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Report No.: 1610TW0501-U8
Report Version: 1.0
Issue Date: 2016-10-30

MEASUREMENT REPORT
FCC PART 22,24,27

FCC ID:	2ACC5-GT500
APPLICANT:	A Mobile Intelligent Corp.
Application Type:	Certification
Product:	5" Rugged Android™ Handheld Device with LTE solution
Model No.:	GT-500
Brand Name:	AMobile
FCC Classification:	(PCE) PCS Licensed Transmitter held to ear
FCC Rule Part(s):	Part 22H,Part 24E,Part 27
Test Procedure(s):	TIA 603-D 2010, KDB 971168 D01v02r02
Test Date:	October 09 ~ 30, 2016

Reviewed By : Paddy Chen
(Paddy Chen)

Approved By : Chenz Ker
(Chenz Ker)

Testing Laboratory
3261

The test results relate only to the samples tested.
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.

Revision History

Report No.	Version	Description	Issue Date	Note
1609TW0105-U8	1.0	Original Report	2016.10.30	

CONTENTS

§2.1033 General Information

Applicant:	AMobile Intelligent Corp.
Applicant Address:	8F.-1, No.700, Zhongzheng Rd., Zhonghe Dist.,New Taipei City 235, Taiwan
Manufacturer:	MAKER TECHNOLOGY
Manufacturer Address:	12th Floor,NO.82 building,NO.1198 North QinzhouRoad,Xuhui District,Shanghai,China
Test Site:	MRT Technology (Taiwan) Co., Ltd
Test Site Address:	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.:	153292
FCC Rule Part(s):	Part 22H,Part 24E,Part 27
Model No.:	GT-500
FCC ID:	2ACC5-GT500
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 153292) test facility with the site description report on file and is designated by the FCC as an Accredited Test Film.
2. MRT facility is an IC registered (MRT Reg. No. 21723-1) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (TAF) under the American Association for Laboratory Accreditation Program (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC, Industry Taiwan, EU and TELEC Rules.

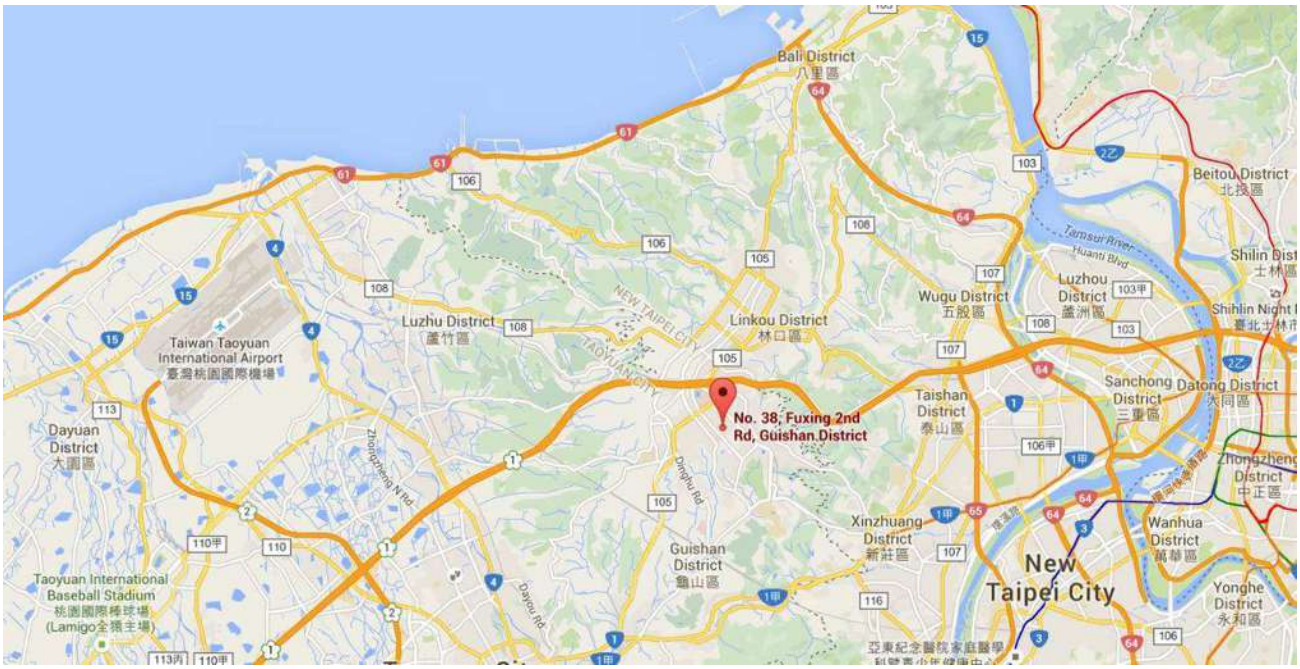
1. INTRODUCTION

1.1. Scope

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

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. PRODUCT INFORMATION

2.1. Feature of Equipment under Test

Product Name	5" Rugged Android™ Handheld Device with LTE solution
FCC ID	2ACC5-GT500
Model No.	GT500
Brand Name	AMobile
Supports Radios Spec.	WWAN : GSM/GPRS/EGPRS/WCDMA/HSPA/CDMA/EVDO/LTE WLAN : 2.4G : 802.11b/g/n-20/n-40; 5G : 802.11a/n-20/n-40 WPAN : Bluetooth/NFC
WWAN Specification	2G(GSM/GPRS/EDGE): 850/1900 3G(WCDMA): Band 2/5 3G(CDMA2000):BC0/BC1 4G(FDD/TDD): Band 2/4/5/7/12/13/17
Frequency Range	LTE Band 2: 1850~1910MHz LTE Band 4: 1710~1755MHz LTE Band 5: 824~849MHz LTE Band 7: 2500~2570MHz LTE Band 12: 699~716MHz LTE Band 13: 777~787MHz LTE Band 17: 704~716MHz

2.2. Antenna Description

Antenna Type	PCB
Antenna M/N	AP316-LTE-MAIN_V1
Antenna Gain	LTE Band 2: 1850~1910MHz : 3.31dBi LTE Band 4: 1710~1755MHz : -7.78dBi LTE Band 5: 824~849MHz : -3.94dBi LTE Band 7: 2500~2570MHz : 0.93dBi LTE Band 12: 699~716MHz : -3.26dBi LTE Band 13: 777~787MHz : -3.94dBi LTE Band 17: 704~716MHz : -3.26dBi
Type of Modulation	QPSK/16QAM

Note: The test report has showed the worst test mode.

2.3. Test Configuration

The **5" Rugged Android™ Handheld Device with LTE solution** was tested per the guidance of ANSI/TIA-603-D-2010 and KDB 971168 D01v02r02. See section 7.0 of this 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.

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the “Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards” (ANSI/TIA-603-D-2010) and “Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems” (KDB 971168) were used in the measurement of the **5” Rugged Android™ Handheld Device with LTE solution**

Deviation from measurement procedure…….....None

3.2. Occupied Bandwidth

§2.1049

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.

3.3. Spurious and Harmonic Emissions at Antenna Terminal

§2.1051 §22.917(a) §24.238(a) §27.53(c)(h)(m)

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 for Part 22. 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.

3.4. Power and Radiated Spurious Emissions

§2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a) §27.50(b)(d)(h) §27.53(c)(h)(m)

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurement 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. A MF Model 210SS 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 80cm high PVC support structure is placed on top of the turntable.

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

Per the guidance of ANSI/TIA-603-D-2010, 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:

Pd [dBm] = Pg [dBm] – cable loss [dB] + antenna gain [dBd/dBi]

Where, Pd is the dipole equivalent power, Pg 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 Pg [dBm] – cable loss [dB].

The calculated Pd levels are then compared to the absolute spurious emission limit of -13/-25dBm which is equivalent to the required minimum attenuation of 43 + 10*log10(Power [Watts]) /55 + 10*log10(Power [Watts])specified in 22.917(a)/27.53(m).

3.5. Peak-Average Ratio

§24.232(d) §27.50(B)

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulativ
e 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.

For pulsed signals, the spectrum analyzer is set to use an internal “RF Burst” trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the “on time” of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power. For continuous signals, the trigger is set to “free run” in the CCDF measurement mode.

3.6. Frequency Stability / Temperature Variation

§2.1055 §22.355 §22.863 §22.905 §24.235 §27.54

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-D-2010. 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 End point 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 – For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency.

Time Period and Procedure:
1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for 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 period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2017/03/16
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2017/03/23
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2017/03/23
Cable	Rosnol	N1C50-RG400-B1C50-500CM	MRTTWE00013	1 year	2017/05/19

Radiated Emissions – AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2017/03/16
Broadband TRILOG Antenna	Schwarzbeck	VULB 9162	MRTTWA00001	1 year	2017/04/05
Acitve Loop Antenna	Schwarzbeck	FMZB 1519B	MRTTWA00002	1 year	2017/04/05
Broadband Horn antenna	Schwarzbeck	BBHA 9120D	MRTTWA00003	1 year	2017/04/05
Breitband Hornantenna	Schwarzbeck	BBHA 9170	MRTTWA00004	1 year	2017/04/05
Broadband Preamplifier	Schwarzbeck	BBV 9718	MRTTWA00005	1 year	2017/04/05
Broadband Amplifier	Schwarzbeck	BBV 9721	MRTTWA00006	1 year	2017/04/05
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2017/03/02
Cable	HUBERSUHNER	SF106	MRTTWA00010	1 year	2017/05/19
Cable	Rosnol	K1K50-UP0264-K1K50-4M	MRTTWA00012	1 year	2017/05/19

Conducted Test Equipment – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2017/07/10
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2017/03/02
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2017/03/17
DUALDIRECTIONAL COUPLER	KEYSIGHT	778D	MRTTWE00015	1 year	2017/06/02
DIRECTIONAL COUPLER	KEYSIGHT	87301D	MRTTWE00016	1 year	2017/04/10

Software	Version	Function
e3	9.160520a	EMI Test Software

5. SAMPLE CALCULATIONS

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EGPRS Emission Designator

Emission Designator = 250KG7W

GSM BW = 250 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA / CDMA Emission Designator

Emission Designator = 1M25F9W

WCDMA BW = 1.25 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

LTE Emission Designator

Emission Designator = QPSK 5M00G7D / 16QAM 5M00W7D

LTE BW = 1.4/3/5/10/15/20 MHz

QPSK G = Phase Modulation /

16QAM W= in a combination of two or more of the following modes: amplitude, angle, pulse

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

Spurious Radiated Emission

Example: Spurious emission at 1688.10 MHz

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was –65.0dBm. The gain of the substituted antenna is 6.5dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –65.0dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 4.5 dB at 1688.1MHz. So 2 dB is added to the signal generator reading of –25dBm yielding –23dBm. The fundamental EIRP was 24.0dBm so this harmonic was 24.0dBm – (-23) = 47dBc.

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

AC Conducted Emission Measurement – SR2
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 150kHz~30MHz: 2.42dB
Conducted Measurement– SR1
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.3dB
Radiated Emission Measurement – AC1
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): Horizontal: 9K~30MHz: 4.14dB 30MHz~1GHz: 4.22dB 1GHz~40GHz: 4.05dB Vertical: 9K~30MHz: 4.14dB 30MHz~1GHz: 3.37dB 1GHz~40GHz: 4.08dB

7. TEST RESULT

7.1. Summary

Company Name: **5" Rugged Android™ Handheld Device with LTE solution**

FCC ID: **2ACC5-GT500**

FCC Classification: **(PCE) PCS Licensed Transmitter held to ear**

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 7.2
2.1051 22.917(a) 24.238(a) 27.53(c) 27.52(h)	Conducted Spurious Emissions	> 43 + 10log$_{10}$ (P[Watts]) at for all out-of-band emissions (Band 2,4,5,12,13,17)		Pass	Section 7.3
2.1051 27.53(m)		> 55 + 10log$_{10}$ (P[Watts]) at for all out-of-band emissions (Band 7)			
2.1051 22.917(a) 24.238(a) 27.53(c) 27.52(h)	Band Edge	> 43 + 10log$_{10}$ (P[Watts]) at for all out-of-band emissions		Pass	Section 7.4
27.53(m)		27.53(m)(4)			
2.1046	Conducted Output Power	N/A		Pass	Section 7.5
22.913(a)	Radiated Output Power	< 7 Watts max. ERP (Band 5)	Radiated	Pass	Section 7.5
24.232(c) 27.50(h)		< 2 Watts max. EIRP (Band 2, 7)		Pass	
27.50(b)		< 3 Watts max. ERP (Band 12,13)		Pass	
27.50(d)		< 1 Watts max. EIRP (Band 4)		Pass	

2.1053 22.917(a) 24.238(a) 27.53(c) 27.53(h)	Radiated Spurious Emissions	> 43 + $\log_{10}$ (P[Watts]) for all out-of-band emissions (Band 2,4,5,12,13,17)	Radiated	Pass	Section 7.5
2.1053 27.53(m)		> 55 + 10$\log_{10}$ (P[Watts]) for all out-of-band emissions (Band 7)			
24.232(d) 27.50(B)	Peak-Average Ratio	<13dB	Conducted	Pass	Section 7.6
2.1055 22.355	Frequency Stability	< 2.5 ppm		Pass	Section 7.7
2.1055 24.235 27.54		Within Authorized Band			

Notes:

1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
2) 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.

7.2. Occupied Bandwidth

7.2.1. Test Limit

N/A

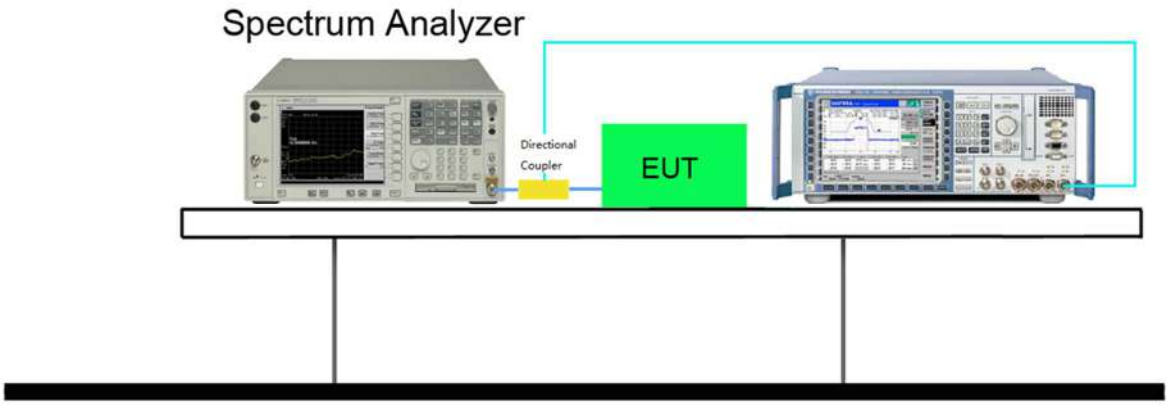
7.2.2. Test Procedure used

KDB 971168 D01v02r02 – Section 4.2 & ANSI/TIA-603-D-2010

7.2.3. Test Setting

1. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
2. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW. (RBW = approximately 1% of the emission bandwidth).
3. Set the detection mode to peak, and the trace mode to max hold.
4. Use the 99 % power bandwidth function of the spectrum analyzer (if available) and report the measured bandwidth.

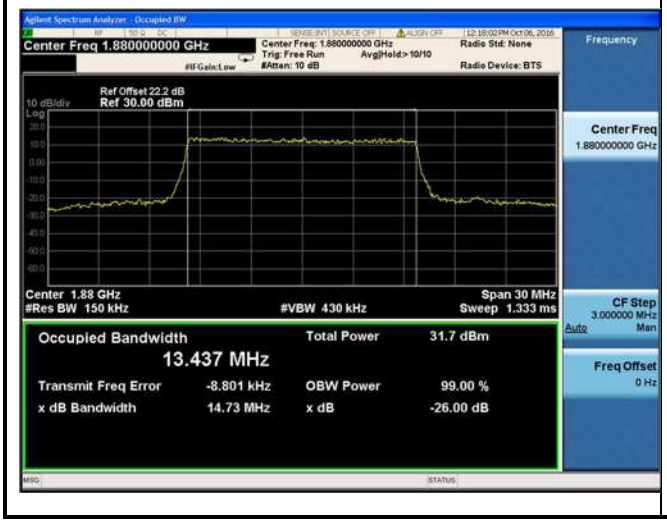
7.2.4. Test Setup

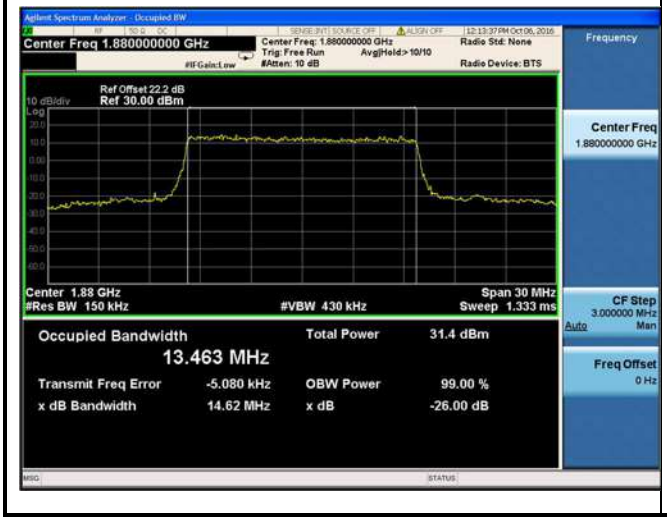
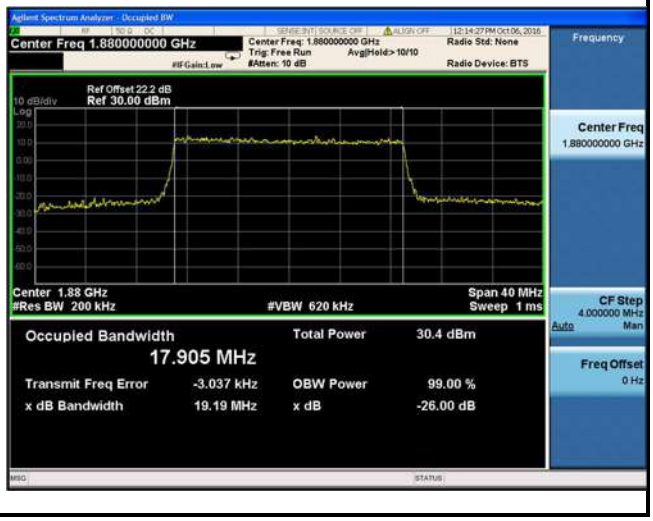


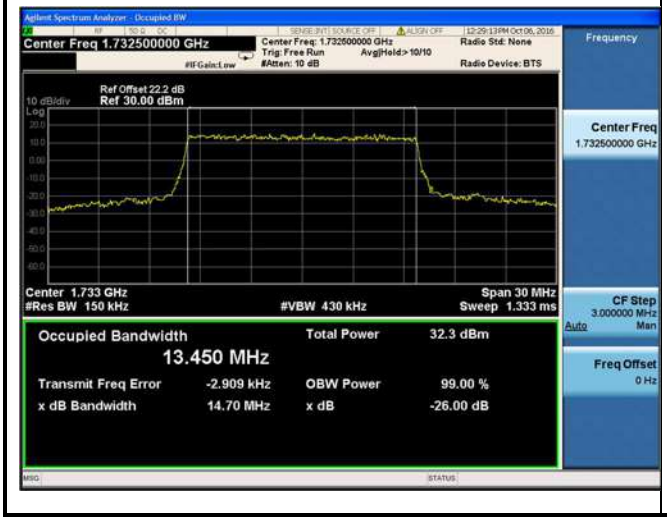
7.2.5. Test Result

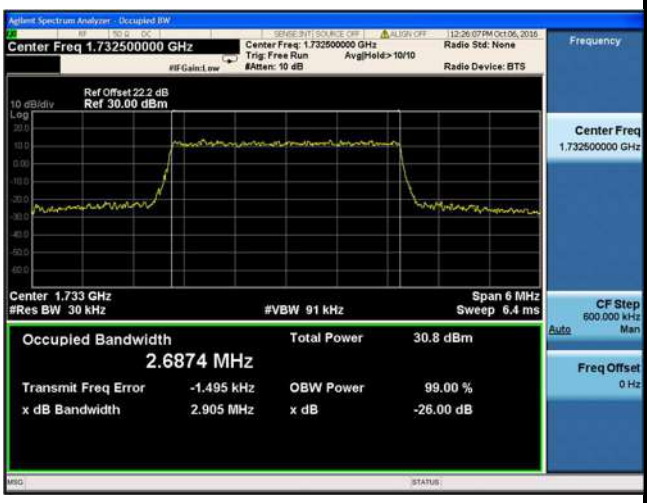
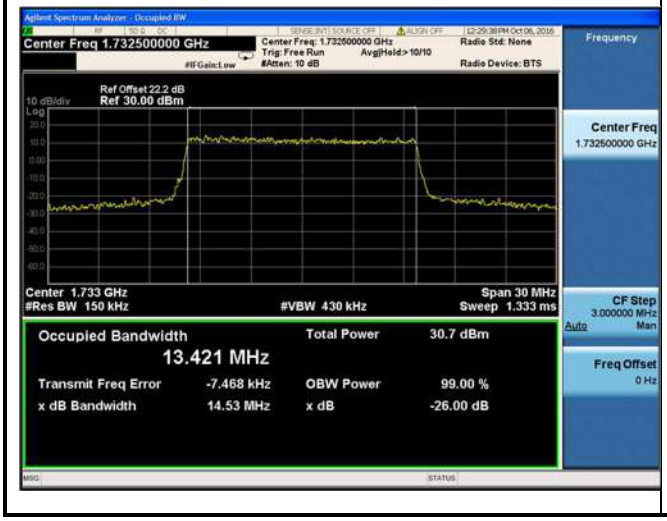
Test Mode	Channel/ Frequency (MHz)	Modulation	Bandwidth (MHz)	RB Size	RB Offset	99% Occupied Bandwidth (MHz)	-26dB Occupied Bandwidth (MHz)
LET Band 2 (Middle Channel)	18900 (1880MHz)	QPSK	1.4	6	0	1.084	1.258
			3	15	0	2.6849	2.9
			5	25	0	4.5049	5.003
			10	50	0	8.9675	9.764
			15	75	0	13.437	14.73
			20	100	0	17.931	19.39
		16QAM	1.4	6	0	1.0891	1.262
			3	15	0	2.6857	2.943
			5	25	0	4.4855	4.909
			10	50	0	8.9615	9.787
			15	75	0	13.463	14.62
			20	100	0	17.905	19.19
LET Band 4 (Middle Channel)	20175 (1732.5MHz)	QPSK	1.4	6	0	1.0786	1.226
			3	15	0	2.6845	2.923
			5	25	0	4.5067	5.016
			10	50	0	8.9545	9.768
			15	75	0	13.450	14.7
			20	100	0	17.918	19.36
		16QAM	1.4	6	0	1.0818	1.246
			3	15	0	2.6874	2.905
			5	25	0	4.4856	4.948
			10	50	0	8.9392	9.769
			15	75	0	13.421	14.53
			20	100	0	17.898	19.12

Test Mode	Channel/ Frequency (MHz)	Modulation	Bandwidth (MHz)	RB Size	RB Offset	99% Occupied Bandwidth (MHz)	-26dB Occupied Bandwidth (MHz)
LET Band 5 (Middle Channel)	20525 (836.5MHz)	QPSK	1.4	6	0	1.0836	1.24
			3	15	0	2.6789	2.905
			5	25	0	4.5058	4.989
			10	50	0	8.9681	9.748
		16QAM	1.4	6	0	1.0838	1.262
			3	15	0	2.6906	2.903
			5	25	0	4.4927	4.932
			10	50	0	8.9622	9.759
LET Band 7 (Middle Channel)	21100 (2535MHz)	QPSK	5	25	0	4.5067	4.982
			10	50	0	8.9594	9.751
			15	75	0	13.447	14.55
			20	100	0	17.916	19.35
		16QAM	5	25	0	4.4837	4.913
			10	50	0	8.9717	9.771
			15	75	0	13.442	14.5
			20	100	0	17.918	19.11
LET Band 12 (Middle Channel)	23095 (707.5MHz)	QPSK	1.4	6	0	1.0783	1.237
			3	15	0	2.6844	2.915
			5	25	0	4.4781	4.964
			10	50	0	8.9532	9.717
		16QAM	1.4	6	0	1.0861	1.245
			3	15	0	2.6885	2.904
			5	25	0	4.4799	4.982
			10	50	0	8.9634	9.646
LET Band 13 (Middle Channel)	23230 (782MHz)	QPSK	5	25	0	4.475	4.905
			10	50	0	8.9682	9.856
		16QAM	5	25	0	4.4922	4.957
			10	50	0	8.9787	9.779
LET Band 17 (Middle Channel)	23790 (710MHz)	QPSK	5	25	0	4.487	4.932
			10	50	0	8.96	9.684
		16QAM	5	25	0	4.4689	4.949
			10	50	0	8.949	9.649

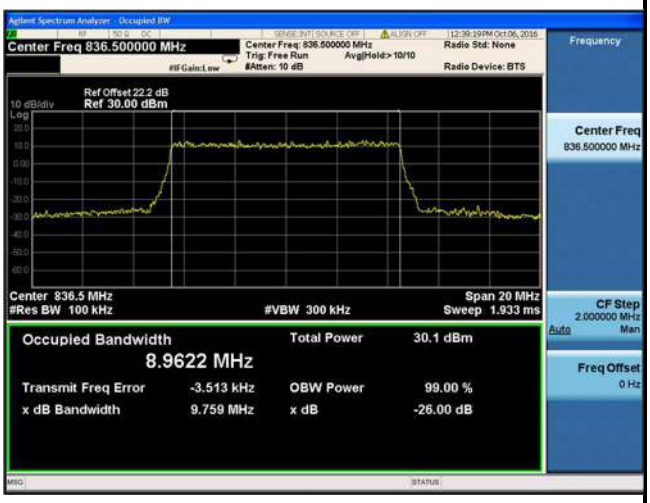
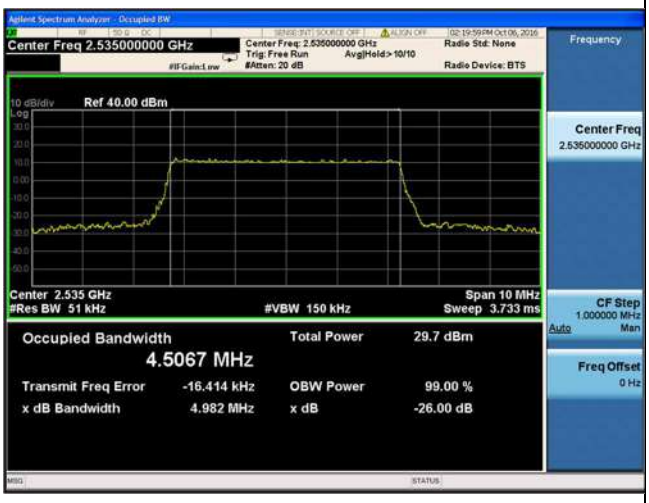
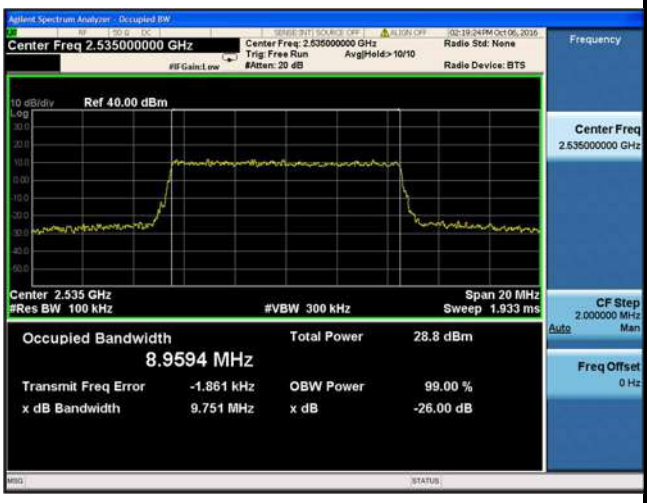
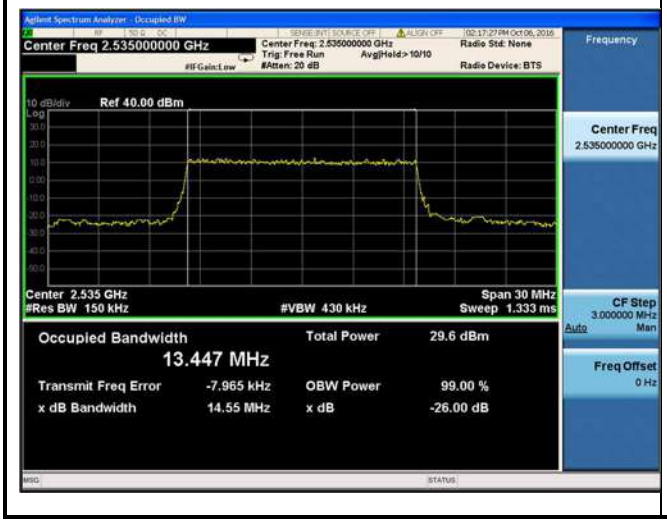
Band 2 CH18900(1880MHz) QPSK-1.4MHz	Band 2 CH18900(1880MHz) QPSK-3MHz
	
Band 2 CH18900(1880MHz) QPSK-5MHz	**Band 2 CH18900(1880MHz) QPSK-10MHz**
	
Band 2 CH18900(1880MHz) QPSK-15MHz	**Band 2 CH18900(1880MHz) QPSK-20MHz**
	

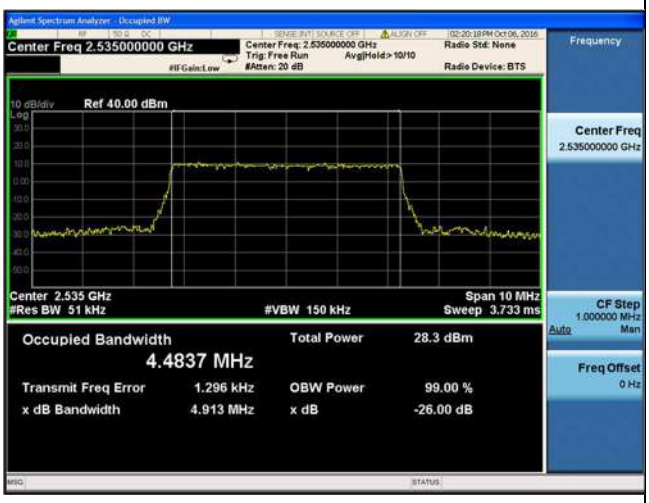
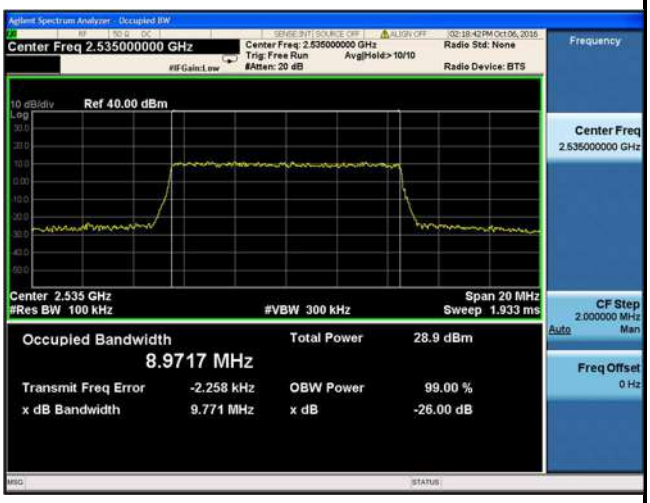
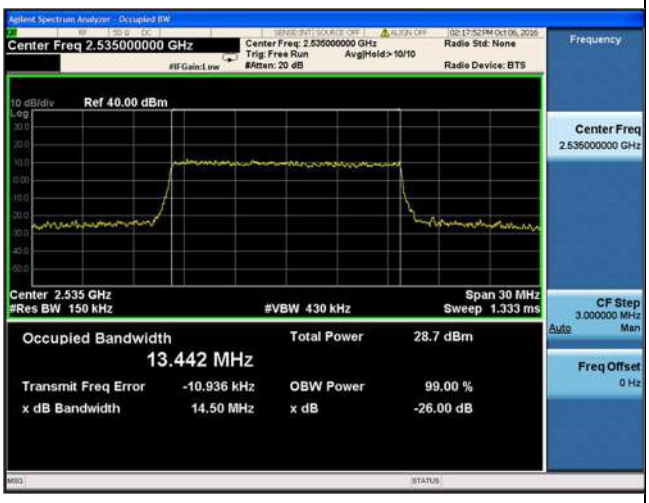
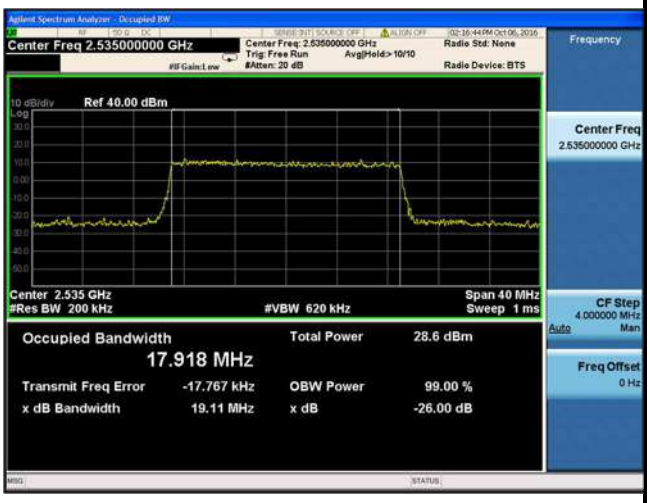
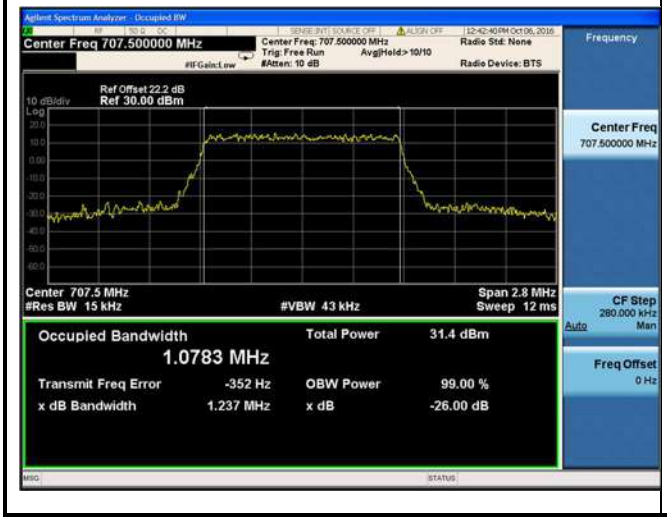
Band 2 CH18900(1880MHz) 16QAM-1.4MHz	Band 2 CH18900(1880MHz) 16QAM -3MHz
	
Band 2 CH18900(1880MHz) 16QAM -5MHz	**Band 2 CH18900(1880MHz) 16QAM -10MHz**
	
Band 2 CH18900(1880MHz) 16QAM -15MHz	**Band 2 CH18900(1880MHz) 16QAM -20MHz**
	

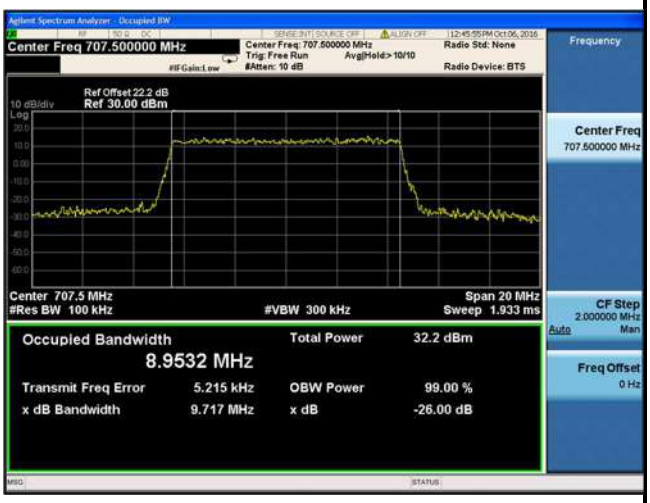
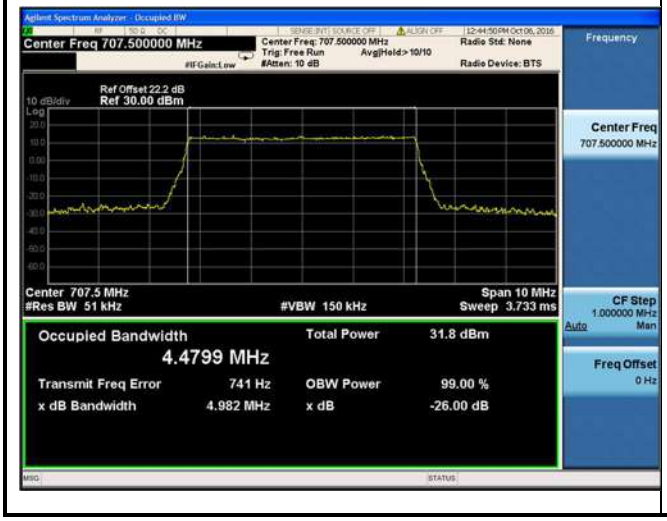
Band 4 CH20175(1732.5MHz) QPSK-1.4MHz	Band 4 CH20175(1732.5MHz) QPSK-3MHz
	
Band 4 CH20175(1732.5MHz) QPSK-5MHz	**Band 4 CH20175(1732.5MHz) QPSK-10MHz**
	
Band 4 CH20175(1732.5MHz) QPSK-15MHz	**Band 4 CH20175(1732.5MHz) QPSK-20MHz**
	

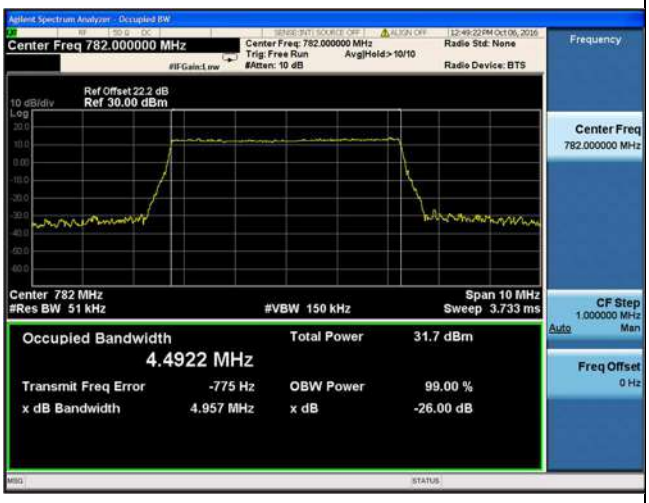
Band 4 CH20175(1732.5MHz) 16QAM-1.4MHz	Band 4 CH20175(1732.5MHz) 16QAM -3MHz
	
Band 4 CH20175(1732.5MHz) 16QAM -5MHz	**Band 4 CH20175(1732.5MHz) 16QAM -10MHz**
	
Band 4 CH20175(1732.5MHz) 16QAM -15MHz	**Band 4 CH20175(1732.5MHz) 16QAM -20MHz**
	

Band 5 CH20525(836.5MHz) QPSK-1.4MHz	Band 5 CH20525(836.5MHz) QPSK-3MHz
	
Band 5 CH20525(836.5MHz) QPSK-5MHz	**Band 5 CH20525(836.5MHz) QPSK-10MHz**
	
Band 5 CH20525(836.5MHz) 16QAM-1.4MHz	**Band 5 CH20525(836.5MHz) 16QAM-3MHz**
	

Band 5 CH20525(836.5MHz) 16QAM-5MHz	Band 5 CH20525(836.5MHz) 16QAM-10MHz
	
Band 7 CH21100(2535MHz) QPSK-5MHz	**Band 7 CH21100(2535MHz) QPSK-10MHz**
	
Band 7 CH21100(2535MHz) QPSK-15MHz	**Band 7 CH21100(2535MHz) QPSK-20MHz**
	

Band 7 CH21100(2535MHz) 16QAM-5MHz	Band 7 CH21100(2535MHz) 16QAM-10MHz
	
Band 7 CH21100(2535MHz) 16QAM-15MHz	**Band 7 CH21100(2535MHz) 16QAM-20MHz**
	
Band 12 CH23095(707.5MHz) QPSK-1.4MHz	**Band 12 CH23095(707.5MHz) QPSK-3MHz**
	

Band 12 CH23095(707.5MHz) QPSK-5MHz	Band 12 CH23095(707.5MHz) QPSK-10MHz
	
Band 12 CH23095(707.5MHz) 16QAM-1.4MHz	**Band 12 CH23095(707.5MHz) 16QAM -3MHz**
	
Band 12 CH23095(707.5MHz) 16QAM-5MHz	**Band 12 CH23095(707.5MHz) 16QAM -10MHz**
	

Band 13 CH23230(782MHz) QPSK-5MHz	Band 13 CH23230(782MHz) QPSK-10MHz
	
Band 13 CH23230(782MHz) 16QAM-5MHz	**Band 13 CH23230(782MHz) 16QAM-10MHz**
	
Band 17 CH23790(710MHz) QPSK-5MHz	**Band 17 CH23790(710MHz) QPSK-10MHz**
	

Band 17 CH23790(710MHz) 16QAM-5MHz	Band 17 CH23790(710MHz) 16QAM-10MHz
	

7.3. Conducted Spurious Emissions

7.3.1. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + $10\log_{10}$(P) dB for Band 2,4,5,12,13,17/ 55+$10\log_{10}$(P) dB for Band7.

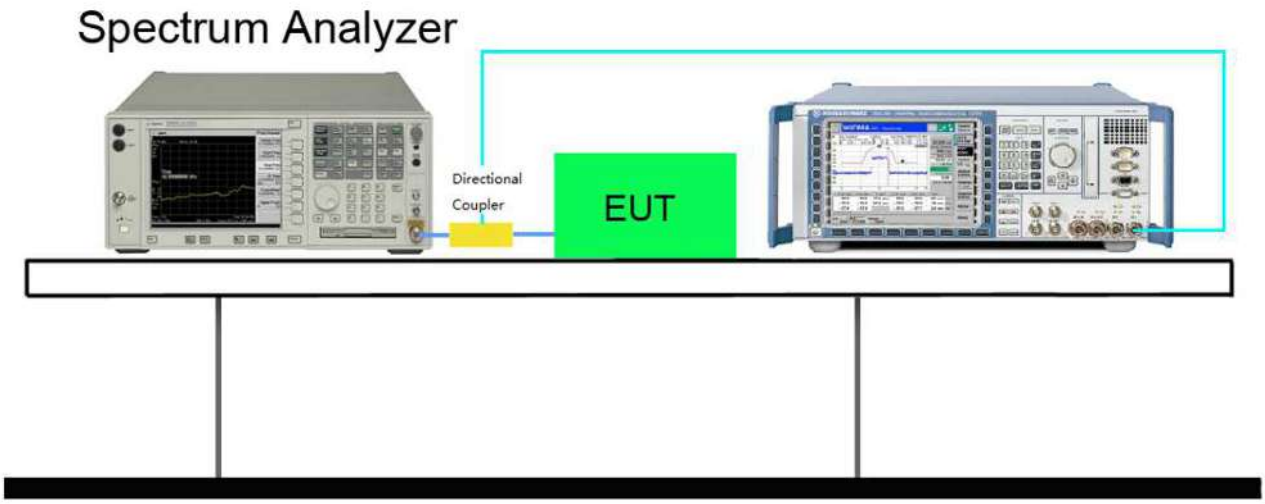
7.3.2. Test Procedure Used

KDB 971168 D01v02r02 – Section 6.0 & ANSI/TIA-603-D-2010

7.3.3. Test Setting

Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz is at or below 1GHz and 1MHz is above 1GHz, If any, up to 10th harmonic.

7.3.4. Test Setup



7.3.5. Test Result

Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Limit (dBm)	Result
LTE Band 2 (Low Channel)	QPSK	18607/1850.7	1.4	1	2	-13	PASS
		18615/1851.5	3	1	7	-13	PASS
		18625/1852.5	5	1	12	-13	PASS
		18650/1855	10	1	25	-13	PASS
		18675/1857.5	15	1	36	-13	PASS
		18700/1860	20	1	49	-13	PASS
	16QAM	18607/1850.7	1.4	1	2	-13	PASS
		18615/1851.5	3	1	7	-13	PASS
		18625/1852.5	5	1	12	-13	PASS
		18650/1855	10	1	25	-13	PASS
		18675/1857.5	15	1	36	-13	PASS
		18700/1860	20	1	49	-13	PASS
LTE Band 2 (Middle Channel)	QPSK	18900/1880	1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
			15	1	36	-13	PASS
			20	1	49	-13	PASS
	16QAM		1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
			15	1	36	-13	PASS
			20	1	49	-13	PASS

LTE Band 2 (High Channel)	QPSK	19193/1909.3	1.4	1	2	-13	PASS
		19185/1908.5	3	1	7	-13	PASS
		19175/1907.5	5	1	12	-13	PASS
		19150/1905	10	1	25	-13	PASS
		19125/1902.5	15	1	36	-13	PASS
		19100/1900	20	1	49	-13	PASS
	16QAM	19193/1909.3	1.4	1	2	-13	PASS
		19185/1908.5	3	1	7	-13	PASS
		19175/1907.5	5	1	12	-13	PASS
		19150/1905	10	1	25	-13	PASS
		19125/1902.5	15	1	36	-13	PASS
		19100 /1900	20	1	49	-13	PASS

Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Limit (dBm)	Result
LTE Band 4 (Low Channel)	QPSK	19957/1710.7	1.4	1	2	-13	PASS
		19965/1711.5	3	1	7	-13	PASS
		19975/1712.5	5	1	12	-13	PASS
		20000/1715	10	1	25	-13	PASS
		20025/1717.5	15	1	36	-13	PASS
		20050/1720	20	1	49	-13	PASS
	16QAM	19957/1710.7	1.4	1	2	-13	PASS
		19965/1711.5	3	1	7	-13	PASS
		19975/1712.5	5	1	12	-13	PASS
		20000/1715	10	1	25	-13	PASS
		20025/1717.5	15	1	36	-13	PASS
		20050/1720	20	1	49	-13	PASS

LTE Band 4 (Middle Channel)	QPSK	20175 /1732.5	1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
			15	1	36	-13	PASS
			20	1	49	-13	PASS
	16QAM		1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
			15	1	36	-13	PASS
			20	1	49	-13	PASS
LTE Band 4 (High Channel)	QPSK	20393/1754.3	1.4	1	2	-13	PASS
		20385/1753.5	3	1	7	-13	PASS
		20375/1752.5	5	1	12	-13	PASS
		20350/1750	10	1	25	-13	PASS
		20325/1747.5	15	1	36	-13	PASS
		20300/1745	20	1	49	-13	PASS
	16QAM	20393/1754.3	1.4	1	2	-13	PASS
		20385/1753.5	3	1	7	-13	PASS
		20375/1752.5	5	1	12	-13	PASS
		20350/1750	10	1	25	-13	PASS
		20325/1747.5	15	1	36	-13	PASS
		20300/1745	20	1	49	-13	PASS

Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Limit (dBm)	Result
LTE Band 5 (Low Channel)	QPSK	20407/824.7	1.4	1	2	-13	PASS
		20415/825.5	3	1	7	-13	PASS
		20425/826.5	5	1	12	-13	PASS
		20450/829	10	1	25	-13	PASS
	16QAM	20407/824.7	1.4	1	2	-13	PASS
		20415/825.5	3	1	7	-13	PASS
		20425/826.5	5	1	12	-13	PASS
		20450/829	10	1	25	-13	PASS
LTE Band 5 (Middle Channel)	QPSK	20525/836.5	1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
	16QAM		1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
LTE Band 5 (High Channel)	QPSK	20643/848.3	1.4	1	2	-13	PASS
		20635/847.5	3	1	7	-13	PASS
		20625/846.5	5	1	12	-13	PASS
		20600/844	10	1	25	-13	PASS
	16QAM	20643/848.3	1.4	1	2	-13	PASS
		20635/847.5	3	1	7	-13	PASS
		20625/846.5	5	1	12	-13	PASS
		20600/844	10	1	25	-13	PASS

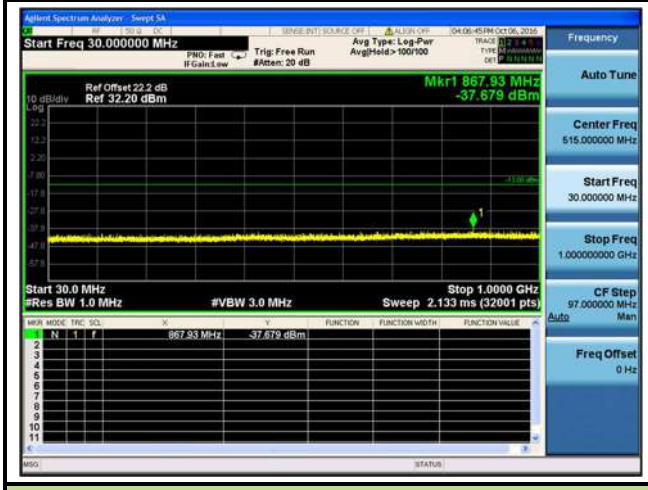
Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Limit (dBm)	Result
LTE Band 7 (Low Channel)	QPSK	20775/2502.5	5	1	12	-25	PASS
		20800/2505	10	1	25	-25	PASS
		20825/2507.5	15	1	36	-25	PASS
		20850/2510	20	1	49	-25	PASS
	16QAM	20775/2502.5	5	1	12	-25	PASS
		20800/2505	10	1	25	-25	PASS
		20825/2507.5	15	1	36	-25	PASS
		20850/2510	20	1	49	-25	PASS
LTE Band 7 (Middle Channel)	QPSK	21100/2535	5	1	12	-25	PASS
			10	1	25	-25	PASS
			15	1	36	-25	PASS
			20	1	49	-25	PASS
	16QAM		5	1	12	-25	PASS
			10	1	25	-25	PASS
			15	1	36	-25	PASS
			20	1	49	-25	PASS
LTE Band 7 (High Channel)	QPSK	21425/2567.5	5	1	12	-25	PASS
		21400/2565	10	1	25	-25	PASS
		21375/2562.5	15	1	36	-25	PASS
		21350/2560	20	1	49	-25	PASS
	16QAM	21425/2567.5	5	1	12	-25	PASS
		21400/2565	10	1	25	-25	PASS
		21375/2562.5	15	1	36	-25	PASS
		21350/2560	20	1	49	-25	PASS

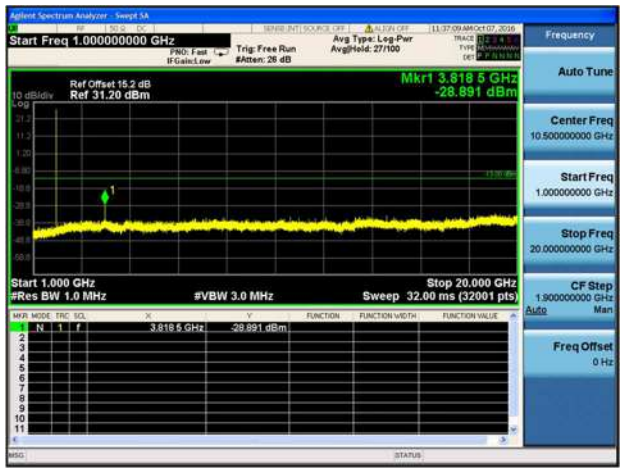
Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Limit (dBm)	Result
LTE Band 12 (Low Channel)	QPSK	23017/699.7	1.4	1	2	-13	PASS
		23025/700.5	3	1	7	-13	PASS
		23035/701.5	5	1	12	-13	PASS
		23060/704	10	1	25	-13	PASS
	16QAM	23017/699.7	1.4	1	2	-13	PASS
		23025/700.5	3	1	7	-13	PASS
		23035/701.5	5	1	12	-13	PASS
		23060/704	10	1	25	-13	PASS
LTE Band 12 (Middle Channel)	QPSK	23095/707.5	1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
	16QAM		1.4	1	2	-13	PASS
			3	1	7	-13	PASS
			5	1	12	-13	PASS
			10	1	25	-13	PASS
LTE Band 12 (High Channel)	QPSK	23173/715.3	1.4	1	2	-13	PASS
		23165/714.5	3	1	7	-13	PASS
		23155/713.5	5	1	12	-13	PASS
		23130/711	10	1	25	-13	PASS
	16QAM	23173/715.3	1.4	1	2	-13	PASS
		23165/714.5	3	1	7	-13	PASS
		23155/713.5	5	1	12	-13	PASS
		23130/711	10	1	25	-13	PASS

Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Limit (dBm)	Result
LTE Band 13 (Low Channel)	QPSK	23205/779.5	5	1	12	-13	PASS
	16QAM	23205/779.5	5	1	12	-13	PASS
LTE Band 13 (Middle Channel)	QPSK	23230/782	5	1	12	-13	PASS
			10	1	25	-13	PASS
	16QAM		5	1	12	-13	PASS
			10	1	25	-13	PASS
LTE Band 13 (High Channel)	QPSK	23255/784.5	5	1	12	-13	PASS
	16QAM	23255/784.5	5	1	12	-13	PASS

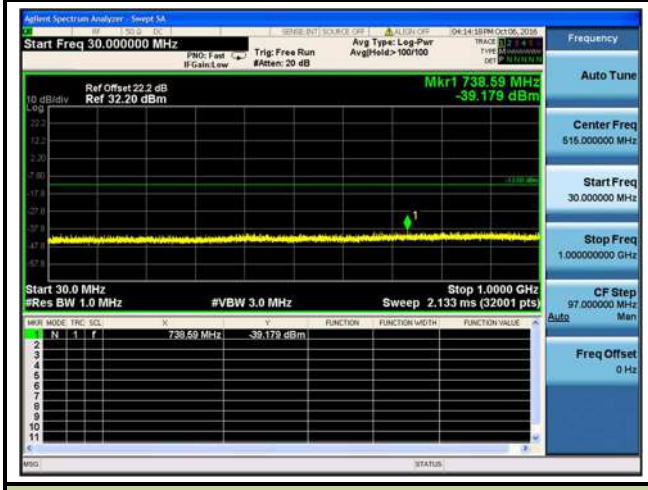
Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Limit (dBm)	Result
LTE Band 17 (Low Channel)	QPSK	23755/706.5	5	1	12	-13	PASS
		23780/709	10	1	25	-13	PASS
	16QAM	23755/706.5	5	1	12	-13	PASS
		23780/709	10	1	25	-13	PASS
LTE Band 17 (Middle Channel)	QPSK	23790/710	5	1	12	-13	PASS
			10	1	25	-13	PASS
	16QAM		5	1	12	-13	PASS
			10	1	25	-13	PASS
LTE Band 17 (High Channel)	QPSK	23825/713.5	5	1	12	-13	PASS
		23800/711	10	1	25	-13	PASS
	16QAM	23825/713.5	5	1	12	-13	PASS
		23800/711	10	1	25	-13	PASS

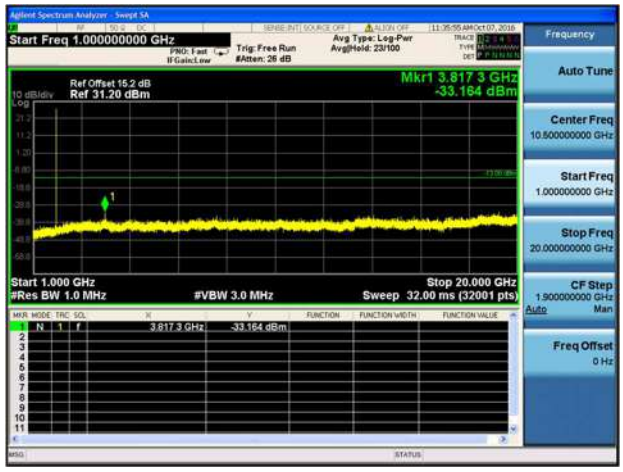
LTE Band 2 (Low Channel) 18607 (1850.7MHz) QPSK Bandwidth 1.4MHz



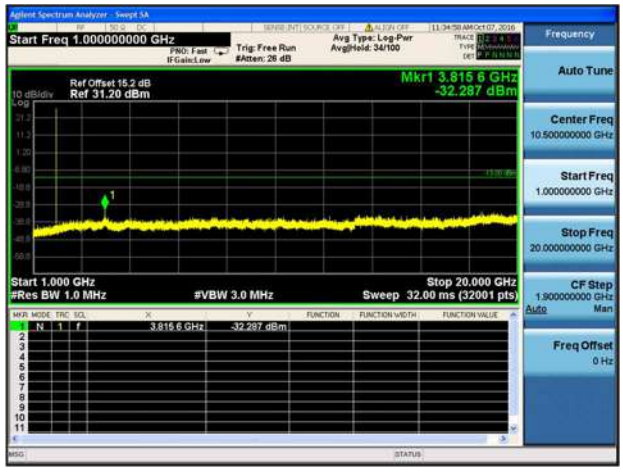


LTE Band 2 (Low Channel) 18615 (1851.5MHz) QPSK Bandwidth 3MHz

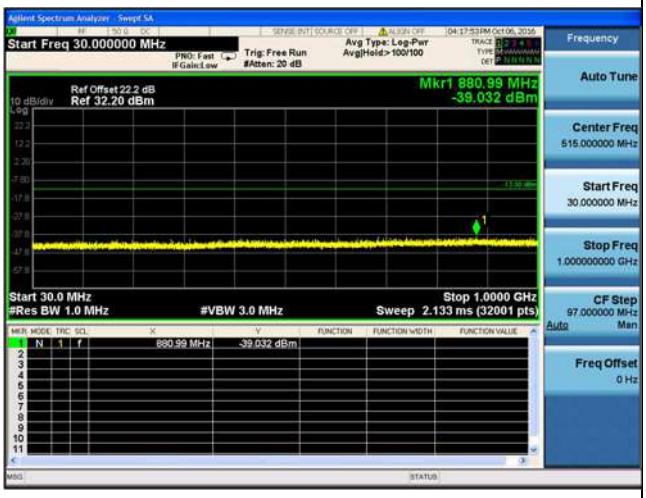


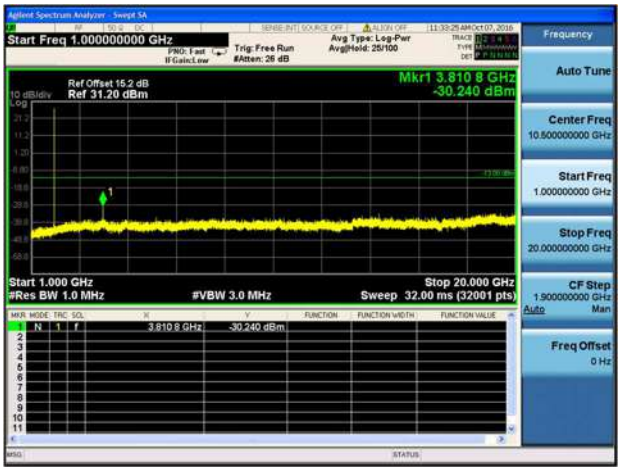


LTE Band 2 (Low Channel) 18625 (1852.5MHz) QPSK Bandwidth 5MHz

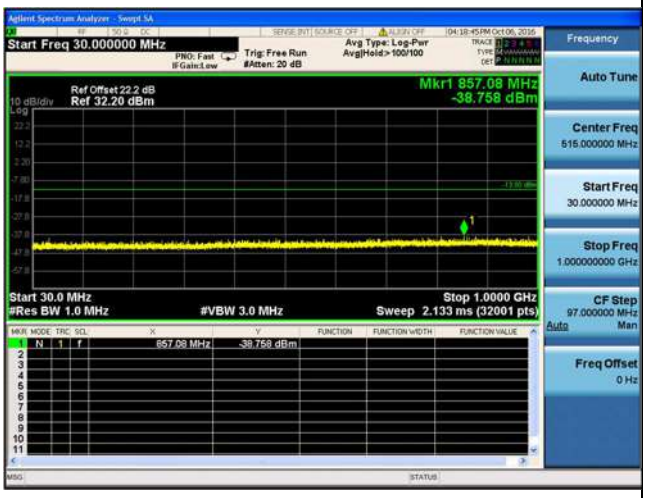


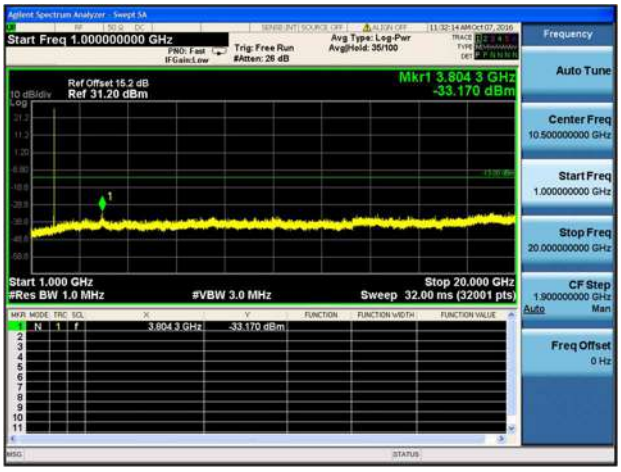
LTE Band 2 (Low Channel) 18650 (1855MHz) QPSK Bandwidth 10MHz



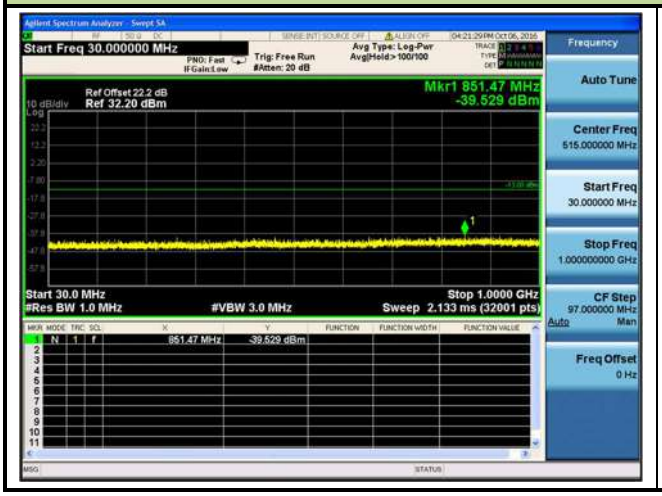


LTE Band 2 (Low Channel) 18675 (1857.5MHz) QPSK Bandwidth 15MHz

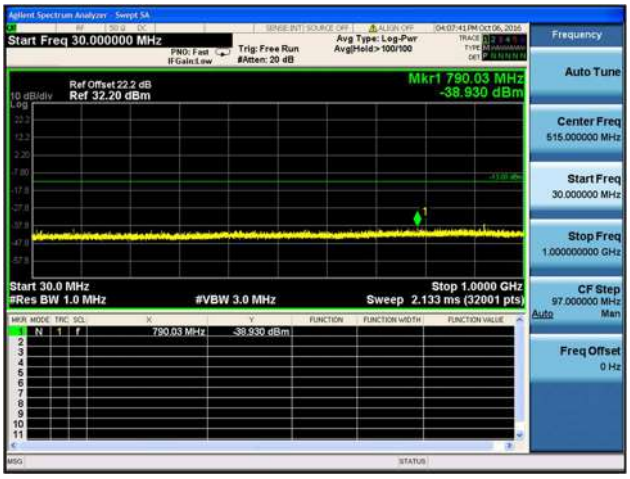


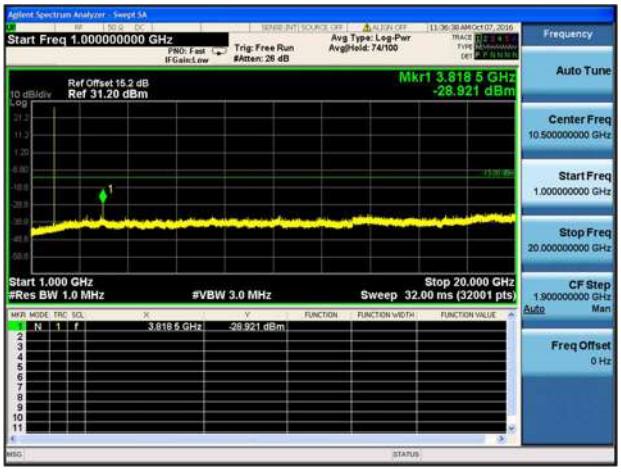


LTE Band 2 (Low Channel) 18700 (1860MHz) QPSK Bandwidth 20MHz

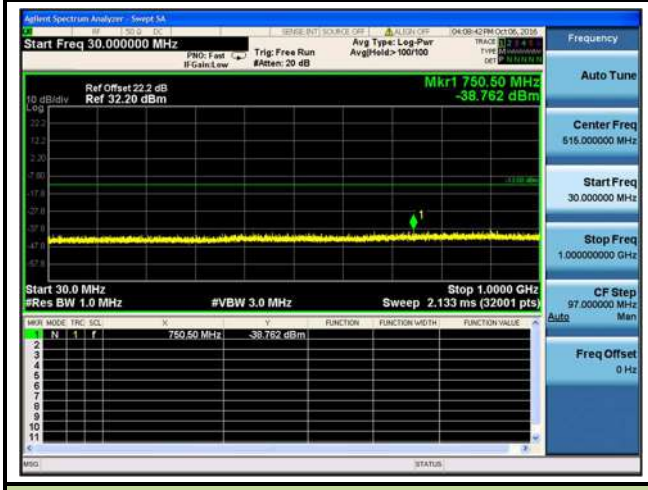


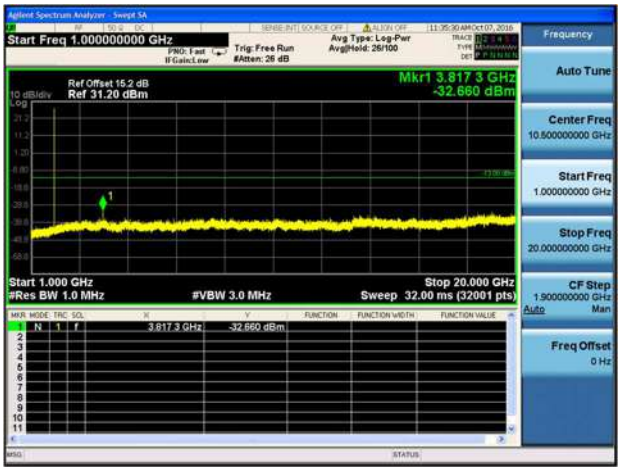
LTE Band 2 (Low Channel) 18607 (1850.7MHz) 16QAM Bandwidth 1.4MHz



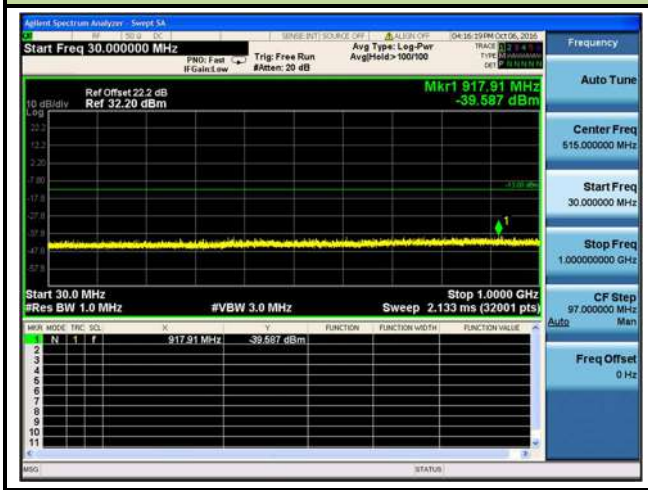


LTE Band 2 (Low Channel) 18615 (1851.5MHz) 16QAM Bandwidth 3MHz

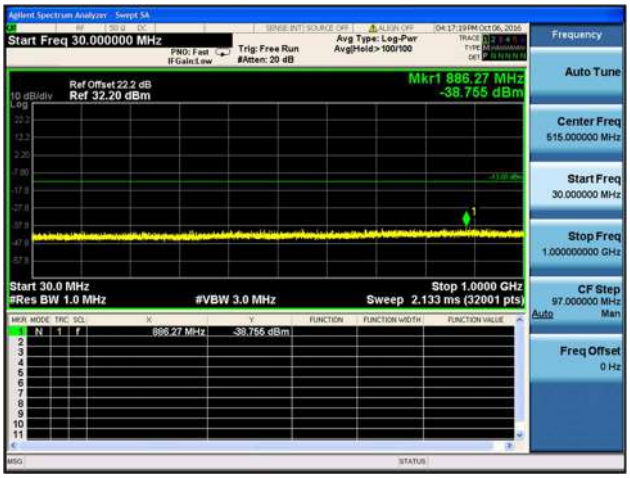


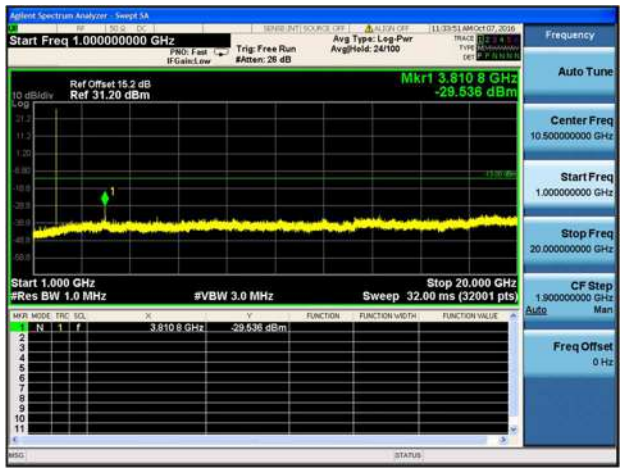


LTE Band 2 (Low Channel) 18625 (1852.5MHz) 16QAM Bandwidth 5MHz

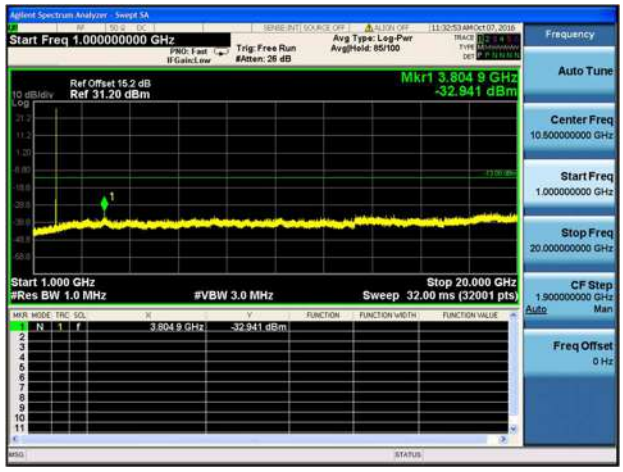


LTE Band 2 (Low Channel) 18650 (1855MHz) 16QAM Bandwidth 10MHz

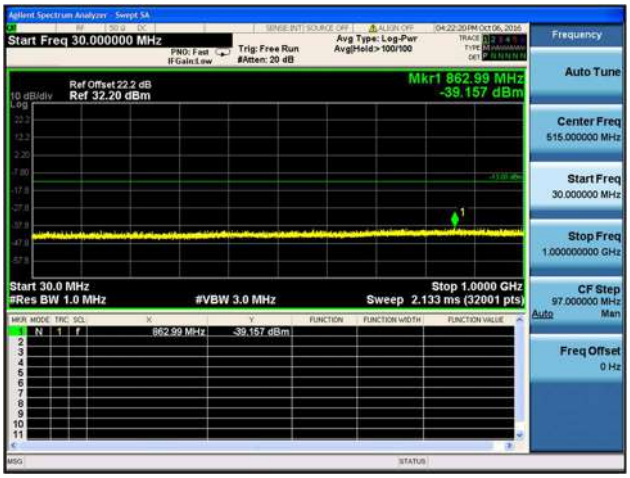


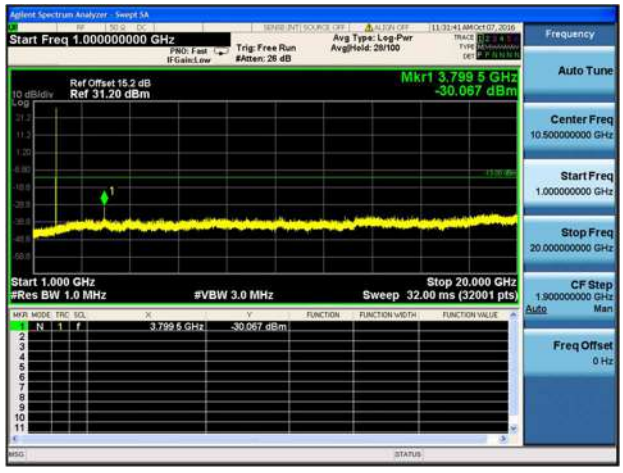


LTE Band 2 (Low Channel) 18675 (1857.5MHz) 16QAM Bandwidth 15MHz

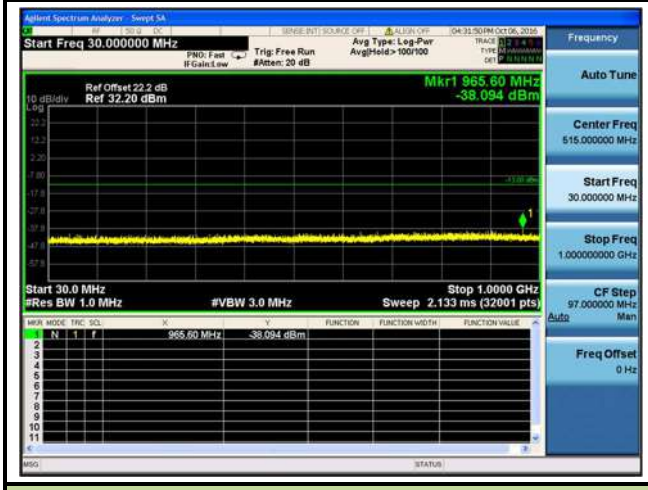


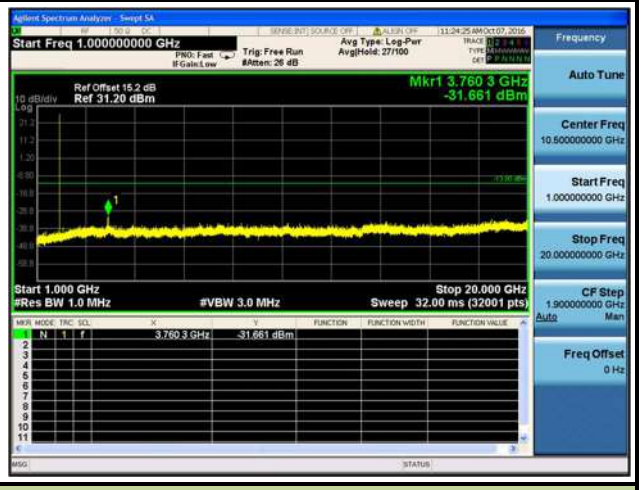
LTE Band 2 (Low Channel) 18700 (1860MHz) 16QAM Bandwidth 20MHz



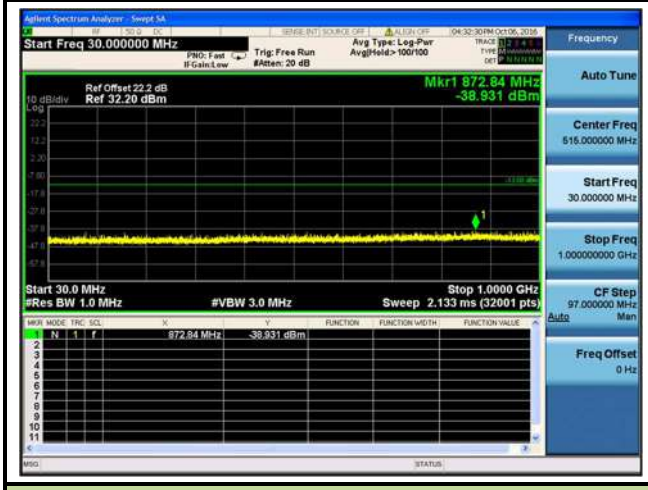


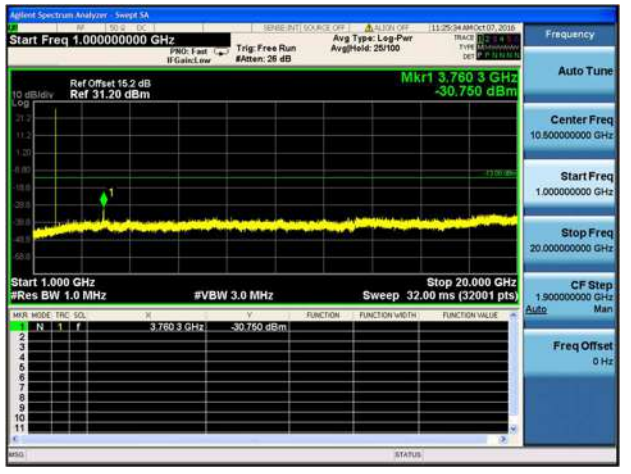
LTE Band 2 (Mid Channel) 18900 (1880MHz) QPSK Bandwidth 1.4MHz



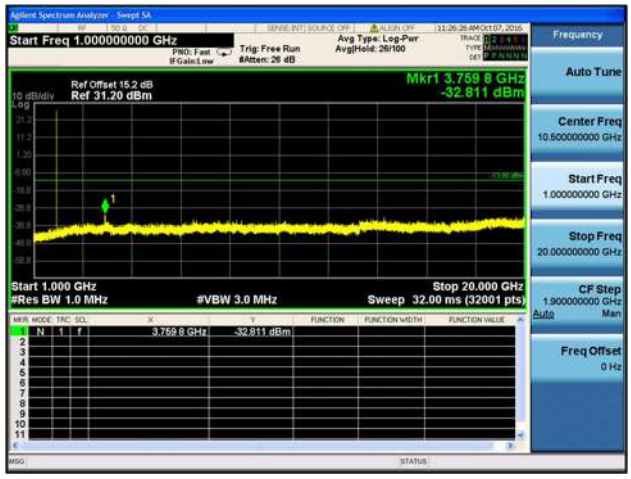


LTE Band 2 (Mid Channel) 18900 (1880MHz) QPSK Bandwidth 3MHz

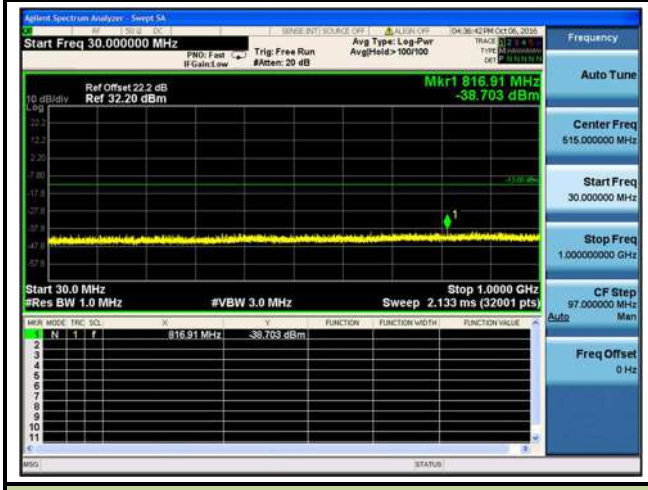


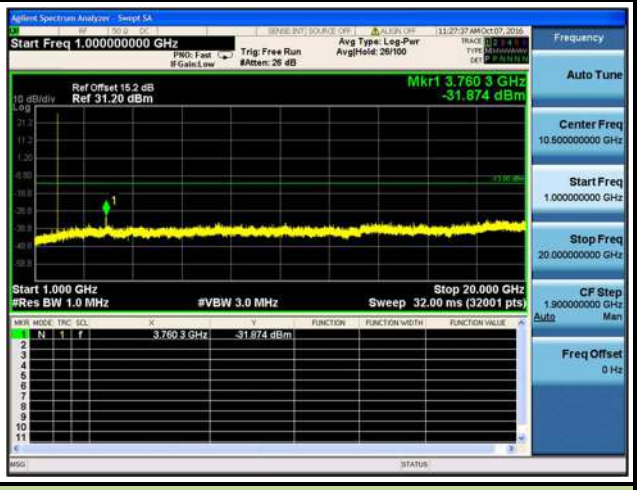


LTE Band 2 (Mid Channel) 18900 (1880MHz) QPSK Bandwidth 5MHz

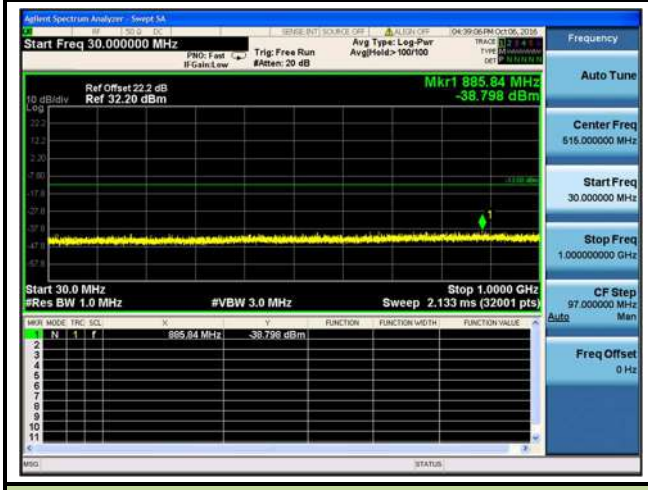


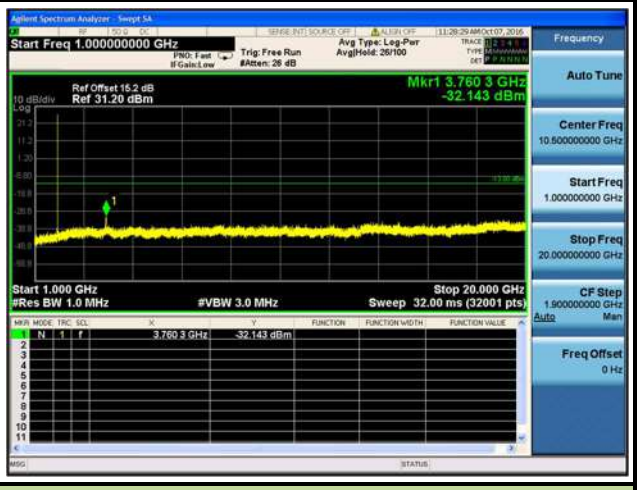
LTE Band 2 (Mid Channel) 18900 (1880MHz) QPSK Bandwidth 10MHz



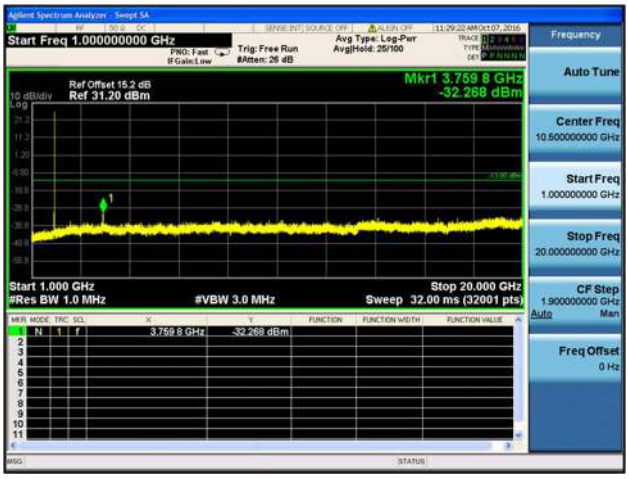


LTE Band 2 (Mid Channel) 18900 (1880MHz) QPSK Bandwidth 15MHz

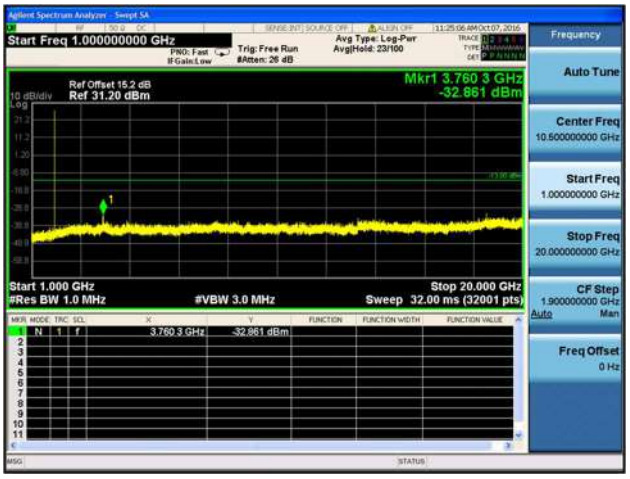




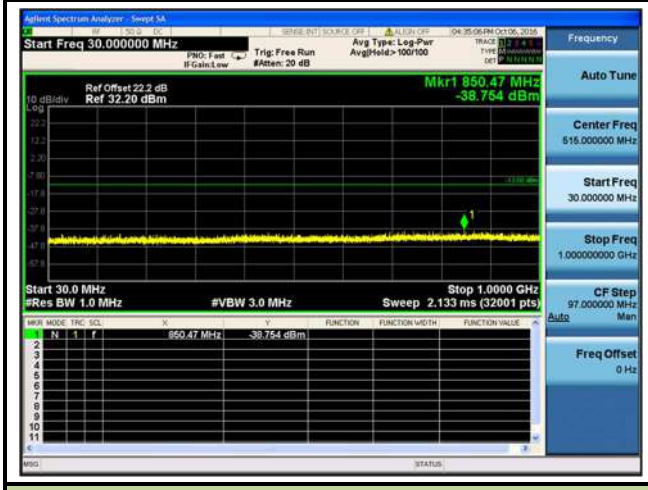
LTE Band 2 (Mid Channel) 18900 (1880MHz) QPSK Bandwidth 20MHz

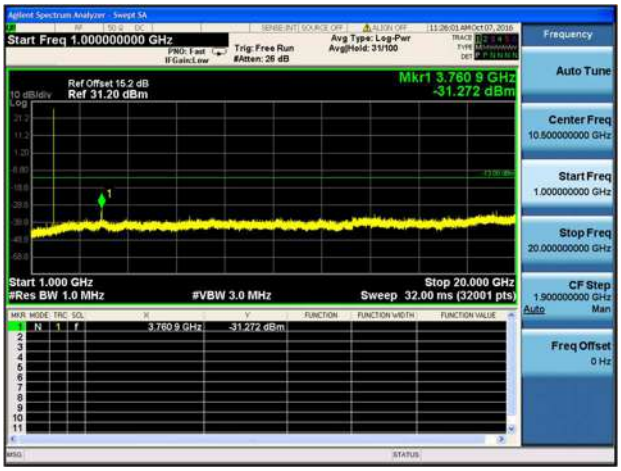


LTE Band 2 (Mid Channel) 18900 (1880MHz) 16QAM Bandwidth 1.4MHz

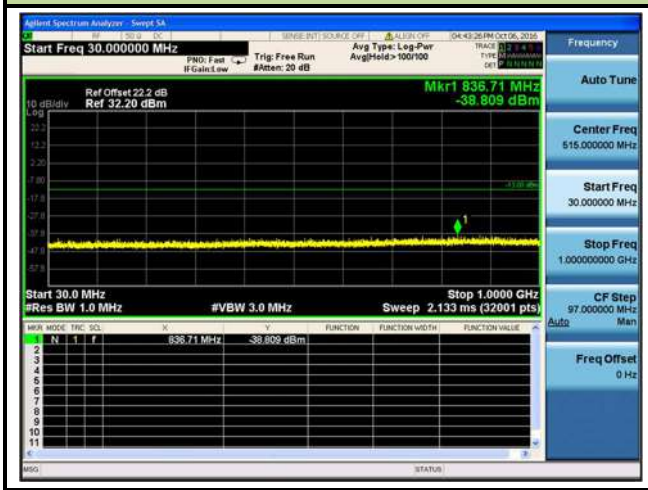


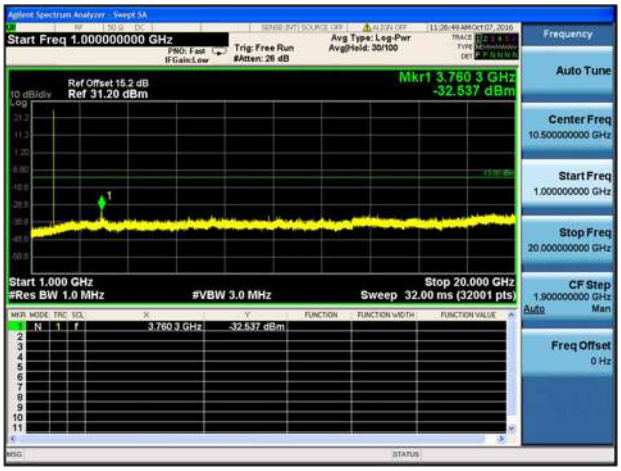
LTE Band 2 (Mid Channel) 18900 (1880MHz) 16QAM Bandwidth 3MHz



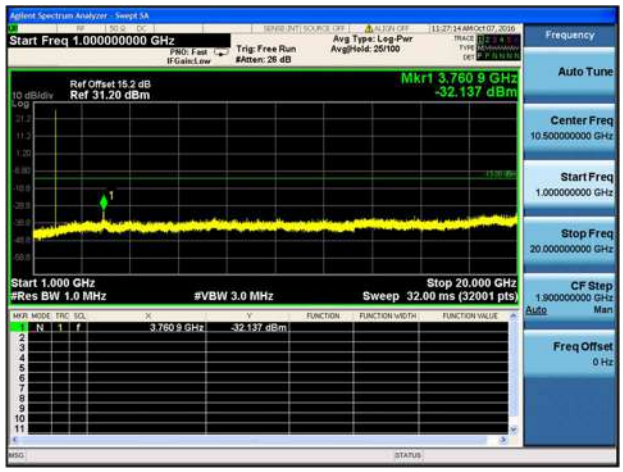


LTE Band 2 (Mid Channel) 18900 (1880MHz) 16QAM Bandwidth 5MHz

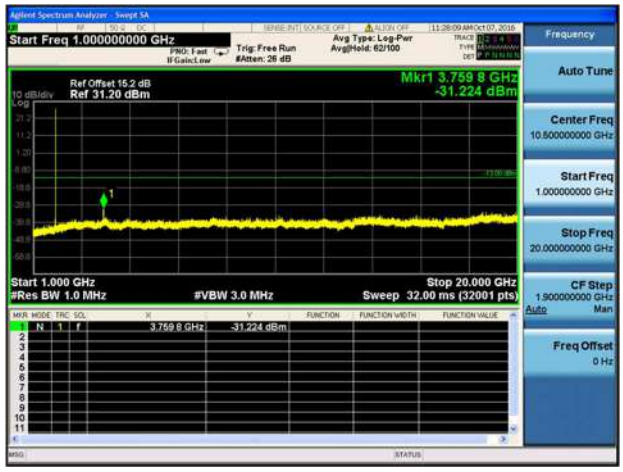




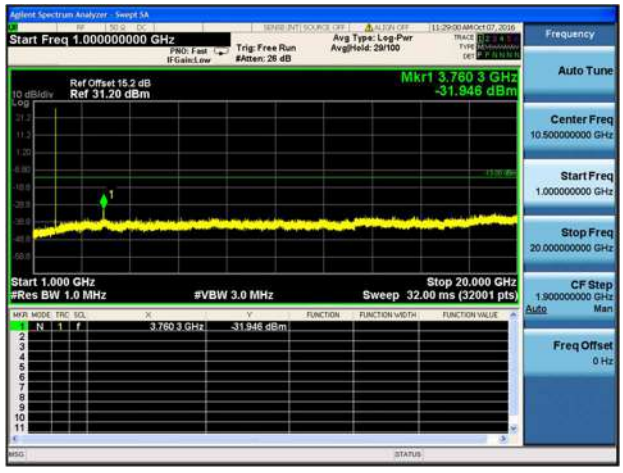
LTE Band 2 (Mid Channel) 18900 (1880MHz) 16QAM Bandwidth 10MHz



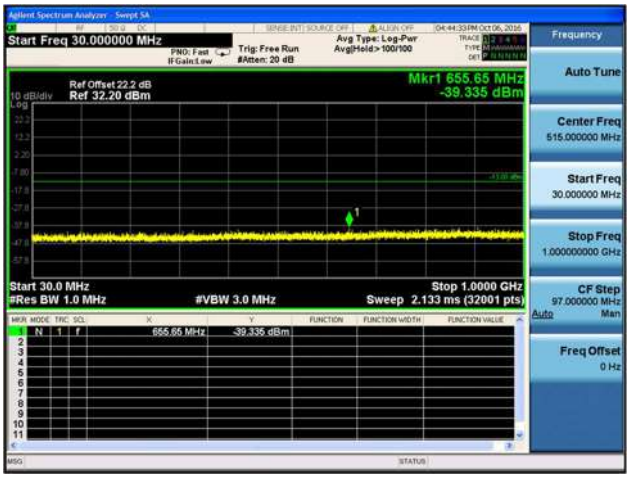
LTE Band 2 (Mid Channel) 18900 (1880MHz) 16QAM Bandwidth 15MHz

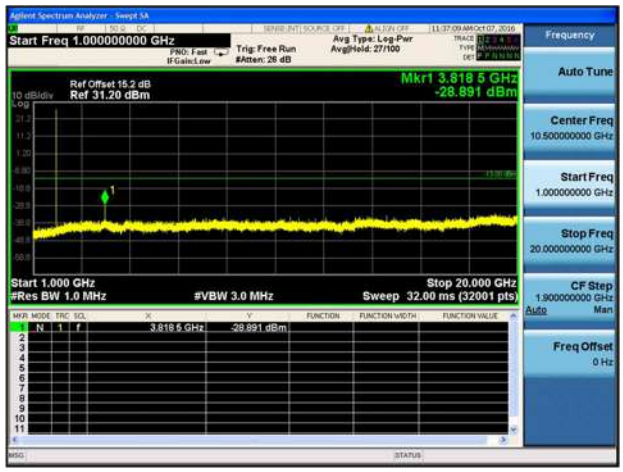


LTE Band 2 (Mid Channel) 18900 (1880MHz) 16QAM Bandwidth 20MHz

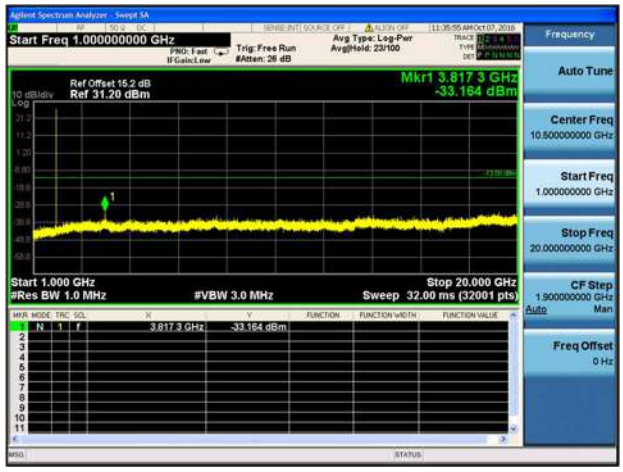


LTE Band 2 (High Channel) 19193 (1909.3MHz) QPSK Bandwidth 1.4MHz

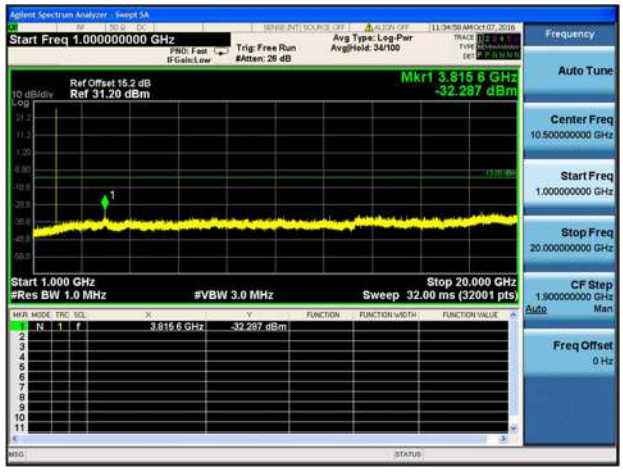




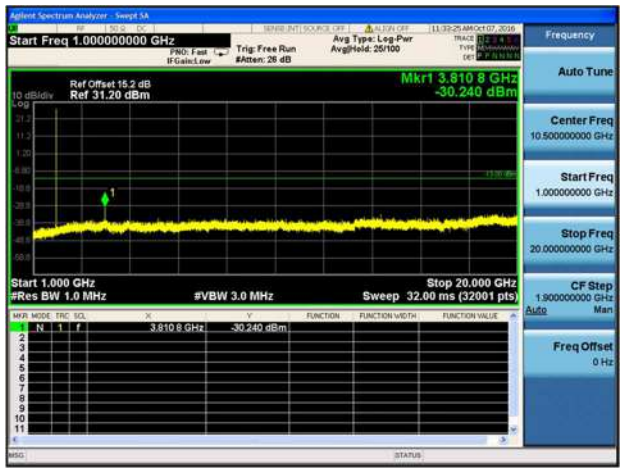
LTE Band 2 (High Channel) 19185 (1908.5MHz) QPSK Bandwidth 3MHz



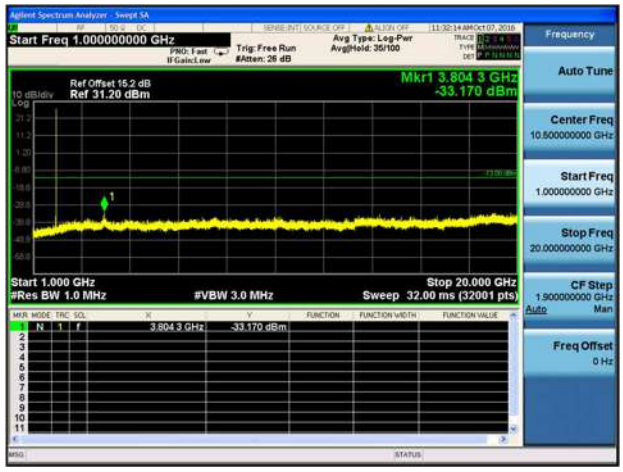
LTE Band 2 (High Channel) 19175 (1907.5MHz) QPSK Bandwidth 5MHz



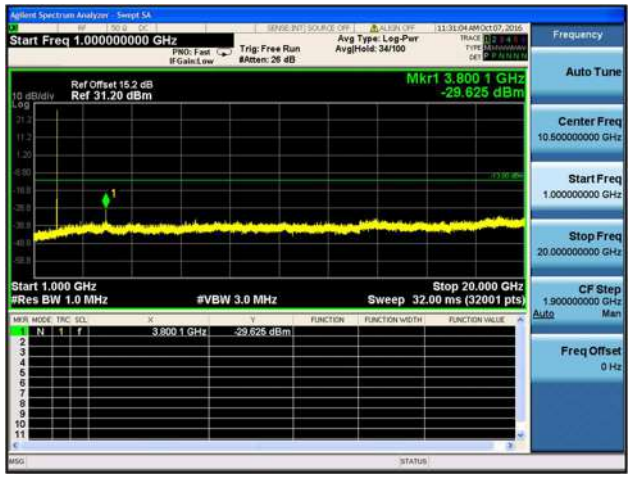
LTE Band 2 (High Channel) 19150 (1905MHz) QPSK Bandwidth 10MHz



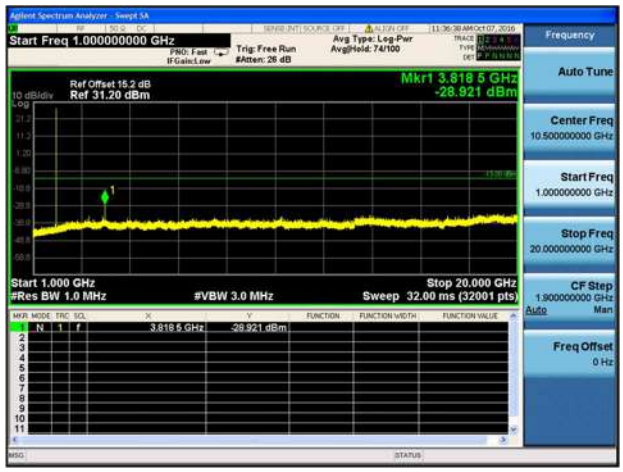
LTE Band 2 (High Channel) 19125 (1902.5MHz) QPSK Bandwidth 15MHz



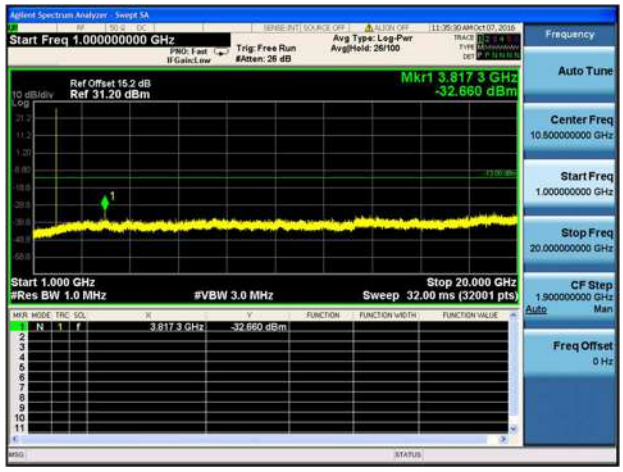
LTE Band 2 (High Channel) 19100 (1900MHz) QPSK Bandwidth 20MHz



LTE Band 2 (High Channel) 19193 (1909.3MHz) 16QAM Bandwidth 1.4MHz

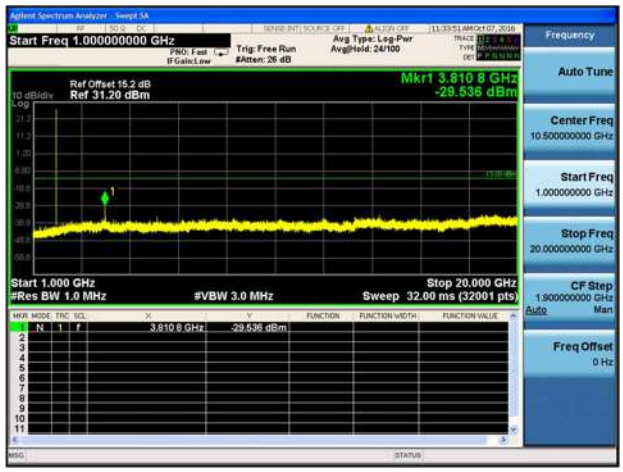


LTE Band 2 (High Channel) 19185 (1908.5MHz) 16QAM Bandwidth 3MHz

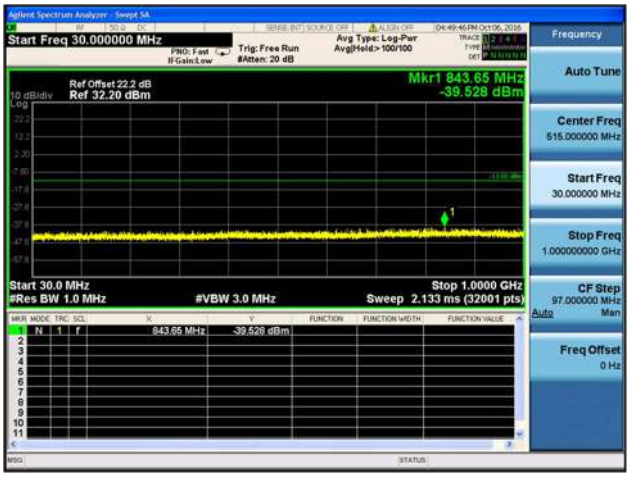


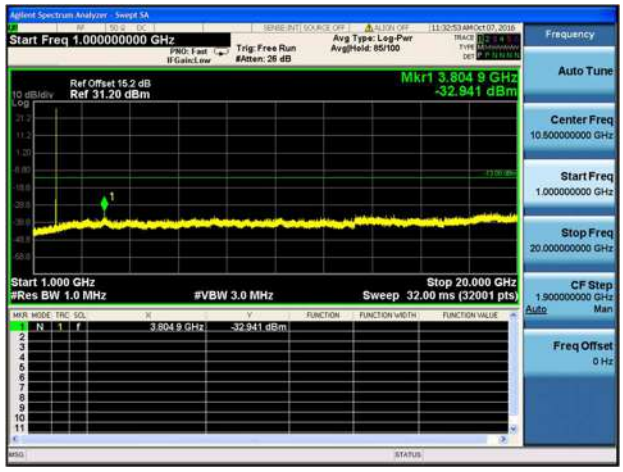
LTE Band 2 (High Channel) 19175 (1907.5MHz) 16QAM Bandwidth 5MHz

LTE Band 2 (High Channel) 19150 (1905MHz) 16QAM Bandwidth 10MHz

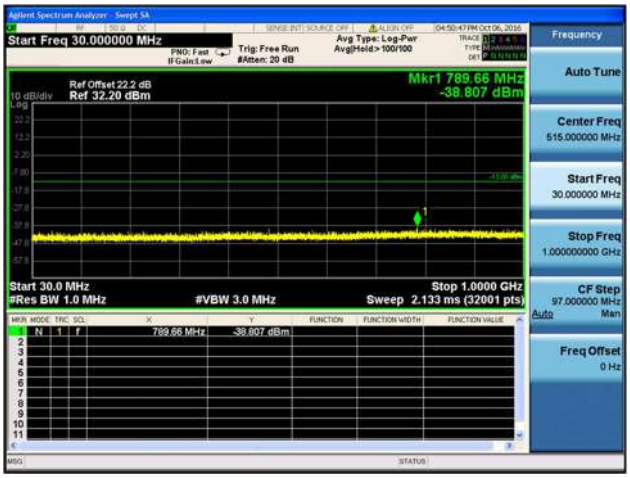


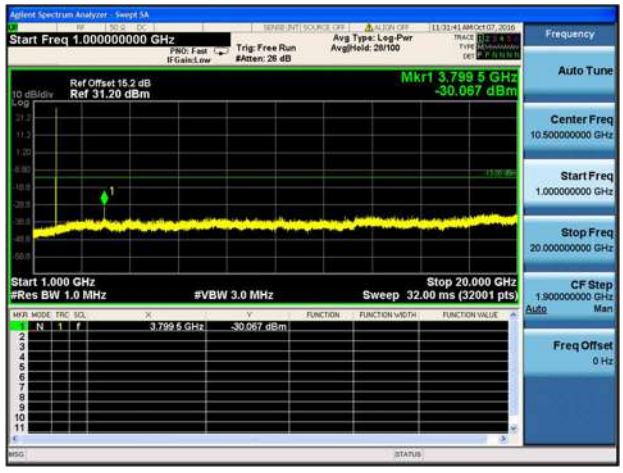
LTE Band 2 (High Channel) 19125 (1902.5MHz) 16QAM Bandwidth 15MHz



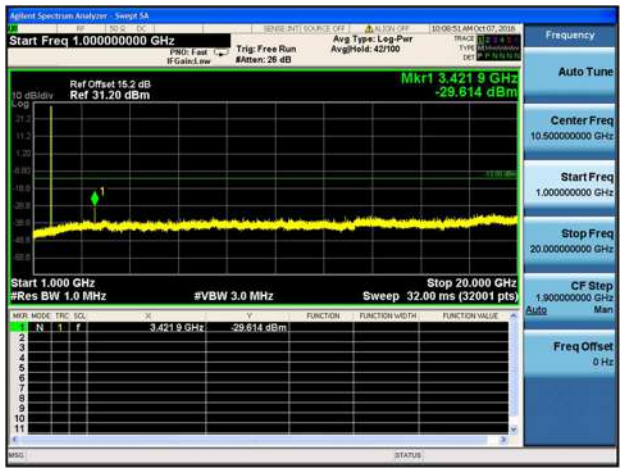


LTE Band 2 (High Channel) 19100 (1900MHz) 16QAM Bandwidth 20MHz

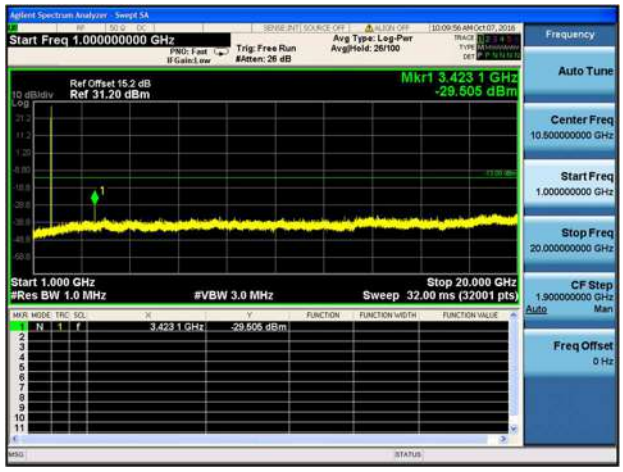




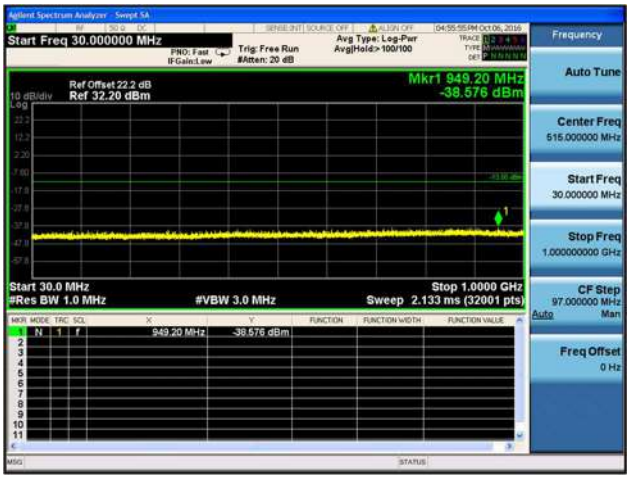
LTE Band 4 (Low Channel) 19957 (1710.7MHz) QPSK Bandwidth 1.4MHz

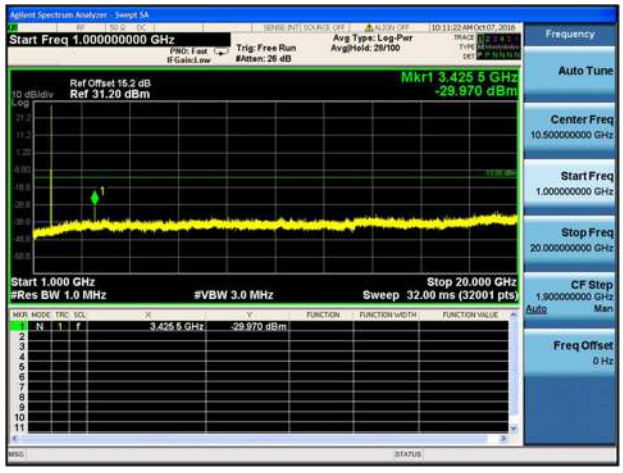


LTE Band 4 (Low Channel) 19965 (1711.5MHz) QPSK Bandwidth 3MHz

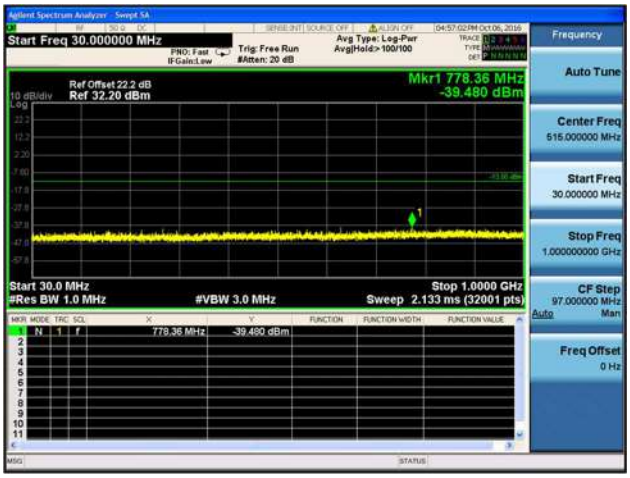


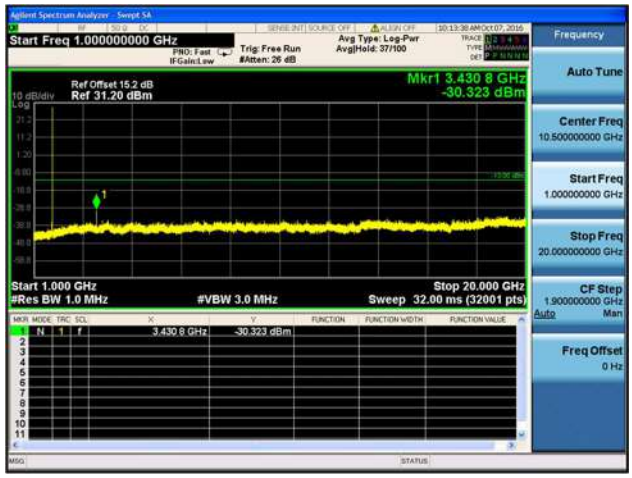
LTE Band 4 (Low Channel) 19975 (1712.5MHz) QPSK Bandwidth 5MHz





LTE Band 4 (Low Channel) 20000 (1715MHz) QPSK Bandwidth 10MHz

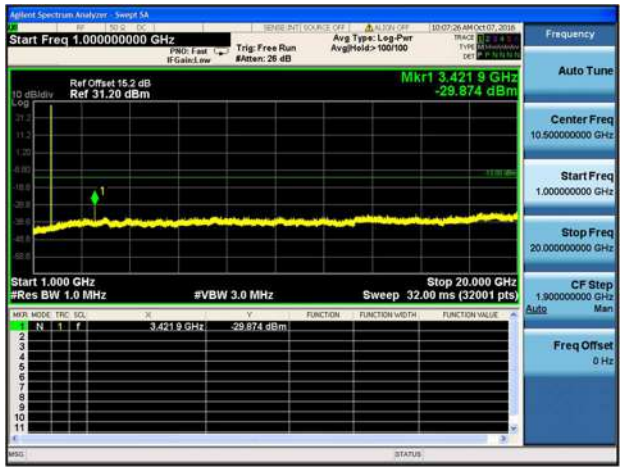




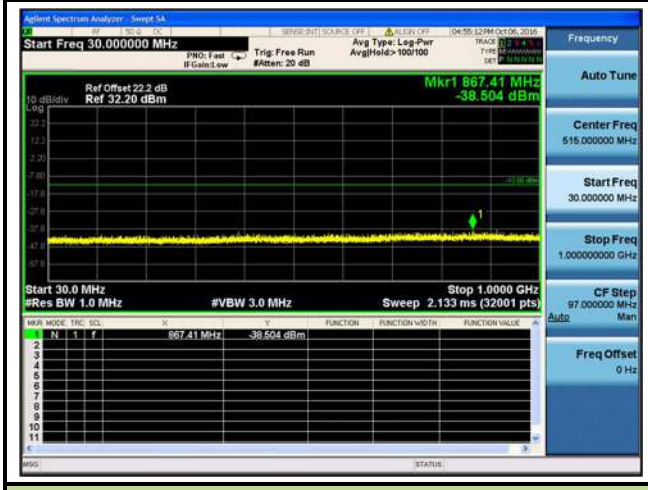
LTE Band 4 (Low Channel) 20025 (1720MHz) QPSK Bandwidth 15MHz

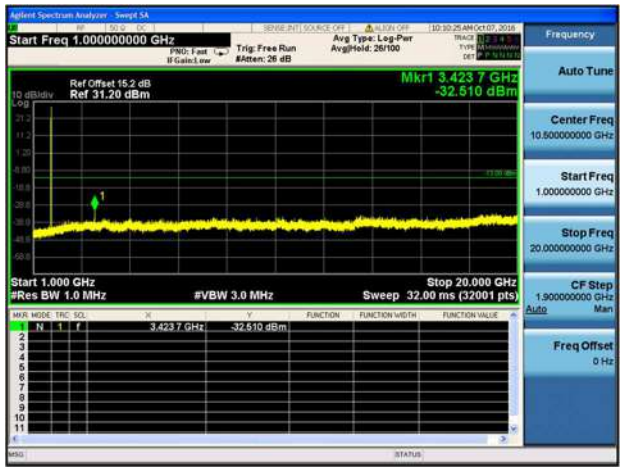
LTE Band 4 (Low Channel) 20050 (1720MHz) QPSK Bandwidth 20MHz

LTE Band 4 (Low Channel) 19957 (1710.7MHz) 16QAM Bandwidth 1.4MHz

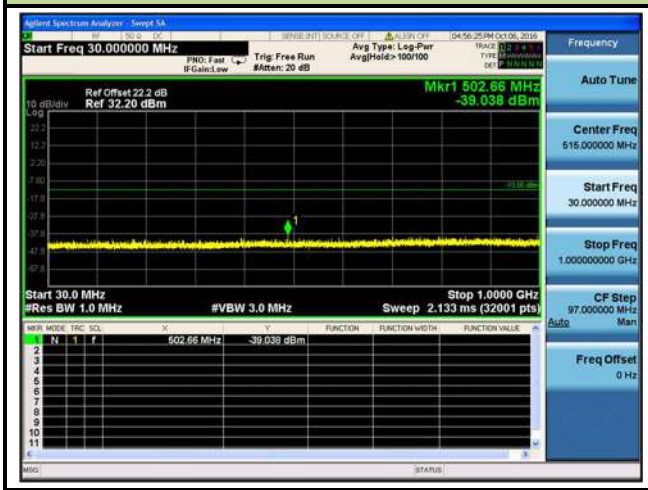


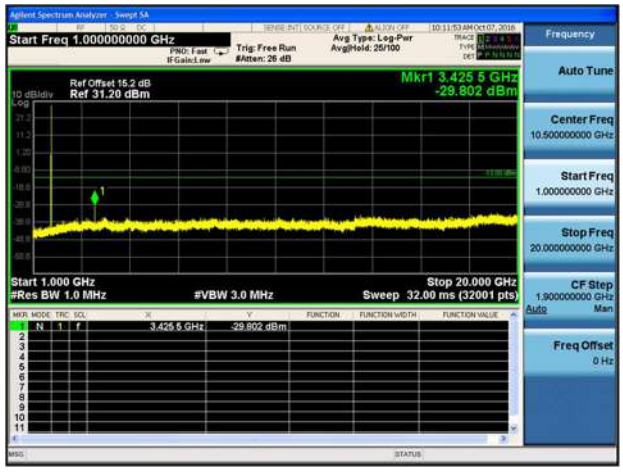
LTE Band 4 (Low Channel) 19965 (1711.5MHz) 16QAM Bandwidth 3MHz



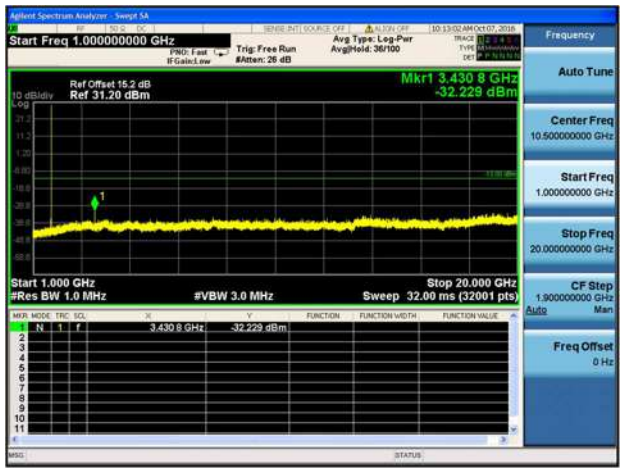


LTE Band 4 (Low Channel) 19975 (1712.5MHz) 16QAM Bandwidth 5MHz

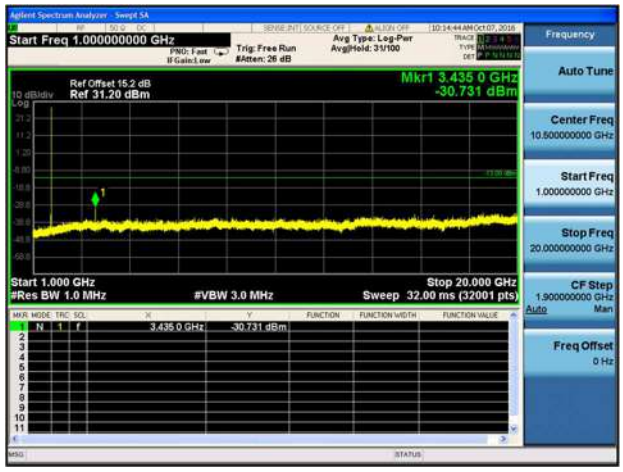




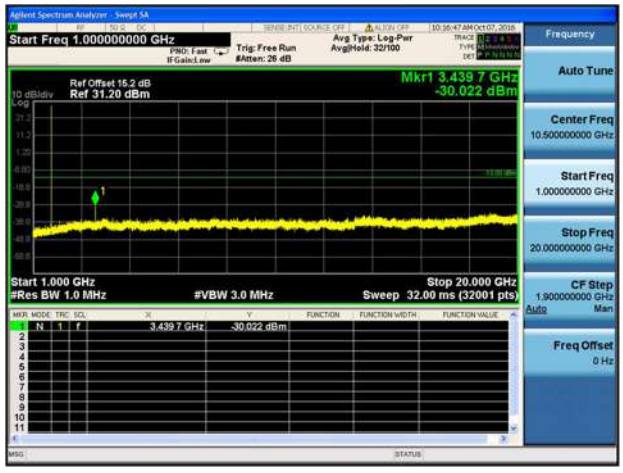
LTE Band 4 (Low Channel) 20000 (1715MHz) 16QAM Bandwidth 10MHz



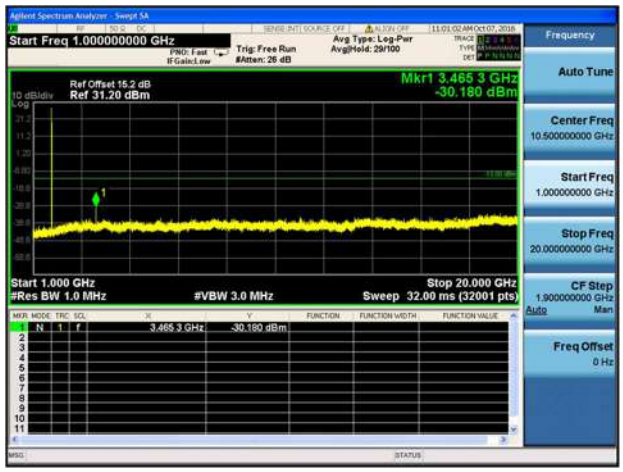
LTE Band 4 (Low Channel) 20025 (1717.5MHz) 16QAM Bandwidth 15MHz



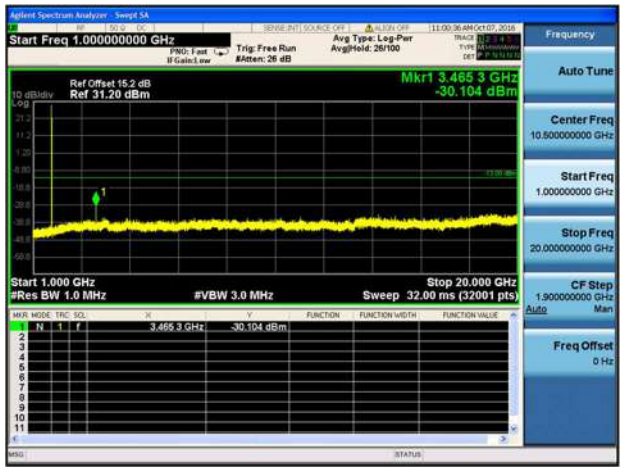
LTE Band 4 (Low Channel) 20050 (1720MHz) 16QAM Bandwidth 20MHz



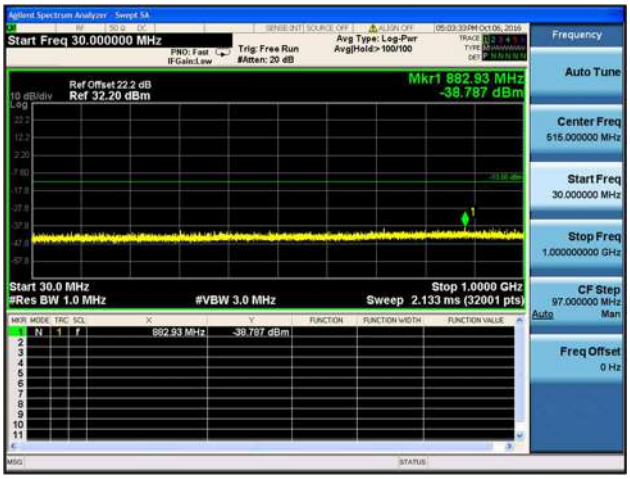
LTE Band 4 (Mid Channel) 20175 (1732.5MHz) QPSK Bandwidth 1.4MHz

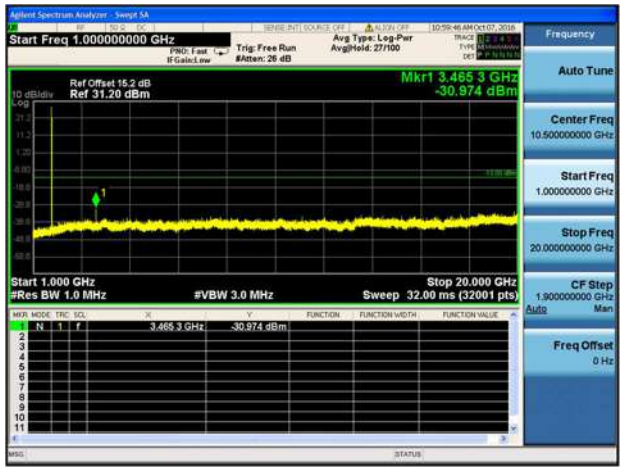


LTE Band 4 (Mid Channel) 20175 (1732.5MHz) QPSK Bandwidth 3MHz

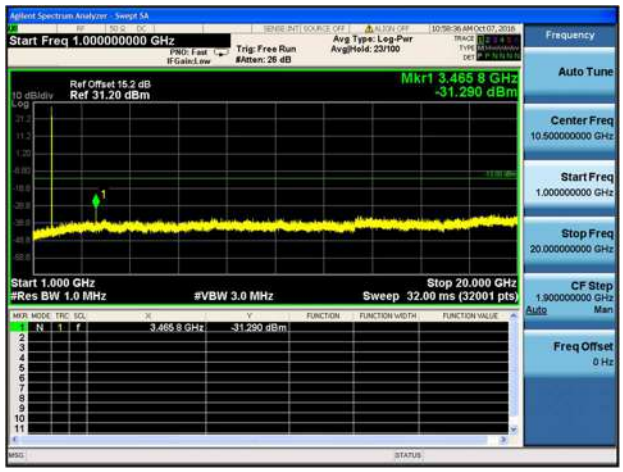


LTE Band 4 (Mid Channel) 20175 (1732.5MHz) QPSK Bandwidth 5MHz

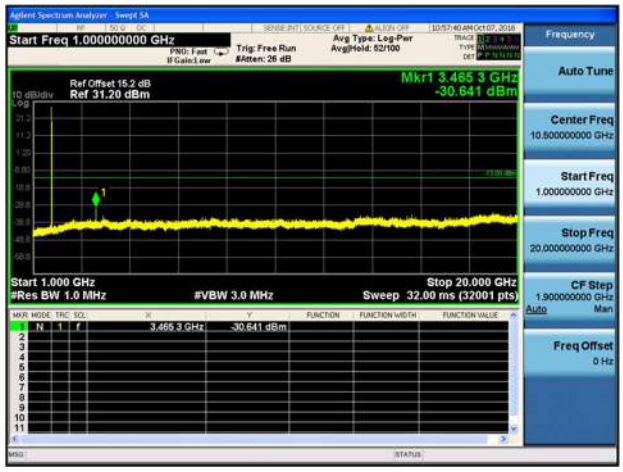




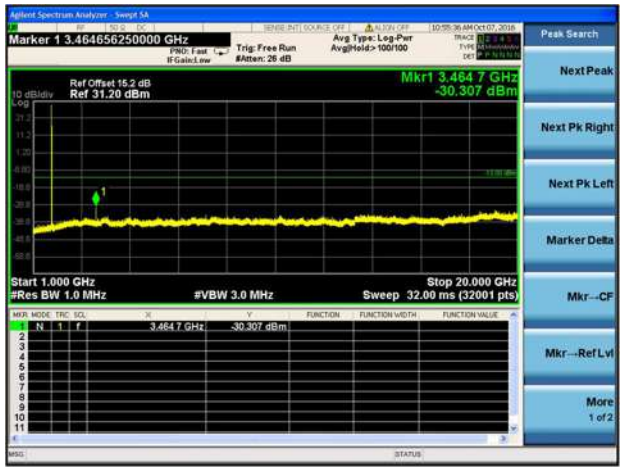
LTE Band 4 (Mid Channel) 20175 (1732.5MHz) QPSK Bandwidth 10MHz



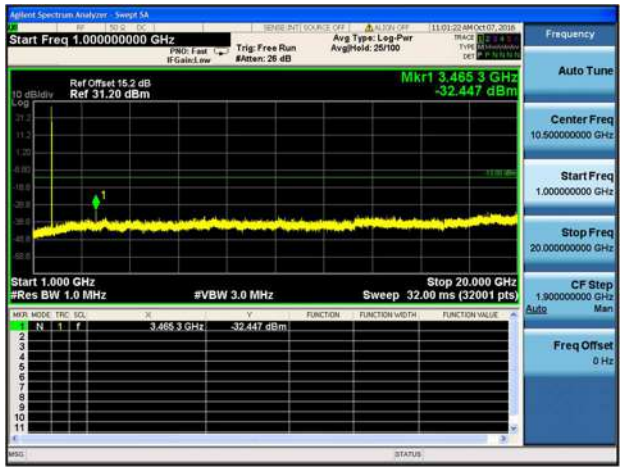
LTE Band 4 (Mid Channel) 20175 (1732.5MHz) QPSK Bandwidth 15MHz



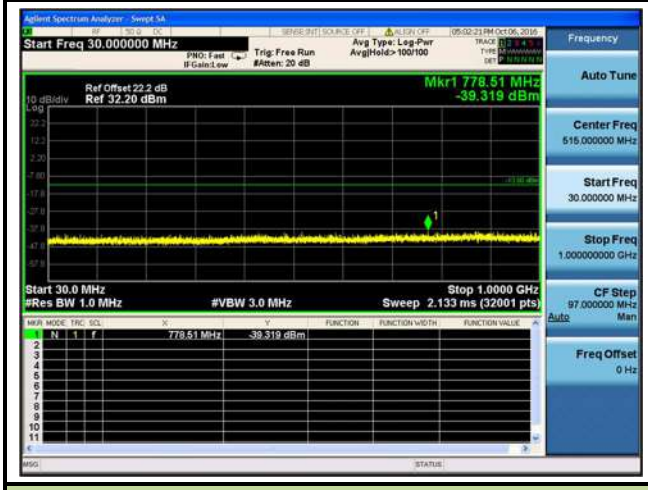
LTE Band 4 (Mid Channel) 20175 (1732.5MHz) QPSK Bandwidth 20MHz

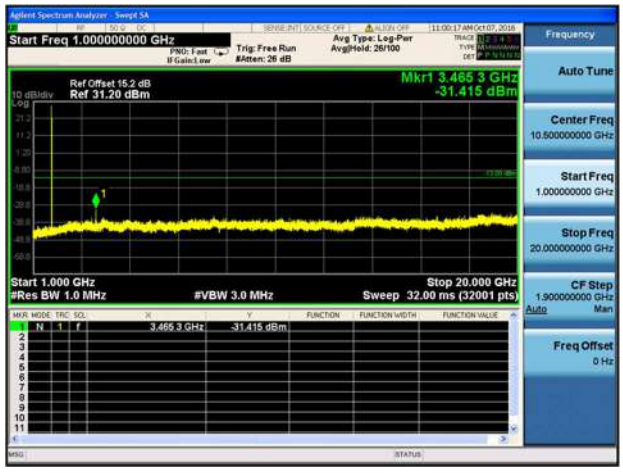


LTE Band 4 (Mid Channel) 20175 (1732.5MHz) 16QAM Bandwidth 1.4MHz

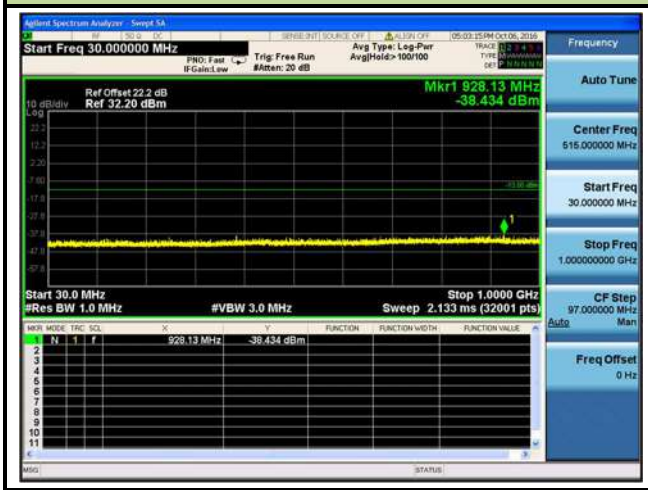


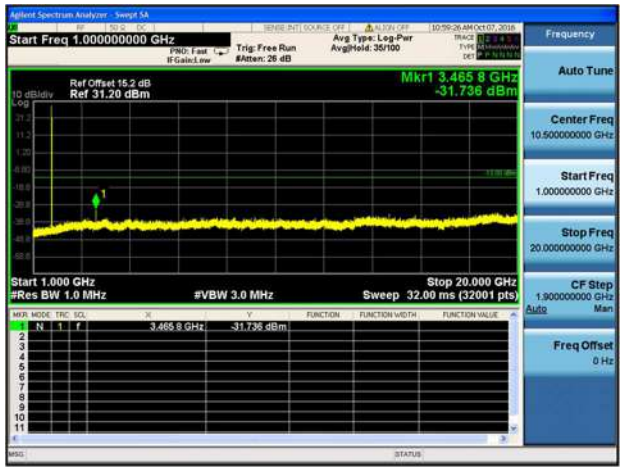
LTE Band 4 (Mid Channel) 20175 (1732.5MHz) 16QAM Bandwidth 3MHz



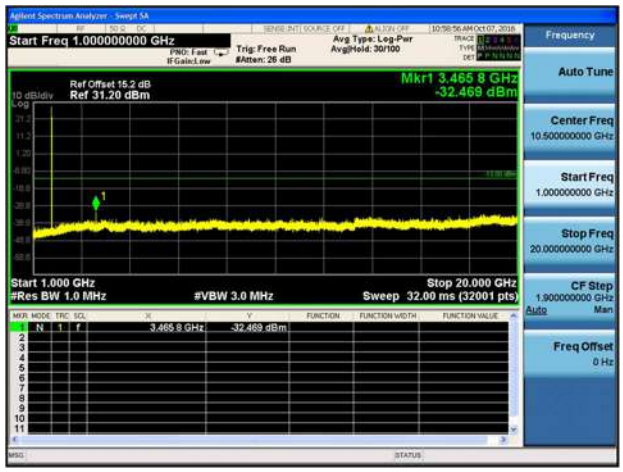


LTE Band 4 (Mid Channel) 20175 (1732.5MHz) 16QAM Bandwidth 5MHz

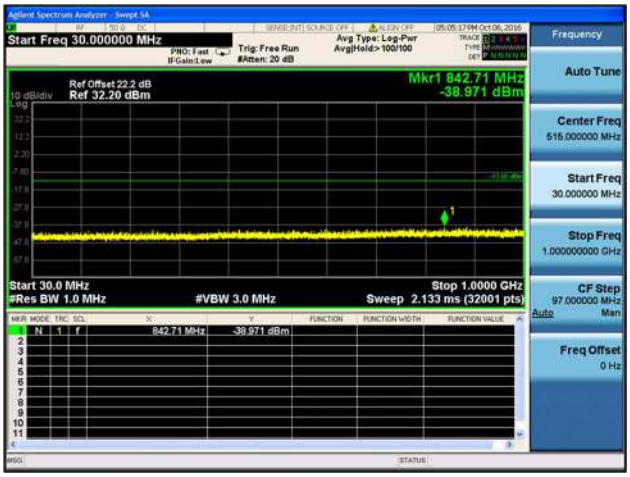


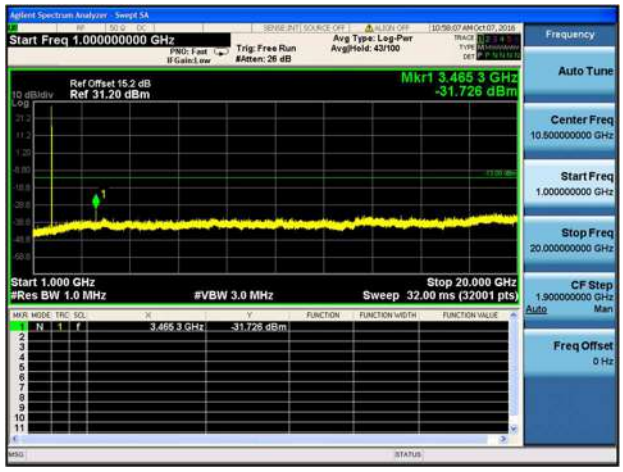


LTE Band 4 (Mid Channel) 20175 (1732.5MHz) 16QAM Bandwidth 10MHz

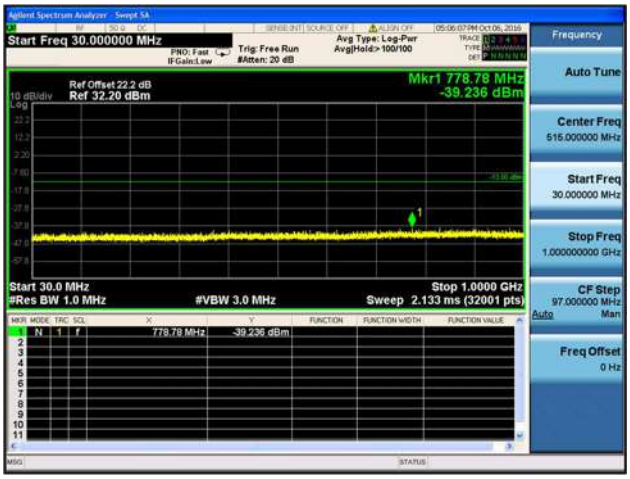


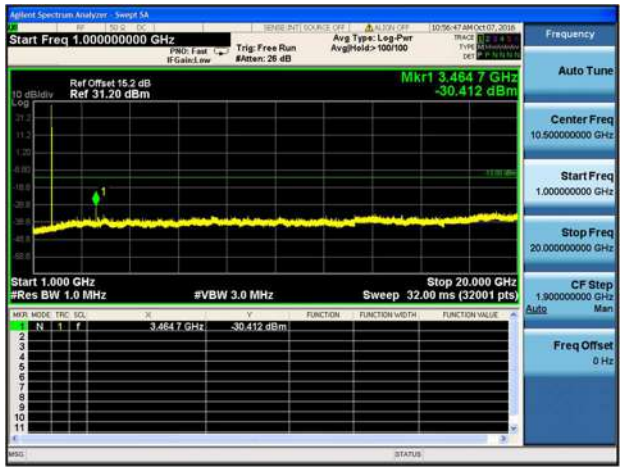
LTE Band 4 (Mid Channel) 20175 (1732.5MHz) 16QAM Bandwidth 15MHz



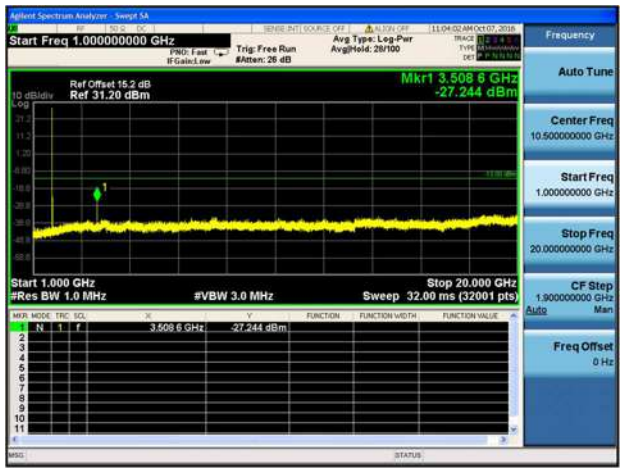


LTE Band 4 (Mid Channel) 20175 (1732.5MHz) 16QAM Bandwidth 20MHz

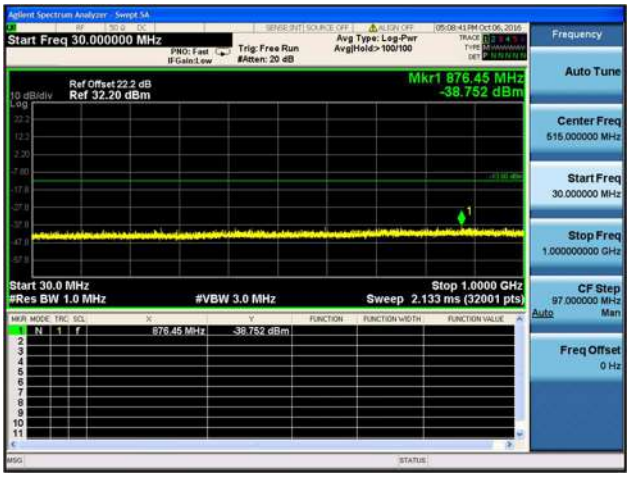


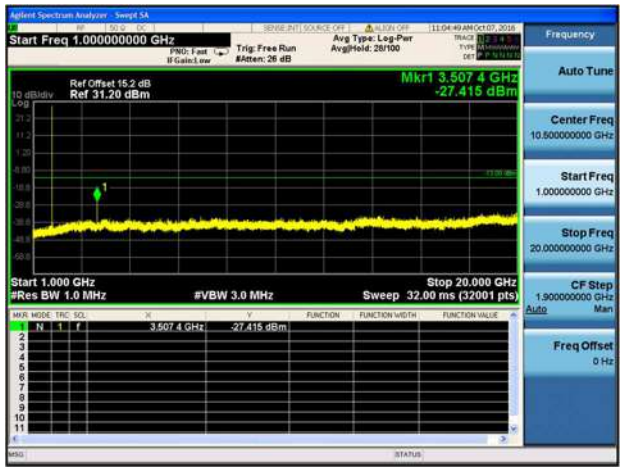


LTE Band 4 (High Channel) 20393 (1754.3MHz) QPSK Bandwidth 1.4MHz

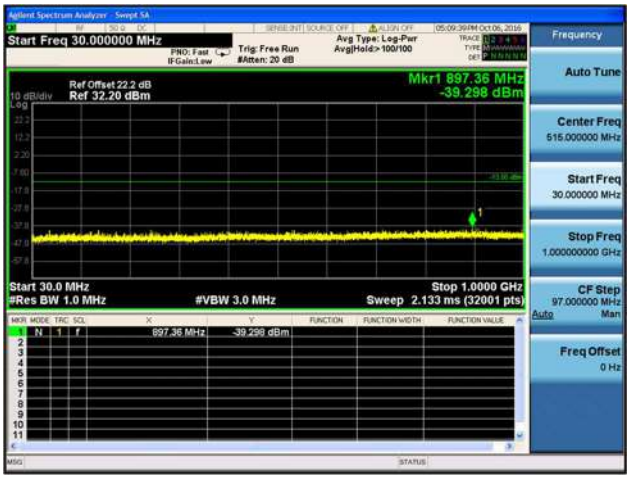


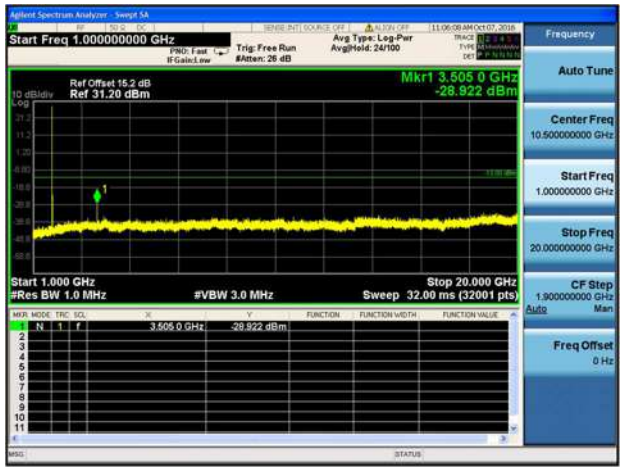
LTE Band 4 (High Channel) 20385 (1753.5MHz) QPSK Bandwidth 3MHz



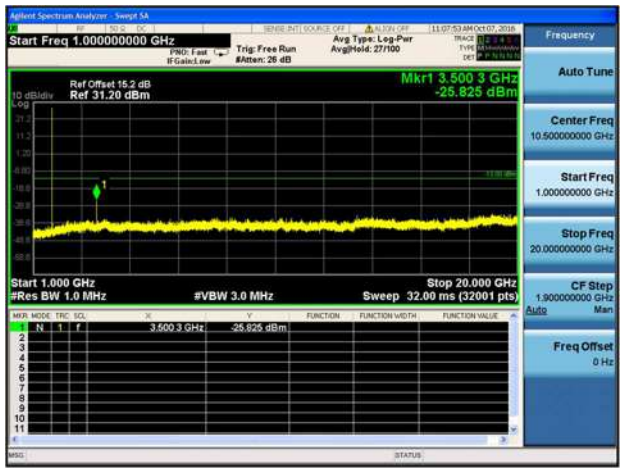


LTE Band 4 (High Channel) 20375 (1752.5MHz) QPSK Bandwidth 5MHz

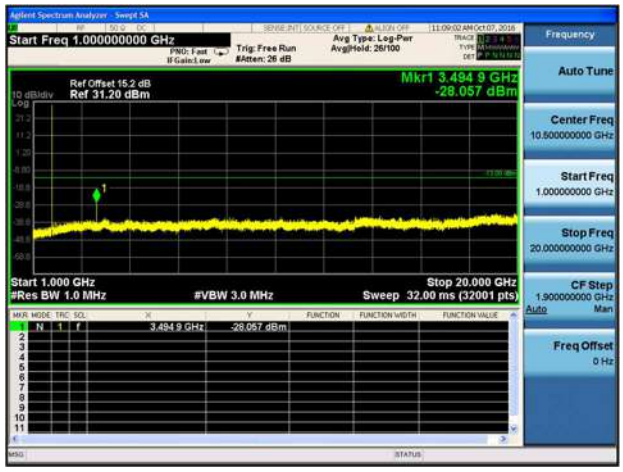




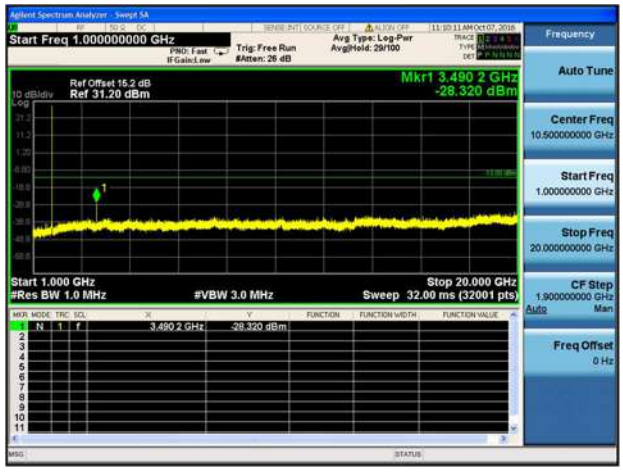
LTE Band 4 (High Channel) 20350 (1750MHz) QPSK Bandwidth 10MHz



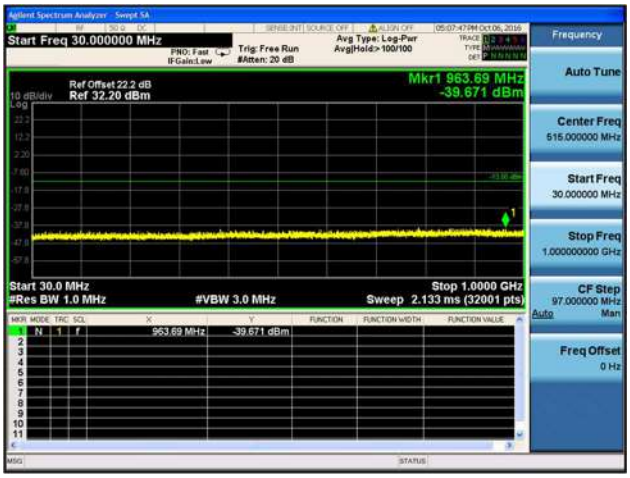
LTE Band 4 (High Channel) 20325 (1747.5MHz) QPSK Bandwidth 15MHz

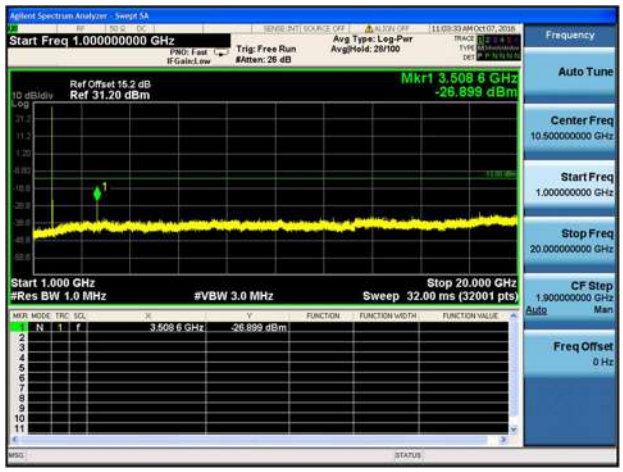


LTE Band 4 (High Channel) 20300 (1745MHz) QPSK Bandwidth 20MHz

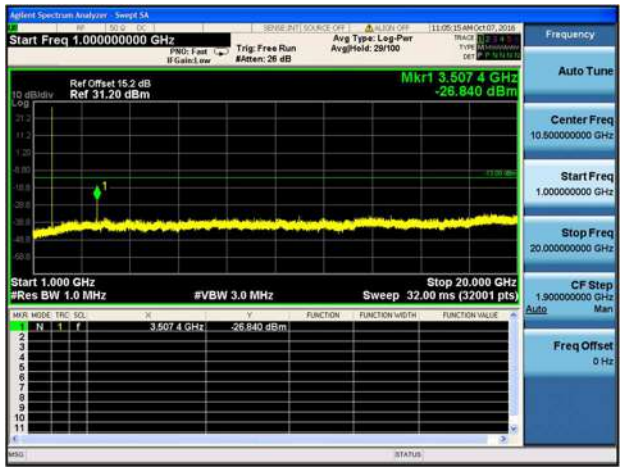


LTE Band 4 (High Channel) 20393 (1754.3MHz) 16QAM Bandwidth 1.4MHz





LTE Band 4 (High Channel) 20385 (1753.5MHz) 16QAM Bandwidth 3MHz



LTE Band 4 (High Channel) 20375 (1752.5MHz) 16QAM Bandwidth 5MHz