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MEASUREMENT REPORT
FCC Part 27 LTE

Applicant Name:
NEC Corporation
7-1,SHIBA 5-CHOME
MINATO-KU, TOKYO 108 - 8001
JAPAN

Date of Testing:
June 22 - July 17, 2012
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1208101147.DI4

FCC ID:	**DI407208901**
APPLICANT:	**NEC CORPORATION**

Application Type:	Certification
FCC Classification:	TNB
FCC Rule Part(s):	§2; §27
EUT Type:	LTE Base Station
Model(s):	MB4300
Test Device Serial No.:	*identical prototype* [S/N: N/A]

Antenna Port	Modulation	Conducted Power (dBm)	Conducted Power (Watt)	Emission Designator
Port 0	QPSK	36.44	4.406	8M96G7D
	16QAM	36.40	4.365	8M94W7D
	64QAM	36.37	4.335	8M96W7D
Port 1				
	QPSK	36.31	4.276	8M96G7D
	16QAM	36.39	4.355	8M95W7D
	64QAM	36.37	4.335	8M96W7D

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

ACCREDITED
TESTING LABORATORY
CERTIFICATE #2041.01

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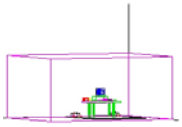
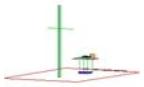


MEASUREMENT REPORT
FCC Part 27



§2.1033 General Information

APPLICANT:	NEC Corporation
APPLICANT ADDRESS:	7-1,SHIBA 5-CHOME MINATO-KU, TOKYO 108 - 8001
TEST SITE:	PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS:	7185 Oakland Mills Road, Columbia, MD 21046 USA
FCC RULE PART(S):	§2; §27
BASE MODEL:	MB4300
FCC ID:	DI407208901
FCC CLASSIFICATION:	TNB
MODULATIONS:	QPSK, 16-QAM, 64-QAM
FREQUENCY TOLERANCE:	Emission must remain in band §27.54
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST:	June 22 - July 17, 2012
TEST REPORT S/N:	0Y1208101147.DI4

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 and Industry Canada (2451B-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 (2451B-1) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

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1.0 INTRODUCTION

1.1 Scope

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

1.2 Testing Facility

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

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

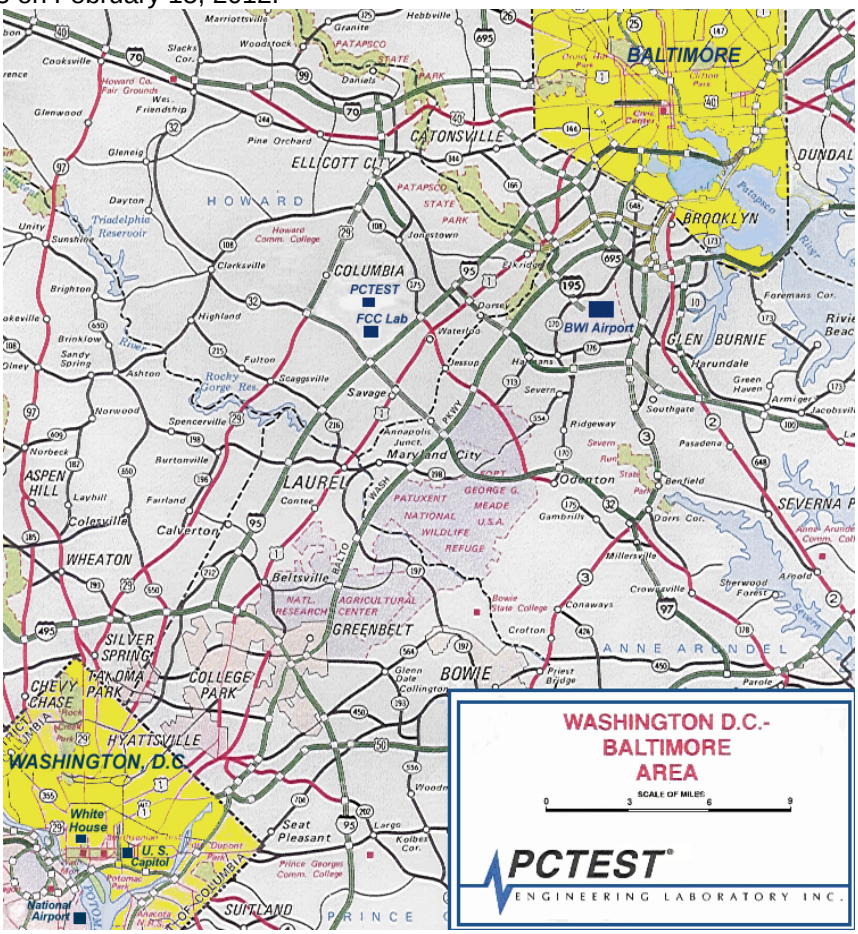

Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **NEC LTE Base Station FCC ID: DI407208901**. 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 supports the following capabilities:

Band 13 LTE (10MHz BW), QPSK,16QAM and 64QAM.

2.3 Test Configuration

The NEC LTE Base Station FCC ID: DI407208901 was tested per the guidance of ANSI/TIA-603-C-2004 and KDB 971168. See Section 3.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

2.4 EMI Suppression Device(s)/Modifications

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

2.5 Labeling Requirements

Per 2.925
The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.

Per 15.19; Docket 95-19
In addition to this requirement, a device subject to certification shall be labeled as follows:
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-C-2004) and "Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems" were used in the measurement of the measurement of the **NEC LTE Base Station FCC ID: DI407208901.**

Deviation from Measurement Procedure……..None

3.2 Block C Frequency Range

§27.5(b)(3)

Two paired channels of 11 megahertz each are available for assignment in Block C in the 746-757 MHz and 776-787 MHz bands. In the event that no licenses for two channels in this Block C are assigned based on the results of the first auction in which such licenses were offered because the auction results do not satisfy the applicable reserve price, the spectrum in the 746-757 MHz and 776-787 MHz bands will instead be made available for assignment at a subsequent auction as follows: (i) Two paired channels of 6 megahertz each available for assignment in Block C1 in the 746-752 MHz and 776-782 MHz bands. (ii) Two paired channels of 5 megahertz each available for assignment in Block C2 in the 752-757 MHz and 782-787 MHz bands.

3.3 Occupied Bandwidth Emission Limits

§2.1049, §27.53(l)(6)

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. The spectrum analyzers' "occupied bandwidth" measurement function was used to record the occupied bandwidth in accordance with KDB 971168.

3.4 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, §27.53(c)

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 10^{th} 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 100 kHz 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.

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3.5 Radiated Power and Radiated Spurious Emissions

§2.1053, §27.53(c)

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 a 50 ohm termination and is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions' occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168.

Per the guidance of ANSI/TIA-603-C-2004, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$P_{d\ [dBm]} = P_{g\ [dBm]} - \text{cable loss}_{\ [dB]} + \text{antenna gain}_{\ [dBd/dBi]}$$

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_{g\ [dBm]}$ – 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 27.53.

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3.6 Frequency Stability / Temperature Variation

§2.1055, 27.54

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-C-2004. 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 fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.

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

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4.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	LTx1	Licensed Transmitter Cable Set	1/25/2012	Annual	1/25/2013	N/A
-	RE1	Radiated Emissions Cable Set (UHF/EHF)	6/7/2012	Annual	6/7/2013	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	5/8/2012	Annual	5/8/2013	1937A03348
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	2/15/2012	Annual	2/15/2013	3008A00985
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	N9020A	MXA Signal Analyzer	10/10/2011	Annual	10/10/2012	US46470561
Agilent	N9038A	MXE EMI Receiver	8/5/2011	Annual	8/5/2012	MY51210133
Agilent	N9030A	PXA Signal Analyzer	2/23/2012	Annual	2/23/2013	MY49432391
Anritsu	MA2411B	Power Sensor	3/5/2012	Annual	3/5/2013	846215
Anritsu	ML2495A	Power Meter	10/13/2011	Annual	10/13/2012	1039008
Espec	ESX-2CA	Environmental Chamber	5/21/2013	Annual	5/21/2013	17620
Mini-Circuits	VHF-1300+	High Pass Filter	2/7/2012	Annual	2/7/2013	30716
Mini-Circuits	VHF-3100+	High Pass Filter	1/15/2012	Annual	1/15/2013	30841
Pasternack	PE2208-6	Bidirectional Coupler	6/3/2012	Annual	6/3/2013	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	N/A		N/A	836536/0005
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Tx	10/3/2011	Biennial	10/3/2013	91052522TX
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	10/3/2011	Biennial	10/3/2013	91052523RX
Seekonk	NC-100	Torque Wrench (8" lb)	3/5/2012	Triennial	3/5/2015	N/A
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	7/5/2011	Biennial	7/5/2013	A050307
Sunol	DRH-118	Horn Antenna (1-18 GHz)	6/17/2011	Biennial	6/17/2013	A042511

Table 4-1. Test Equipment

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5.0 SAMPLE CALCULATIONS

Emission Designator

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).

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6.0 TEST RESULTS

6.1 Summary

Company Name: NEC Corporation

FCC ID: DI407208901

FCC Classification: TNB

Mode(s): LTE

Ports: 0 + 1

Modulations: QPSK, 16QAM and 64QAM

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (Tx)					
2.1049	Occupied Bandwidth	N/A	CONDUCTED	PASS	Section 7.0
2.1046, 27.50(a)(a)	Conducted Output Power	30W ERP		PASS	Section 6.3
2.1051, 27.53(c)(2), 27.53(c)(4)	Band Edge / Conducted Spurious Emissions **(*)**	< 43 + 10log$_{10}$ (P[Watts]) < 65 + 10log$_{10}$ (P[Watts]) in a 6.25kHz bandwidth for emissions in the 763 – 775MHz and 793 – 805MHz bands		PASS	Section 7.0
2.1053, 27.53(c)(2) 27.53(c)(4)	Undesirable Out-of-Band Emissions	< 43 + 10log$_{10}$ (P[Watts]) for all out-of-band emissions	RADIATED	PASS	Section 6.3
2.1055, 27.54	Frequency Stability	Must remain in authorized band of operation		PASS	Section 6.4

Table 6-1. Summary of Test Results

Notes:

* - For out of band conducted spurious emissions (including those at the band edges), the emissions of QPSK, 16-QAM and 64-QAM modulations were investigated. The worst case transmitter emissions are shown in Section 7.0.
- All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- The analyzer plots shown in Section 7.0 were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.

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6.2 Conducted Output Power

§2.1046

Antenna Port	Modulation	Conducted Power (dBm)	Conducted Power (Watt)
Port 0	QPSK	36.44	4.406
	16QAM	36.40	4.365
	64QAM	36.37	4.335
Port 1	QPSK	36.31	4.276
	16QAM	36.39	4.355
	64QAM	36.37	4.335

A transmitter antenna terminal of EUT is connected to the input of a spectrum analyzer. Measurement is made using a spectrum analyzer capable of making peak power measurements while the EUT is operating in transmission mode at the appropriate frequencies.

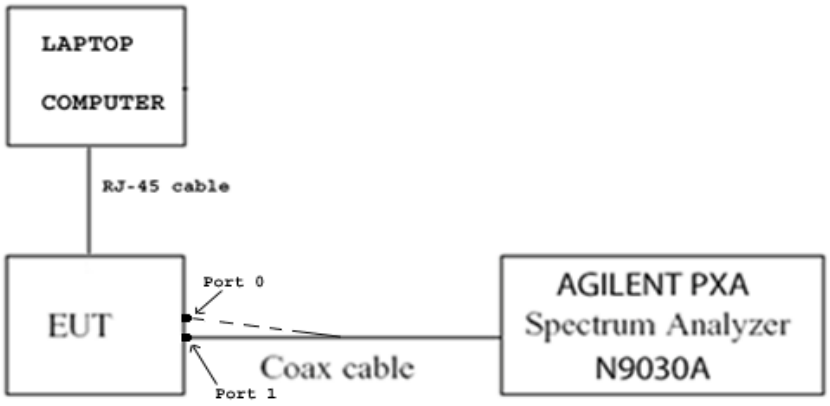

Figure 6-1. Test Instrument & Measurement Setup

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6.3 LTE Radiated Measurements

§2.1053, §27.53(c)(2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	751.00	MHz		
MEASURED OUTPUT POWER:	36.440	dBm	=	4.406 W
MODULATION SIGNAL:	QPSK			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	49.44	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1502.00	-21.16	3.43	-17.72	V	54.2
2253.00	-60.82	3.87	-56.95	V	93.4
3004.00	-59.88	4.62	-55.26	V	91.7
3755.00	-88.16	6.77	-81.39	V	117.8
4506.00	-90.40	9.04	-81.36	V	117.8

Table 6-2. Radiated Spurious Data (QPSK Modulation) Antenna Port 0 (Terminated) (Transmitting at Port 0 only)

NOTES:

1. This device was tested under all modulations and the worst case radiated spurious emissions are reported with QPSK modulation.

2. This unit was tested while being powered by 48VDC from a DC power supply.

3. The EUT was tested in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	751.00	MHz		
MEASURED OUTPUT POWER:	36.440	dBm	=	4.406 W
MODULATION SIGNAL:	QPSK			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	49.44	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1502.00	-18.77	3.43	-15.33	V	51.8
2253.00	-60.82	3.87	-56.95	V	93.4
3004.00	-59.88	4.62	-55.26	V	91.7
3755.00	-88.16	6.77	-81.39	V	117.8
4506.00	-90.40	9.04	-81.36	V	117.8

Table 6-3. Radiated Spurious Data (QPSK Modulation) Antenna Port 1 (Terminated) (Transmitting at Port 1 only)

NOTES:

1. This device was tested under all modulations and the worst case radiated spurious emissions are reported with QPSK modulation.

2. This unit was tested while being powered by 48VDC from a DC power supply.

3. The EUT was tested in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup. The data reported in the table above was measured in this test setup.

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Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	751.00	MHz	
MEASURED OUTPUT POWER:	36.440 dBm	=	4.406 W
MODULATION SIGNAL:	QPSK		
DISTANCE:	3 meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	49.44	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1502.00	-21.29	3.43	-17.85	V	54.3
2253.00	-60.82	3.87	-56.95	V	93.4
3004.00	-59.88	4.62	-55.26	V	91.7
3755.00	-88.16	6.77	-81.39	V	117.8
4506.00	-90.40	9.04	-81.36	V	117.8

Table 6-4. Radiated Spurious Data (QPSK Modulation) Antenna Ports 0 and 1 (Terminated) (Transmitting at both Port 0 and 1)

NOTES:

1. This device was tested under all modulations and the worst case radiated spurious emissions are reported with QPSK modulation.

2. This unit was tested while being powered by 48VDC from a DC power supply.

3. The EUT was tested in all possible test configurations and positioning. The worst case test configuration was found in the vertical setup. The data reported in the table above was measured in this test setup.

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6.4 LTE Band 13 Frequency Stability Measurements

§2.1055, 27.54

OPERATING FREQUENCY: 751,000,000 Hz

REFERENCE VOLTAGE: -48 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	-48.00	+ 20 (Ref)	750,999,965	-35	-0.000005
100 %	-48.00	- 30	750,999,973	-27	-0.000004
100 %	-48.00	- 20	750,999,948	-52	-0.000007
100 %	-48.00	- 10	750,999,982	-18	-0.000002
100 %	-48.00	0	751,000,064	64	0.000009
100 %	-48.00	+ 10	750,999,916	-84	-0.000011
100 %	-48.00	+ 20	750,999,965	-35	-0.000005
100 %	-48.00	+ 30	750,999,955	-45	-0.000006
100 %	-48.00	+ 40	750,999,938	-62	-0.000008
100 %	-48.00	+ 50	750,999,963	-37	-0.000005
MAX POWER	-57.00	+ 20	750,999,932	-68	-0.000009
BATT. ENDPOINT	-43.20	+ 20	750,999,919	-81	-0.000011

Table 6-5. Frequency Stability Data (LTE Band 13 – 751MHz)

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LTE Band 13 Frequency Stability Measurements (Cont'd)

§2.1055, 27.54

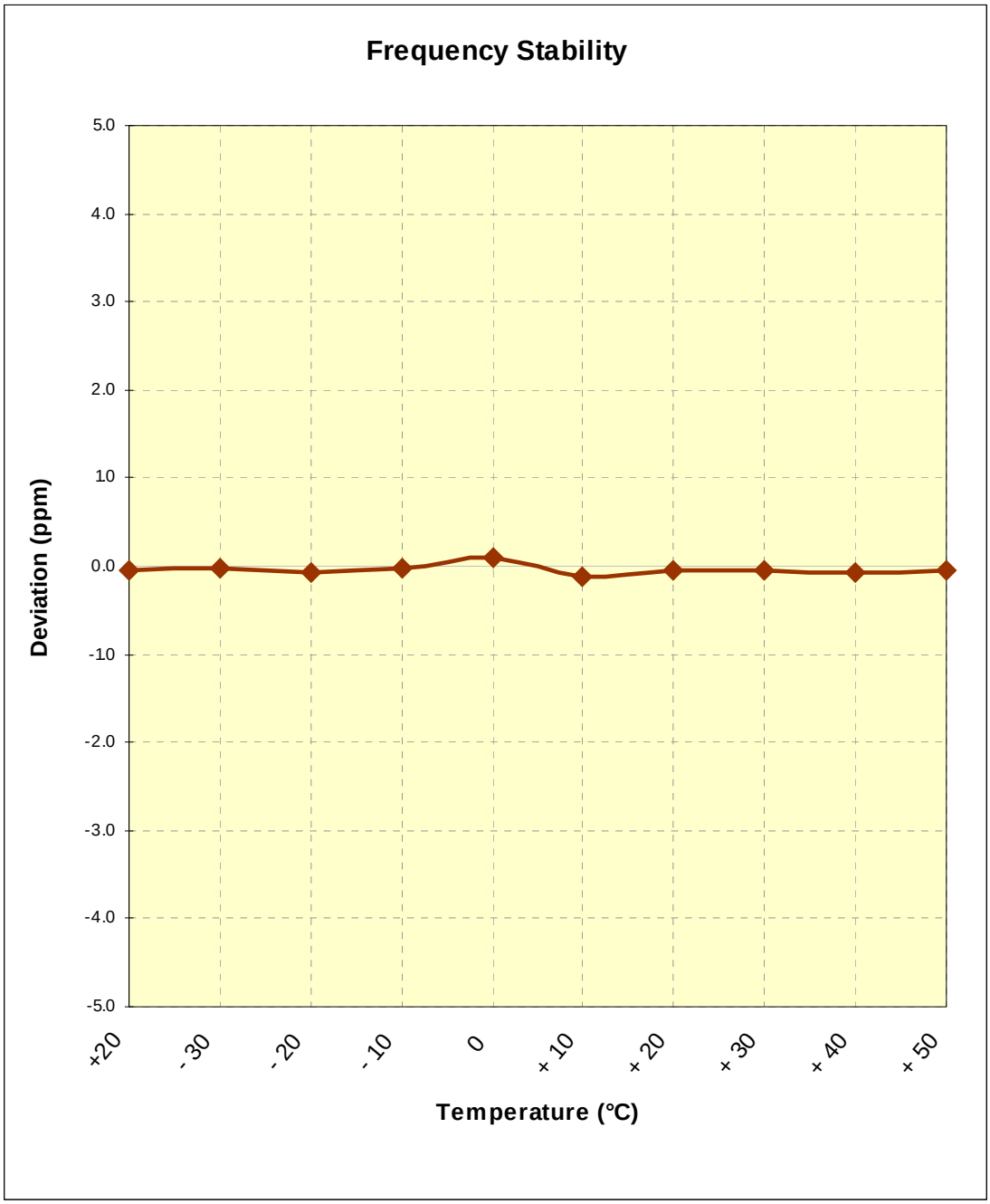

Figure 6-2. Frequency Stability Graph (LTE Band 13 – 751MHz)

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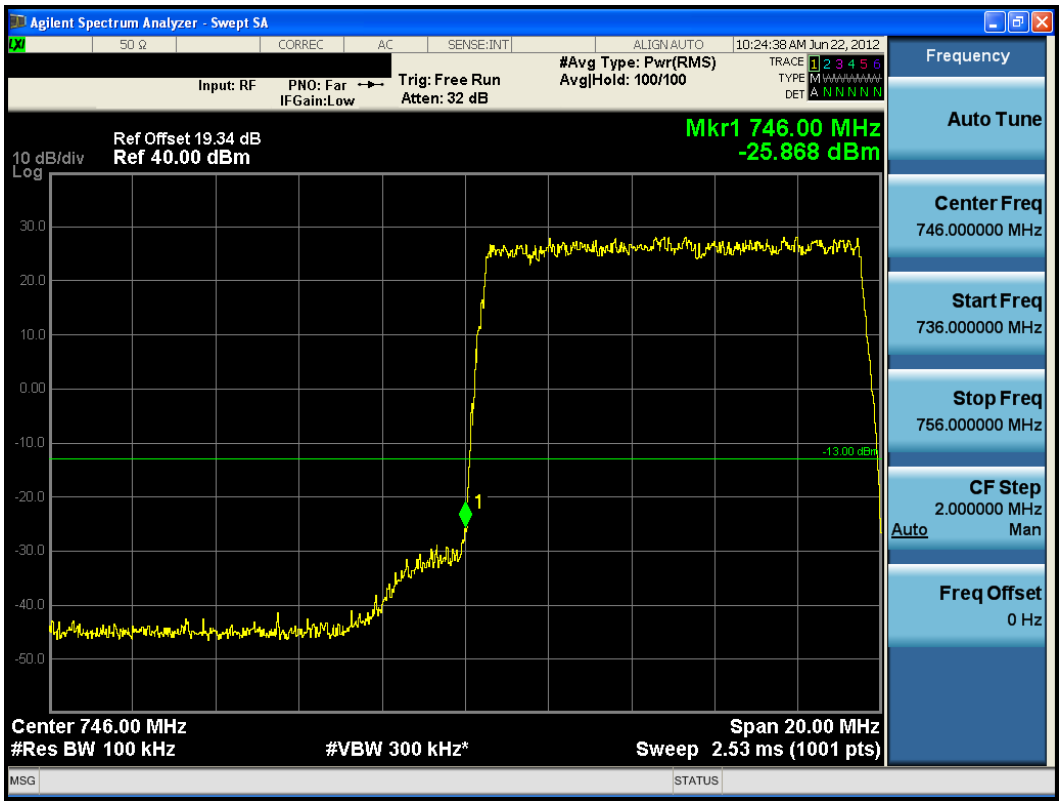
7.0 PLOT(S) OF EMISSIONS

For all plots in Section 7.0 showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit is an attenuation below the transmitter Power of 76 + $10\log_{10}$(4.406W) = 82.44dB in a 6.25kHz bandwidth or -46dBm. Since it was not possible to set the resolution bandwidth to 6.25kHz with the available equipment, a bandwidth of 10kHz was used instead to show compliance. By using a 10kHz bandwidth on the spectrum analyzer, the limit was adjusted by $10\log_{10}$(10kHz/6.25kHz) = 2.04dB. Thus, the limit shown in all plots in the 763 – 775MHz and 793 – 805MHz bands for all available modulation types was -46dBm + 2.04dB = -43.96dBm.



Plot 7-1. Lower Band Edge Plot (QPSK) Antenna Port 0

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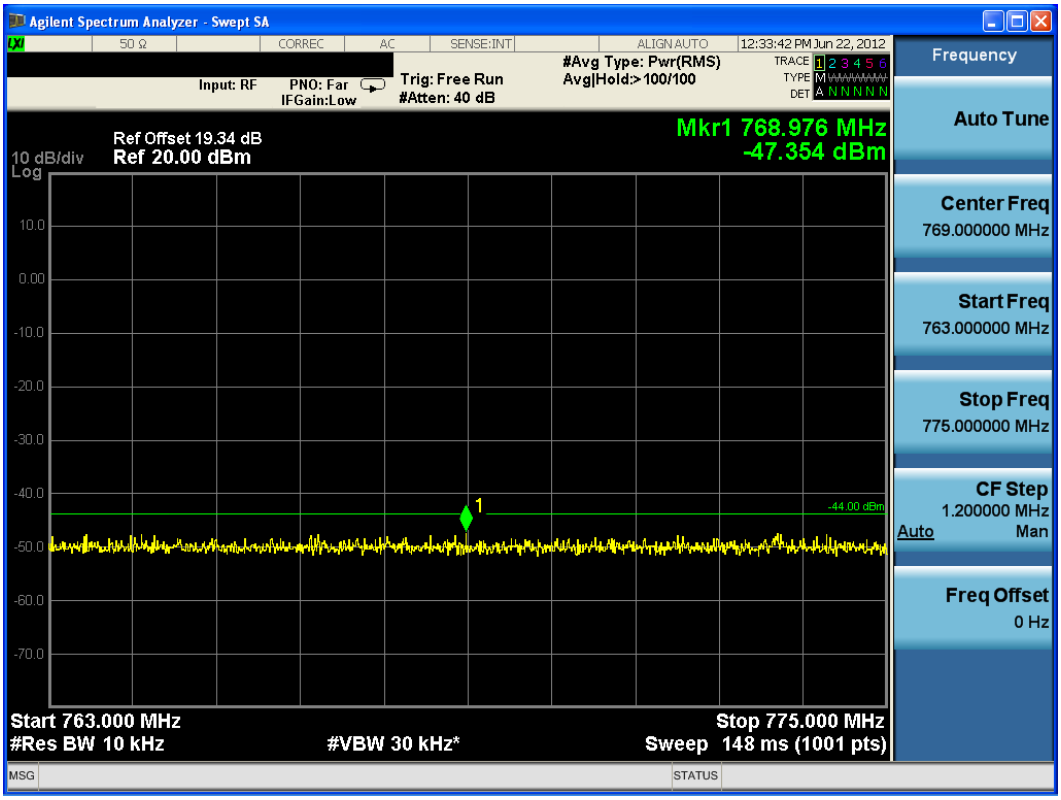
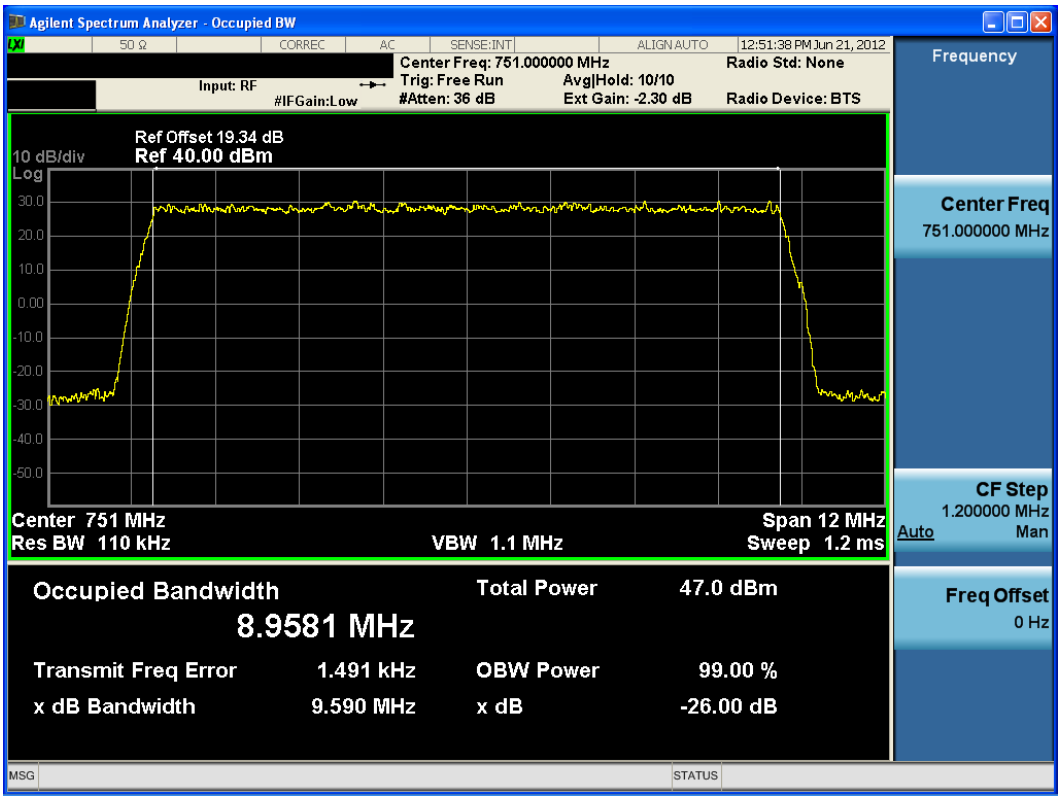


Plot 7-2. Lower Emission Mask (763 – 775MHz) Plot (QPSK) Antenna Port 0



Plot 7-3. Occupied Bandwidth Plot (QPSK) Antenna Port 0

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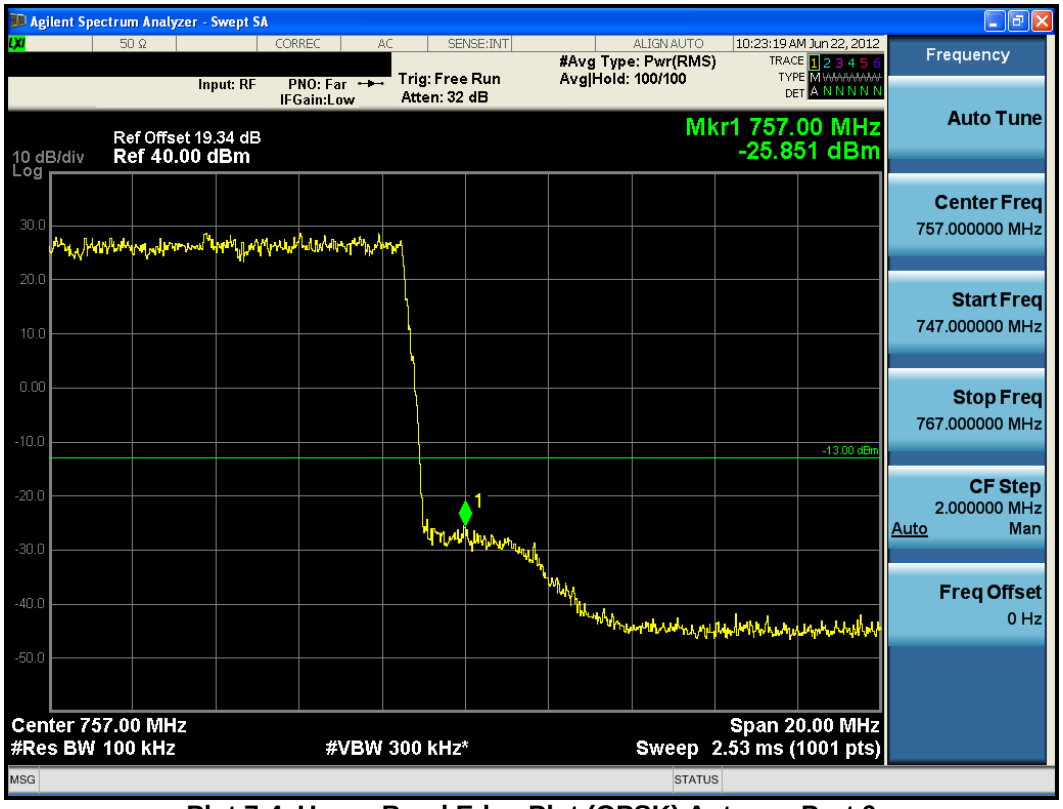
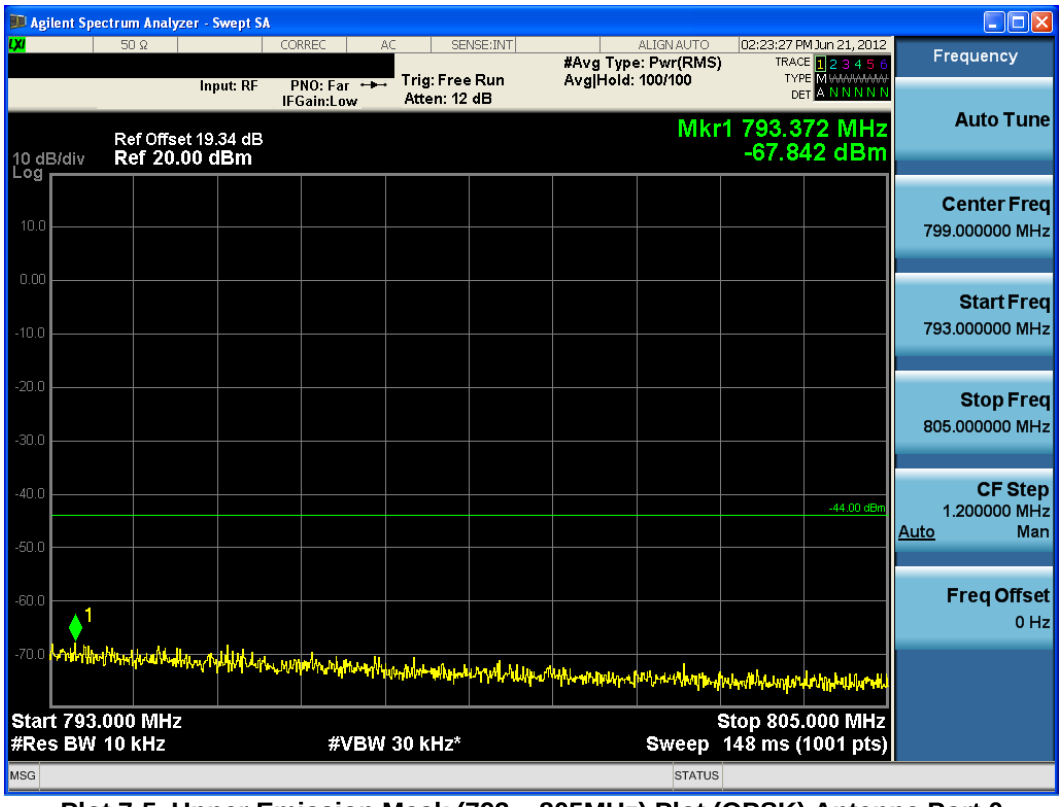


Plot 7-4. Upper Band Edge Plot (QPSK) Antenna Port 0



Plot 7-5. Upper Emission Mask (793 – 805MHz) Plot (QPSK) Antenna Port 0

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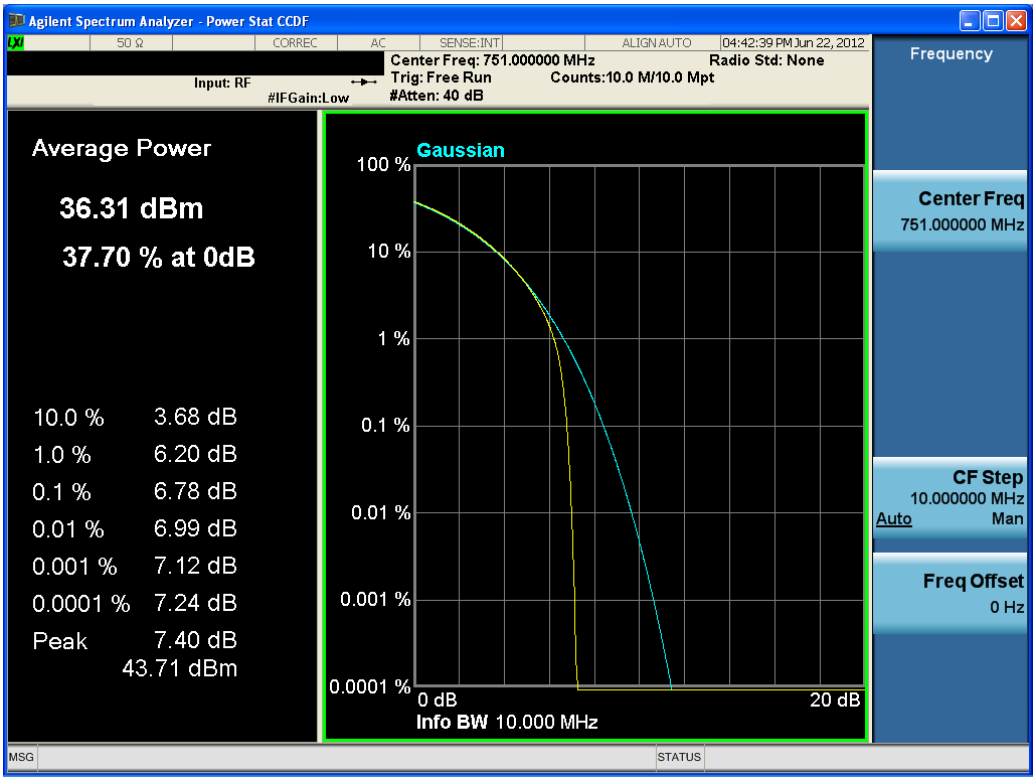
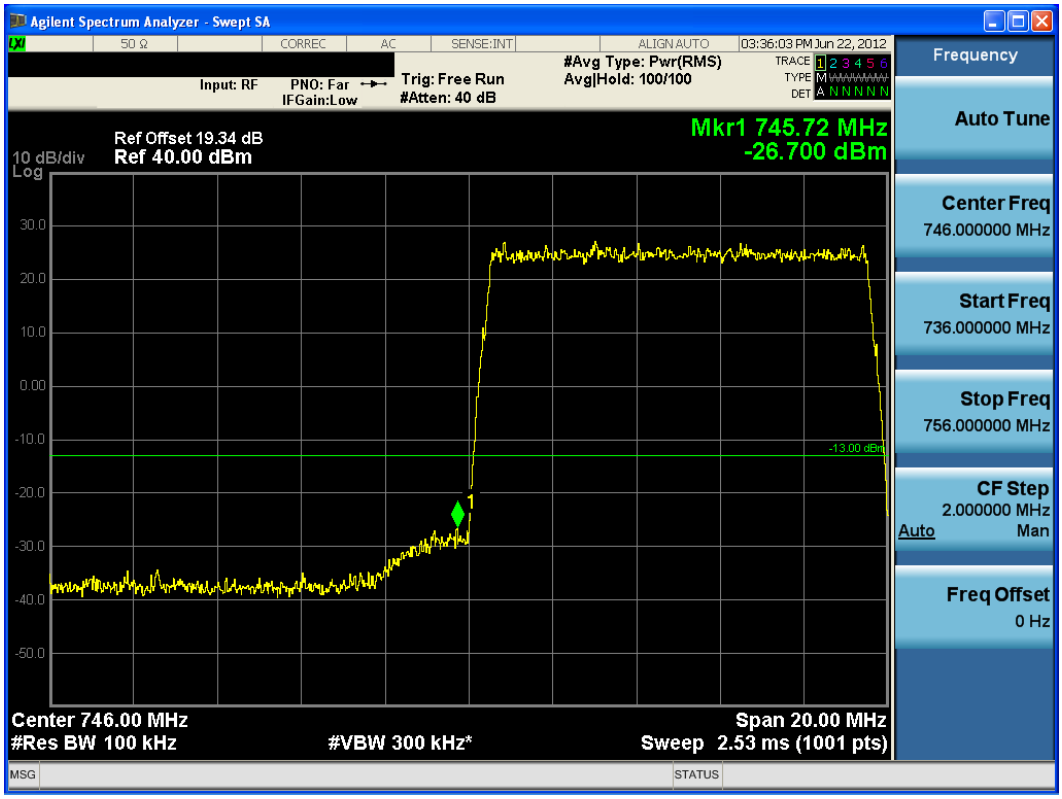


Plot 7-6. CCDF Plot (QPSK) Antenna Port 0



Plot 7-7. Lower Band Edge Plot (QPSK) Antenna Port 1

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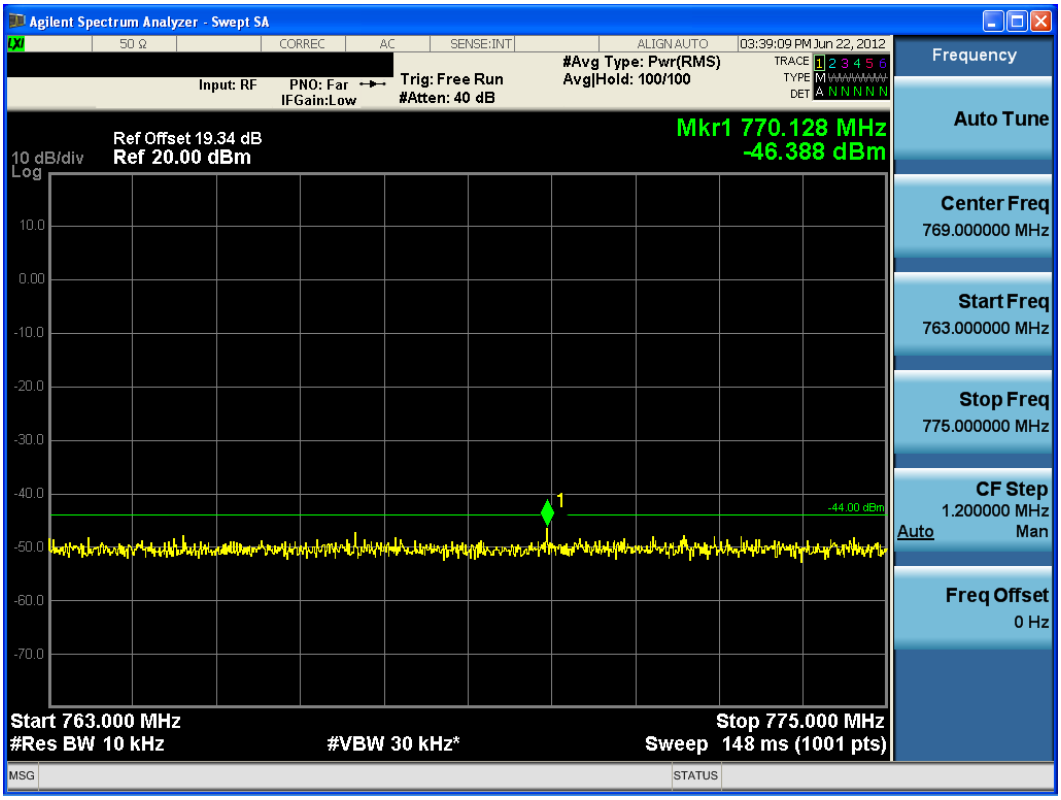
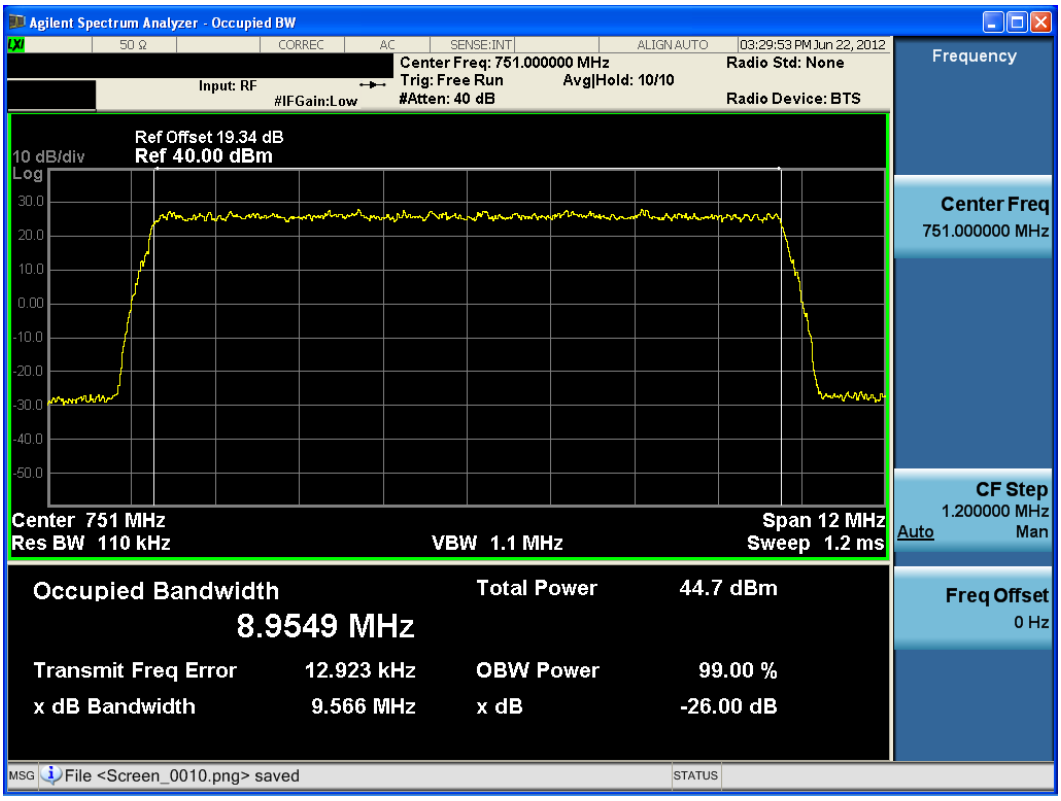


Plot 7-8. Lower Emission Mask (763 – 775MHz) Plot (QPSK) Antenna Port 1



Plot 7-9. Occupied Bandwidth Plot (QPSK) Antenna Port 1

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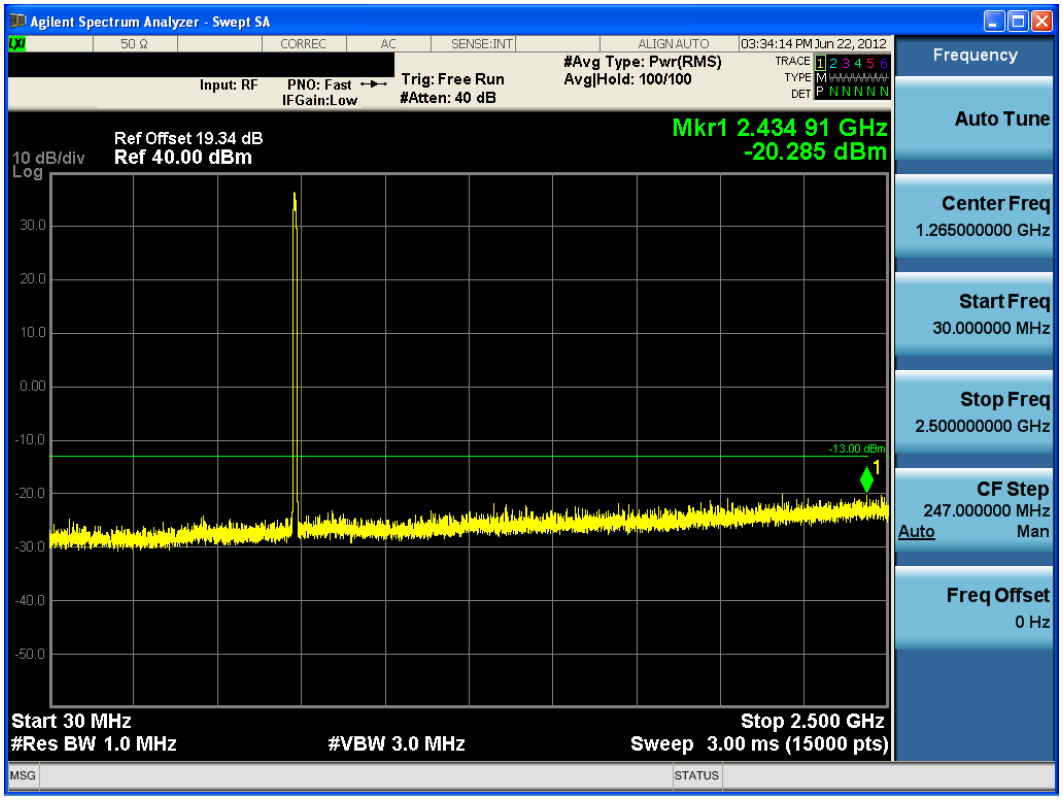
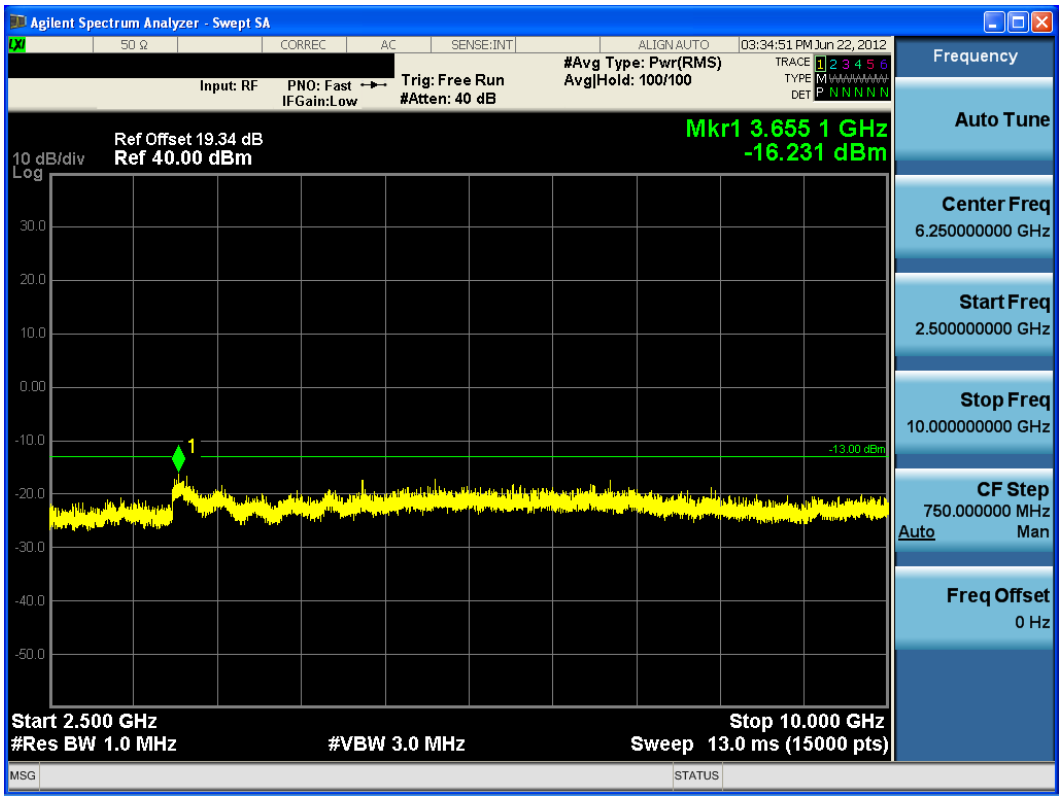


Plot 7-10. Conducted Spurious Plot (QPSK) Antenna Port 1



Plot 7-11. Conducted Spurious Plot (QPSK) Antenna Port 1

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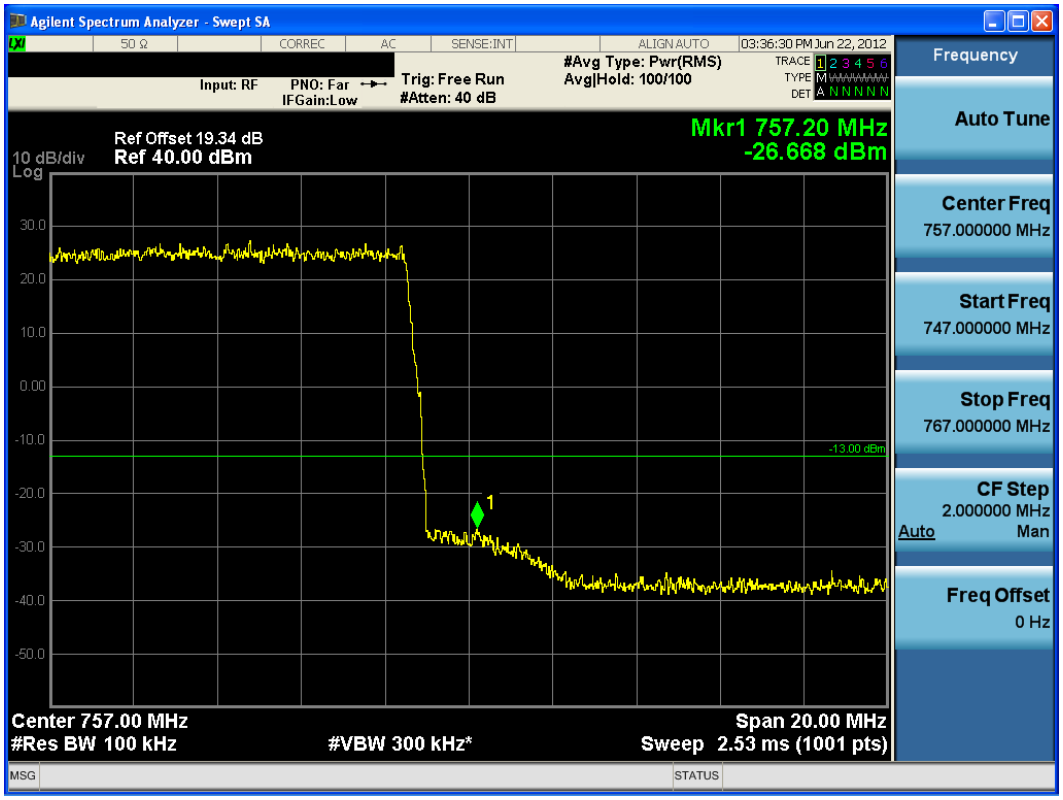
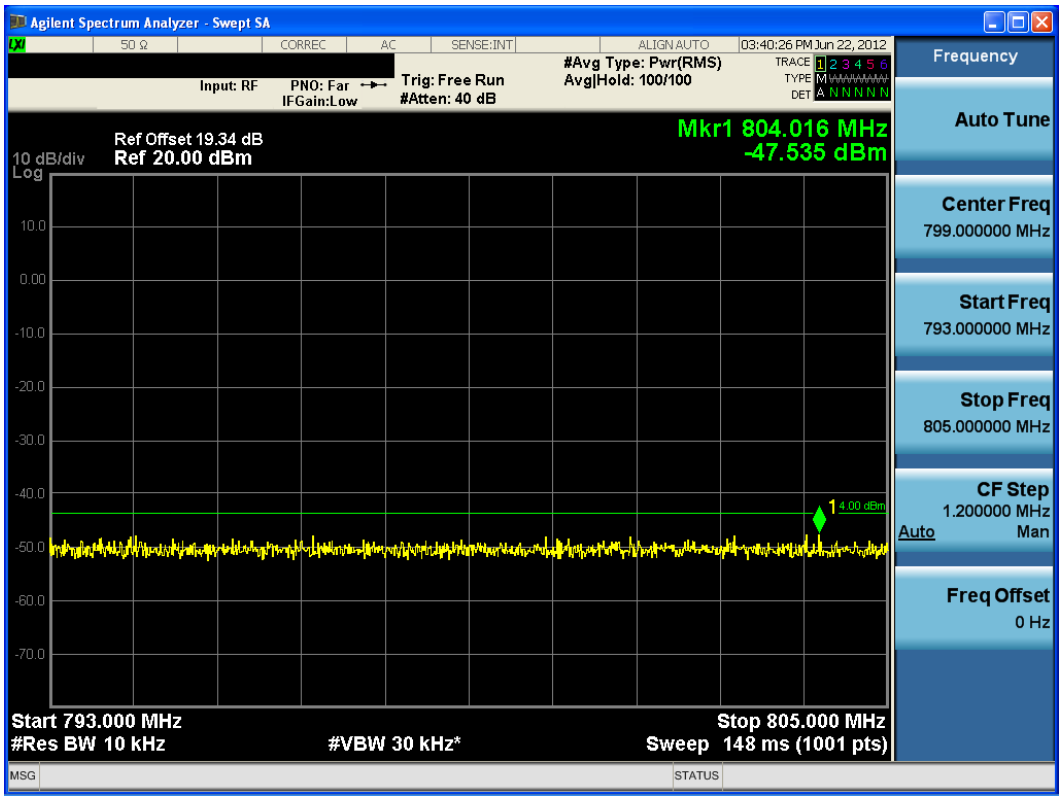


Plot 7-12. Upper Band Edge Plot (QPSK) Antenna Port 1



Plot 7-13. Upper Emission Mask (793 – 805MHz) Plot (QPSK) Antenna Port 1

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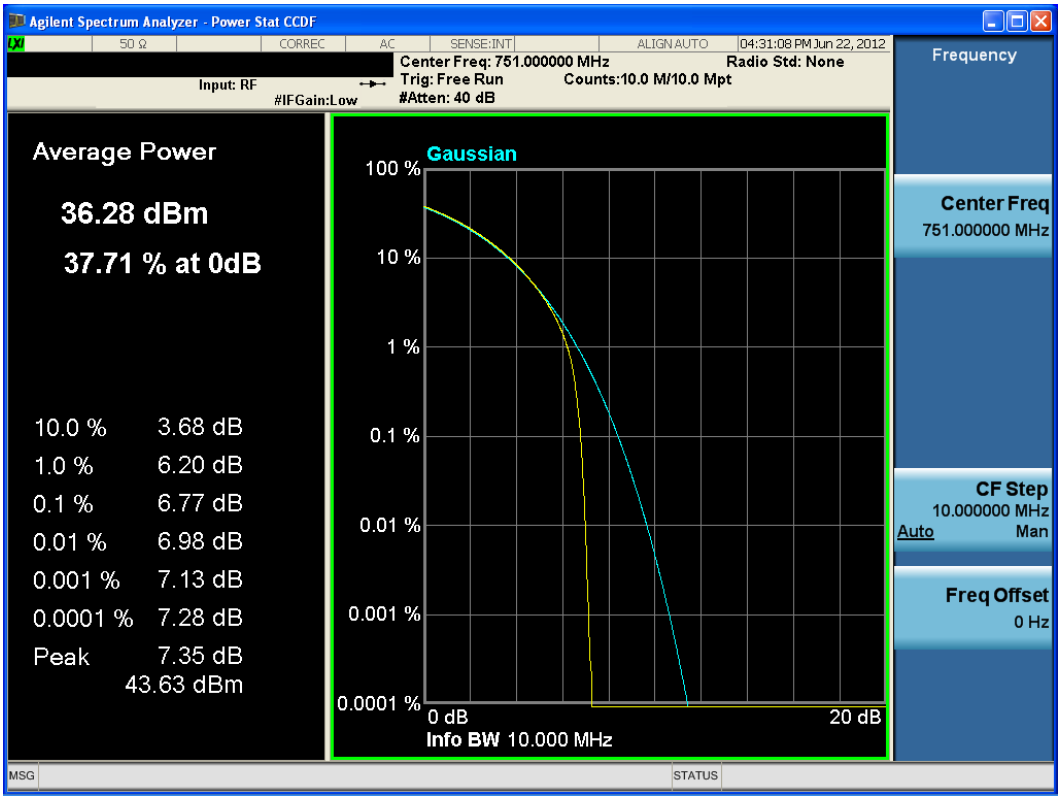
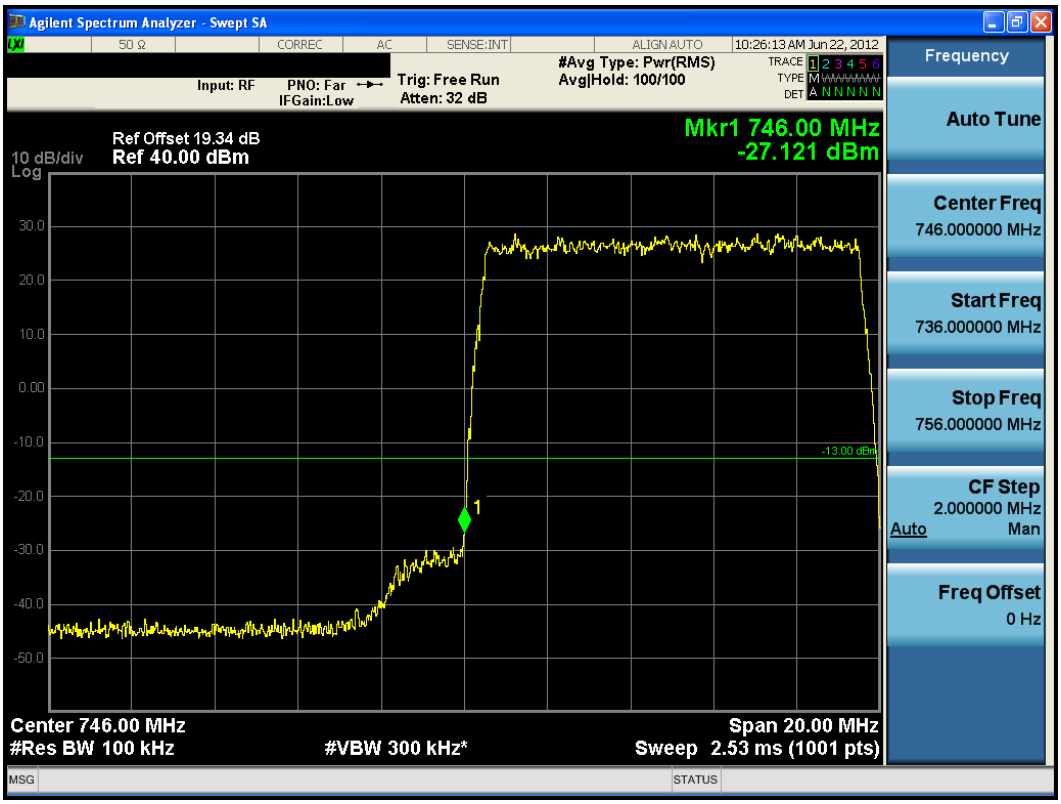


Plot 7-14. CCDF Plot (QPSK) Antenna Port 1



Plot 7-15. Lower Band Edge Plot (16-QAM) Antenna Port 0

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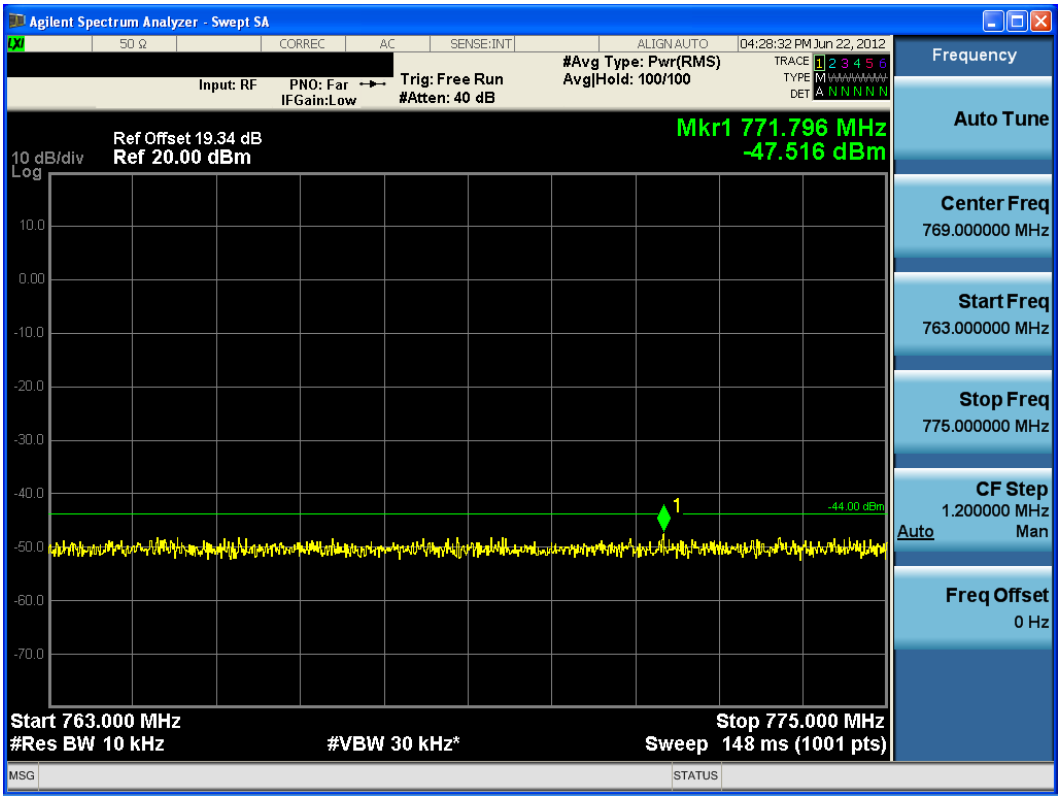
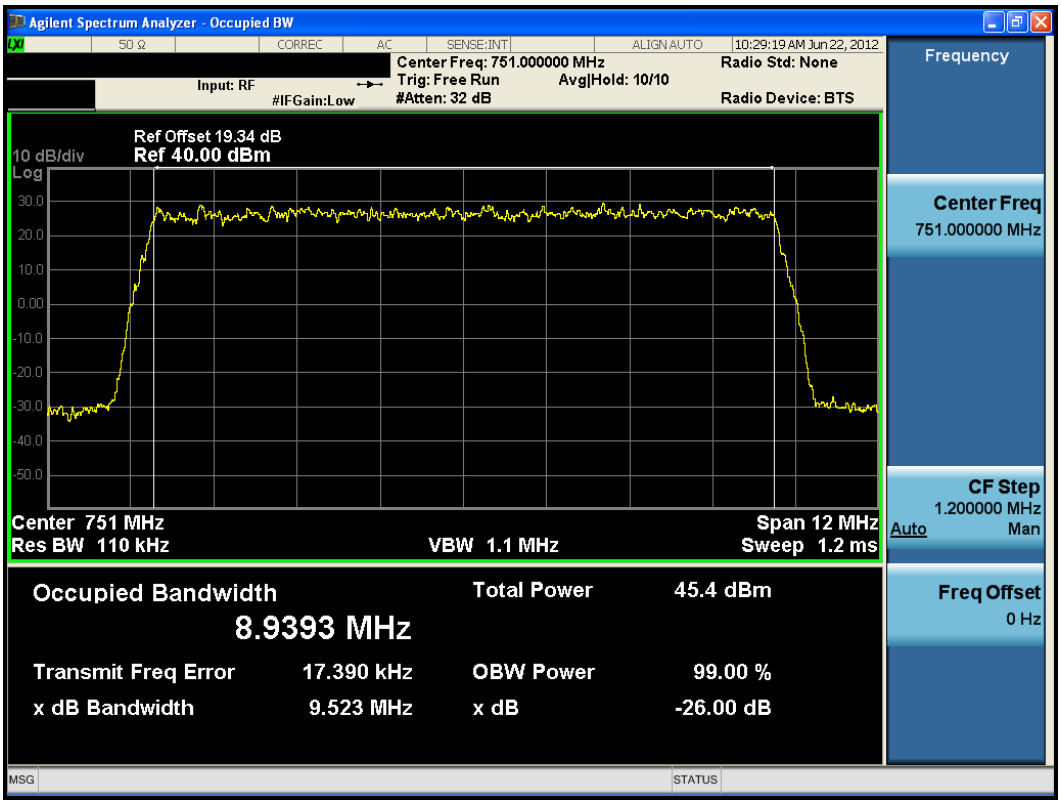


Plot 7-16. Lower Emission Mask (763 – 775MHz) Plot (16-QAM) Antenna Port 0



Plot 7-17. Occupied Bandwidth Plot (16-QAM) Antenna Port 0

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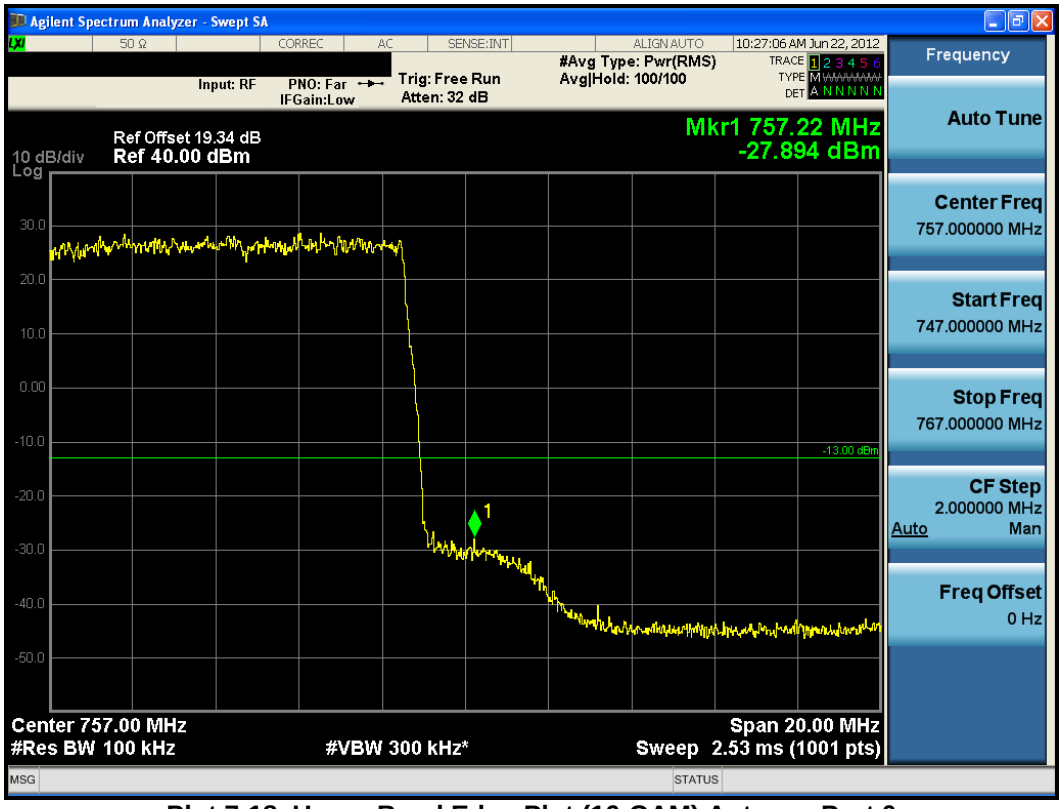
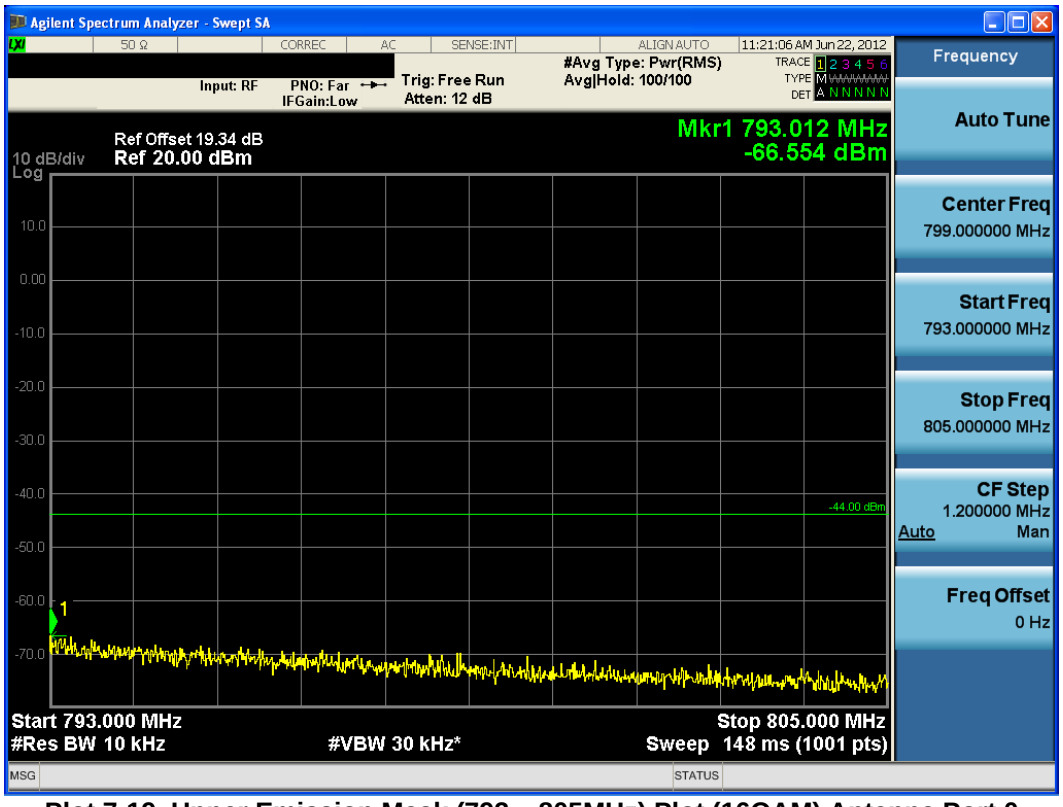


Plot 7-18. Upper Band Edge Plot (16-QAM) Antenna Port 0



Plot 7-19. Upper Emission Mask (793 – 805MHz) Plot (16QAM) Antenna Port 0

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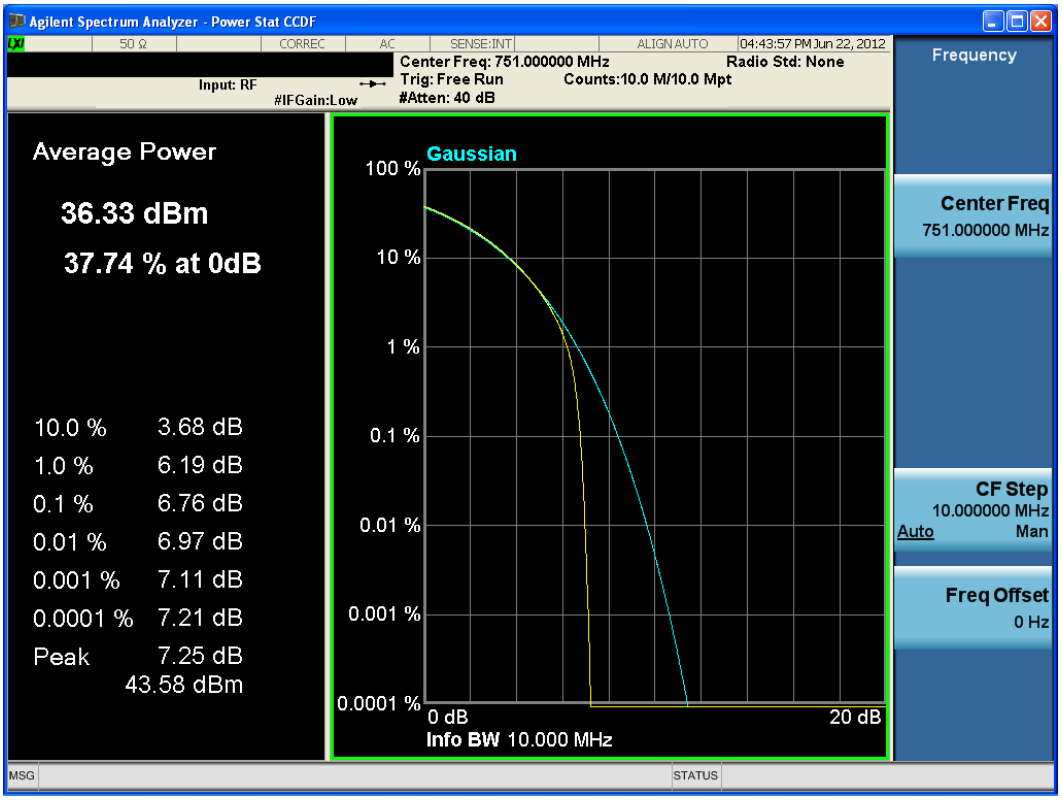
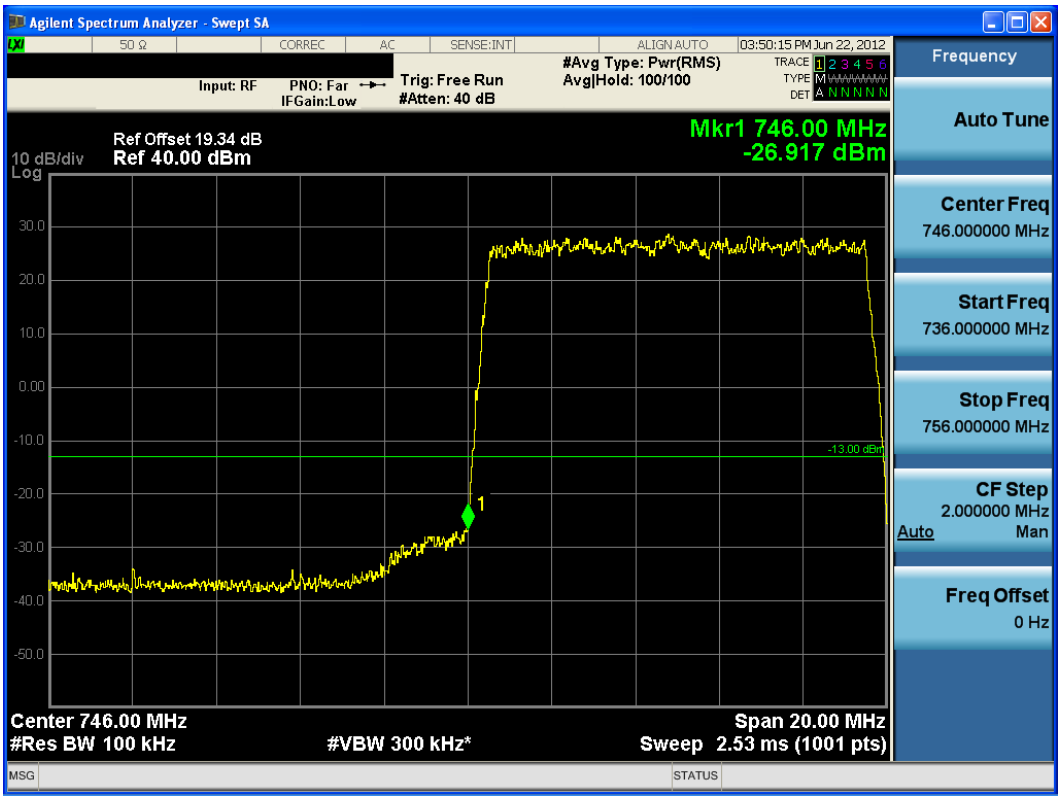


Plot 7-20. CCDF Plot (16-QAM) Antenna Port 0



Plot 7-21. Lower Band Edge Plot (16-QAM) Antenna Port 1

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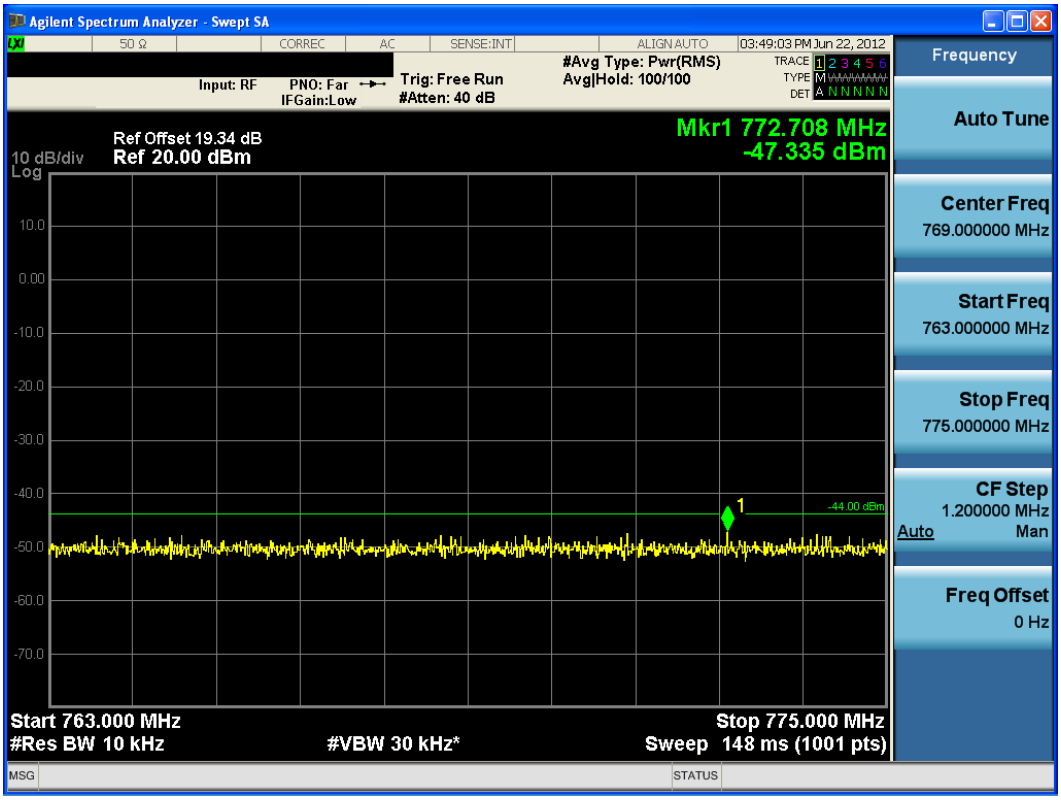
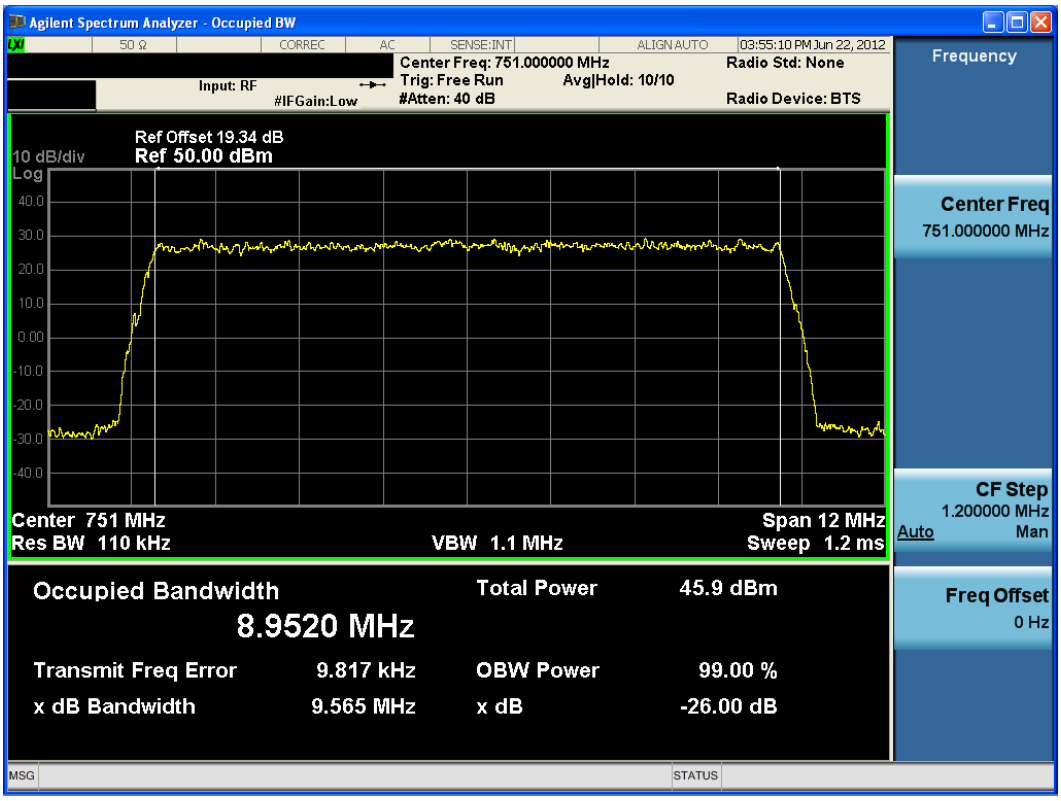


Plot 7-22. Lower Emission Mask (763 – 775MHz) Plot (16-QAM) Antenna Port 1



Plot 7-23. Occupied Bandwidth Plot (16-QAM) Antenna Port 1

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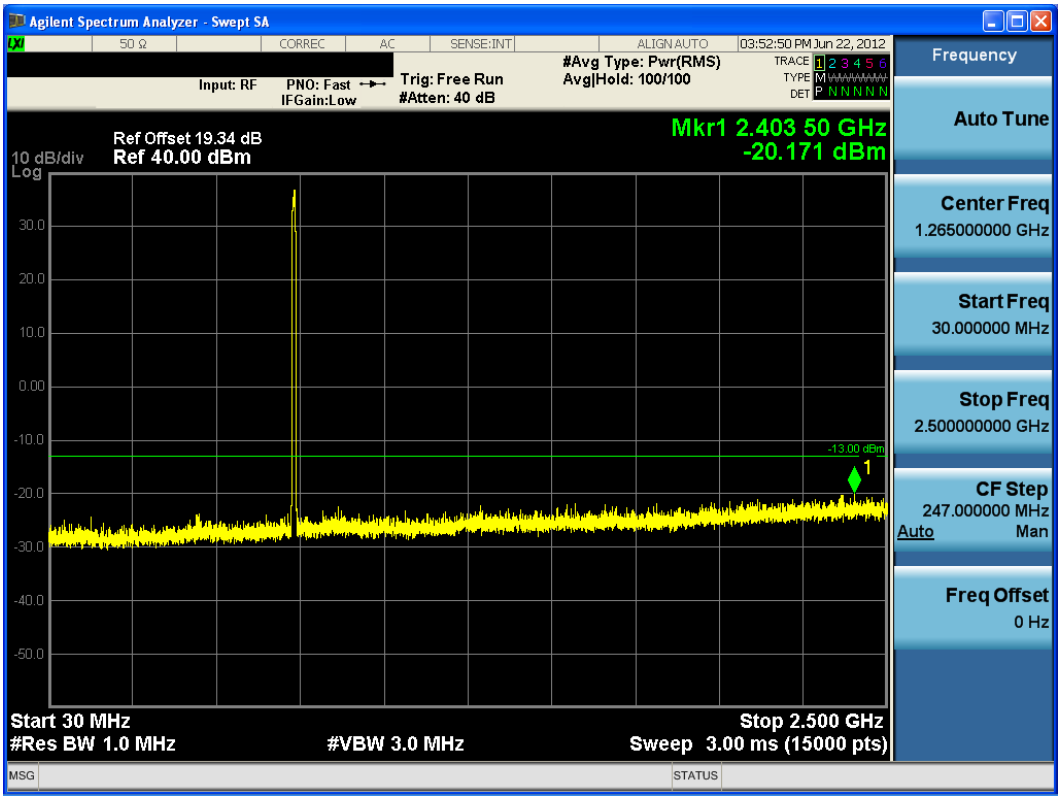
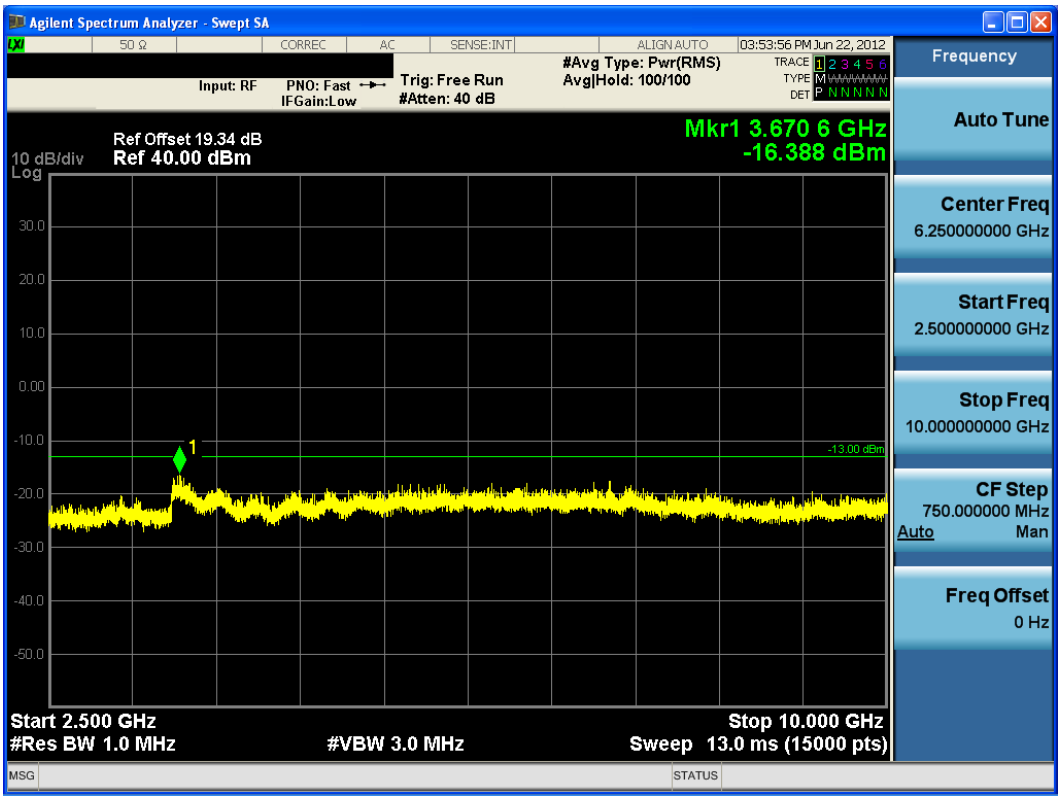


Plot 7-24. Conducted Spurious Plot (16-QAM) Antenna Port 1



Plot 7-25. Conducted Spurious Plot (16-QAM) Antenna Port 1

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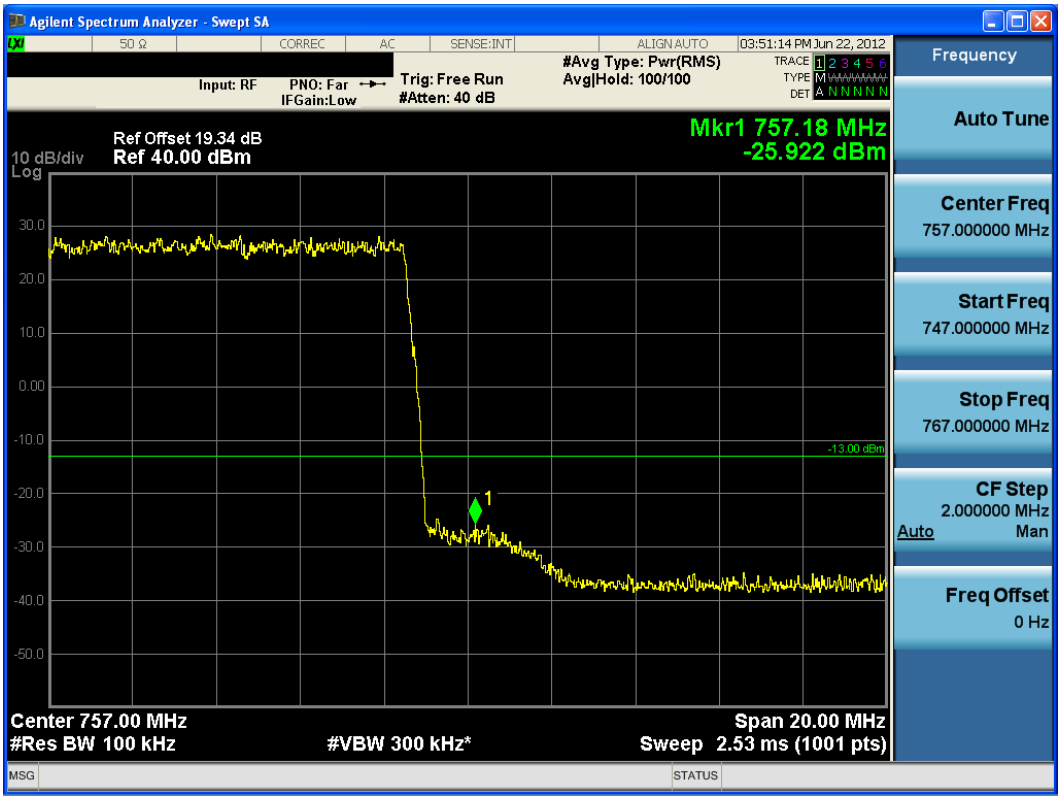
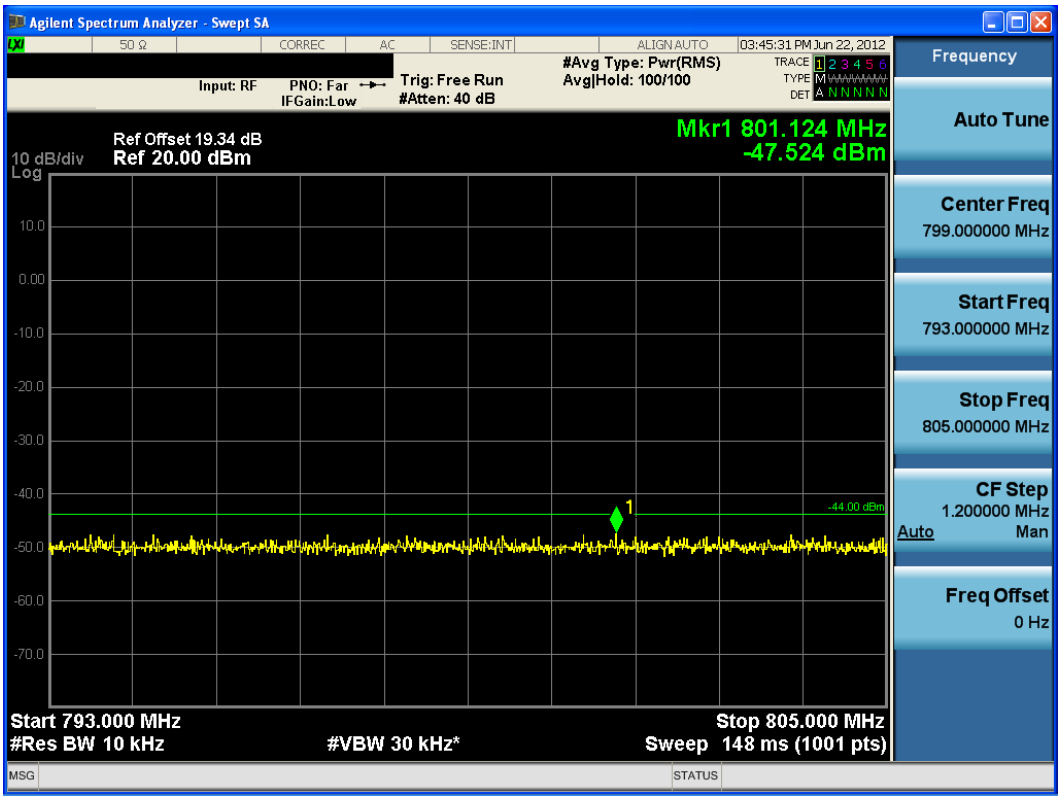


Plot 7-26. Upper Band Edge Plot (16-QAM) Antenna Port 1



Plot 7-27. Upper Emission Mask (793 – 805MHz) Plot (16-QAM) Antenna Port 1

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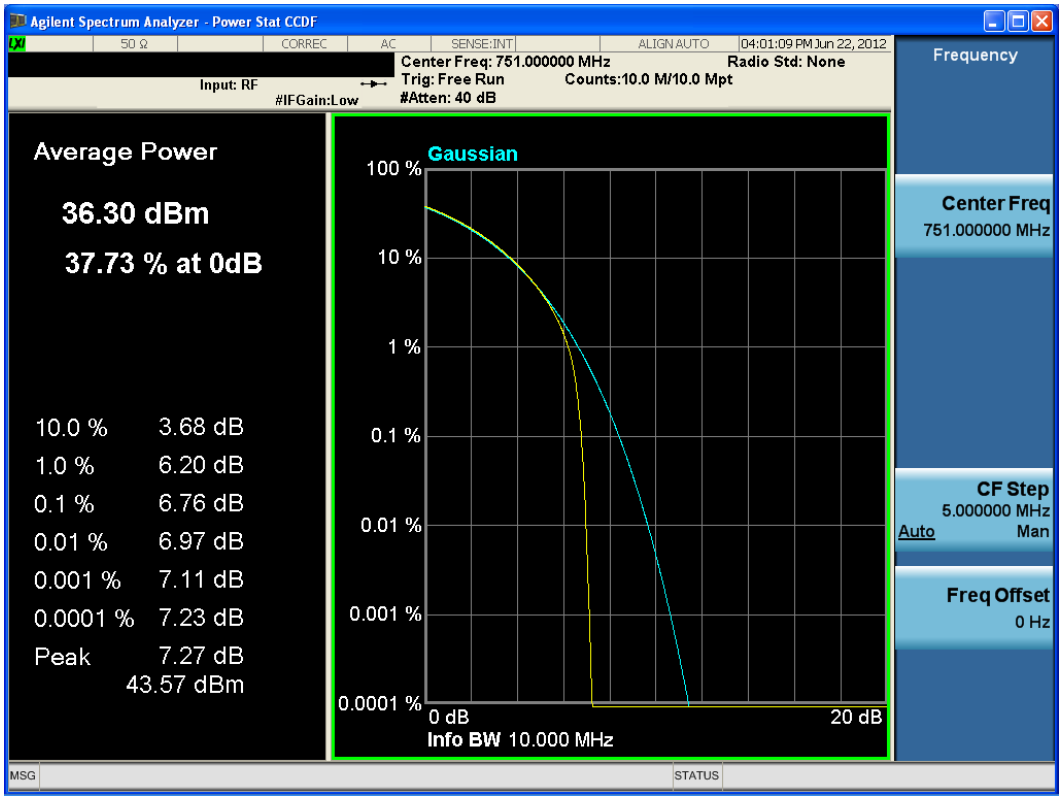
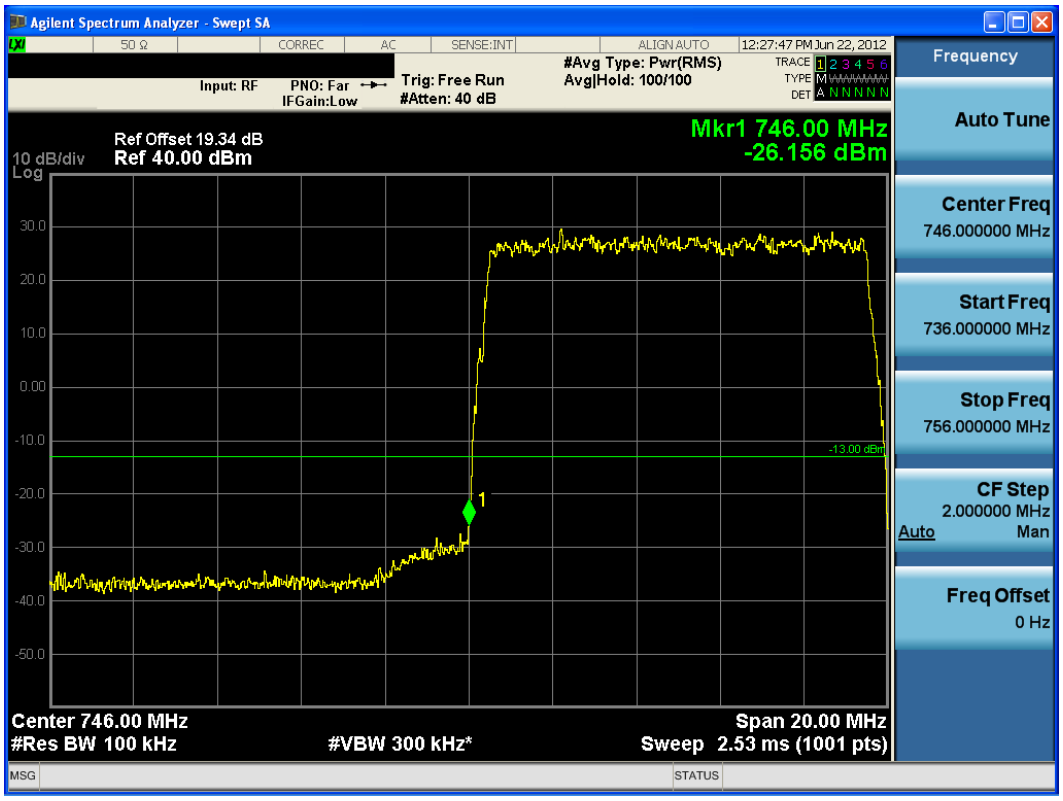


Plot 7-28. CCDF Plot (16-QAM) Antenna Port 1



Plot 7-29. Lower Band Edge Plot (64-QAM) Antenna Port 0

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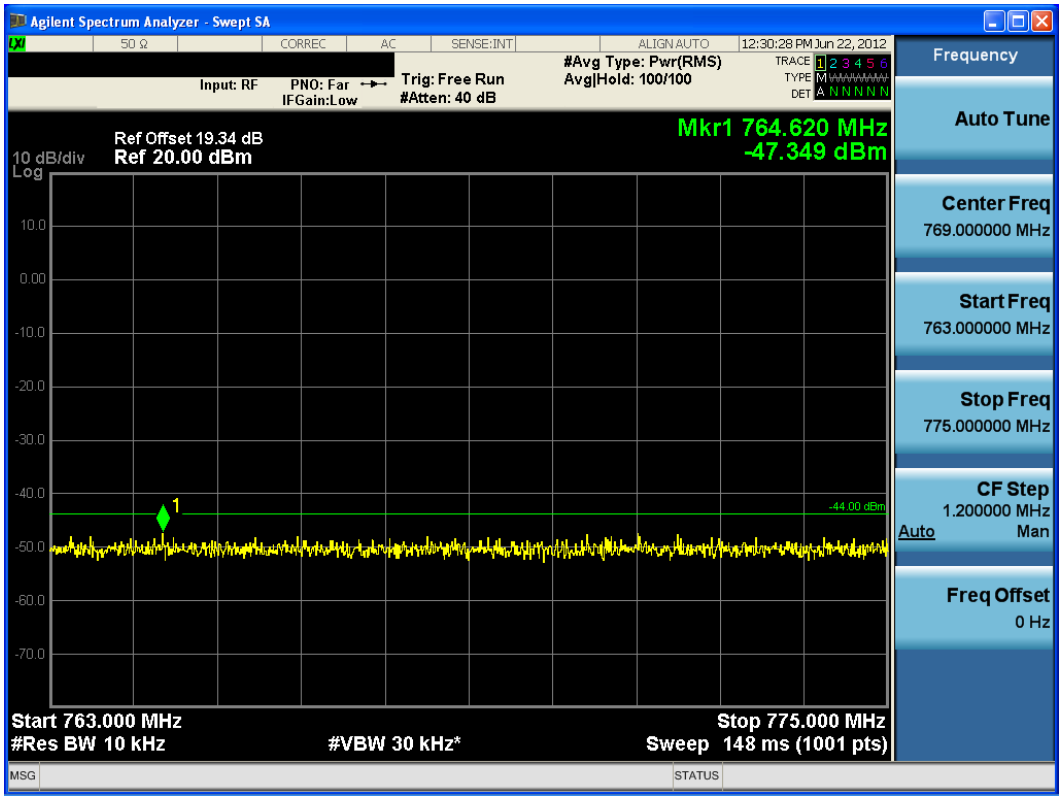
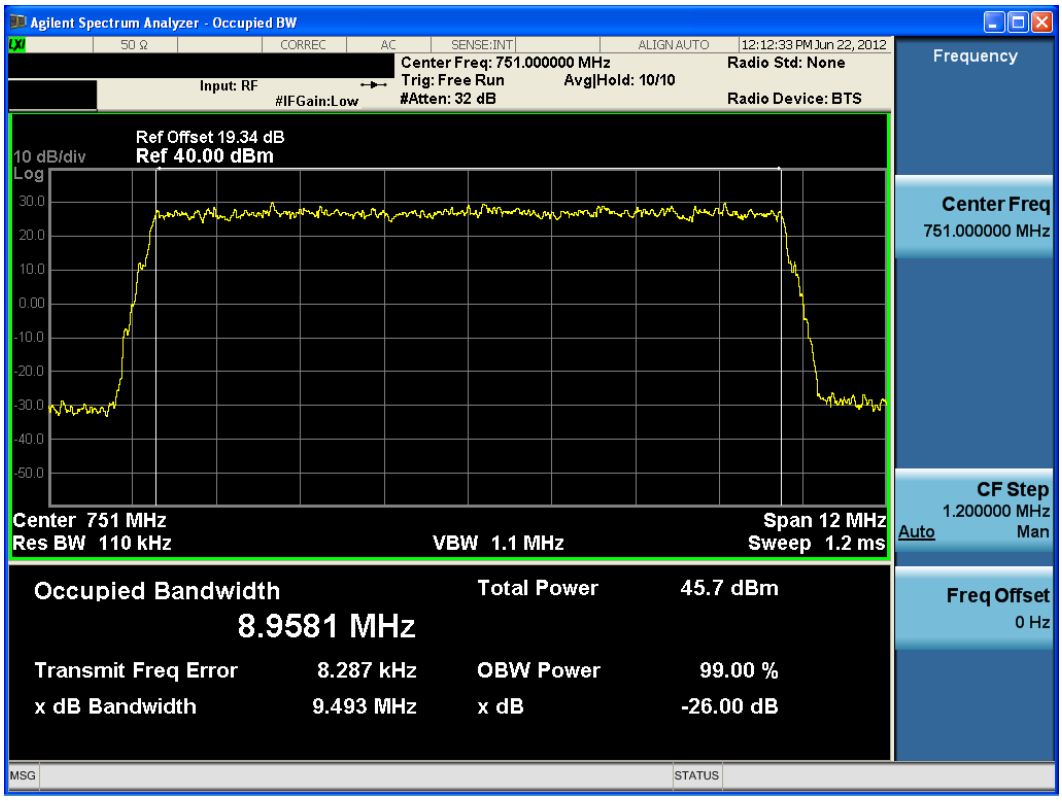


Plot 7-30. Lower Emission Mask (763 – 775MHz) Plot (64-QAM) Antenna Port 0



Plot 7-31. Occupied Bandwidth Plot (64-QAM) Antenna Port 0

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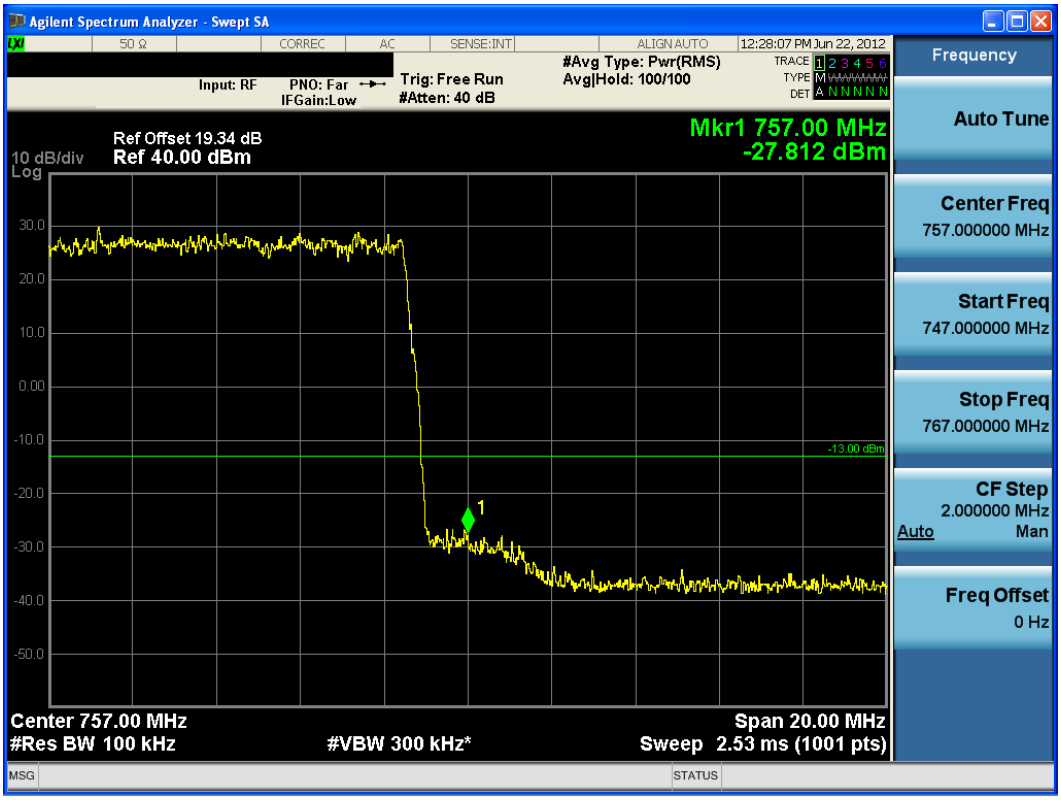
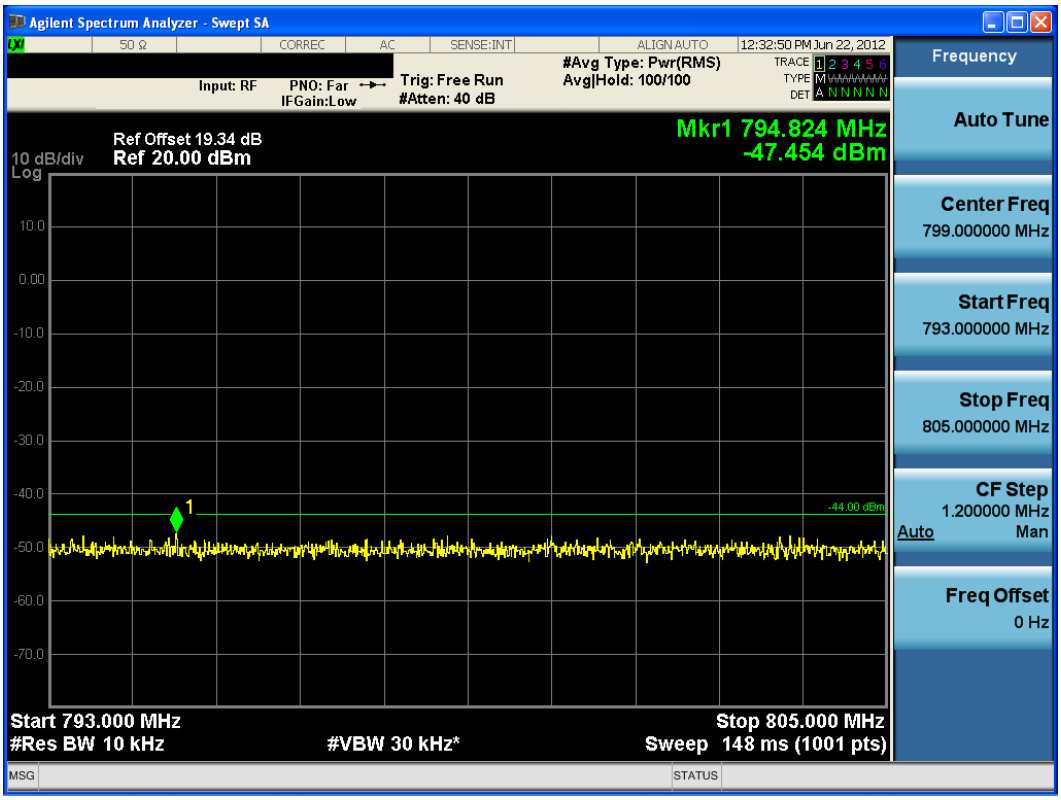


Plot 7-32. Upper Band Edge Plot (64-QAM) Antenna Port 0



Plot 7-33. Upper Emission Mask (793 – 805MHz) Plot (64-QAM – RB Size 50) Antenna Port 0

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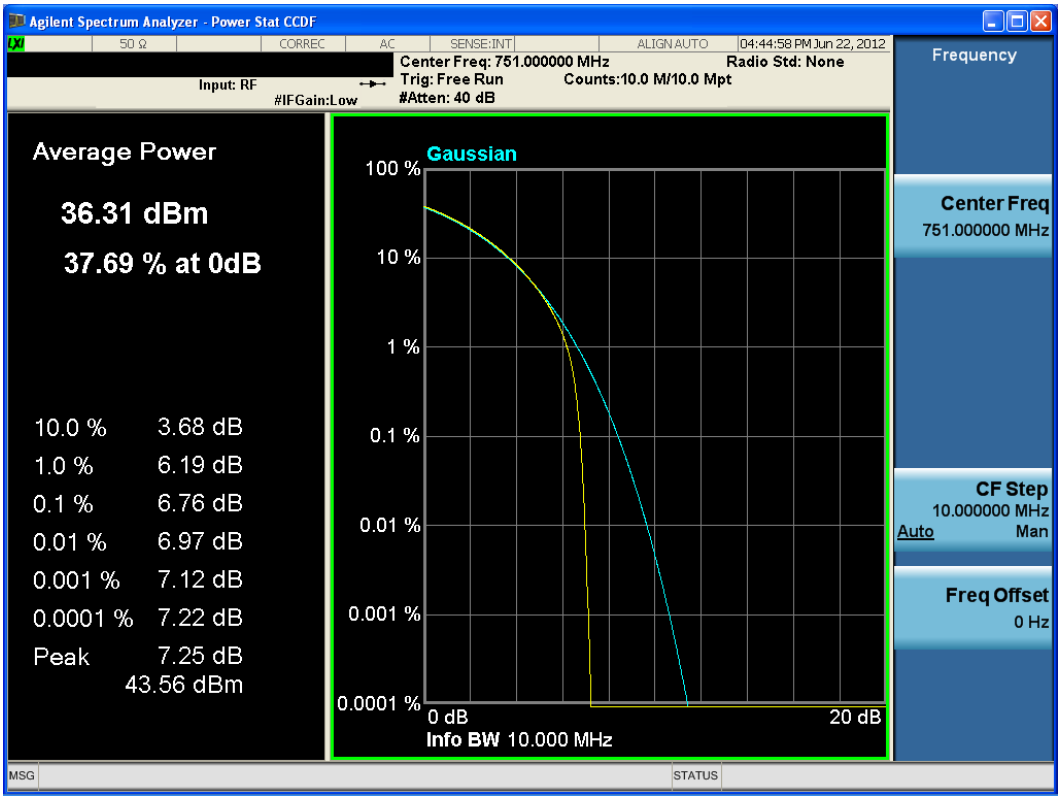
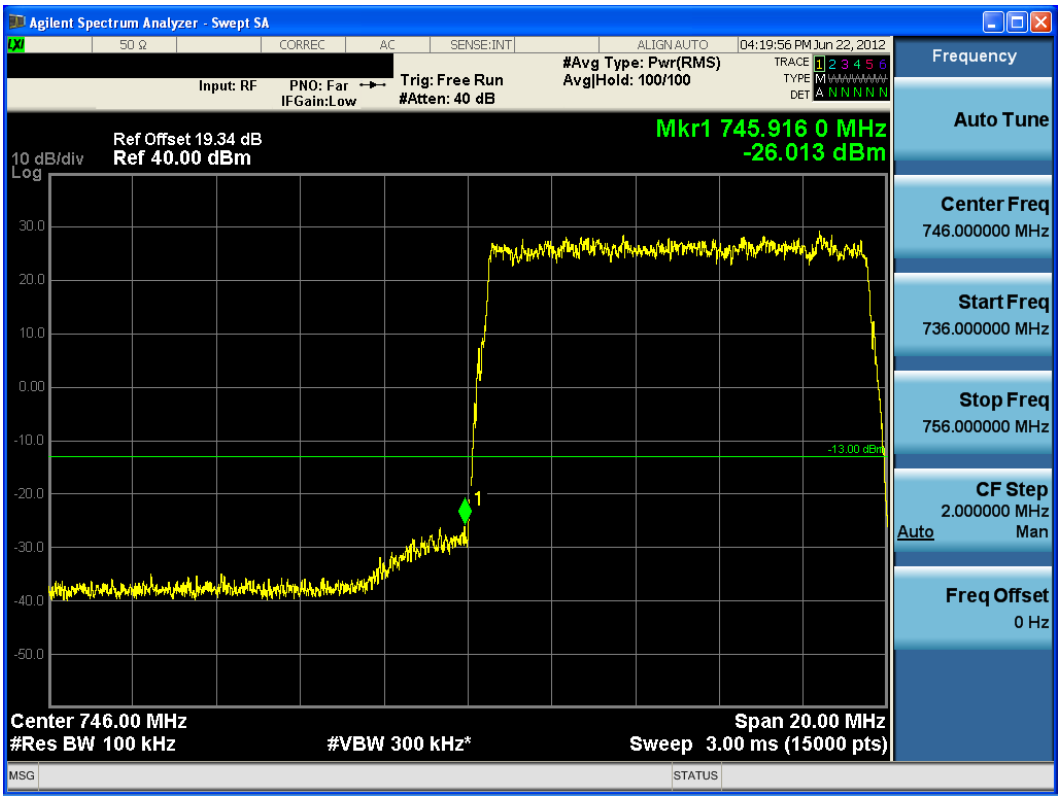


Plot 7-34. CCDF Plot (64-QAM) Antenna Port 0



Plot 7-35. Lower Band Edge Plot (64-QAM) Antenna Port 1

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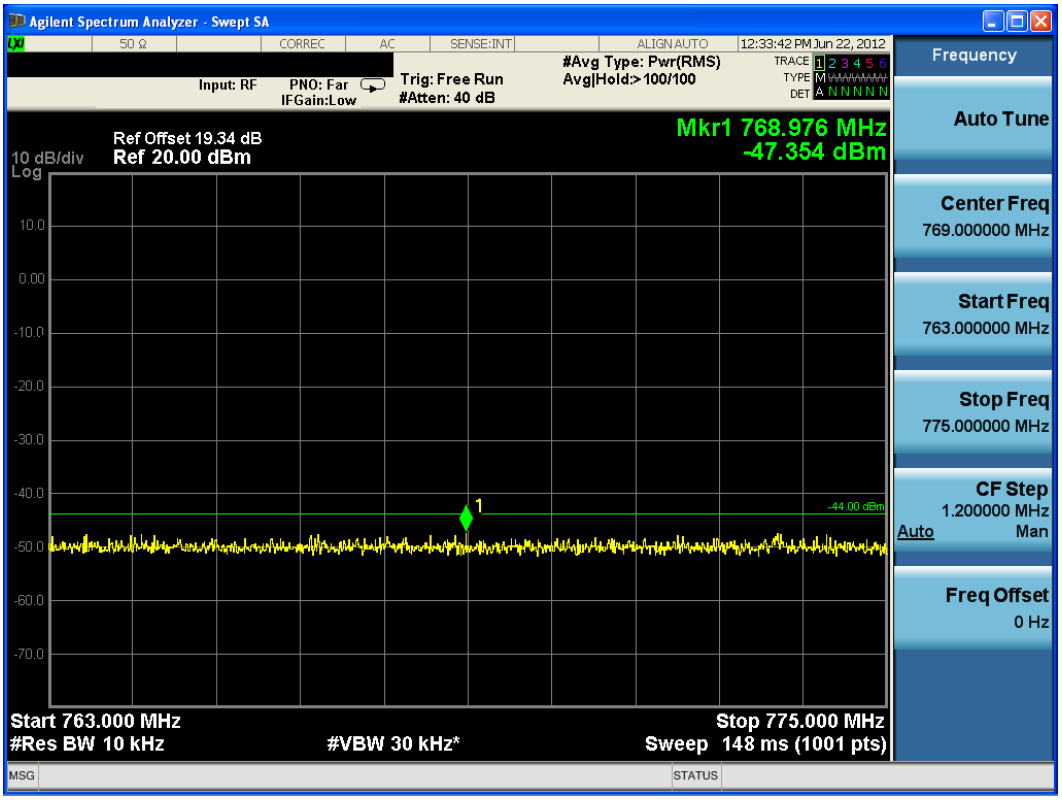
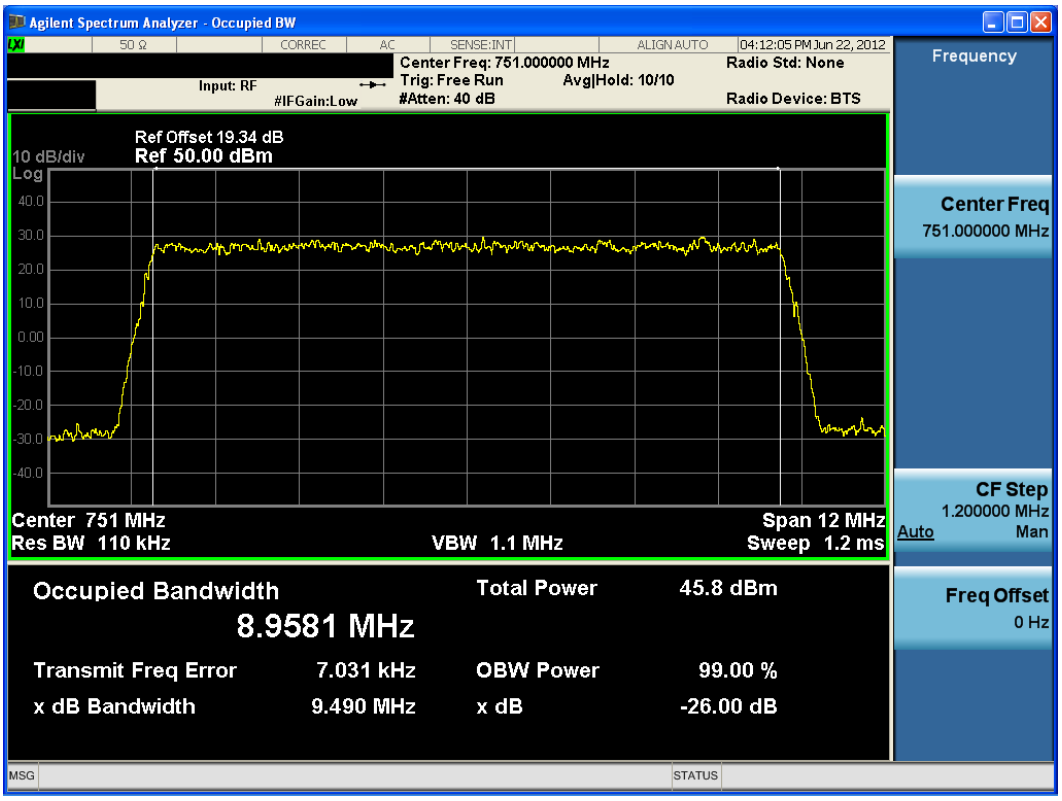


Plot 7-36. Lower Emission Mask (763 – 775MHz) Plot (64-QAM) Antenna Port 1



Plot 7-37. Occupied Bandwidth Plot (64-QAM) Antenna Port 1

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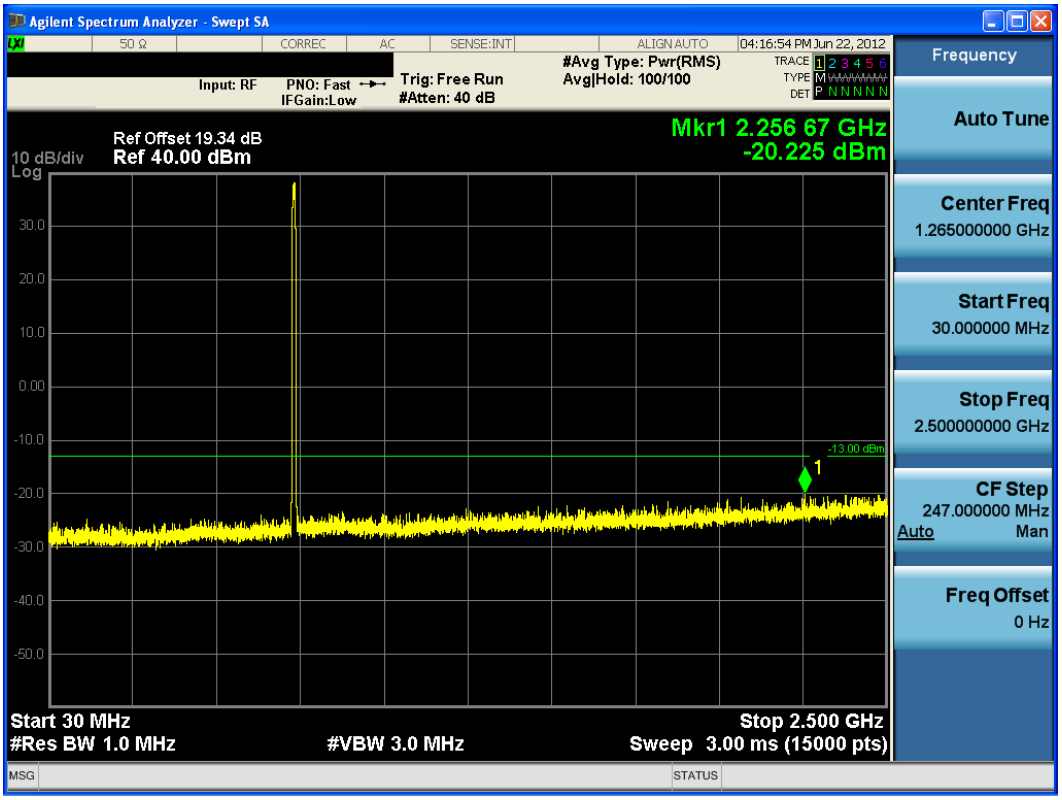
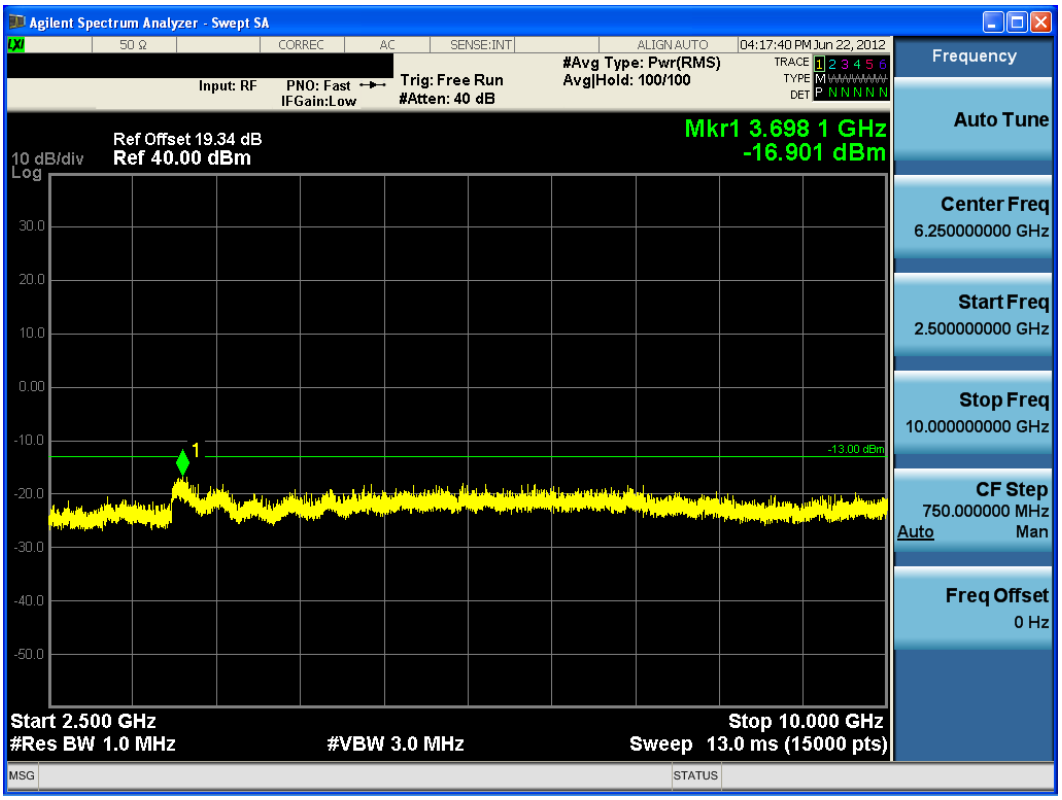


Plot 7-38. Conducted Spurious Plot (64-QAM) Antenna Port 1



Plot 7-39. Conducted Spurious Plot (64-QAM) Antenna Port 1

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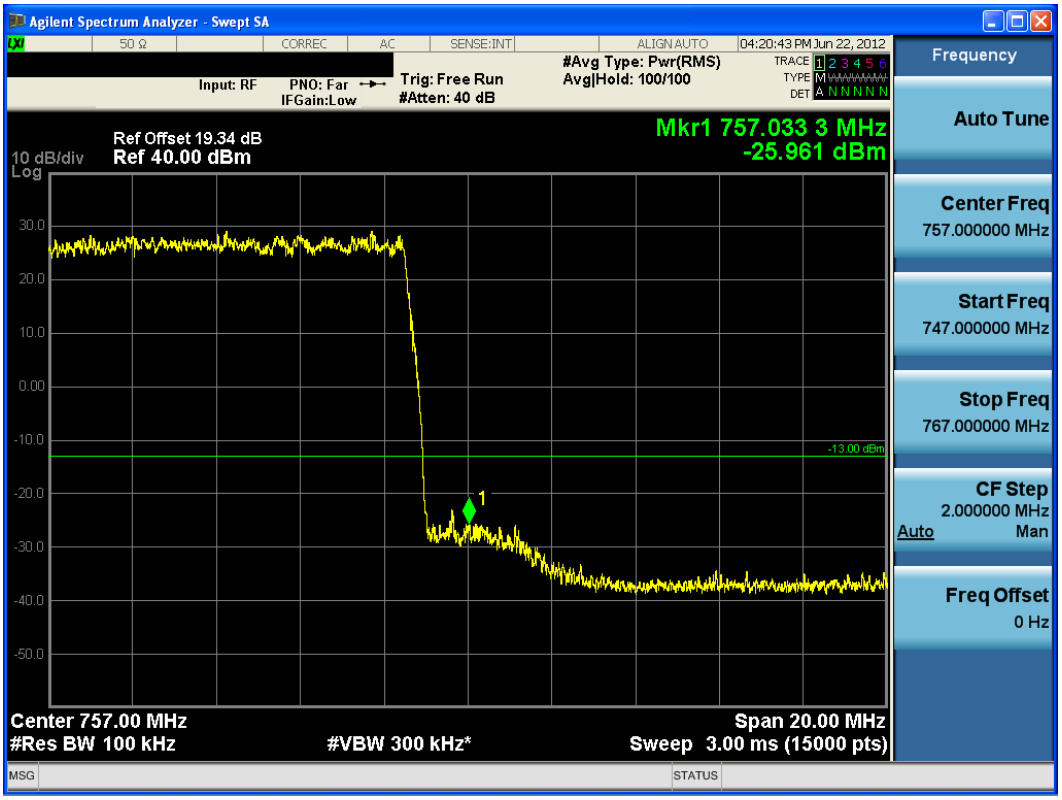
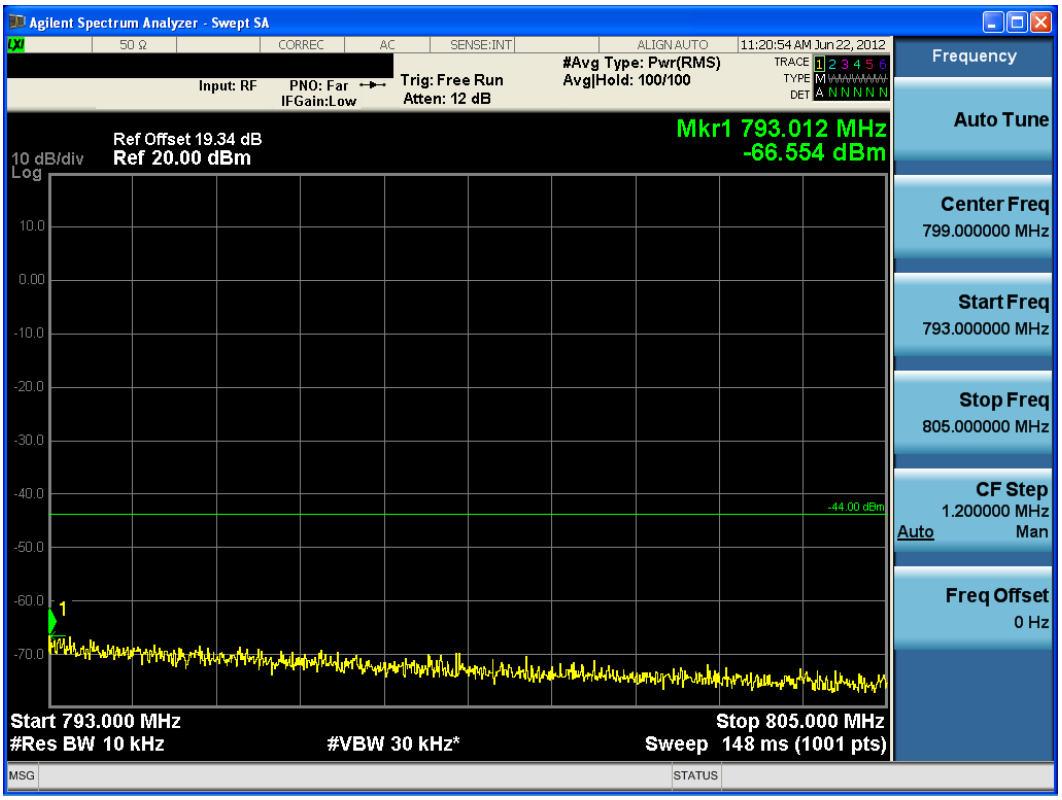


Plot 7-40. Upper Band Edge Plot (64-QAM) Antenna Port 1



Plot 7-41. Upper Emission Mask (793 – 805MHz) Plot (64-QAM) Antenna Port 1

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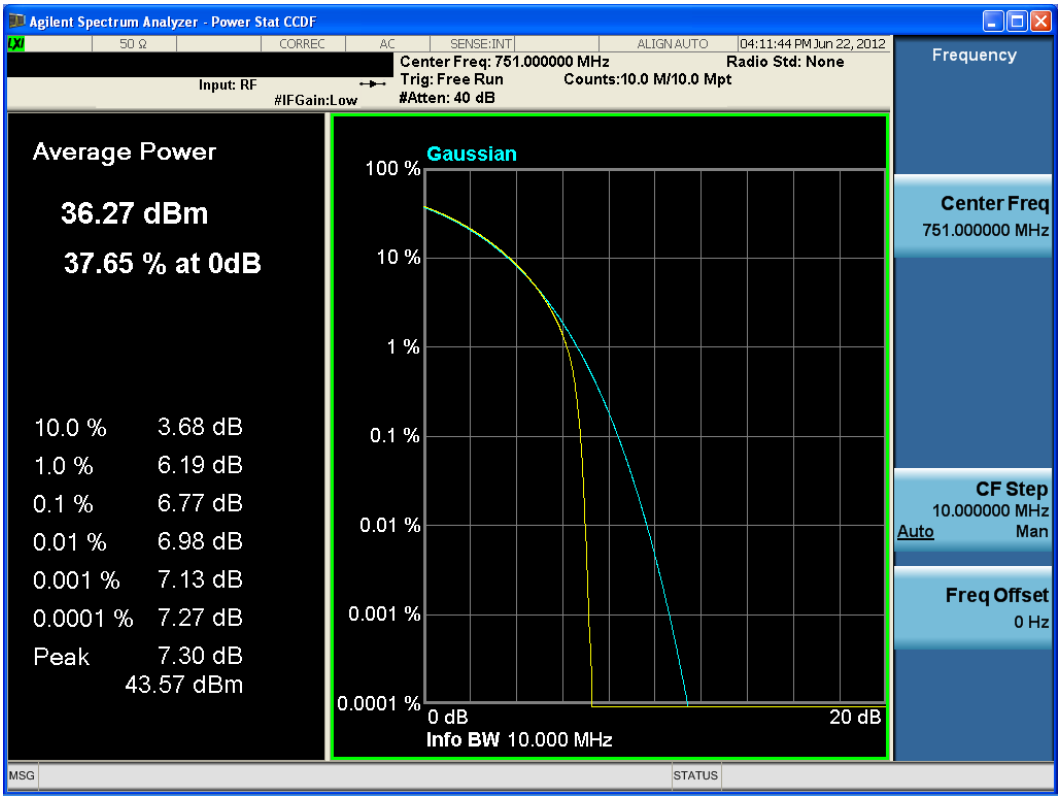

Plot 7-42. CCDF Plot (64-QAM) Antenna Port 1

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **NEC LTE Base Station FCC ID: DI407208901** complies with all the requirements of Parts 2 and 27 of the FCC rules.

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