

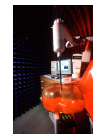


PCTEST ENGINEERING LABORATORY, INC.

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CERTIFICATE OF COMPLIANCE FCC Part 27 Certification

Applicant Name:

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

Date of Testing:

September 7 - 16, 2009

Test Site/Location:

PCTEST Lab., Columbia, MD, USA

Test Report Serial No.:

0909081672.A3L

FCC ID:

A3LSLCU100

APPLICANT:

SAMSUNG ELECTRONICS, CO. LTD.

Application Type:

Certification

FCC Classification:

Licensed Non-Broadcast Transmitter (TNB)

FCC Rule Part(s):

§2; §27

EUT Type:

LTE USB Modem

Model(s):

SLC-U100

Tx Frequency Range:

777 - 787MHz (LTE)

Max. RF Output Power:

0.093 W ERP (QPSK) (19.7 dBm) / 0.11 W ERP (16-QAM) (20.42 dBm)

0.088 W ERP (BPSK) (19.45 dBm)

Emission Designator(s):

8M95G7D (QPSK) / 8M94D7W (16-QAM) / 8M93G7D (BPSK)

Test Device Serial No.:

identical prototype [S/N: FCC #6]

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.

Grant Conditions: Power output listed is ERP for Part 27.

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


Randy Ortanez
President



FCC ID: A3LSLCU100		FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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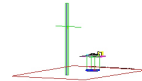
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MEASUREMENT REPORT

FCC Part 27

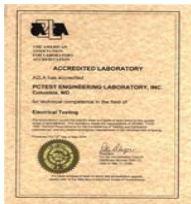


§2.1033 General Information

APPLICANT: Samsung Electronics, Co. Ltd.
APPLICANT ADDRESS: 18600 Broadwick St.
 Rancho Dominguez, CA 90220
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: SLC-U100
FCC ID: A3LSLCU100
FCC CLASSIFICATION: Licensed Non-Broadcast Transmitter (TNB)
EMISSION DESIGNATOR(S): 8M95G7D (QPSK) / 8M94D7W (16-QAM) / 8M93G7D (BPSK)
MODE: LTE
FREQUENCY TOLERANCE: Emission must remain in band
Test Device Serial No.: FCC #6 ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST: September 7 - 16, 2009
TEST REPORT S/N: 0909081672.A3L

Test Facility / Accreditations

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



- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (2451A-1).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (2451A-1) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

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1.0 INTRODUCTION

1.1 Scope

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

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity area, the Baltimore-Washington Intern't'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 27, 2006.

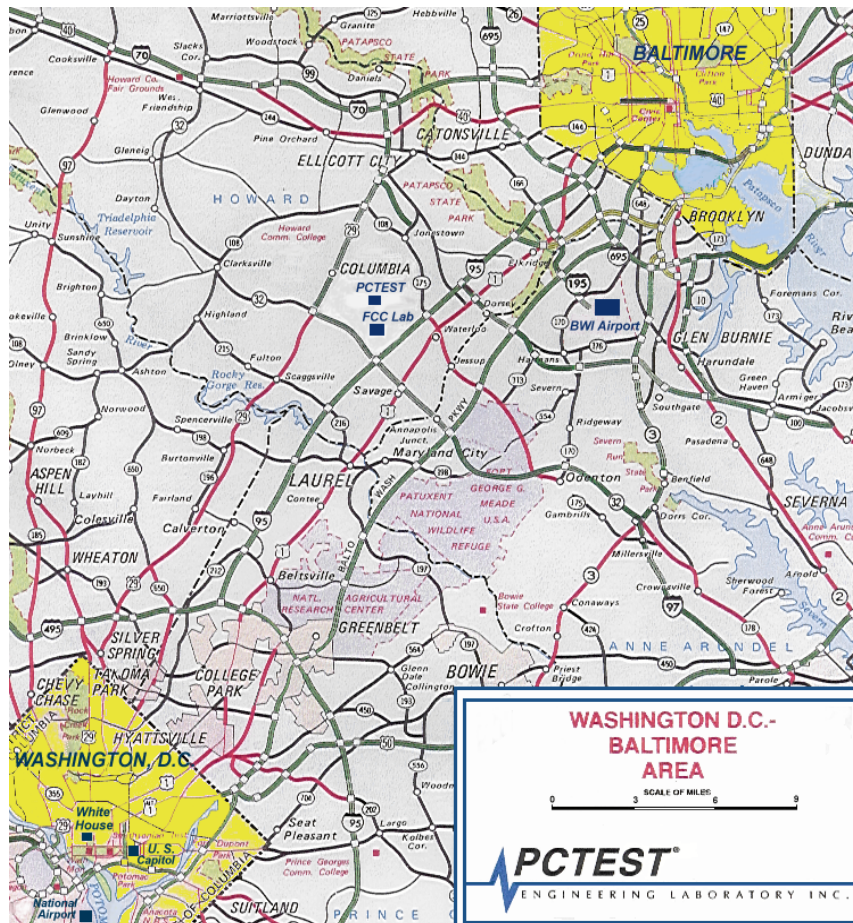


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung LTE USB Modem FCC ID: A3LSLCU100**. 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: SLC-U100	A3LSLCU100	LTE USB Modem

Table 2-1. EUT Equipment Description

The EUT was powered through a USB connection to a laptop computer. The EUT's Receive antenna port was connected to an Agilent Vector Signal Generator used to load a downlink waveform onto the EUT. The EUT was set to transmit at full power through test software installed in a laptop computer. The test software also allowed for the device to transmit in all physical uplink channel types (e.g. PUCCH, PUSCH, PRACH) and a sounding reference signal (SRS) with every available combination of resource block sizes and offsets. Each available mode/modulation type (i.e. QPSK, 16-QAM, BPSK) used in each physical channel type was tested to determine the configuration producing the worst case emissions.

2.2 EMI Suppression Device(s)/Modifications

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

2.3 Labeling Requirements

Per 2.925

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

Per 15.19; Docket 95-19

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

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

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

Please see attachment for FCC ID label and label location.

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3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

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

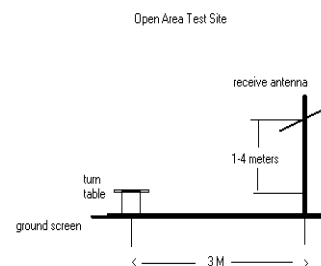


Figure 3-1. Diagram of 3-meter outdoor test range

Deviation from Measurement Procedure.....None

3.2 Occupied Bandwidth Emission Limits

§2.1049, §27.53(c)

- On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB.
- On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.
- 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.
- When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.
- The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

3.3 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.

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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 10th harmonic.

3.5 Radiated Spurious and Harmonic Emissions

§2.1053, §27.53(c)

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This level is then measured with a broadband average power meter. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive average power meter reading. This spurious level is recorded with the power meter. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all configurations and the worst case is reported with 16-QAM modulation.

3.6 Frequency Stability / Temperature Variation

§2.1055, §27.54

The frequency stability of the transmitter is measured by:

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

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

Time Period and Procedure:

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

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4.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	263-10dB	(DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
-	No. 165	(30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No. 166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No. 167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Agilent	11713A	Attenuation/Switch Driver	12/4/2008	Annual	12/4/2009	3439A02645
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	12/4/2008	Annual	12/4/2009	3008A00985
Agilent	8495A	(0-70dB) DC-4GHz Attenuator	N/A		N/A	N/A
Agilent	85650A	Quasi-Peak Adapter	12/4/2008	Annual	12/4/2009	3303A01872
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	12/5/2008	Annual	12/5/2009	3638A08713
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/11/2007	Biennial	10/11/2009	3613A00315
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/25/2009	Biennial	3/25/2011	MY45470194
Agilent	E8267C	Vector Signal Generator	11/15/2007	Biennial	11/15/2009	US42340152
Agilent	N9020A	MXA Signal Analyzer	9/17/2008	Annual	9/17/2009	US46470561
Espec	ESX-2CA	Environmental Chamber	3/30/2009	Annual	3/30/2010	17620
MiniCircuits	VHF-1300+	High Pass Filter	N/A		N/A	30716
Pasternack	PE2208-6	Bidirectional Coupler	N/A		N/A	N/A
Rohde & Schwarz	FSQ 26	Spectrum Analyzer	9/29/2008	Annual	9/29/2009	200452
Rohde & Schwarz	CMW500	LTE Base Station Simulator	8/25/2009	Annual	8/25/2010	100976
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Rx	7/17/2009	Biennial	7/17/2011	9105-2404
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Tx	7/17/2009	Biennial	7/17/2011	9105-2403
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/14/2009	Biennial	5/14/2011	A050307

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 = 8M45D7W

LTE BW = 8.45 MHz

D = Amplitude/Angle Modulated

7 = Quantized/Digital Info

W = Combination (Audio/Data)

BPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Amplitude/Angle Modulated

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: Samsung Electronics, Co. Ltd.
 FCC ID: A3LSLCU100
 FCC Classification: Licensed Non-Broadcast Transmitter (TNB)
 Mode(s): LTE

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
2.1051, 27.53(c)(2)	Band Edge / Conducted Spurious Emissions	$< 43 + 10\log_{10} (P[\text{Watts}])$		PASS	Section 7.0
2.1046	Transmitter Conducted Output Power Measurements	N/A		N/A	Section 6.3
2.1055, 27.54	Frequency Stability	Fundamental emissions must stay within the allotted band		PASS	Section 6.6
27.50(b)(10)	Effective Radiated Power	< 3 Watts max. ERP	RADIATED	PASS	Section 6.2
2.1053, 27.53(c)(2)	Undesirable Out-of-Band Emissions	$< 43 + 10\log_{10} (P[\text{Watts}])$ for all out-of-band emissions		PASS	Section 6.4
2.1053, 27.53(f)	Undesirable Emissions in the 1559 – 1610MHz band	$< -40\text{dBm/MHz}$ EIRP (wideband) $< -50\text{dBm}$ EIRP (narrowband)		PASS	Section 6.5

Table 6-1. Summary of Test Results

Note:

The LTE device was set to transmit using each of the available modulation types in all of the physical channels (e.g. PUSCH, PUCCH, and PRACH). A Sounding Reference Signal (SRS) is generated using a Zadoff-Chu (Z-C) sequence. All testing was performed using 50 resource blocks per FCC instructions.

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6.2 Effective Radiated Power Output Data

§27.50(b)(10)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	Power Source
782.00	QPSK	-14.960	19.70	0.00	H	19.70	0.093	AC
782.00	16-QAM	-14.240	20.42	0.00	H	20.42	0.110	AC
782.00	BPSK	-15.210	19.45	0.00	H	19.45	0.088	AC

Table 6-2. Effective Radiated Power Output Data

NOTES:

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

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

This device was tested under all configurations and the worst case is reported with 16-QAM modulation. This unit was tested while powered through a USB connection to a computer.

6.3 Maximum Transmitter Conducted Output Power

§2.1046

Conducted output powers were measured for all physical uplink channel types (e.g. PUCCH, PUSCH, PRACH) and for all modulations. The powers were also measured through every available configuration of resource block sizes and offsets to determine the highest powers as listed below.

Frequency [MHz]	Modulation	Worst Case Average Conducted Power [dBm]
782.00	QPSK	23.76
782.00	16-QAM	23.52
782.00	BPSK	22.19

Table 6-3. Maximum Conducted Output Power Measurements



Figure 6-1. Test Setup Diagram

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6.4 LTE Radiated Measurements

§2.1053, §27.53(c)(2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 782.00 MHz
 MEASURED OUTPUT POWER: 20.420 dBm = 0.110 W
 MODULATION SIGNAL: 16-QAM
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 33.42 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2346.00	-66.53	8.59	-57.94	H	78.4
3128.00	-72.04	8.95	-63.08	H	83.5
3910.00	-91.02	8.93	-82.09	H	102.5
4692.00	-91.36	10.62	-80.74	H	101.2

Table 6-4. Radiated Spurious Data (16-QAM Modulation)

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 configurations and the worst case is reported with 16-QAM modulation. This unit was tested while powered through a USB connection to a computer.

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6.5 LTE Radiated Measurements in 1559 – 1610MHz Band

§2.1053, §27.53(f)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 782.00 MHz
 MEASURED OUTPUT POWER: 20.420 dBm = 0.110 W
 MODULATION SIGNAL: 16-QAM
 DISTANCE: 3 meters
 NARROWBAND EMISSION LIMIT: -50 dBm
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

FREQUENCY (MHz)	EMISSION TYPE	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	MARGIN (dB)
1564.00	WIDEBAND	-72.15	8.21	-63.93	H	-23.93

Table 6-5. Radiated Spurious Data

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 configurations and the worst case is reported with 16-QAM modulation. This unit was tested while powered through a USB connection to a computer.

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6.6 LTE Frequency Stability Measurements

§2.1055, §27.54

OPERATING FREQUENCY: 782,000,000 Hz

REFERENCE VOLTAGE: 5 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	5.00	+ 20 (Ref)	782,000,007	7	0.000001
100 %		- 30	781,999,974	-26	-0.000003
100 %		- 20	782,000,019	19	0.000002
100 %		- 10	782,000,008	8	0.000001
100 %		0	781,999,990	-10	-0.000001
100 %		+ 10	781,999,988	-12	-0.000002
100 %		+ 20	782,000,005	5	0.000001
100 %		+ 30	782,000,008	8	0.000001
100 %		+ 40	781,999,994	-6	-0.000001
100 %		+ 50	781,999,984	-16	-0.000002
85 %	4.25	+ 20	781,999,988	-12	-0.000002
115 %	5.75	+ 20	781,999,982	-18	-0.000002

Table 6-6. Frequency Stability Data

Note:

The frequency deviation was measured to ensure that the channel emissions remained within the authorized band with varying temperature and voltage.

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LTE Frequency Stability Measurements (Cont'd)

\$2.1055, \$27.54

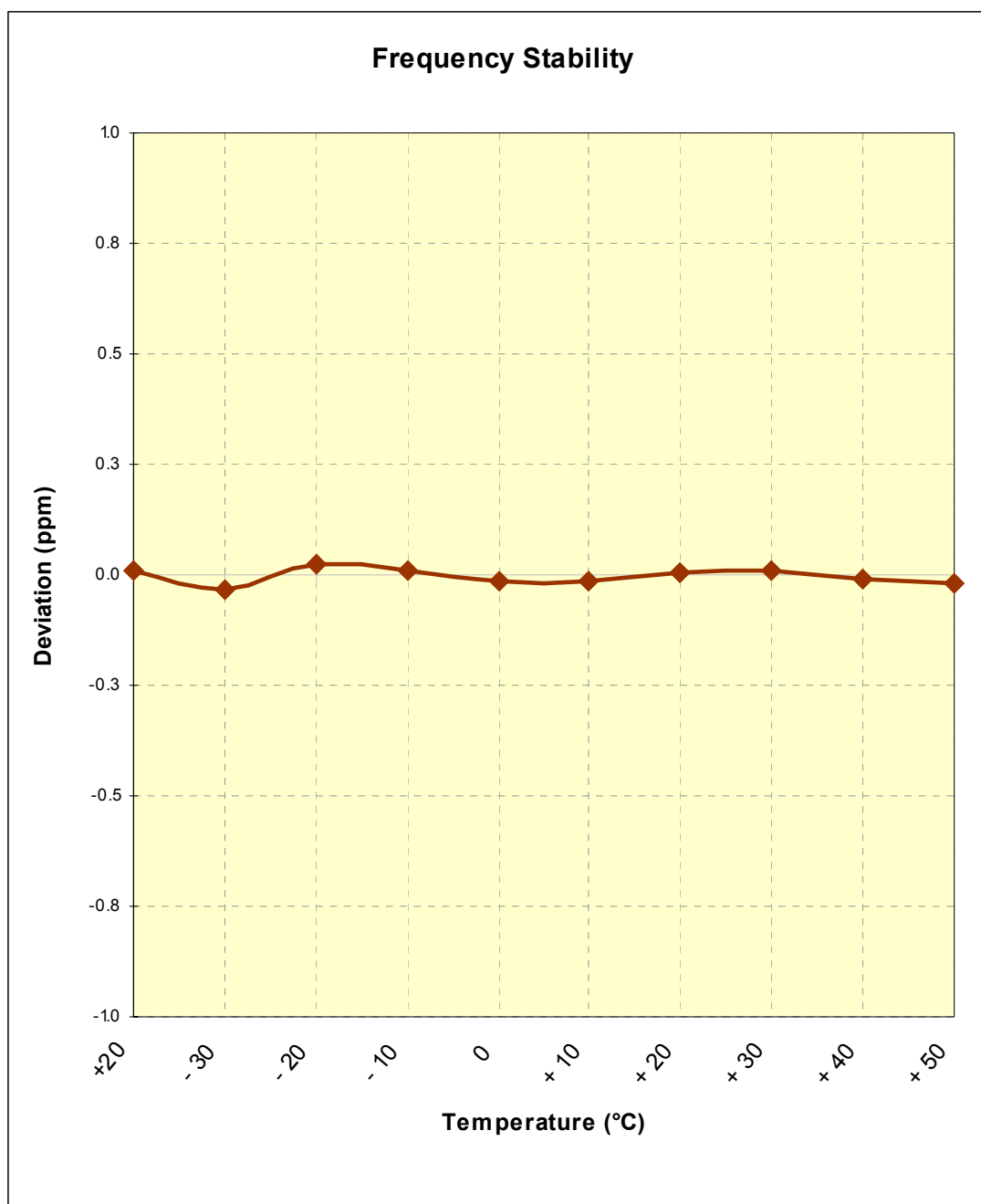


Figure 6-2. Frequency Stability Graph

Note:

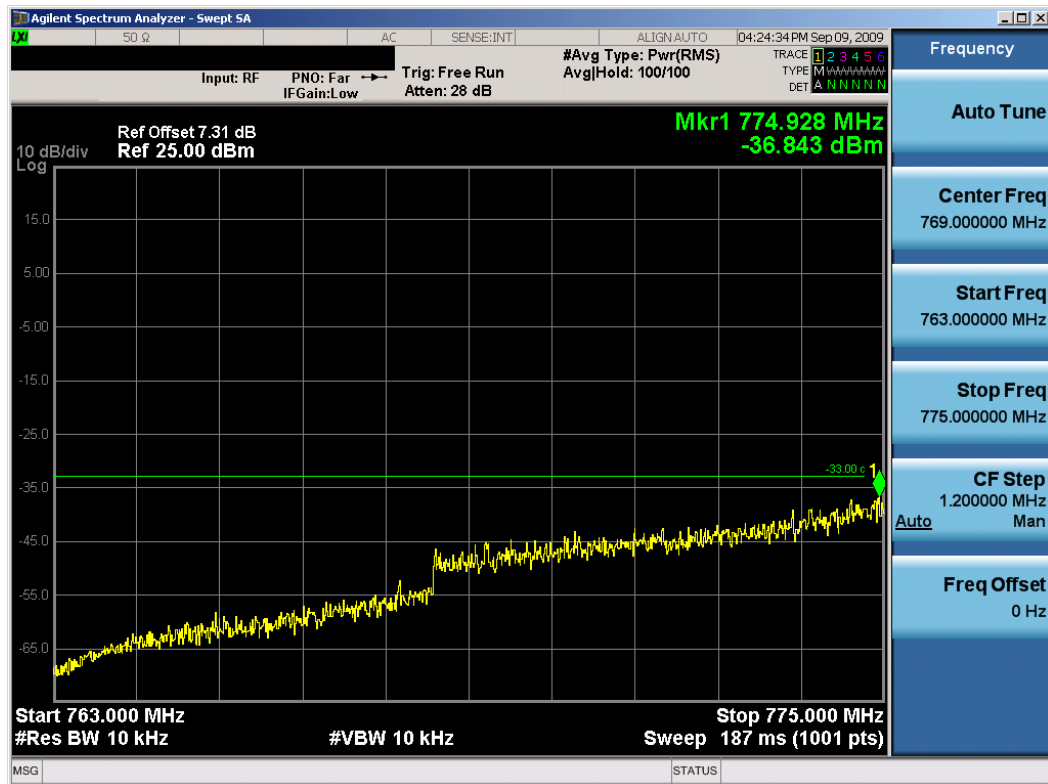
The frequency deviation was measured to ensure that the channel emissions remained within the authorized band with varying temperature and voltage.

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7.0 PLOT(S) OF EMISSIONS

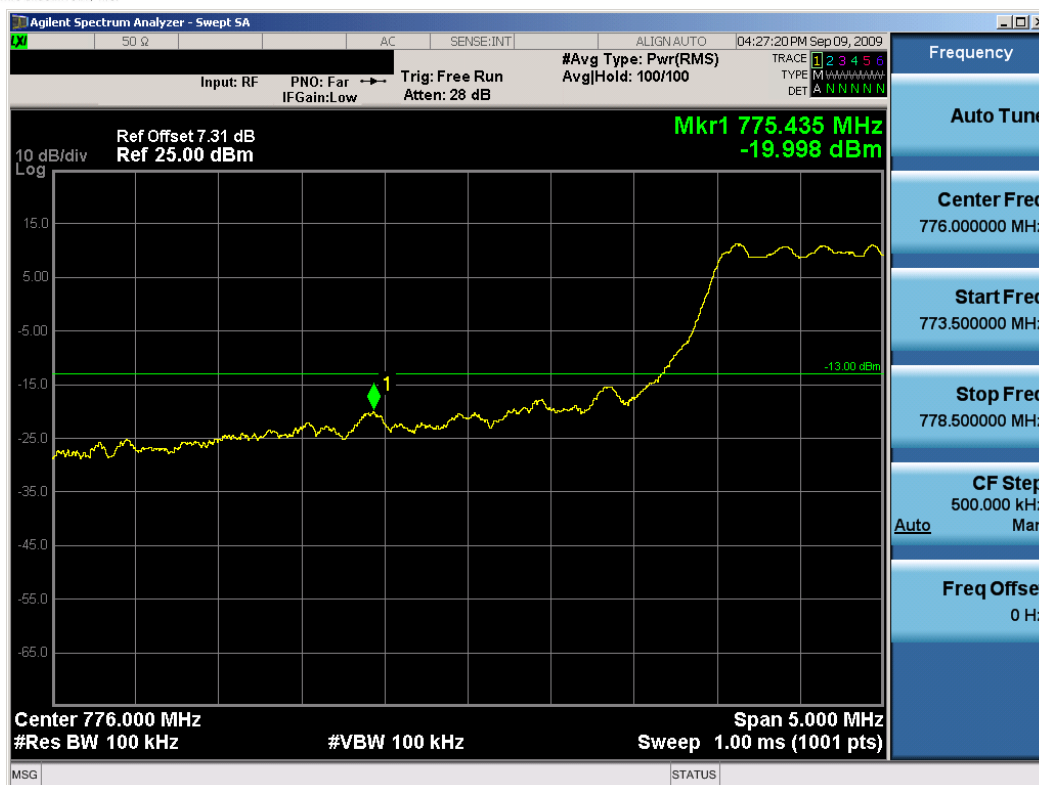
Note:

For all plots showing emissions in the 763 – 775MHz and 793 – 805MHz band, the FCC limit is $65 + 10\log_{10}(P_{\text{Watts}}) = -35\text{dBm}$ in a 6.25kHz bandwidth. 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, the limit was adjusted by $10\log_{10}(10\text{kHz}/6.25\text{kHz}) = 2.04\text{dB}$. Thus, the limit shown in all plots in the 763 – 775MHz and 793 – 805MHz bands for all available modulation types was $-35\text{dBm} + 2.04\text{dB} \approx -33\text{dBm}$.

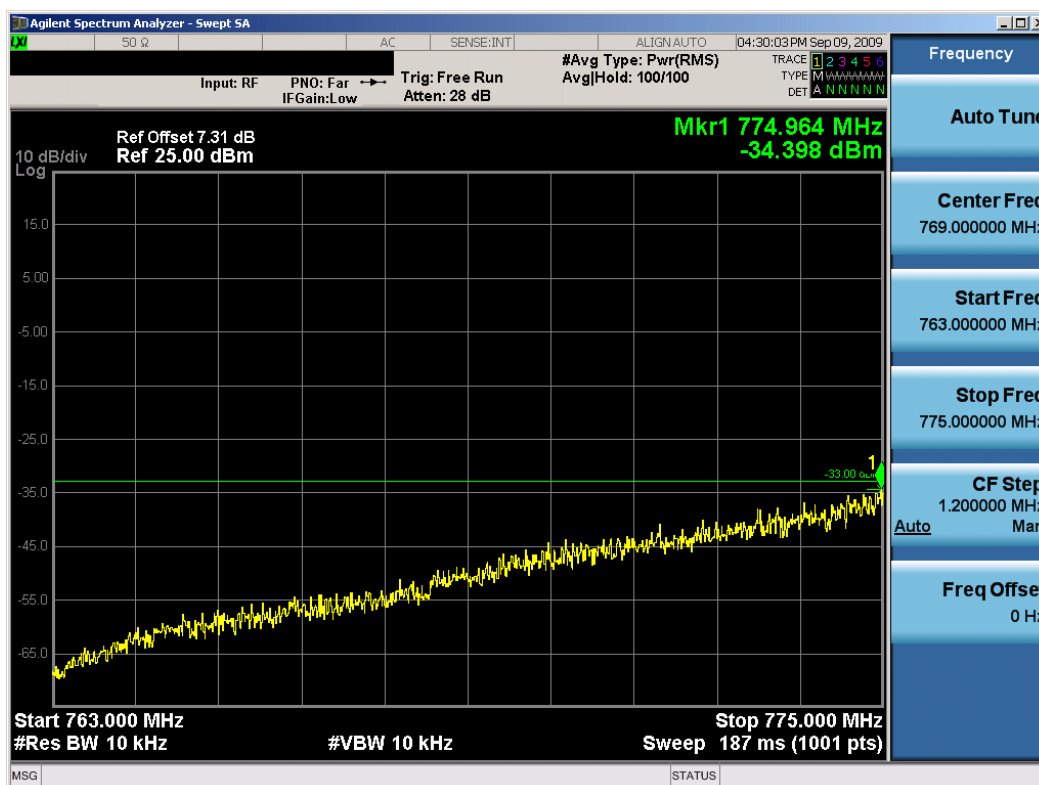


Plot 7-1. Lower Emission Mask (763 – 775MHz) Plot (QPSK Modulation)

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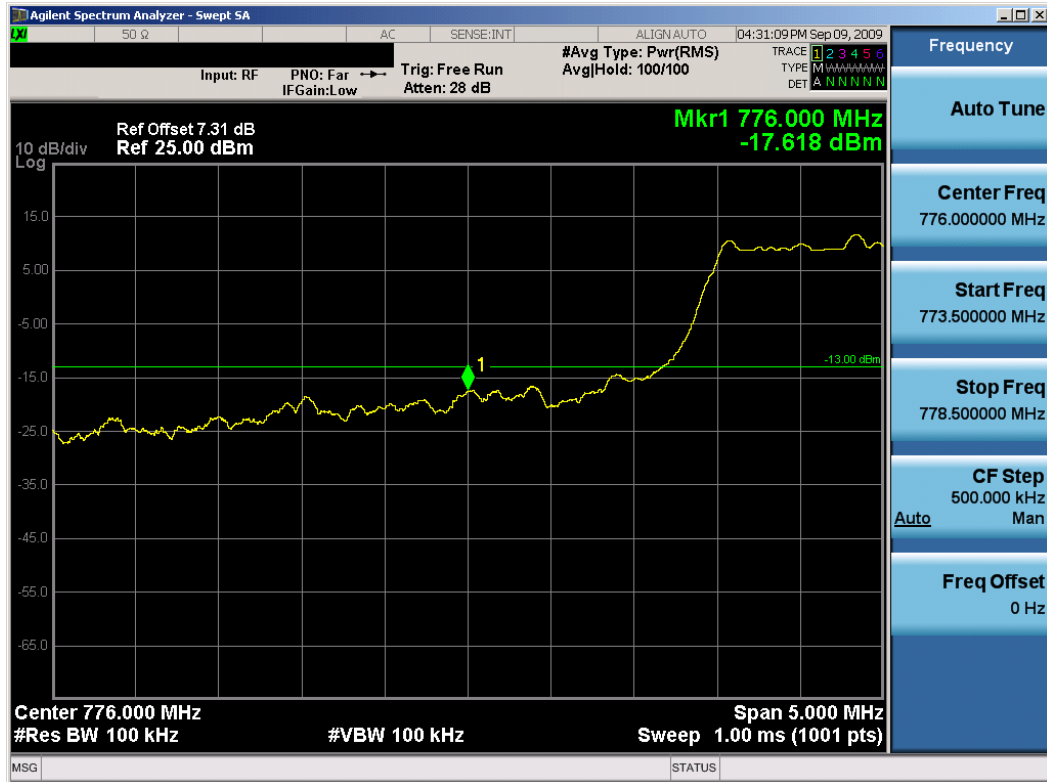


Plot 7-2. Lower Band Edge Plot (QPSK Modulation)

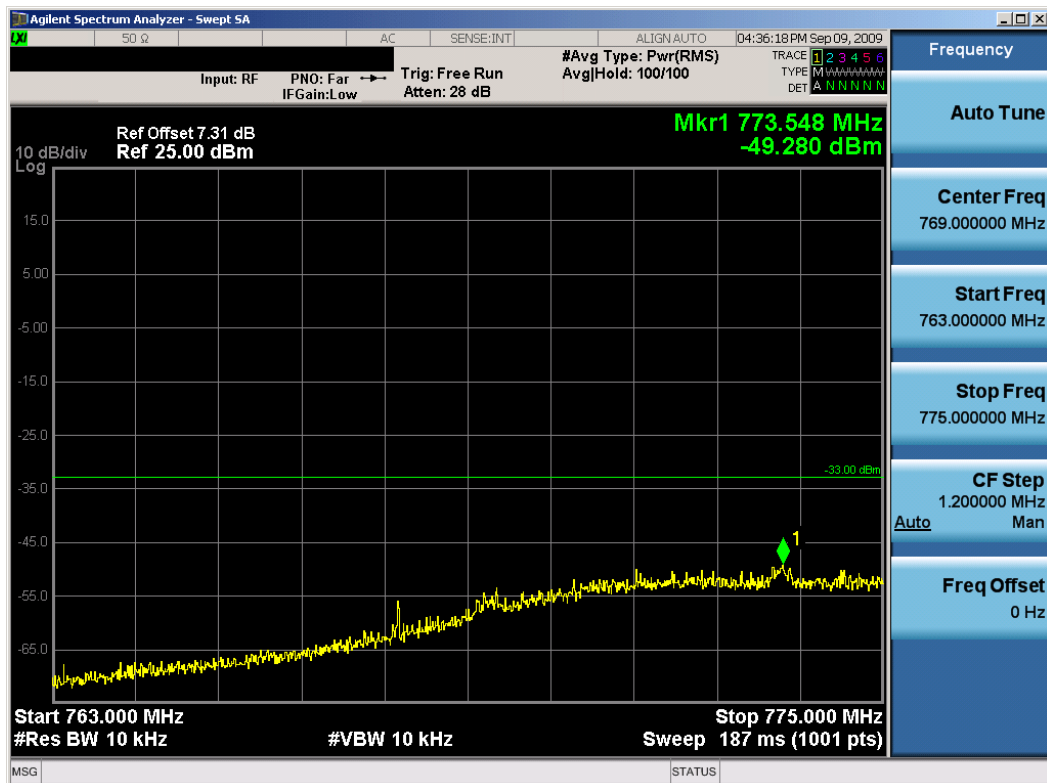


Plot 7-3. Lower Emission Mask (763 – 775MHz) Plot (16-QAM Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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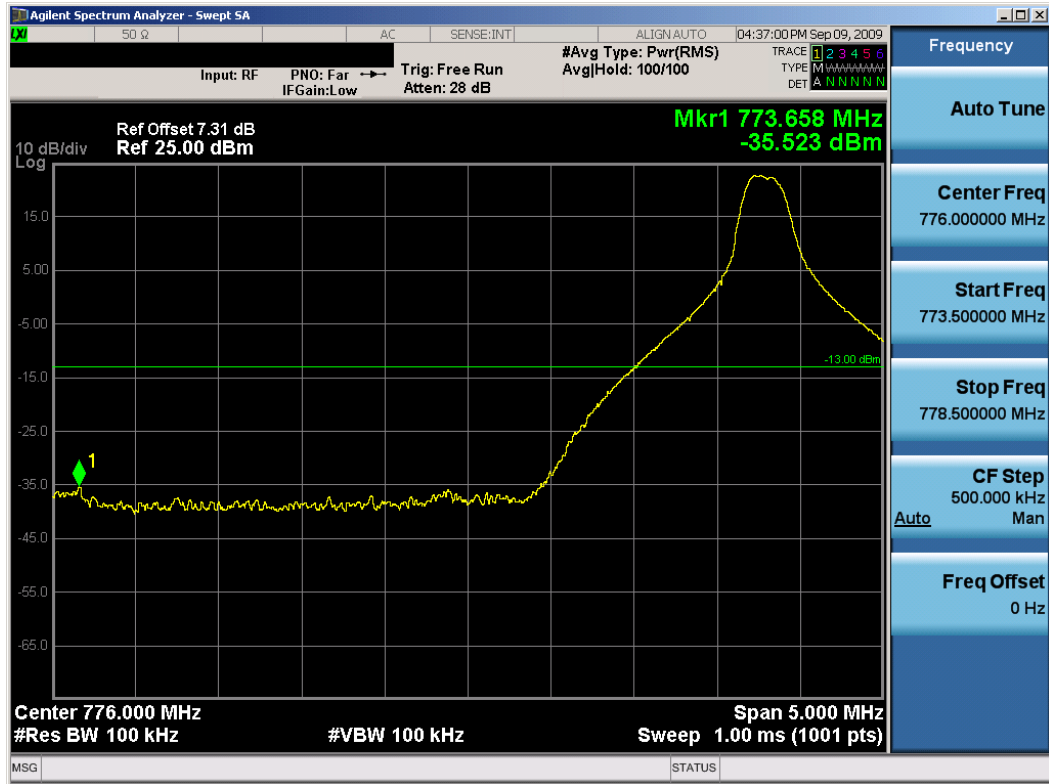


Plot 7-4. Lower Band Edge Plot (16-QAM Modulation)

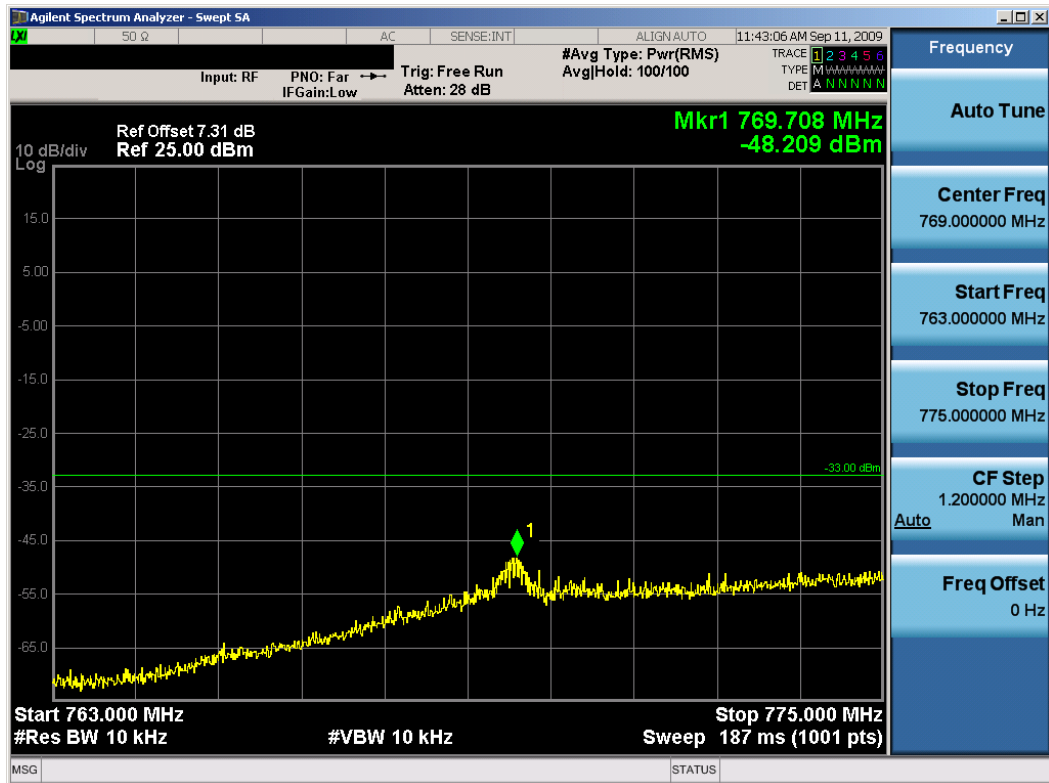


Plot 7-5. Lower Emission Mask (763 – 775MHz) Plot (BPSK Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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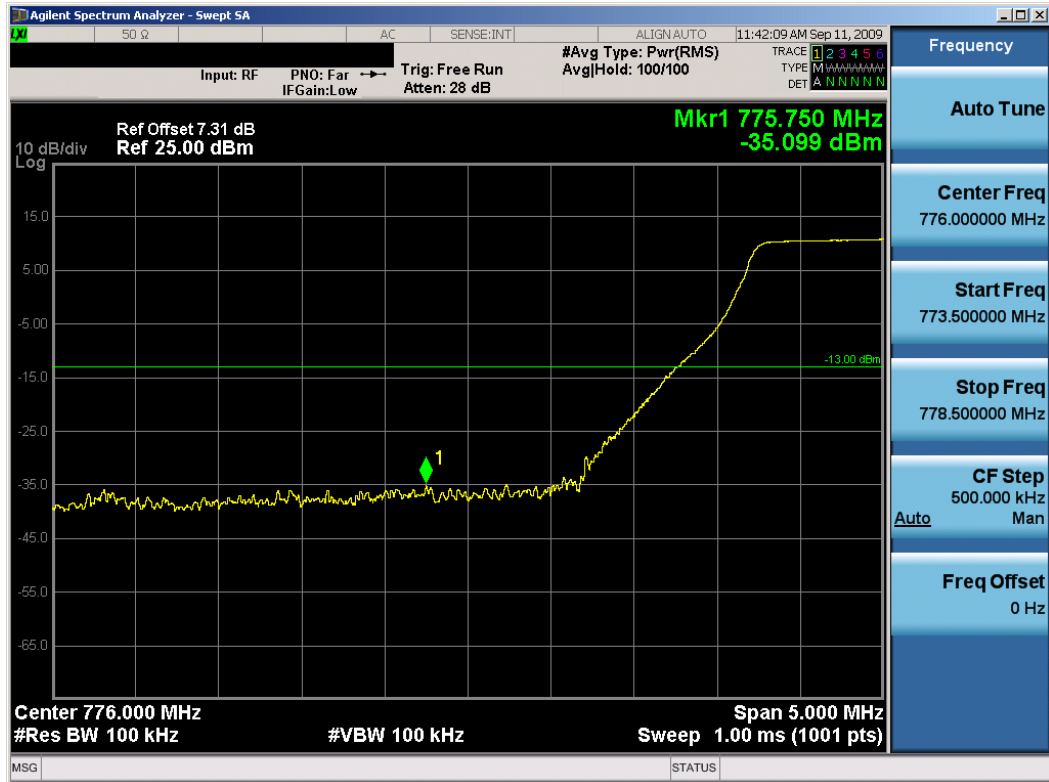


Plot 7-6. Lower Band Edge Plot (BPSK Modulation)

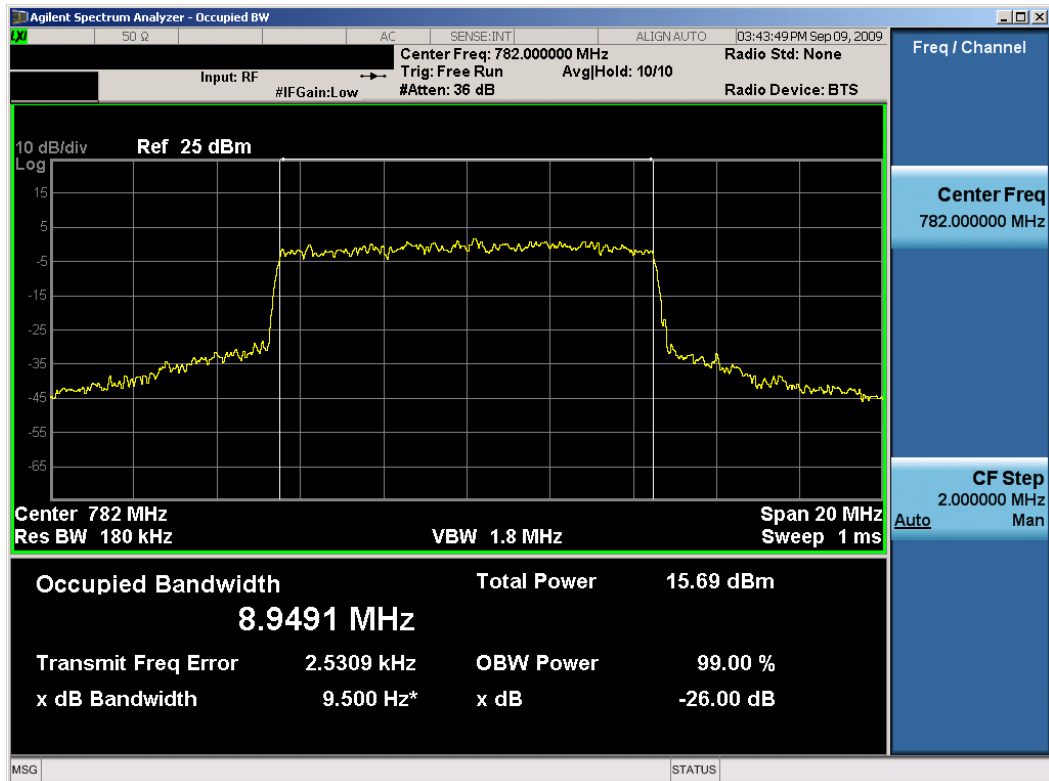


Plot 7-7. Lower Emission Mask (763 – 775MHz) Plot (SRS Mode)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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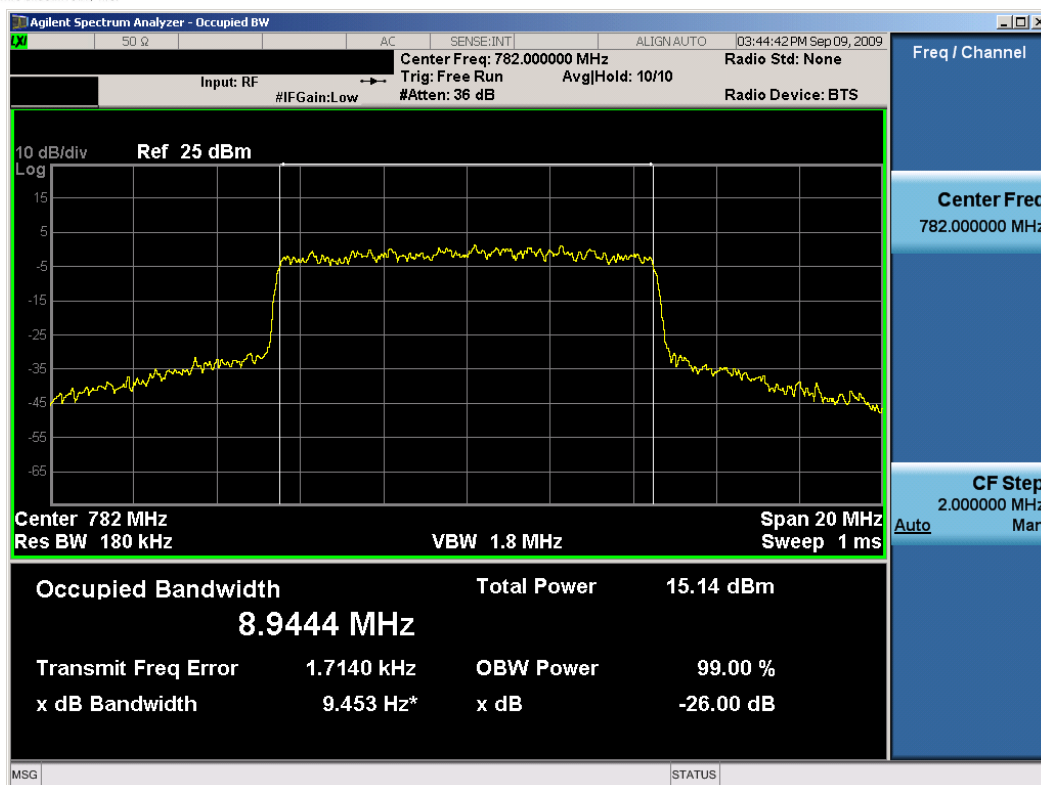


Plot 7-8. Lower Band Edge Plot (SRS Mode)

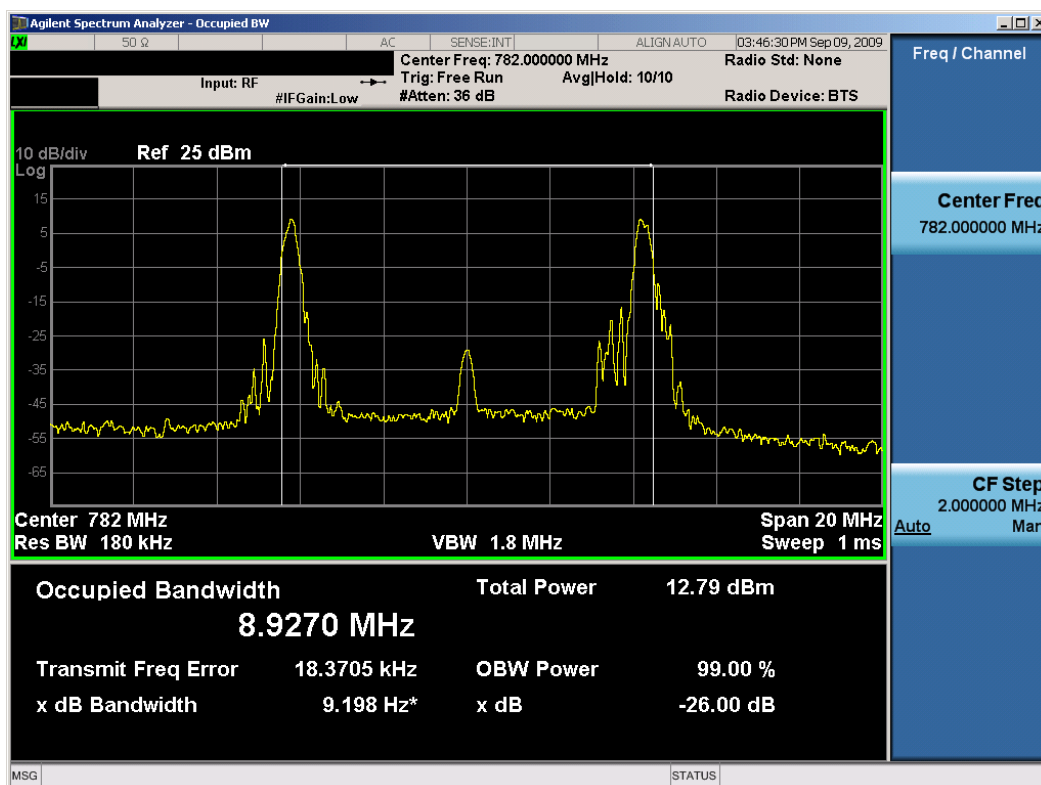


Plot 7-9. Occupied Bandwidth Plot (QPSK Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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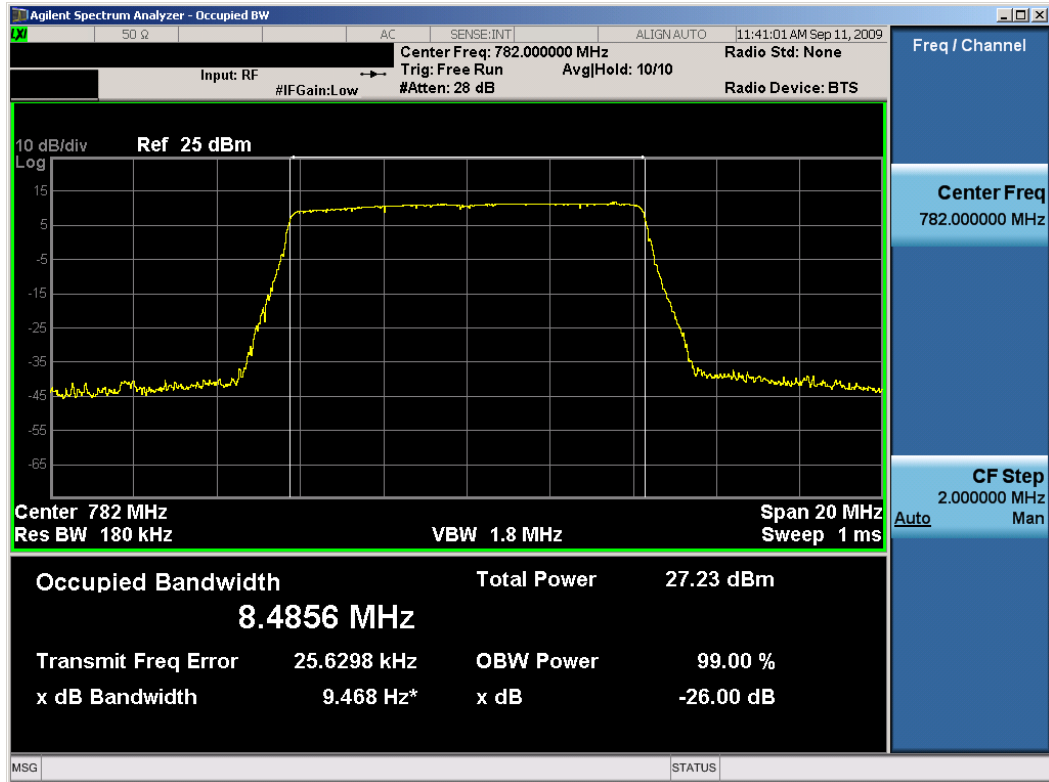


Plot 7-10. Occupied Bandwidth Plot (16-QAM Modulation)

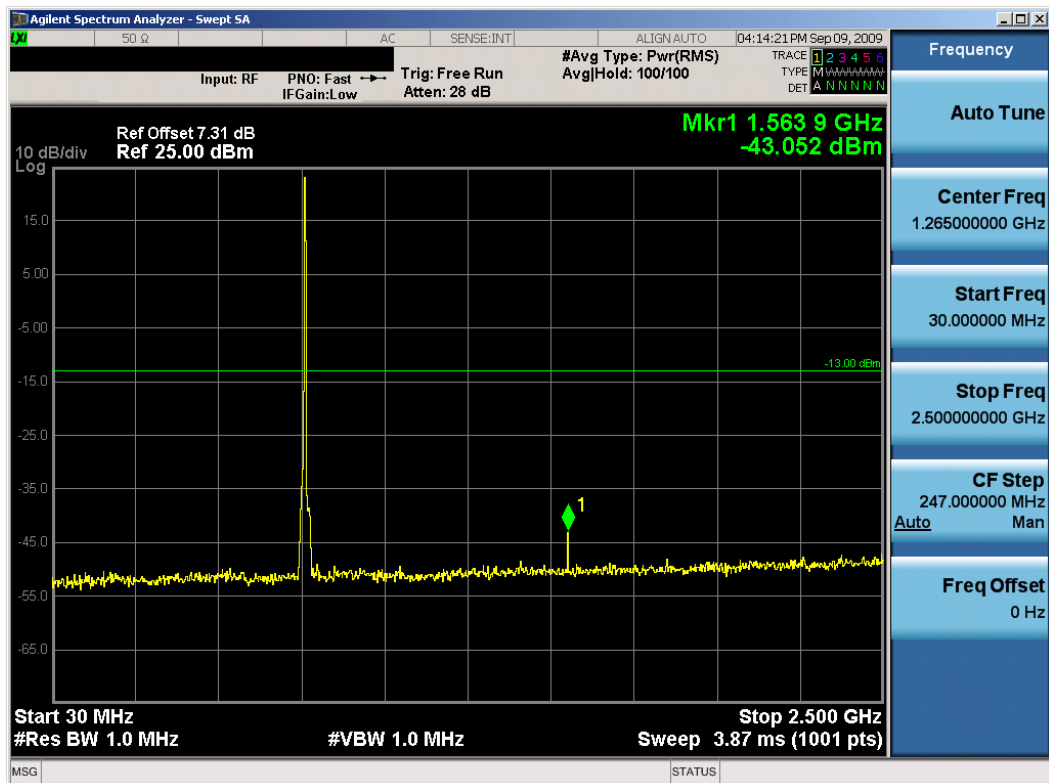


Plot 7-11. Occupied Bandwidth Plot (BPSK Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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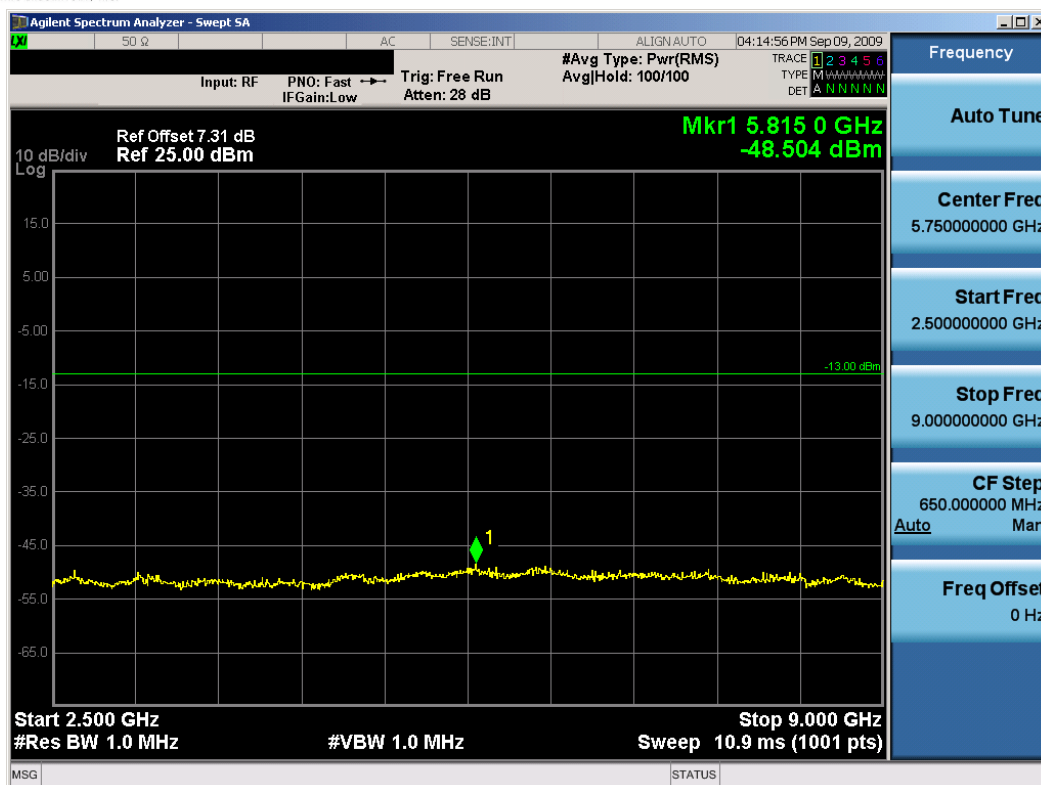


Plot 7-12. Occupied Bandwidth Plot (SRS Mode)

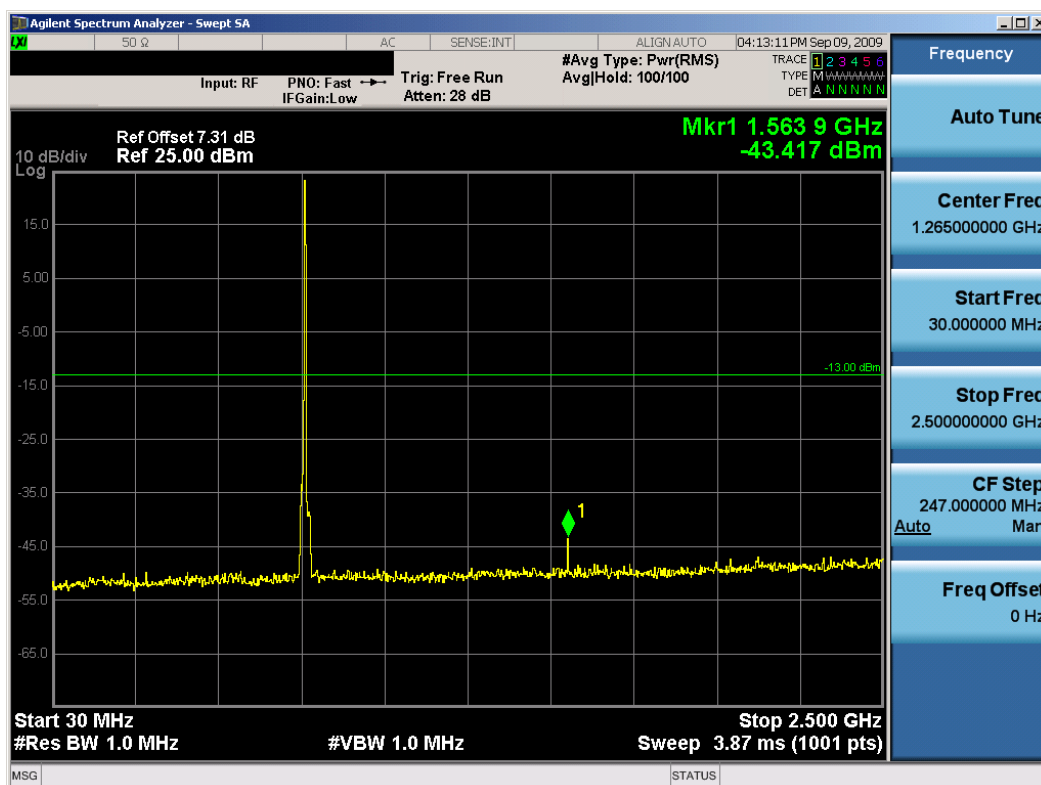


Plot 7-13. Conducted Spurious Plot (QPSK Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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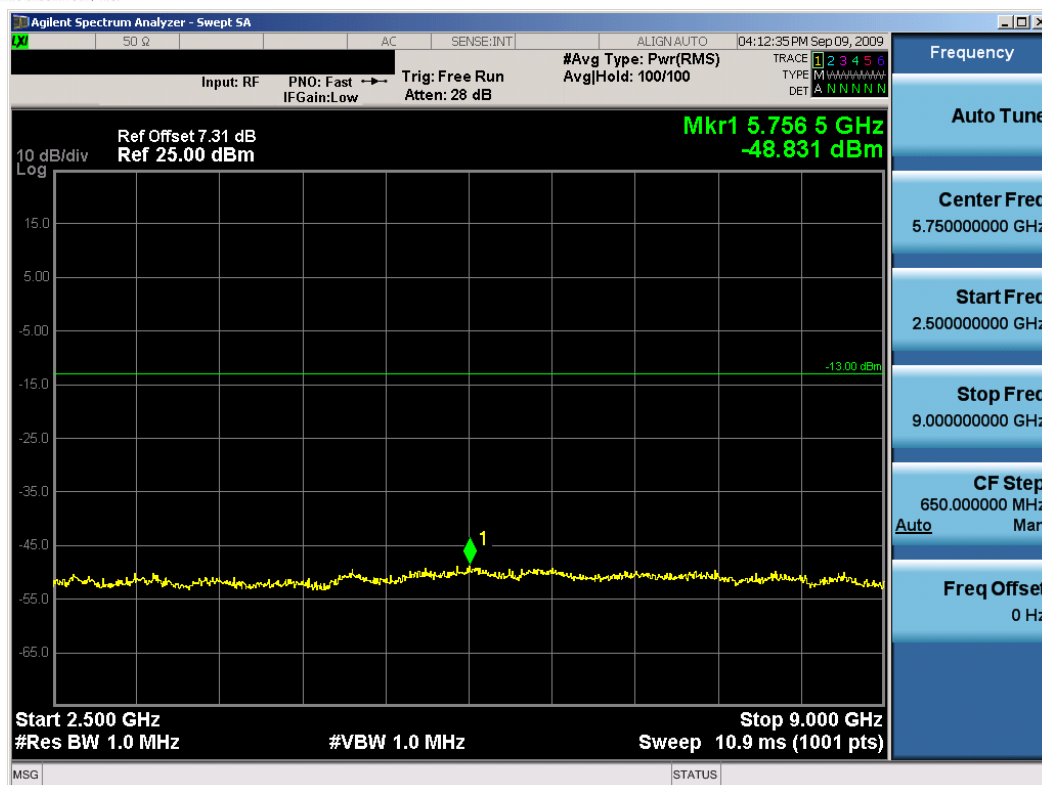


Plot 7-14. Conducted Spurious Plot (QPSK Modulation)

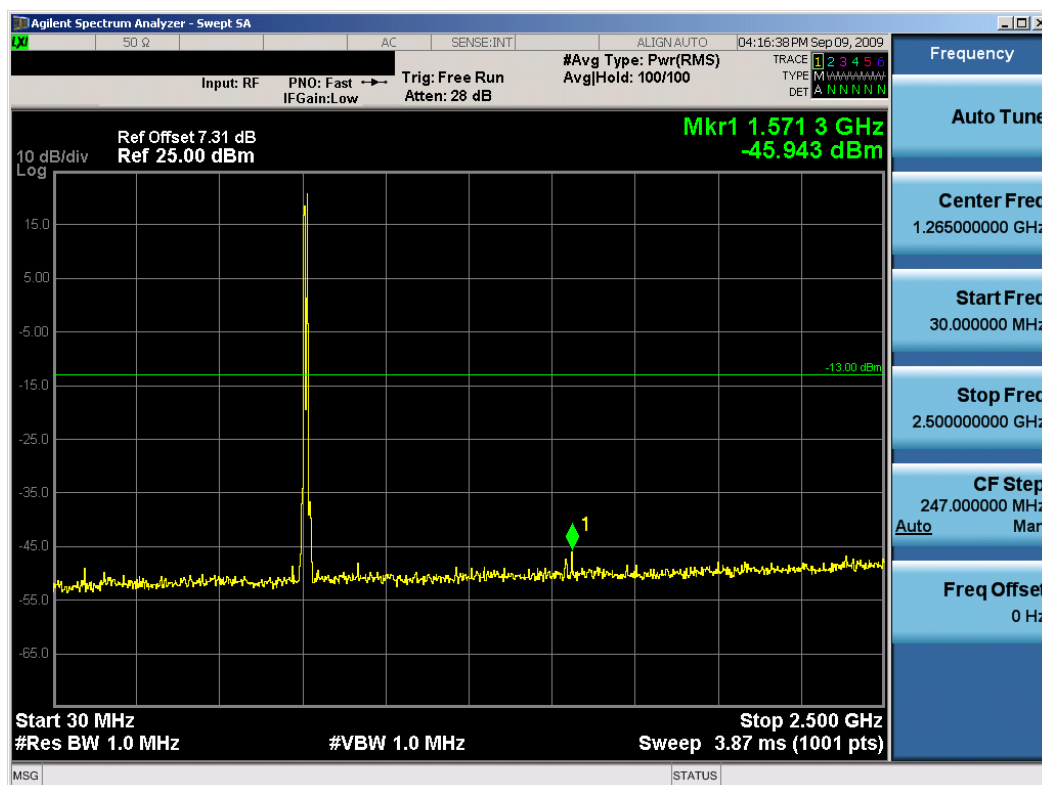


Plot 7-15. Conducted Spurious Plot (16-QAM Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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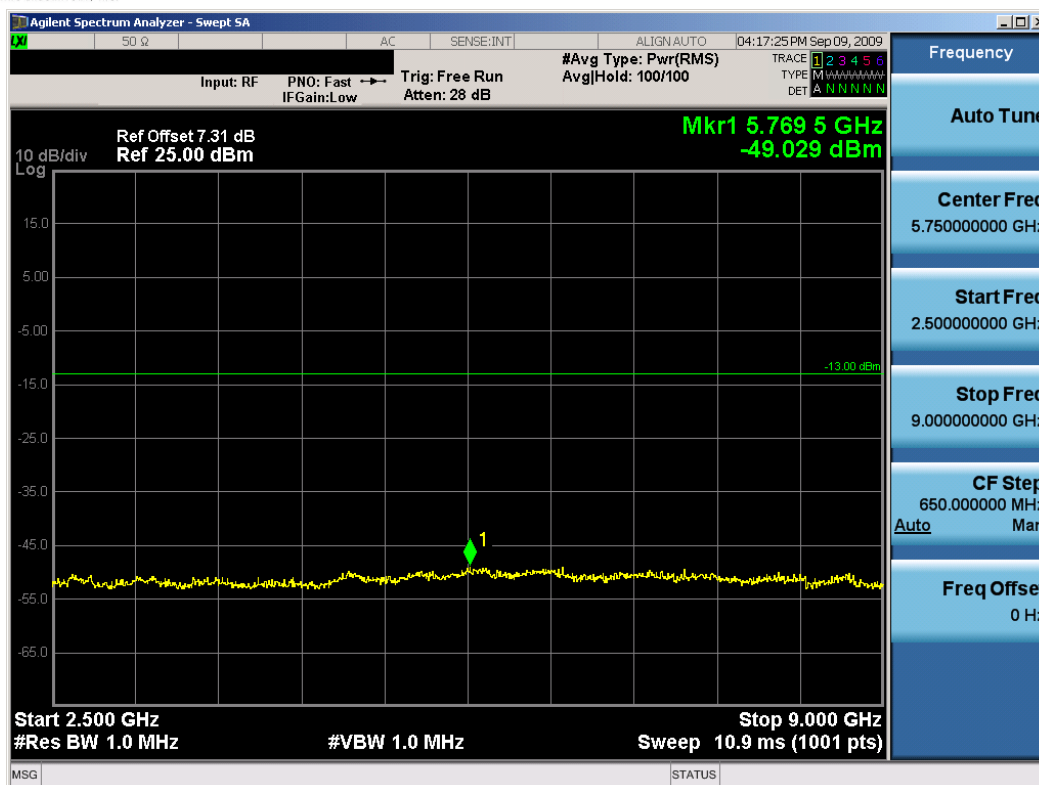


Plot 7-16. Conducted Spurious Plot (16-QAM Modulation)



Plot 7-17. Conducted Spurious Plot (BPSK Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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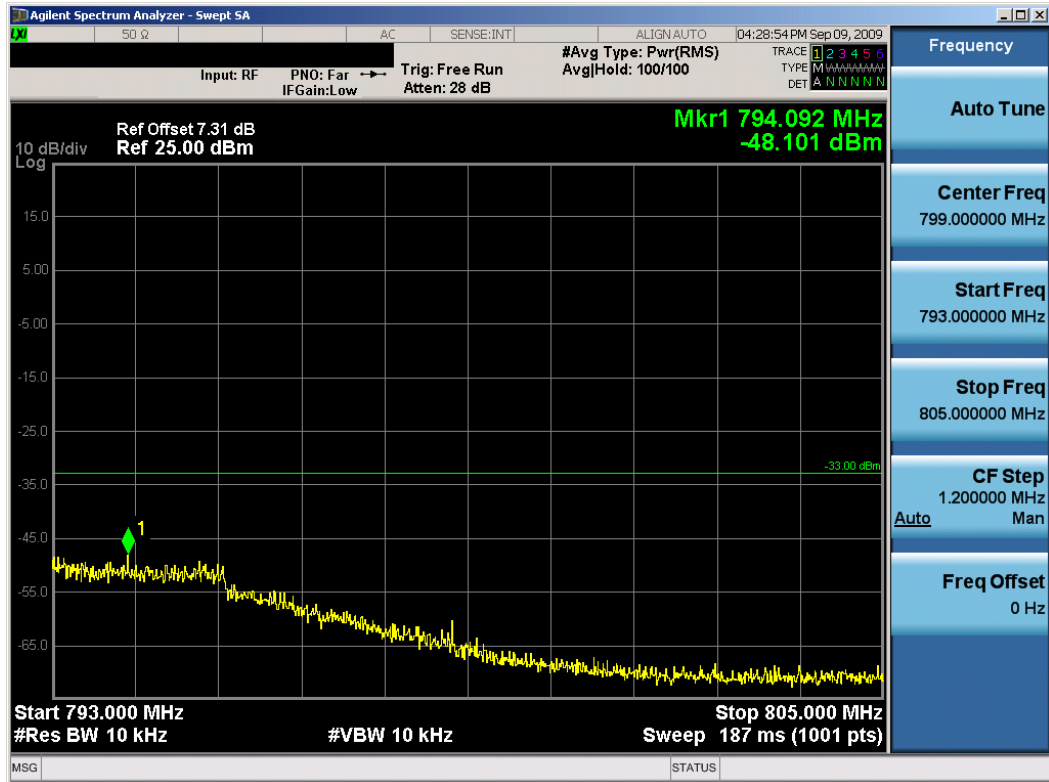


Plot 7-18. Conducted Spurious Plot (BPSK Modulation)



Plot 7-19. Upper Band Edge Plot (QPSK Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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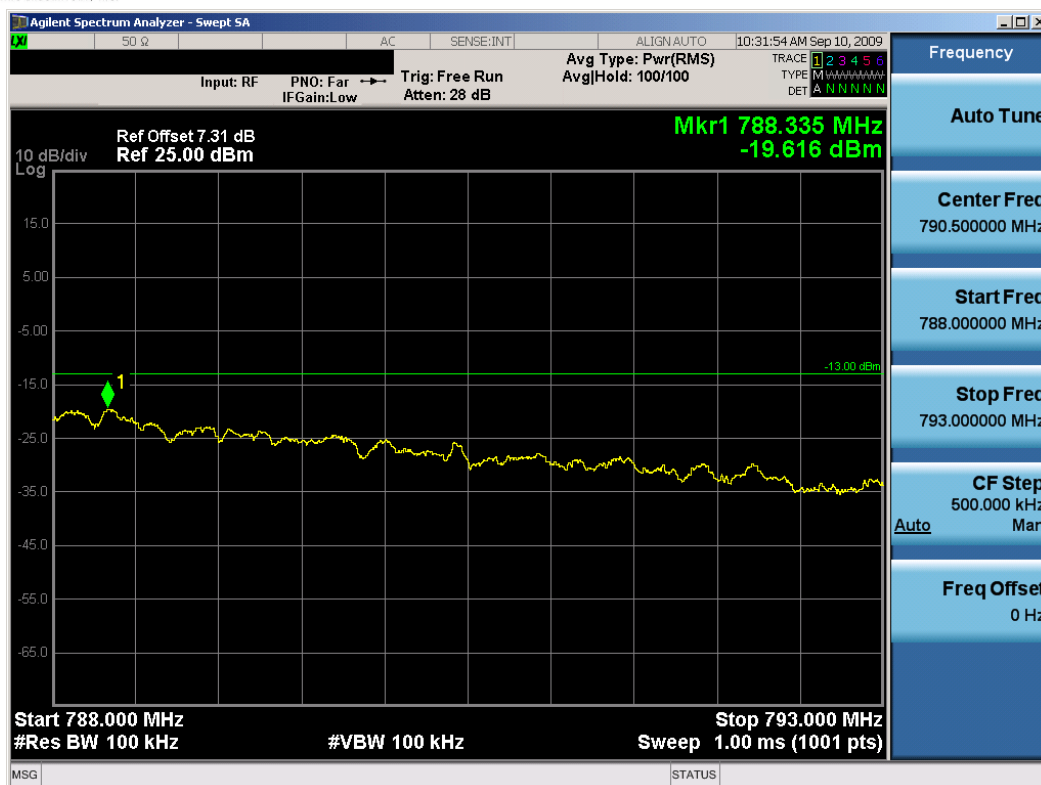


Plot 7-20. Upper Emission Mask (793 – 805MHz) Plot (QPSK Modulation)

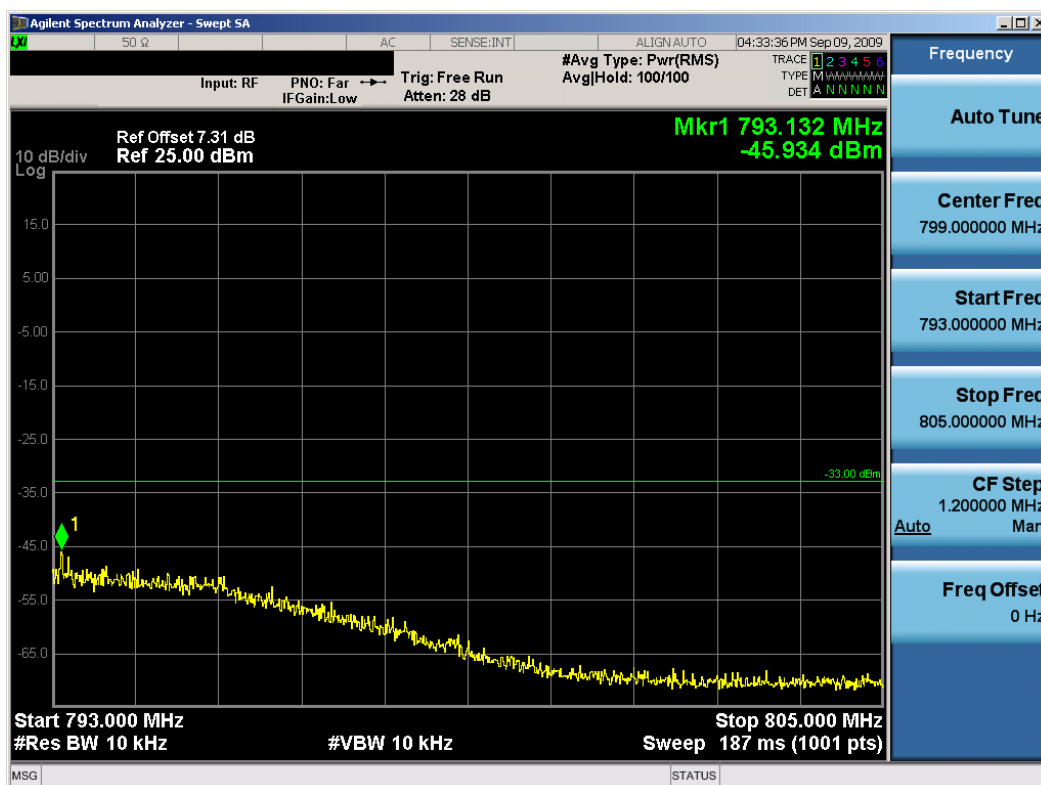


Plot 7-21. Upper Band Edge Plot (16-QAM Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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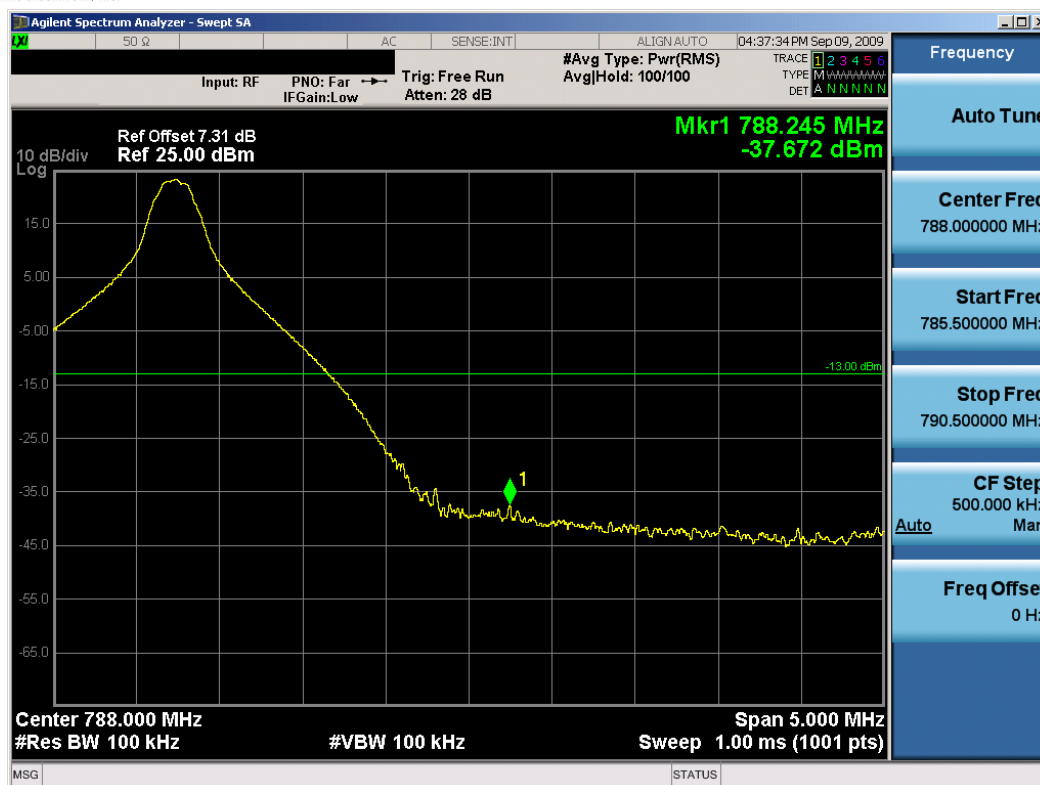


Plot 7-22. Intermediate Spurious Emission Plot (788 – 793MHz) (16-QAM Modulation)



Plot 7-23. Upper Emission Mask (793 – 805MHz) Plot (16-QAM Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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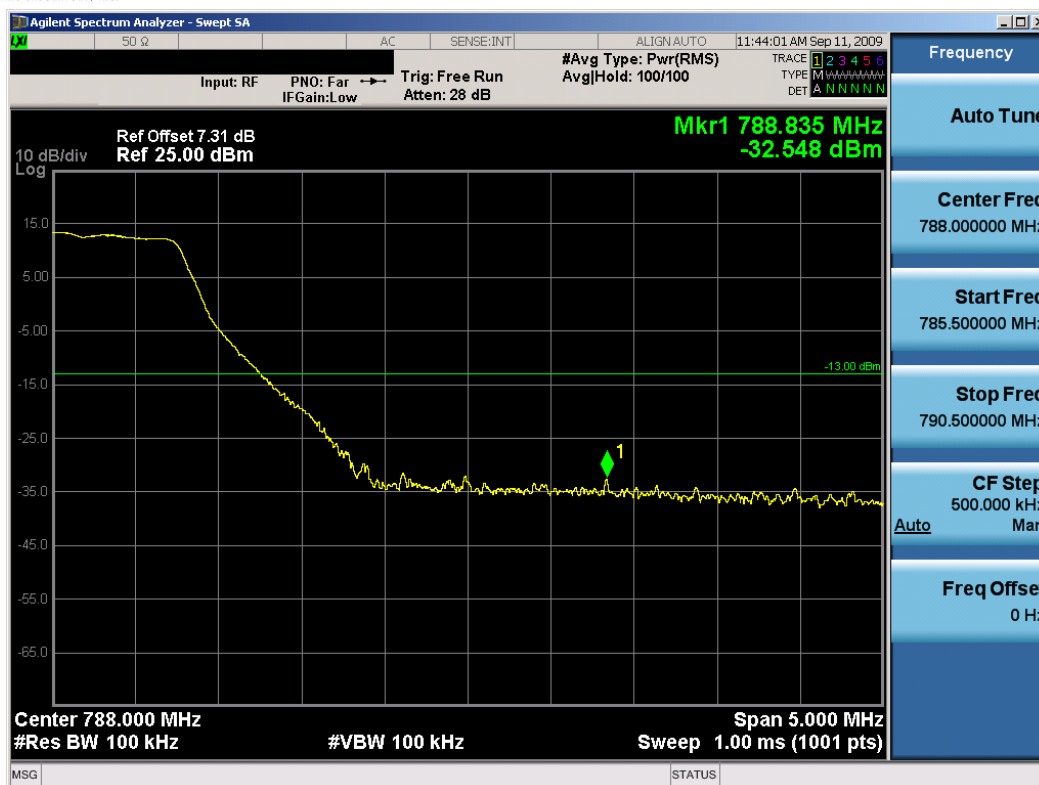


Plot 7-24. Upper Band Edge Plot (BPSK Modulation)

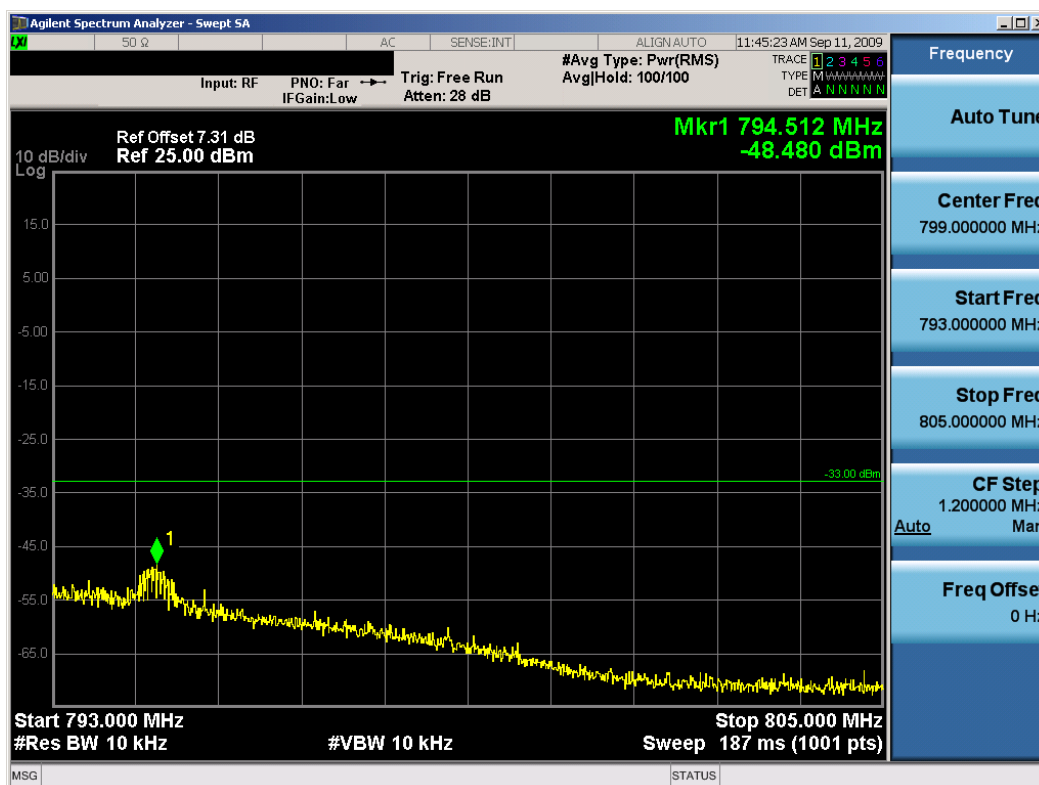


Plot 7-25. Upper Emission Mask (793 – 805MHz) Plot (BPSK Modulation)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 7-26. Upper Band Edge Plot (SRS Mode)



Plot 7-27. Upper Emission Mask (793 – 805MHz) Plot (SRS Mode)

FCC ID: A3LSLCU100	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung LTE USB Modem FCC ID: A3LSLCU100** complies with all the requirements of Parts 2 and 27 of the FCC rules.

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