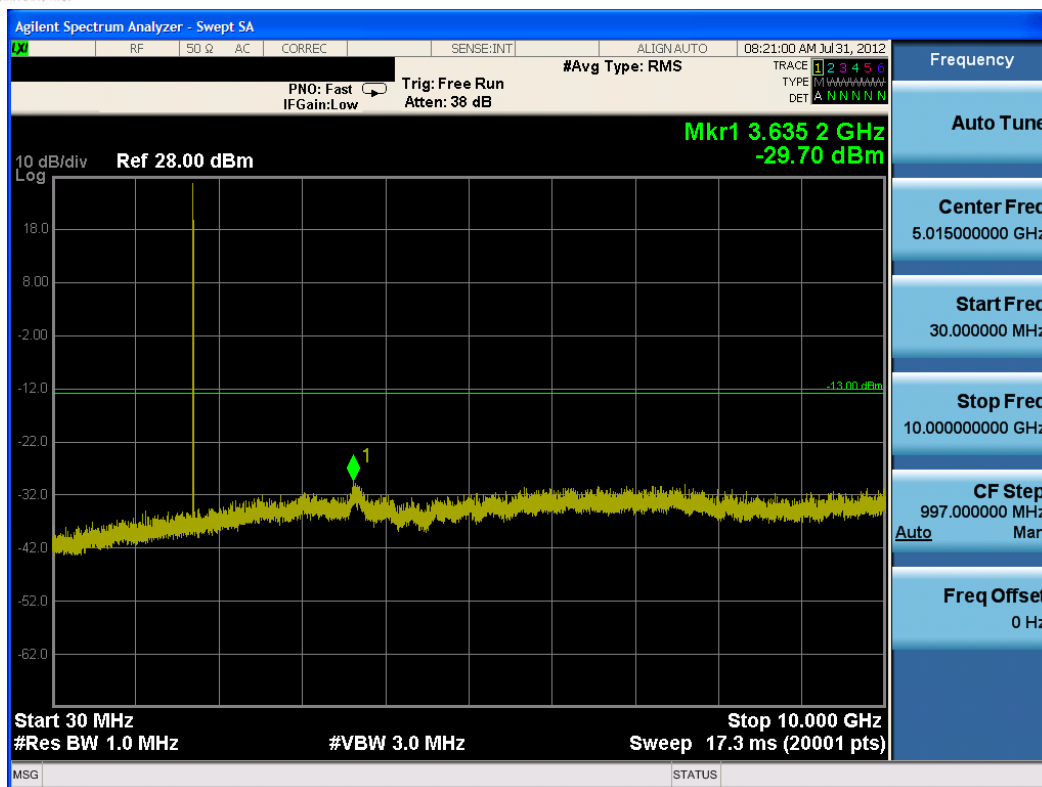


Plot 7-21. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

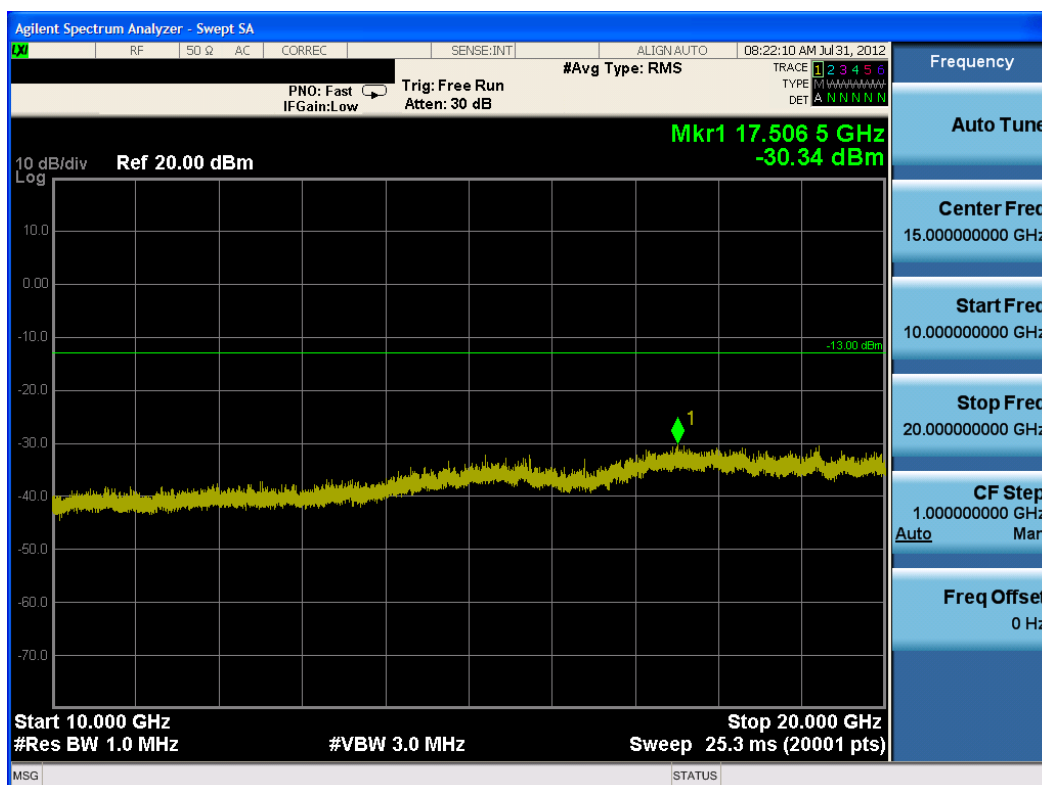


Plot 7-22. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 35 of 81

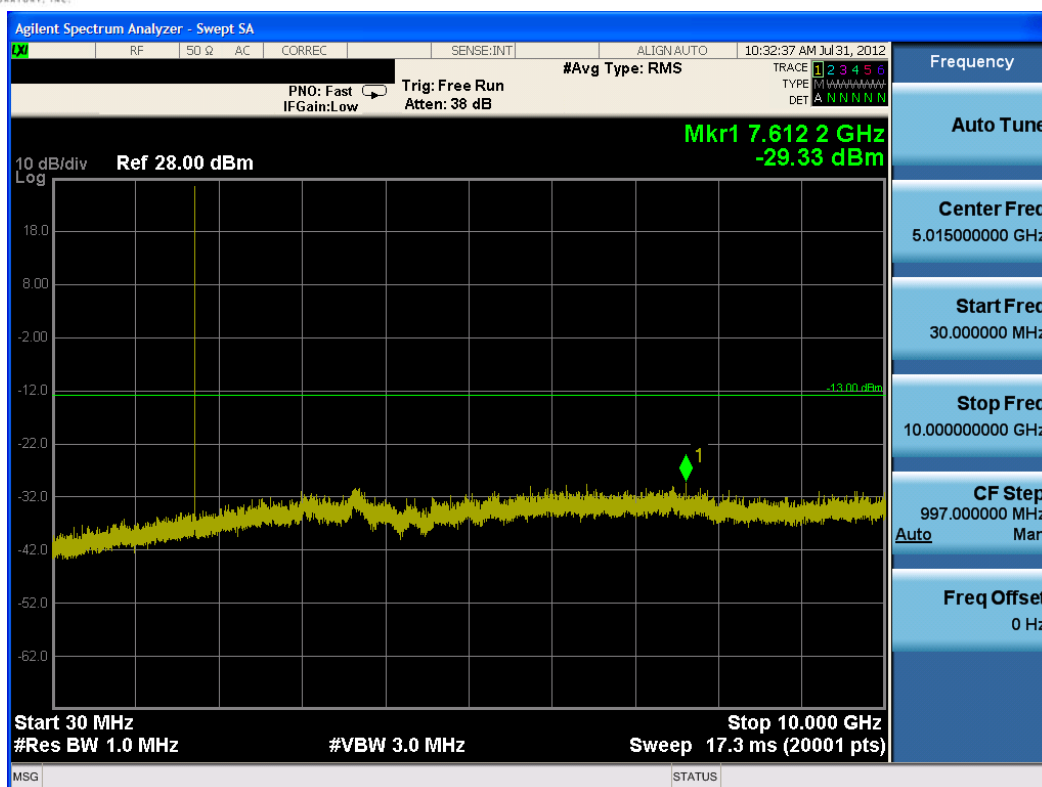


Plot 7-23. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

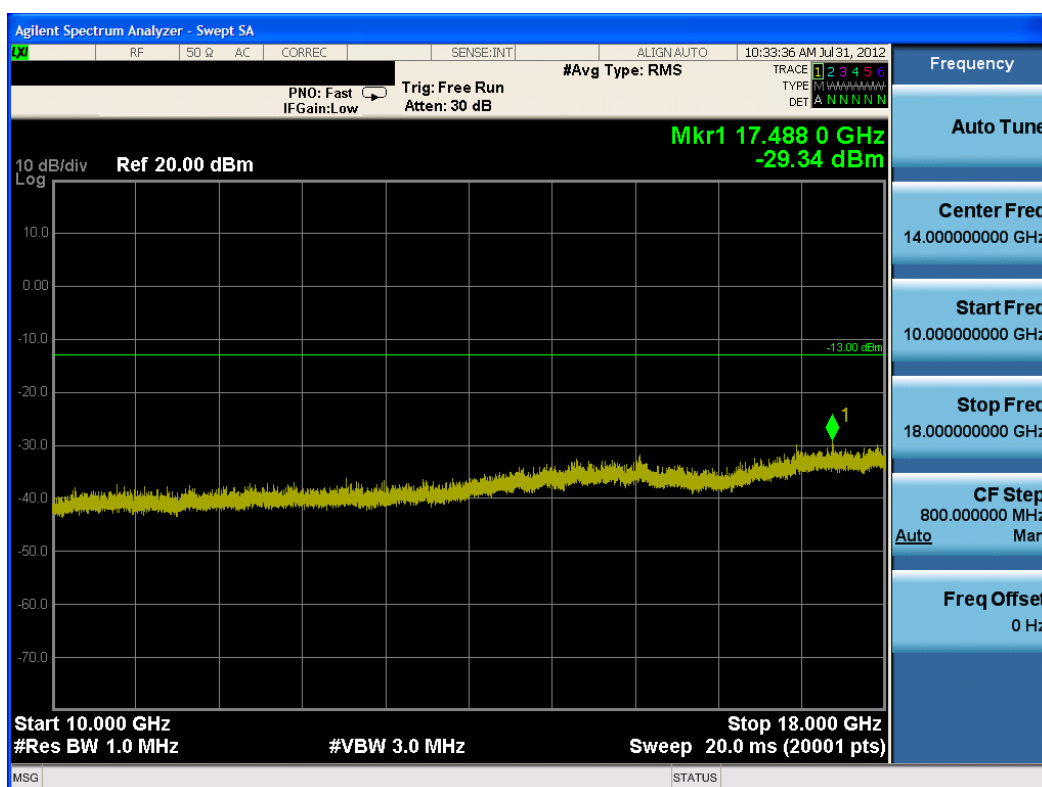


Plot 7-24. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 36 of 81

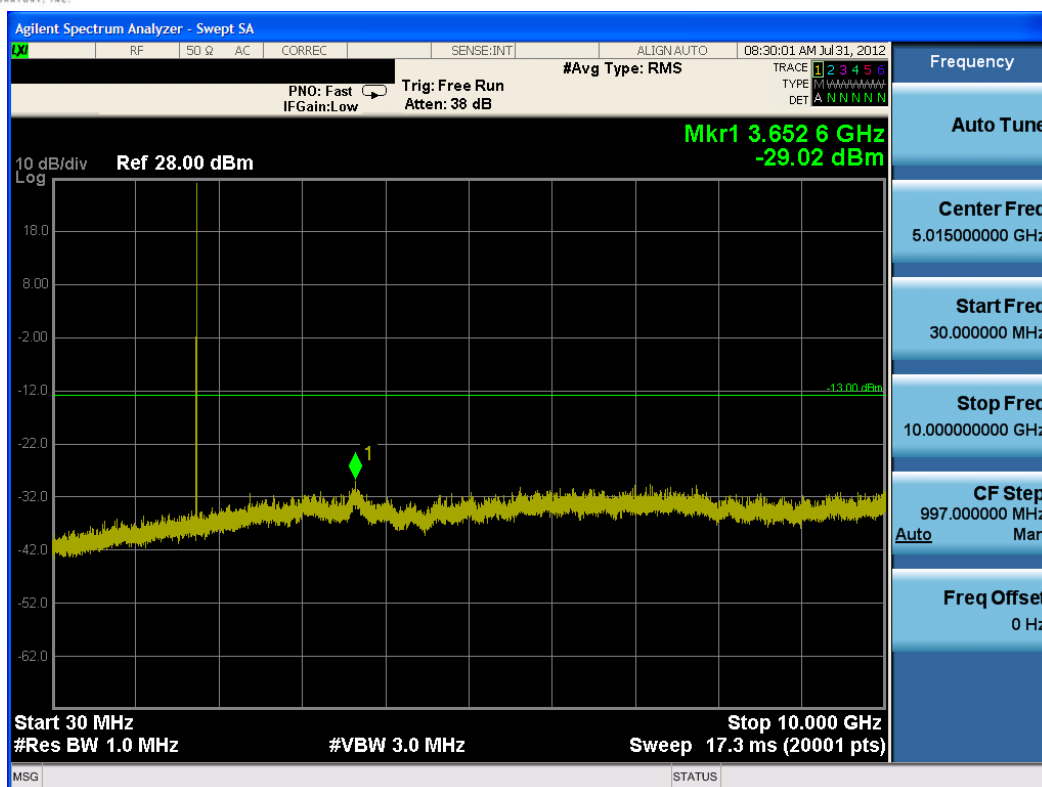


Plot 7-25. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

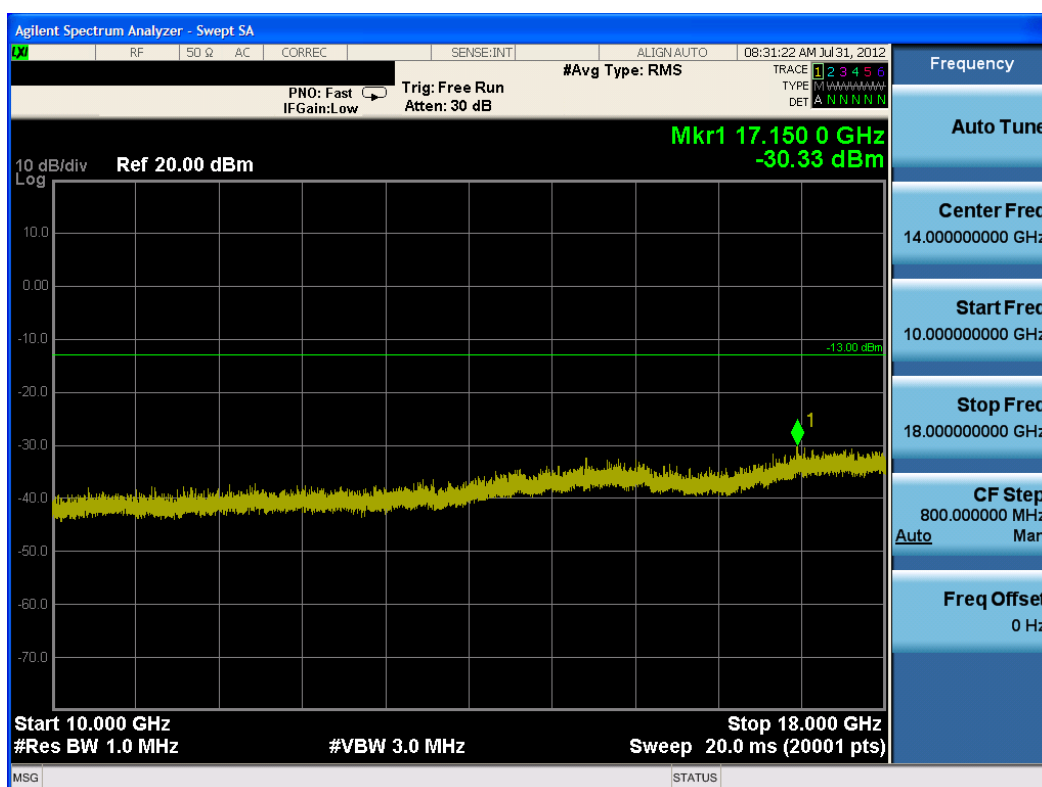


Plot 7-26. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 37 of 81

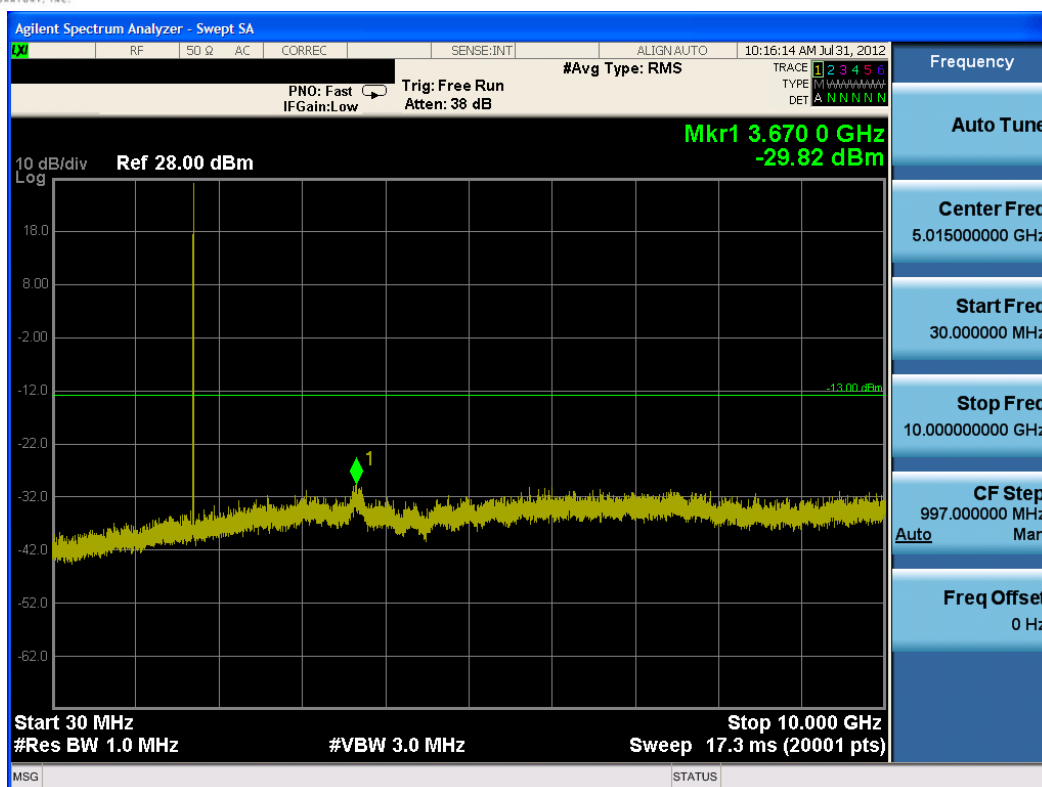


Plot 7-27. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

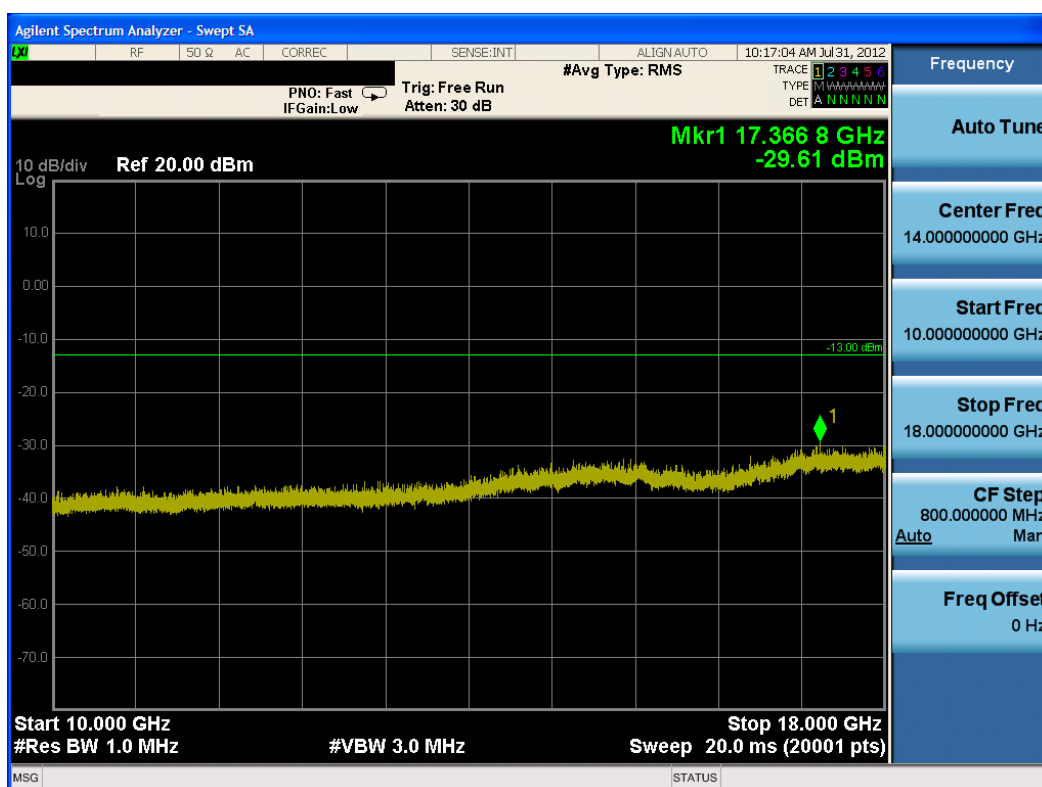


Plot 7-28. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 38 of 81

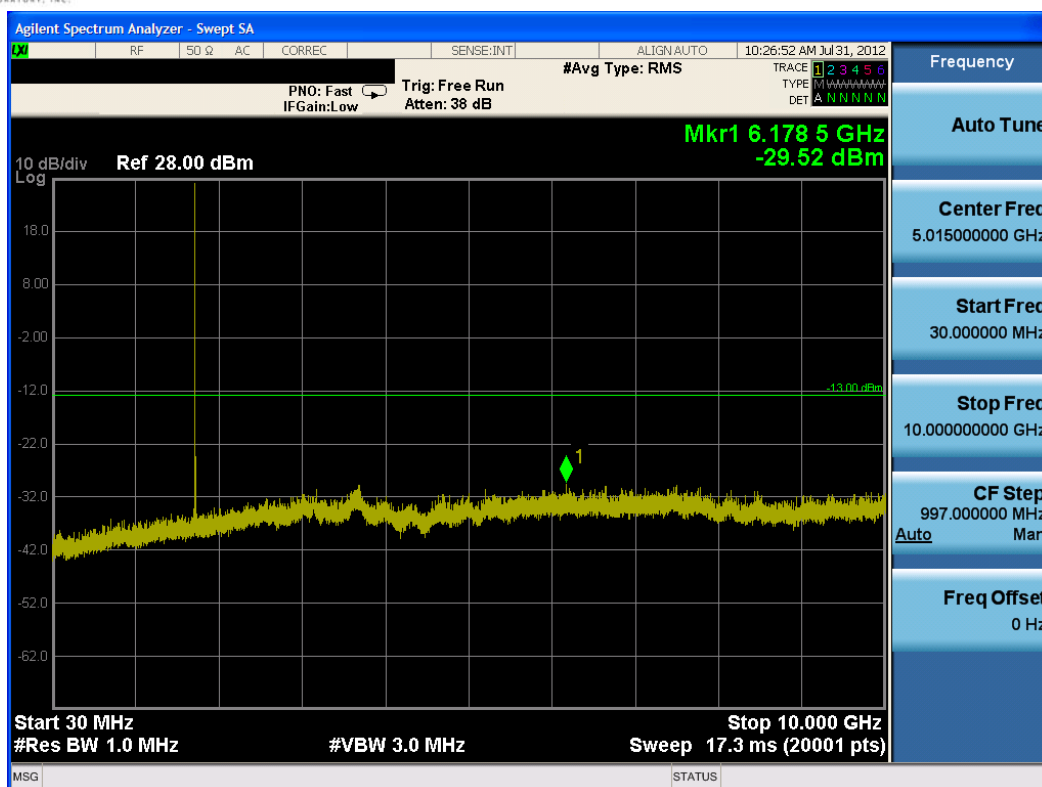


Plot 7-29. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

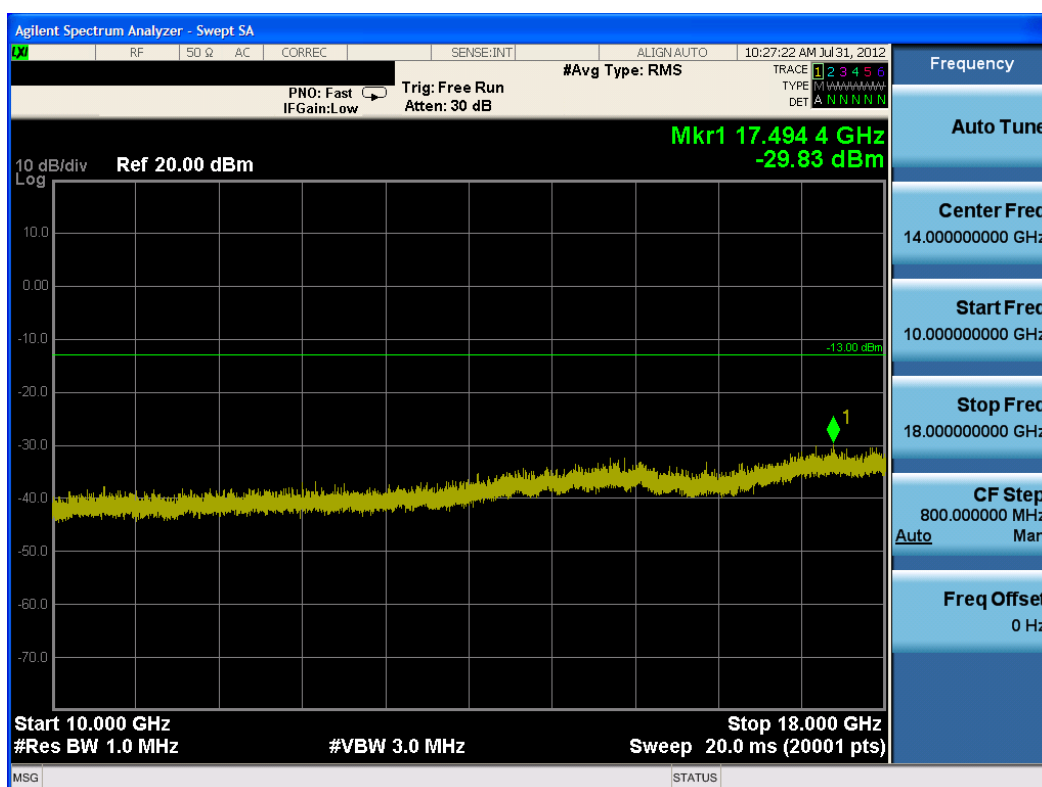


Plot 7-30. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 39 of 81

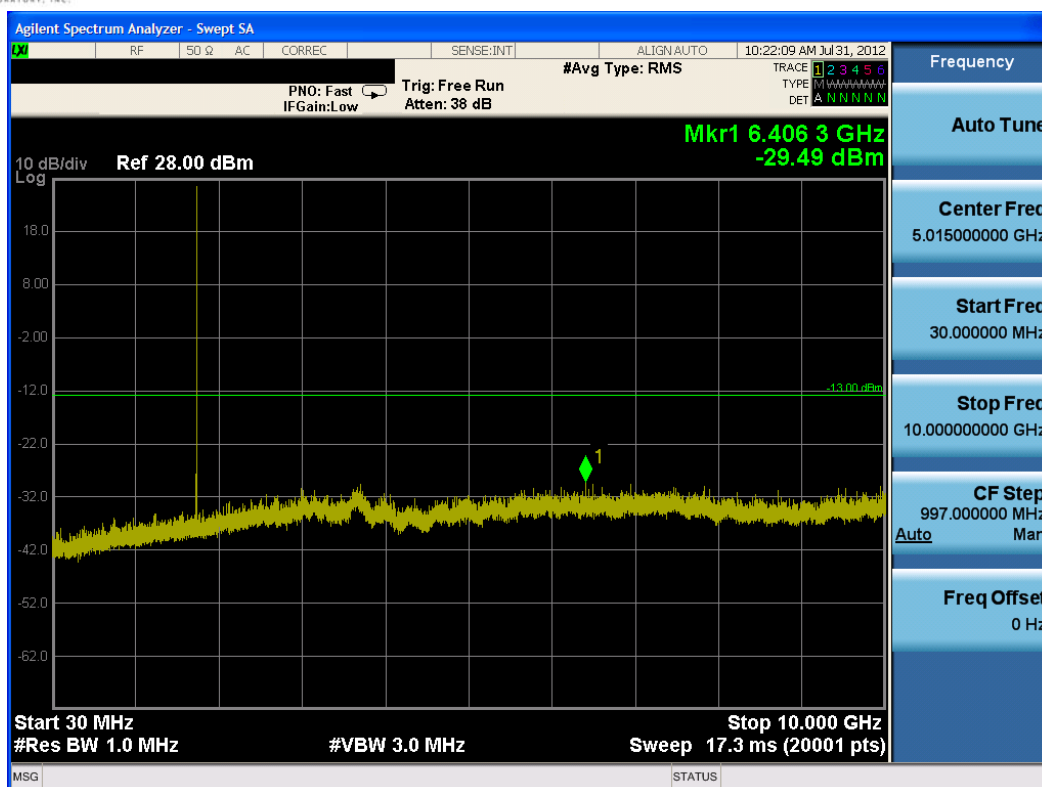


Plot 7-31. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

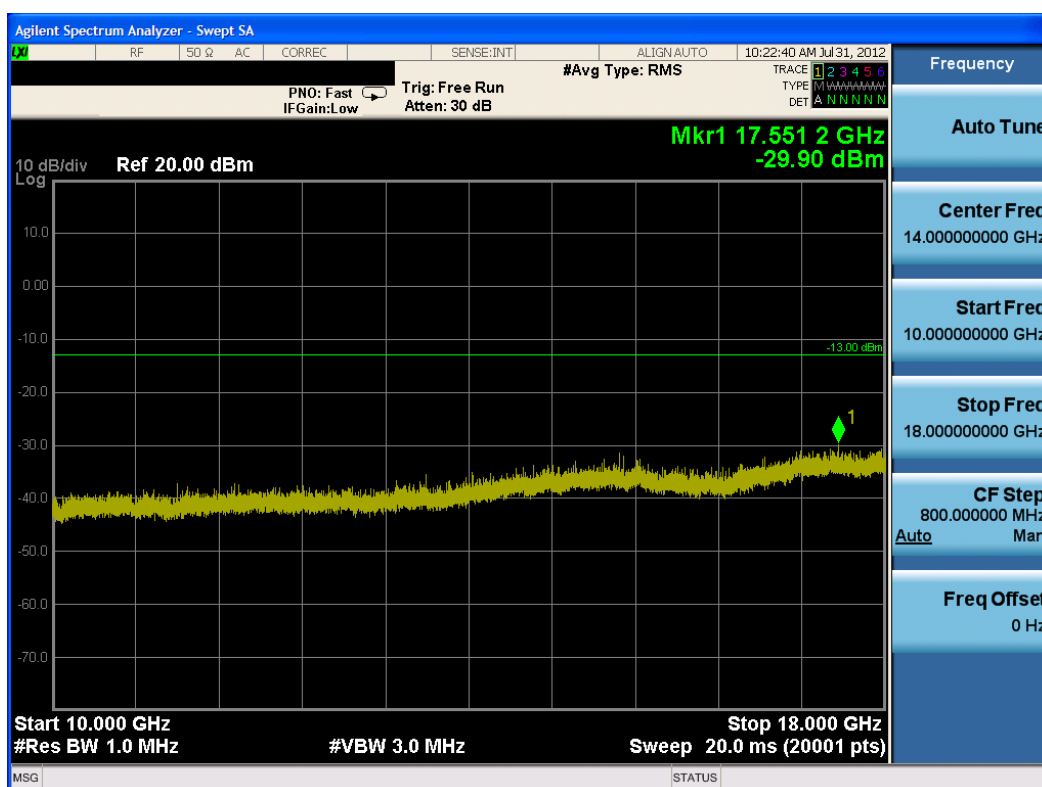


Plot 7-32. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 40 of 81

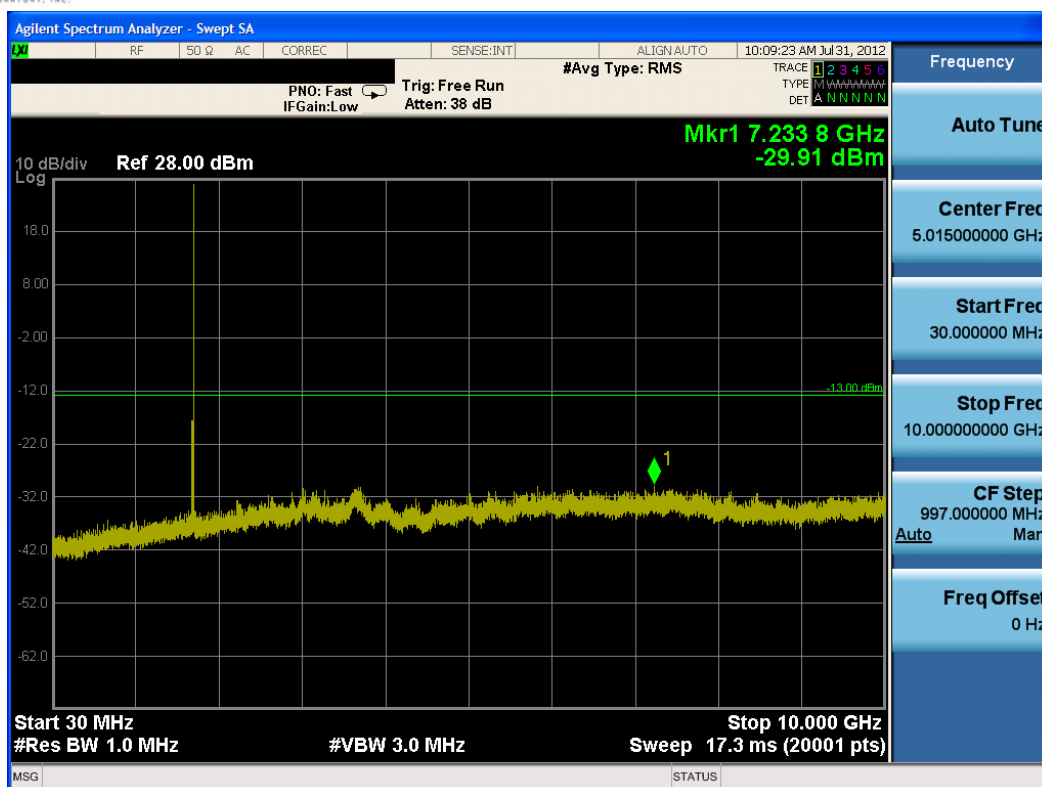


Plot 7-33. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

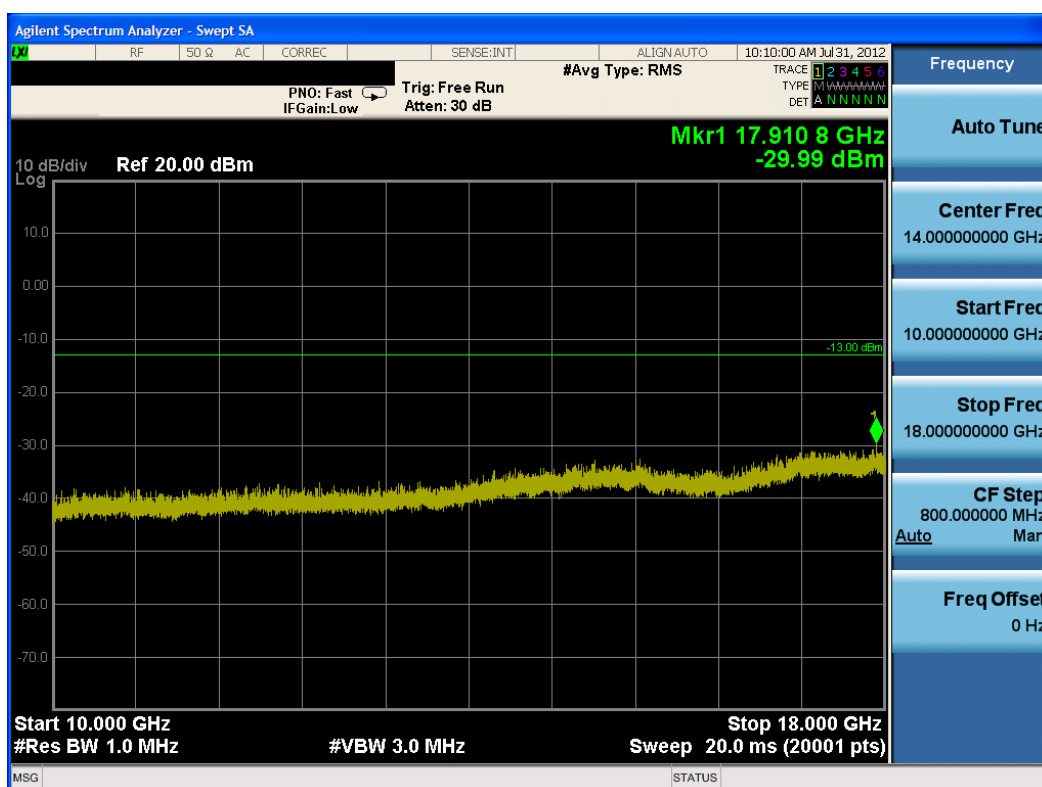


Plot 7-34. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 41 of 81

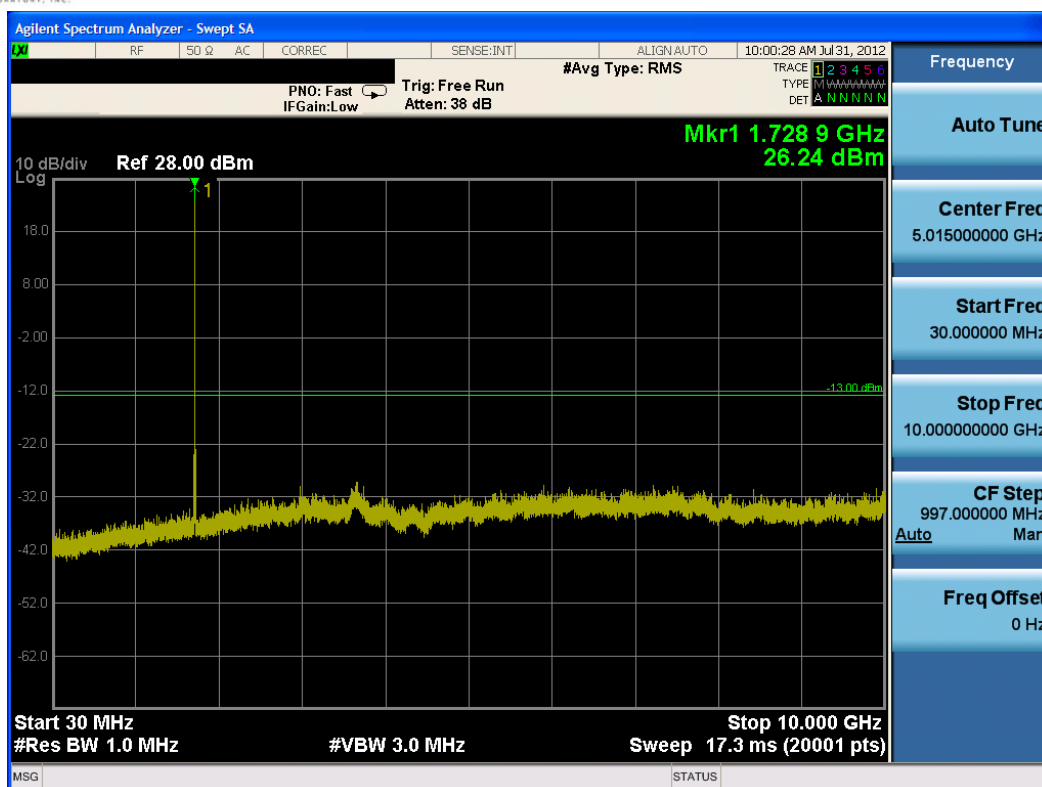


Plot 7-35. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

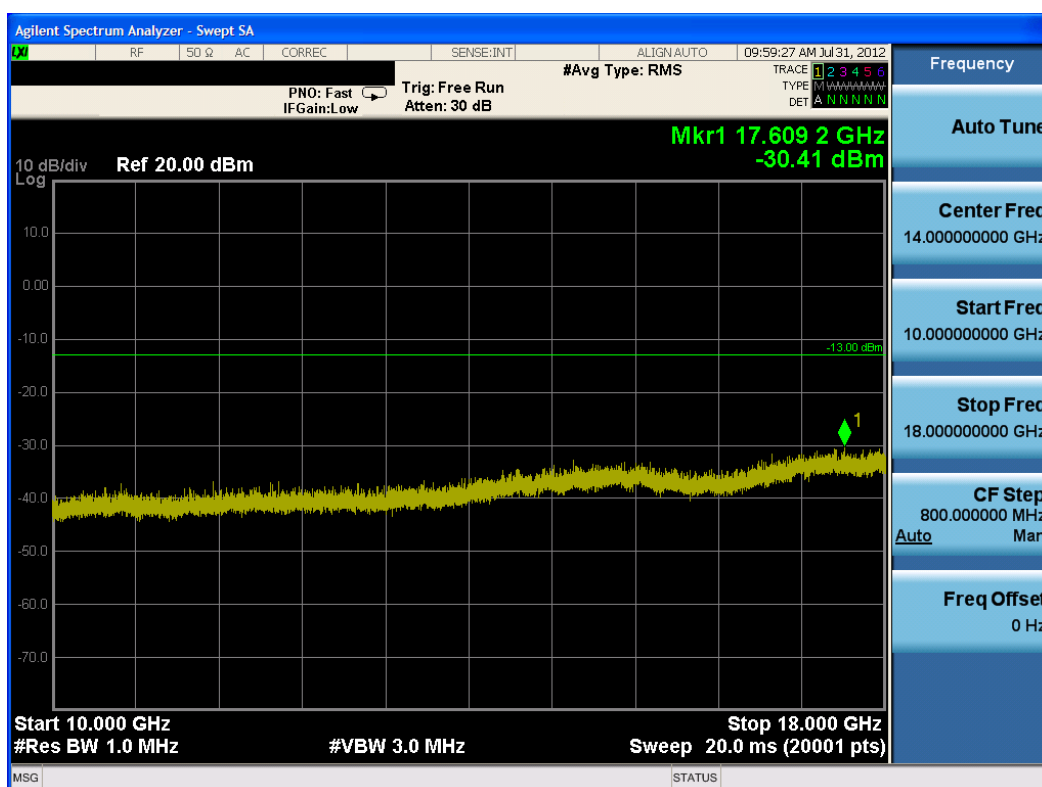


Plot 7-36. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 42 of 81

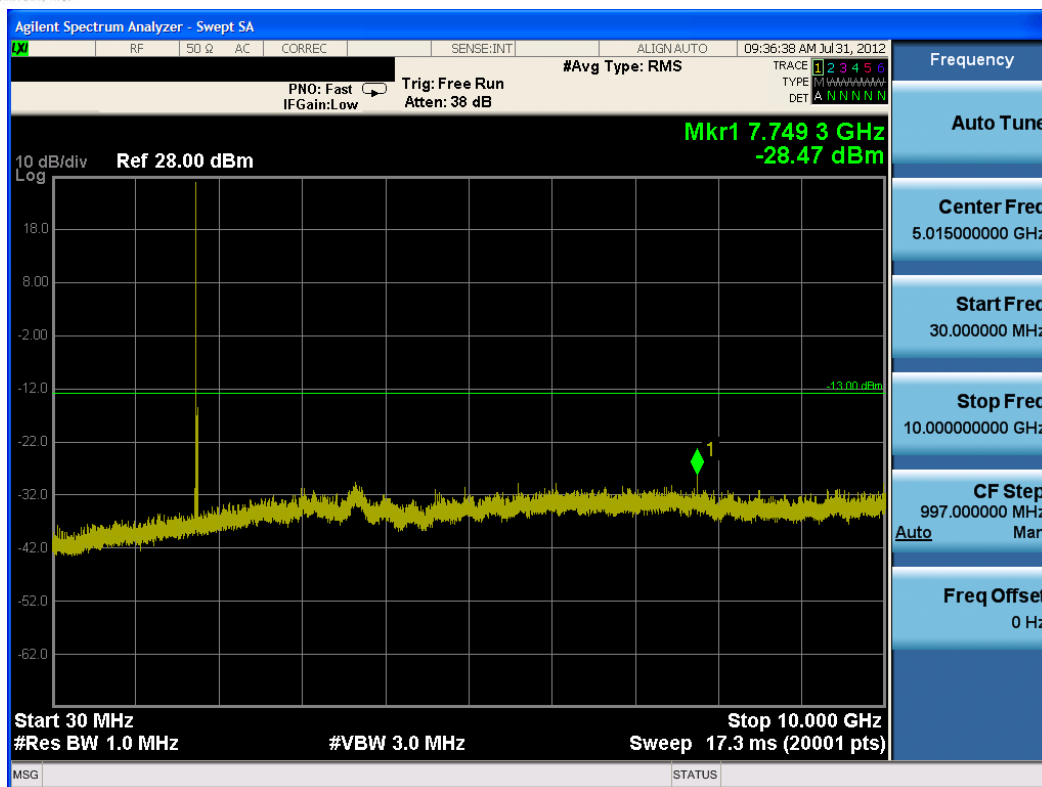


Plot 7-37. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

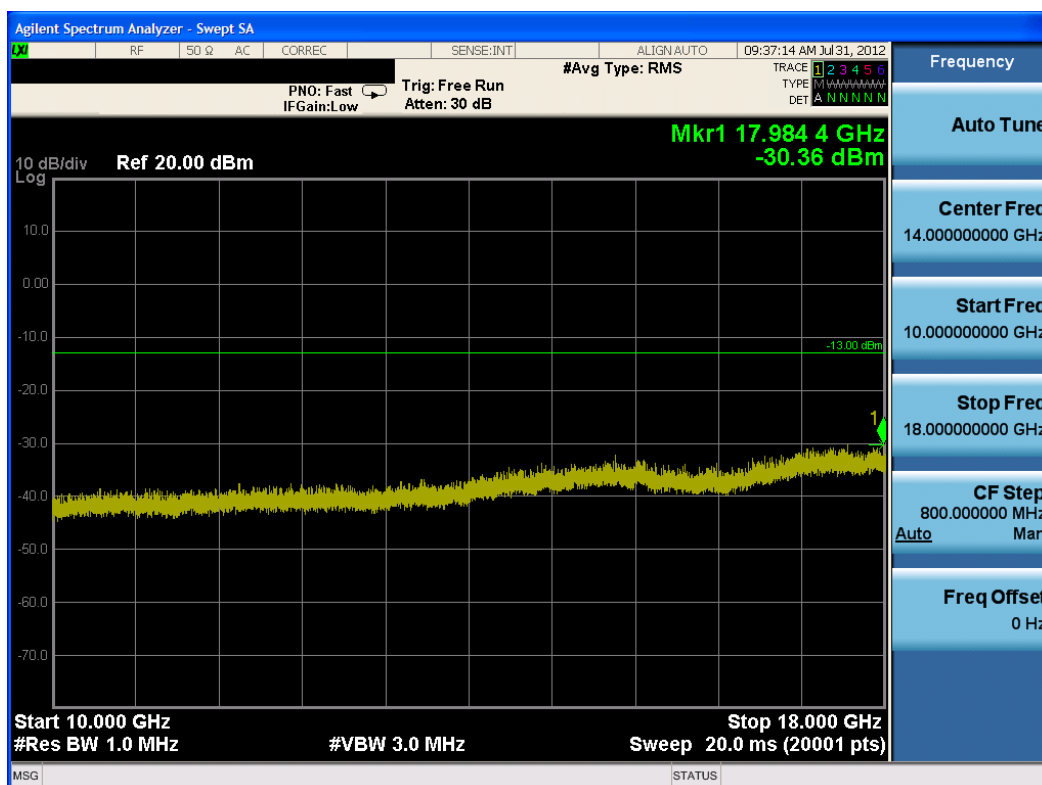


Plot 7-38. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 43 of 81

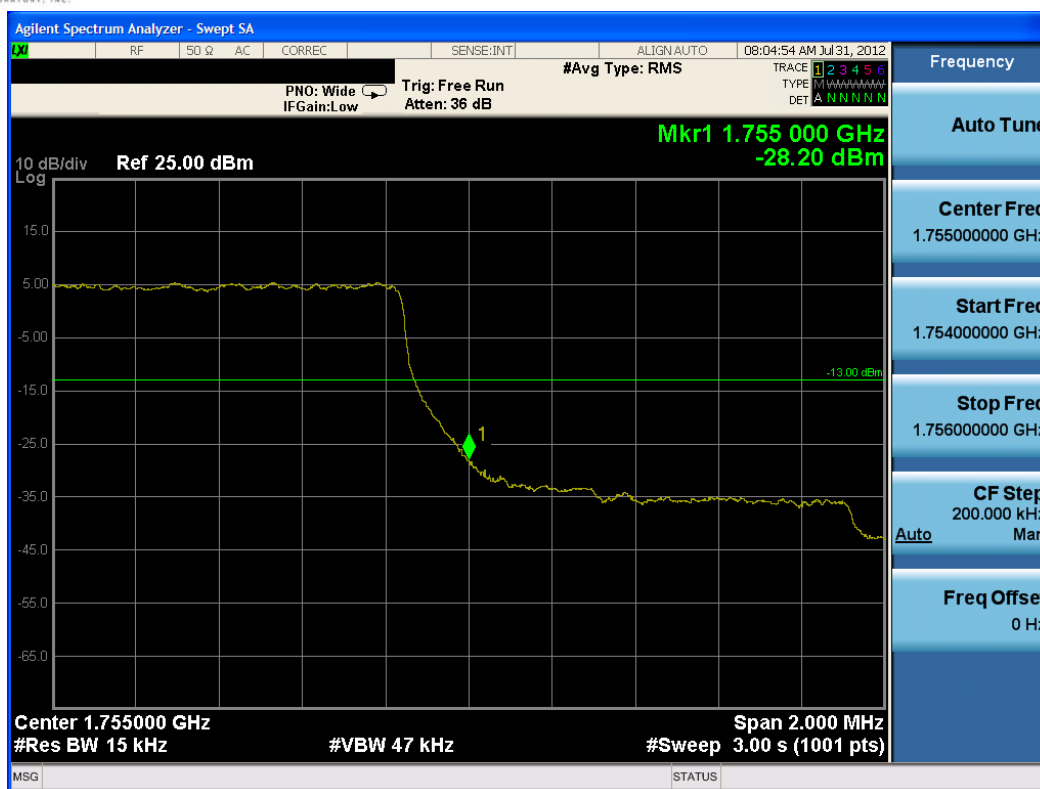


Plot 7-39. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

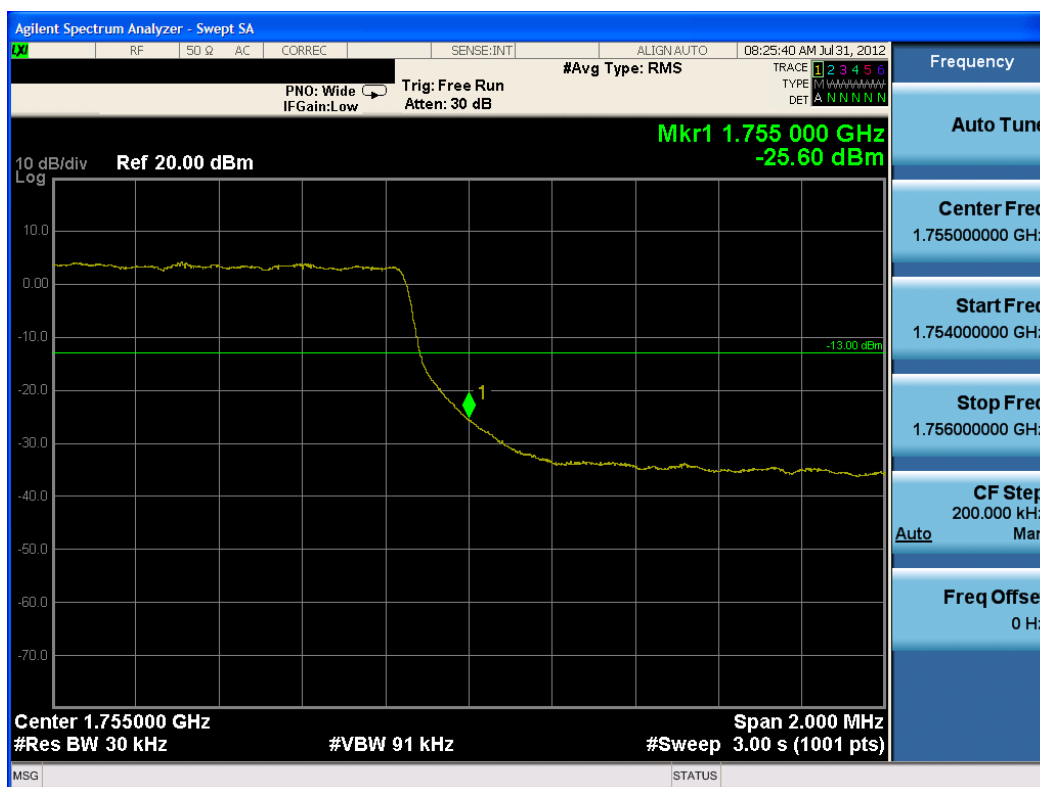


Plot 7-40. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 44 of 81

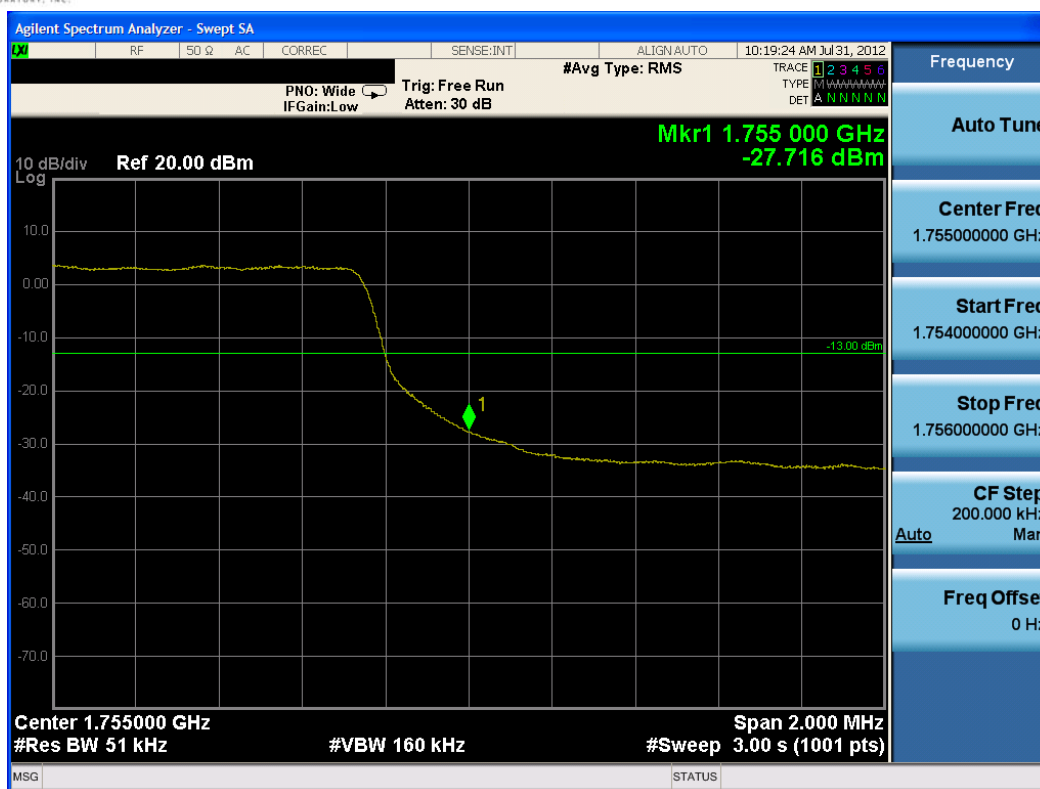


Plot 7-41. Upper Band Edge Plot (1.4MHz QPSK – RB Size 6)

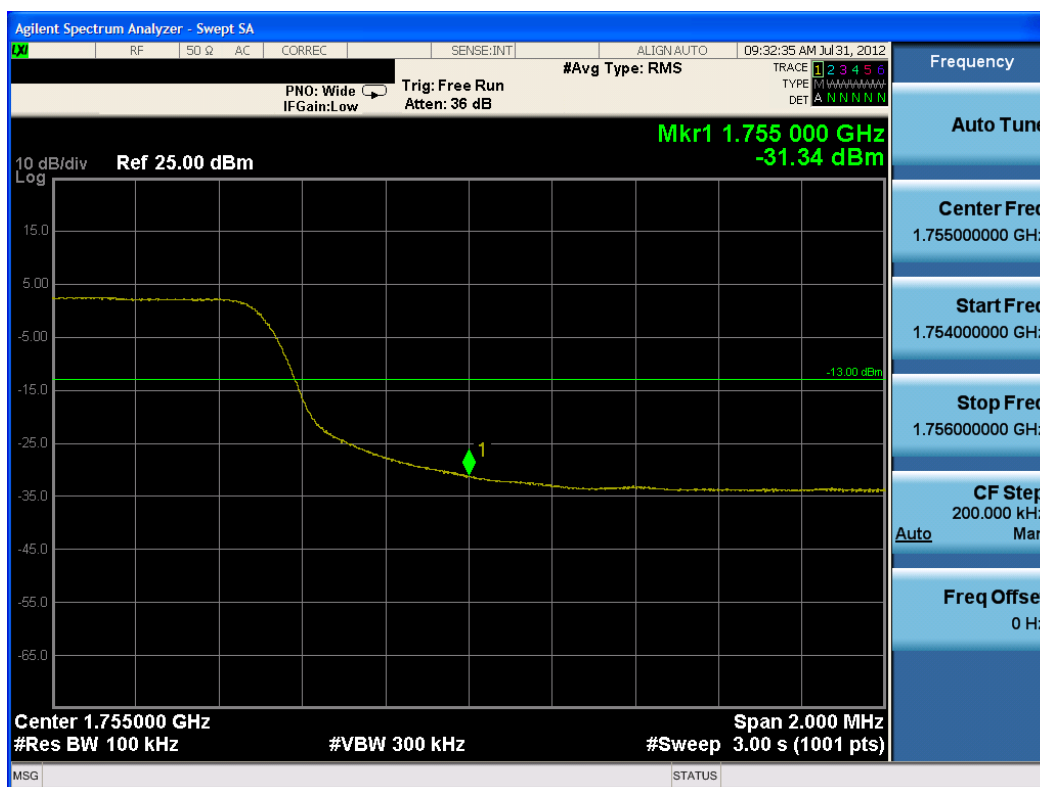


Plot 7-42. Upper Band Edge Plot (3MHz QPSK – RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 45 of 81



Plot 7-43. Upper Band Edge Plot (5MHz QPSK – RB Size 25)



Plot 7-44. Upper Band Edge Plot (10MHz QPSK – RB Size 50)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 46 of 81

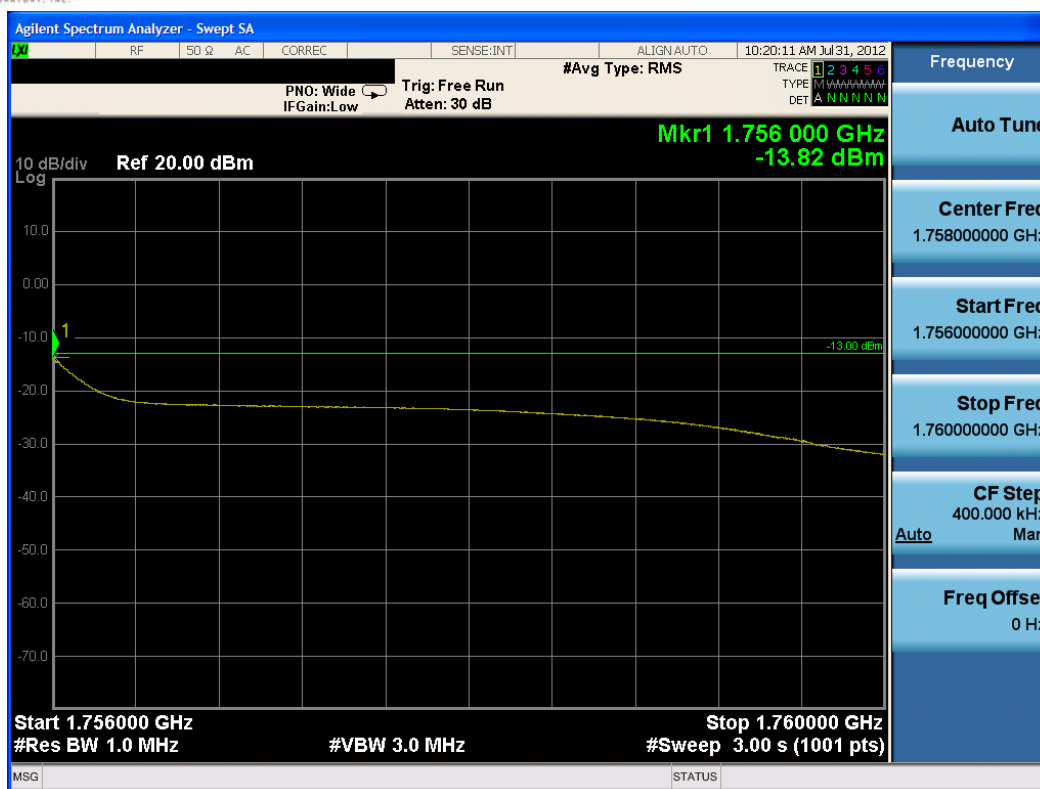


Plot 7-45. Upper Extended Band Edge Plot (1.4MHz QPSK– RB Size 6)



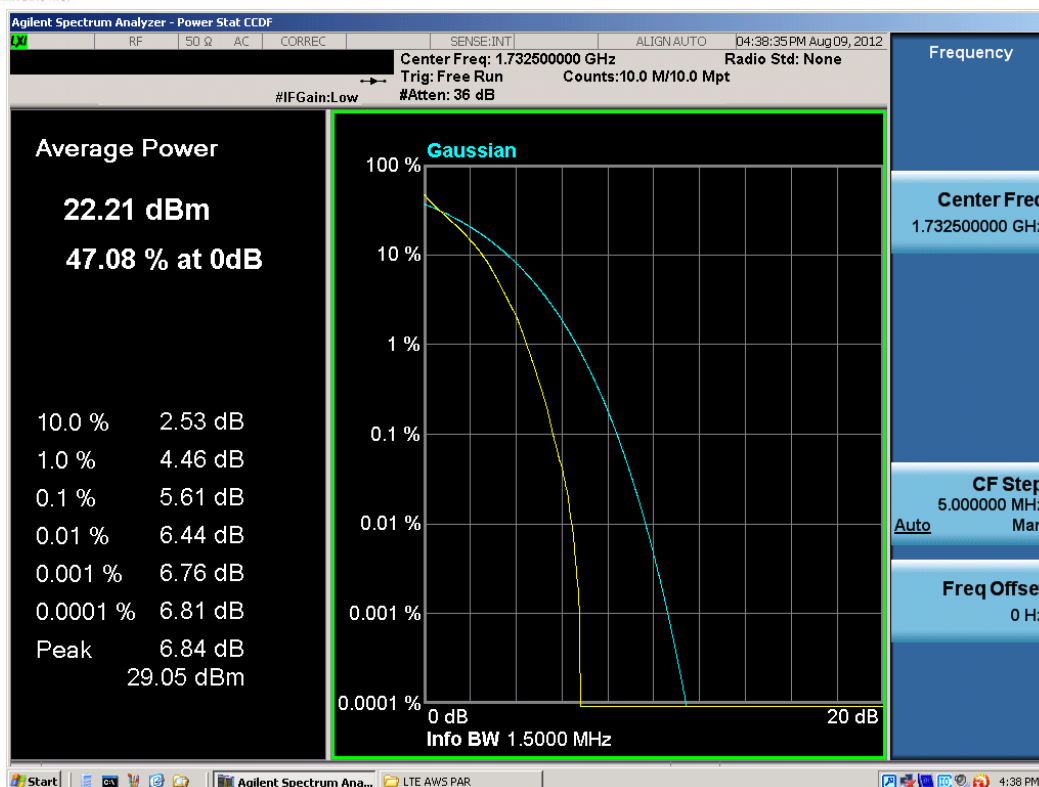
Plot 7-46. Upper Extended Band Edge Plot (3MHz QPSK– RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 47 of 81

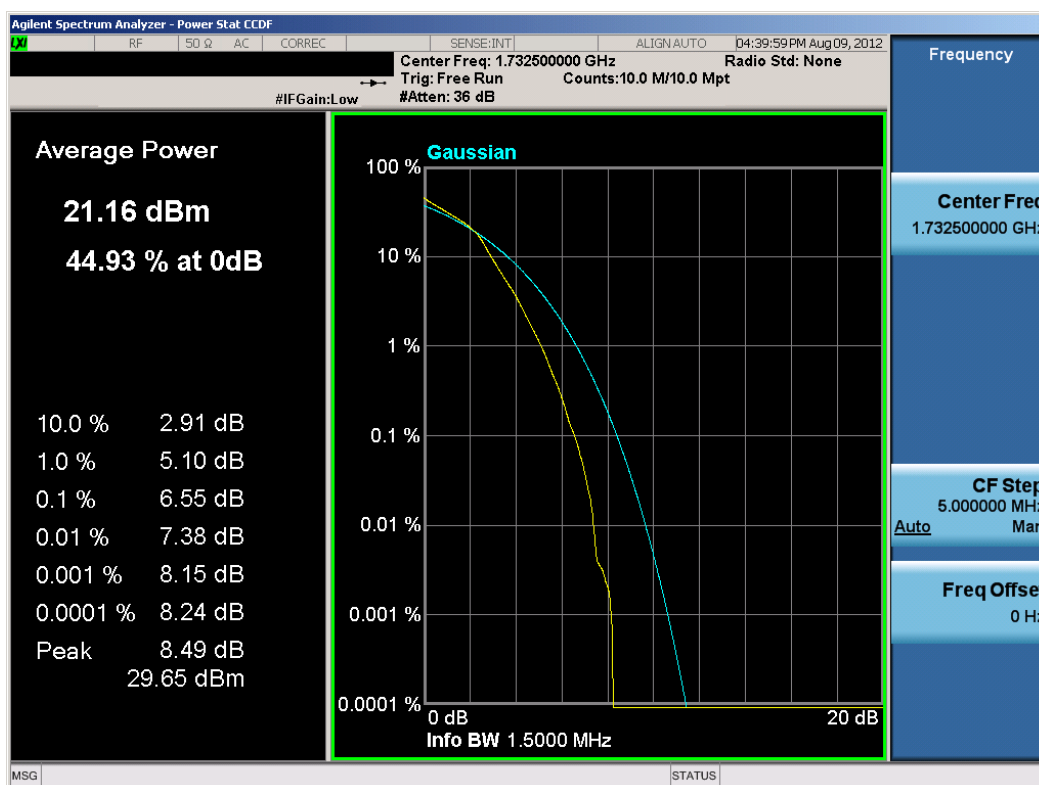


Plot 7-47. Upper Extended Band Edge Plot (5MHz QPSK- RB Size 25)

Plot 7-48. Upper Extended Band Edge Plot (10MHz QPSK- RB Size 50)

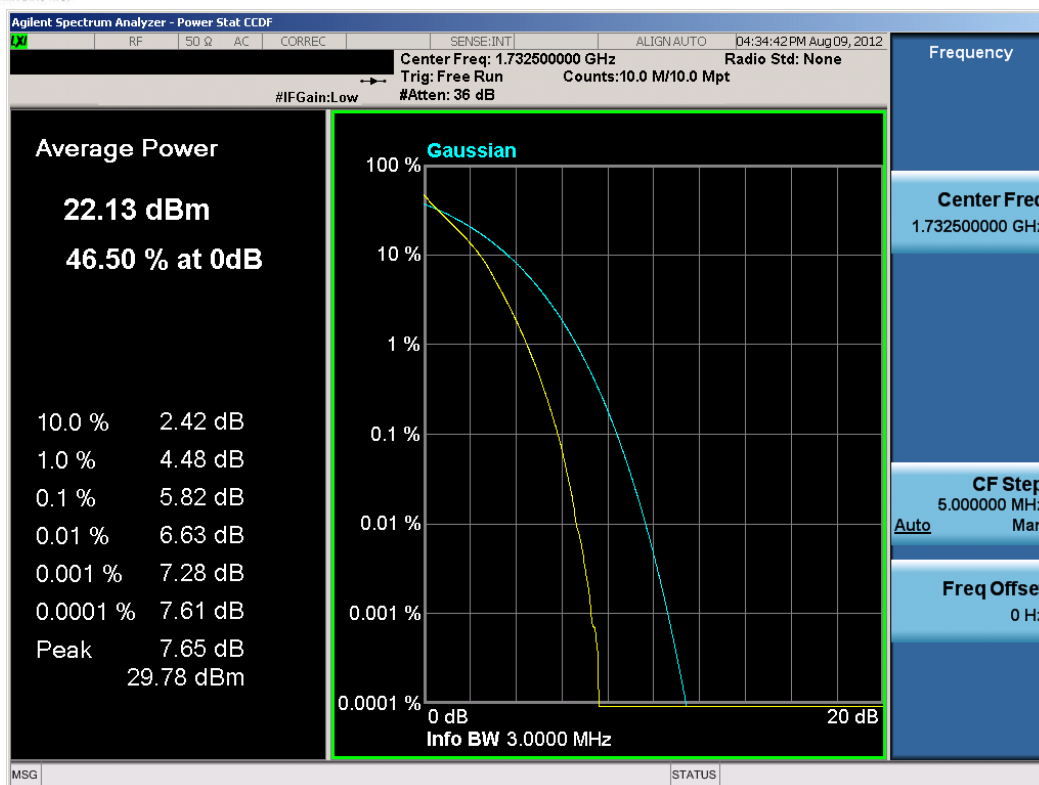


Plot 7-49. PAR Plot (1.4MHz QPSK – RB Size 6)

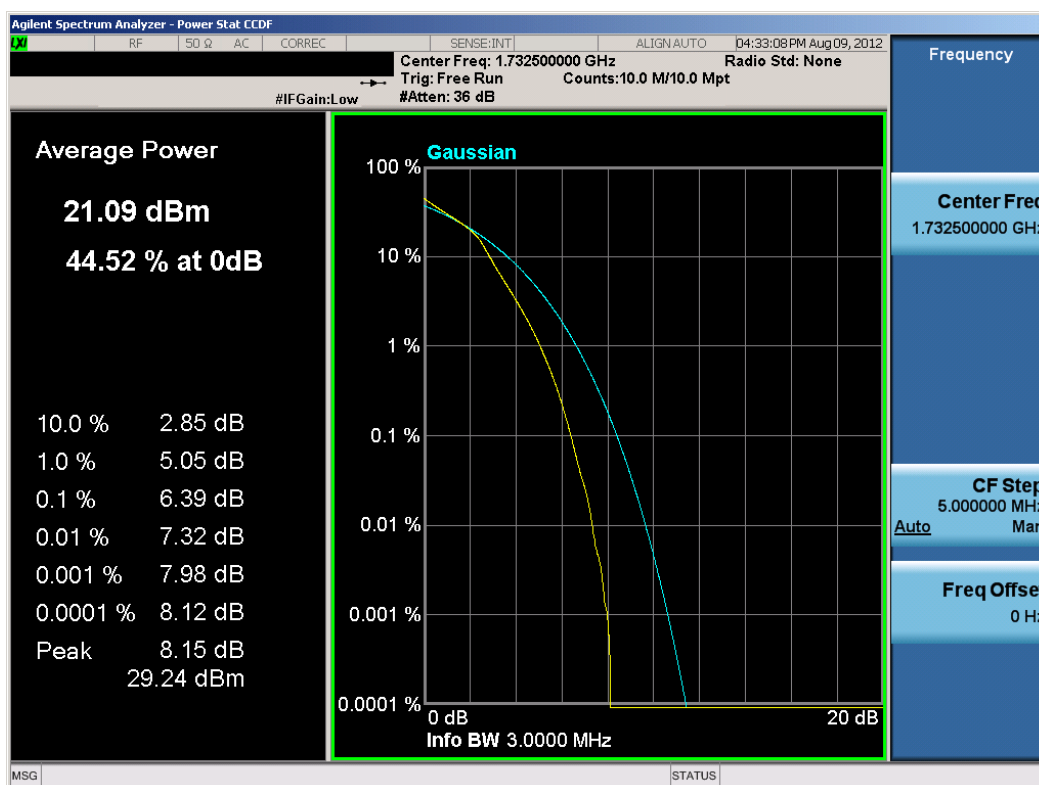


Plot 7-50. PAR Plot (1.4MHz 16QAM – RB Size 6)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 49 of 81

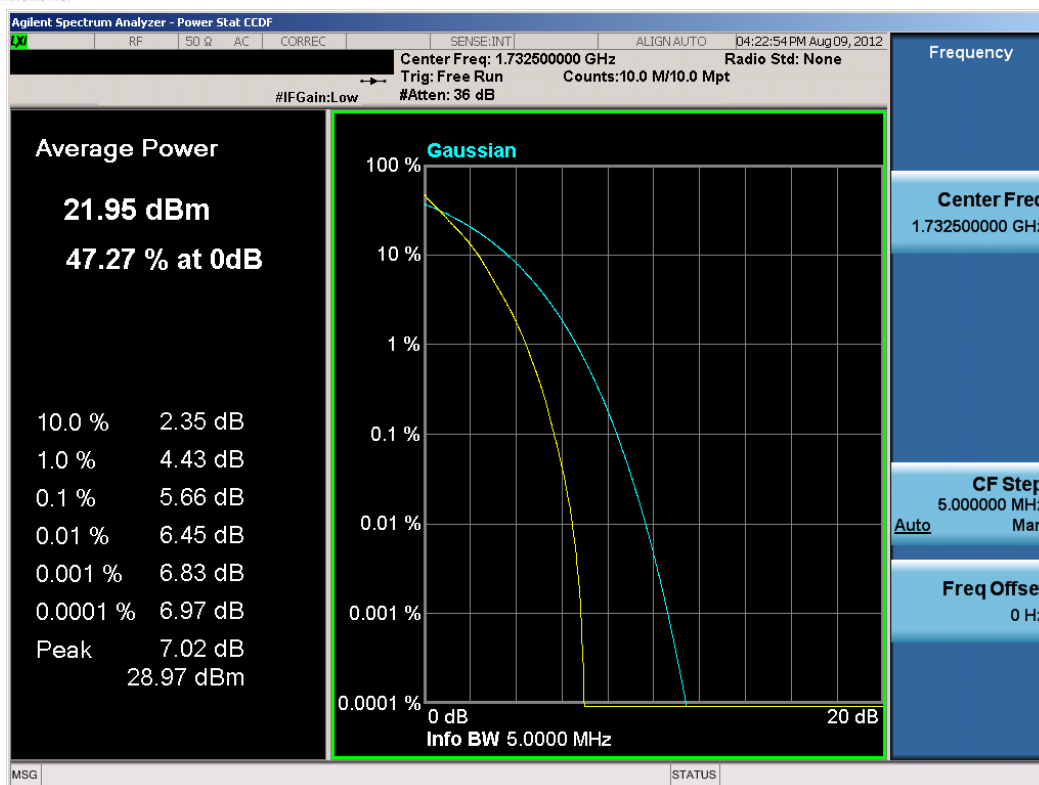


Plot 7-51. PAR Plot (3MHz QPSK – RB Size 15)

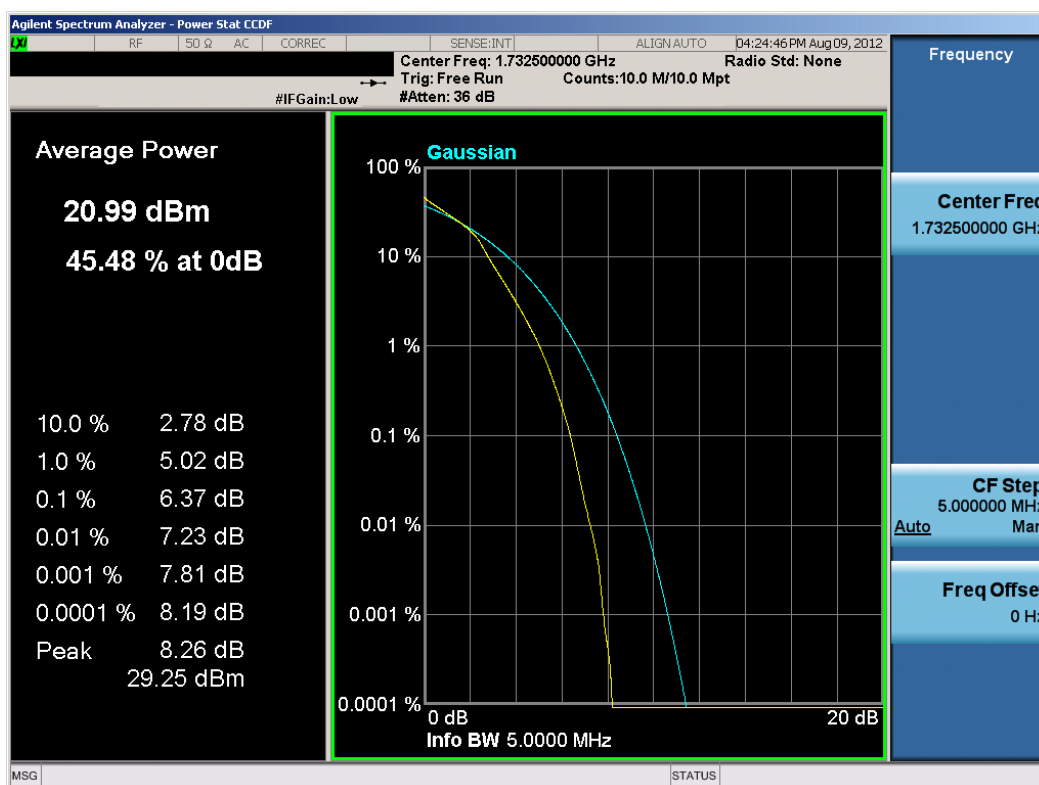


Plot 7-52. PAR Plot (3MHz 16QAM – RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 50 of 81

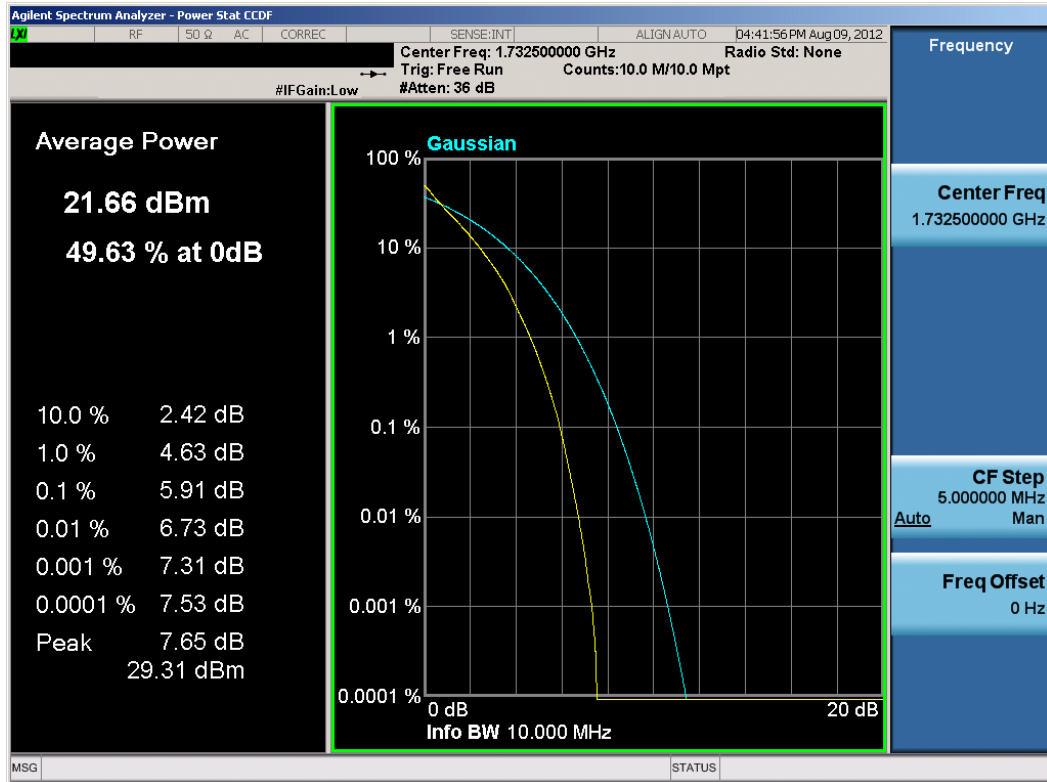


Plot 7-53. PAR Plot (5MHz QPSK – RB Size 25)

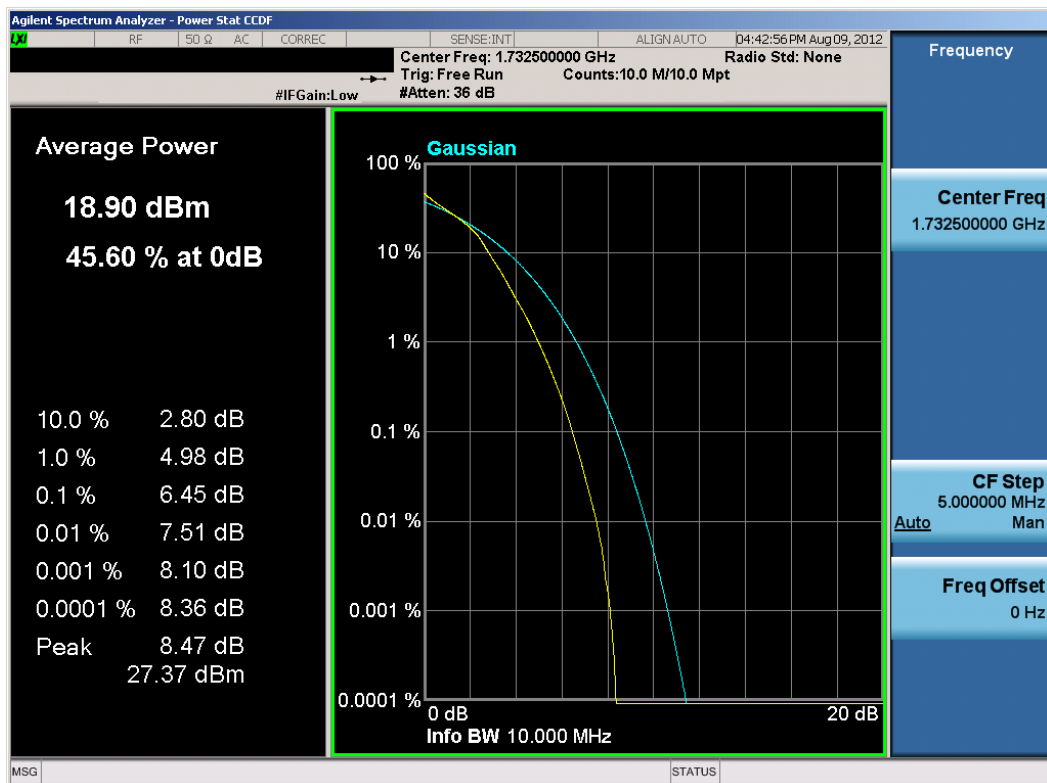


Plot 7-54. PAR Plot (5MHz 16QAM – RB Size 25)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 51 of 81



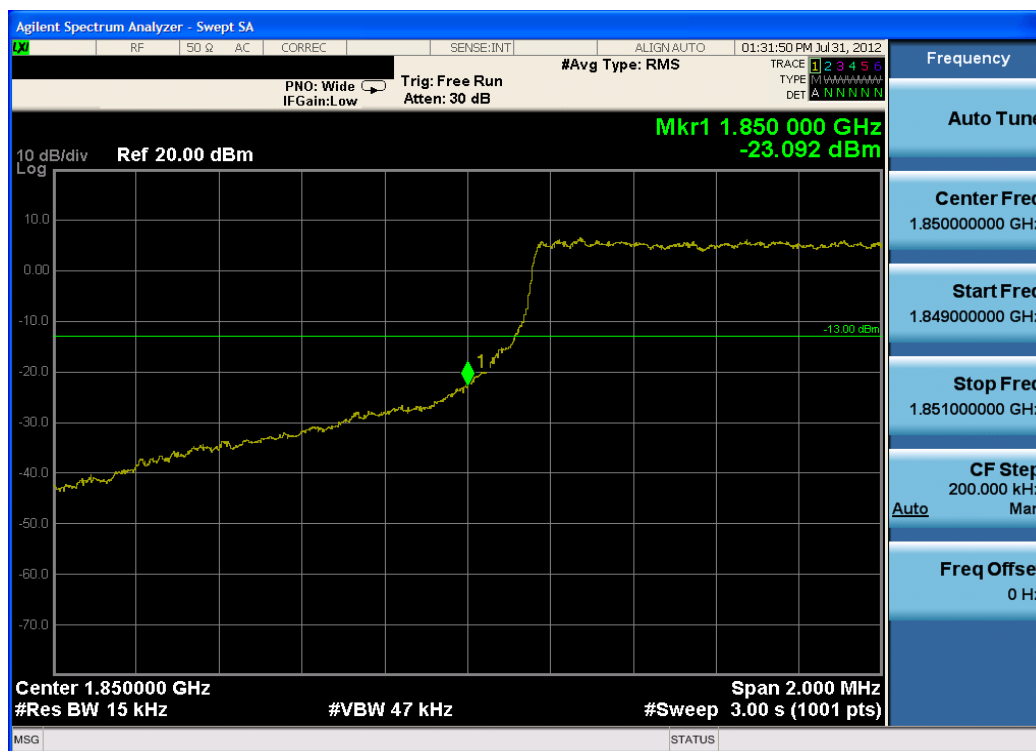
Plot 7-55. PAR Plot (10MHz QPSK - RB Size 50)



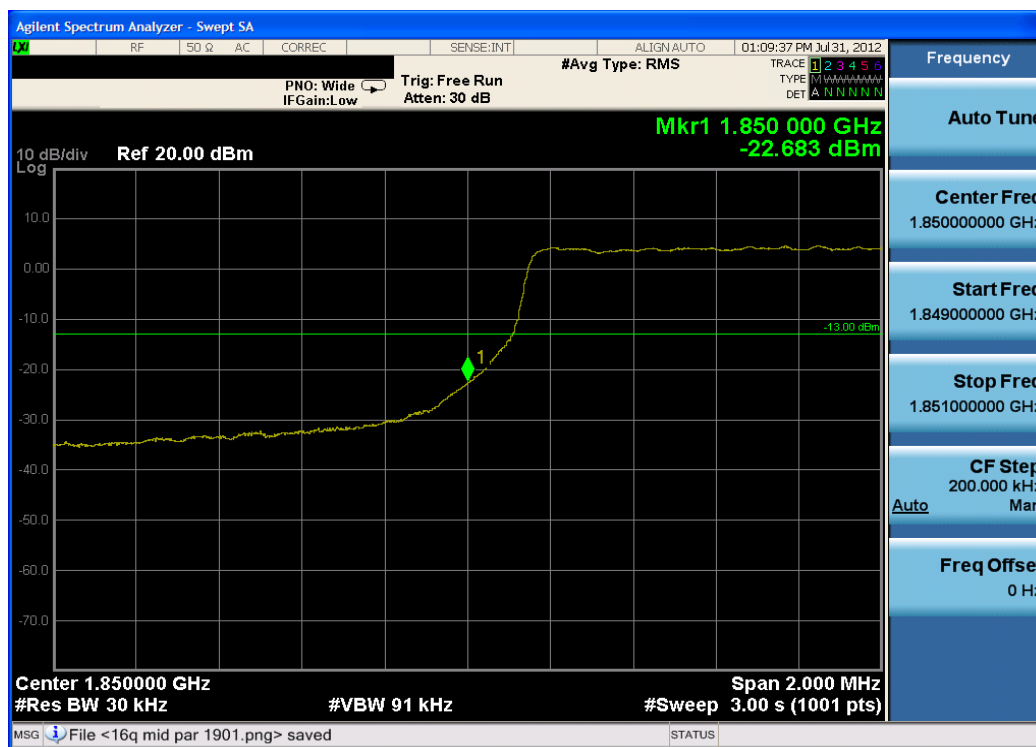
Plot 7-56. PAR Plot (10MHz 16QAM - RB Size 50)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 52 of 81

8.0 BAND 2 PLOTS OF EMISSIONS

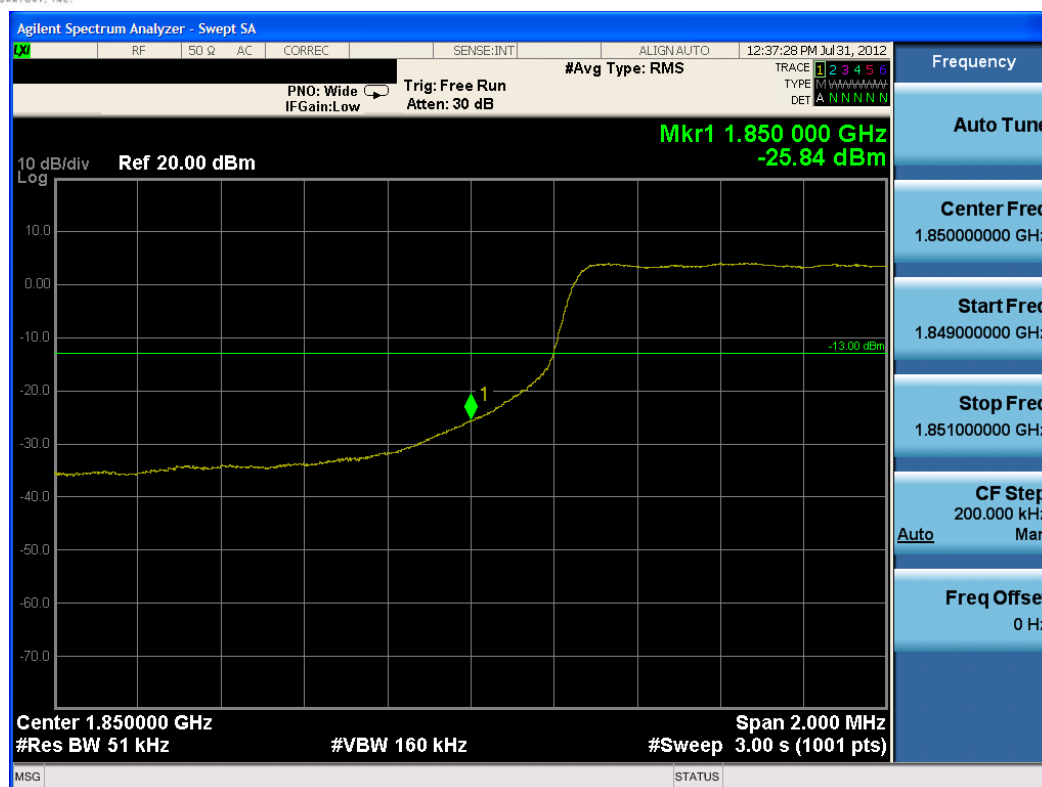


Plot 8-1. Lower Band Edge Plot (1.4MHz QPSK – RB Size 6)

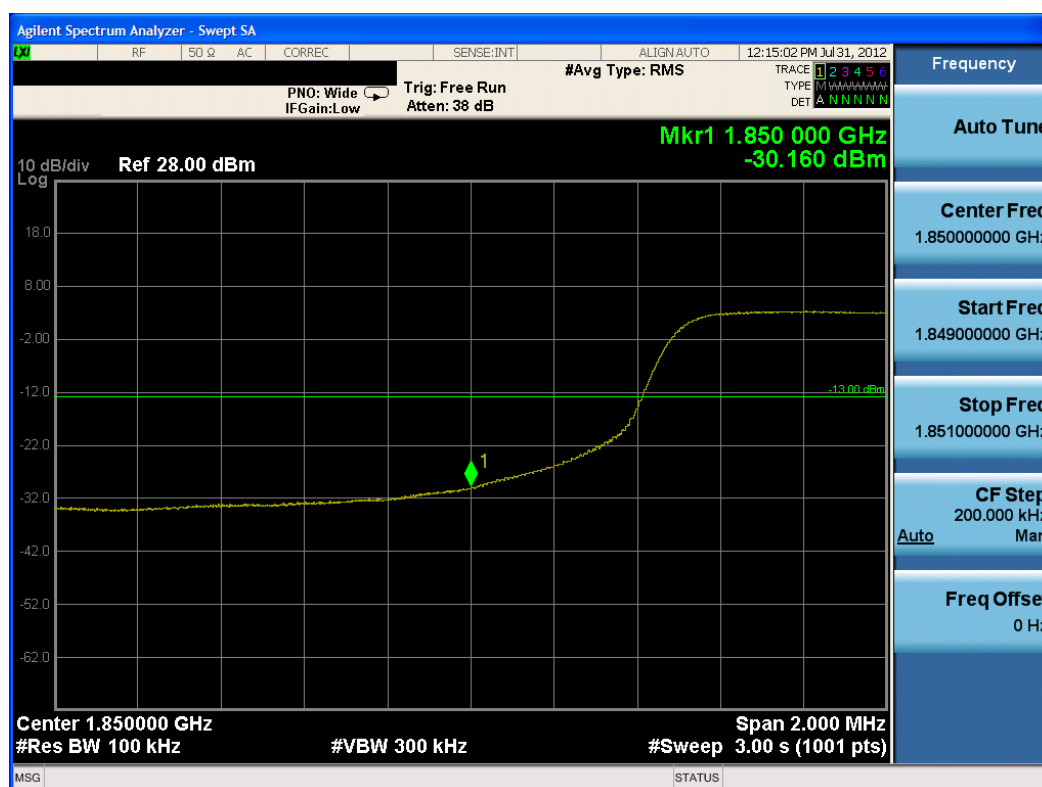


Plot 8-2. Lower Band Edge Plot (3MHz QPSK – RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 53 of 81

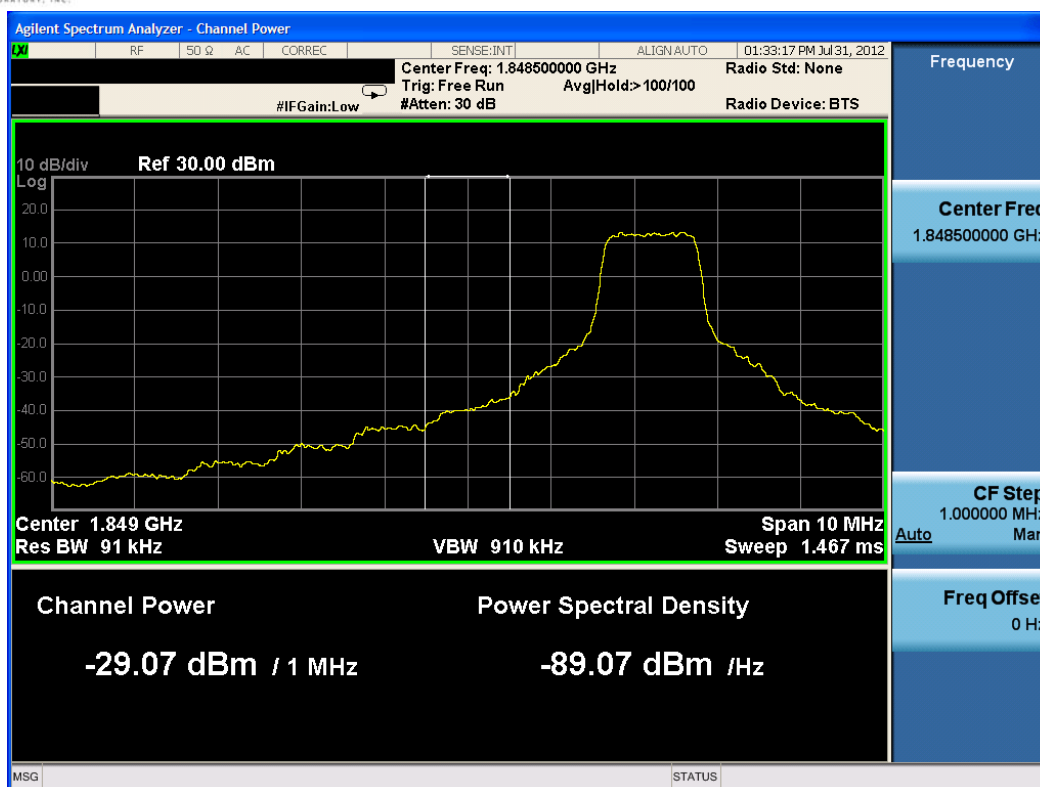


Plot 8-3. Lower Band Edge Plot (5MHz QPSK – RB Size 25)

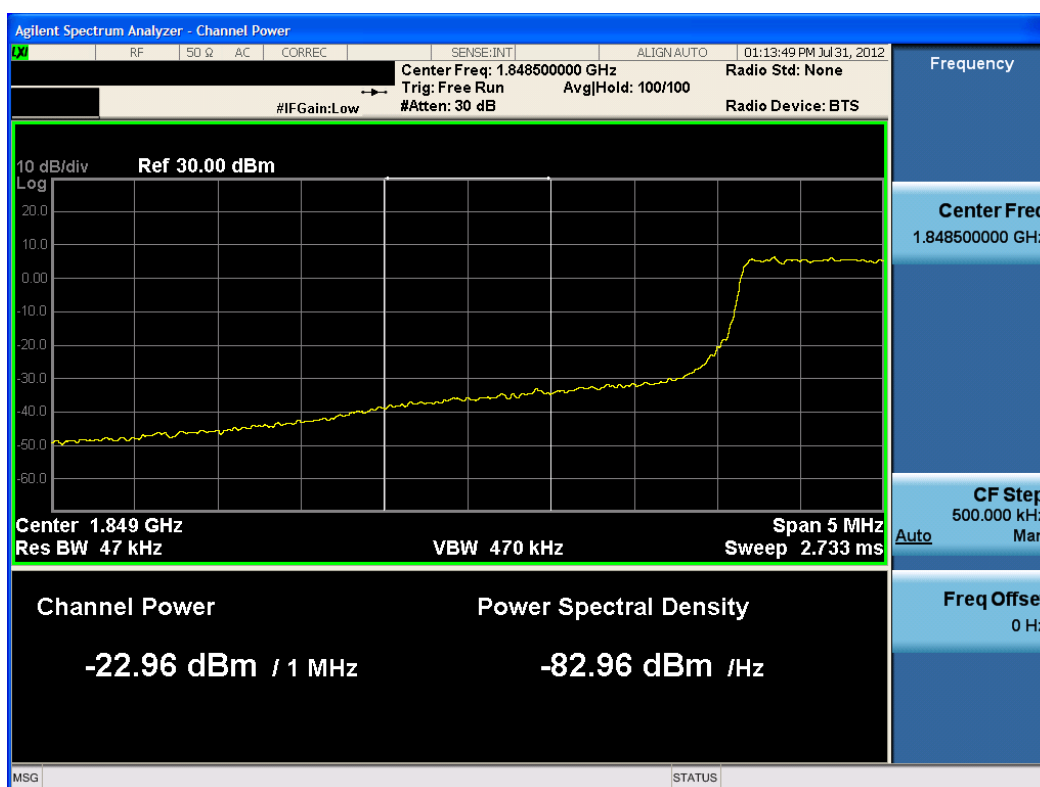


Plot 8-4. Lower Band Edge Plot (10MHz QPSK – RB Size 50)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 54 of 81

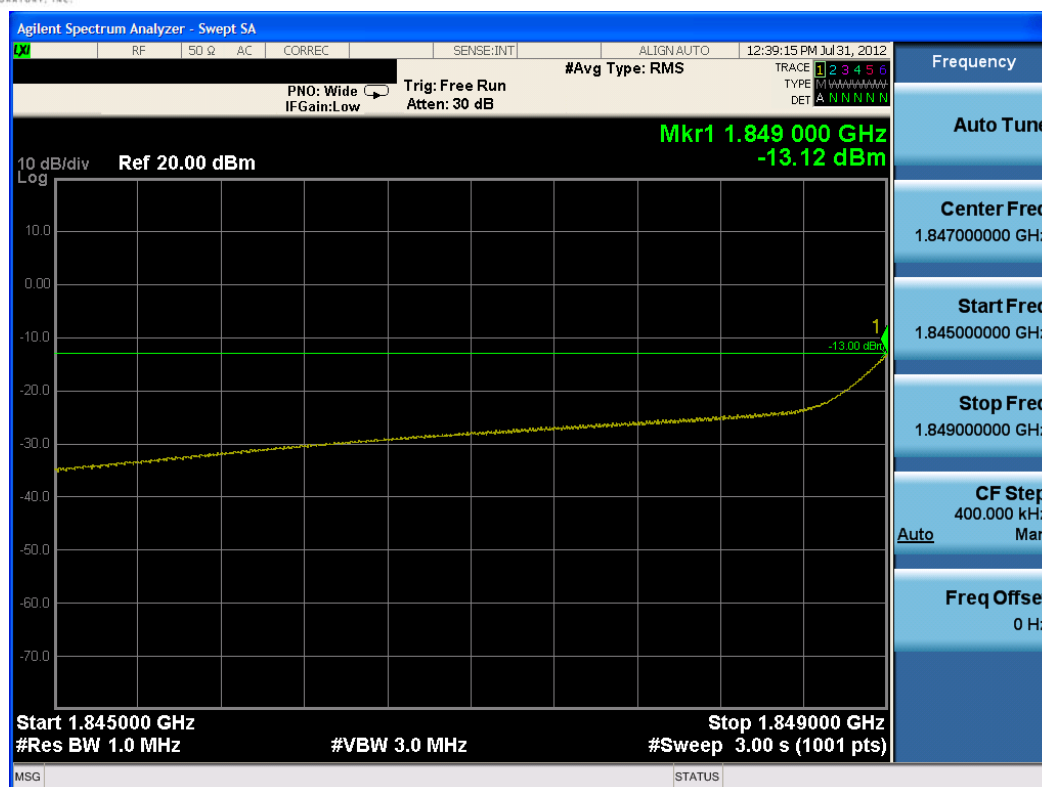


Plot 8-5. Lower Extended Band Edge Plot (1.4MHz QPSK- RB Size 6)

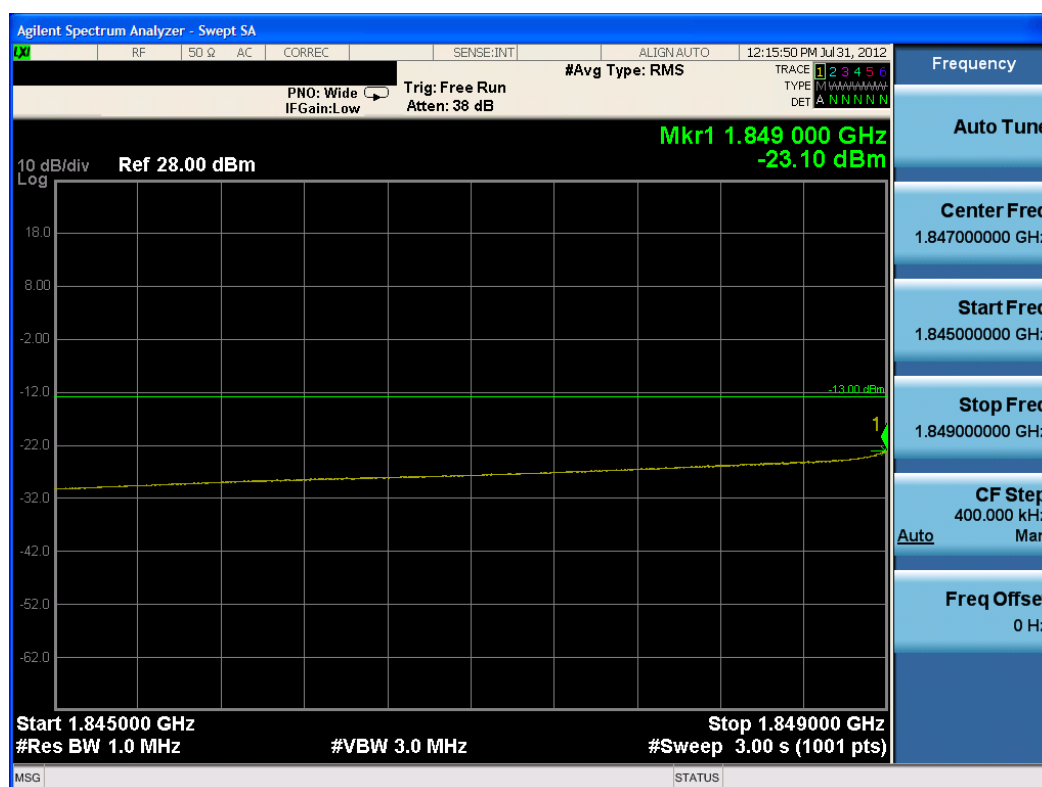


Plot 8-6. Lower Extended Band Edge Plot (3MHz QPSK- RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 55 of 81

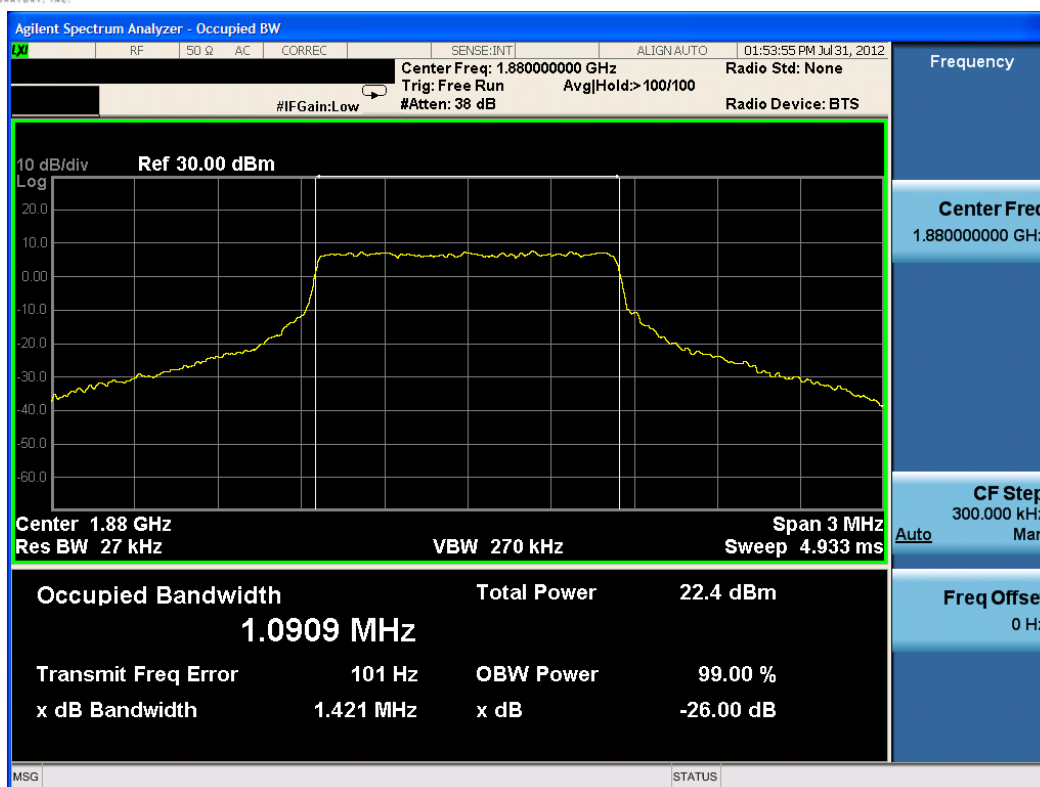


Plot 8-7. Lower Extended Band Edge Plot (5MHz QPSK– RB Size 25)

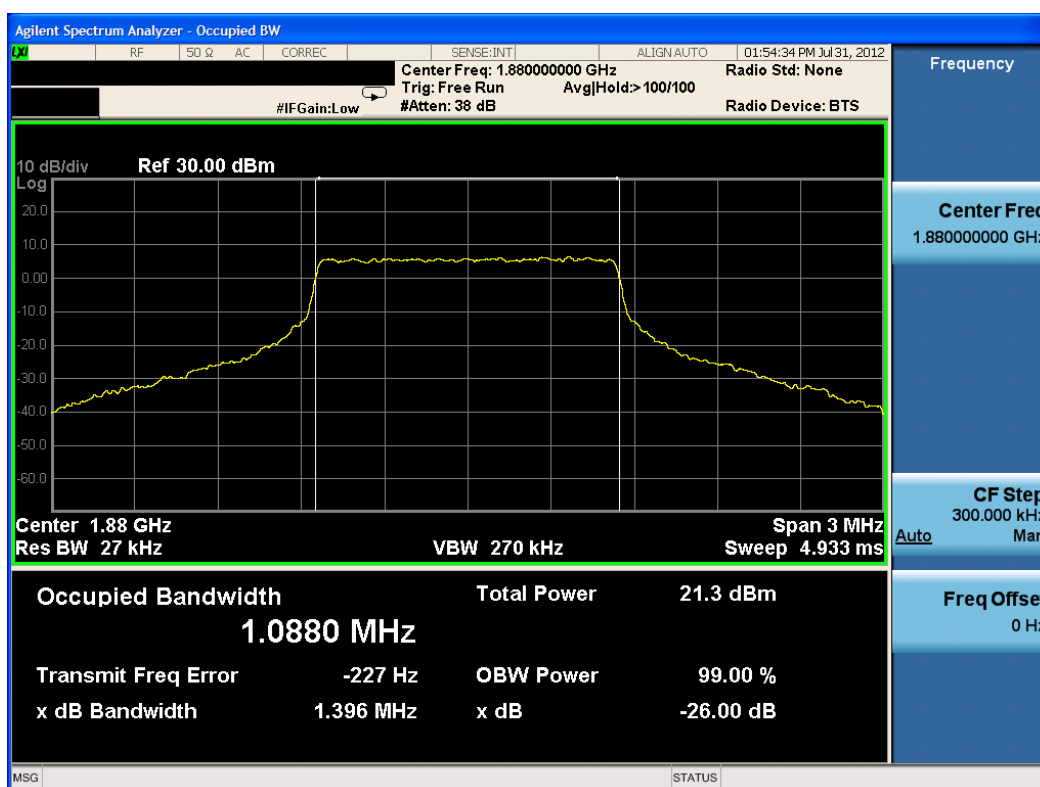


Plot 8-8. Lower Extended Band Edge Plot (10MHz QPSK– RB Size 50)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 56 of 81

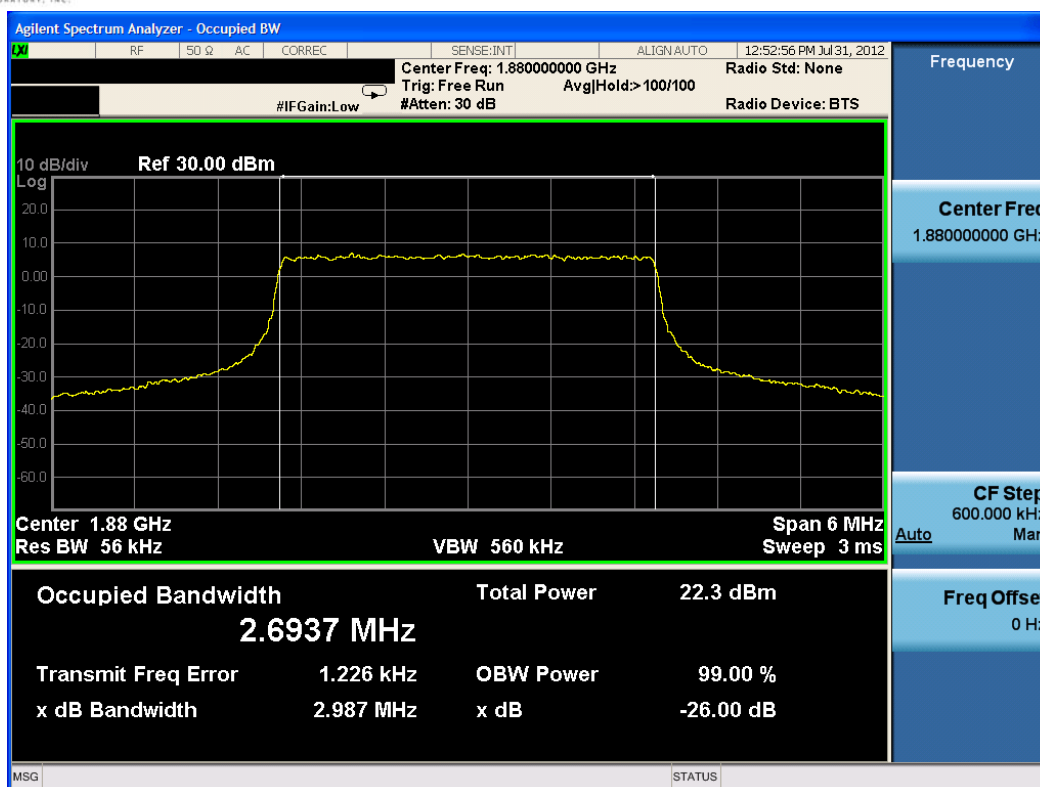


Plot 8-9. Occupied Bandwidth Plot (1.4MHz QPSK – RB Size 6)

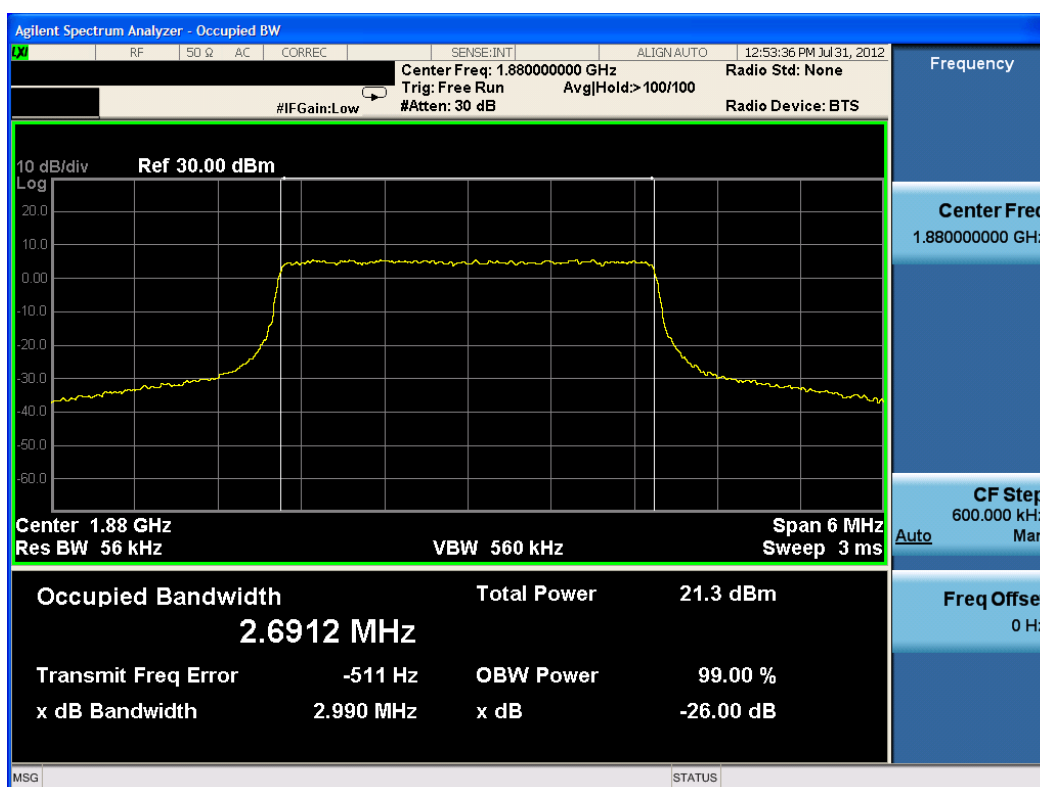


Plot 8-10. Occupied Bandwidth Plot (1.4MHz 16-QAM – RB Size 6)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 57 of 81

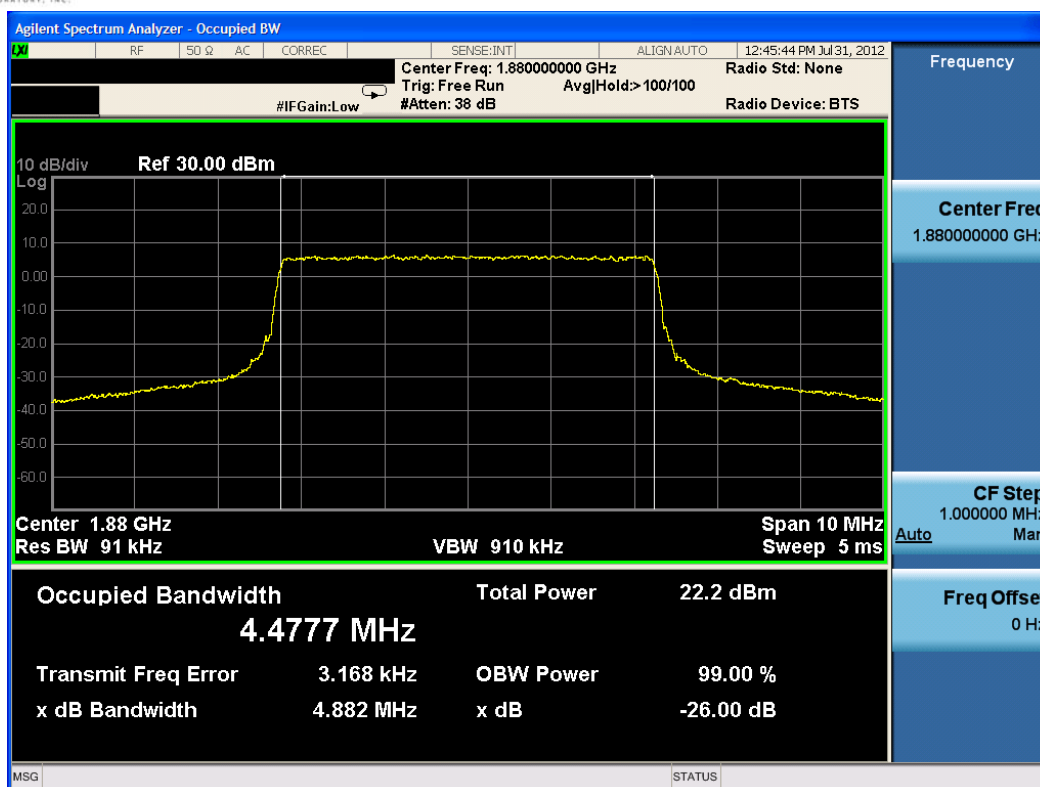


Plot 8-11. Occupied Bandwidth Plot (3MHz QPSK – RB Size 15)

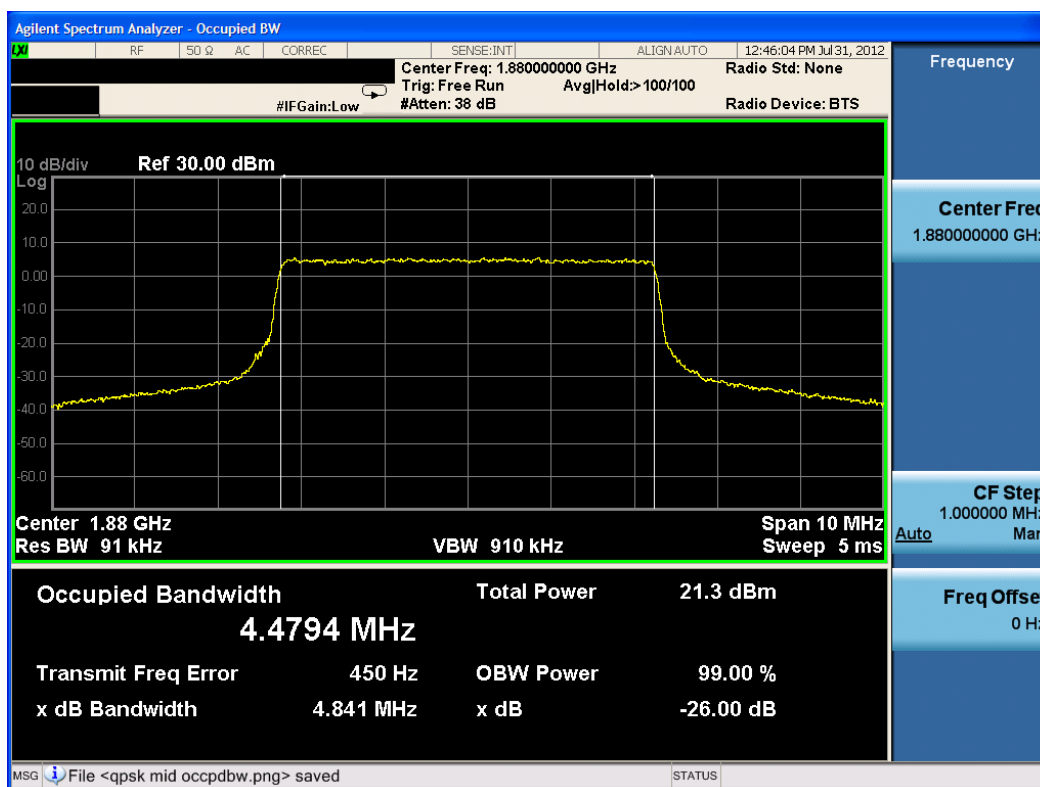


Plot 8-12. Occupied Bandwidth Plot (3MHz 16-QAM – RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 58 of 81

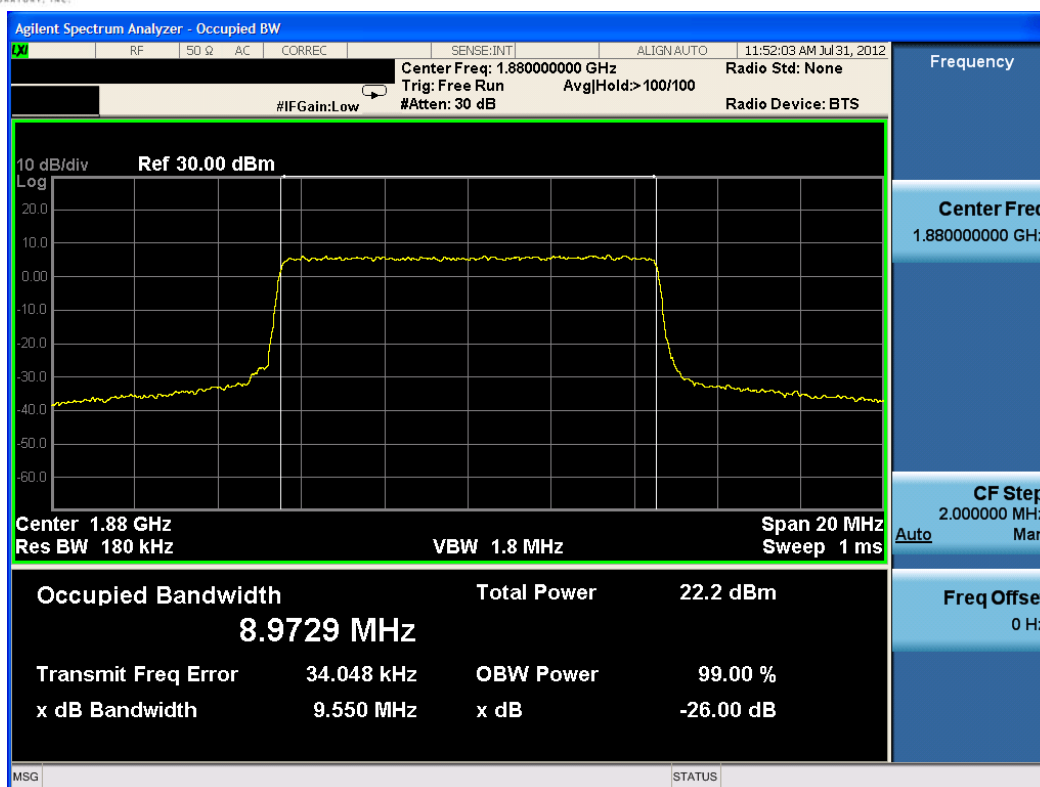


Plot 8-13. Occupied Bandwidth Plot (5MHz QPSK – RB Size 25)

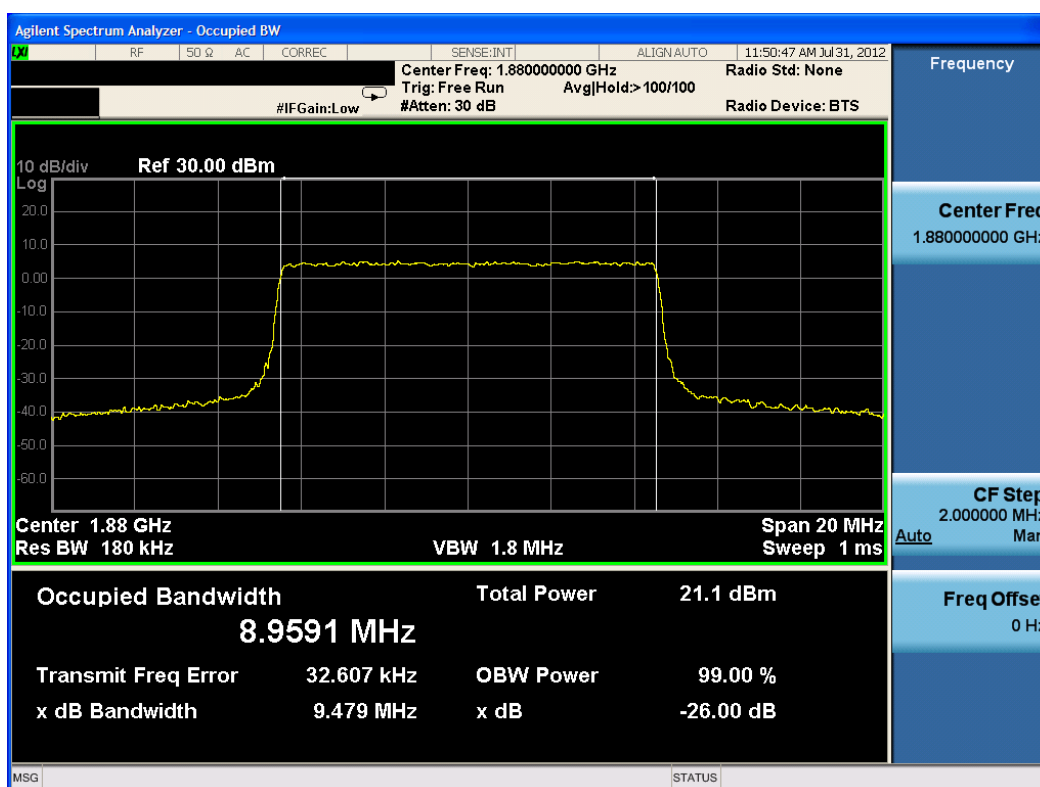


Plot 8-14. Occupied Bandwidth Plot (5MHz 16-QAM – RB Size 25)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 59 of 81

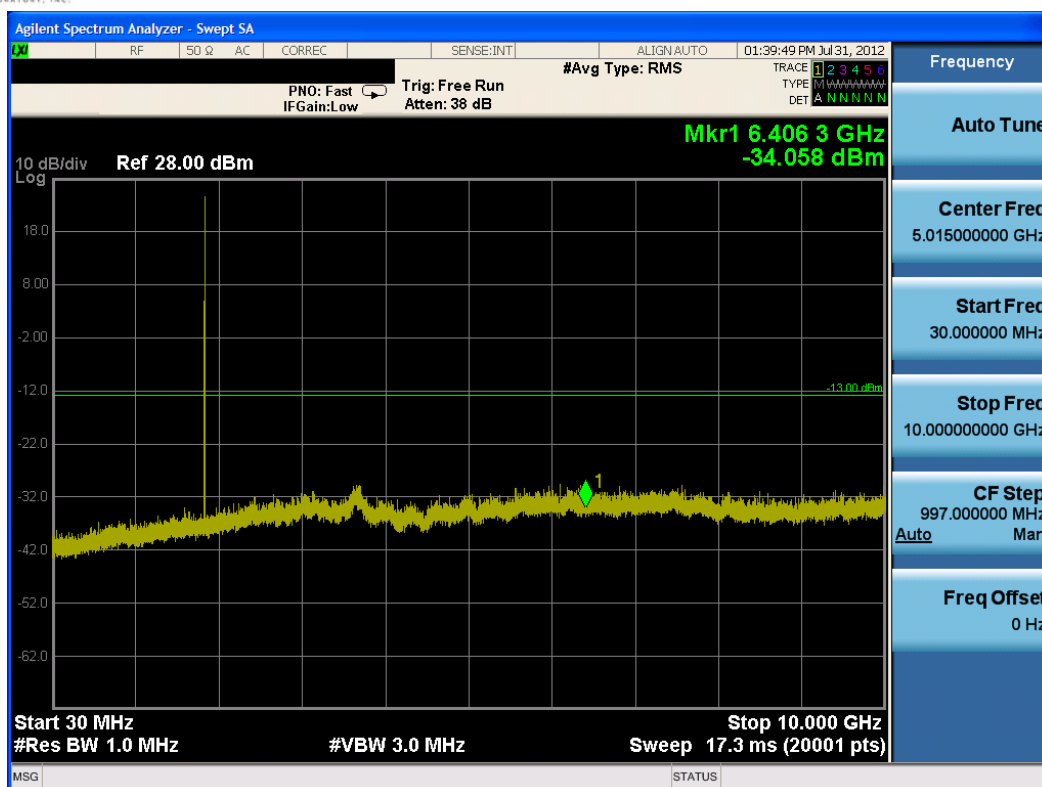


Plot 8-15. Occupied Bandwidth Plot (10MHz QPSK – RB Size 50)

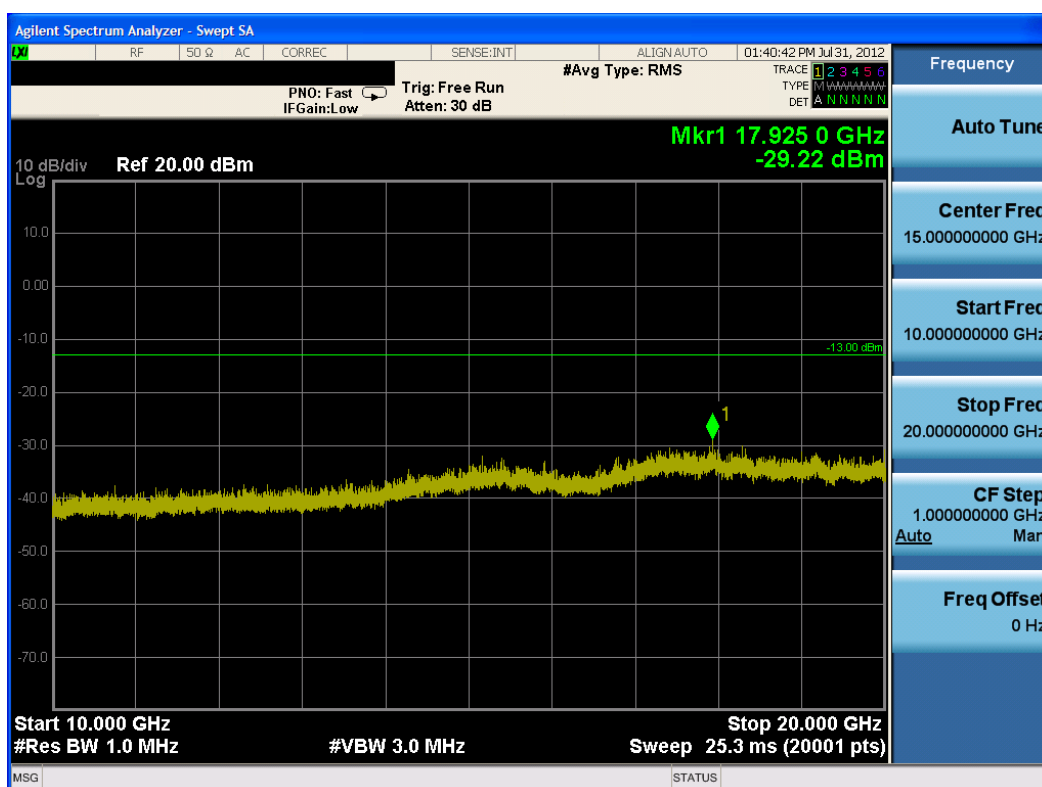


Plot 8-16. Occupied Bandwidth Plot (10MHz 16-QAM – RB Size 50)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 60 of 81

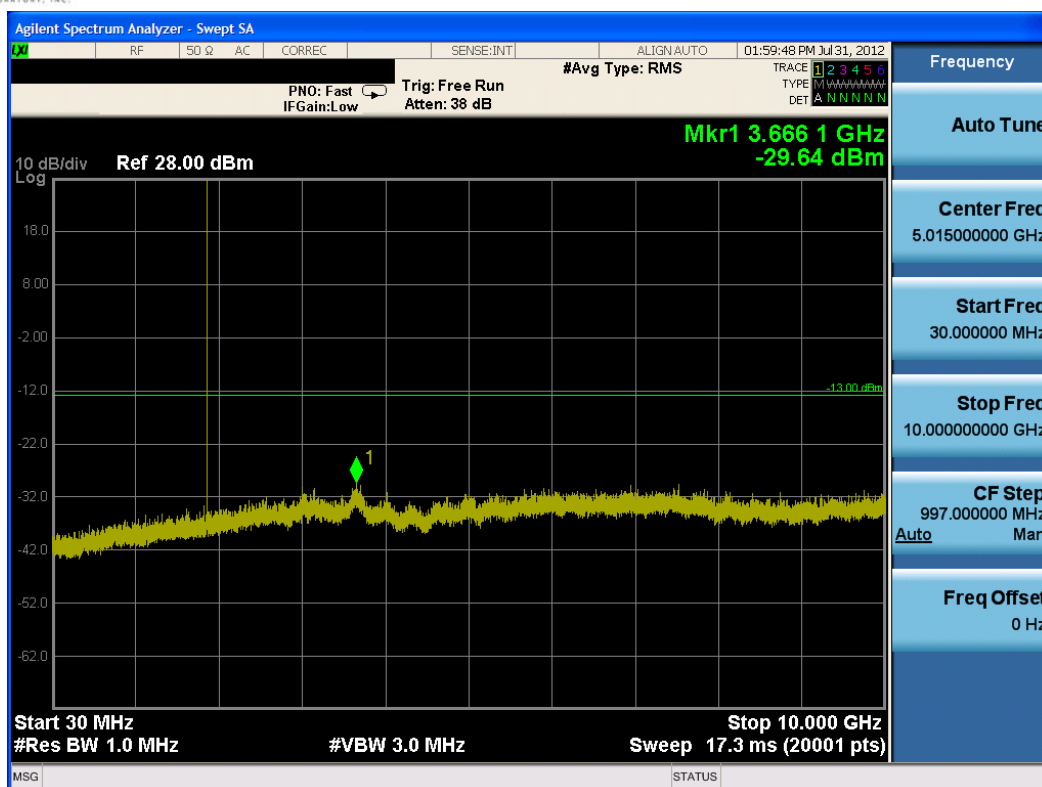


Plot 8-17. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

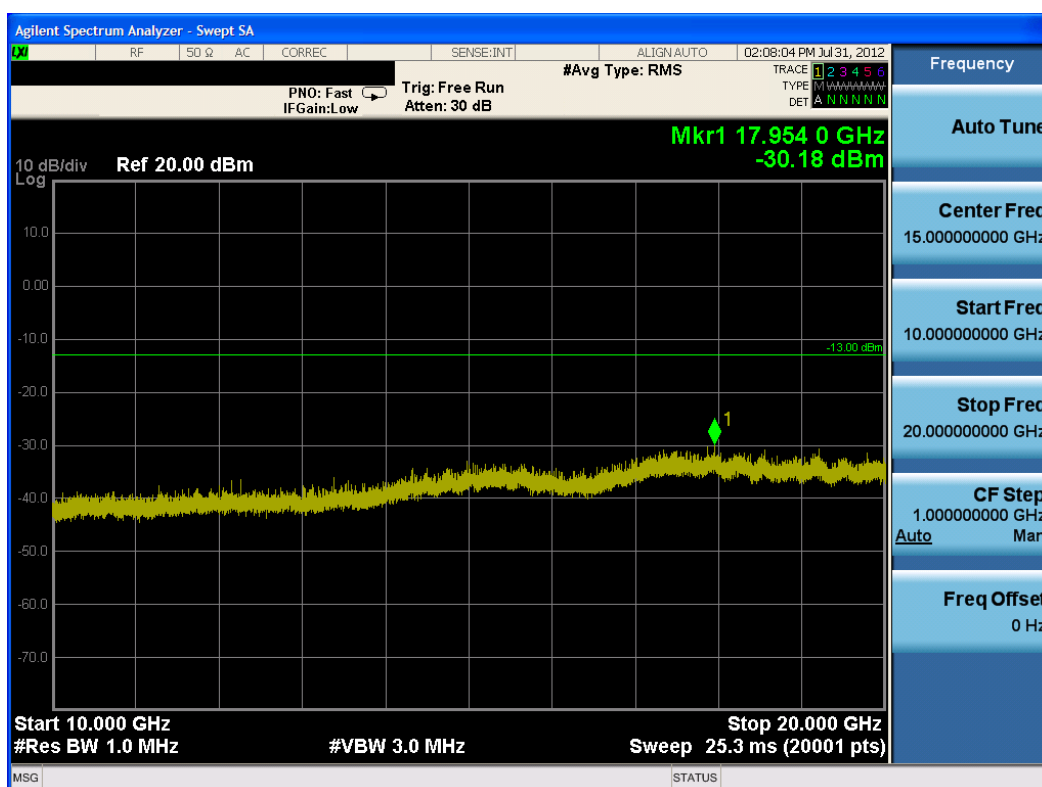


Plot 8-18. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 61 of 81

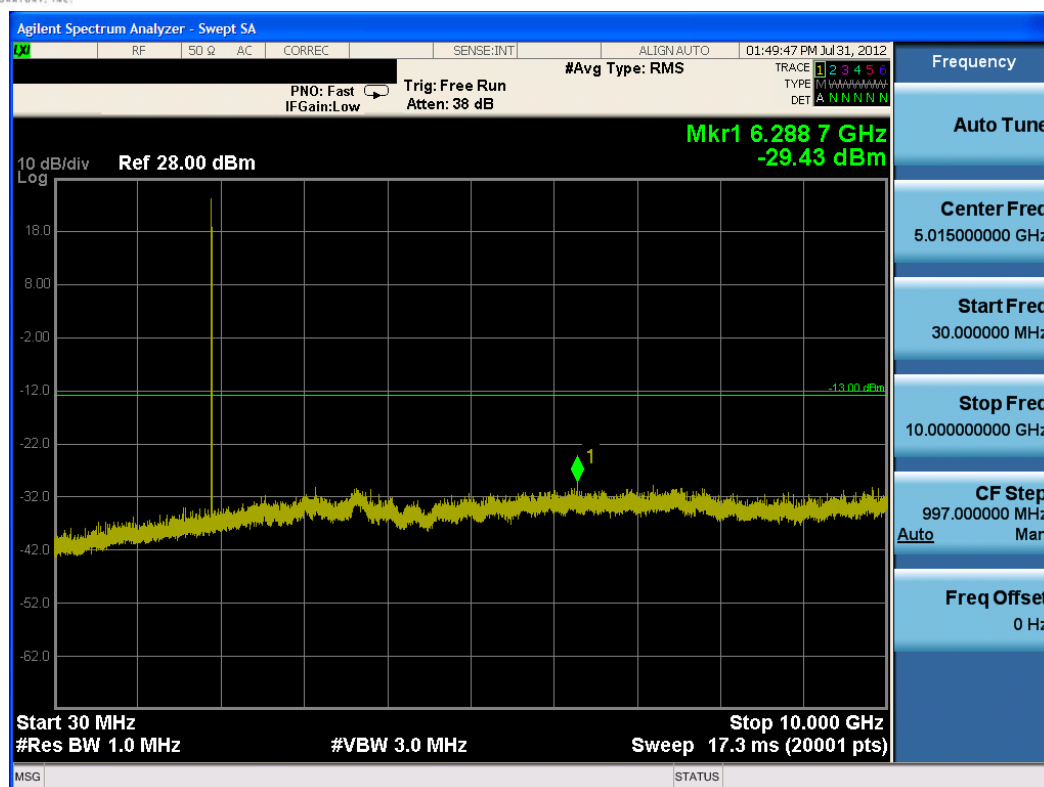


Plot 8-19. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

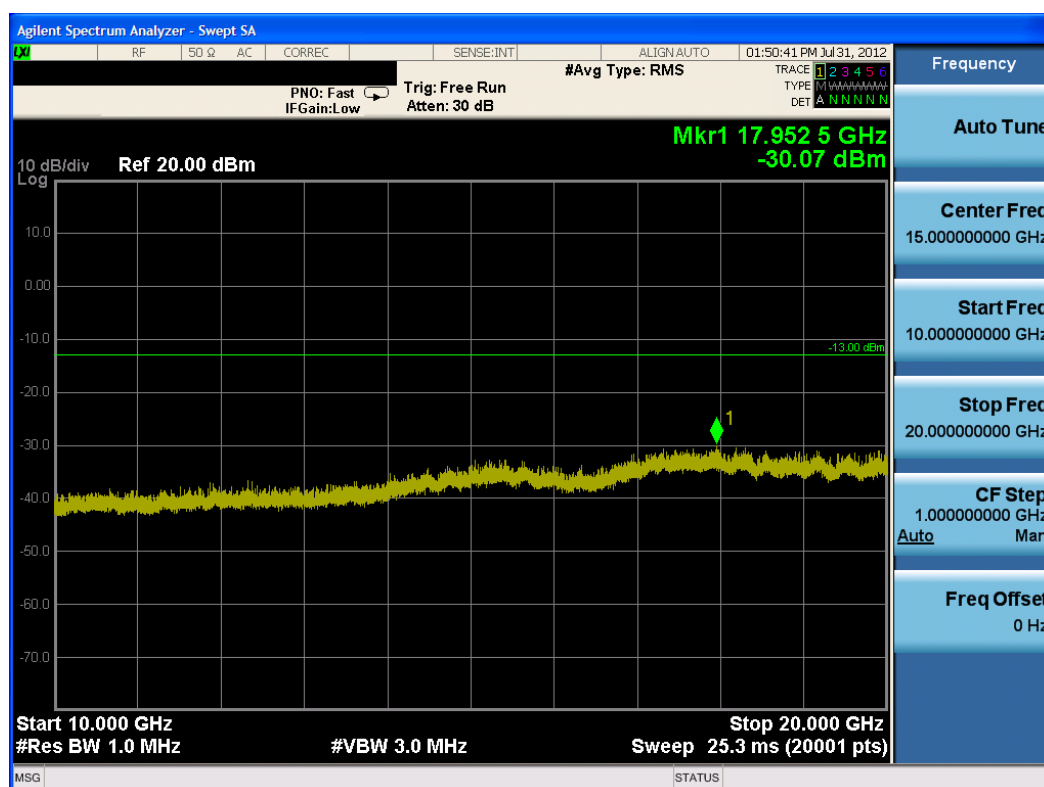


Plot 8-20. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 62 of 81

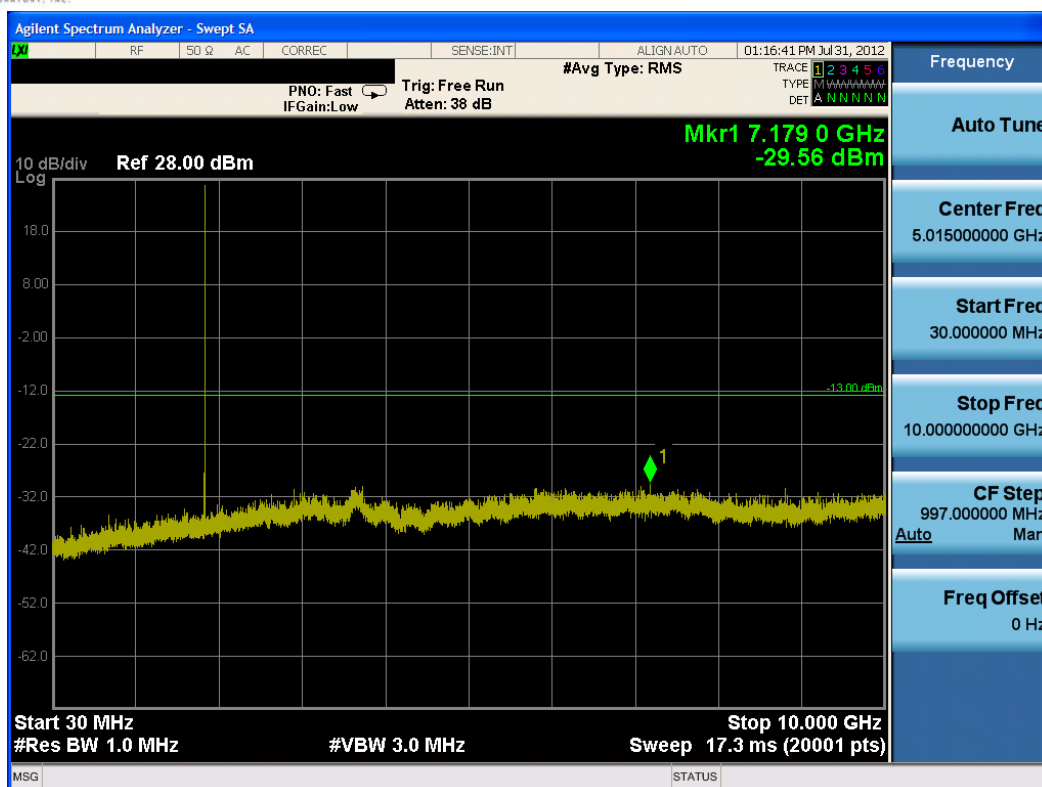


Plot 8-21. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

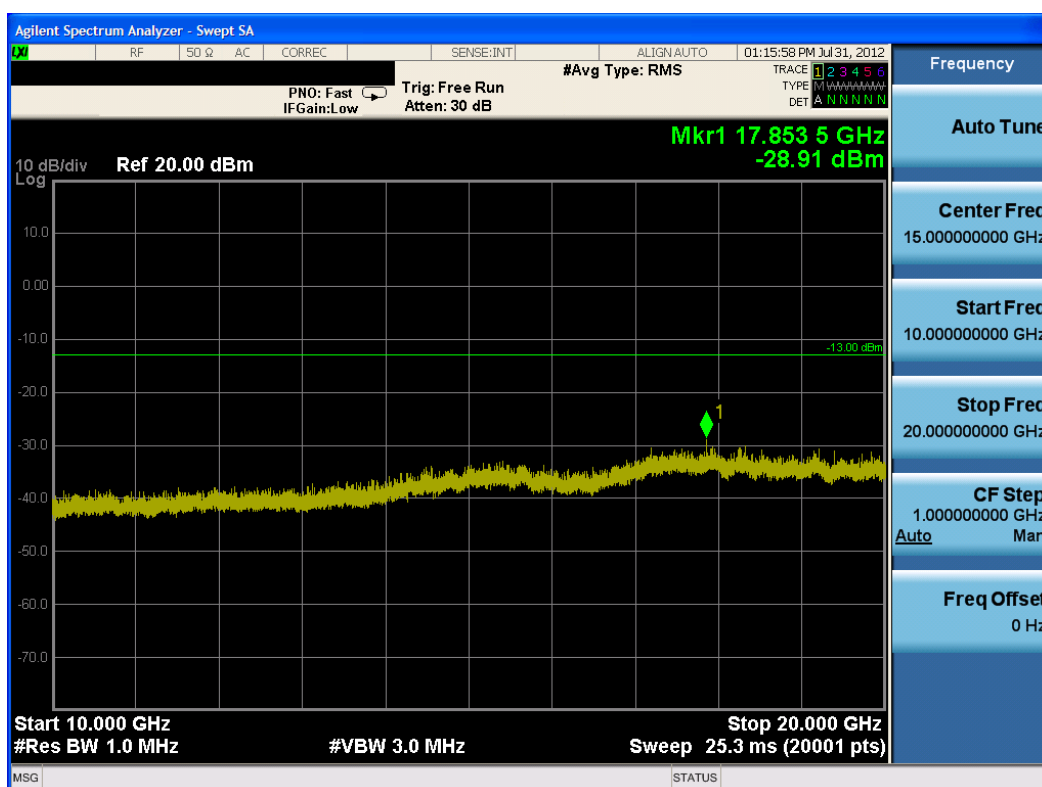


Plot 8-22. Conducted Spurious Plot (1.4MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 63 of 81

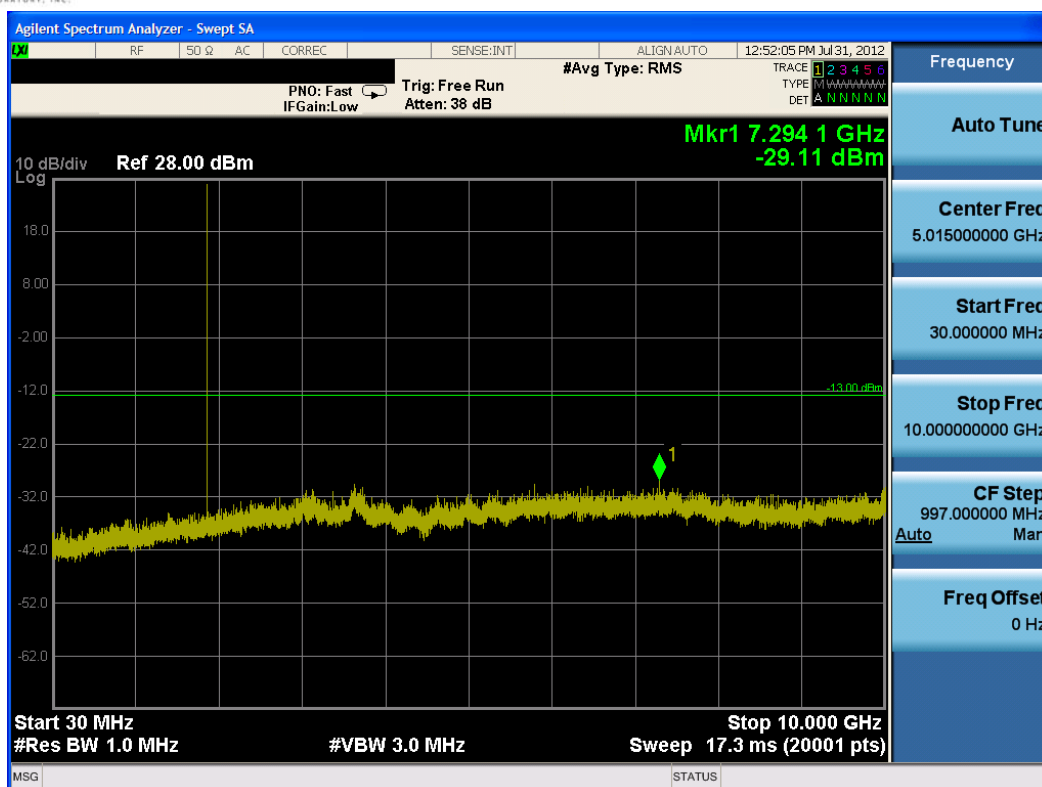


Plot 8-23. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

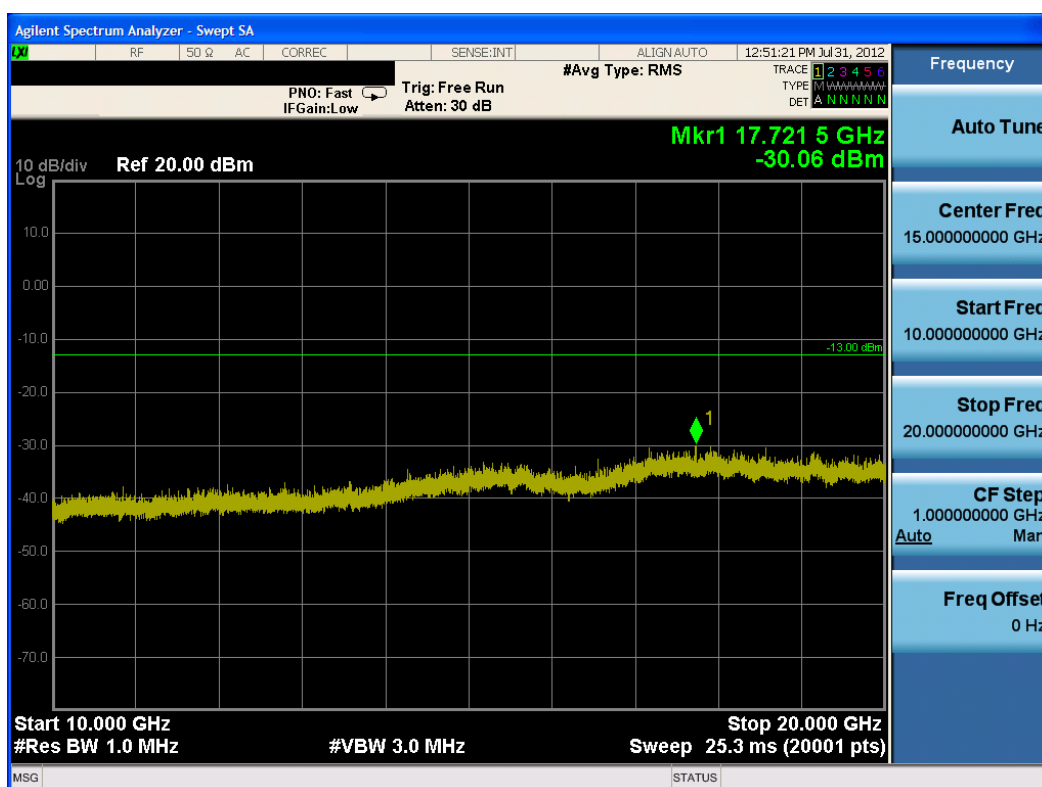


Plot 8-24. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 64 of 81

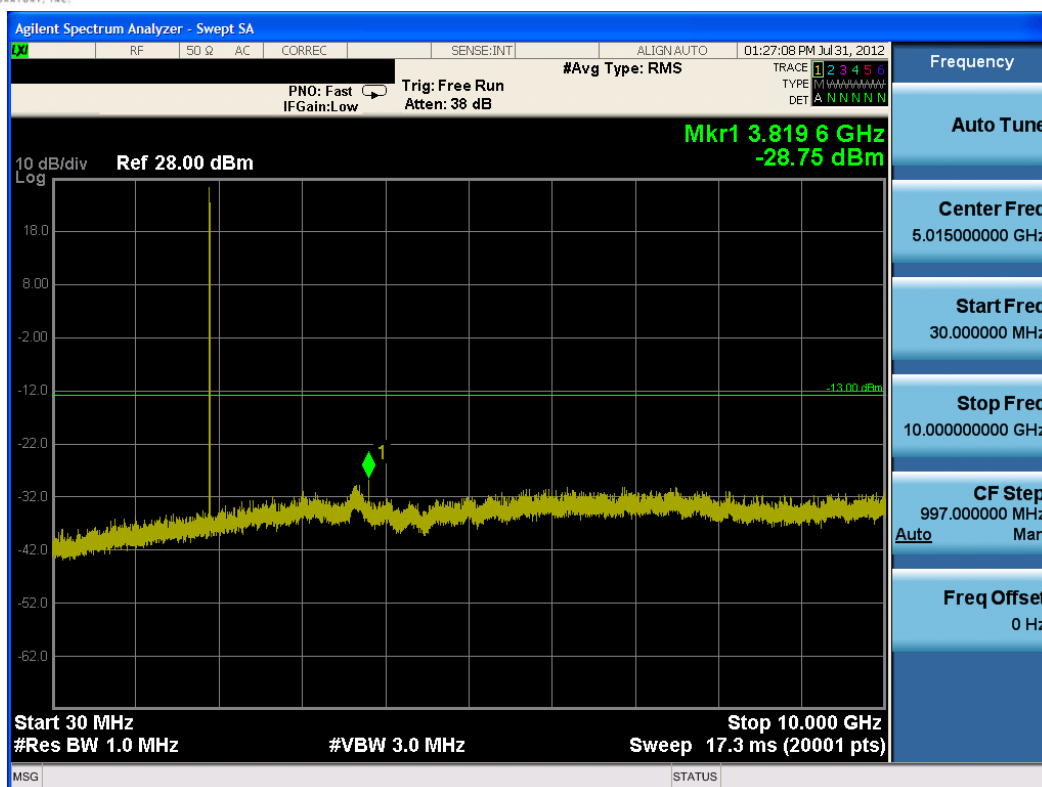


Plot 8-25. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

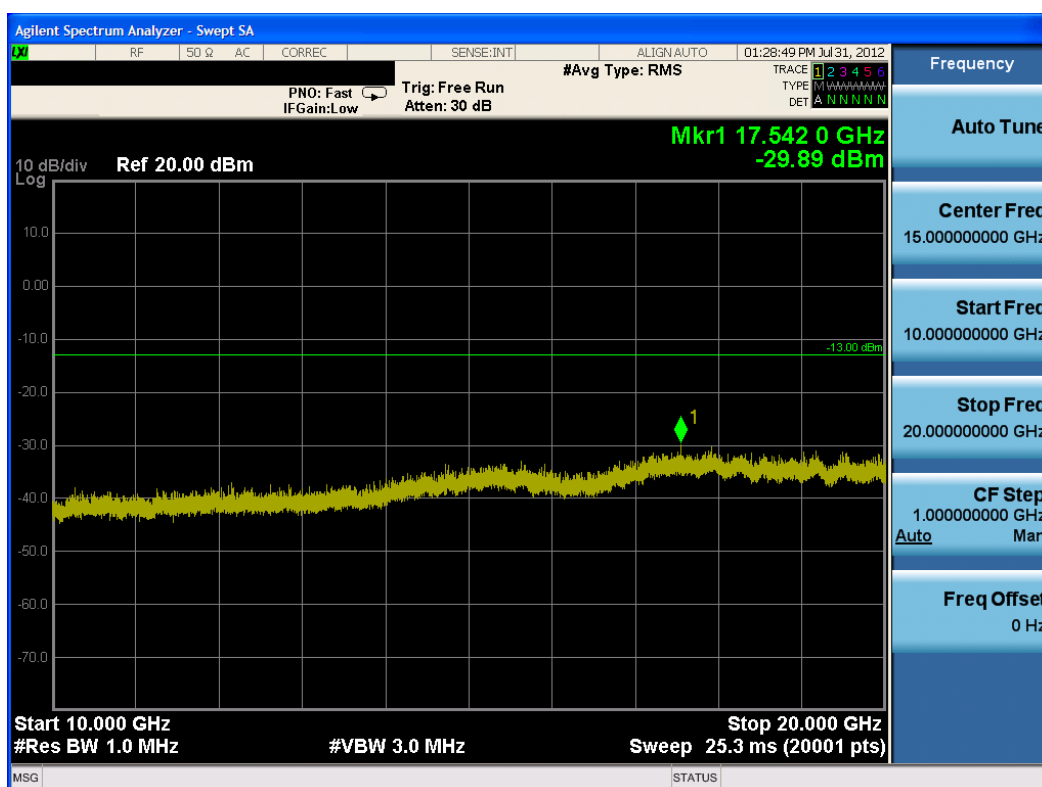


Plot 8-26. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 65 of 81

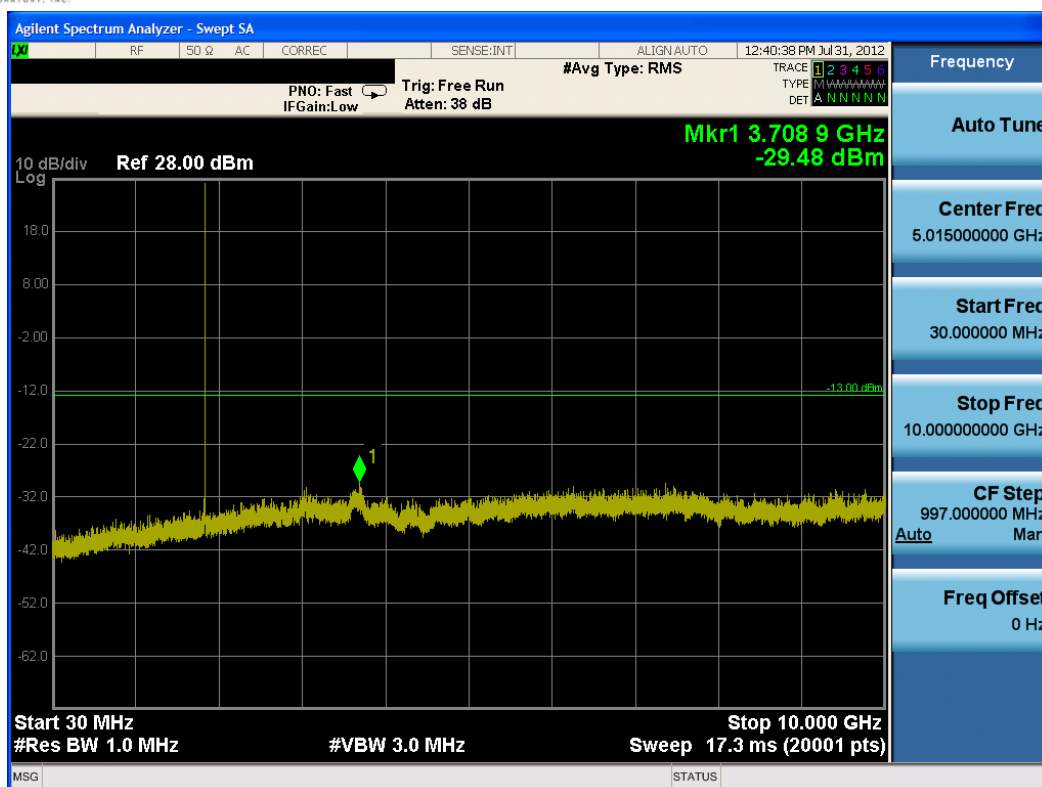


Plot 8-27. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

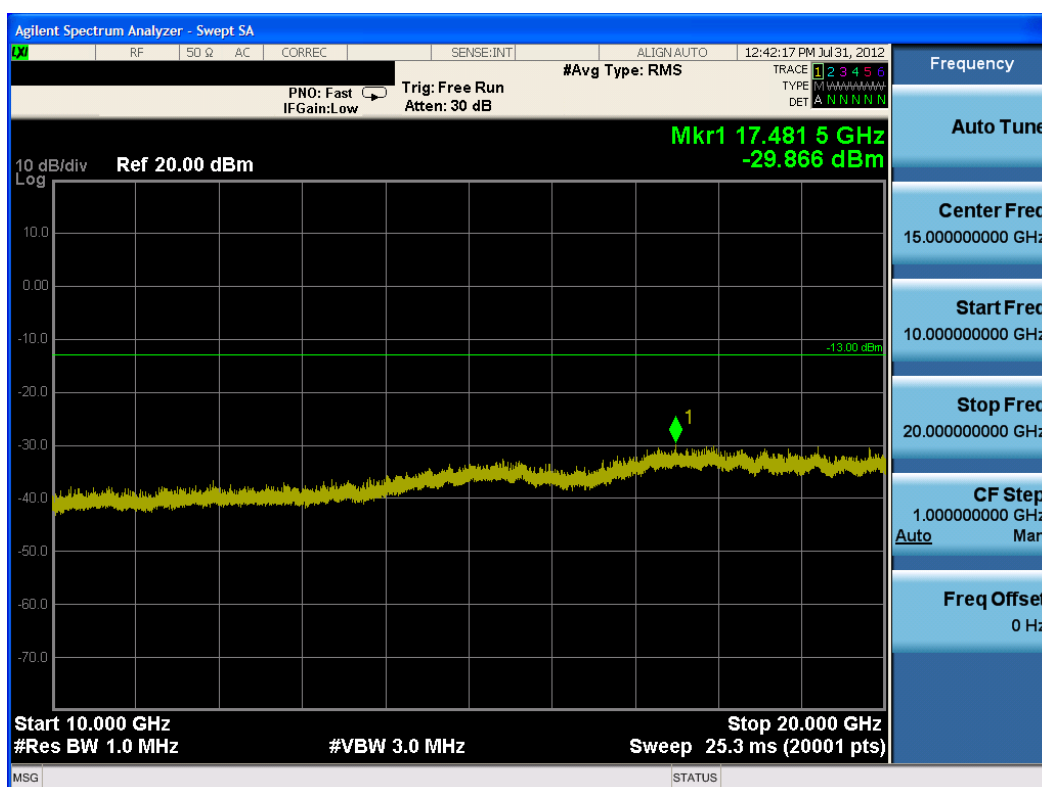


Plot 8-28. Conducted Spurious Plot (3MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 66 of 81

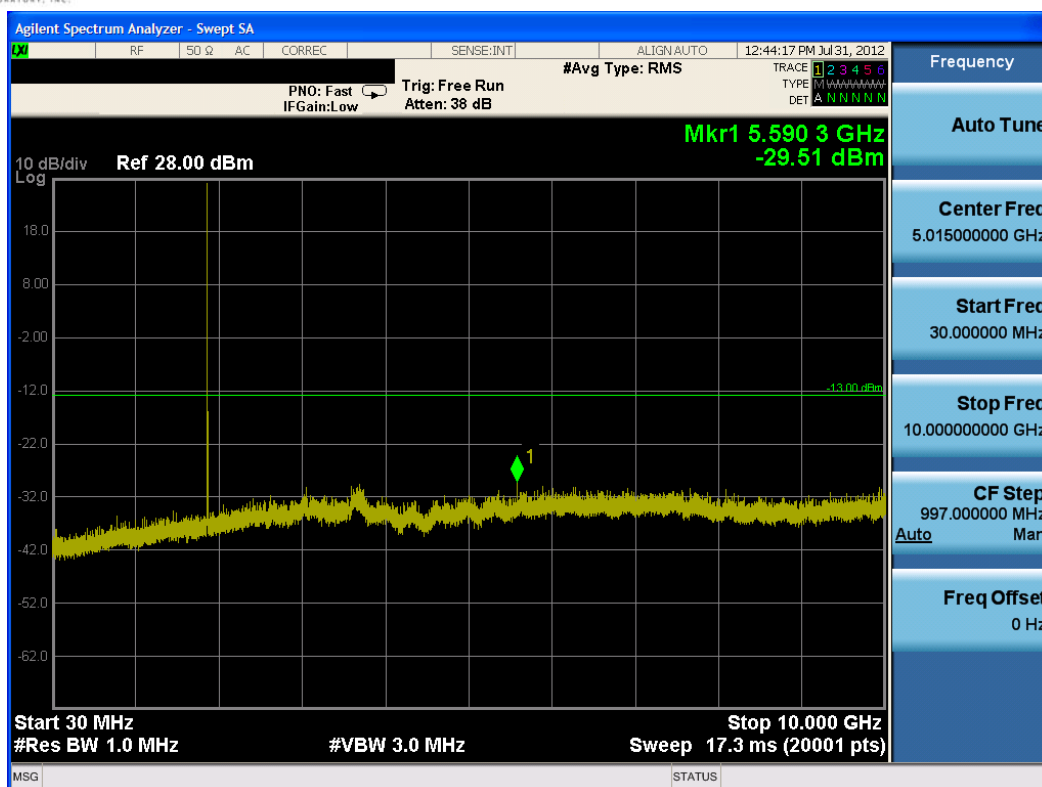


Plot 8-29. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

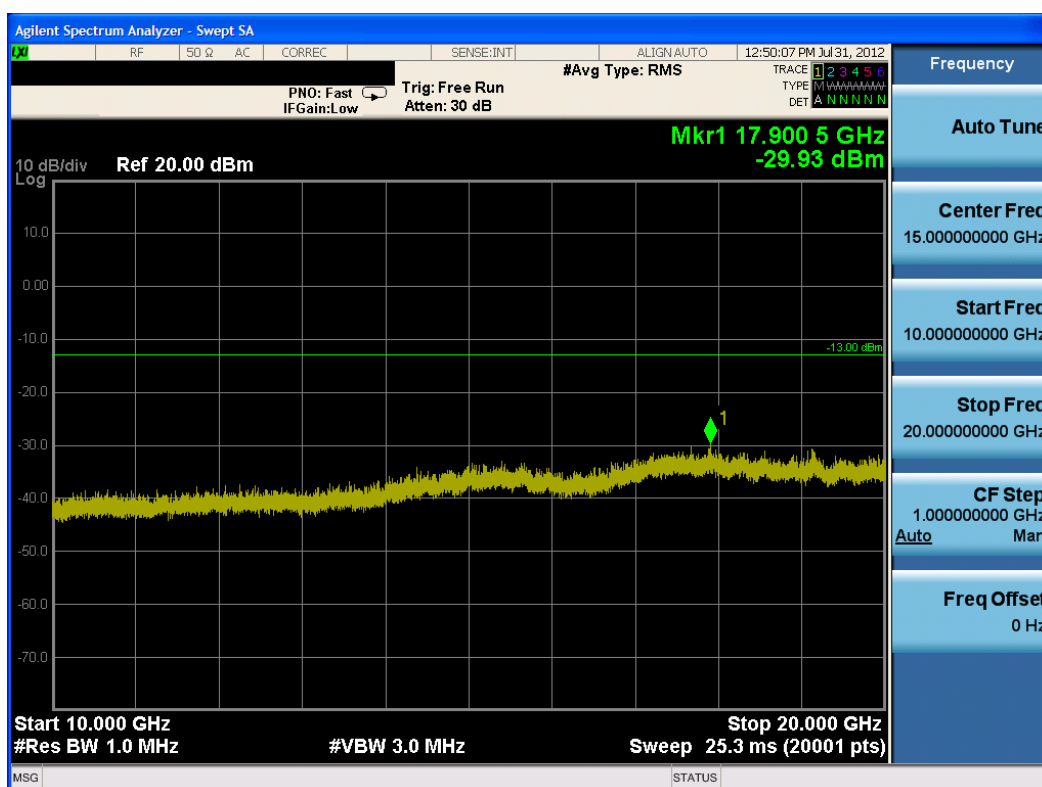


Plot 8-30. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 67 of 81

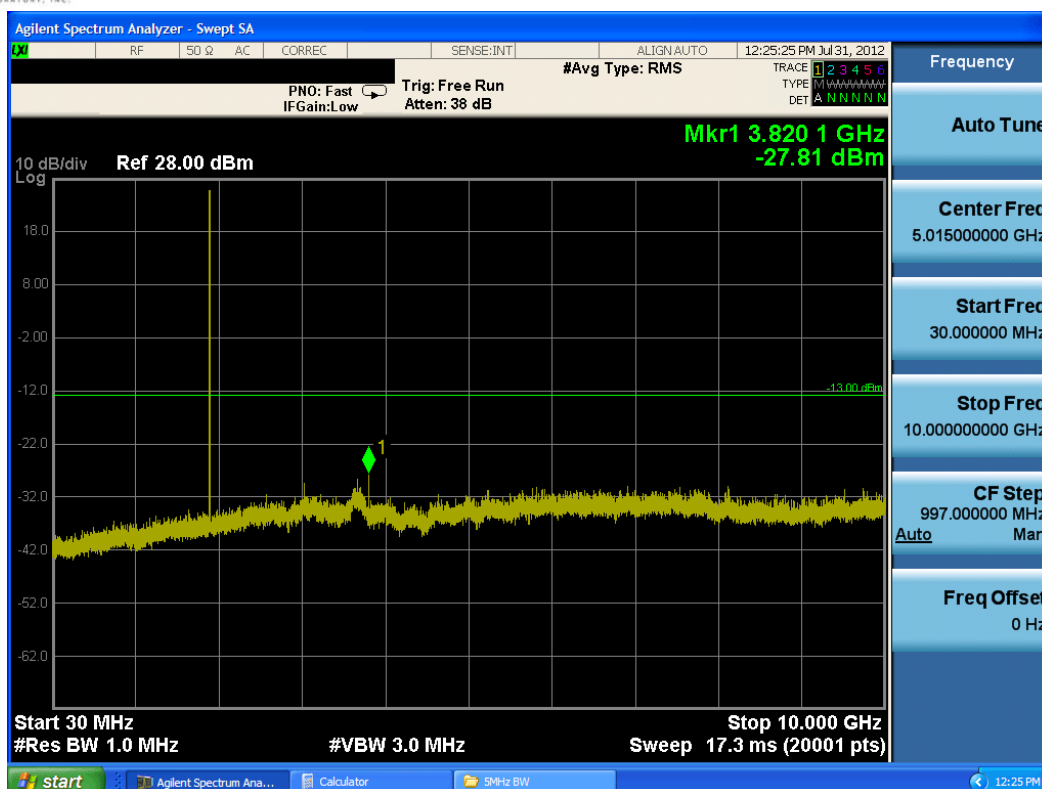


Plot 8-31. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

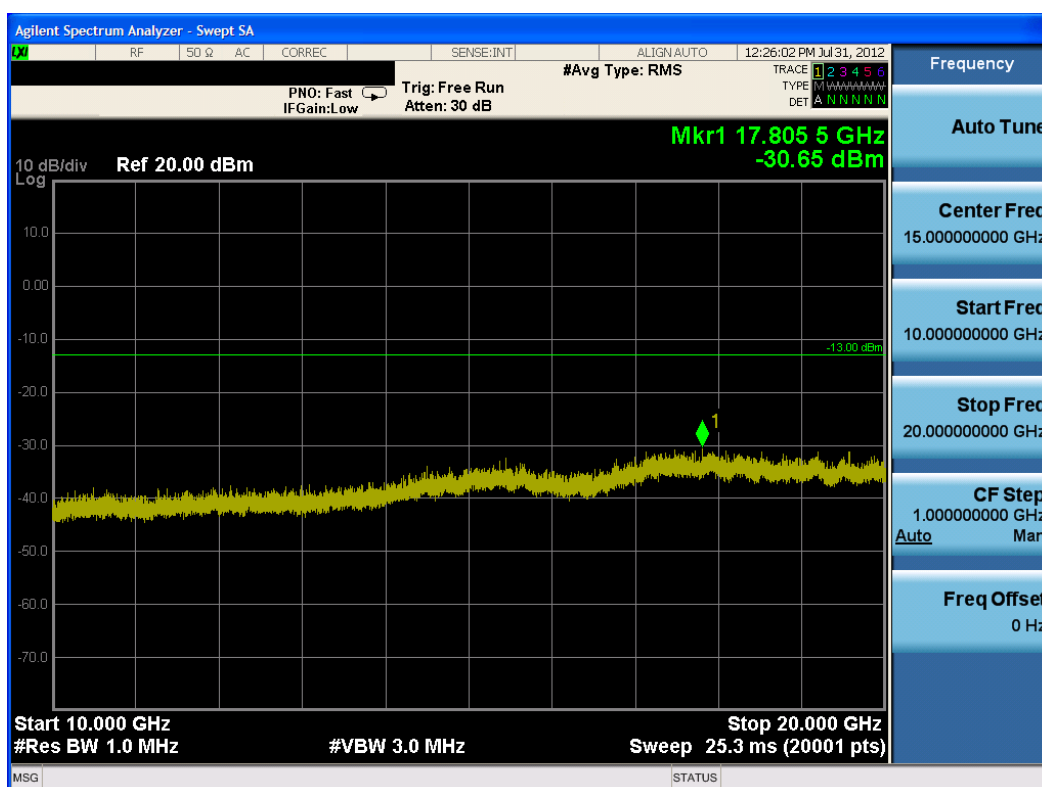


Plot 8-32. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 68 of 81

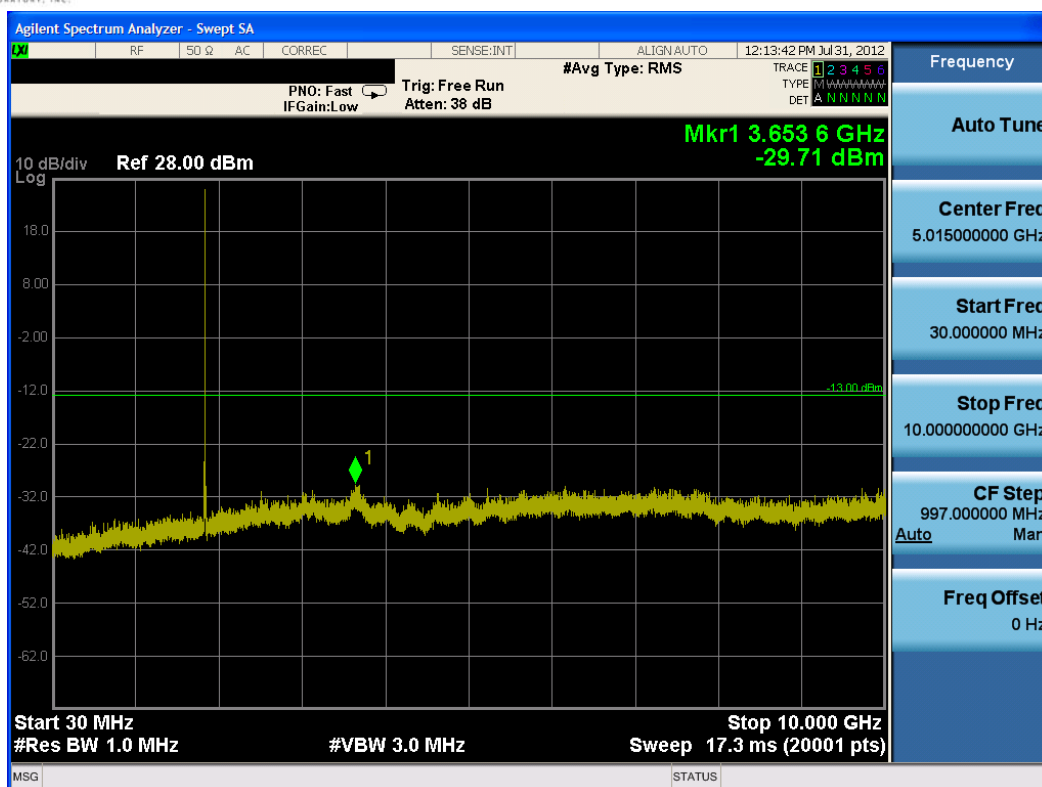


Plot 8-33. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

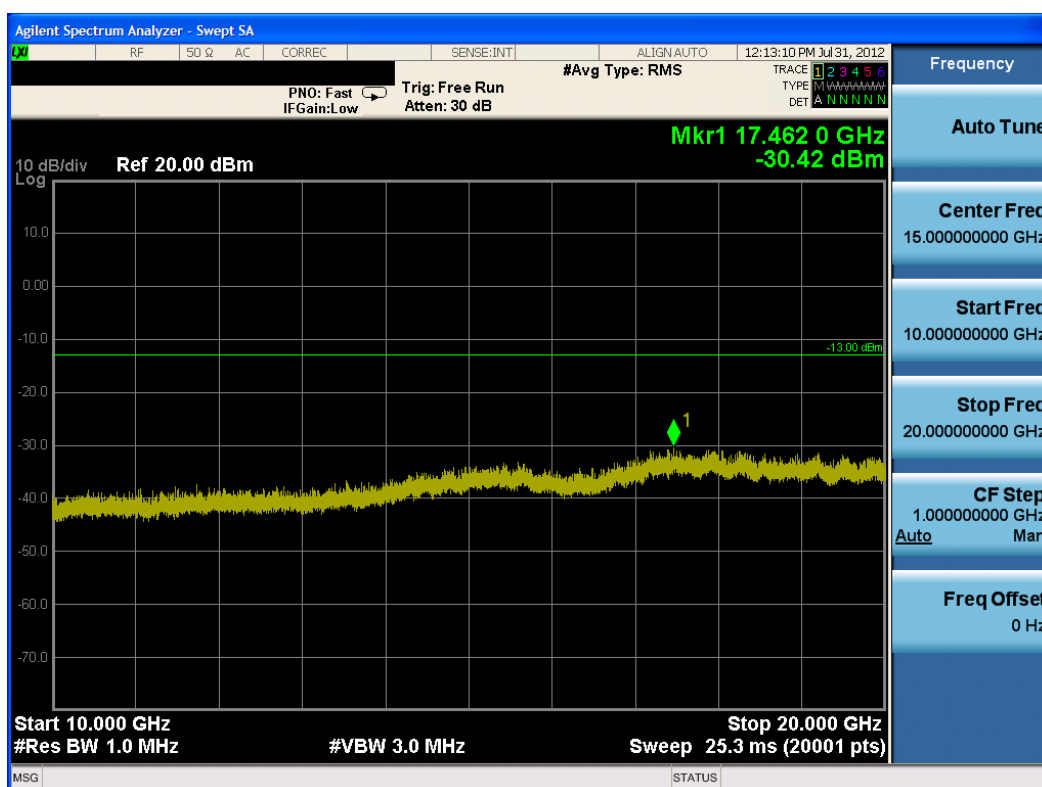


Plot 8-34. Conducted Spurious Plot (5MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 69 of 81

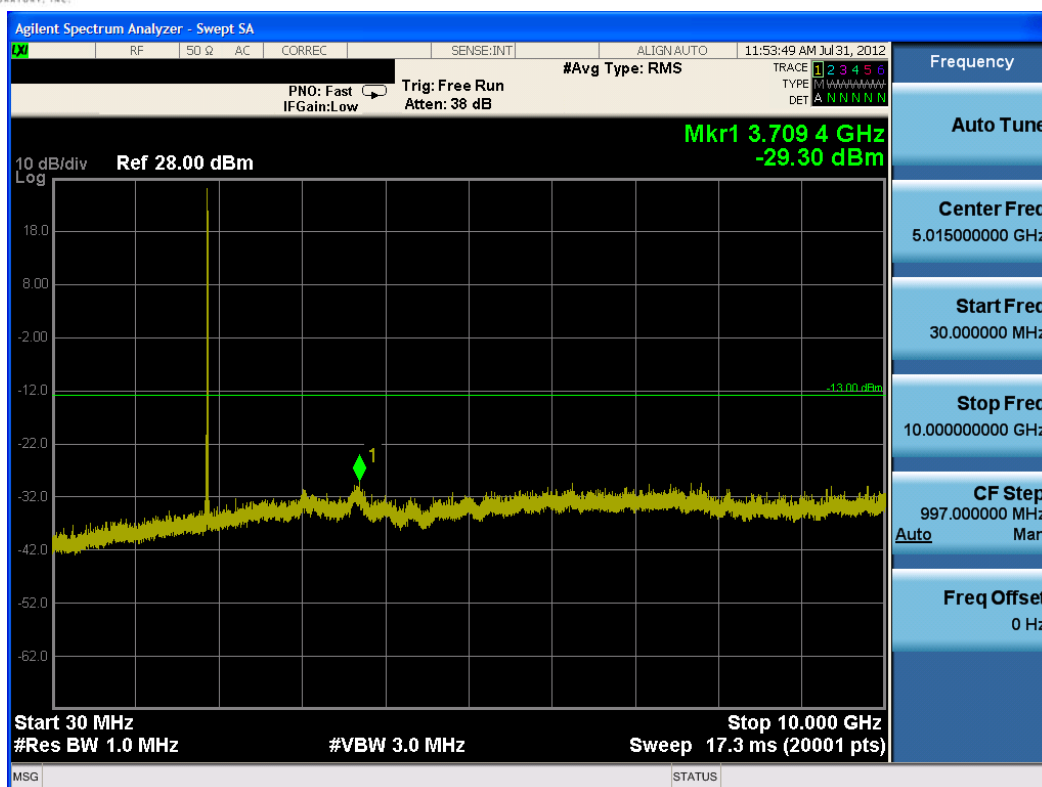


Plot 8-35. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

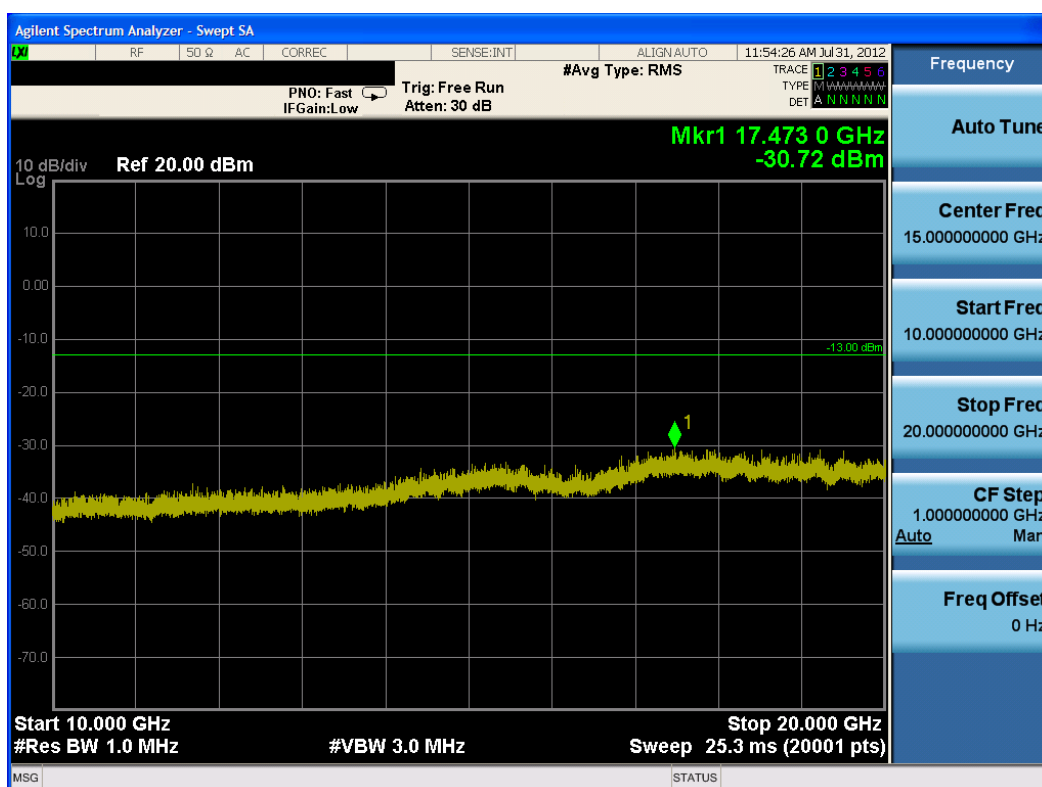


Plot 8-36. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Low Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 70 of 81

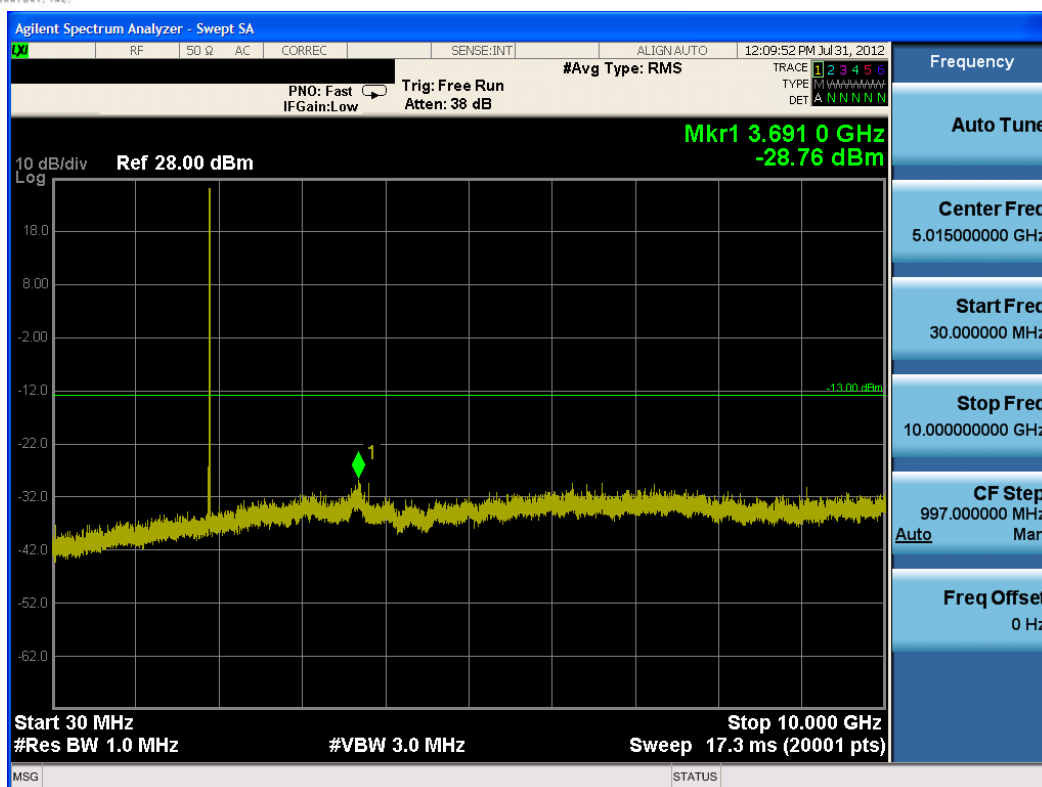


Plot 8-37. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

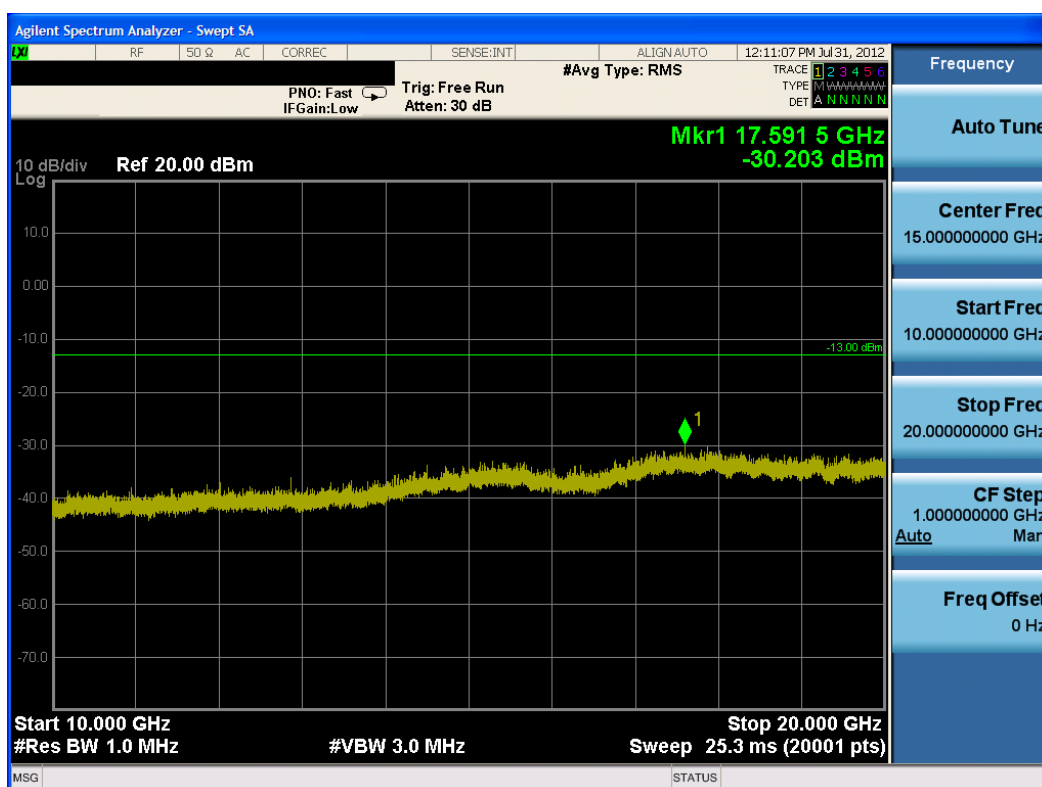


Plot 8-38. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – Mid Channel)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 71 of 81



Plot 8-39. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – High Channel)



Plot 8-40. Conducted Spurious Plot (10MHz QPSK – RB Size 1, RB Offset 0 – High Channel)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 72 of 81

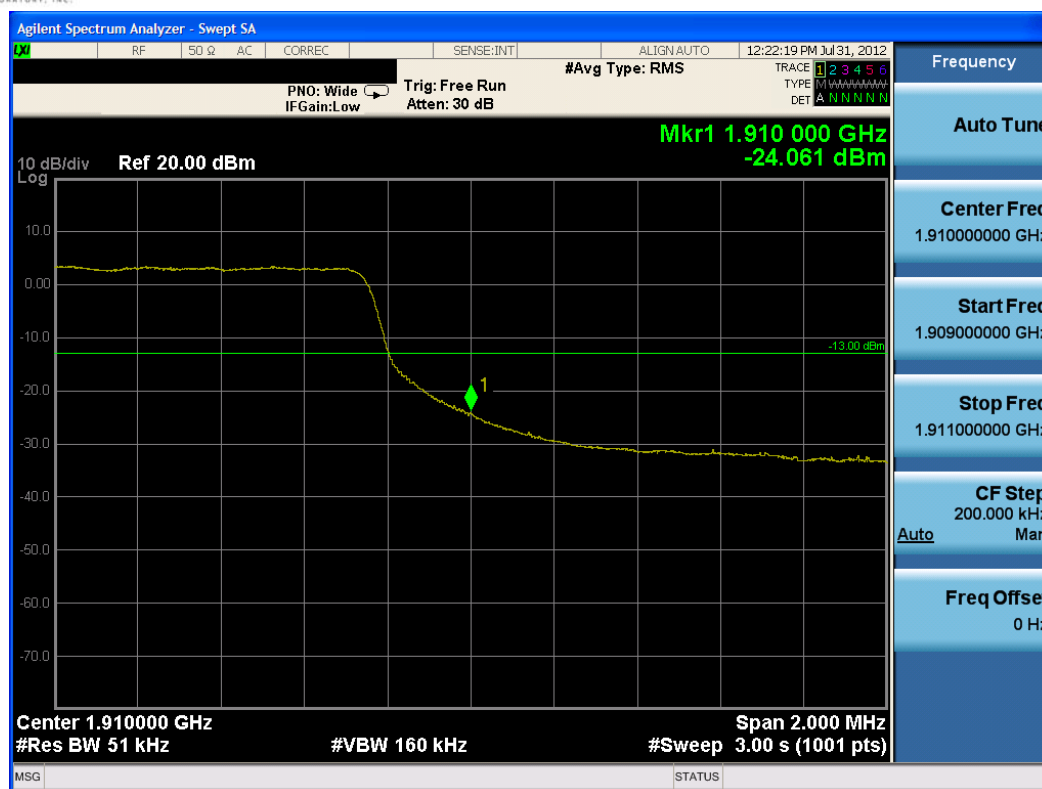


Plot 8-41. Upper Band Edge Plot (1.4MHz QPSK – RB Size 6)

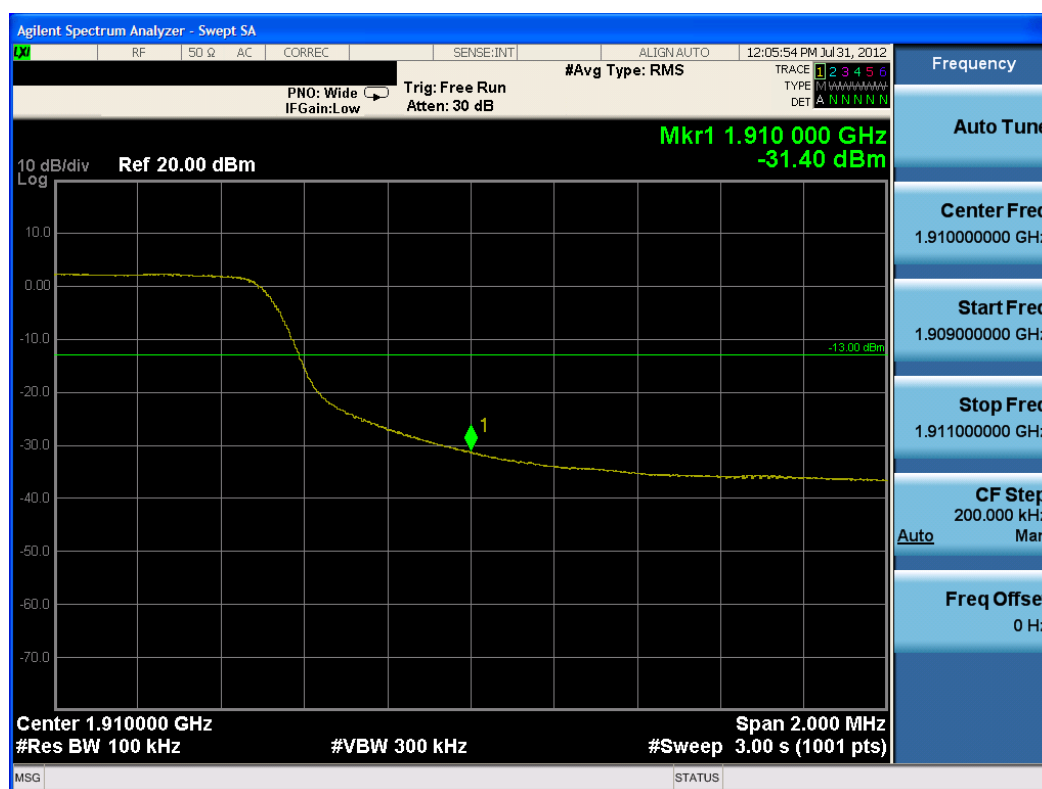


Plot 8-42. Upper Band Edge Plot (3MHz QPSK – RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 73 of 81

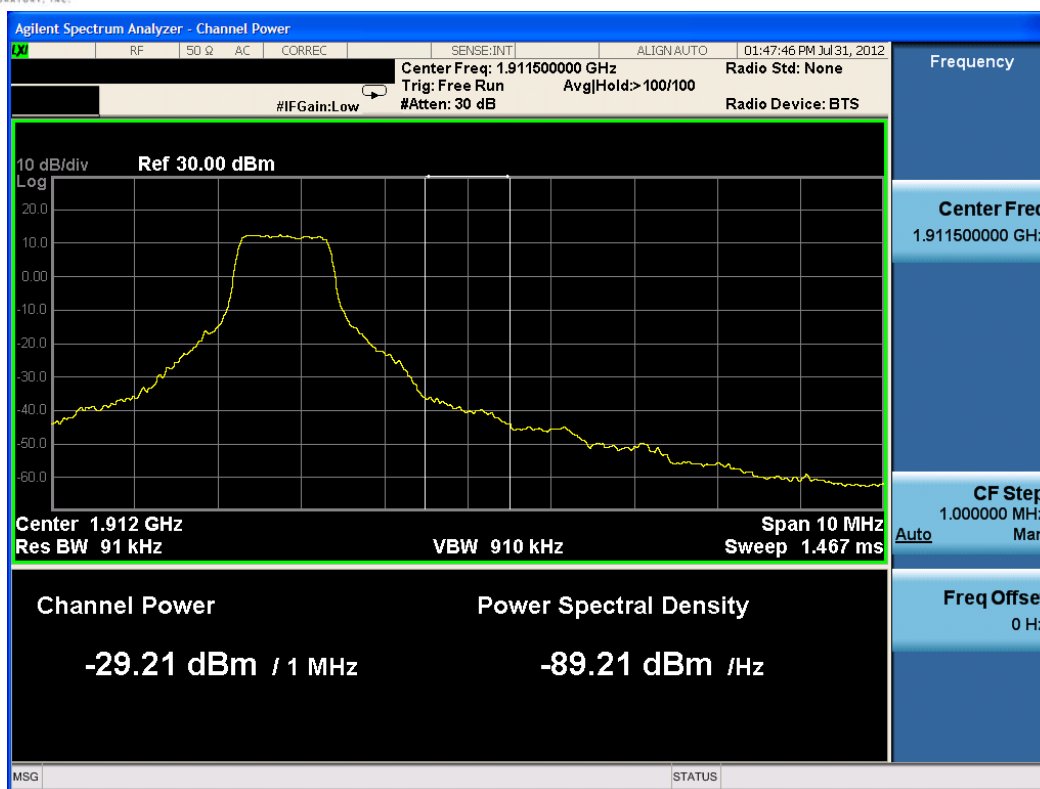


Plot 8-43. Upper Band Edge Plot (5MHz QPSK – RB Size 25)



Plot 8-44. Upper Band Edge Plot (10MHz QPSK – RB Size 50)

FCC ID: A3LSCHR530M	 FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset	Page 74 of 81

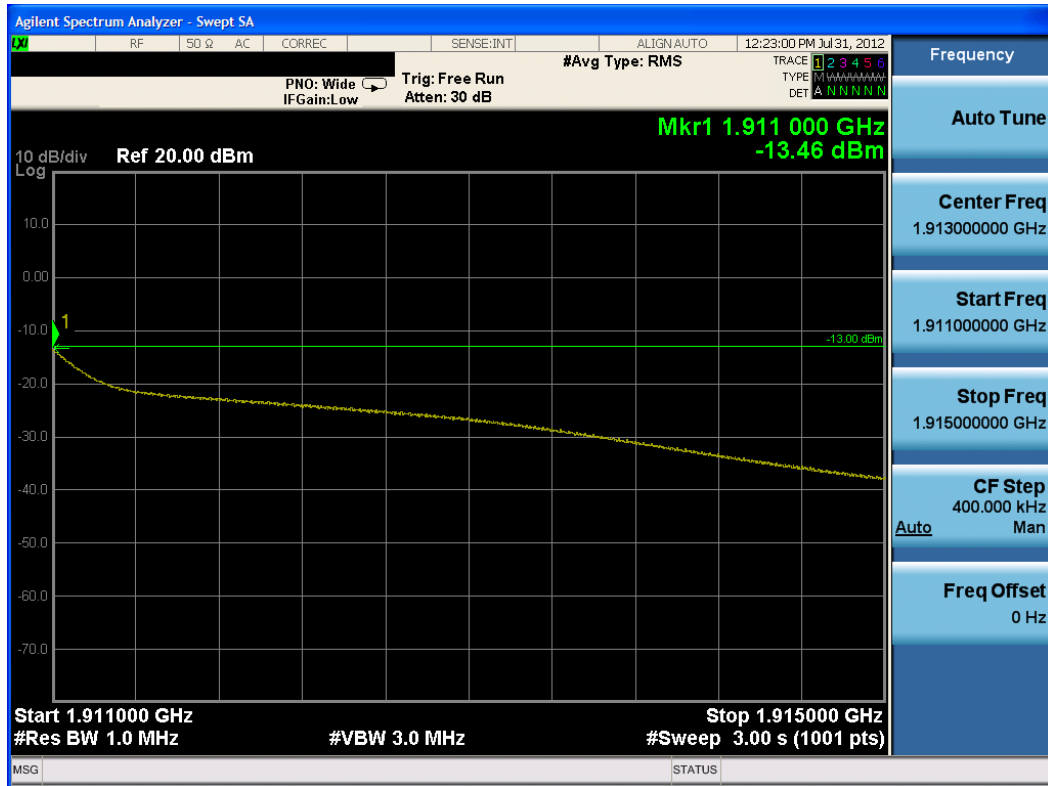


Plot 8-45. Upper Extended Band Edge Plot (1.4MHz QPSK- RB Size 6)



Plot 8-46. Upper Extended Band Edge Plot (3MHz QPSK- RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 75 of 81



Plot 8-47. Upper Extended Band Edge Plot (5MHz QPSK- RB Size 25)

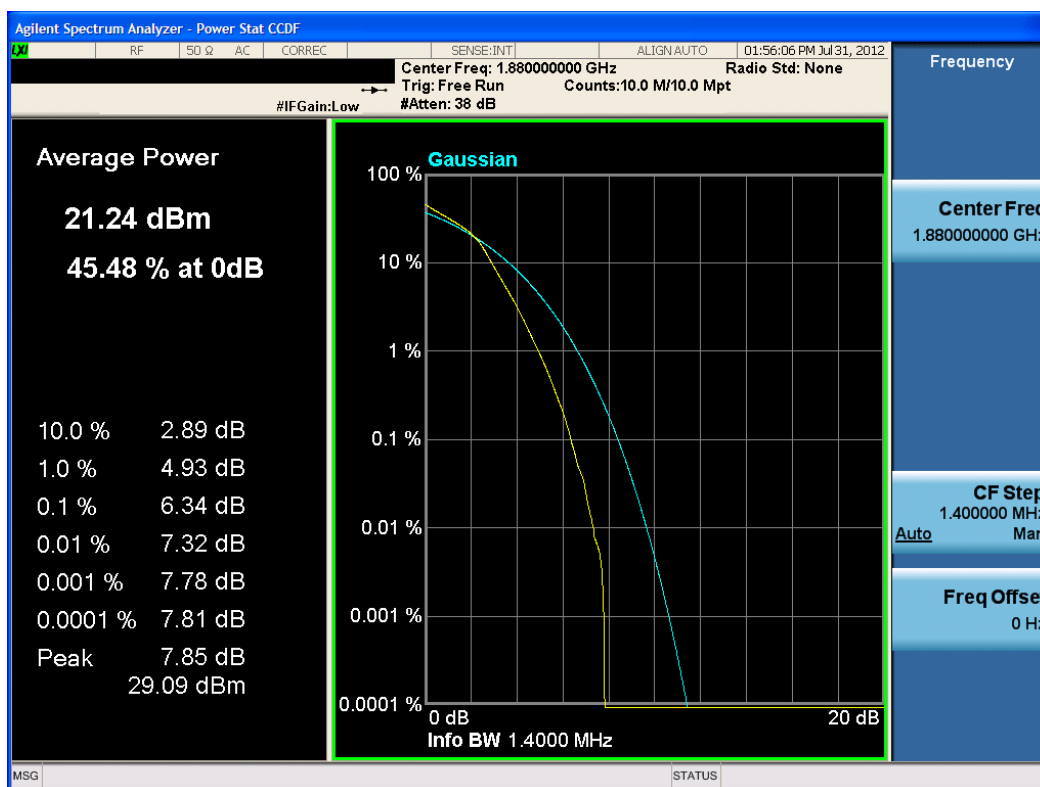


Plot 8-48. Upper Extended Band Edge Plot (10MHz QPSK- RB Size 50)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 76 of 81

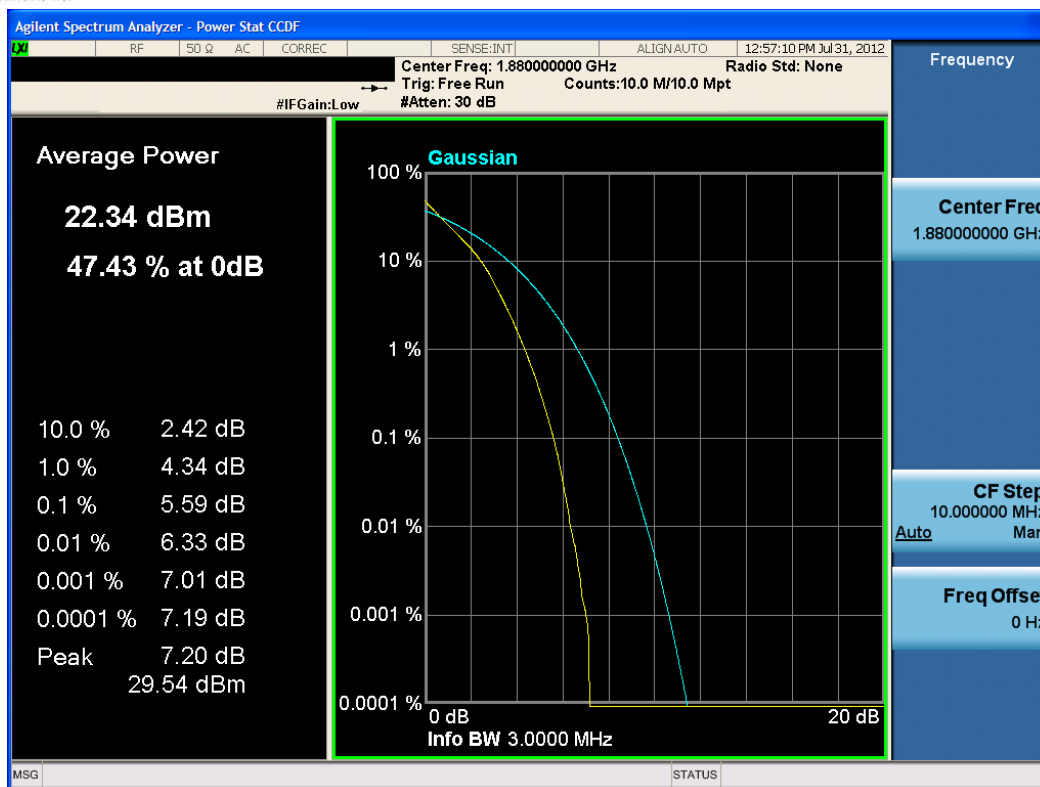


Plot 8-49. PAR Plot (1.4MHz QPSK – RB Size 6)



Plot 8-50. PAR Plot (1.4MHz 16QAM – RB Size 6)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 77 of 81

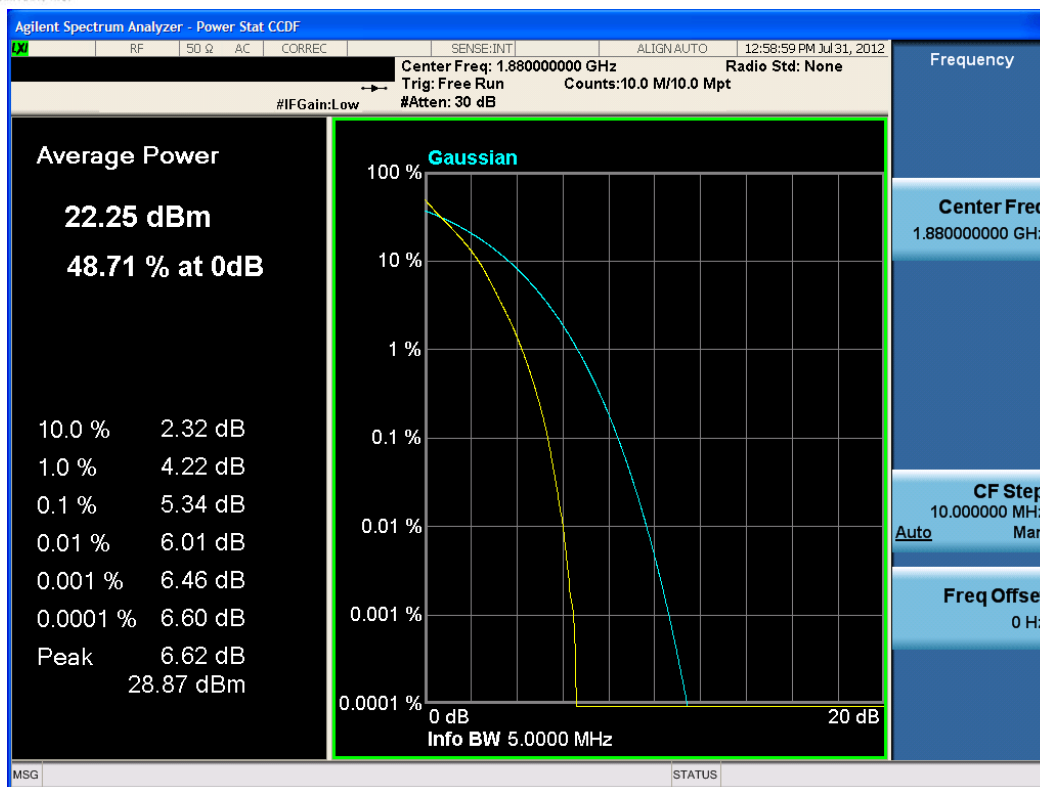


Plot 8-51. PAR Plot (3MHz QPSK – RB Size 15)

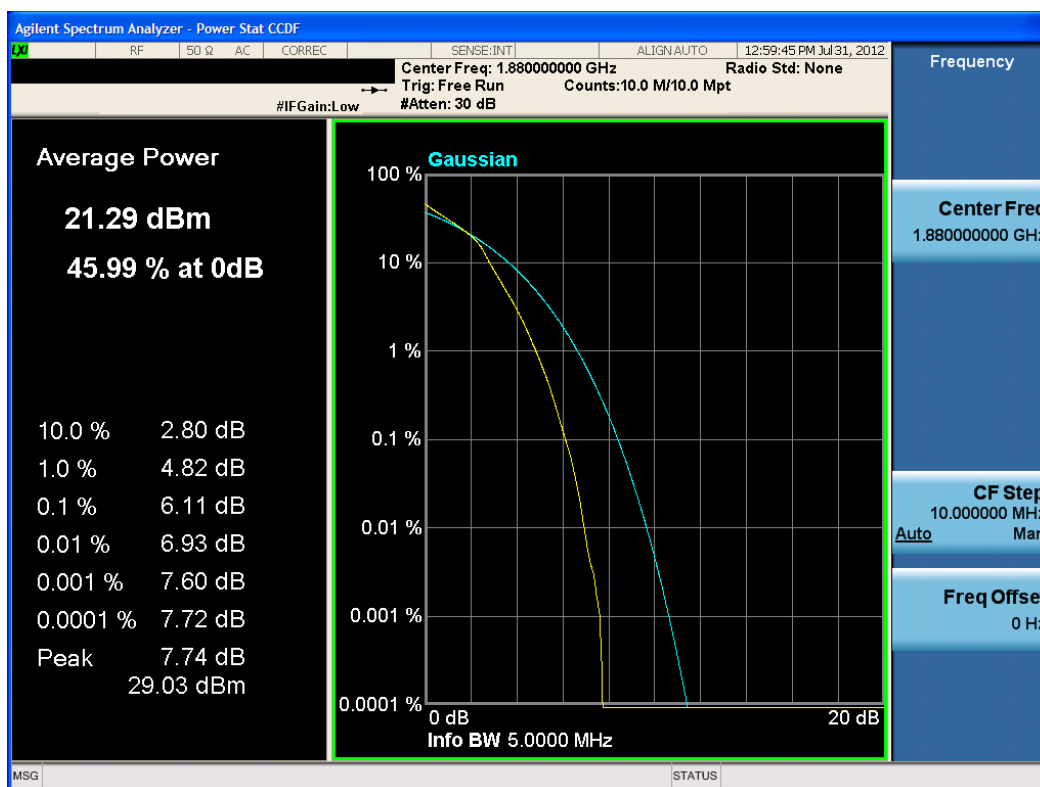


Plot 8-52. PAR Plot (3MHz 16QAM – RB Size 15)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 78 of 81

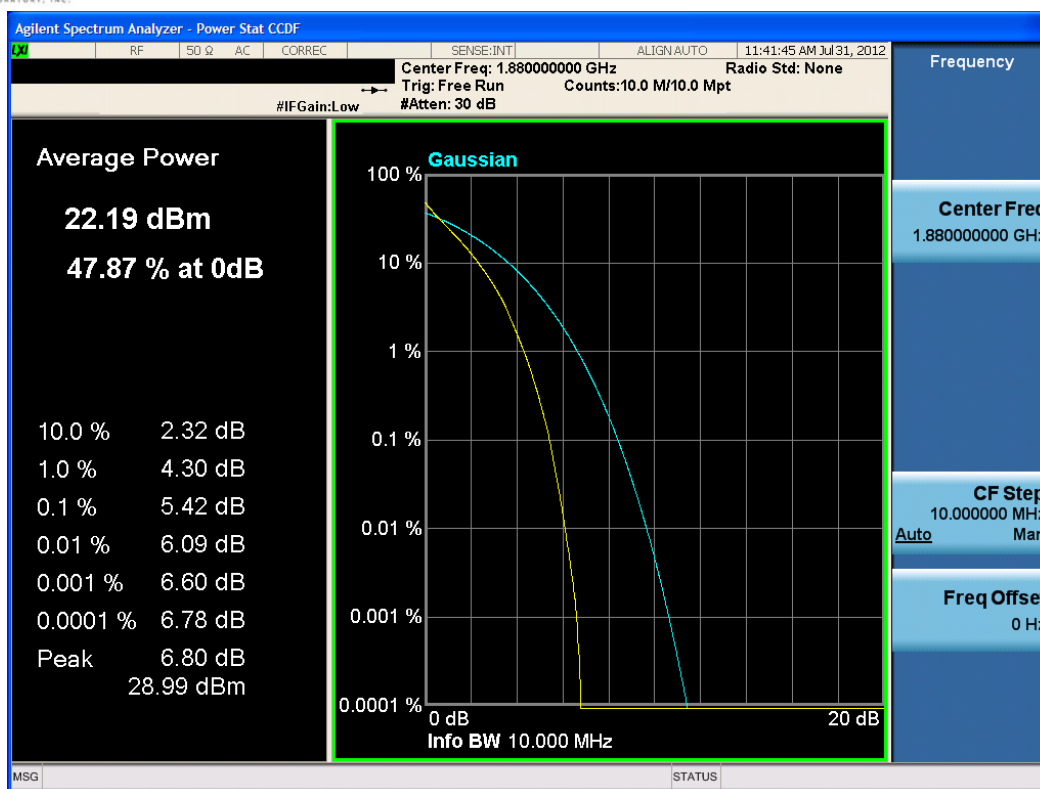


Plot 8-53. PAR Plot (5MHz QPSK – RB Size 25)

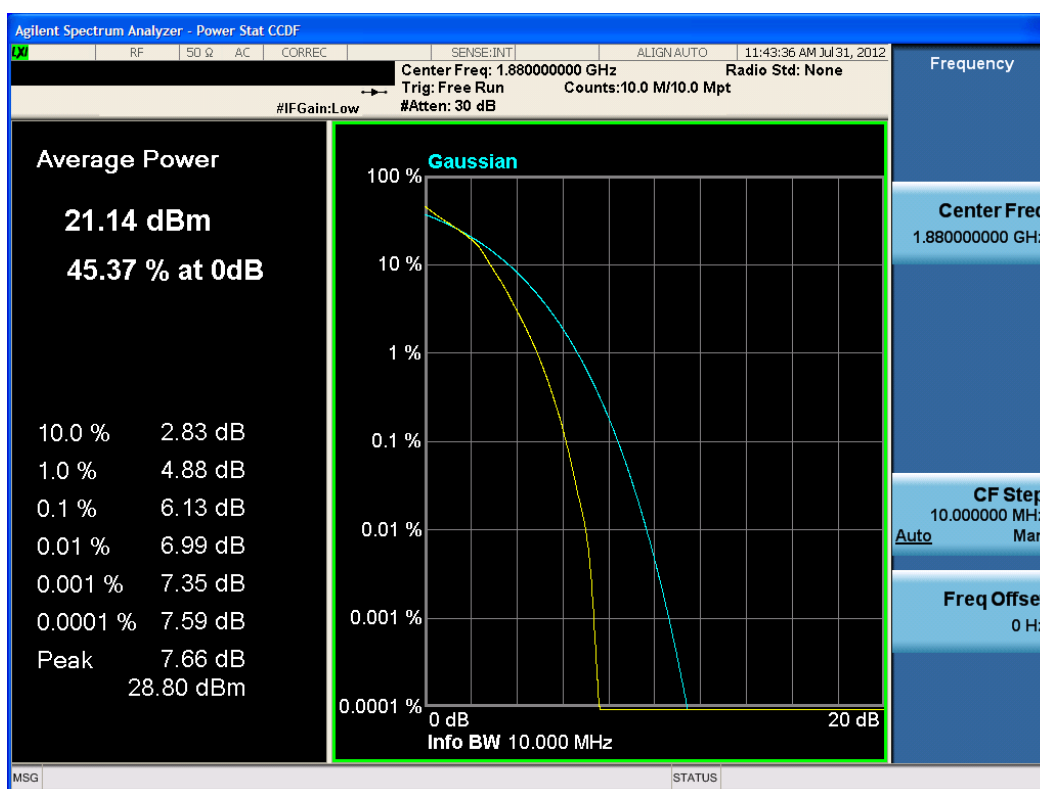


Plot 8-54. PAR Plot (5MHz 16QAM – RB Size 25)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 79 of 81



Plot 8-55. PAR Plot (10MHz QPSK – RB Size 50)



Plot 8-56. PAR Plot (10MHz 16QAM – RB Size 50)

FCC ID: A3LSCHR530M	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 80 of 81

9.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSCHR530M** complies with all the requirements of Parts 2, 22, 24 and 27 of the FCC rules for LTE operation only.

FCC ID: A3LSCHR530M		FCC Pt. 24-27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1207230998.A3L	Test Dates: 07/31 - 08/09/2012	EUT Type: Portable Handset		Page 81 of 81