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MEASUREMENT REPORT
FCC Part 27

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

Date of Testing:
Feb. 23 - Mar. 2, 2012
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1202220235.A3L

FCC ID : A3LSGHI747

APPLICANT: SAMSUNG ELECTRONICS CO., LTD.

Application Type: Certification
FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s): §2; §27
EUT Type: Portable Handset
Model(s): SGH-I747
Test Device Serial No.: *identical prototype* [S/N: ERP/EIRP, #7]

Mode	Tx Frequency (MHz)	Emission Designator	Modulation	ERP/EIRP	
				Max. Power (W)	Max. Power (dBm)
LTE Band 4	1710 - 1755	4M51G7D	QPSK	0.153	21.84
LTE Band 4	1710 - 1755	4M52W7D	16QAM	0.115	20.61
LTE Band 4	1710 - 1755	9M00G7D	QPSK	0.158	21.98
LTE Band 4	1710 - 1755	8M97W7D	16QAM	0.126	20.99
LTE Band 4	1710 - 1755	13M4G7D	QPSK	0.209	23.20
LTE Band 4	1710 - 1755	13M4W7D	16QAM	0.137	21.38
LTE Band 4	1710 - 1755	18M0G7D	QPSK	0.135	21.30
LTE Band 4	1710 - 1755	18M0W7D	16QAM	0.110	20.43
LTE Band 17	704 - 716	4M50G7D	QPSK	0.027	14.28
LTE Band 17	704 - 716	4M49W7D	16QAM	0.025	13.90
LTE Band 17	704 - 716	8M90G7D	QPSK	0.018	12.61
LTE Band 17	704 - 716	8M88W7D	16QAM	0.015	11.84

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

ACCREDITED
TESTING LABORATORY
CERTIFICATE #2041.01

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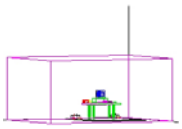
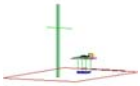


MEASUREMENT REPORT
FCC Part 27



§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:	6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S):	§2; §27
BASE MODEL:	SGH-I747
FCC ID:	A3LSGHI747
FCC CLASSIFICATION:	PCS Licensed Transmitter Held to Ear (PCE)
FREQUENCY TOLERANCE:	Within Authorized Bands of Operation
Test Device Serial No.:	ERP/EIRP, #7 ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST:	Feb. 23 - Mar. 2, 2012
TEST REPORT S/N:	0Y1202220235.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.

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.

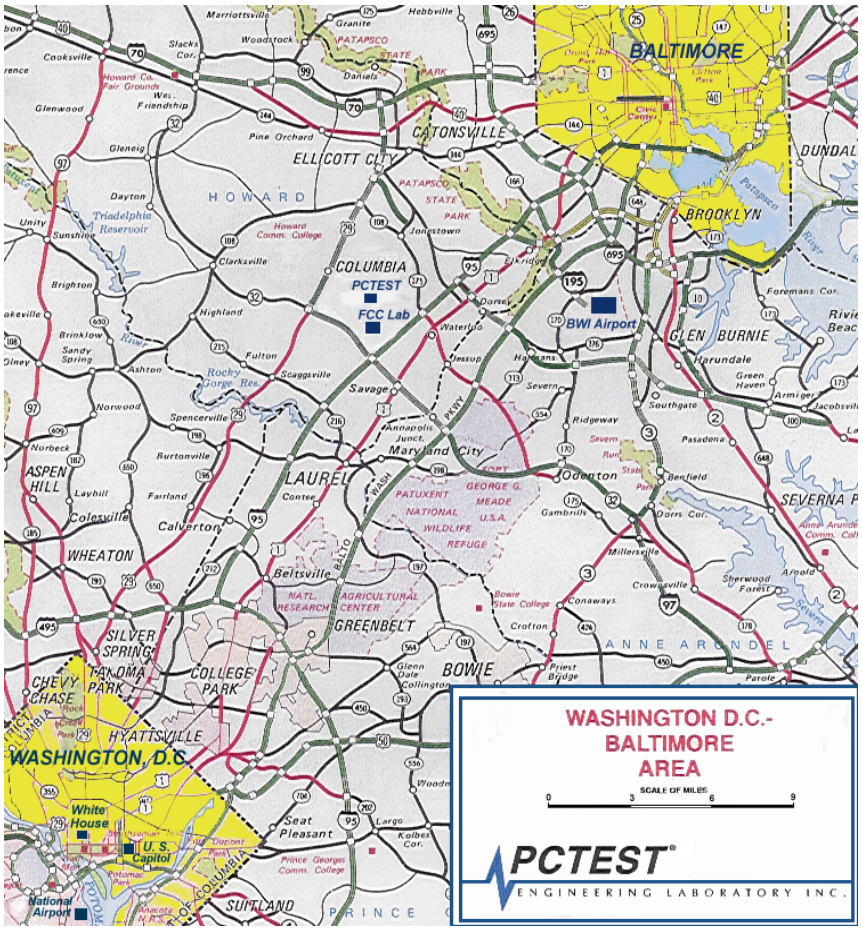


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSGHI747**. 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-I747	A3LSGHI747	Portable Handset

Table 2-1. EUT Equipment Description

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1900 WCDMA/HSPA, Band 4 and 17 LTE, 802.11a/b/g/n WLAN, 802.11a/n UNII, Bluetooth (EDR, LE), NFC

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.

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.

Deviation from Measurement Procedure……..None

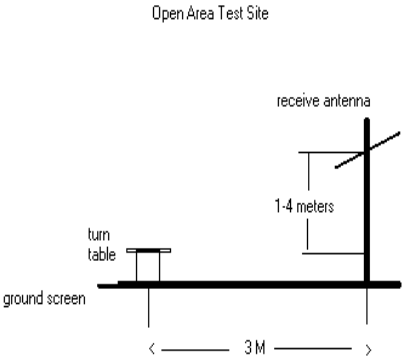


Figure 3-1. Diagram of 3-meter outdoor test range

3.2 Occupied Bandwidth

§2.1049, RSS-Gen (4.6.1)

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upperfrequency 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 odulation 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 Block A Frequency Range

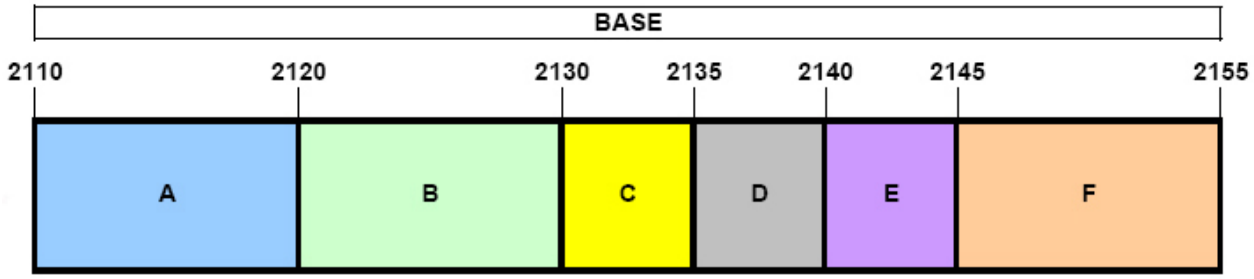
§27.5(c)

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

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

3.4 AWS - Base Frequency Blocks

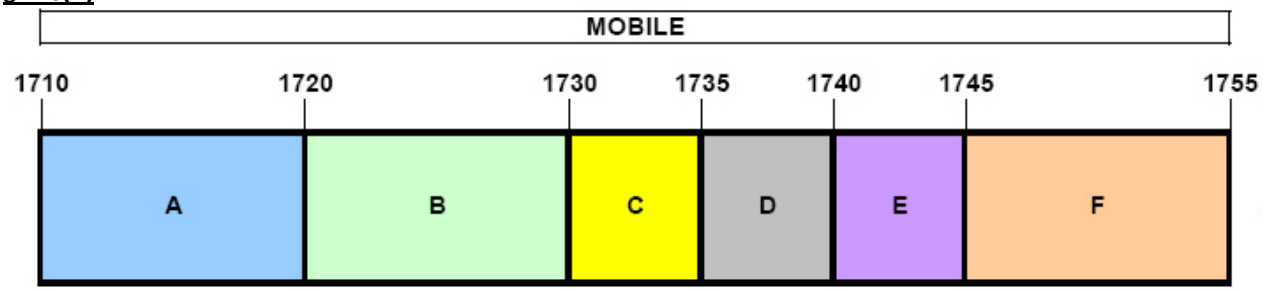
§27.5(h)



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

3.5 AWS - Mobile Frequency Blocks

§27.5(h)



BLOCK 1: 1710 – 1720 MHz (A)
BLOCK 2: 1720 – 1730 MHz (B)
BLOCK 3: 1730 – 1735 MHz (C)
BLOCK 4: 1735 – 1740 MHz (D)
BLOCK 5: 1740 – 1745 MHz (E)
BLOCK 6: 1745 – 1755 MHz (F)

3.6 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, §27.53(g), §27.53(h); RSS-132 (4.5.1), 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. For Bands 5 and 12, Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. For Bands 2 and 4, 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.

3.7 Radiated Power and Radiated Spurious Emissions

§2.1053, §27.53(g), §27.53(h); RSS-132(4.5.1.2), RSS-133 (6.5.1)

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.

3.8 Peak-Average Ratio

§27.50(d)(5), RSS-133 (6.4)

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

3.9 Frequency Stability / Temperature Variation

§2.1055, §27.54, RSS-132 (4.3), RSS-133 (6.3)

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.

Time Period and Procedure:

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

2. The equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.

3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A sufficient stabilization period at each temperature shall be used prior to each frequency requirement.

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)	6/7/2011	Annual	6/7/2012	N/A
-	RE2	Radiated Emissions Cable Set (VHF/UHF)	2/13/2012	Annual	2/13/2013	N/A
-	LTx2	Licensed Transmitter Cable Set	2/17/2012	Annual	2/17/2013	N/A
Agilent	8447D	Broadband Amplifier	5/8/2011	Annual	5/8/2012	1937A03348
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/10/2011	Annual	10/10/2012	3613A00315
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	2/15/2012	Annual	2/15/2013	US42510244
Agilent	E8267C	Vector Signal Generator	10/10/2011	Biennial	10/10/2013	US42340152
Agilent	N9020A	MXA Signal Analyzer	10/10/2011	Annual	10/10/2012	US46470561
Agilent	N9030A	PXA Signal Analyzer	2/23/2012	Annual	2/23/2013	MY49432391
Espec	ESX-2CA	Environmental Chamber	5/21/2011	Annual	5/21/2012	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	7/22/2011	Annual	7/22/2012	125518
ETS Lindgren	3160-09	18-26.5 GHz Standard Gain Horn	5/31/2011	Annual	5/31/2012	135427
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	10/1/2010	Biennial	10/1/2012	128337
Mini-Circuits	VHF-1200+	High Pass Filter	1/15/2012	Annual	1/15/2013	30923
Mini-Circuits	VHF-3100+	High Pass Filter	1/15/2012	Annual	1/15/2013	30841
Pasternack	PE2208-6	Bidirectional Coupler	6/3/2011	Annual	6/3/2012	N/A
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	N/A		N/A	100976
Rohde & Schwarz	RS-PR18	1-18 GHz Pre-Amplifier	6/9/2011	Annual	6/9/2012	100071
Rohde & Schwarz	RS-PR26	18-26.5 GHz Pre-Amplifier	6/9/2011	Annual	6/9/2012	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
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Tx	11/14/2011	Biennial	11/14/2013	9105-2403
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	1/26/2012	Biennial	1/26/2014	A051107

Table 4-1. Test Equipment

Note: Rohde & Schwarz Model CMW500 LTE Radio Communication Tester with calibration date 'N/A' was used for signaling purposes only and not for calibrated measurements.

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 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 terminals 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 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).

6.0 TEST RESULTS

6.1 Summary

Company Name: Samsung Electronics Co., Ltd.

FCC ID: A3LSGHI747

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

Bands: LTE Bands 4 (5, 10, 15, 20MHz) and 17 (5, 10MHz)

Modulation: QPSK, 16QAM

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)						
2.1049	RSS-Gen (4.6.1) RSS-133 (2.3)	Occupied Bandwidth	N/A	CONDUCTED	PASS	Section 7.0
2.1051, 27.53(g), 27.53(h)	RSS-133 (6.5.1)	Band Edge / Conducted Spurious Emissions	< 43 + 10log$_{10}$ (P[Watts]) at Band Edge and for all out-of-band emissions		PASS	Section 7.0
27.50(d)(5)	RSS-133 (6.4)	Peak-Average Ratio	< 13 dB		PASS	Section 7.0
2.1046	RSS-132 (4.4) RSS-133 (4.1)	Transmitter Conducted Output Power	N/A		PASS	SAR Report
27.50(c)(10)		Effective Radiated Power (Band 17)	< 3 Watts max. ERP	RADIATED	PASS	Section 6.2
27.50(d)(4)		Equivalent Isotropic Radiated Power (Band 4)	< 1 Watts max. EIRP		PASS	Section 6.2
2.1053, 27.53(g), 27.53(h)	RSS-132 (4.5.1) RSS-133 (6.5.1)	Undesirable Emissions	< 43 + 10log$_{10}$ (P[Watts]) for all out-of-band emissions		PASS	Section 6.4, 6.5, 6.6, 6.7
2.1055, 27.54,	RSS-132 (4.3) RSS-133 (6.3)	Frequency Stability	Within authorized band of operation		PASS	Section 6.8, 6.9, 6.10, 6.11

Table 6-1. Summary of Test Results

6.2 Effective Radiated Power Output Data

§27.50(c)(10)

	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]	Battery
Band XVII LTE	706.50	5	QPSK	1 / 24	-21.70	11.81	2.12	H	13.93	0.025	Standard
	710.00	5	QPSK	1 / 24	-22.40	11.11	2.20	H	13.31	0.021	Standard
	713.50	5	QPSK	1 / 0	-21.52	11.99	2.29	H	14.28	0.027	Standard
	706.50	5	16-QAM	1 / 24	-22.67	10.84	2.12	H	12.96	0.020	Standard
	710.00	5	16-QAM	1 / 24	-22.98	10.53	2.20	H	12.73	0.019	Standard
	713.50	5	16-QAM	1 / 0	-21.90	11.61	2.29	H	13.90	0.025	Standard
	710.00	10	QPSK	1 / 49	-23.10	10.41	2.20	H	12.61	0.018	Standard
	710.00	10	16-QAM	1 / 49	-23.87	9.64	2.20	H	11.84	0.015	Standard

Table 6-2. 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.

The EUT was tested in three orthogonal planes and in all possible test configurations the worst case test configuration was found in the horizontal setup for Band 17. All possible modulations, configurations, RB sizes and offsets were tested and the worst case settings are described in the table above. The data reported in the table above was measured in this test setup.

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]	Battery
Band IV LTE	1712.50	5	QPSK	1 / 24	-19.94	10.55	8.47	H	19.02	0.080	Standard
	1732.50	5	QPSK	1 / 0	-17.19	13.30	8.54	H	21.84	0.153	Standard
	1752.50	5	QPSK	1 / 24	-22.15	8.34	8.60	H	16.94	0.049	Standard
	1712.50	5	16-QAM	1 / 24	-21.85	8.64	8.47	H	17.11	0.051	Standard
	1732.50	5	16-QAM	1 / 0	-18.42	12.07	8.54	H	20.61	0.115	Standard
	1752.50	5	16-QAM	1 / 24	-23.05	7.44	8.60	H	16.04	0.040	Standard
	1715.00	10	QPSK	1 / 49	-18.04	12.45	8.47	H	20.92	0.124	Standard
	1732.50	10	QPSK	1 / 0	-17.95	12.54	8.54	H	21.08	0.128	Standard
	1750.00	10	QPSK	1 / 0	-17.11	13.38	8.60	H	21.98	0.158	Standard
	1715.00	10	16-QAM	1 / 49	-19.98	10.51	8.47	H	18.98	0.079	Standard
	1732.50	10	16-QAM	1 / 0	-19.03	11.46	8.54	H	20.00	0.100	Standard
	1750.00	10	16-QAM	1 / 0	-18.10	12.39	8.60	H	20.99	0.126	Standard
	1717.50	15	QPSK	1 / 0	-17.56	12.93	8.47	H	21.40	0.138	Standard
	1732.50	15	QPSK	1 / 0	-15.83	14.66	8.54	H	23.20	0.209	Standard
	1747.50	15	QPSK	1 / 0	-17.42	13.07	8.60	H	21.67	0.147	Standard
	1717.50	15	16-QAM	1 / 0	-18.65	11.84	8.47	H	20.31	0.107	Standard
	1732.50	15	16-QAM	1 / 0	-17.65	12.84	8.54	H	21.38	0.137	Standard
	1747.50	15	16-QAM	1 / 0	-19.29	11.20	8.60	H	19.80	0.095	Standard
	1720.00	20	QPSK	1 / 0	-17.69	12.80	8.47	H	21.27	0.134	Standard
	1732.50	20	QPSK	1 / 0	-17.73	12.76	8.54	H	21.30	0.135	Standard
	1745.00	20	QPSK	1 / 0	-20.43	10.06	8.60	H	18.66	0.073	Standard
	1720.00	20	16-QAM	1 / 0	-18.78	11.71	8.47	H	20.18	0.104	Standard
	1732.50	20	16-QAM	1 / 0	-18.60	11.89	8.54	H	20.43	0.110	Standard
	1745.00	20	16-QAM	1 / 0	-20.39	10.10	8.60	H	18.70	0.074	Standard

Table 6-3. 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.

The EUT was tested in three orthogonal planes and in all possible test configurations the worst case test configuration was found in the horizontal setup for Band 4. All possible modulations, configurations, RB sizes and offsets were tested and the worst case settings are described in the table above. The data reported in the table above was measured in this test setup.

6.4 Band 17 Radiated Measurements

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	706.50	MHz		
CHANNEL:	23755			
MEASURED OUTPUT POWER:	13.93	dBm	=	0.025 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	26.93	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1413.00	-47.83	5.78	-42.05	H	63.5
2119.50	-45.34	6.05	-39.29	H	60.7
2826.00	-46.00	7.16	-38.84	H	60.2
3532.50	-94.56	8.40	-86.16	H	107.6
4239.00	-93.79	9.38	-84.40	H	105.8

Table 6-4. Radiated Spurious Data (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, RB sizes and offsets for each channel bandwidth configurations and the worst case emissions are reported in Band 4 using 15MHz 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 the worst case test configuration was found in the horizontal setup. The data reported in the table above was measured in this test setup.

Band 17 Radiated Measurements

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	710.00	MHz		
CHANNEL:	23790			
MEASURED OUTPUT POWER:	13.31	dBm	=	0.021 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	26.31	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1420.00	-47.57	5.83	-41.74	H	64.9
2130.00	-46.44	6.07	-40.37	H	63.6
2840.00	-48.19	7.17	-41.02	H	64.2
3550.00	-94.49	8.40	-86.09	H	109.3
4260.00	-93.76	9.40	-84.36	H	107.6

Table 6-5. Radiated Spurious Data (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, RB sizes and offsets for each channel bandwidth configurations and the worst case emissions are reported in Band 4 using 15MHz 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, modulations, RB sizes and offsets and positioning. The worst case test configuration was found in the horizontal setup with an RB size of 1 and offset of 0. The data reported in the table above was measured in this test setup.

Band 17 Radiated Measurements

§2.1053, §27.53(g)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	713.50	MHz		
CHANNEL:	23825			
MEASURED OUTPUT POWER:	14.28	dBm	=	0.027 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	5	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	27.28	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1427.00	-48.42	5.87	-42.55	H	64.2
2140.50	-45.35	6.48	-38.87	H	60.5
2854.00	-49.25	7.67	-41.57	H	63.2
3567.50	-90.75	7.53	-83.22	H	104.9
27392.50	-91.75	8.53	-83.22	H	104.9

Table 6-6. Radiated Spurious Data (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, RB sizes and offsets for each channel bandwidth configurations and the worst case emissions are reported in Band 4 using 15MHz 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, modulations, RB sizes and offsets and positioning. The worst case test configuration was found in the horizontal setup with an RB size of 1 and offset of 0. The data reported in the table above was measured in this test setup.

6.5 Band 4 Radiated Measurements

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1717.50	MHz		
CHANNEL:	20025			
MEASURED OUTPUT POWER:	21.40	dBm	=	0.138 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	34.40	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3435.00	-43.56	8.15	-35.41	H	56.8
5152.50	-52.99	10.22	-42.77	H	64.2
6870.00	-53.27	11.35	-41.92	H	63.3
8587.50	-43.86	13.04	-30.83	H	52.2
10305.00	-89.85	13.04	-76.80	H	98.2

Table 6-7. Radiated Spurious Data (Ch. 20025)

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, RB sizes and offsets for each channel bandwidth configurations and the worst case emissions are reported in Band 4 using 15MHz 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, modulations, RB sizes and offsets and positioning. The worst case test configuration was found in the horizontal setup with an RB size of 1 and offset of 0. The data reported in the table above was measured in this test setup.

Band 4 Radiated Measurements

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1732.50	MHz		
CHANNEL:	20175			
MEASURED OUTPUT POWER:	23.20	dBm	=	0.209 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	36.20	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3465.00	-39.94	8.26	-31.68	H	54.9
5197.50	-41.41	10.26	-31.16	H	54.4
6930.00	-56.59	11.42	-45.17	H	68.4
8662.50	-42.22	13.07	-29.16	H	52.4
10395.00	-89.83	13.12	-76.71	H	99.9

Table 6-8. Radiated Spurious Data (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, RB sizes and offsets for each channel bandwidth configurations and the worst case emissions are reported in Band 4 using 15MHz 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, modulations, RB sizes and offsets and positioning. The worst case test configuration was found in the horizontal setup with an RB size of 1 and offset of 0. The data reported in the table above was measured in this test setup.

Band 4 Radiated Measurements

§2.1053, §27.53(h)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1747.50	MHz		
CHANNEL:	20325			
MEASURED OUTPUT POWER:	21.67	dBm	=	0.147 W
MODULATION SIGNAL:	QPSK			
BANDWIDTH:	15	MHz		
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	34.67	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3495.00	-39.13	8.38	-30.75	H	52.4
5242.50	-50.07	10.29	-39.77	H	61.4
6990.00	-52.92	11.49	-41.43	H	63.1
8737.50	-41.13	13.10	-28.04	H	49.7
29062.50	-79.51	28.00	-51.51	H	73.2

Table 6-9. Radiated Spurious Data (Ch. 20325)

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, RB sizes and offsets for each channel bandwidth configurations and the worst case emissions are reported in Band 4 using 15MHz 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, modulations, RB sizes and offsets and positioning. The worst case test configuration was found in the horizontal setup with an RB size of 1 and offset of 0. The data reported in the table above was measured in this test setup.

6.6 Band 17 Frequency Stability Measurements

§2.1055, §27.54, RSS-133 (6.3)

OPERATING FREQUENCY: 710,000,000 Hz

CHANNEL: 23790

REFERENCE VOLTAGE: 3.7 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	710,000,018	18	0.000003
100 %		- 30	710,000,020	20	0.000003
100 %		- 20	709,999,983	-17	-0.000002
100 %		- 10	709,999,988	-12	-0.000002
100 %		0	710,000,020	20	0.000003
100 %		+ 10	710,000,027	27	0.000004
100 %		+ 20	709,999,990	-10	-0.000001
100 %		+ 30	709,999,986	-14	-0.000002
100 %		+ 40	710,000,021	21	0.000003
100 %		+ 50	710,000,024	24	0.000003
115 %	4.26	+ 20	710,000,016	16	0.000002
85 %	3.40	+ 20	709,999,983	-17	-0.000002

Table 6-10. Frequency Stability Data (Band 17)

The frequency stability shall be sufficient to ensure that the fundamental e missions stay within the authorized bands of operation.

Note: Carrier Frequency Stability Measurements performed according to ANSI/TI/EIA-603-C-2004, Aug. 17, 2004

Band 17 Frequency Stability Measurements (Cont'd)

§2.1055, §27.54, RSS-133 (6.3)

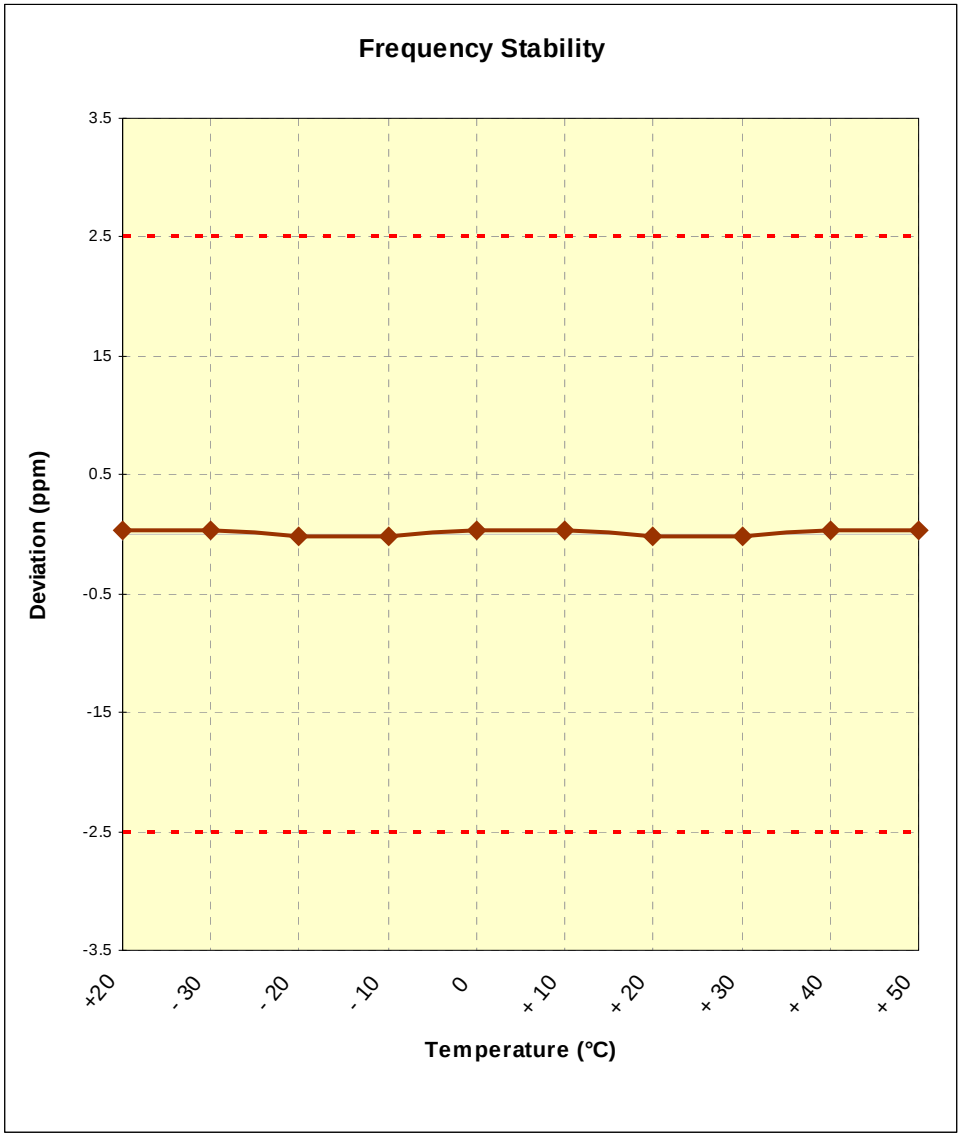


Figure 6-1. Frequency Stability Graph (Band 17)

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Note: Carrier Frequency Stability Measurements performed according to ANSI/TI/EIA-603-C-2004, Aug. 17, 2004

6.7 Band 4 Frequency Stability Measurements

§2.1055, §27.54, RSS-133 (6.3)

OPERATING FREQUENCY: 1,732,500,000 Hz

CHANNEL: 20175

REFERENCE VOLTAGE: 3.7 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	1,732,499,977	-23	-0.000001
100 %		- 30	1,732,499,985	-15	-0.000001
100 %		- 20	1,732,500,015	15	0.000001
100 %		- 10	1,732,500,023	23	0.000001
100 %		0	1,732,499,983	-17	-0.000001
100 %		+ 10	1,732,500,019	19	0.000001
100 %		+ 20	1,732,499,990	-10	-0.000001
100 %		+ 30	1,732,499,981	-19	-0.000001
100 %		+ 40	1,732,500,015	15	0.000001
100 %		+ 50	1,732,500,013	13	0.000001
115 %	4.26	+ 20	1,732,500,012	12	0.000001
85 %	3.40	+ 20	1,732,499,988	-12	-0.000001

Table 6-11. Frequency Stability Data (Band 4)

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Note: Carrier Frequency Stability Measurements performed according to ANSI/TI/EIA-603-C-2004, Aug. 17, 2004

Band 4 Frequency Stability Measurements (Cont'd)

§2.1055, §27.54; RSS-133 (6.3)

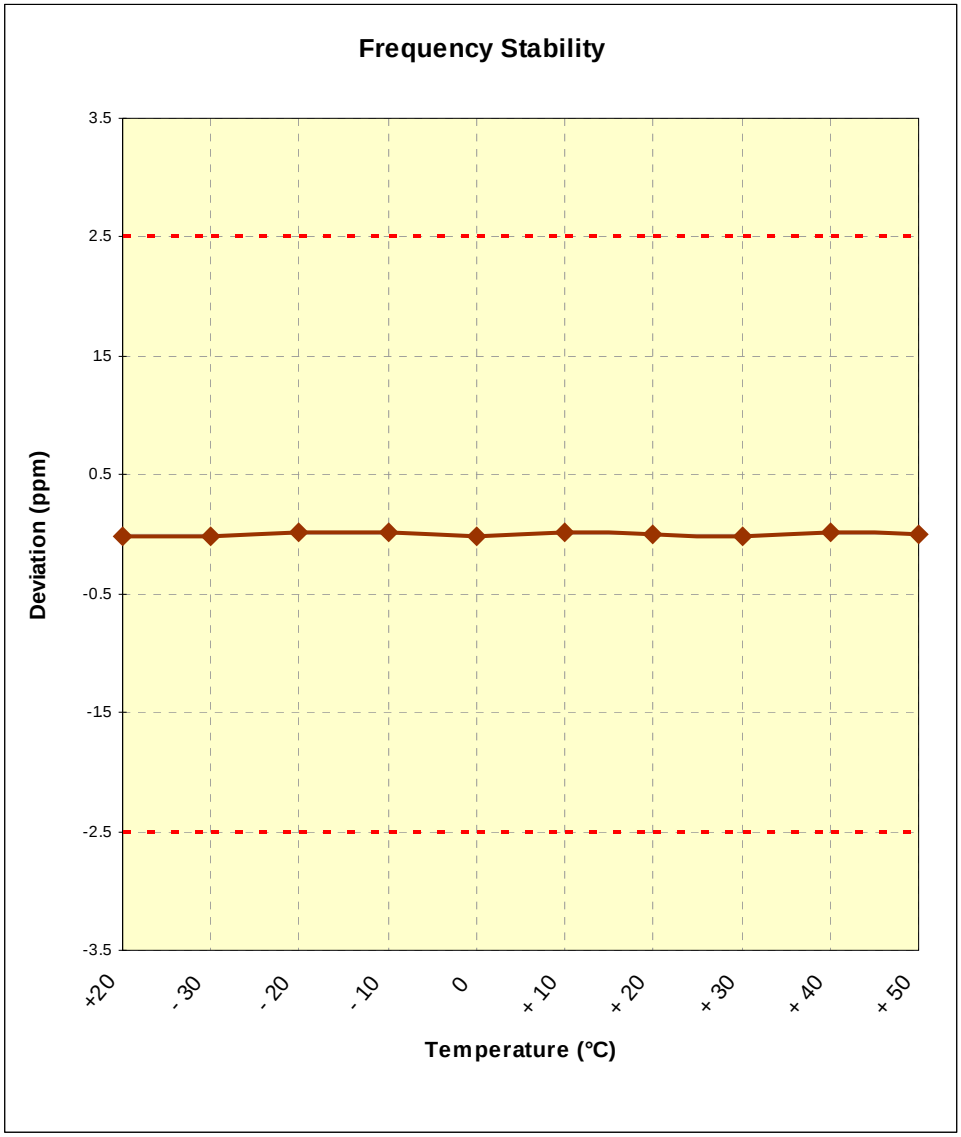


Figure 6-2. Frequency Stability Graph (Band 4)

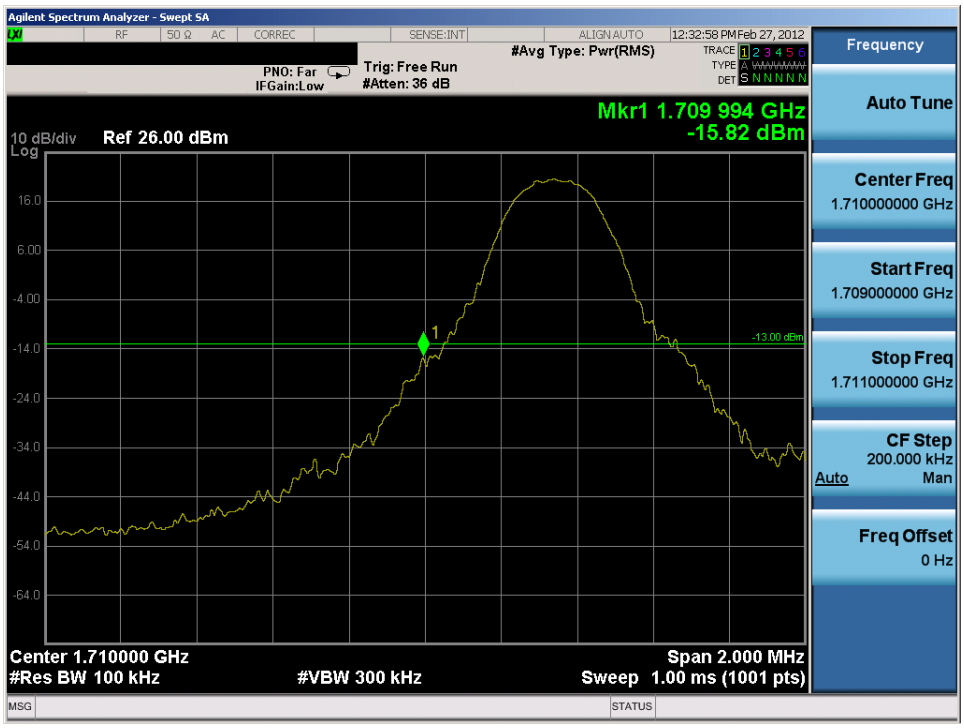
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Note: Carrier Frequency Stability Measurements performed according to ANSI/TI/EIA-603-C-2004, Aug. 17, 2004

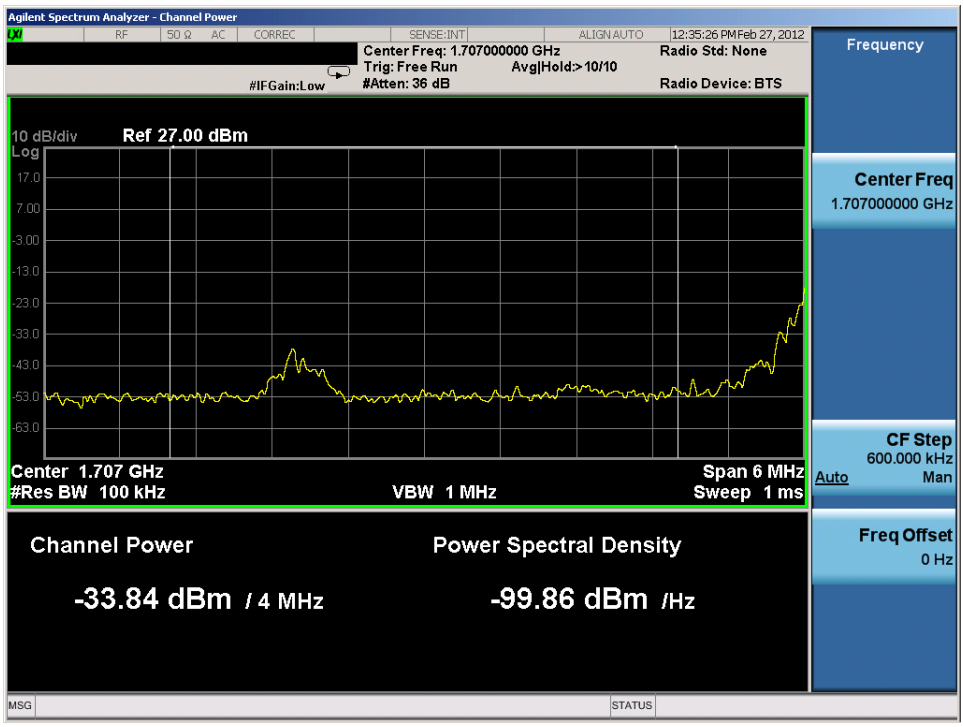
7.0 PLOT(S) OF EMISSIONS

Note: For all out-of-band spurious emissions, QPSK modulation produced the worst case emissions. The RB sizes and offsets that yielded worst case emissions are indicated in the plot captions. For both Band 4 and 17 a resolution bandwidth of at least 1% of the emission bandwidth was used to measure band edge. In addition, for Band 4 (1710-1755MHz) emissions 1MHz removed from the band edge a resolution bandwidth of at least 1MHz was used.

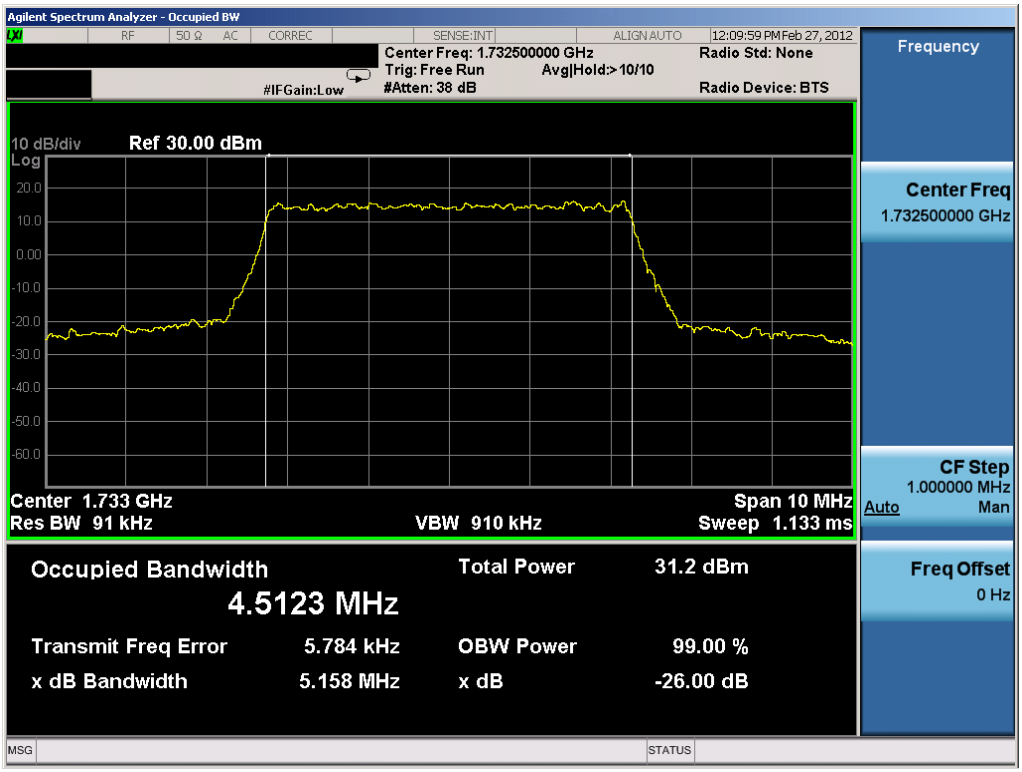
8.0 BAND 4 – 5 MHZ BW



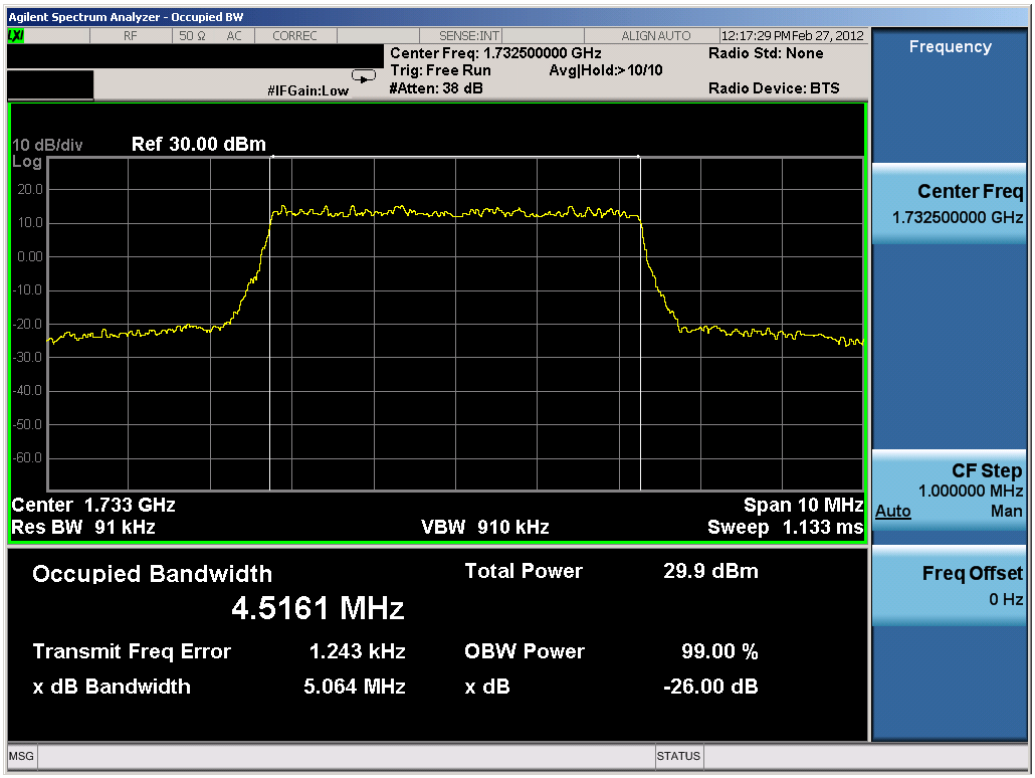
Plot 8-1. Lower Band Edge Plot (QPSK – RB Size 1, Offset 0)



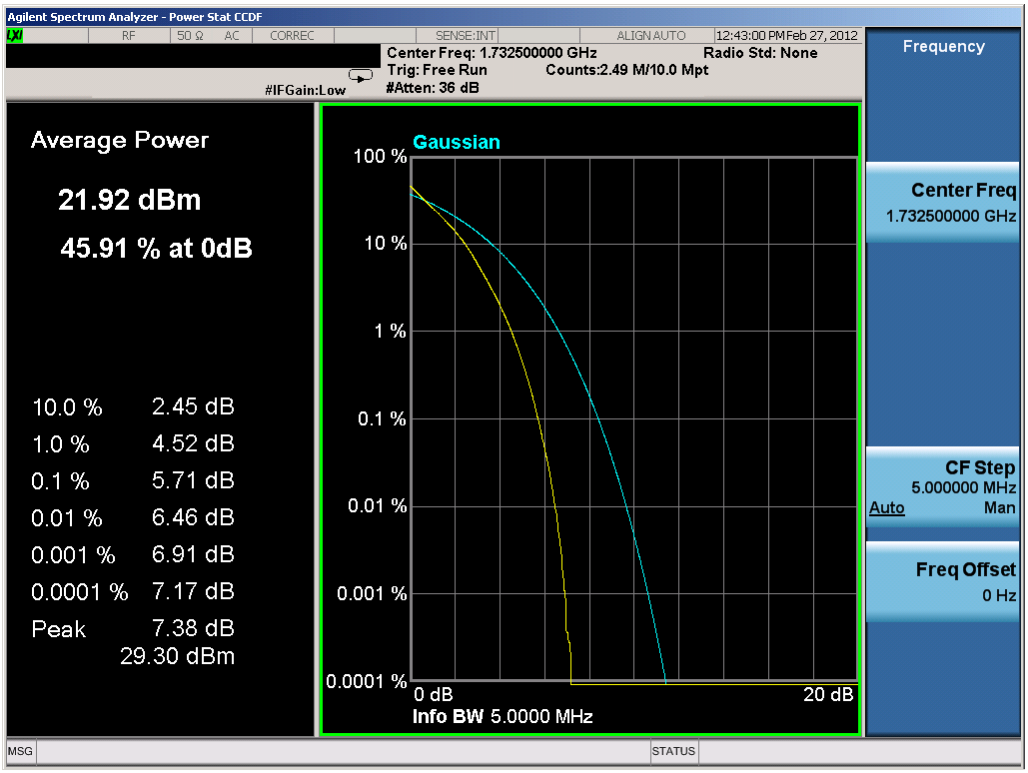
Plot 8-2. Lower Band Edge Plot (QPSK – RB Size 1, Offset 0)



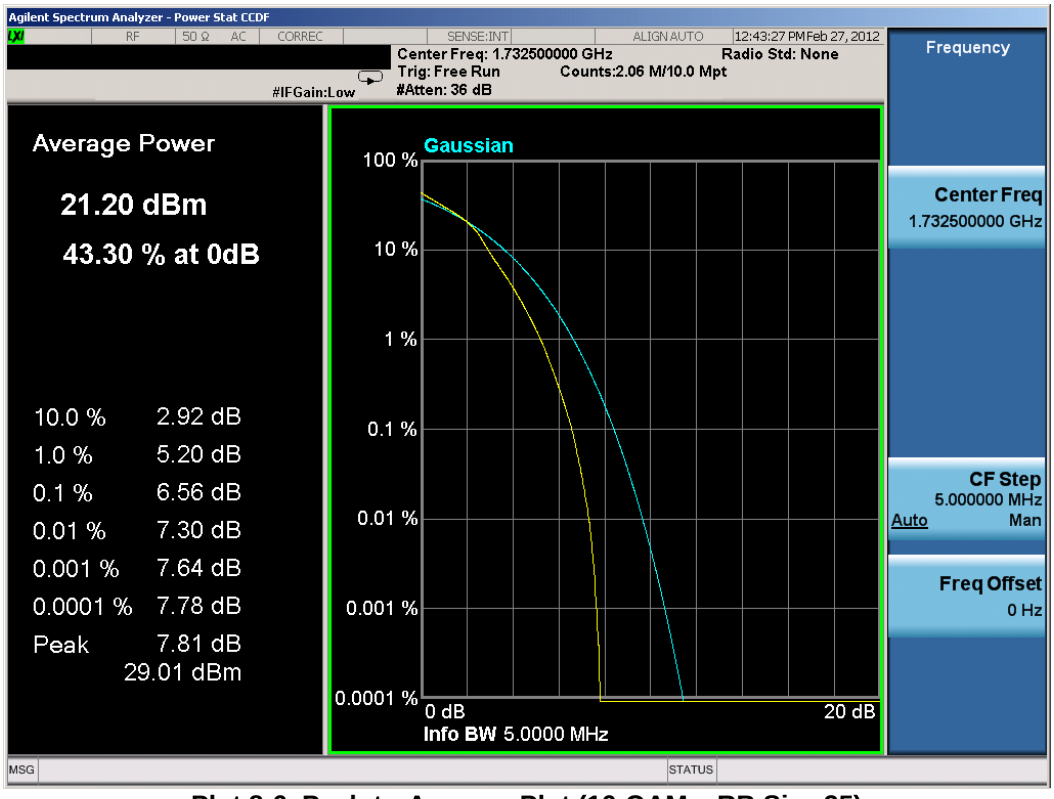
Plot 8-3. Occupied Bandwidth Plot (QPSK – RB Size 25)



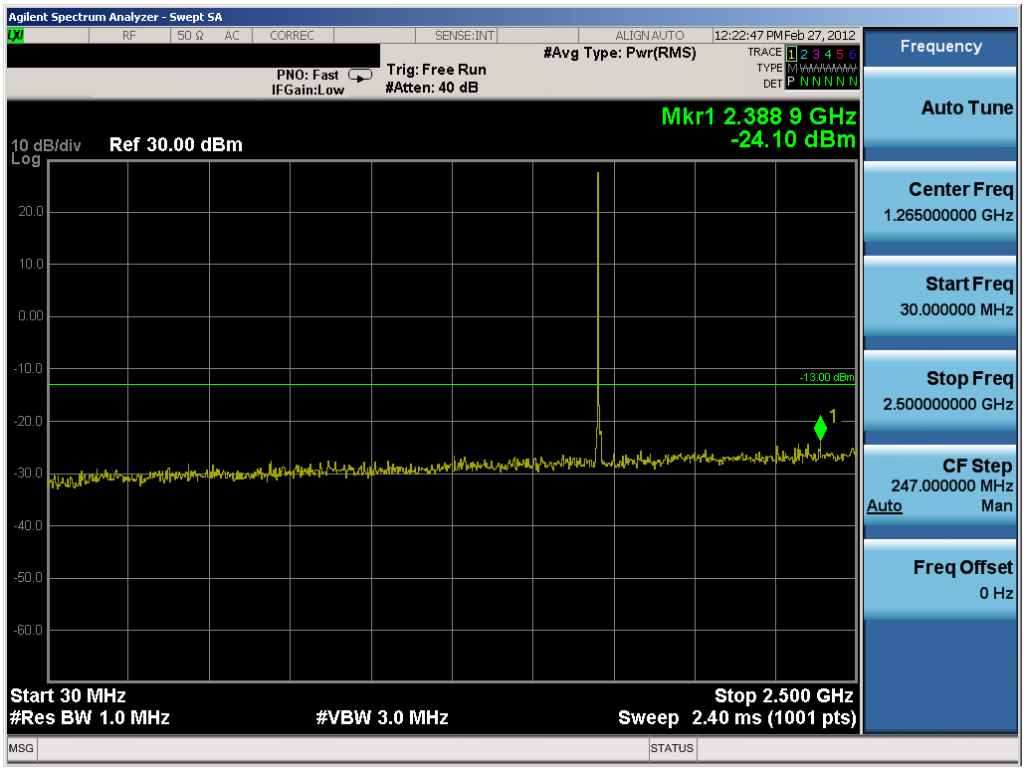
Plot 8-4. Occupied Bandwidth Plot (16-QAM – RB Size 25)



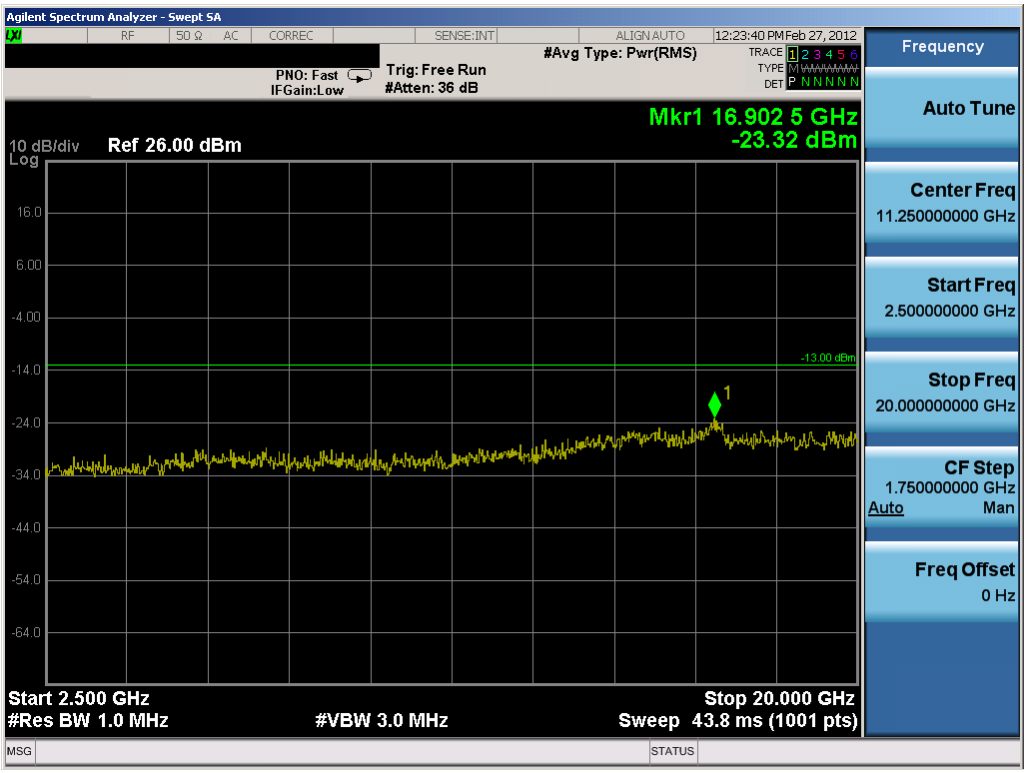
Plot 8-5. Peak-to-Average Plot (QPSK – RB Size 25)



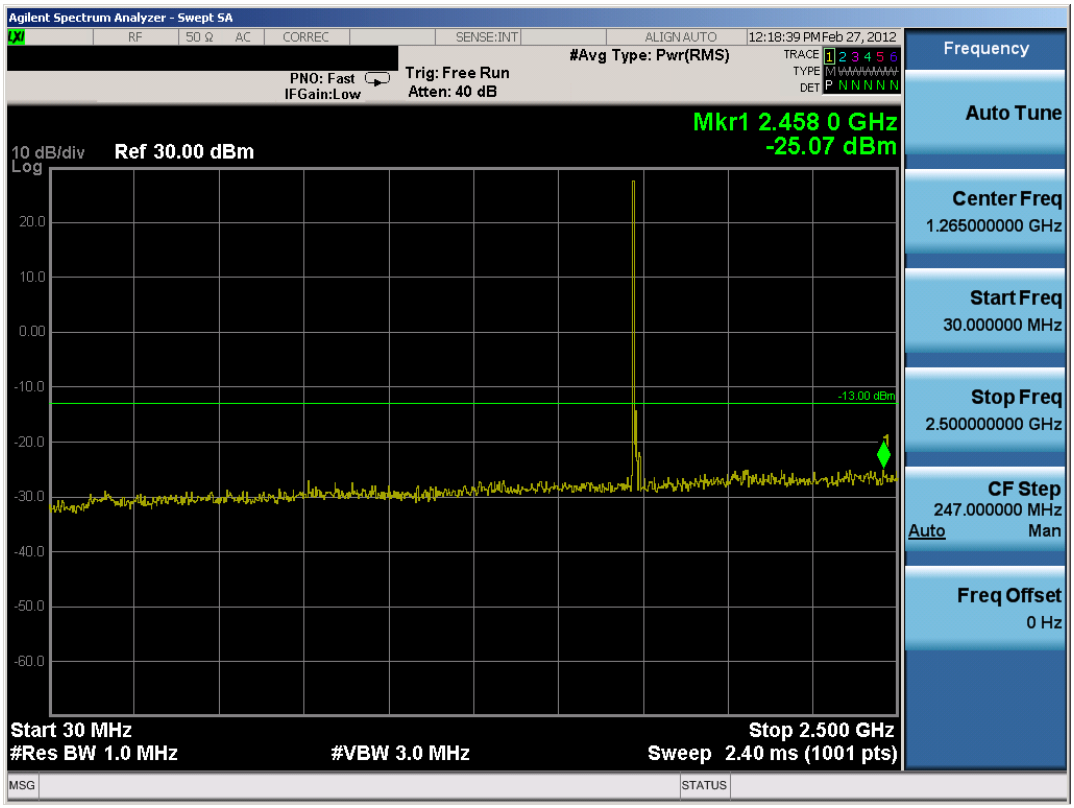
Plot 8-6. Peak-to-Average Plot (16-QAM – RB Size 25)



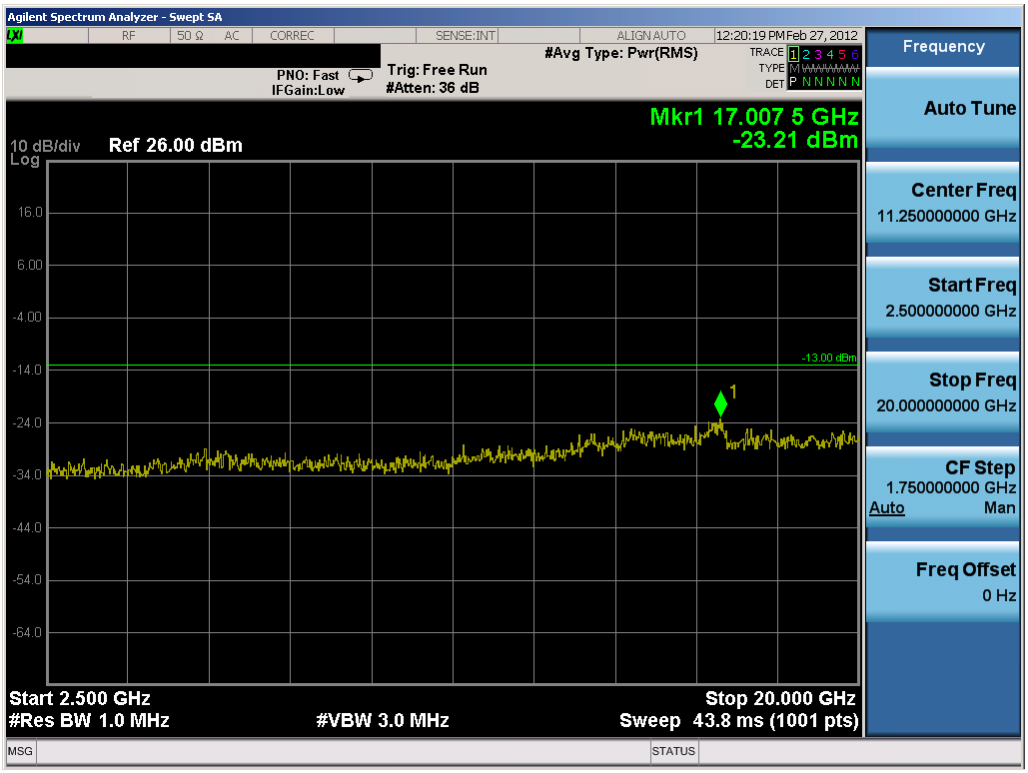
Plot 8-7. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



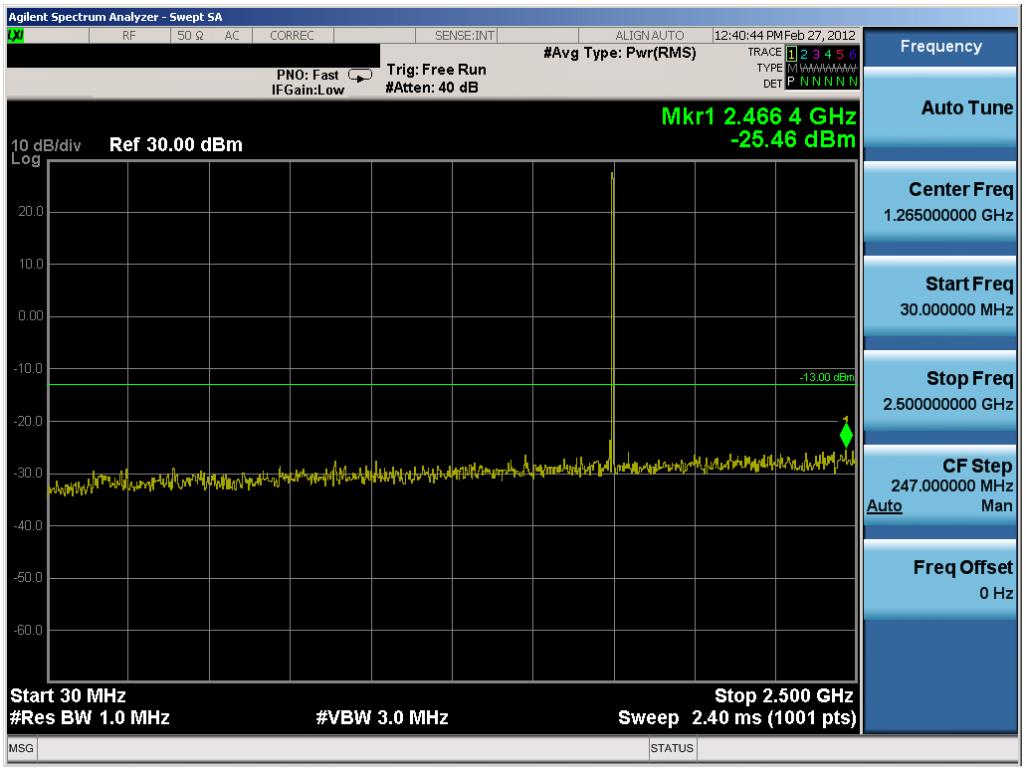
Plot 8-8. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



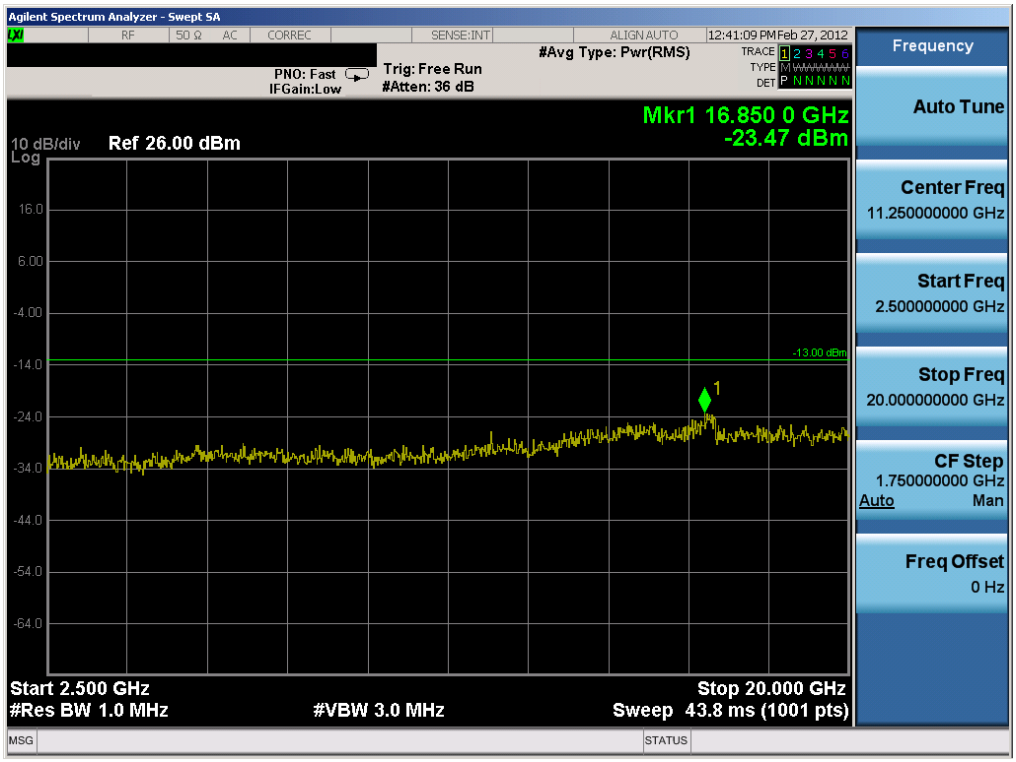
Plot 8-9. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



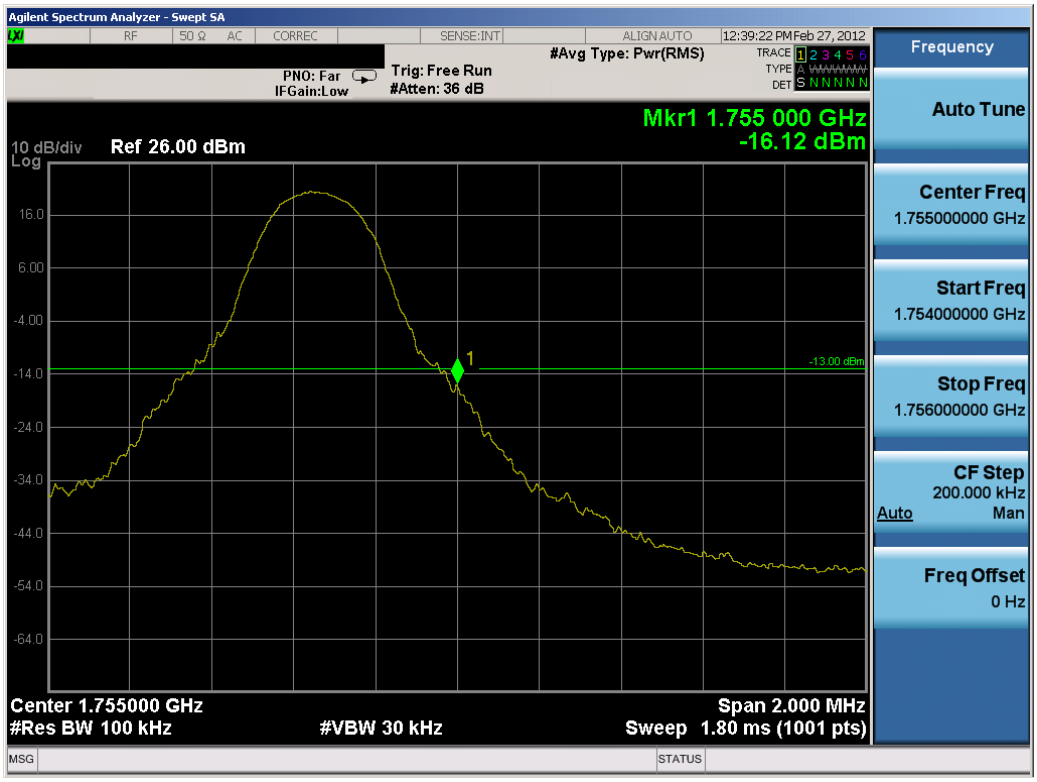
Plot 8-10. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



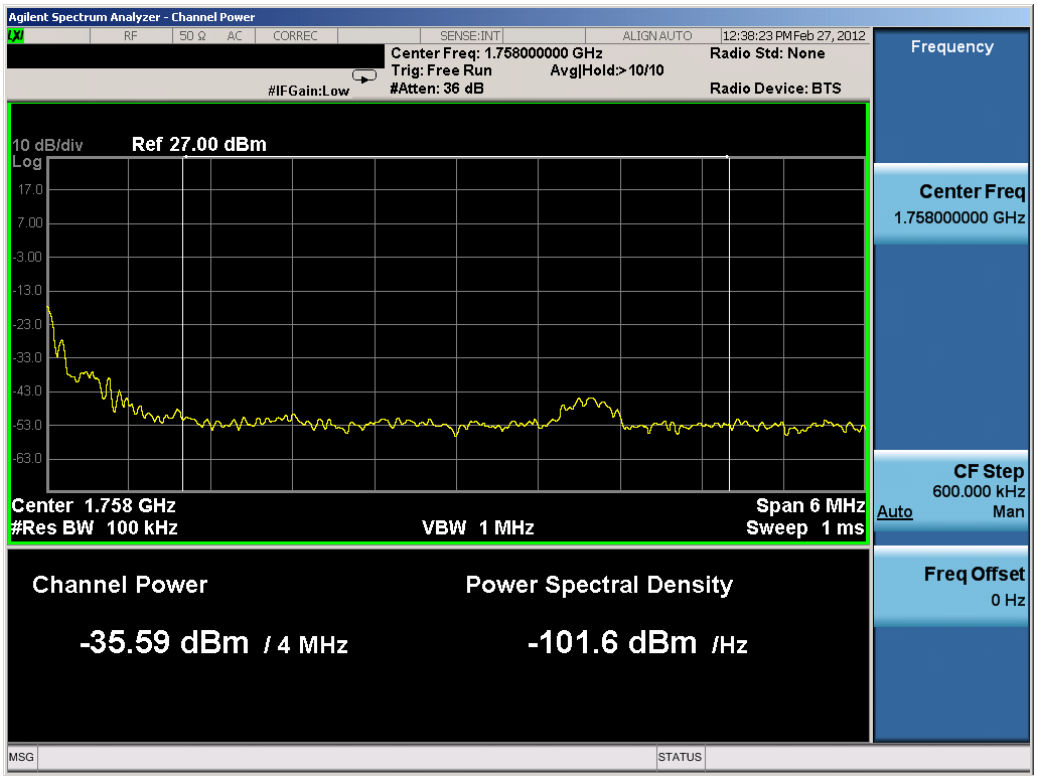
Plot 8-11. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



Plot 8-12. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)

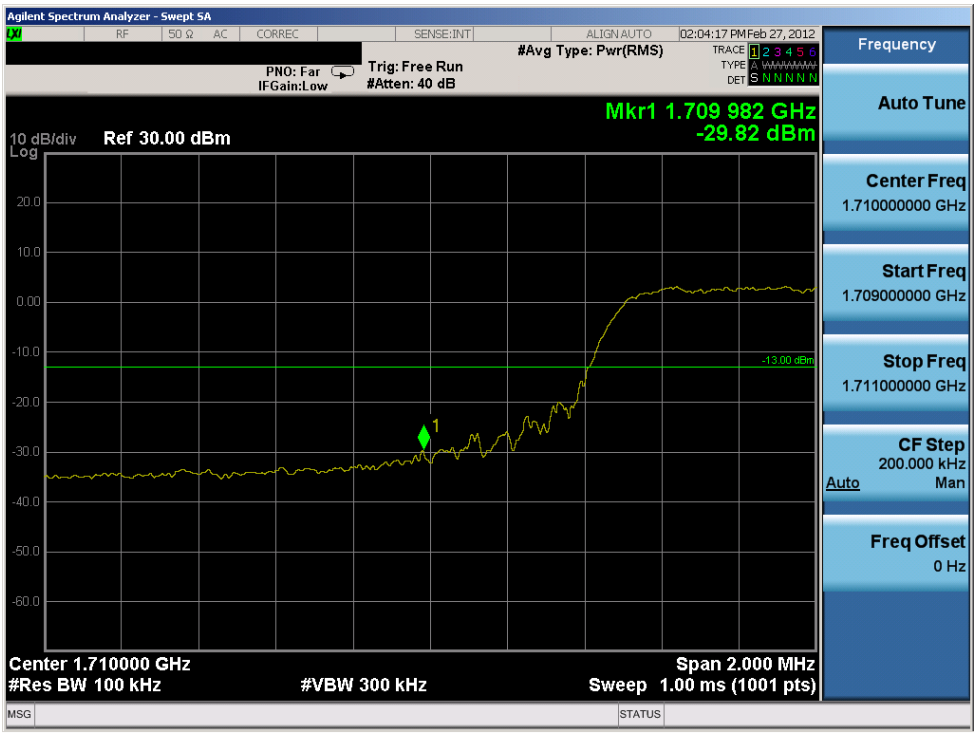


Plot 8-13. Upper Band Edge Plot (QPSK – RB Size 1, Offset 24)



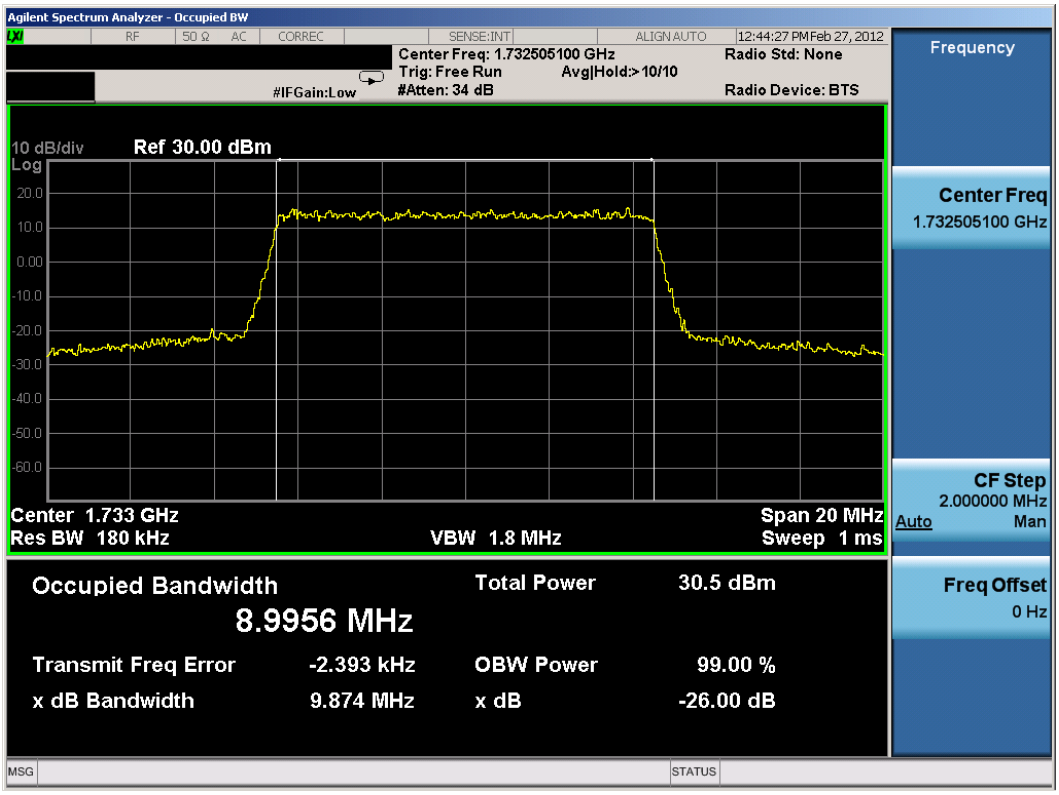
Plot 8-14. Upper Band Edge Plot (QPSK – RB Size 1, Offset 24)

9.0 BAND 4 – 10 MHZ BW

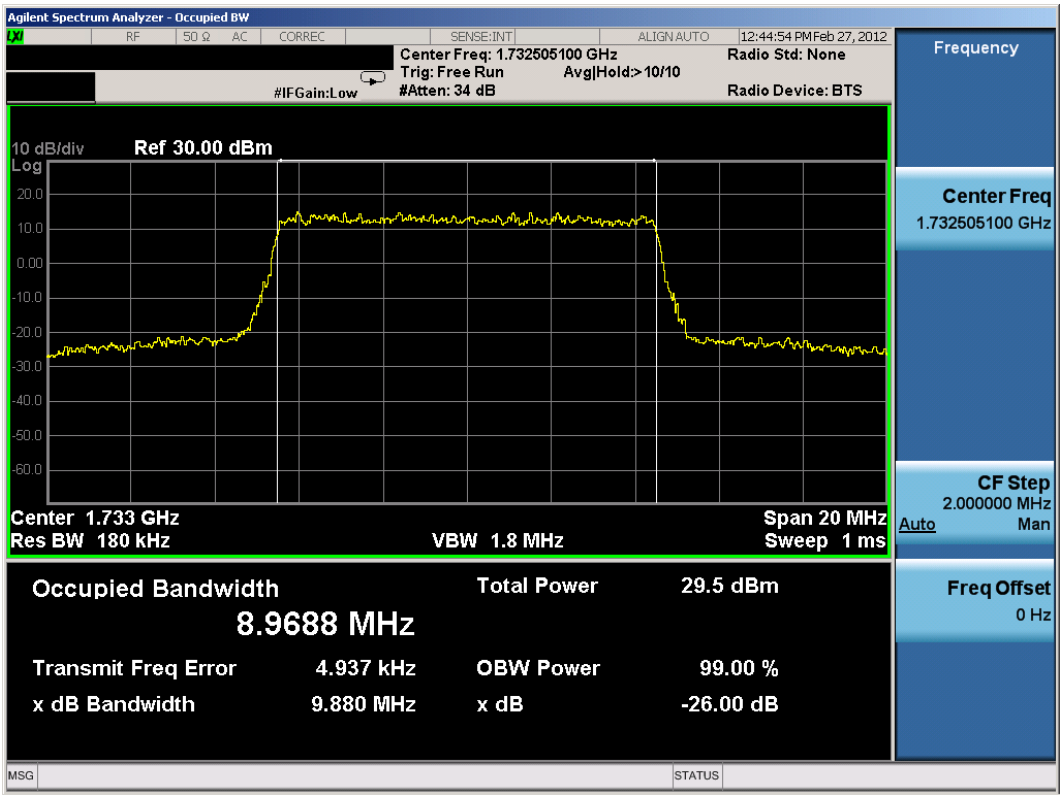


Plot 9-1. Lower Band Edge Plot (QPSK – RB Size 50)

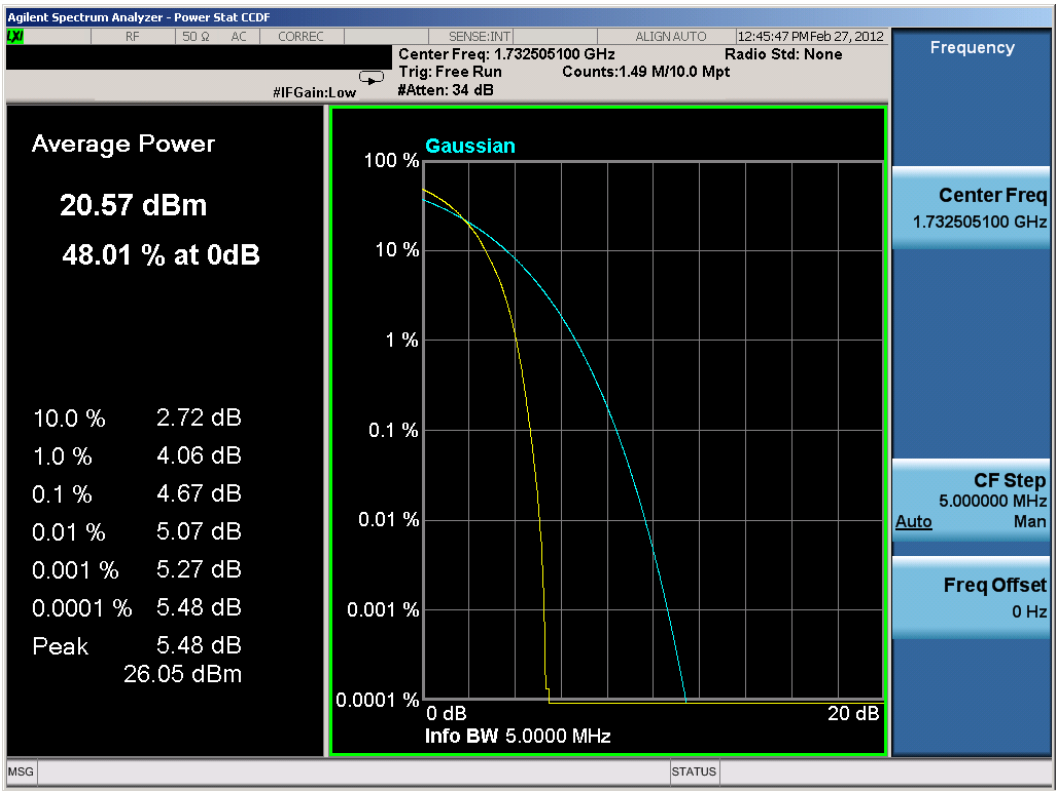
Plot 9-2. Lower Band Edge Plot (QPSK – RB Size 50)



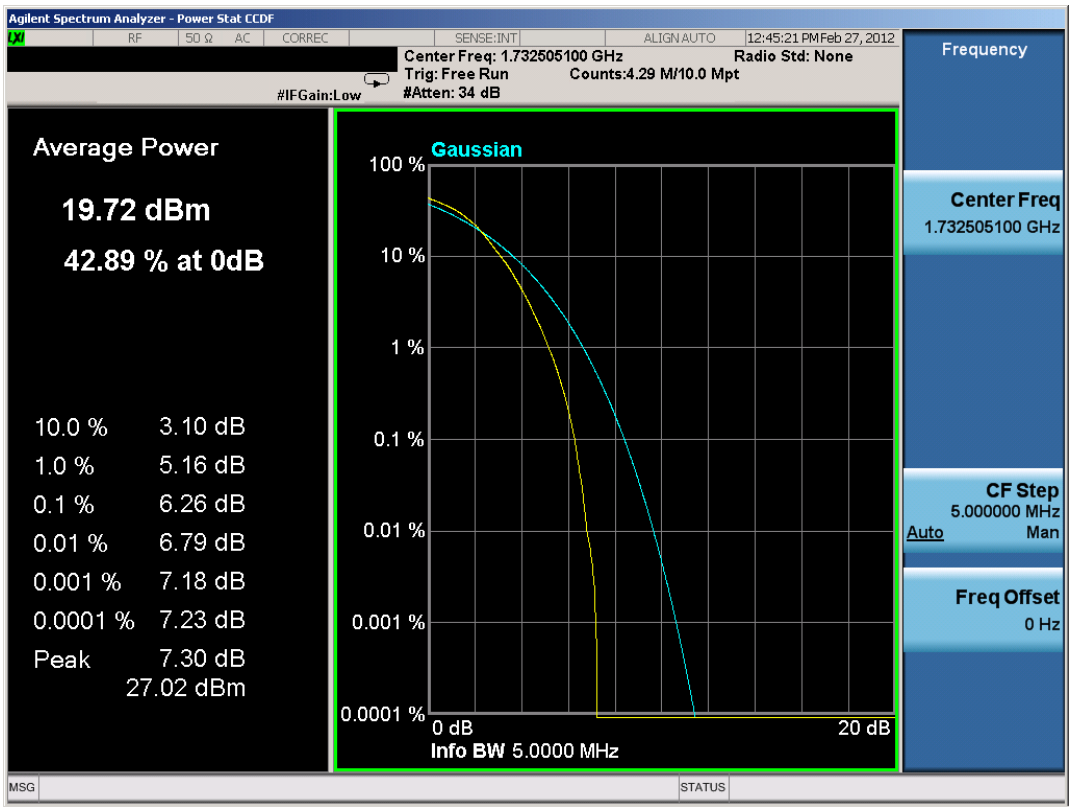
Plot 9-3. Occupied Bandwidth Plot (QPSK – RB Size 50)



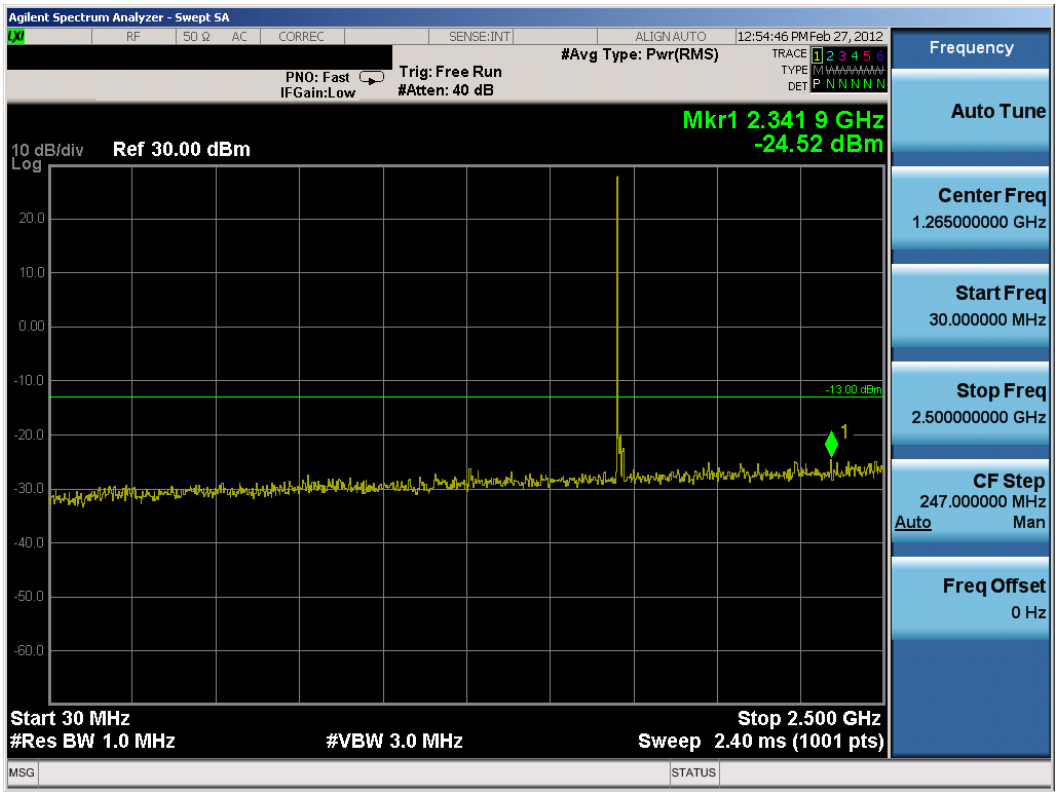
Plot 9-4. Occupied Bandwidth Plot (16-QAM – RB Size 50)



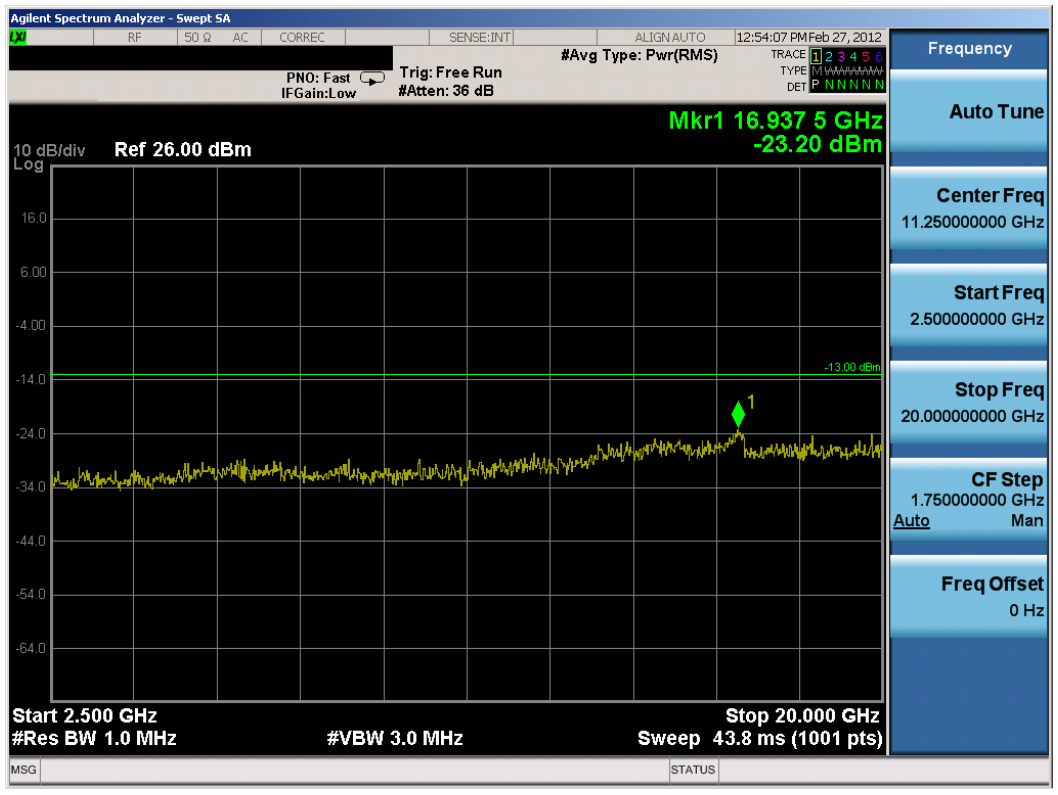
Plot 9-5. Peak-to-Average Plot (QPSK – RB Size 50)



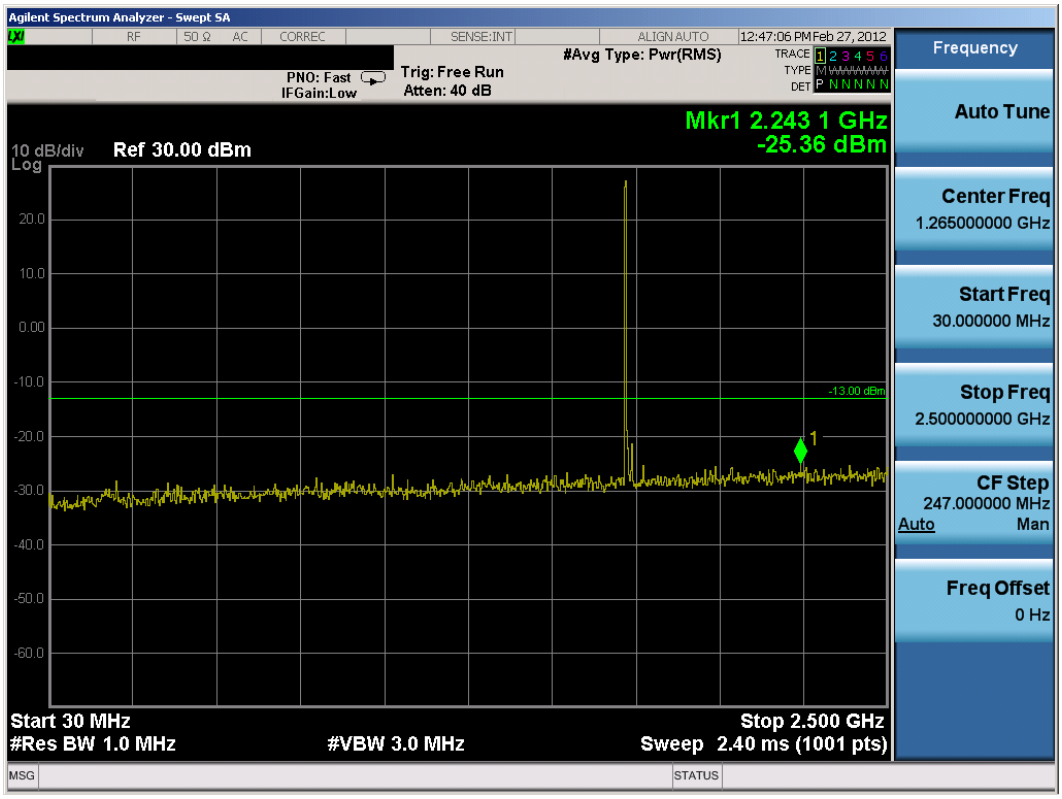
Plot 9-6. Peak-to-Average Plot (16-QAM – RB Size 50)



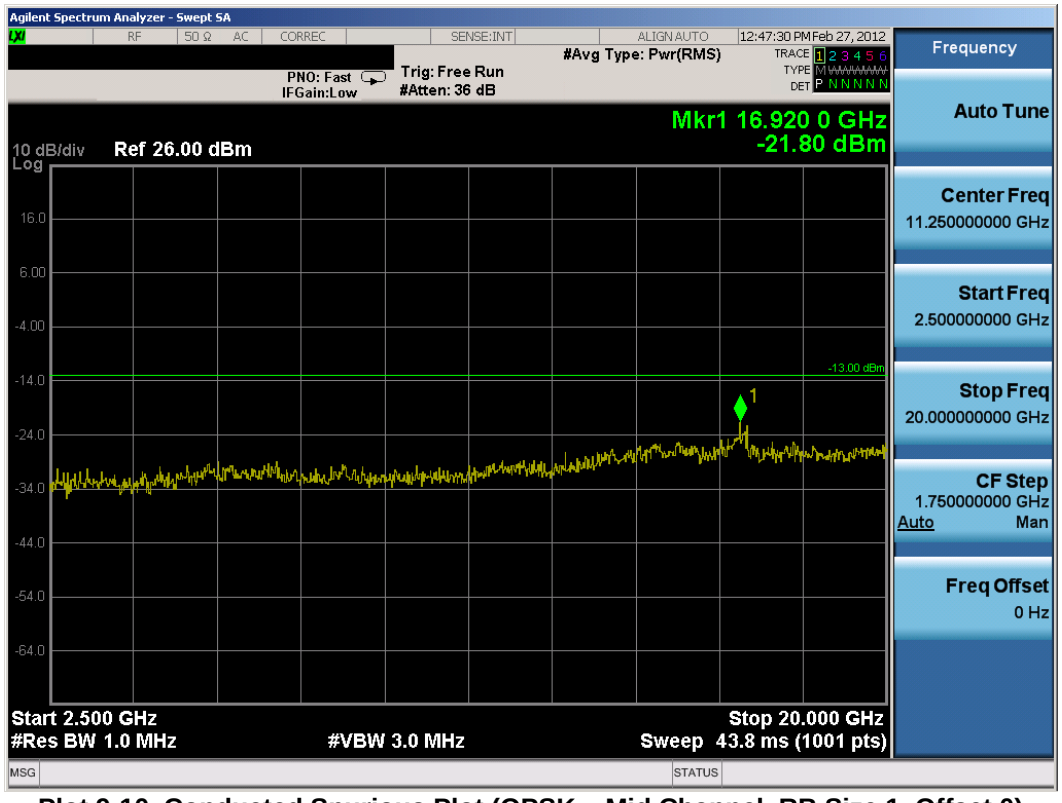
Plot 9-7. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



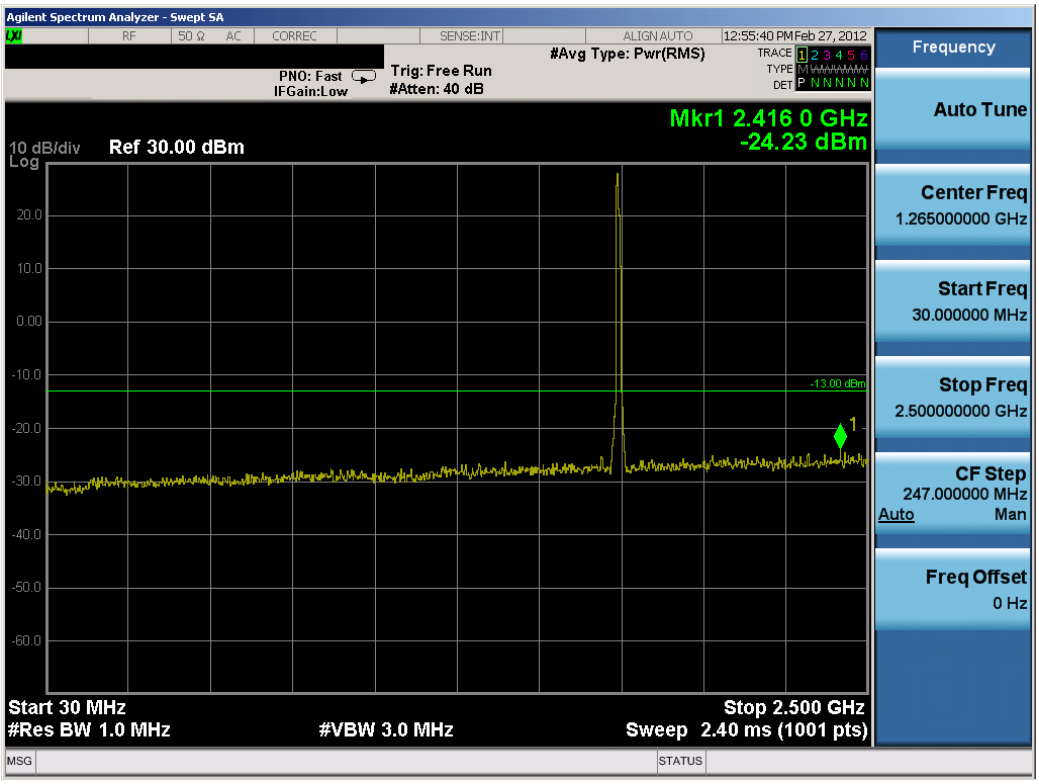
Plot 9-8. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



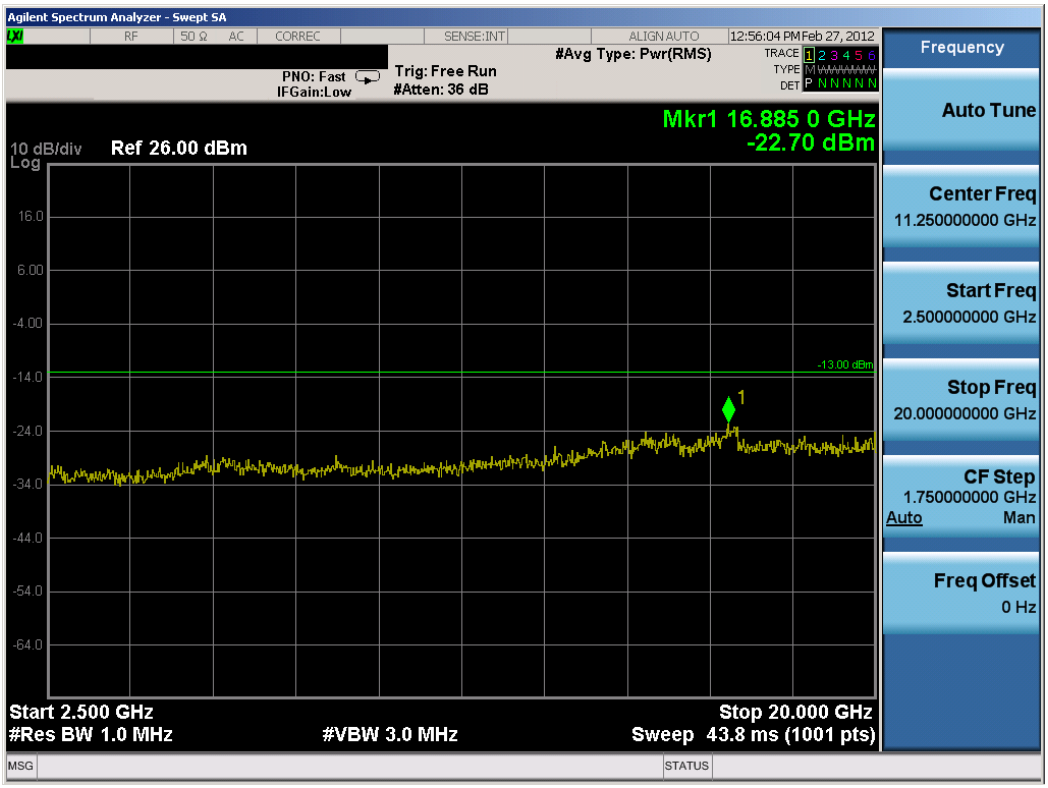
Plot 9-9. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



Plot 9-10. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)

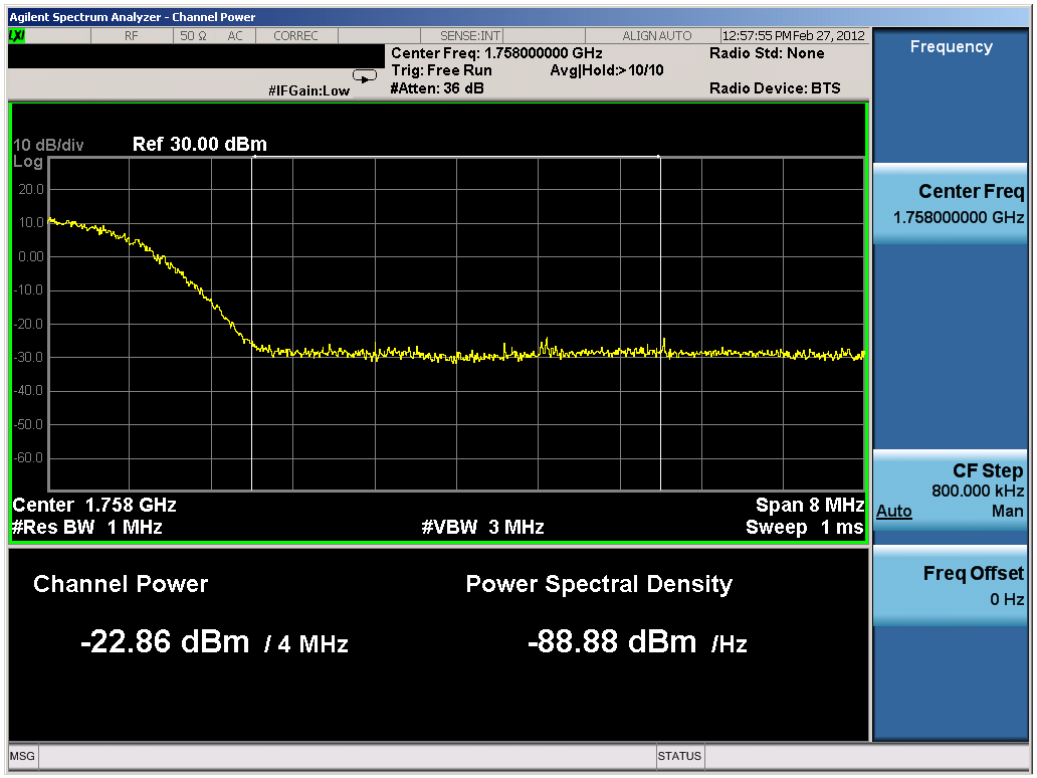


Plot 9-11. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



Plot 9-12. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)

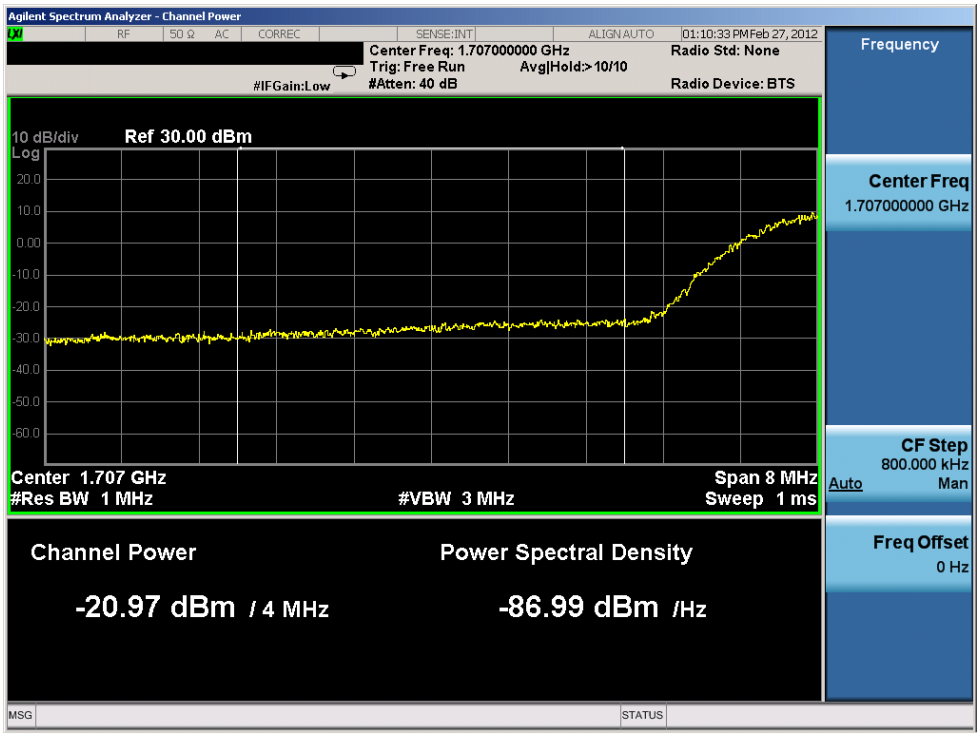
Plot 9-13. Upper Band Edge Plot (QPSK – RB Size 50)



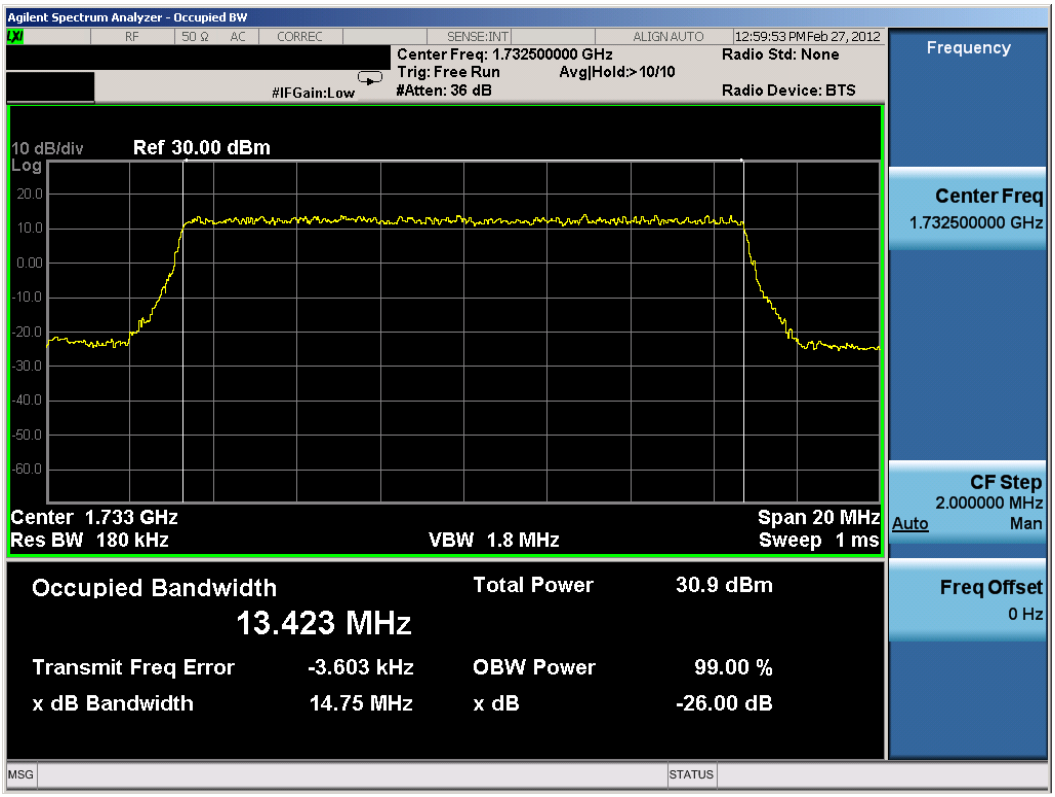
Plot 9-14. Upper Band Edge Plot (QPSK – RB Size 50)

10.0 BAND 4 – 15 MHZ BW

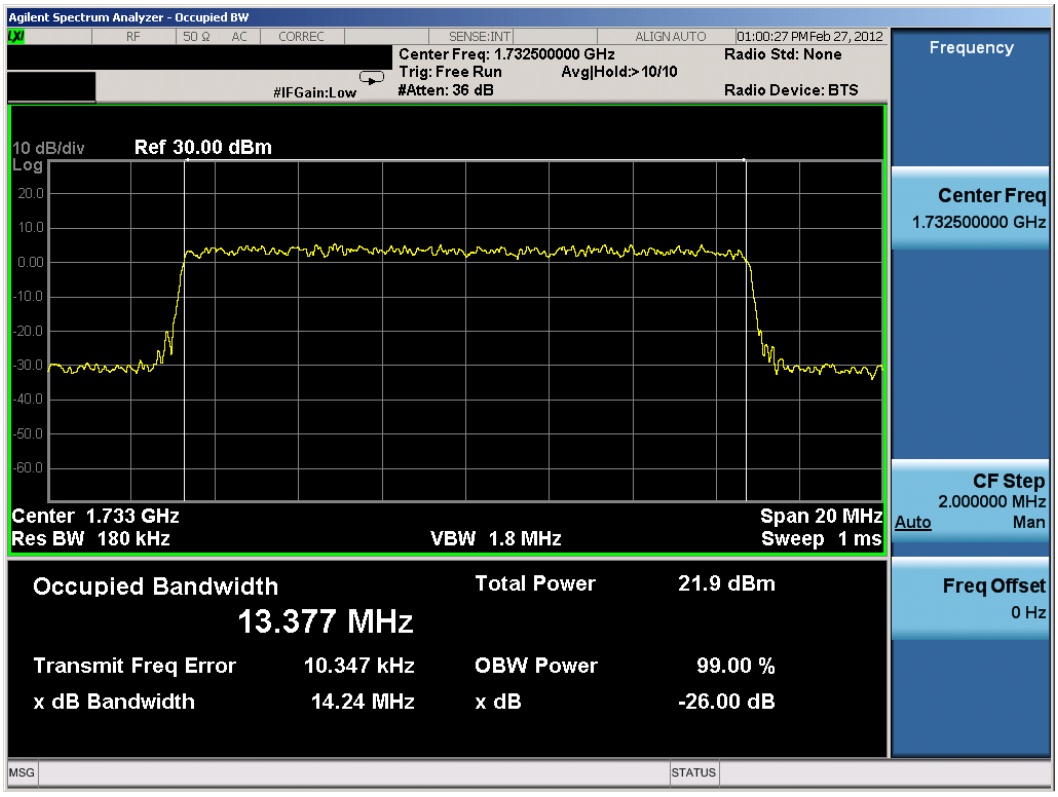
Plot 10-1. Lower Band Edge Plot (QPSK – RB Size 1, Offset 0)



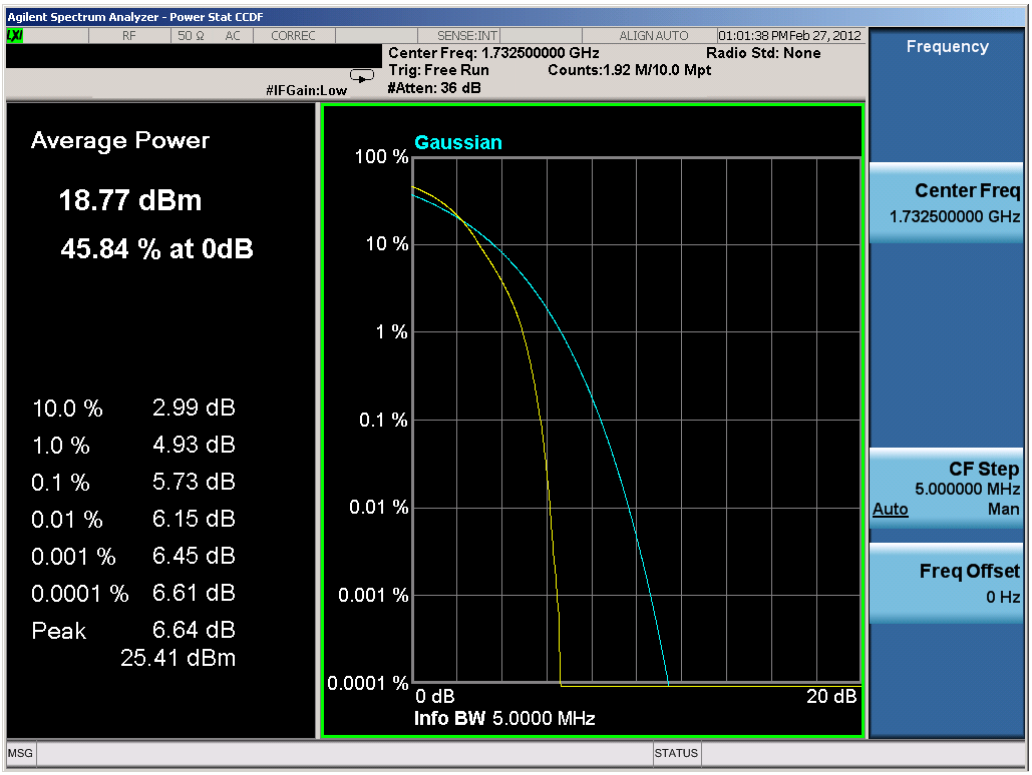
Plot 10-2. Lower Band Edge Plot (QPSK – RB Size 75)



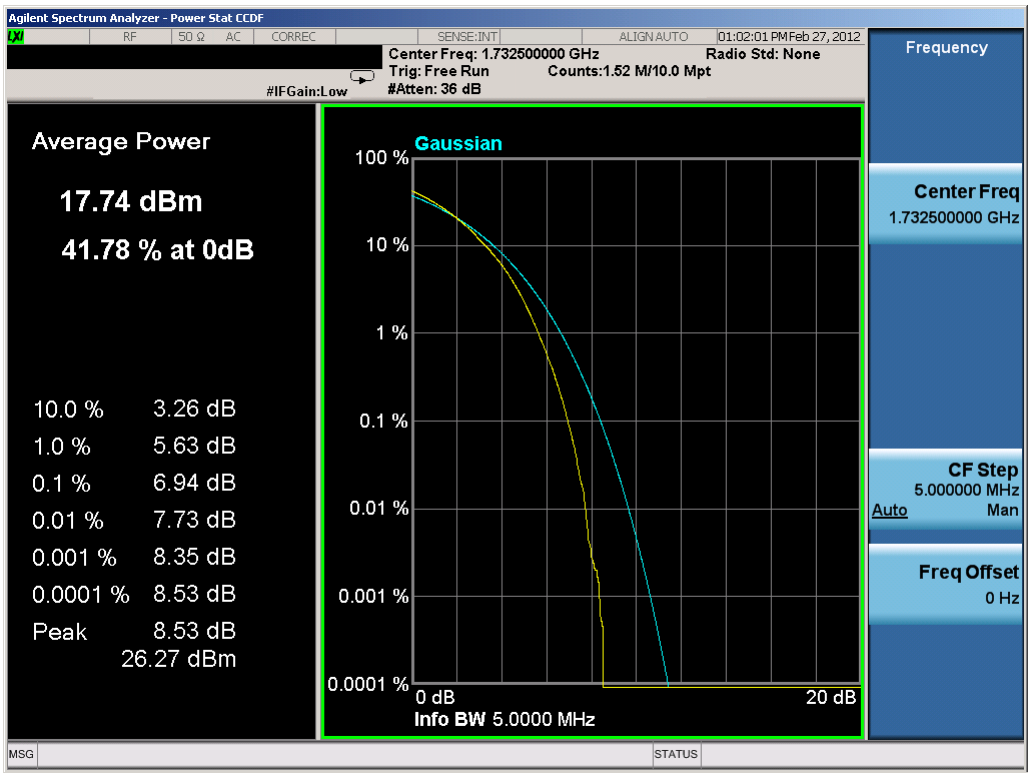
Plot 10-3. Occupied Bandwidth Plot (QPSK – RB Size 75)



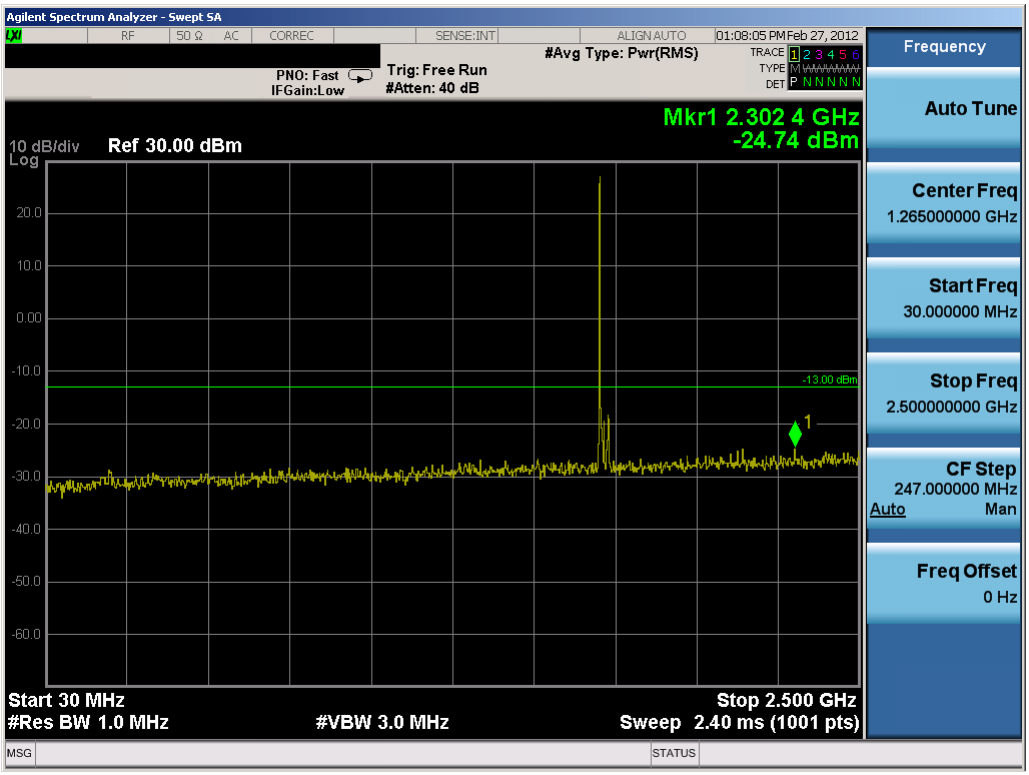
Plot 10-4. Occupied Bandwidth Plot (16-QAM – RB Size 75)



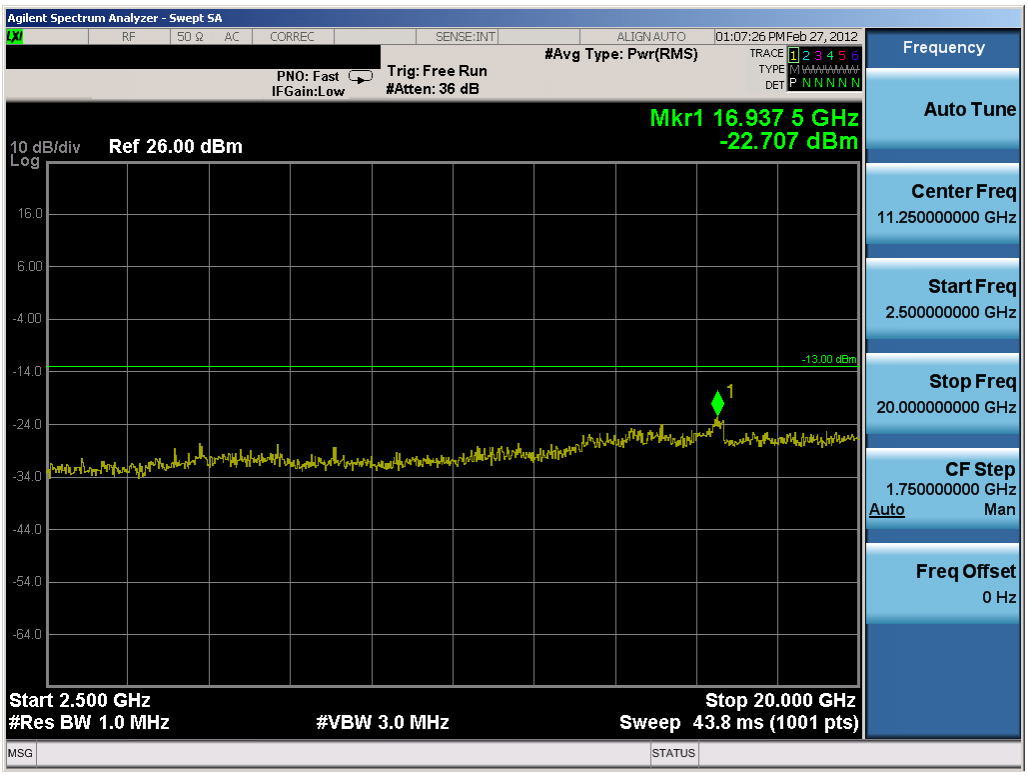
Plot 10-5. Peak-to-Average Plot (QPSK – RB Size 75)



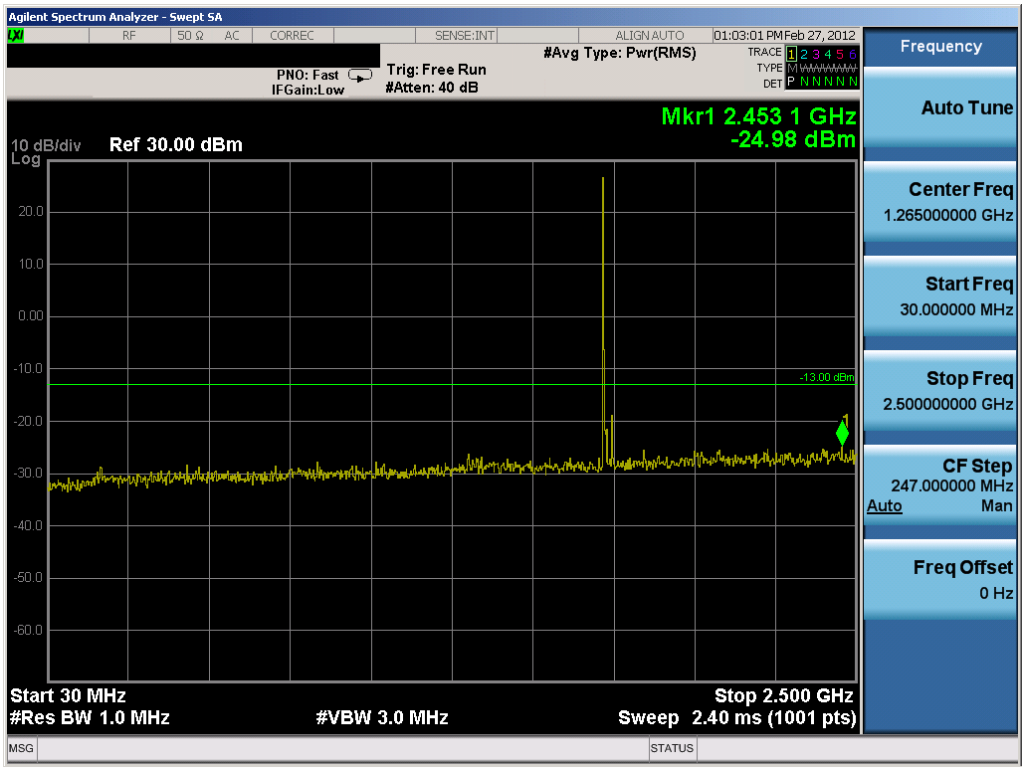
Plot 10-6. Peak-to-Average Plot (16-QAM – RB Size 75)



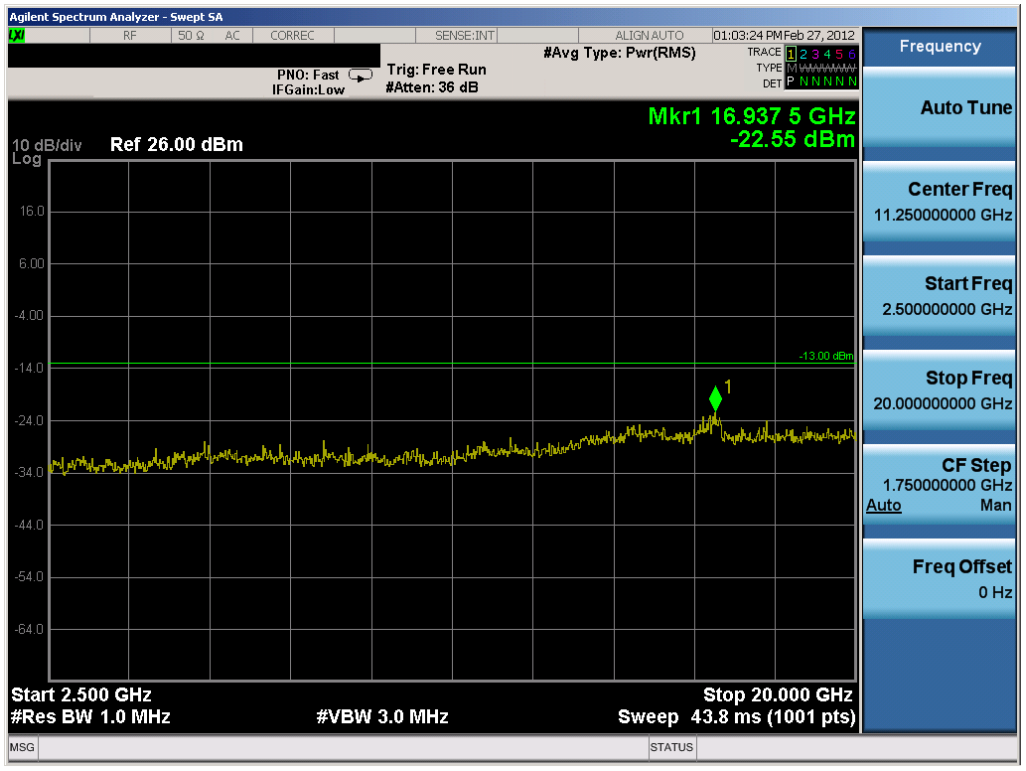
Plot 10-7. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



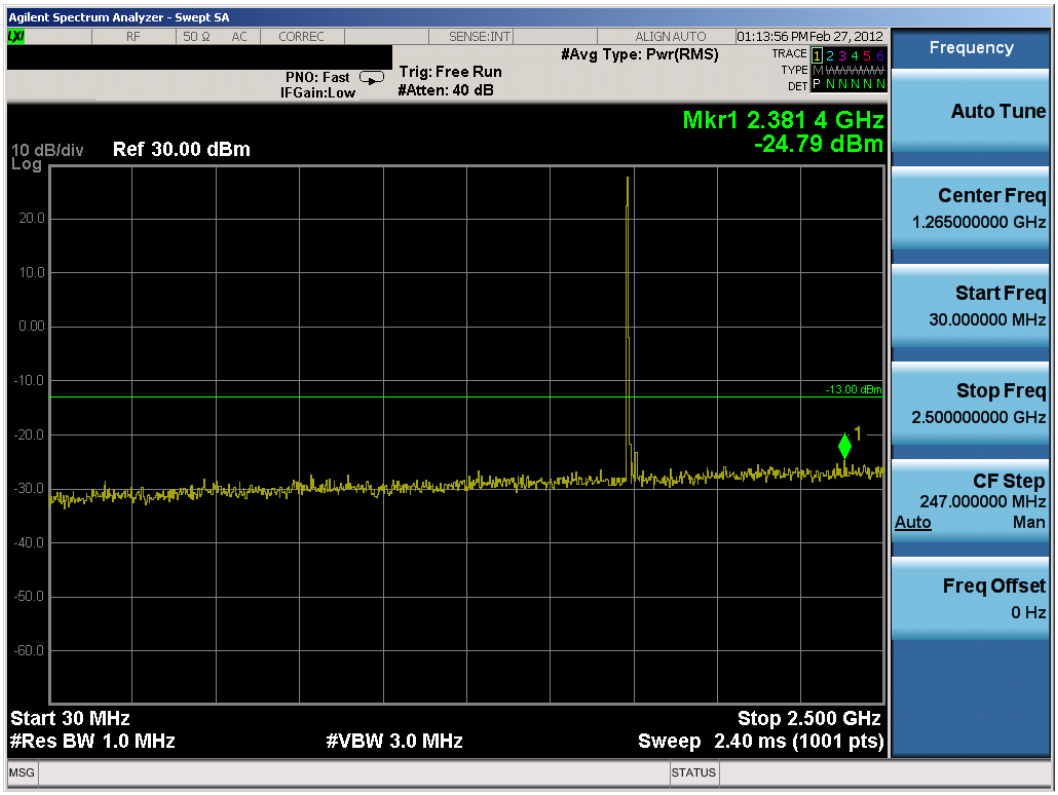
Plot 10-8. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



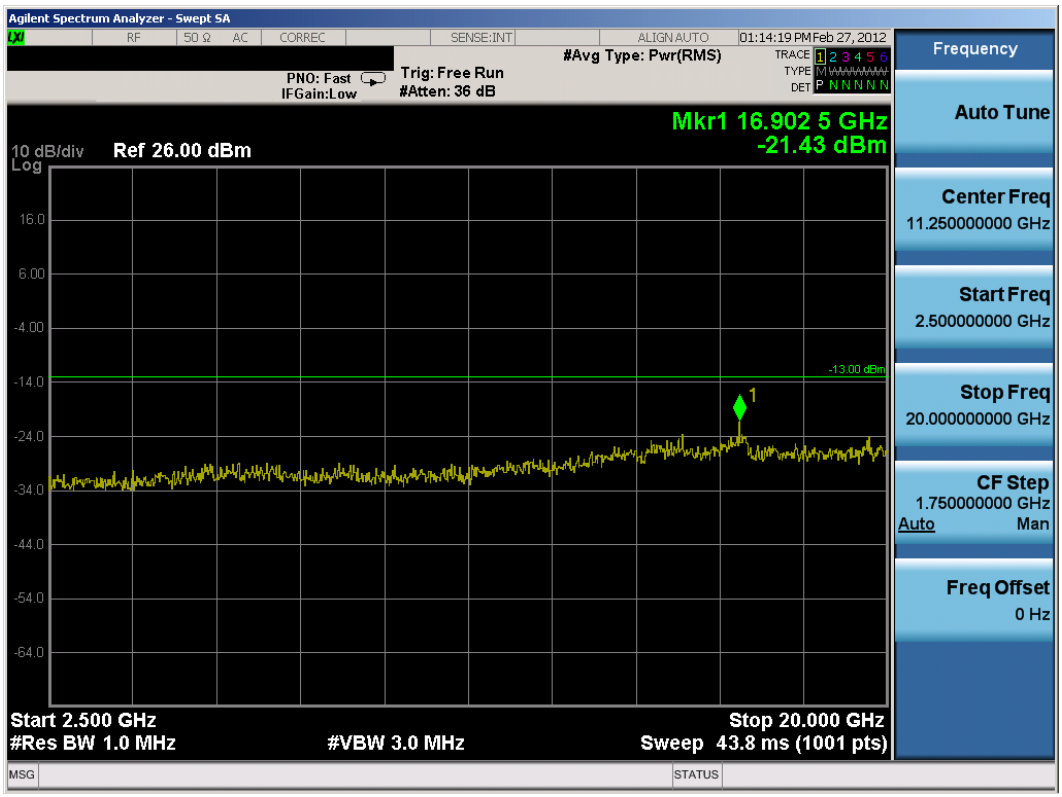
Plot 10-9. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



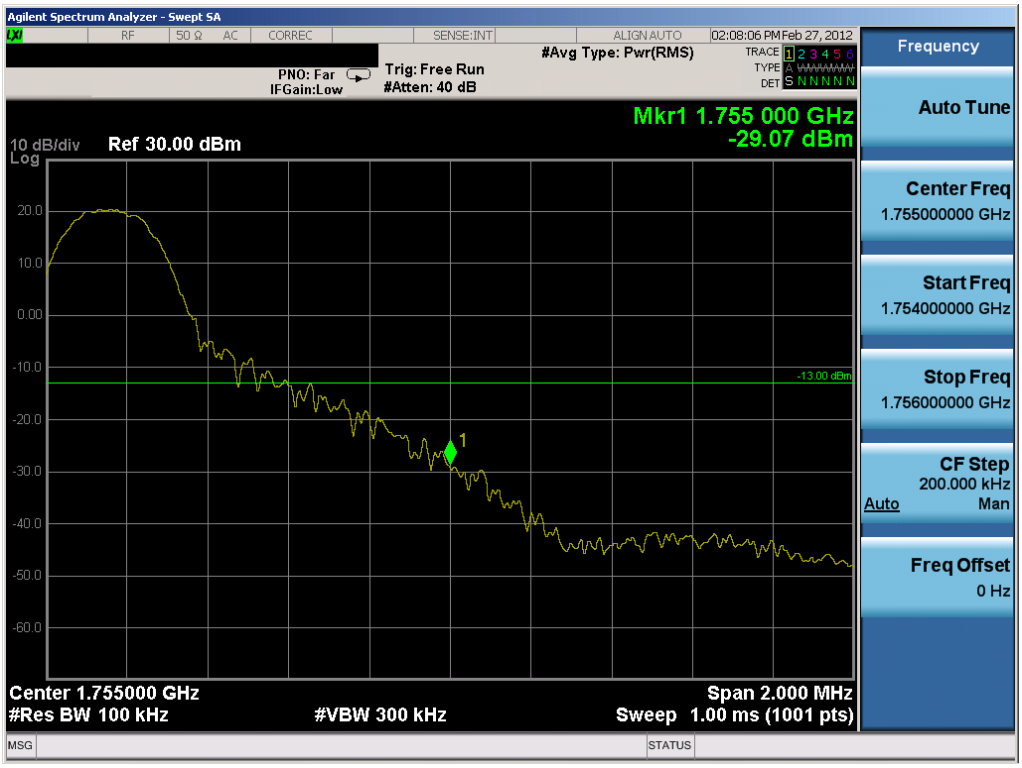
Plot 10-10. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



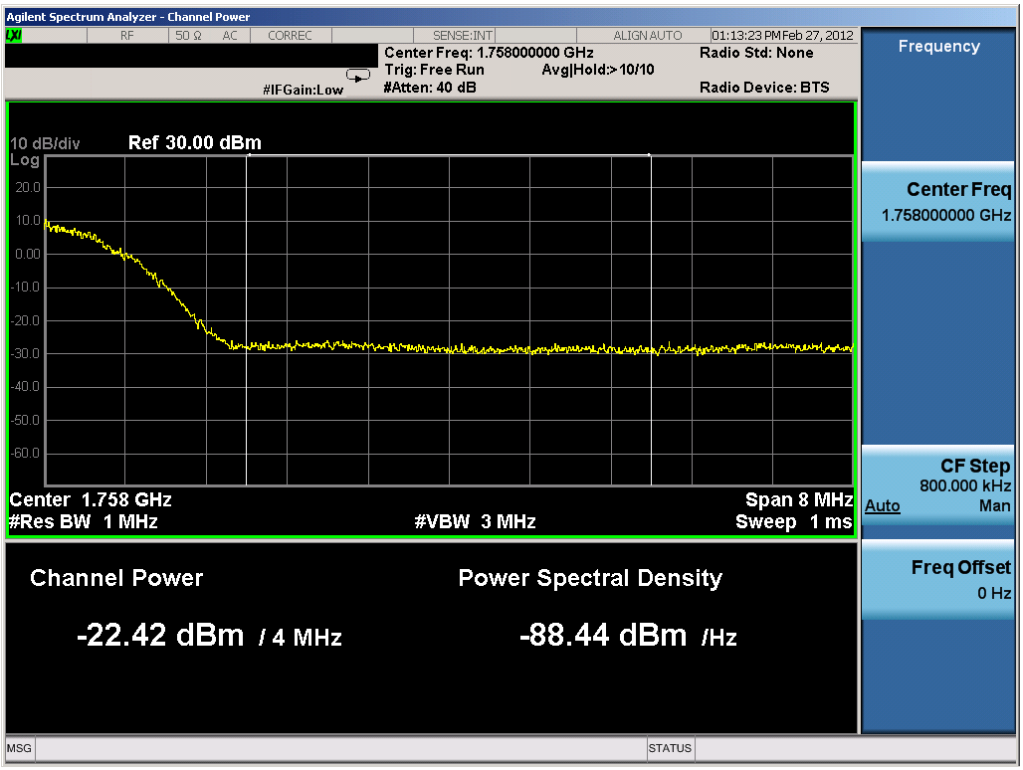
Plot 10-11. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



Plot 10-12. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



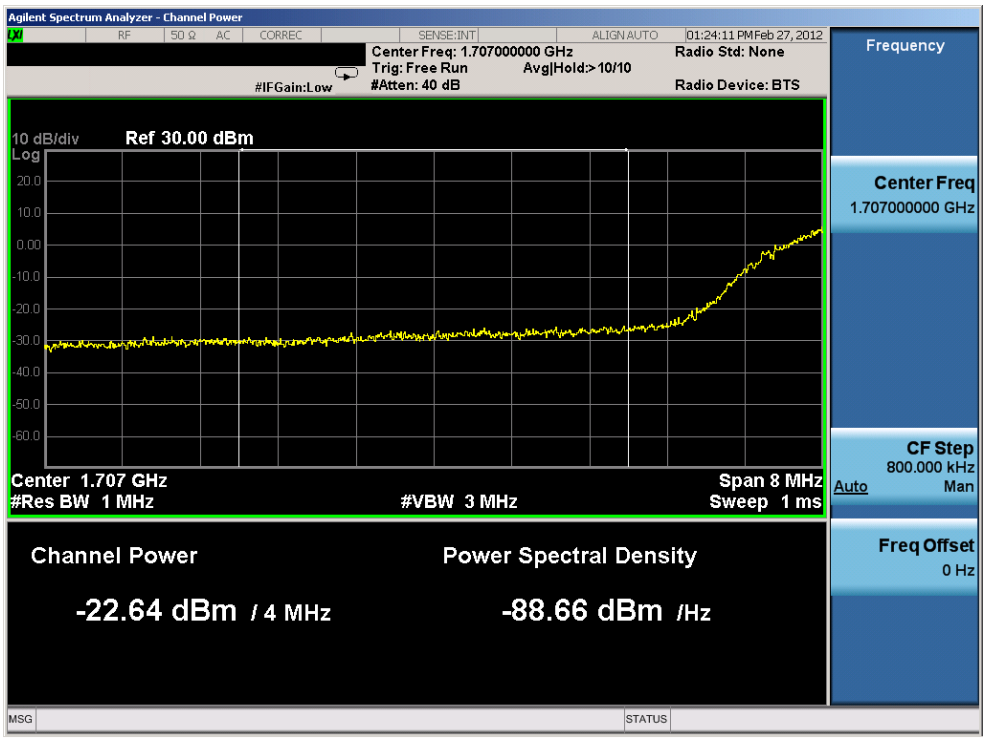
Plot 10-13. Upper Band Edge Plot (QPSK – RB Size 1, Offset 74)



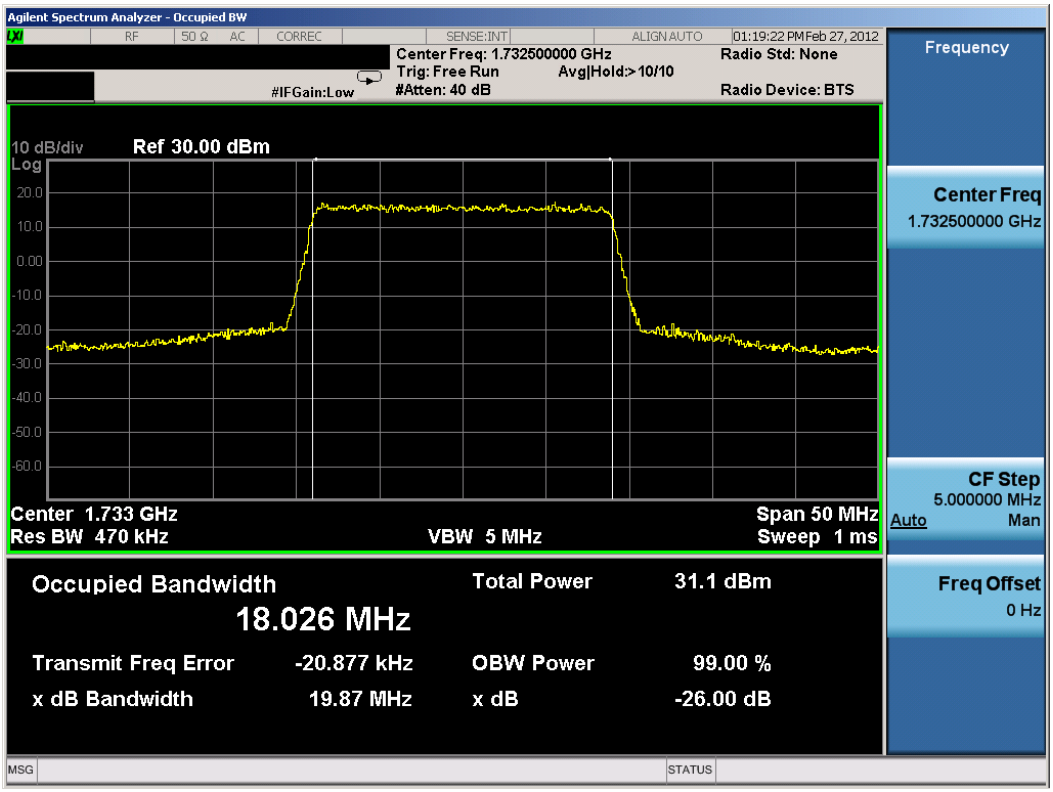
Plot 10-14. Upper Band Edge Plot (QPSK – RB Size 75)

11.0 BAND 4 – 20 MHZ BW

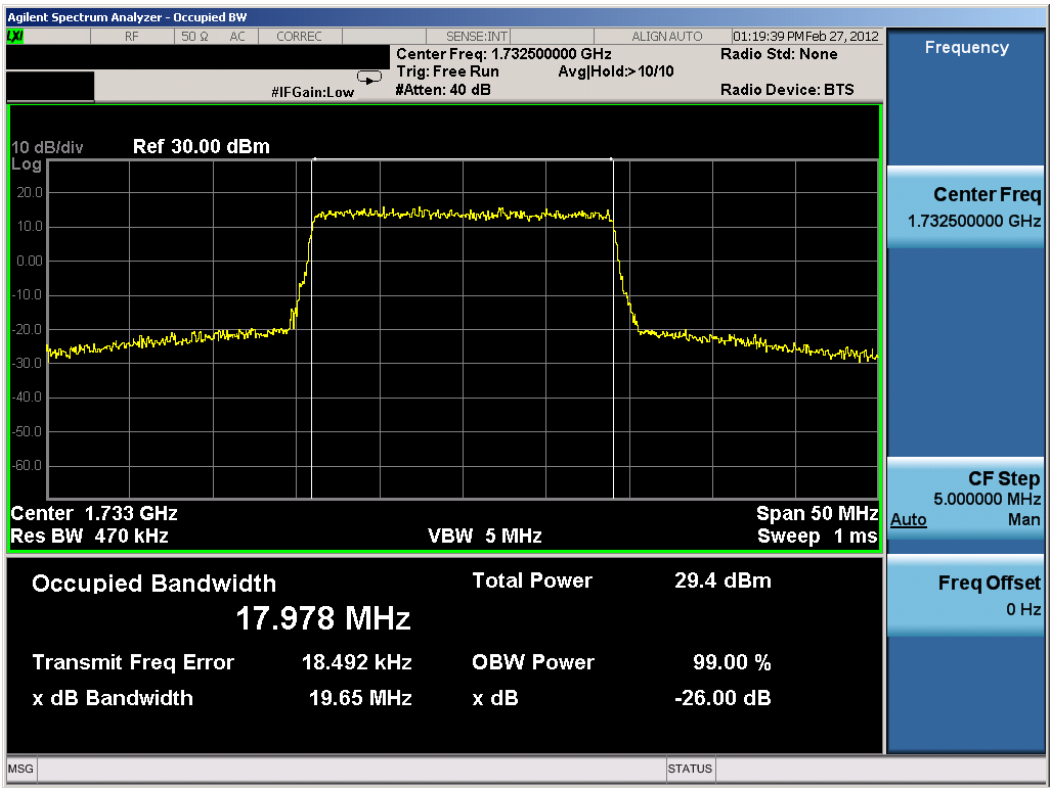
Plot 11-1. Lower Band Edge Plot (QPSK – RB Size 1, Offset 0)



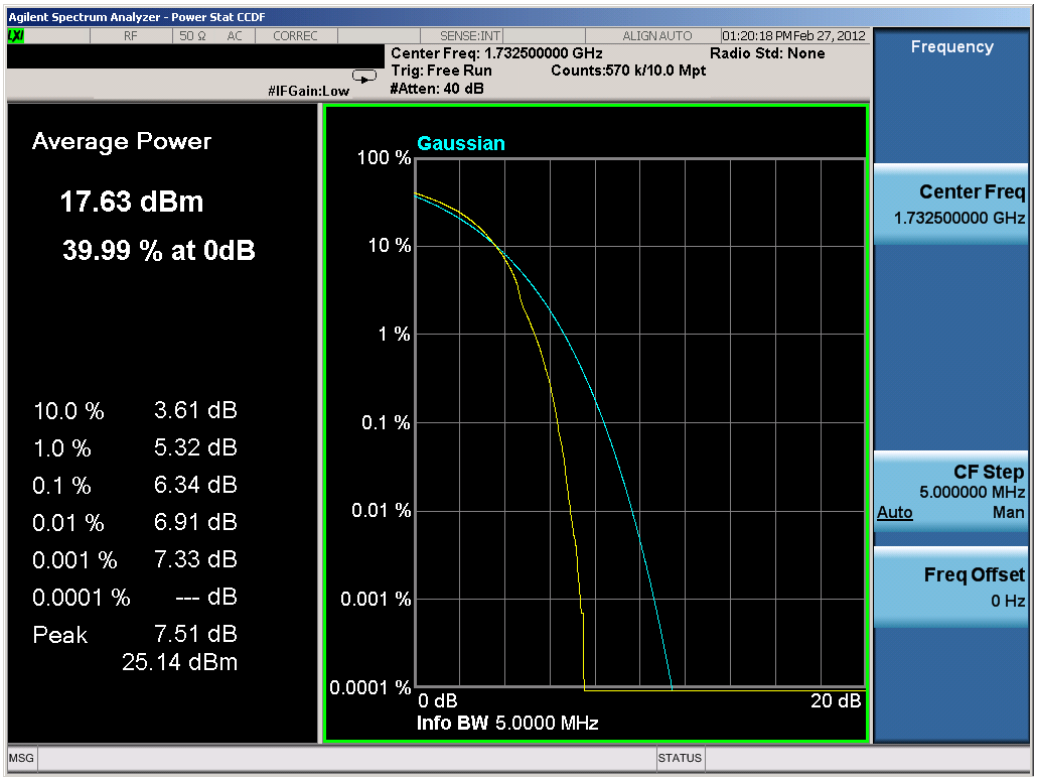
Plot 11-2. Lower Band Edge Plot (QPSK – RB Size 100)



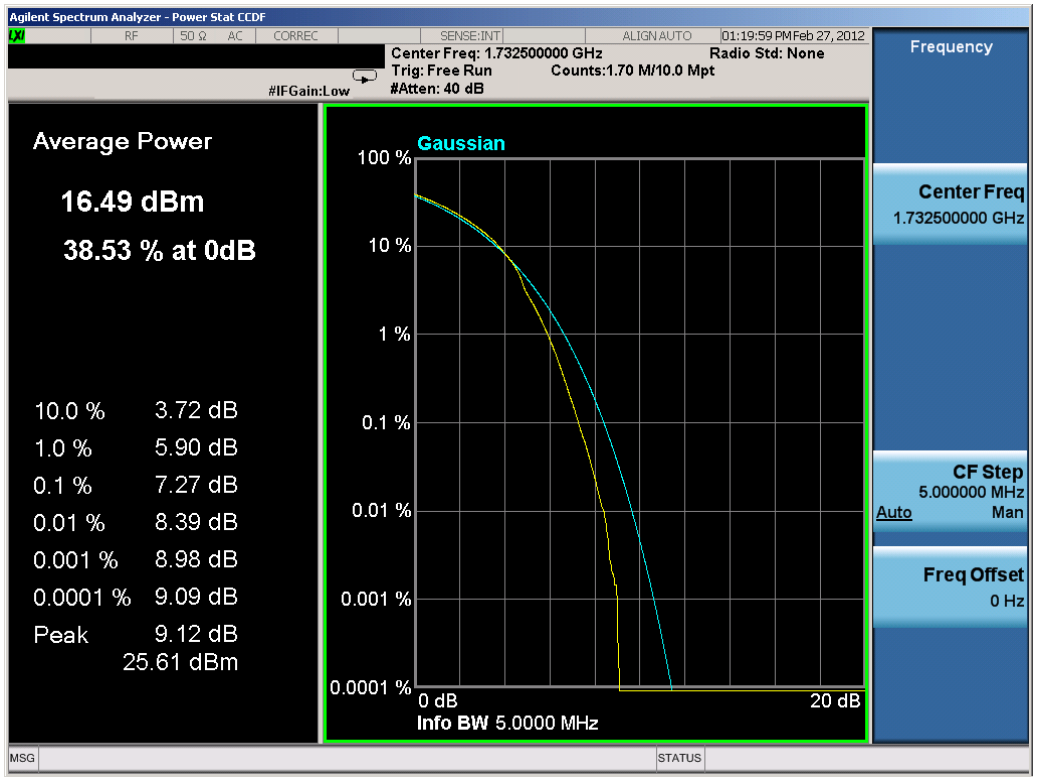
Plot 11-3. Occupied Bandwidth Plot (QPSK – RB Size 100)



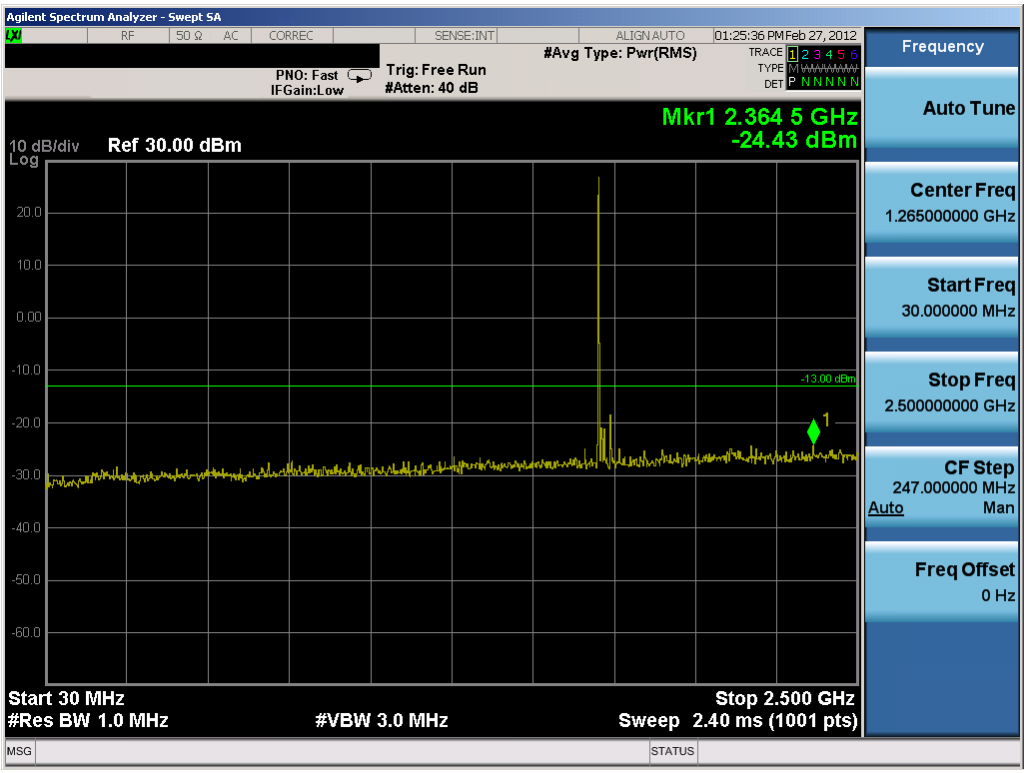
Plot 11-4. Occupied Bandwidth Plot (16-QAM – RB Size 100)



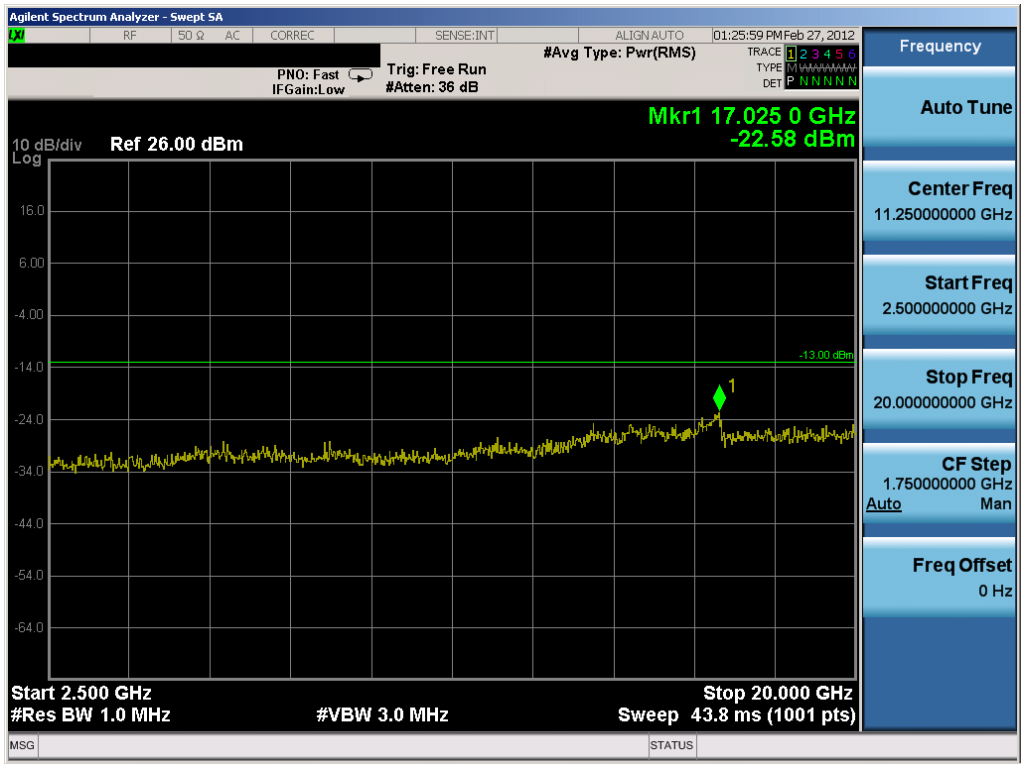
Plot 11-5. Peak-to-Average Plot (QPSK – RB Size 100)



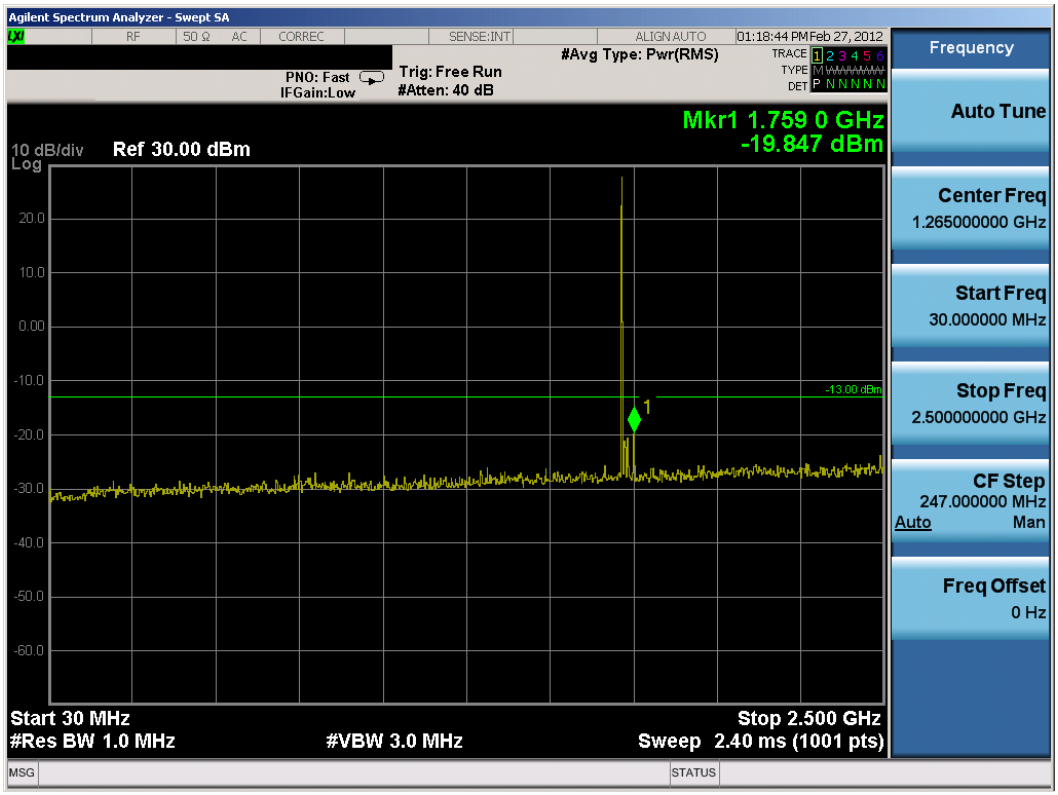
Plot 11-6. Peak-to-Average Plot (16-QAM – RB Size 100)



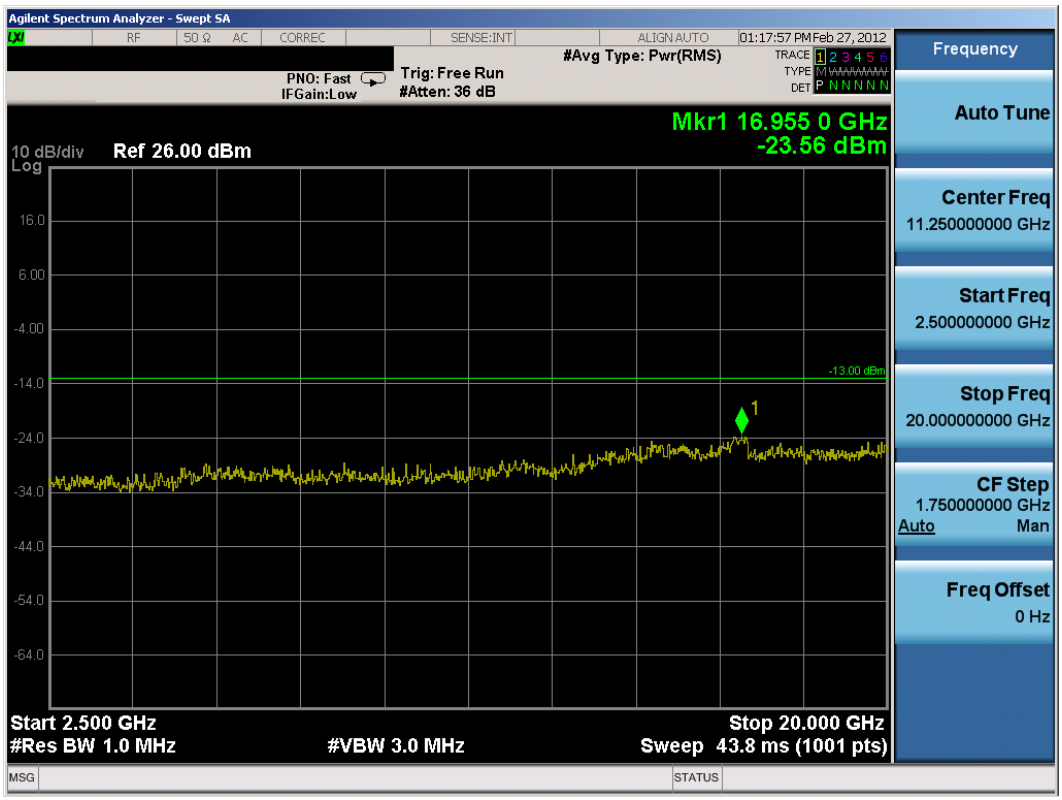
Plot 11-7. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



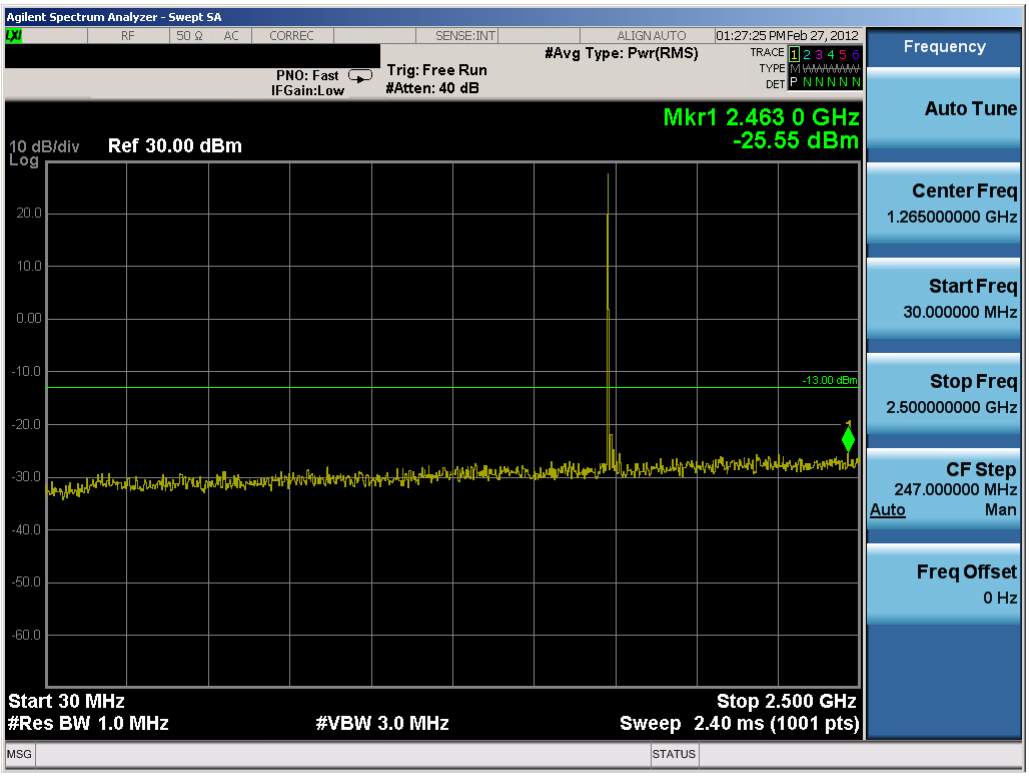
Plot 11-8. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



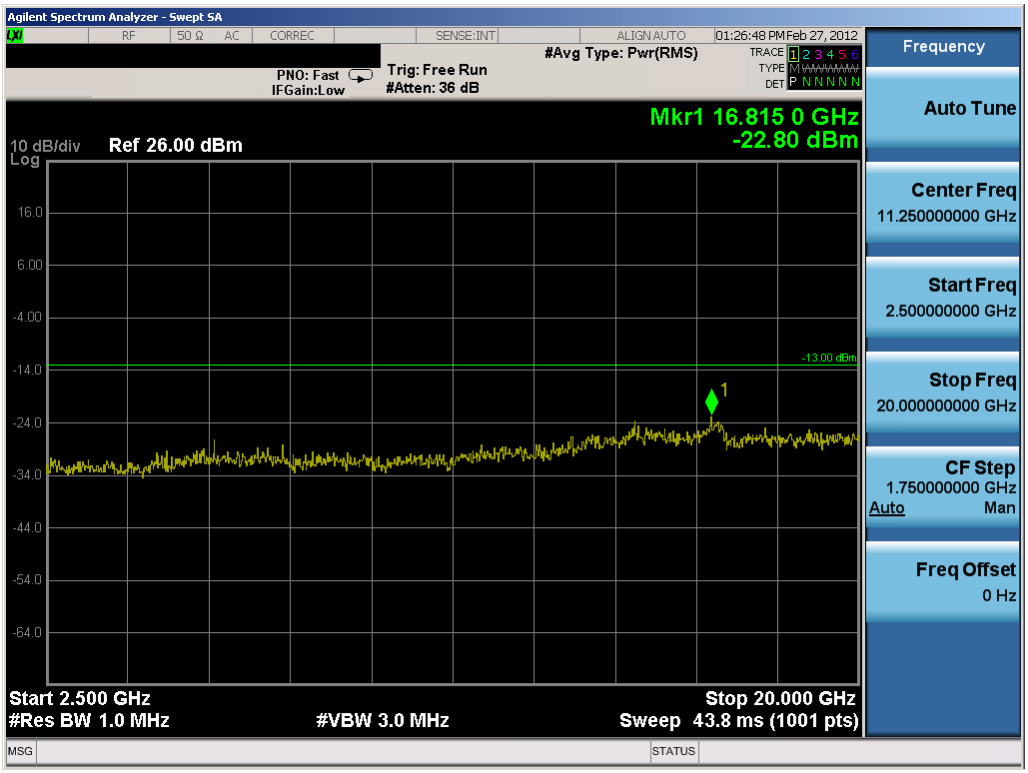
Plot 11-9. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



Plot 11-10. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)

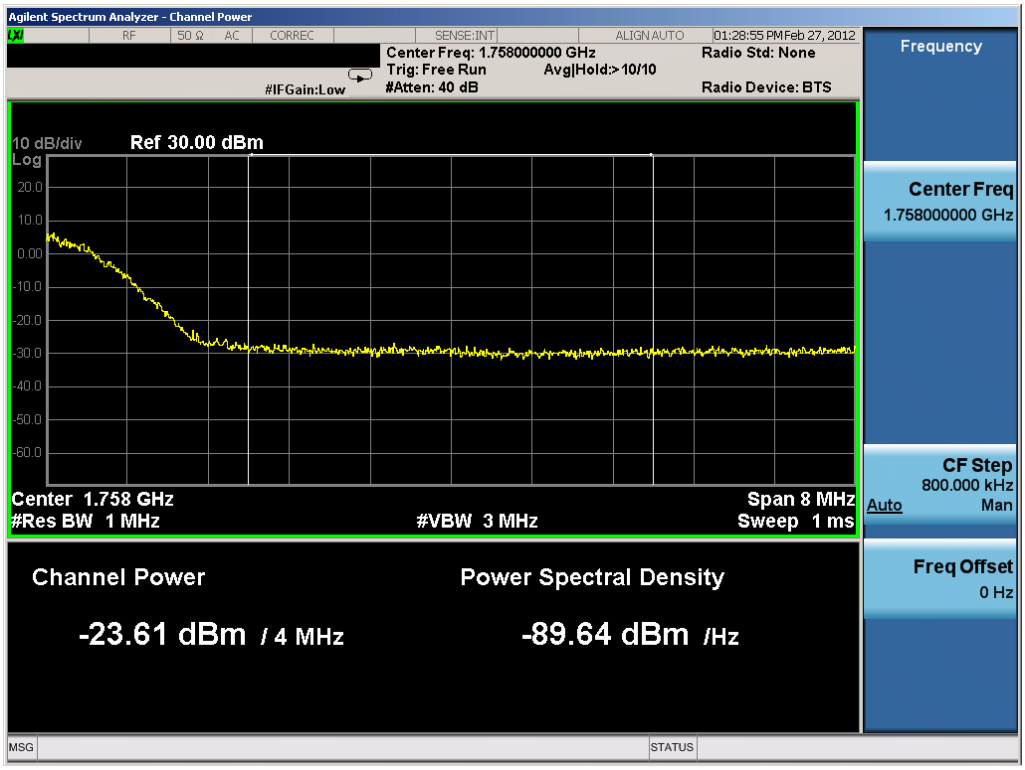


Plot 11-11. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



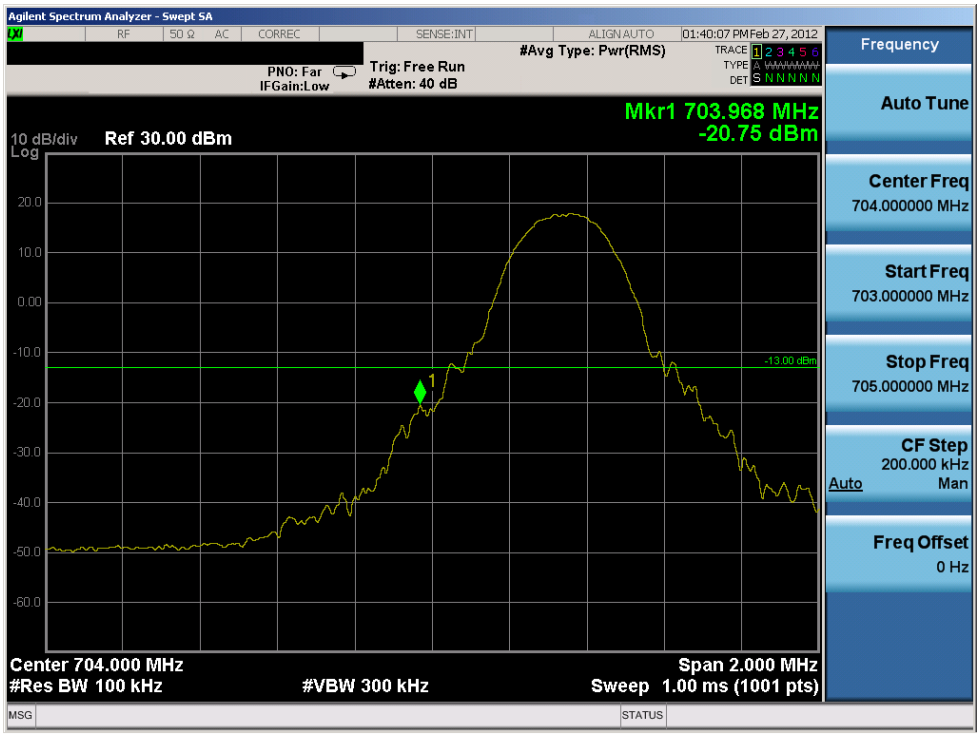
Plot 11-12. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)

Plot 11-13. Upper Band Edge Plot (QPSK – RB Size 1, Offset 99)



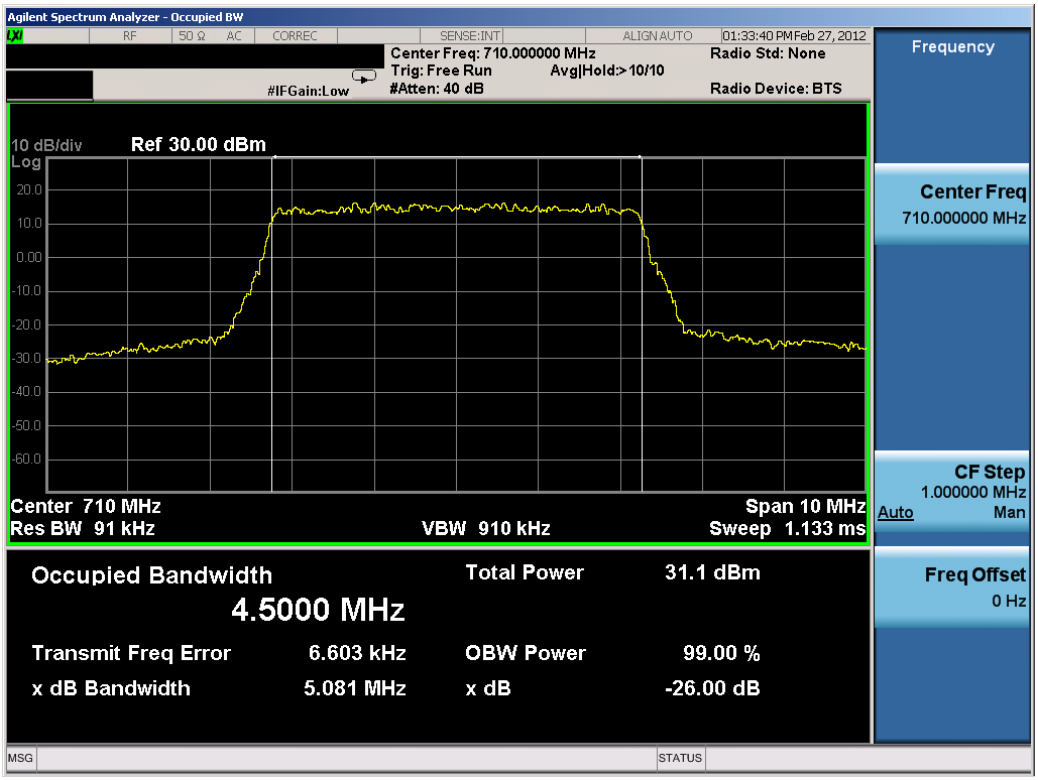
Plot 11-14. Upper Band Edge Plot (QPSK – RB Size 100)

12.0 BAND 17 – 5 MHZ BW

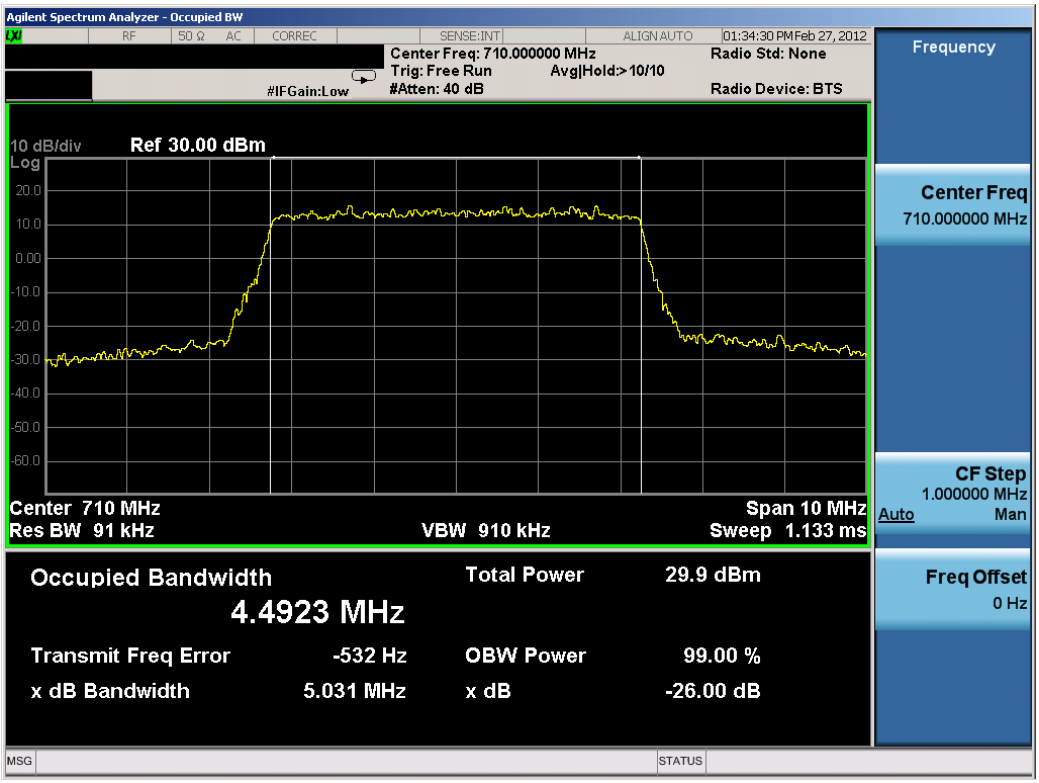


Plot 12-1. Lower Band Edge Plot (QPSK – RB Size 1, Offset 0)

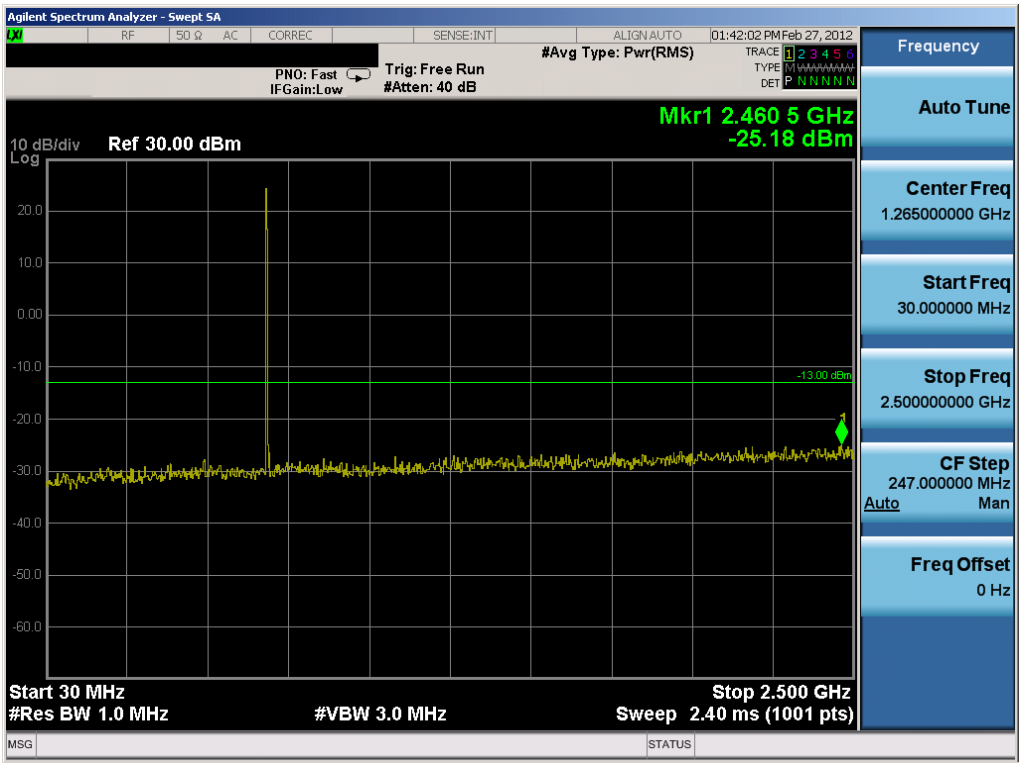
Plot 12-2. Lower Band Edge Plot (QPSK – RB Size 25)



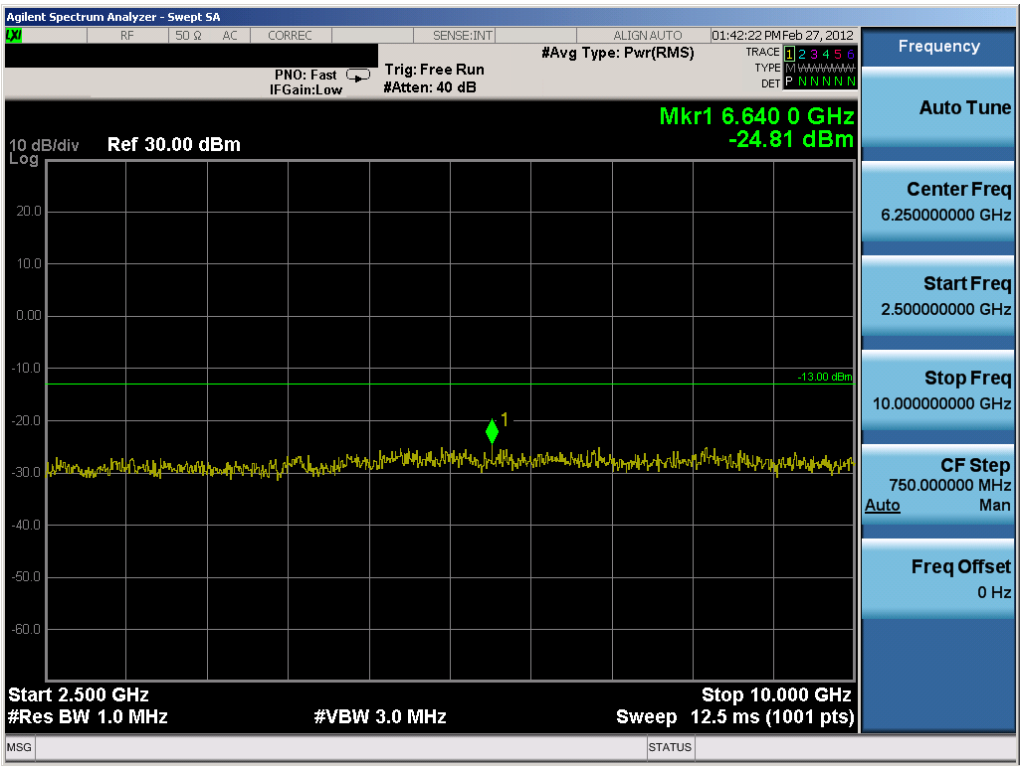
Plot 12-3. Occupied Bandwidth Plot (QPSK – RB Size 25)



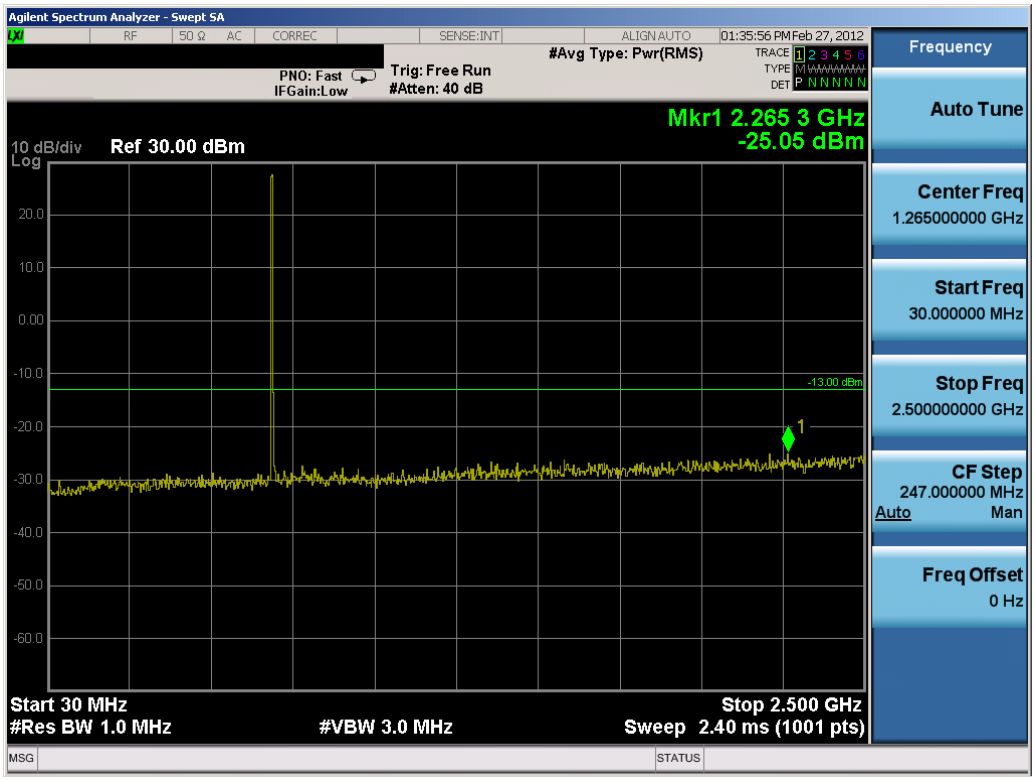
Plot 12-4. Occupied Bandwidth Plot (16-QAM – RB Size 25)



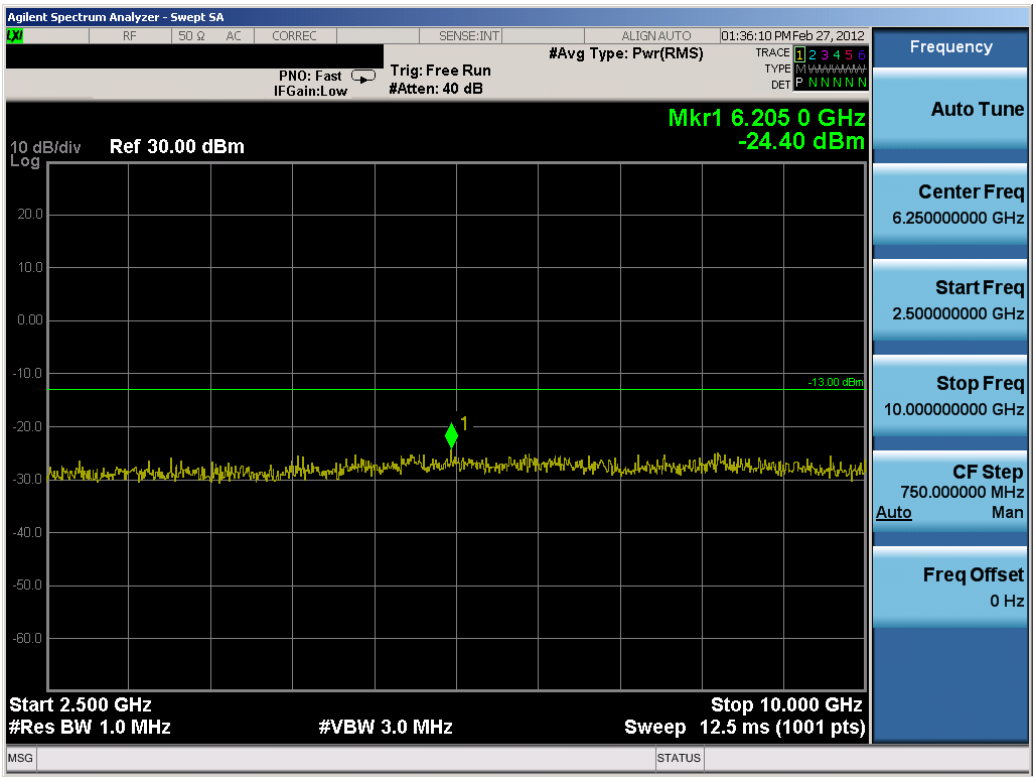
Plot 12-5. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



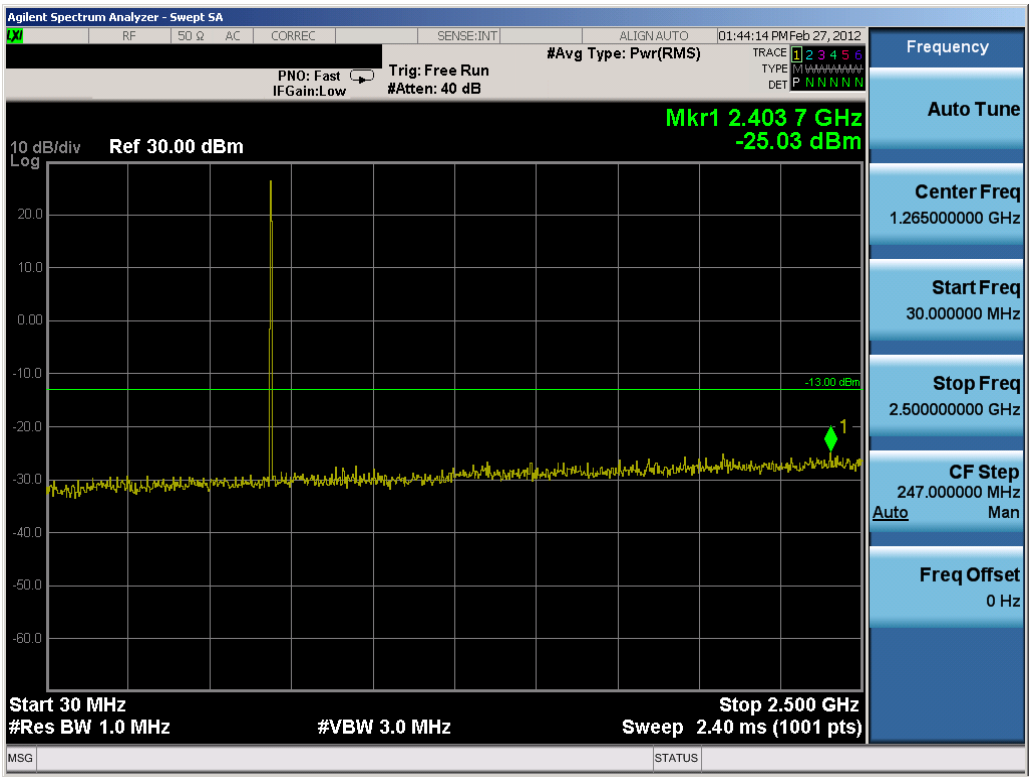
Plot 12-6. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



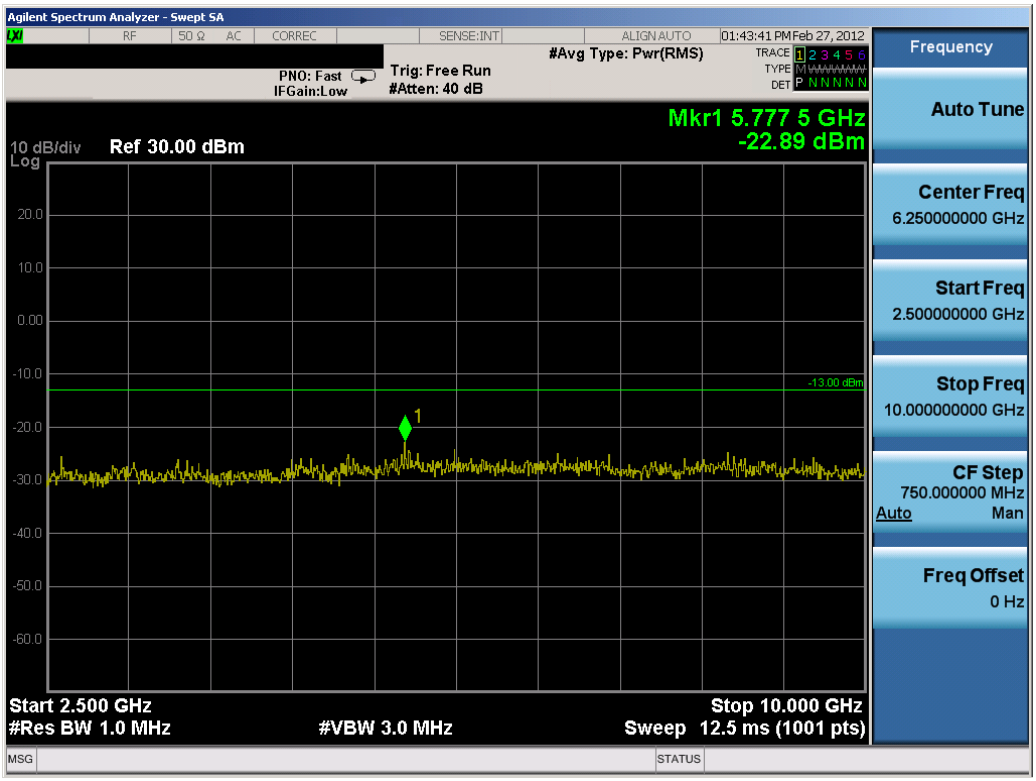
Plot 12-7. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



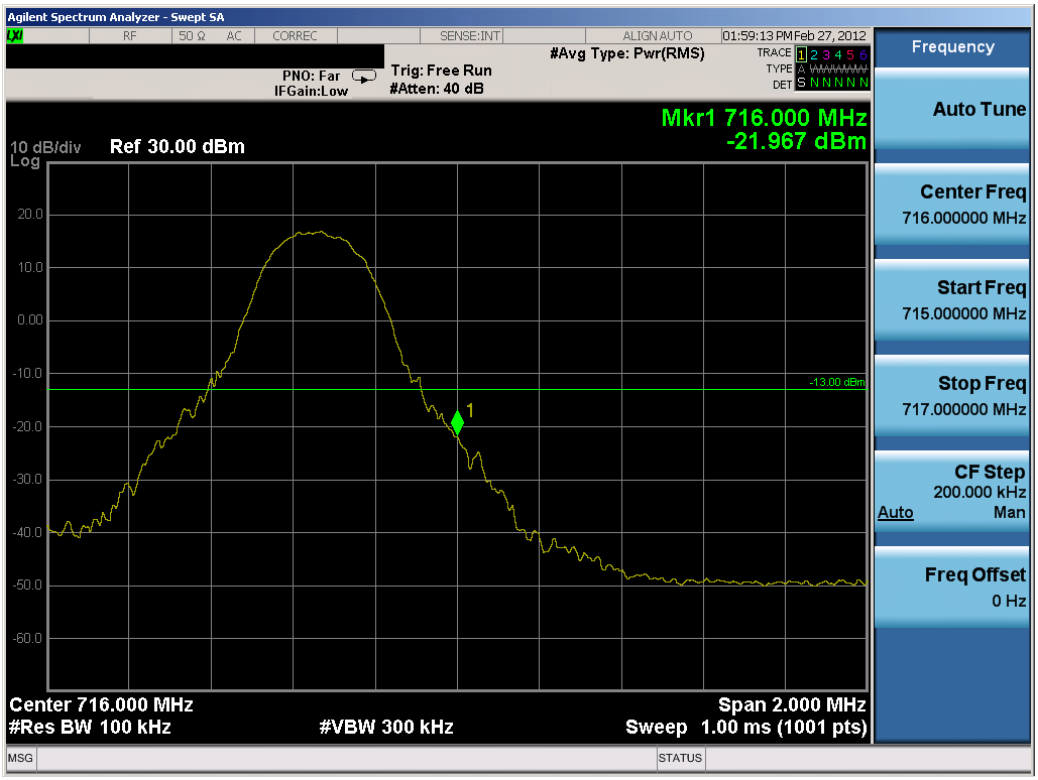
Plot 12-8. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



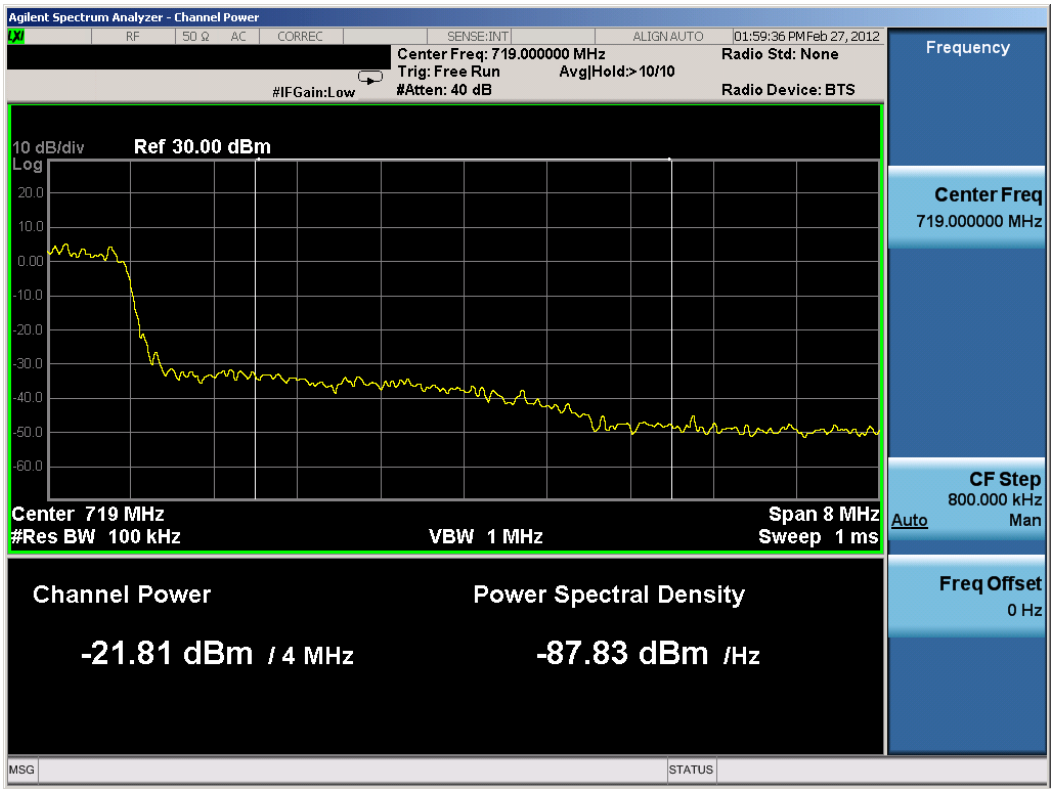
Plot 12-9. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



Plot 12-10. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)

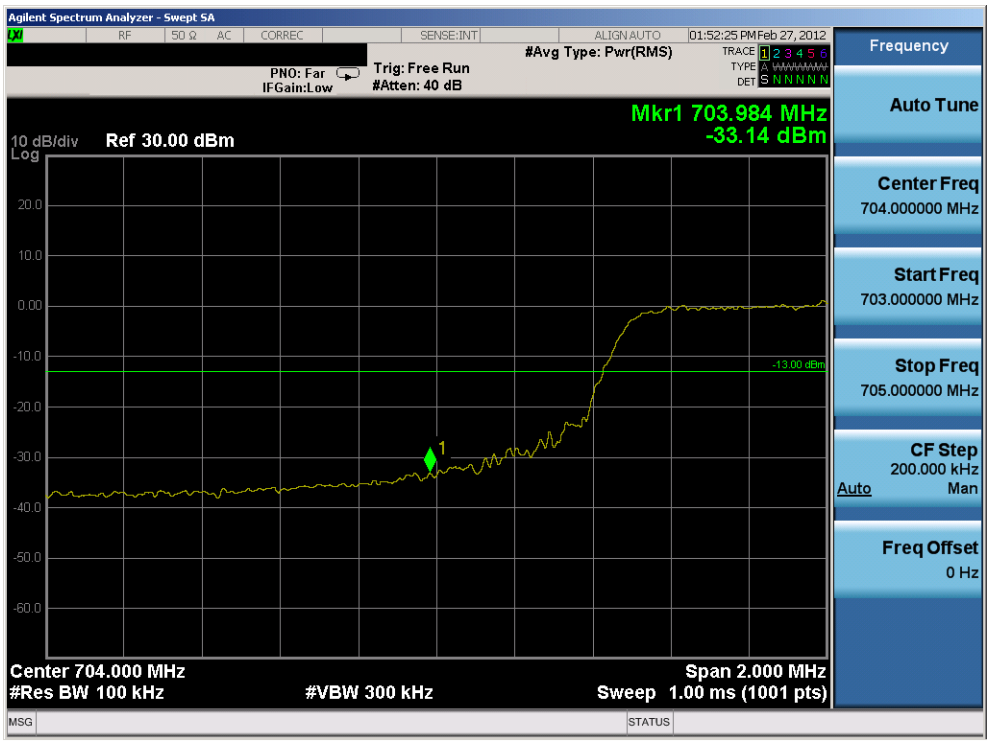


Plot 12-11. Upper Band Edge Plot (QPSK – RB Size 1, Offset 24)

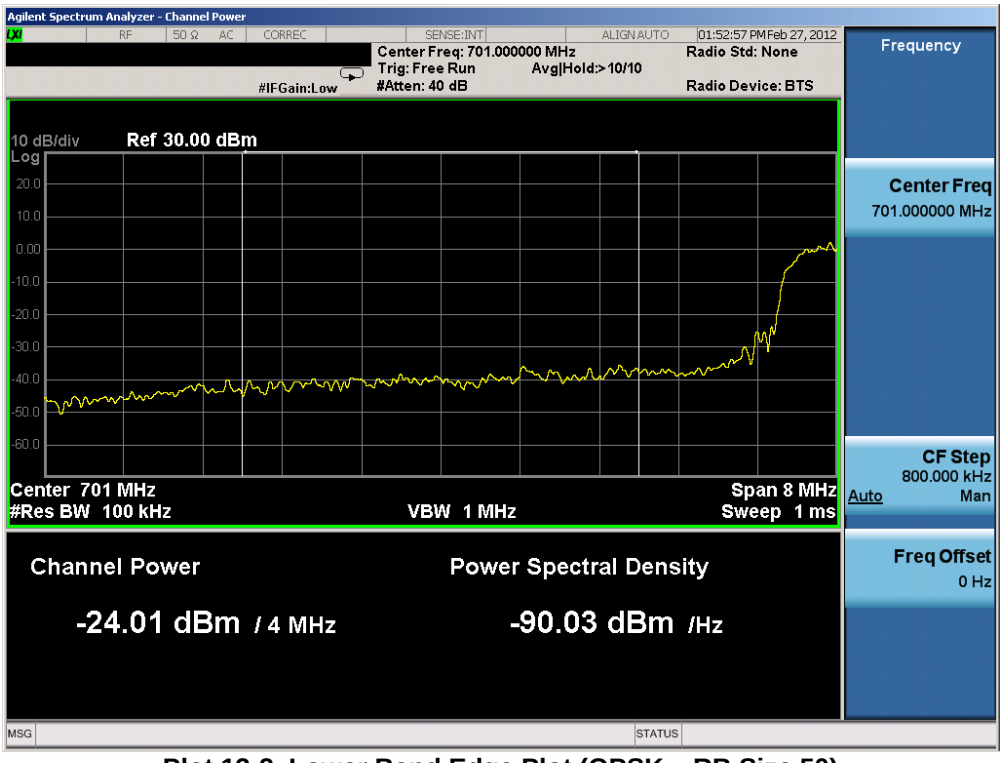


Plot 12-12. Upper Band Edge Plot (QPSK – RB Size 25)

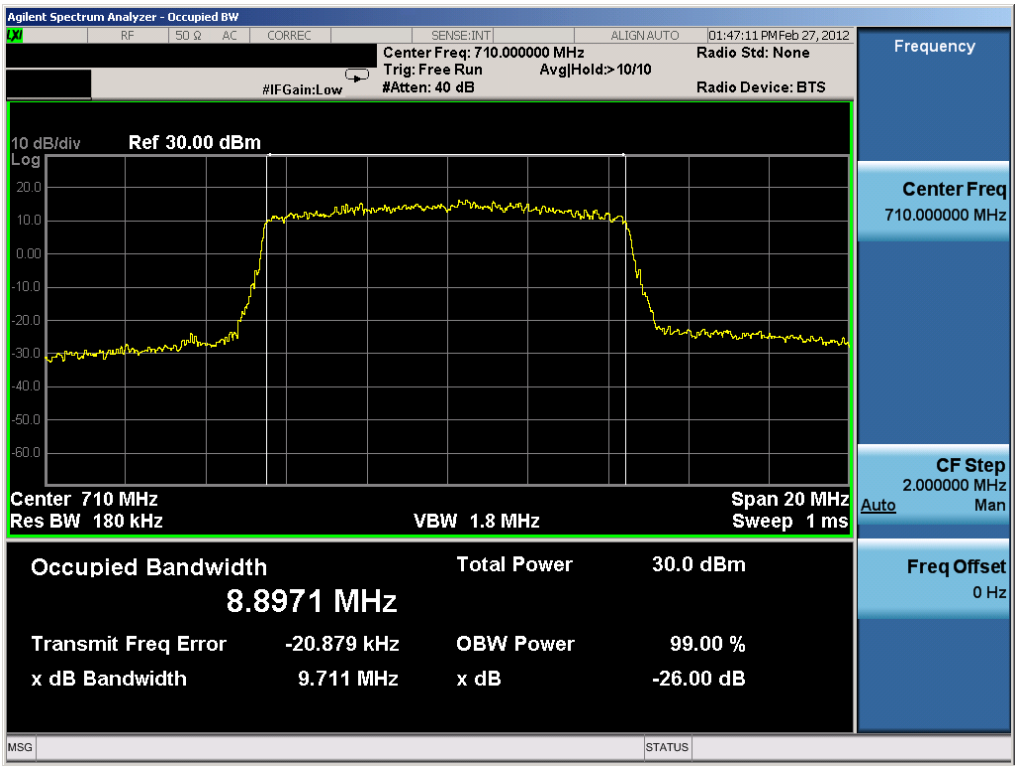
13.0 BAND 17 – 10 MHZ BW



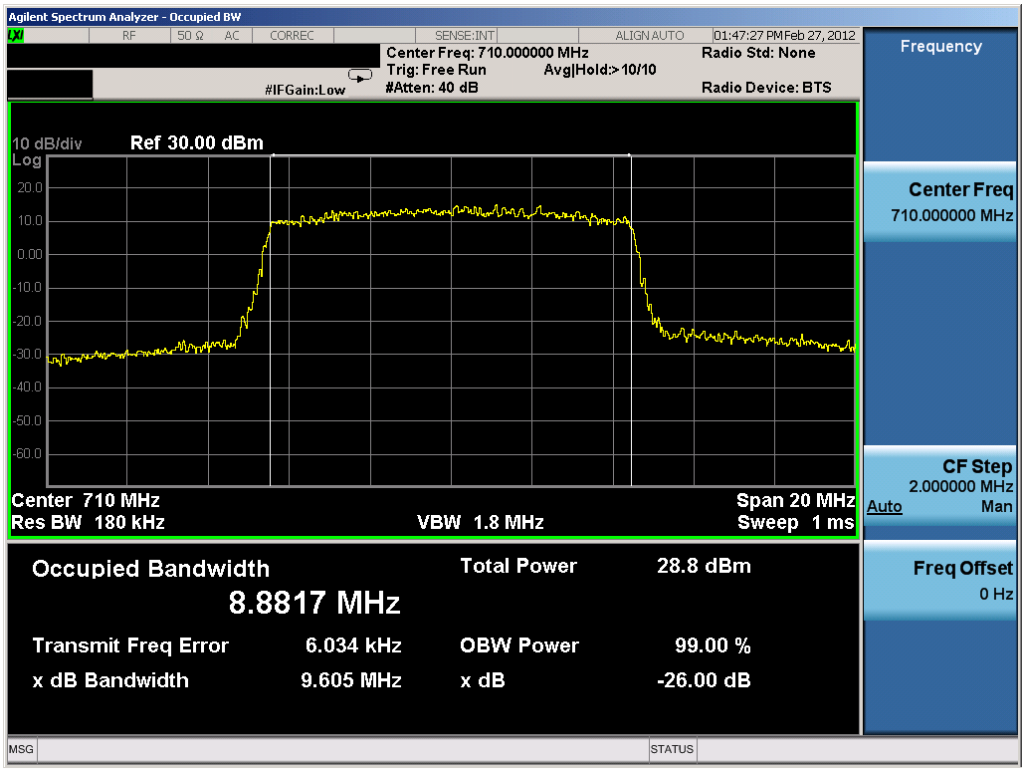
Plot 13-1. Lower Band Edge Plot (QPSK – RB Size 50)



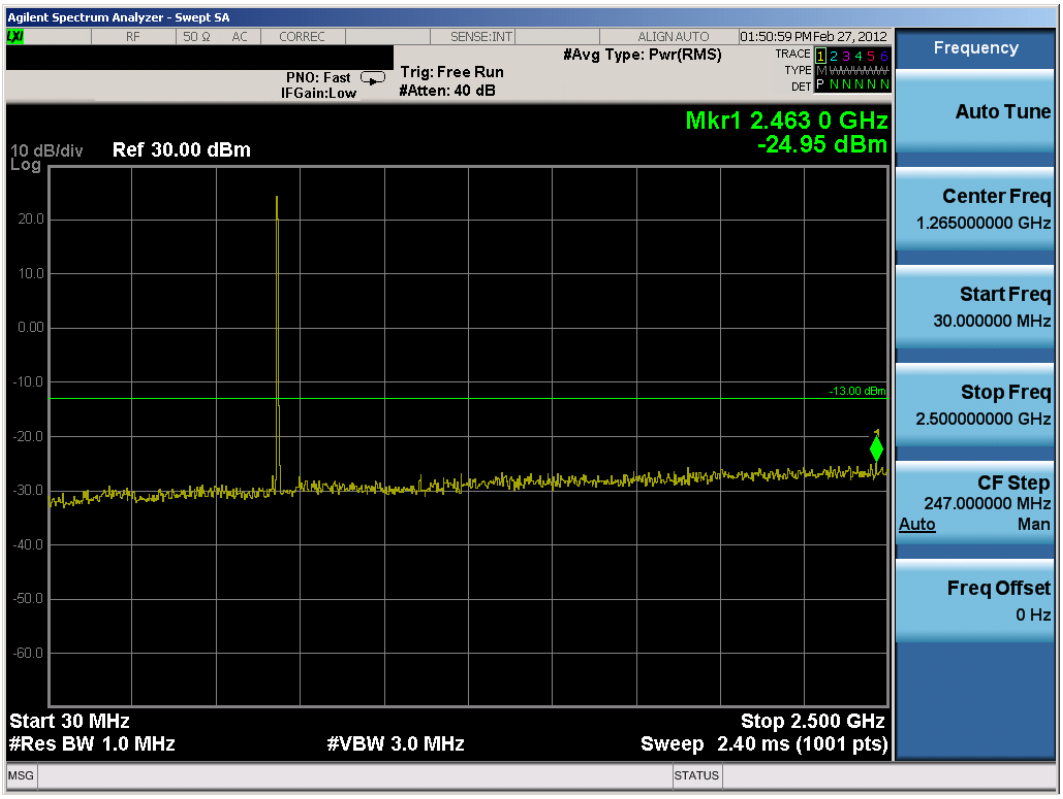
Plot 13-2. Lower Band Edge Plot (QPSK – RB Size 50)



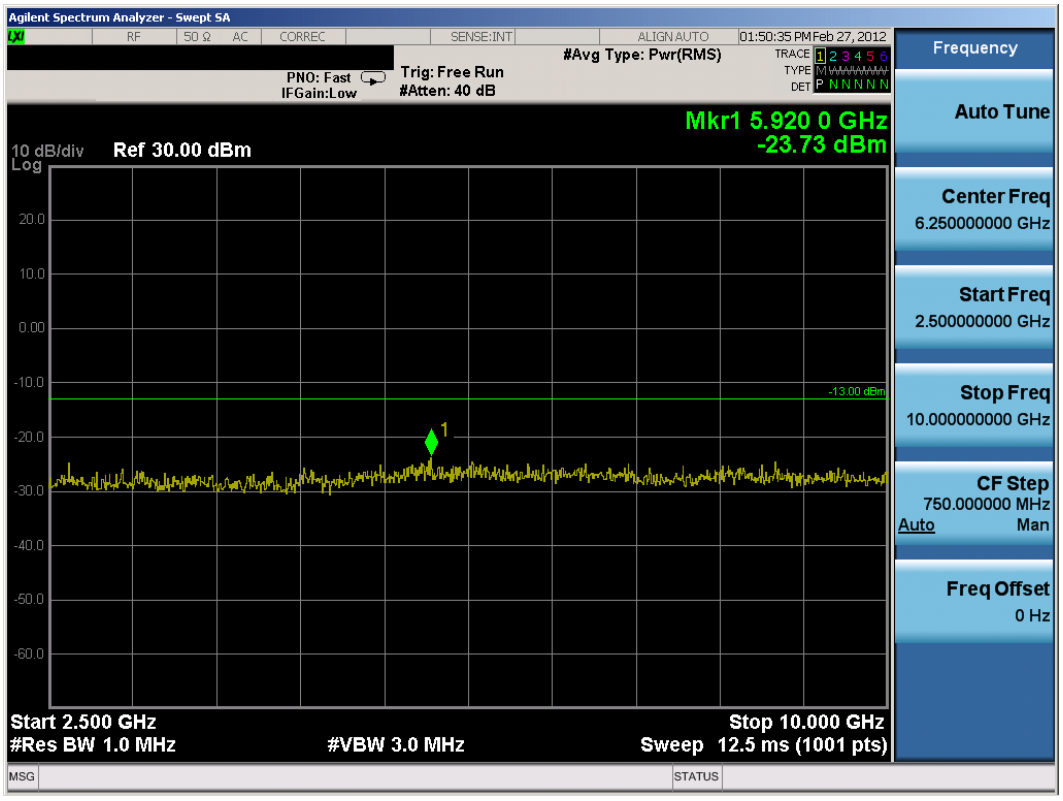
Plot 13-3. Occupied Bandwidth Plot (QPSK – RB Size 50)



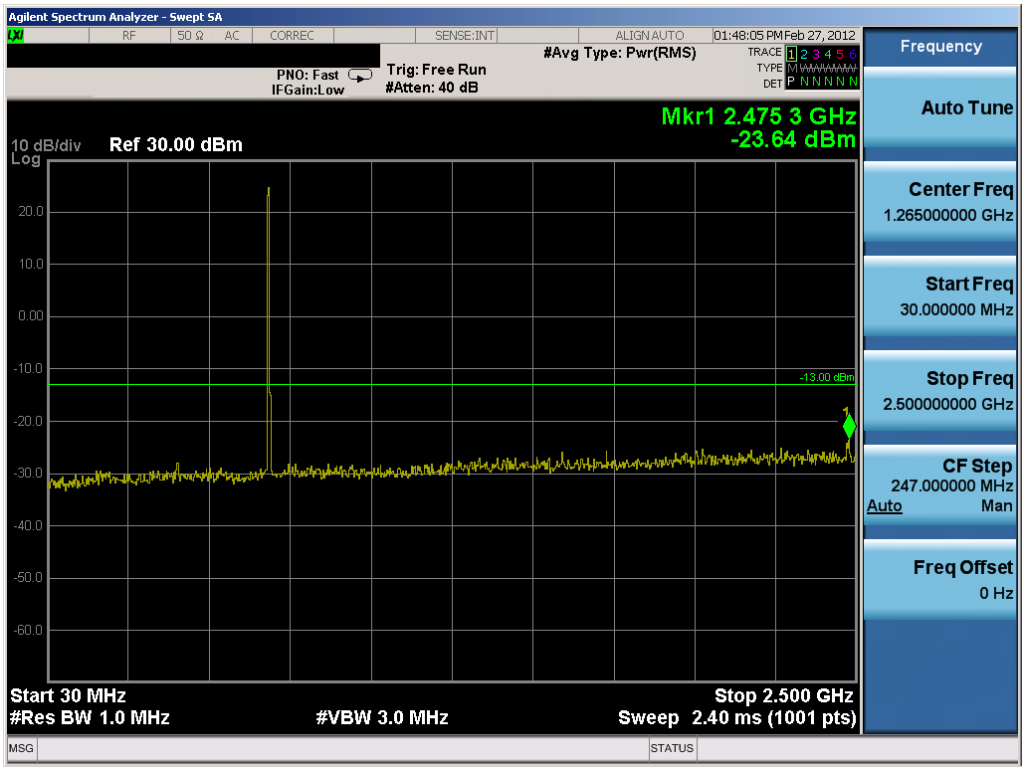
Plot 13-4. Occupied Bandwidth Plot (16-QAM – RB Size 50)



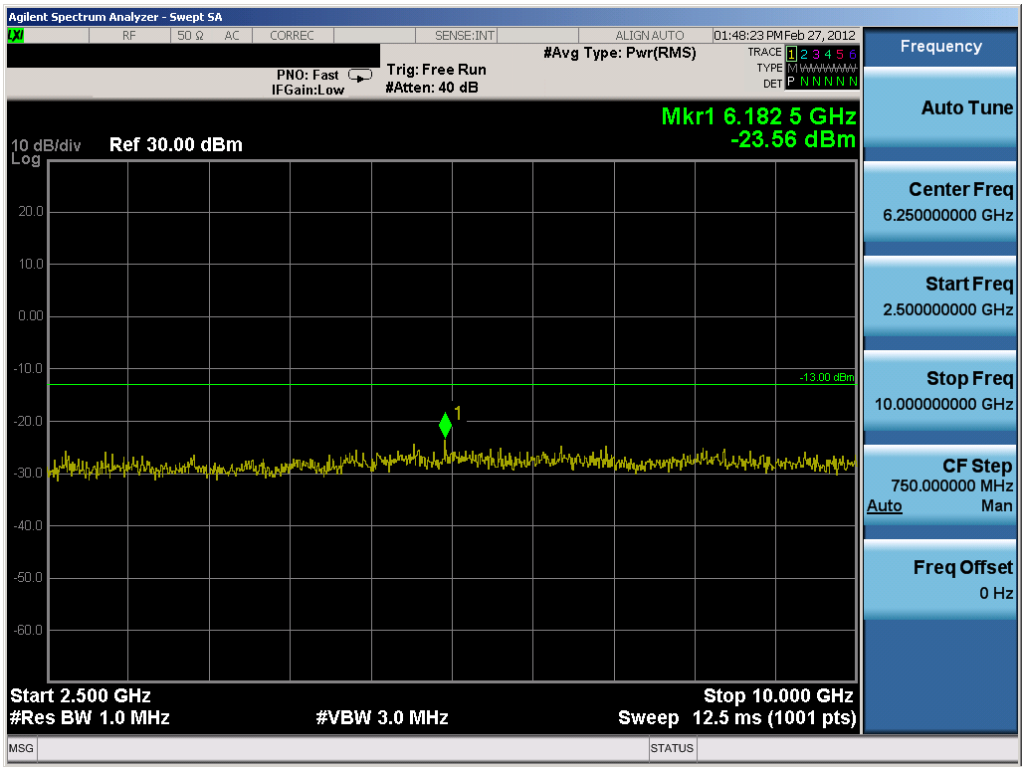
Plot 13-5. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



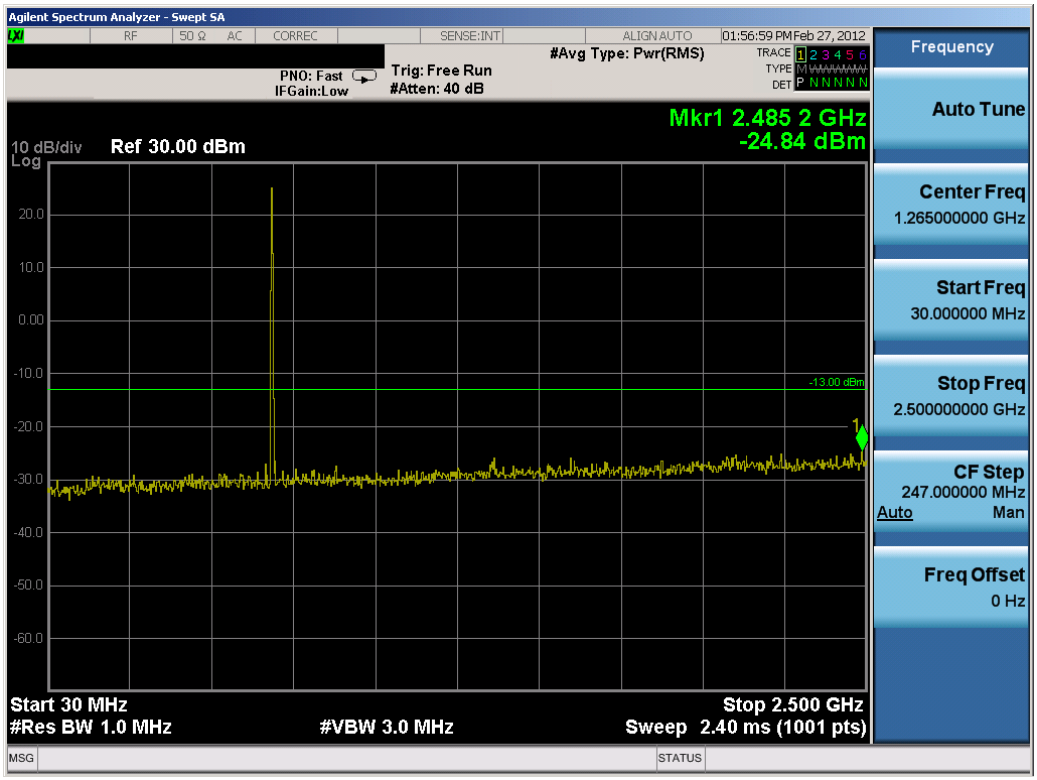
Plot 13-6. Conducted Spurious Plot (QPSK – Low Channel, RB Size 1, Offset 0)



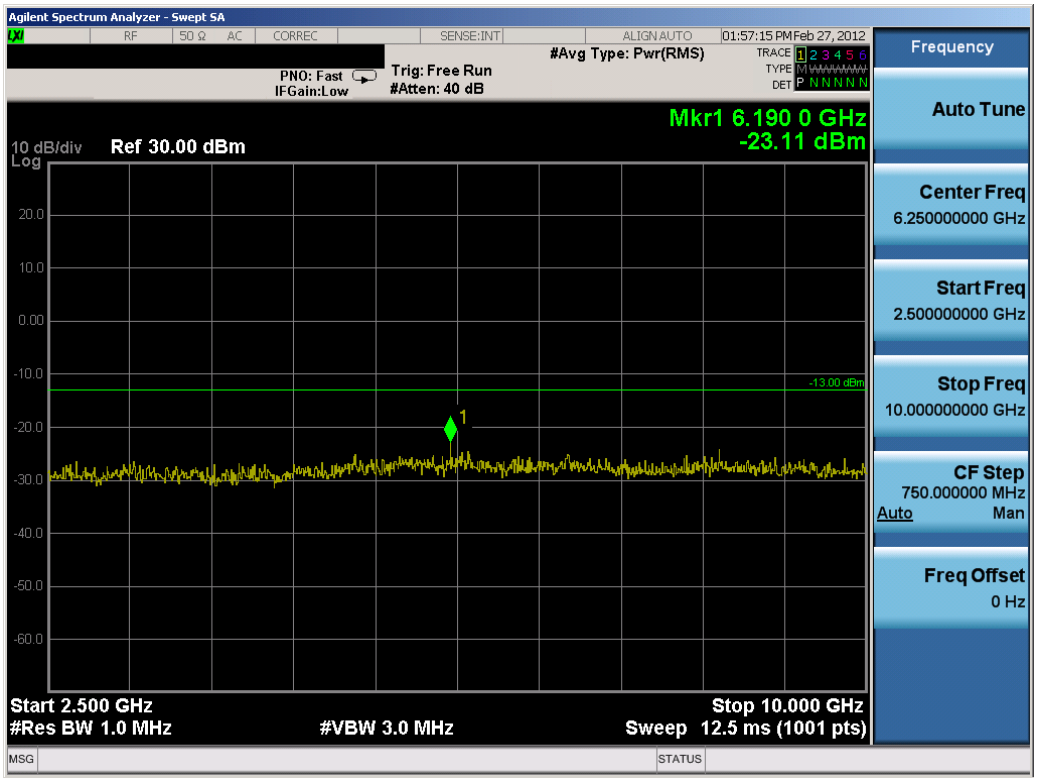
Plot 13-7. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



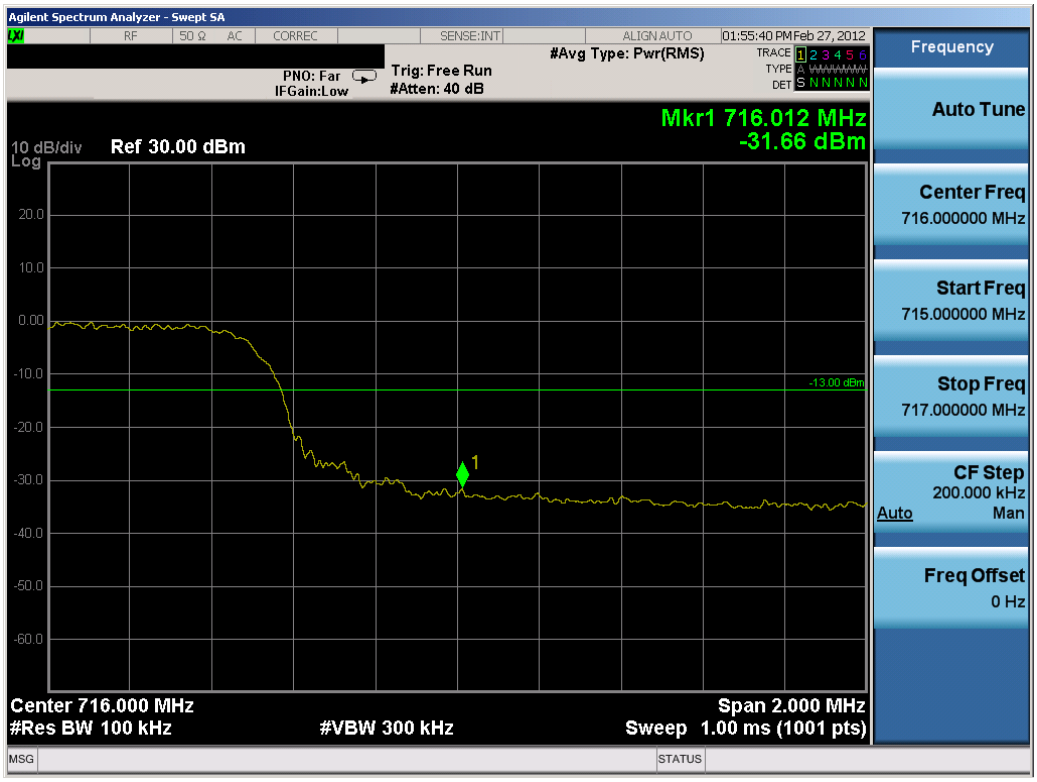
Plot 13-8. Conducted Spurious Plot (QPSK – Mid Channel, RB Size 1, Offset 0)



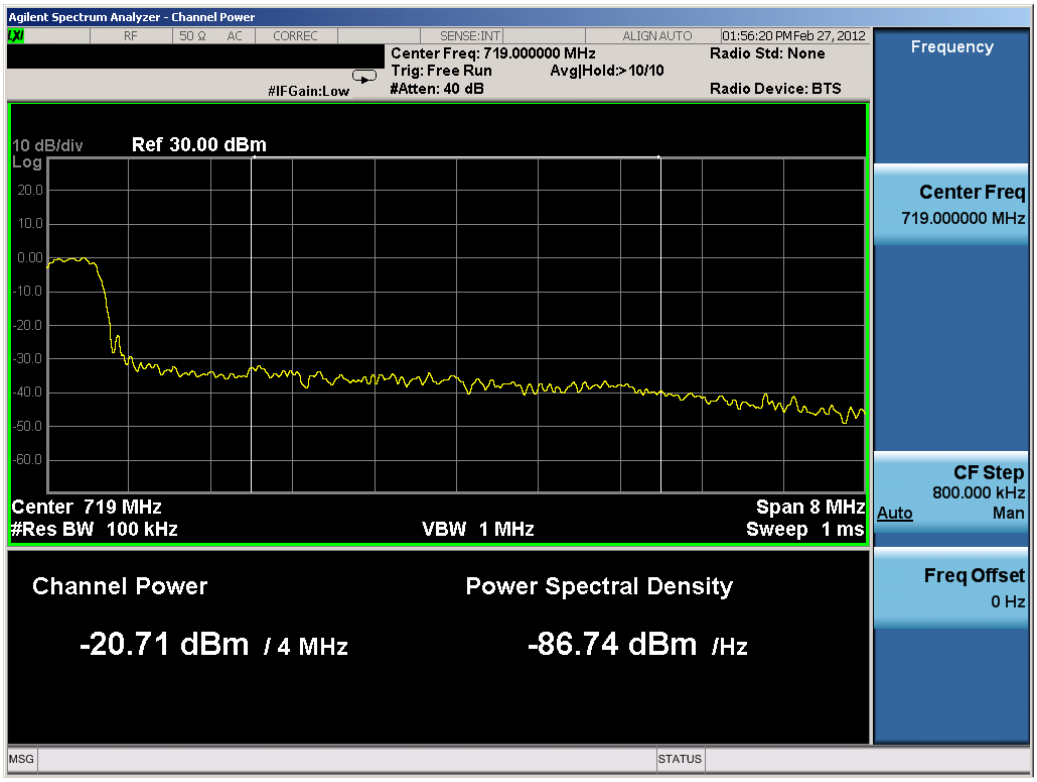
Plot 13-9. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



Plot 13-10. Conducted Spurious Plot (QPSK – High Channel, RB Size 1, Offset 0)



Plot 13-11. Upper Band Edge Plot (QPSK – RB Size 50)



Plot 13-12. Upper Band Edge Plot (QPSK – RB Size 50)

14.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSGHI747** complies with all the requirements of Parts 2 and 27 of the FCC rules for LTE operation only.