TEST REPORT

DT&C Co., Ltd. 42, Yurim-ro, 154Beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea Tel : 031-321-2664, Fax : 031-321-1664	Report No : DRTFCC1512-0276 Pages:(1) / (170) page	Dt&C

1. Customer

   • Name : POINTMOBILE CO., LTD.

   • Address : Gasan-dong B-9F, Kabul Great Valley 32 Digital-ro 9-gil, Geumcheon-gu, Seoul, Korea 153-709

2. Use of Report : FCC & IC Original Grant

3. Product Name (FCCID, IC) : Mobile Computer (V2X-PM80G, 10664A-PM80G)

4. Date of Test : 2015-10-12 ~ 2015-11-13

5. Test Method Used: FCC Part 22, 24, 27
   RSS-130, 132, 133, 139

6. Testing Environment : See appended test report

7. Test Result : ☒ Pass ☐ Fail

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Name : Jaejin Lee (Signature)	Technical Manager Name : Bongjin Kim (Signature)

2015 . 12 . 29 .

DT&C Co., Ltd.

Test Report Version

Test Report No.	Date	Description
DRTFCC1512-0276	Dec. 22, 2015	Initial issue

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1. GENERAL INFORMATION

Applicant Name: **POINTMOBILE CO., LTD.**

Address: **Gasan-dong B-9F, Kabul Great Valley 32 Digital-ro 9-gil, Geumcheon-gu, Seoul, Korea 153-709**

FCC ID	:	V2X-PM80G
IC	:	10664A-PM80G
FCC Classification	:	Licensed Portable Transmitter Held to Ear (PCE)
EUT Type	:	Mobile Computer
Model Name	:	PM80
Add Model Name	:	CHD8, XT2, APT1
Supplying power	:	DC 3.8 V
Antenna Information	:	Internal Antenna

Mode	TX Frequency (MHz)	Emission Designator	Modulation	ERP		EIRP	
				Max power (dBm)	Max power (W)	Max power (dBm)	Max power (W)
LTE Band 17	709 ~ 711	8M96G7D	QPSK	18.00	0.063	20.15	0.104
LTE Band 17	709 ~ 711	8M98W7D	16QAM	16.98	0.050	19.13	0.082
LTE Band 17	706.5 ~ 713.5	4M49G7D	QPSK	17.34	0.054	19.49	0.089
LTE Band 17	706.5 ~ 713.5	4M48W7D	16QAM	16.60	0.046	18.75	0.075
LTE Band 13	782 ~ 782	8M99G7D	QPSK	20.21	0.105	22.36	0.172
LTE Band 13	782 ~ 782	8M96W7D	16QAM	19.36	0.086	21.51	0.142
LTE Band 13	779.5 ~ 784.5	4M49G7D	QPSK	21.10	0.129	23.25	0.211
LTE Band 13	779.5 ~ 784.5	4M49W7D	16QAM	19.94	0.099	22.09	0.162
LTE Band 5	829 ~ 844	8M98G7D	QPSK	19.97	0.099	22.12	0.163
LTE Band 5	829 ~ 844	8M96W7D	16QAM	18.91	0.078	21.06	0.128
LTE Band 5	826.5 ~ 846.5	4M50G7D	QPSK	20.10	0.102	22.25	0.168
LTE Band 5	826.5 ~ 846.5	4M50W7D	16QAM	19.20	0.083	21.35	0.136
LTE Band 5	825.5 ~ 847.5	2M69G7D	QPSK	18.80	0.076	20.95	0.124
LTE Band 5	825.5 ~ 847.5	2M69W7D	16QAM	17.48	0.056	19.63	0.092
LTE Band 5	824.7 ~ 848.3	1M09G7D	QPSK	18.25	0.067	20.40	0.110
LTE Band 5	824.7 ~ 848.3	1M09W7D	16QAM	17.38	0.055	19.53	0.090
LTE Band 4	1720 ~ 1745	17M9G7D	QPSK	-	-	24.45	0.279
LTE Band 4	1720 ~ 1745	17M9W7D	16QAM	-	-	23.64	0.231
LTE Band 4	1717.5 ~ 1747.5	13M4G7D	QPSK	-	-	24.75	0.299
LTE Band 4	1717.5 ~ 1747.5	13M4W7D	16QAM	-	-	23.77	0.238
LTE Band 4	1715 ~ 1750	8M98G7D	QPSK	-	-	24.98	0.315
LTE Band 4	1715 ~ 1750	8M98W7D	16QAM	-	-	24.11	0.258
LTE Band 4	1712.5 ~ 1752.5	4M49G7D	QPSK	-	-	24.08	0.256
LTE Band 4	1712.5 ~ 1752.5	4M49W7D	16QAM	-	-	22.91	0.195
LTE Band 4	1711.5 ~ 1753.5	2M70G7D	QPSK	-	-	23.96	0.249
LTE Band 4	1711.5 ~ 1753.5	2M69W7D	16QAM	-	-	23.18	0.208
LTE Band 4	1710.7 ~ 1754.3	1M09G7D	QPSK	-	-	23.84	0.242
LTE Band 4	1710.7 ~ 1754.3	1M09W7D	16QAM	-	-	23.73	0.236
LTE Band 2	1860 ~ 1900	17M9G7D	QPSK	-	-	24.81	0.303
LTE Band 2	1860 ~ 1900	17M9W7D	16QAM	-	-	24.00	0.251
LTE Band 2	1857.5 ~ 1902.5	13M5G7D	QPSK	-	-	24.82	0.303
LTE Band 2	1857.5 ~ 1902.5	13M5W7D	16QAM	-	-	24.11	0.258
LTE Band 2	1855 ~ 1905	8M96G7D	QPSK	-	-	24.58	0.287
LTE Band 2	1855 ~ 1905	8M98W7D	16QAM	-	-	23.71	0.235
LTE Band 2	1852.5 ~ 1907.5	4M50G7D	QPSK	-	-	24.52	0.283
LTE Band 2	1852.5 ~ 1907.5	4M50W7D	16QAM	-	-	24.38	0.274
LTE Band 2	1851.5 ~ 1908.5	2M70G7D	QPSK	-	-	24.96	0.313
LTE Band 2	1851.5 ~ 1908.5	2M70W7D	16QAM	-	-	24.22	0.264
LTE Band 2	1850.7 ~ 1909.3	1M09G7D	QPSK	-	-	24.66	0.292
LTE Band 2	1850.7 ~ 1909.3	1M09W7D	16QAM	-	-	23.97	0.249

2. INTRODUCTION

2.1 EUT DESCRIPTION

The Equipment under Test (EUT) GSM/WCDMA, Band 17 (5, 10, MHz BW), Band 13 (5, 10, MHz BW), Band 5 (1.4, 3, 5, 10 MHz BW), Band 4 (1.4, 3, 5, 10, 15, 20 MHz BW), Band 2 (1.4, 3, 5, 10, 15, 20 MHz BW) LTE Phone with Bluetooth 4.0 LE, WIFI 802.11b/g/n(2.4GHz), 802.11a/n(5GHz), NFC.

2.2 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3 TEST FACILITY

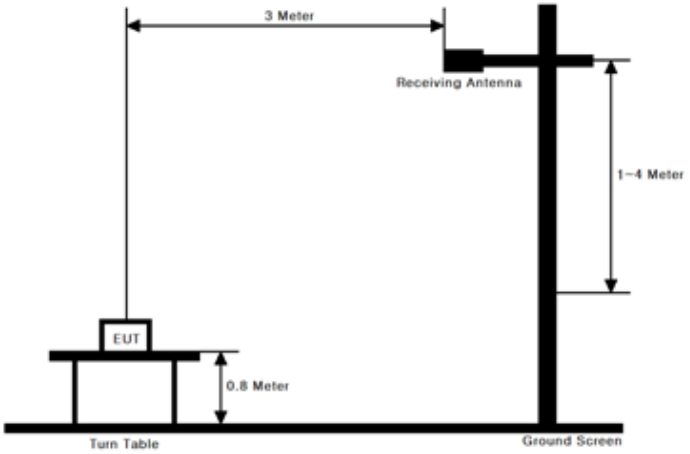
The 3M test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935. The site is constructed in conformance with the requirements.

- 3M test site registration Number: 165783(FCC) & 5740A-2(IC)

3. DESCRIPTION OF TESTS

3.1 ERP&EIRP
(Effective Radiated Power & Equivalent Isotropic Radiated Power)

Test Set-up



Test Procedure

- **ANSI/TIA-603-C-2004 - Section 2.2.17**
- **KDB971168 v02r02 - Section 5.2.1**

These measurements were performed at 3 &10 m test site. The equipment under test is placed on a non-conductive table 0.8-meters above a turntable which is flush with the ground plane and 3 meters from the receive antenna.

Test setting

1. Set span to at least 1.5 times the OBW.
2. Set RBW = 1-5 % of the OBW, not to exceed 1 MHz.
3. Set VBW ≥ 3 x RBW.
4. Set number of points in sweep ≥ 2 × span / RBW.
5. Sweep time = auto couple.
6. Detector = RMS (power averaging).
7. If the EUT can be configured to transmit continuously (i.e., burst duty cycle ≥ 98 %), then set the trigger to free run.
8. If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle < 98 %), then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep.
   Ensure that the sweep time is less than or equal to the transmission burst duration.
9. Trace average at least 100 traces in power averaging (i.e., RMS) mode.
10. Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with the band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

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. The conducted power at the terminal of the substitute antenna is measured.

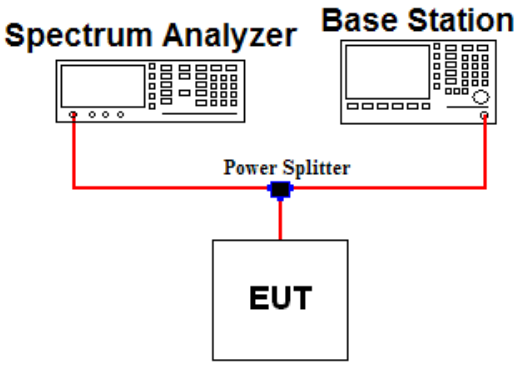
The ERP/EIRP is calculated using the following formula:

ERP/EIRP = The conducted power at the substitute antenna`s terminal [dBm] + Substitute Antenna gain [dBd for ERP , dBi for EIRP]

For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn antenna and an isotropic antenna are taken into consideration.

3.2 PEAK TO AVERAGE RATIO

Test set-up



Test Procedure

- **KDB971168 v02r02 - Section 5.7.1**

A peak to average ratio measurement is performed at the conducted port of the EUT.
The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The present of time the signal spends at or above the level defines the probability for that particular power level.

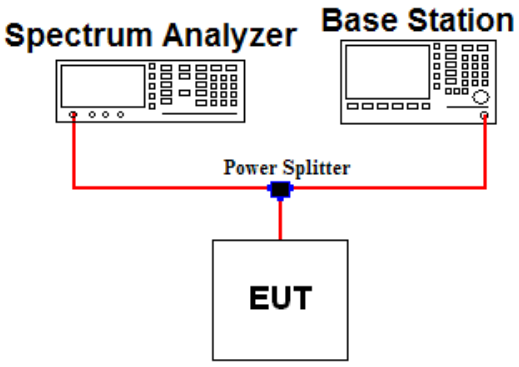
Test setting

The spectrum Analyzer`s CCDF measurement function is enabled.

1. Set resolution/measurement bandwidth ≥ signal`s occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve
3. Set the measurement interval as follows:
   1) For continuous transmissions, set to 1 ms.
   2) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1 %

3.3 OCCUPIED BANDWIDTH.

Test set-up



Test Procedure

- **KDB971168 v02r02 - Section 4.2**

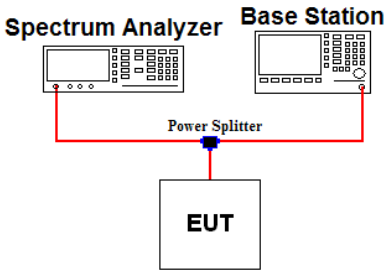
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

Test setting

1. The signal analyzer`s automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 ~ 5 % of the expected OBW & VBW ≥ 3 X RBW
3. Detector = Peak
4. Trance mode = Max hold
5. Sweep = Auto couple
6. The trace was allowed to stabilize
7. If necessary, step 2 ~ 6 were repeated after changing the RBW such that it would be within 1 ~ 5 % of the 99 % occupied bandwidth observed in step 6.

3.4 BAND EDGE EMISSIONS (Conducted)

Test set-up



Test Procedure

- **KDB971168 v02r02 - Section 6.0**

All out of band emissions are measured by means of a calibrated spectrum analyzer. The EUT was setup to maximum output power at its lowest and highest channel with all bandwidths, modulations and RB configurations.

The power of any spurious emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB or requirements on note 2 in case of band 7 and 41.

Test setting

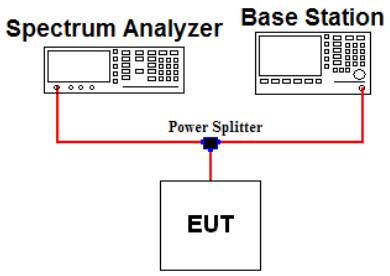
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW ≥ 1 % of the emission bandwidth or 2 % of the emission bandwidth (refer to note 2)
4. VBW ≥ 3 X RBW
5. Detector = RMS & Trace mode = Max hold
6. Sweep time = Auto couple or 1 s for band edge
7. Number of sweep point ≥ 2 X span / RBW
8. The trace was allowed to stabilize

Note 1: 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 to demonstrate compliance with the out-of-band emissions limit. 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.

Note 2: For part 27.53(m)(4) the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 MHz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 MHz and X MHz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. For mobile digital stations, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of **at least two percent** may be employed, except when the 1 MHz band is 2495-2496 MHz, in which case a resolution bandwidth of **at least one percent** may be employed.

3.5 SPURIOUS AND HARMONIC EMISSIONS (Conducted)

Test set-up



Test Procedure

- **KDB971168 v02r02 - Section 6.0**

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The EUT was setup to maximum output power at its low, middle, high channel with all bandwidths, modulations and RB configurations. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

The power of any spurious emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB or 55 + 10 log(P) in case of band 7 and 41.

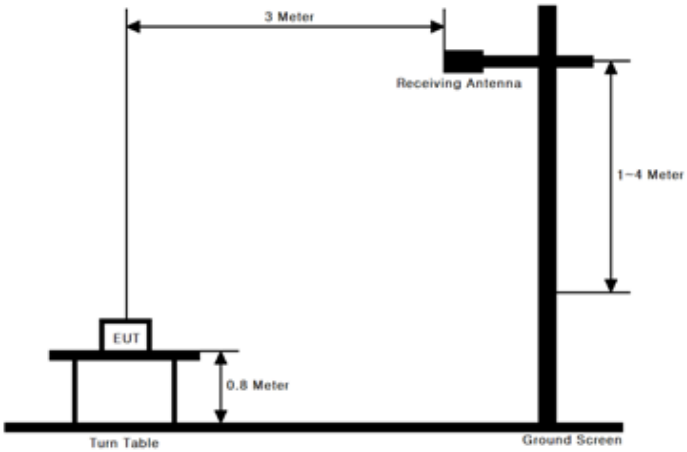
Test setting

1. RBW = 100 KHz or 1 MHz & VBW ≥ 3 X RBW (Refer to Note 1)
2. Detector = RMS & Trace mode = Max hold
3. Sweep time = Auto couple
4. Number of sweep point ≥ 2 X span / RBW
5. The trace was allowed to stabilize

Note 1: Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for Part 22 and 1 MHz or greater for Part 24, 27.

3.6 UNDESIRABLE EMISSIONS (Radiated)

Test Set-up



Test Procedure

- **ANSI/TIA-603-C-2004 - Section 2.2.12**
- **KDB971168 v02r02 - Section 5.8**

These measurements were performed at 3 & 10m test site. The equipment under test is placed on a non-conductive table 0.8-meters above a turntable which is flush with the ground plane and 3 meters from the receive antenna.

Test setting

1. RBW = 100 kHz for below 1 GHz and 1 MHz for above 1 GHz / VBW ≥ 3 X RBW
2. Detector = Peak & Trace mode = Max hold
3. Sweep time = Auto couple
4. Number of sweep point ≥ 2 X span / RBW
5. The trace was allowed to stabilize

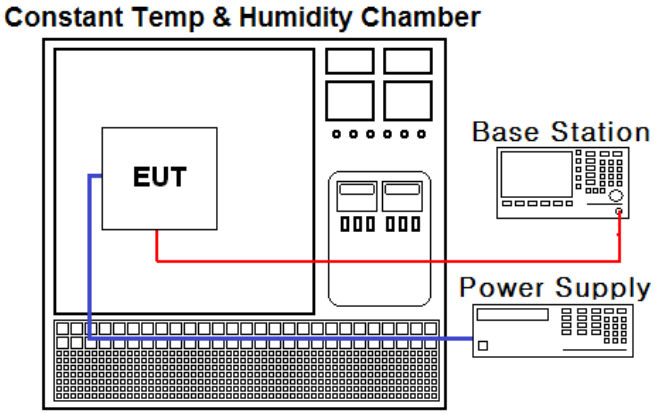
EIRP in GNSS Band: 1.559 to 1.610 GHz

1. RBW = 1MHz / VBW ≥ 3 X RBW
2. Detector = RMS & Trace mode = Max hold
3. Sweep time = 1S (Sweep Speed slow enough to maintain measurement calibration.)
4. Number of sweep point ≥ 2 X span / RBW
5. The trace was allowed to stabilize

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.
For radiated power measurements below 1 GHz, 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.
For radiated power measurements above 1 GHz, a Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. The difference between the gain of the horn and an isotropic antenna are taken into consideration.
This measurement was performed with the EUT oriented in 3 orthogonal axis.

3.7 FREQUENCY STABILITY

Test Set-up



Test Procedure

- **ANSI/TIA-603-C-2004**
- **KDB971168 v02r02 - Section 9.0**

The frequency stability of the transmitter is measured by:

a.) **Temperature:**
The temperature is varied from - 30 °C to + 50 °C 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 for Part 24, 27. The frequency stability of the transmitter shall be maintained within ± 0.000 25 % (± 2.5 ppm) of the center frequency for Part 22.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature. (25 °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 period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal. Date (yy/mm/dd)	S/N
MXA Signal Analyzer	Agilent Technologies	N9020A	15/08/18	16/08/18	MY50200867
Dynamic Measurement DC Source	Agilent Technologies	66332A	15/01/22	16/01/22	GB37470200
Temp & Humi Test Chamber	SJ Science	SJ-TH-S50	15/10/19	16/10/19	SJ-TH-S50-130930
RadioCommunication Analyzer	Anritsu	MT8820C	15/01/09	16/01/09	6201274516
Power Splitter	Anritsu	K241B	15/10/20	16/10/20	1701061
Thermohygrometer	BODYCOM	BJ5478	15/02/26	16/02/26	1209
Multimeter	FLUKE	17B	15/04/27	16/04/27	26030065WS
Vector Signal Generator	Rohde Schwarz	SMBV100A	15/01/06	16/01/06	25571
Signal Generator	Rohde Schwarz	SMF100A	15/06/29	16/06/29	102341
Loop Antenna	Schwarzbeck	FMZB1513	14/04/29	16/04/29	1513-128
TRILOG Broadband Test-Antenna	Schwarzbeck	VULB 9160	14/04/30	16/04/30	3358
Dipole Antenna	Schwarzbeck	VHA9103	15/05/29	17/05/29	2116
Dipole Antenna	Schwarzbeck	VHA9103	14/04/01	16/04/01	2117
Dipole Antenna	Schwarzbeck	UHA9105	15/05/29	17/05/29	2261
Dipole Antenna	Schwarzbeck	UHA9105	14/04/01	16/04/01	2262
HORN ANT	ETS	3115	15/02/09	17/02/09	00021097
HORN ANT	ETS	3117	14/05/12	16/05/12	140394
HORN ANT	A.H.Systems	SAS-574	15/04/30	17/04/30	154
HORN ANT	A.H.Systems	SAS-574	15/09/03	17/09/03	155
Low Noise Pre Amplifier	TSJ	MLA-010K01-B01-27	15/04/09	16/04/09	1844538
Amplifier	RF Bay Inc	MPA-40-40	15/05/08	16/05/08	21151801
Amplifier	EMPOWER	BBS3Q7ELU	15/09/09	16/09/09	1020
Amplifier (30dB)	Agilent	8449B	15/11/06	16/11/06	3008A02108
High-pass filter	Wainwright	WHKX12-935-1000-15000-40SS	15/09/23	16/09/23	7
High-pass filter	Wainwright	WHKX12-2580-3000-18000-80SS	15/09/23	16/09/23	3

5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Status Note 1
2.1046	RSS-130 [4.4] RSS-132 [5.4] RSS-133 [6.4] RSS-139 [6.5]	Conducted Output Power	N/A	Conducted	C Note2
2.1049	RSS-GEN[6.6]	Occupied Bandwidth	N/A		C
24.232(d) 27.50(d.5)	RSS-130 [4.4] RSS-132 [5.4] RSS-133 [6.4] RSS-139 [6.5]	Peak to Average Ratio	< 13 dB		C
2.1051 22.917(a) 24.238(a) 27.53(c.2) 27.53(g) 27.53(h)	RSS-130 [4.6.1] RSS-132 [5.5] RSS-133 [6.5] RSS-139 [6.6]	Band Edge / conducted Spurious Emissions	> 43 + 10log$_{10}$(P) dB at Band edge and for all out-of-band emissions		C
27.53(c.4)	RSS-130 [4.6.2]	Undesirable Emissions in 763 ~ 775MHz & 793 ~ 805MHz	< 65+10log$_{10}$(P) dB		C
2.1055 22.355 24.235 27.54	RSS-130 [4.3] RSS-132 [5.3] RSS-133 [6.3] RSS-139 [6.4]	Frequency Stability	< 2.5 ppm (Part 22), (RSS-132, 133) Fundamental emissions must stay within Authorized frequency block (Part 24, 27), (RSS-130,139)		C
27.50(c.10) 27.50(b.10)	RSS-130 [4.4]	Effective Radiated Power (B17,13)	< 3 Watts max. ERP (Part 27) < 5 Watts max. EIRP (RSS-130)	Radiated	C
22.913(a.2)	RSS-132 [5.4]	Effective Radiated Power (B5)	< 7 Watts max. ERP (Part 22) < 11.5 Watts max. EIRP (RSS-132)		C
24.232(c)	RSS-133 [6.4]	Equivalent Isotropic Radiated Power (B2)	< 2 Watts max. EIRP		C
27.50(d.4)	RSS-139 [6.5]	Equivalent Isotropic Radiated Power (B4)	< 1 Watts max. EIRP		C
2.1053 22.917(a) 24.238(a) 27.53(c.2) 27.53(g) 27.53(h)	RSS-130 [4.6.1] RSS-132 [5.5] RSS-133 [6.5] RSS-139 [6.6]	Undesirable Emissions	> 43 + 10log$_{10}$(P) dB at Band edge and for all out-of-band emissions		C
27.53(f)	RSS-130 [4.6.2]	Undesirable Emissions in 1559 ~ 1610MHz	< -70dBW/MHz (-40dBm/MHz)		C
27.53(c.4)	RSS-130 [4.6.2]	Undesirable Emissions in 763 ~ 775MHz & 793 ~ 805MHz	< 65+10log$_{10}$(P) dB		C

Note 1: **C**=Comply **NC**=Not Comply **NT**=Not Tested **NA**=Not Applicable

Note 2: Refer to RF Exposure Report (Test Report_SAR)

The sample was tested according to the following specification:
ANSI/TIA/EIA-603-C-2004 and KDB 971168 D01 v02r02

6. SAMPLE CALCULATION

A. Emission Designator

LTE Band 17(QPSK)

Emission Designator = **8M96G7D**
LTE OBW = 8.957 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 17(16QAM)

Emission Designator = **8M98W7D**
LTE OBW = 8.983 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 13(QPSK)

Emission Designator = **8M99G7D**
LTE OBW = 8.988 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 13(16QAM)

Emission Designator = **8M96W7D**
LTE OBW = 8.960 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5(QPSK)

Emission Designator = **8M98G7D**
LTE OBW = 8.981 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5(16QAM)

Emission Designator = **8M96W7D**
LTE OBW = 8.962 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 4(QPSK)

Emission Designator = **17M9G7D**
LTE OBW = 17.937 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 4(16QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.935 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 2(QPSK)

Emission Designator = **17M9G7D**
LTE OBW = 17.922 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 2(16QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.882 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

B. EIRP Sample Calculation

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Spectrum Reading Value(dBm)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBi)	EIRP (dBm)	EIRP (W)
20	1880	QPSK	1/0	-18.93	Y	H	15.70	9.05	24.75	0.299

EIRP = @ Ant Terminal LEVEL(dBm) + Ant. Gain

1) The EUT mounted on a non-conductive turntable is 0.8 meter above test site ground level.
2) During the test, the turn table is rotated until the maximum signal is found.
3) Record the field strength meter's level.
4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
6) The signal generator output level with Ant. Gain is the rating of effective isotropic radiated power (EIRP).

7. TEST DATA

7.1 OCCUPIED BANDWIDTH

- Plots of the EUT's Occupied Bandwidth are shown in Clause 8.1

7.2 PEAKTOAVERAGERATIO

- Plots of the EUT's Peak- to- Average Ratio are shown in Clause 8.2

7.3 BAND EDEG EMISSIONS (Conducted)

- Plots of the EUT's Band Edge Emissions are shown in Clause 8.3

7.4 SPURIOUS AND HARMONICS EMISSIONS (Conducted)

- Plots of the EUT's Spurious Emissions are shown in Clause 8.4

7.5 EFFECTIVE RADIATED POWER & EQUIVALENT ISOTROPIC RADIATED POWER

7.5.1 LTE Band 17

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	709	QPSK	1/49	Z	H	16.42	1.32	17.74	0.059
		16QAM	1/49	Z	H	15.54	1.32	16.86	0.049
	711	QPSK	1/25	Z	H	16.68	1.32	18.00	0.063
		16QAM	1/25	Z	H	15.66	1.32	16.98	0.050
5	706.5	QPSK	1/24	Z	H	15.82	1.32	17.14	0.052
		16QAM	1/24	Z	H	15.06	1.32	16.38	0.043
	710	QPSK	1/24	Z	H	16.02	1.32	17.34	0.054
		16QAM	1/24	Z	H	15.23	1.32	16.55	0.045
	713.5	QPSK	1/0	Z	H	15.72	1.32	17.04	0.051
		16QAM	1/0	Z	H	15.28	1.32	16.60	0.046

Note: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

7.5.2 LTE Band 13

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	782	QPSK	1/49	Z	H	18.87	1.34	20.21	0.105
		16QAM	1/49	Z	H	18.02	1.34	19.36	0.086
5	779.5	QPSK	1/0	Z	H	19.42	1.34	20.76	0.119
		16QAM	1/0	Z	H	18.20	1.34	19.54	0.090
	784.5	QPSK	1/24	Z	H	19.76	1.34	21.10	0.129
		16QAM	1/24	Z	H	18.60	1.34	19.94	0.099

Note: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

7.5.3 LTE Band 5

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	829	QPSK	1/0	X	H	18.76	1.21	19.97	0.099
		16QAM	1/0	X	H	17.70	1.21	18.91	0.078
	836.5	QPSK	1/0	X	H	16.37	1.17	17.54	0.057
		16QAM	1/0	X	H	15.58	1.17	16.75	0.047
	844	QPSK	1/0	X	H	16.91	1.13	18.04	0.064
		16QAM	1/0	X	H	16.19	1.13	17.32	0.054
5	826.5	QPSK	1/0	X	H	18.88	1.22	20.10	0.102
		16QAM	1/0	X	H	17.98	1.22	19.20	0.083
	836.5	QPSK	1/24	X	H	16.76	1.17	17.93	0.062
		16QAM	1/24	X	H	15.62	1.17	16.79	0.048
	846.5	QPSK	1/12	X	H	17.04	1.12	18.16	0.065
		16QAM	1/12	X	H	15.92	1.12	17.04	0.051
3	825.5	QPSK	1/14	X	H	17.58	1.22	18.80	0.076
		16QAM	1/14	X	H	16.26	1.22	17.48	0.056
	836.5	QPSK	1/14	X	H	16.76	1.17	17.93	0.062
		16QAM	1/14	X	H	16.01	1.17	17.18	0.052
	847.5	QPSK	1/7	X	H	16.93	1.11	18.04	0.064
		16QAM	1/7	X	H	16.15	1.11	17.26	0.053
1.4	824.7	QPSK	1/5	X	H	17.02	1.23	18.25	0.067
		16QAM	1/5	X	H	16.15	1.23	17.38	0.055
	836.5	QPSK	1/5	X	H	15.00	1.17	16.17	0.041
		16QAM	1/5	X	H	14.22	1.17	15.39	0.035
	848.3	QPSK	1/0	X	H	16.88	1.11	17.99	0.063
		16QAM	1/0	X	H	15.96	1.11	17.07	0.051

Note: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

7.5.4 LTE Band 4

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBi)	EIRP (dBm)	EIRP (W)
20	1720	QPSK	1/0	X	H	15.35	8.87	24.22	0.264
		16QAM	1/0	X	H	14.67	8.87	23.54	0.226
	1732.5	QPSK	1/99	X	H	15.57	8.88	24.45	0.279
		16QAM	1/99	X	H	14.76	8.88	23.64	0.231
	1745	QPSK	1/0	X	H	15.46	8.90	24.36	0.273
		16QAM	1/0	X	H	14.70	8.90	23.60	0.229
15	1717.5	QPSK	1/0	X	H	15.79	8.87	24.66	0.292
		16QAM	1/0	X	H	14.90	8.87	23.77	0.238
	1732.5	QPSK	1/74	X	H	15.40	8.88	24.28	0.268
		16QAM	1/74	X	H	14.55	8.88	23.43	0.220
	1747.5	QPSK	1/0	X	H	15.85	8.90	24.75	0.299
		16QAM	1/0	X	H	14.57	8.90	23.47	0.222
10	1715	QPSK	1/0	X	H	15.32	8.87	24.19	0.262
		16QAM	1/0	X	H	14.41	8.87	23.28	0.213
	1732.5	QPSK	1/49	X	H	15.29	8.88	24.17	0.261
		16QAM	1/49	X	H	14.58	8.88	23.46	0.222
	1750	QPSK	1/0	X	H	16.08	8.90	24.98	0.315
		16QAM	1/0	X	H	15.21	8.90	24.11	0.258
5	1712.5	QPSK	1/0	X	H	14.98	8.86	23.84	0.242
		16QAM	1/0	X	H	13.87	8.86	22.73	0.187
	1732.5	QPSK	1/12	X	H	15.20	8.88	24.08	0.256
		16QAM	1/12	X	H	13.48	8.88	22.36	0.172
	1752.5	QPSK	1/0	X	H	14.86	8.90	23.76	0.238
		16QAM	1/0	X	H	14.01	8.90	22.91	0.195
3	1711.5	QPSK	1/0	X	H	15.10	8.86	23.96	0.249
		16QAM	1/0	X	H	14.32	8.86	23.18	0.208
	1732.5	QPSK	1/14	X	H	14.90	8.88	23.78	0.239
		16QAM	1/14	X	H	14.09	8.88	22.97	0.198
	1753.5	QPSK	1/0	X	H	14.59	8.90	23.49	0.223
		16QAM	1/0	X	H	13.48	8.90	22.38	0.173
1.4	1710.7	QPSK	1/5	X	H	14.98	8.86	23.84	0.242
		16QAM	1/5	X	H	14.87	8.86	23.73	0.236
	1732.5	QPSK	1/5	X	H	14.72	8.88	23.60	0.229
		16QAM	1/5	X	H	13.27	8.88	22.15	0.164
	1754.3	QPSK	1/5	X	H	14.63	8.90	23.53	0.225
		16QAM	1/5	X	H	13.85	8.90	22.75	0.188

Note: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

7.5.5 LTE Band 2

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBi)	EIRP (dBm)	EIRP (W)
20	1860	QPSK	1/0	Y	H	14.66	9.02	23.68	0.233
		16QAM	1/0	Y	H	14.03	9.02	23.05	0.202
	1880	QPSK	1/0	Y	H	15.70	9.05	24.75	0.299
		16QAM	1/0	Y	H	14.88	9.05	23.93	0.247
	1900	QPSK	1/0	Y	H	15.74	9.07	24.81	0.303
		16QAM	1/0	Y	H	14.93	9.07	24.00	0.251
15	1857.5	QPSK	1/0	Y	H	15.65	9.02	24.67	0.293
		16QAM	1/0	Y	H	14.52	9.02	23.54	0.226
	1880	QPSK	1/0	Y	H	15.77	9.05	24.82	0.303
		16QAM	1/0	Y	H	15.06	9.05	24.11	0.258
	1902.5	QPSK	1/0	Y	H	15.21	9.07	24.28	0.268
		16QAM	1/0	Y	H	14.77	9.07	23.84	0.242
10	1855	QPSK	1/0	Y	H	15.26	9.02	24.28	0.268
		16QAM	1/0	Y	H	14.35	9.02	23.37	0.217
	1880	QPSK	1/0	Y	H	15.53	9.05	24.58	0.287
		16QAM	1/0	Y	H	14.66	9.05	23.71	0.235
	1905	QPSK	1/0	Y	H	14.97	9.08	24.05	0.254
		16QAM	1/0	Y	H	14.49	9.08	23.57	0.228
5	1852.5	QPSK	1/12	Y	H	15.51	9.01	24.52	0.283
		16QAM	1/12	Y	H	14.79	9.01	23.80	0.240
	1880	QPSK	1/0	Y	H	15.30	9.05	24.35	0.272
		16QAM	1/0	Y	H	14.42	9.05	23.47	0.222
	1907.5	QPSK	1/0	Y	H	15.11	9.08	24.19	0.262
		16QAM	1/0	Y	H	15.30	9.08	24.38	0.274
3	1851.5	QPSK	1/14	Y	H	15.95	9.01	24.96	0.313
		16QAM	1/14	Y	H	15.21	9.01	24.22	0.264
	1880	QPSK	1/14	Y	H	14.71	9.05	23.76	0.238
		16QAM	1/14	Y	H	13.95	9.05	23.00	0.200
	1908.5	QPSK	1/0	Y	H	14.55	9.08	23.63	0.231
		16QAM	1/0	Y	H	13.87	9.08	22.95	0.197
1.4	1850.7	QPSK	1/2	Y	H	15.65	9.01	24.66	0.292
		16QAM	1/2	Y	H	14.96	9.01	23.97	0.249
	1880	QPSK	1/2	Y	H	15.23	9.05	24.28	0.268
		16QAM	1/2	Y	H	13.86	9.05	22.91	0.195
	1909.3	QPSK	1/2	Y	H	13.72	9.08	22.80	0.191
		16QAM	1/2	Y	H	13.26	9.08	22.34	0.171

Note: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

7.6 UNDESIRABLE EMISSIONS (Radiated)

7.6.1 LTE Band 17

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
									(dBm)	(dBc)	
10	709	1/49	QPSK	1426.83	Z	V	-55.92	6.04	-49.88	67.62	30.74
				2140.22	Z	V	-48.57	7.19	-41.38	59.12	
		1/49	16QAM	1427.11	Z	V	-55.99	6.04	-49.95	66.81	29.86
				2140.53	Z	V	-49.01	7.19	-41.82	58.68	
	711	1/25	QPSK	1422.26	Z	V	-55.15	6.01	-49.14	67.14	31.00
				2133.13	Z	V	-51.80	7.18	-44.62	62.62	
		1/25	16QAM	1422.19	Z	V	-55.42	6.01	-49.41	66.39	29.98
				2133.43	Z	V	-51.67	7.18	-44.49	61.47	
5	706.5	1/24	QPSK	1417.30	Z	V	-54.01	5.99	-48.02	65.16	30.14
				2125.78	Z	V	-53.83	7.18	-46.65	63.79	
		1/24	16QAM	1417.33	Z	V	-54.97	5.99	-48.98	65.36	29.38
				2126.02	Z	V	-54.61	7.18	-47.43	63.81	
	710	1/24	QPSK	1424.33	Z	V	-55.92	6.03	-49.89	67.23	30.34
				2136.44	Z	V	-52.97	7.19	-45.78	63.12	
		1/24	16QAM	1424.29	Z	V	-56.62	6.03	-50.59	67.14	29.55
				2136.48	Z	V	-53.58	7.19	-46.39	62.94	
	713.5	1/0	QPSK	1422.79	Z	V	-54.91	6.02	-48.89	65.93	30.04
				2133.89	Z	V	-52.58	7.19	-45.39	62.43	
		1/0	16QAM	1422.67	Z	V	-54.79	6.02	-48.77	65.37	29.60
				2133.89	Z	V	-52.68	7.19	-45.49	62.09	

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])
Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.
Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.2 LTE Band 13

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
									(dBm)	(dBc)	
10	782	1/49	QPSK	2359.21	Y	V	-57.34	7.45	-49.89	70.10	33.21
				-	-	-	-	-	-	-	
		1/49	16QAM	2359.08	Y	V	-55.94	7.45	-48.49	67.85	32.36
				-	-	-	-	-	-	-	
5	779.5	1/0	QPSK	1554.71	X	H	-61.54	6.53	-55.01	75.77	33.76
				2332.20	Y	V	-56.76	7.42	-49.34	70.10	
		1/0	16QAM	1554.51	X	H	-61.71	6.53	-55.18	74.72	32.54
				2332.33	Y	V	-57.67	7.42	-50.25	69.79	
	784.5	1/24	QPSK	2359.91	Y	V	-56.67	7.45	-49.22	70.32	34.10
				-	-	-	-	-	-	-	
		1/24	16QAM	2360.07	Y	V	-56.16	7.45	-48.71	68.65	32.94
				-	-	-	-	-	-	-	

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])
Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.
Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

- UNDESIRABLE EMISSIONS IN 763 ~ 775 MHz & 793 ~ 805 MHz (LTE Band 13)

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
									(dBm)	(dBc)	
10	782	50/0	QPSK	774.87	Z	H	-38.14	1.34	-36.80	57.01	55.21
				793.08	Z	H	-49.10	1.35	-47.75	67.96	
5	779.5	25/0	QPSK	774.92	Z	H	-38.15	1.34	-36.81	57.57	55.76
				-	-	-	-	-	-	-	
5	784.5	25/0	QPSK	793.07	Z	H	-66.34	1.35	-64.99	86.09	56.10
				-	-	-	-	-	-	-	

Note 1: Limit Calculation = 65 + $10\log_{10}$ (P[Watts])
Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

- UNDESIRABLE EMISSIONS IN 1559 ~ 1610 MHz(LTE Band 13)

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT (Axis)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result (dBm)	Margin (dB)	Limit (dBm/MHz)
10	782	1/49	QPSK	1572.82	X	H	-60.45	8.70	-51.75	11.75	-40.00
		1/49	16QAM	1572.83	X	H	-61.11	8.70	-52.41	12.41	
5	784.5	1/24	QPSK	1573.33	X	H	-60.93	8.70	-52.23	12.23	
		1/24	16QAM	1573.24	X	H	-62.19	8.70	-53.49	13.49	

Note 1: Limit = 70dBW/MHz (-40dBm/MHz)
Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

7.6.3 LTE Band 5

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
									(dBm)	(dBc)	
10	829	1/0	QPSK	1649.28	X	H	-45.51	6.64	-38.87	58.84	32.97
				2473.89	X	H	-51.68	7.58	-44.10	64.07	
		1/0	16QAM	1649.25	X	H	-45.94	6.64	-39.30	58.21	31.91
				2473.91	X	H	-52.70	7.58	-45.12	64.03	
	836.5	1/0	QPSK	1664.16	X	H	-48.91	6.65	-42.26	59.80	30.54
				2496.37	X	H	-54.55	7.61	-46.94	64.48	
		1/0	16QAM	1664.20	X	H	-48.40	6.65	-41.75	58.50	29.75
				2496.25	X	H	-54.17	7.61	-46.56	63.31	
	844	1/0	QPSK	1679.25	X	H	-49.10	6.67	-42.43	60.47	31.04
				2518.94	X	H	-52.47	7.61	-44.86	62.90	
		1/0	16QAM	1679.15	X	H	-49.48	6.67	-42.81	60.13	30.32
				2518.52	X	H	-53.29	7.61	-45.68	63.00	
5	826.5	1/0	QPSK	1648.76	X	H	-46.73	6.64	-40.09	60.19	33.10
				2473.27	X	H	-56.43	7.58	-48.85	68.95	
		1/0	16QAM	1648.60	X	H	-47.38	6.64	-40.74	59.94	32.20
				2473.16	X	H	-56.76	7.58	-49.18	68.38	
	836.5	1/24	QPSK	1677.42	X	H	-46.43	6.67	-39.76	57.69	30.93
				2515.84	X	H	-56.04	7.61	-48.43	66.36	
		1/24	16QAM	1677.35	X	H	-46.50	6.67	-39.83	56.62	29.79
				2515.79	X	H	-55.96	7.61	-48.35	65.14	
	846.5	1/12	QPSK	1693.16	X	H	-49.96	6.69	-43.27	61.43	31.16
				2539.60	X	H	-54.96	7.60	-47.36	65.52	
		1/12	16QAM	1693.08	X	H	-50.20	6.69	-43.51	60.55	30.04
				2539.52	X	H	-55.77	7.60	-48.17	65.21	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
									(dBm)	(dBc)	
3	825.5	1/14	QPSK	1653.49	X	H	-50.14	6.64	-43.50	62.30	31.80
				2480.37	X	H	-55.51	7.59	-47.92	66.72	
		1/14	16QAM	1653.54	X	H	-50.07	6.64	-43.43	60.91	30.48
				2480.30	X	H	-56.52	7.59	-48.93	66.41	
	836.5	1/14	QPSK	1675.35	X	H	-49.40	6.67	-42.73	60.66	30.93
				2513.38	X	H	-54.99	7.61	-47.38	65.31	
		1/14	16QAM	1675.48	X	H	-49.67	6.67	-43.00	60.18	30.18
				2513.30	X	H	-55.85	7.61	-48.24	65.42	
	847.5	1/7	QPSK	1694.96	X	H	-50.73	6.69	-44.04	62.08	31.04
				2542.31	X	H	-57.54	7.60	-49.94	67.98	
		1/7	16QAM	1694.77	X	H	-51.01	6.69	-44.32	61.58	30.26
				2542.42	X	H	-58.09	7.60	-50.49	67.75	
1.4	824.7	1/5	QPSK	1650.27	X	H	-47.08	6.64	-40.44	58.69	31.25
				2475.53	X	H	-56.31	7.58	-48.73	66.98	
		1/5	16QAM	1650.34	X	H	-48.96	6.64	-42.32	59.70	30.38
				2475.41	X	H	-56.35	7.58	-48.77	66.15	
	836.5	1/5	QPSK	1674.05	X	H	-49.69	6.66	-43.03	59.20	29.17
				2510.80	X	H	-55.67	7.61	-48.06	64.23	
		1/5	16QAM	1673.90	X	H	-50.05	6.66	-43.39	58.78	28.29
				2510.71	X	H	-55.15	7.61	-47.54	62.93	
	848.3	1/0	QPSK	1695.65	X	H	-51.06	6.69	-44.37	62.36	30.99
				2543.52	X	H	-56.96	7.60	-49.36	67.35	
		1/0	16QAM	1695.50	X	H	-51.48	6.69	-44.79	61.86	30.07
				2543.61	X	H	-56.57	7.60	-48.97	66.04	

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])
Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.
Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.4 LTE Band 4

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
									(dBm)	(dBc)	
20	1720	1/0	QPSK	3421.87	X	H	-55.93	10.04	-45.89	70.11	37.22
				5133.47	Z	H	-51.26	10.74	-40.52	64.74	
		1/0	16QAM	3421.85	X	H	-56.49	10.04	-46.45	69.99	36.54
				5133.45	Z	H	-51.77	10.74	-41.03	64.57	
	1732.5	1/99	QPSK	3482.84	X	H	-55.92	10.10	-45.82	70.27	37.45
				5224.35	Z	H	-51.27	10.78	-40.49	64.94	
		1/99	16QAM	3482.61	X	H	-55.53	10.10	-45.43	69.07	36.64
				5224.32	Z	H	-52.90	10.78	-42.12	65.76	
	1745	1/0	QPSK	3472.04	X	H	-54.61	10.09	-44.52	68.88	37.36
				5208.34	Z	H	-50.06	10.77	-39.29	63.65	
		1/0	16QAM	3472.31	X	H	-54.18	10.09	-44.09	67.69	36.60
				5208.38	Z	H	-50.46	10.77	-39.69	63.29	
15	1717.5	1/0	QPSK	3421.52	X	H	-55.03	10.04	-44.99	69.65	37.66
				5132.56	Z	H	-50.01	10.74	-39.27	63.93	
		1/0	16QAM	3421.88	X	H	-55.38	10.04	-45.34	69.11	36.77
				5132.58	Z	H	-49.84	10.74	-39.10	62.87	
	1732.5	1/74	QPSK	3478.30	X	H	-54.23	10.09	-44.14	68.42	37.28
				5217.61	Z	H	-50.67	10.78	-39.89	64.17	
		1/74	16QAM	3478.84	X	H	-55.63	10.09	-45.54	68.97	36.43
				5217.48	Z	H	-50.75	10.78	-39.97	63.40	
	1747.5	1/0	QPSK	3481.89	X	H	-55.01	10.09	-44.92	69.67	37.75
				5222.43	Z	H	-50.73	10.78	-39.95	64.70	
		1/0	16QAM	3481.67	X	H	-55.53	10.09	-45.44	68.91	36.47
				5222.88	Z	H	-50.63	10.78	-39.85	63.32	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
									(dBm)	(dBc)	
10	1715	1/0	QPSK	3421.31	X	H	-55.68	10.04	-45.64	69.83	37.19
				5131.99	Z	H	-49.78	10.74	-39.04	63.23	
		1/0	16QAM	3421.27	X	H	-54.77	10.04	-44.73	68.01	36.28
				5131.86	Z	H	-50.59	10.74	-39.85	63.13	
	1732.5	1/49	QPSK	3474.14	X	H	-54.95	10.09	-44.86	69.03	37.17
				5210.74	Z	H	-49.30	10.77	-38.53	62.70	
		1/49	16QAM	3473.76	X	H	-54.71	10.09	-44.62	68.08	36.46
				5210.87	Z	H	-50.65	10.77	-39.88	63.34	
	1750	1/0	QPSK	3491.12	X	H	-56.74	10.10	-46.64	71.62	37.98
				5236.67	Z	H	-52.98	10.78	-42.20	67.18	
		1/0	16QAM	3491.06	X	H	-57.05	10.10	-46.95	71.06	37.11
				5236.61	Z	H	-53.91	10.78	-43.13	67.24	
5	1712.5	1/0	QPSK	3420.88	X	H	-55.14	10.04	-45.10	68.94	36.84
				5130.99	Z	H	-49.58	10.74	-38.84	62.68	
		1/0	16QAM	3420.74	X	H	-55.40	10.04	-45.36	68.09	35.73
				5130.99	Z	H	-50.08	10.74	-39.34	62.07	
	1732.5	1/12	QPSK	3465.07	X	H	-57.95	10.08	-47.87	71.95	37.08
				5197.39	Z	H	-49.56	10.77	-38.79	62.87	
		1/12	16QAM	3464.63	X	H	-59.64	10.08	-49.56	71.92	35.36
				5197.47	Z	H	-49.50	10.77	-38.73	61.09	
	1752.5	1/0	QPSK	3500.78	X	H	-59.44	10.11	-49.33	73.09	36.76
				5250.97	Z	H	-51.13	10.79	-40.34	64.10	
		1/0	16QAM	3500.96	X	H	-58.85	10.11	-48.74	71.65	35.91
				5250.93	Z	H	-50.87	10.79	-40.08	62.99	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
									(dBm)	(dBc)	
3	1711.5	1/0	QPSK	3420.41	X	H	-57.42	10.04	-47.38	71.34	36.96
				5130.52	Z	H	-49.93	10.74	-39.19	63.15	
		1/0	16QAM	3420.65	X	H	-57.21	10.04	-47.17	70.35	36.18
				5130.47	Z	H	-51.69	10.74	-40.95	64.13	
	1732.5	1/14	QPSK	3467.68	X	H	-58.88	10.08	-48.80	72.58	36.78
				5201.47	Z	H	-49.63	10.77	-38.86	62.64	
		1/14	16QAM	3467.58	X	H	-58.16	10.08	-48.08	71.05	35.97
				5201.72	Z	H	-50.41	10.77	-39.64	62.61	
	1753.5	1/0	QPSK	3504.23	X	H	-58.55	10.11	-48.44	71.93	36.49
				5256.78	Z	H	-51.70	10.79	-40.91	64.40	
		1/0	16QAM	3504.72	X	H	-58.63	10.11	-48.52	70.90	35.38
				5256.45	Z	H	-51.64	10.79	-40.85	63.23	
1.4	1710.7	1/5	QPSK	3422.56	X	H	-57.97	10.04	-47.93	71.77	36.84
				5133.53	Z	H	-50.20	10.74	-39.46	63.30	
		1/5	16QAM	3422.24	X	H	-57.53	10.04	-47.49	71.22	36.73
				5133.34	Z	H	-49.41	10.74	-38.67	62.40	
	1732.5	1/5	QPSK	3465.73	X	H	-59.10	10.08	-49.02	72.62	36.60
				5198.75	Z	H	-48.68	10.77	-37.91	61.51	
		1/5	16QAM	3466.14	X	H	-58.94	10.08	-48.86	71.01	35.15
				5199.11	Z	H	-49.13	10.77	-38.36	60.51	
	1754.3	1/5	QPSK	3509.91	X	H	-59.62	10.10	-49.52	73.05	36.53
				5264.38	Z	H	-50.37	10.80	-39.57	63.10	
		1/5	16QAM	3508.97	X	H	-59.32	10.10	-49.22	71.97	35.75
				5264.15	Z	H	-51.10	10.80	-40.30	63.05	

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])
Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.
Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.5 LTE Band 2

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
									(dBm)	(dBc)	
20	1860	1/0	QPSK	3702.24	X	H	-52.64	9.91	-42.73	66.41	36.68
				5553.34	Z	H	-50.68	10.98	-39.70	63.38	
		1/0	16QAM	3702.28	X	H	-52.98	9.91	-43.07	66.12	36.05
				5553.35	Z	H	-51.68	10.98	-40.70	63.75	
	1880	1/0	QPSK	3742.14	X	H	-47.15	9.87	-37.28	62.03	37.75
				5613.47	Z	H	-50.98	11.07	-39.91	64.66	
		1/0	16QAM	3742.13	X	H	-47.71	9.87	-37.84	61.77	36.93
				5613.39	Z	H	-51.48	11.07	-40.41	64.34	
	1900	1/0	QPSK	3782.40	X	H	-49.66	9.83	-39.83	64.64	37.81
				5673.23	Z	H	-49.83	11.16	-38.67	63.48	
		1/0	16QAM	3782.03	X	H	-49.87	9.83	-40.04	64.04	37.00
				5673.33	Z	H	-50.04	11.16	-38.88	62.88	
15	1857.5	1/0	QPSK	3701.86	X	H	-52.71	9.91	-42.80	67.47	37.67
				5552.57	Z	H	-51.00	10.98	-40.02	64.69	
		1/0	16QAM	3701.73	X	H	-52.95	9.91	-43.04	66.58	36.54
				5552.41	Z	H	-51.05	10.98	-40.07	63.61	
	1880	1/0	QPSK	3746.64	X	H	-47.53	9.87	-37.66	62.48	37.82
				5620.13	Z	H	-51.00	11.08	-39.92	64.74	
		1/0	16QAM	3746.79	X	H	-48.02	9.87	-38.15	62.26	37.11
				5619.98	Z	H	-50.79	11.08	-39.71	63.82	
	1902.5	1/0	QPSK	3791.69	X	H	-48.76	9.82	-38.94	63.22	37.28
				5687.59	Z	H	-52.13	11.18	-40.95	65.23	
		1/0	16QAM	3791.82	X	H	-49.90	9.82	-40.08	63.92	36.84
				5687.47	Z	H	-52.34	11.18	-41.16	65.00	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
									(dBm)	(dBc)	
10	1855	1/0	QPSK	3700.91	X	H	-53.35	9.91	-43.44	67.72	37.28
				5551.77	Z	H	-50.40	10.98	-39.42	63.70	
		1/0	16QAM	3700.96	X	H	-53.14	9.91	-43.23	66.60	36.37
				5551.84	Z	H	-51.39	10.98	-40.41	63.78	
	1880	1/0	QPSK	3751.21	X	H	-46.65	9.86	-36.79	61.37	37.58
				5626.73	Z	H	-51.42	11.09	-40.33	64.91	
		1/0	16QAM	3751.12	X	H	-47.24	9.86	-37.38	61.09	36.71
				5626.81	Z	H	-52.13	11.09	-41.04	64.75	
	1905	1/0	QPSK	3801.17	X	H	-47.59	9.81	-37.78	61.83	37.05
				5701.79	Z	H	-51.53	11.20	-40.33	64.38	
		1/0	16QAM	3801.18	X	H	-48.44	9.81	-38.63	62.20	36.57
				5701.84	Z	H	-52.73	11.20	-41.53	65.10	
5	1852.5	1/12	QPSK	3705.12	X	H	-52.72	9.91	-42.81	67.33	37.52
				5557.55	Z	H	-50.37	10.99	-39.38	63.90	
		1/12	16QAM	3705.27	X	H	-53.77	9.91	-43.86	67.66	36.80
				5557.54	Z	H	-51.39	10.99	-40.40	64.20	
	1880	1/0	QPSK	3755.61	X	H	-47.48	9.86	-37.62	61.97	37.35
				5633.43	Z	H	-54.45	11.10	-43.35	67.70	
		1/0	16QAM	3755.67	X	H	-48.82	9.86	-38.96	62.43	36.47
				5633.40	Z	H	-55.10	11.10	-44.00	67.47	
	1907.5	1/0	QPSK	3810.63	X	H	-53.69	9.81	-43.88	68.07	37.19
				5716.14	Z	H	-55.21	11.22	-43.99	68.18	
		1/0	16QAM	3810.65	X	H	-54.48	9.81	-44.67	69.05	37.38
				5716.02	Z	H	-54.72	11.22	-43.50	67.88	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	EUT Axis	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
									(dBm)	(dBc)	
3	1851.5	1/14	QPSK	3702.25	X	H	-53.37	9.91	-43.46	68.42	37.96
				5558.31	Z	H	-52.68	10.99	-41.69	66.65	
		1/14	16QAM	3705.39	X	H	-53.03	9.91	-43.12	67.34	37.22
				5558.38	Z	H	-52.09	10.99	-41.10	65.32	
	1880	1/14	QPSK	3762.53	X	H	-50.73	9.85	-40.88	64.64	36.76
				5644.03	Z	H	-52.03	11.12	-40.91	64.67	
		1/14	16QAM	3762.29	X	H	-51.10	9.85	-41.25	64.25	36.00
				5644.12	Z	H	-52.74	11.12	-41.62	64.62	
	1908.5	1/0	QPSK	3814.64	X	H	-54.52	9.80	-44.72	68.35	36.63
				5721.47	Z	H	-53.88	11.23	-42.65	66.28	
		1/0	16QAM	3814.62	X	H	-54.97	9.80	-45.17	68.12	35.95
				5721.75	Z	H	-54.92	11.23	-43.69	66.64	
1.4	1850.7	1/2	QPSK	3701.24	X	H	-54.00	9.91	-44.09	68.75	37.66
				5551.98	Z	H	-55.02	10.98	-44.04	68.70	
		1/2	16QAM	3701.07	X	H	-54.02	9.91	-44.11	68.08	36.97
				5552.03	Z	H	-54.82	10.98	-43.84	67.81	
	1880	1/2	QPSK	3759.82	X	H	-48.96	9.86	-39.10	63.38	37.28
				5639.75	Z	H	-53.47	11.11	-42.36	66.64	
		1/2	16QAM	3759.87	X	H	-47.73	9.86	-37.87	60.78	35.91
				5639.90	Z	H	-54.24	11.11	-43.13	66.04	
	1909.3	1/2	QPSK	3818.39	X	H	-54.78	9.80	-44.98	67.78	35.80
				5728.55	Z	H	-55.00	11.24	-43.76	66.56	
		1/2	16QAM	3818.40	X	H	-55.14	9.80	-45.34	67.68	35.34
				5727.58	Z	H	-55.07	11.24	-43.83	66.17	

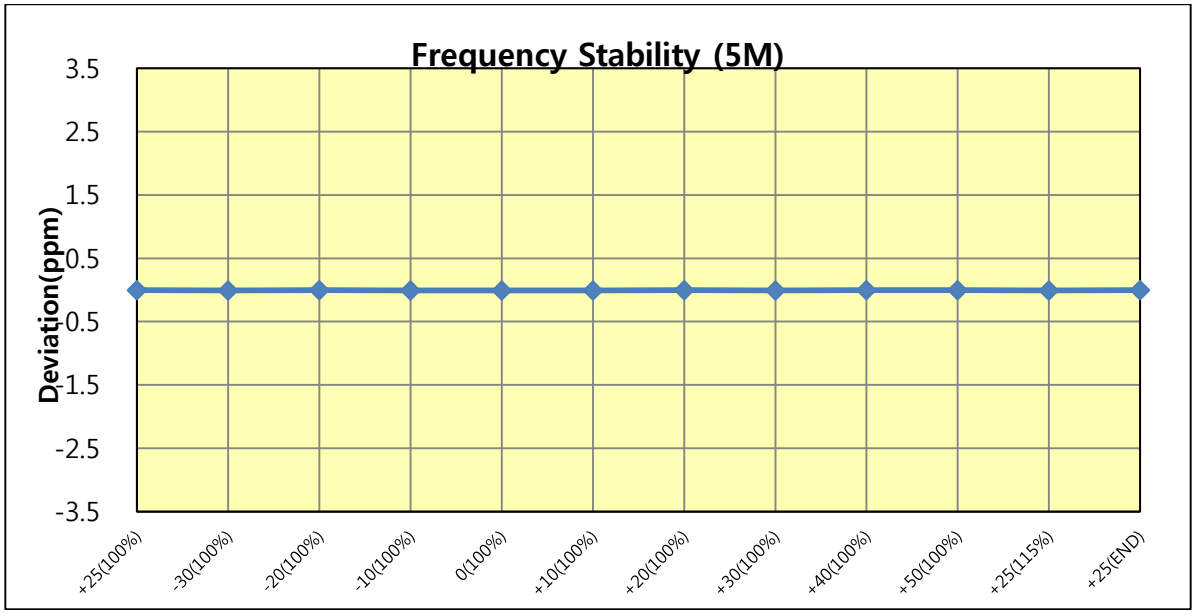
Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])
Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.
Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.7 FREQUENCY STABILITY

7.7.1 LTE Band 17

OPERATING FREQUENCY : 710 MHz
CHANNEL : 23790
REFERENCE VOLTAGE : 3.80 VDC
LIMIT(FCC & IC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays wthin the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	3.80	+25(Ref)	709,999,998	-2	-0.0030	-0.000000296
100%		-30	709,999,995	-5	-0.0070	-0.000000704
100%		-20	709,999,997	-3	-0.0039	-0.000000394
100%		-10	709,999,994	-6	-0.0082	-0.000000817
100%		0	709,999,995	-5	-0.0075	-0.000000746
100%		10	709,999,993	-7	-0.0093	-0.000000930
100%		20	709,999,997	-4	-0.0049	-0.000000493
100%		30	709,999,995	-5	-0.0072	-0.000000718
100%		40	709,999,998	-2	-0.0024	-0.000000239
100%		50	709,999,998	-2	-0.0028	-0.000000282
115%	4.37	25	709,999,996	-4	-0.0055	-0.000000549
BATT.ENDPOINT	3.50	25	709,999,997	-4	-0.0049	-0.000000493

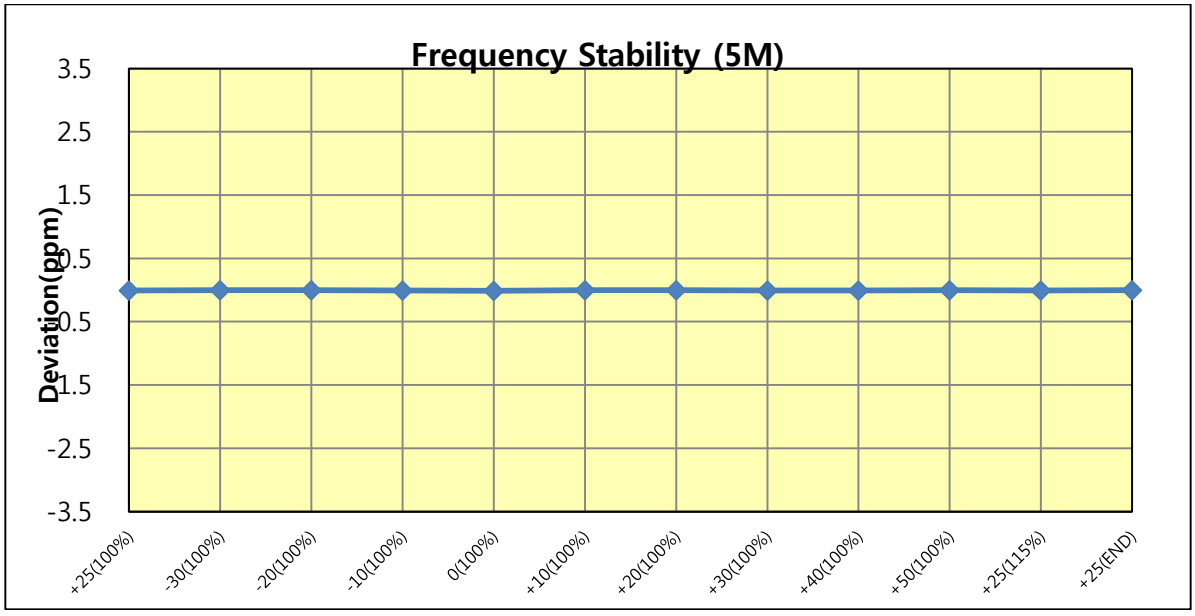


Note. Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. as such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability tests is applied. therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

7.7.2 LTE Band 13

OPERATING FREQUENCY : 779.5 MHz
CHANNEL : 23205
REFERENCE VOLTAGE : 3.80 VDC
LIMIT(FCC & IC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays wthin the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	3.80	+25(Ref)	779,499,994	-6	-0.0082	-0.000000821
100%		-30	779,499,997	-3	-0.0044	-0.000000436
100%		-20	779,499,997	-3	-0.0040	-0.000000398
100%		-10	779,499,994	-6	-0.0073	-0.000000731
100%		0	779,499,992	-8	-0.0099	-0.000000988
100%		10	779,499,997	-3	-0.0040	-0.000000398
100%		20	779,499,997	-3	-0.0041	-0.000000411
100%		30	779,499,996	-4	-0.0047	-0.000000475
100%		40	779,499,996	-4	-0.0054	-0.000000539
100%		50	779,499,997	-3	-0.0035	-0.000000346
115%	4.37	25	779,499,995	-5	-0.0060	-0.000000603
BATT.ENDPOINT	3.50	25	779,499,997	-3	-0.0044	-0.000000436

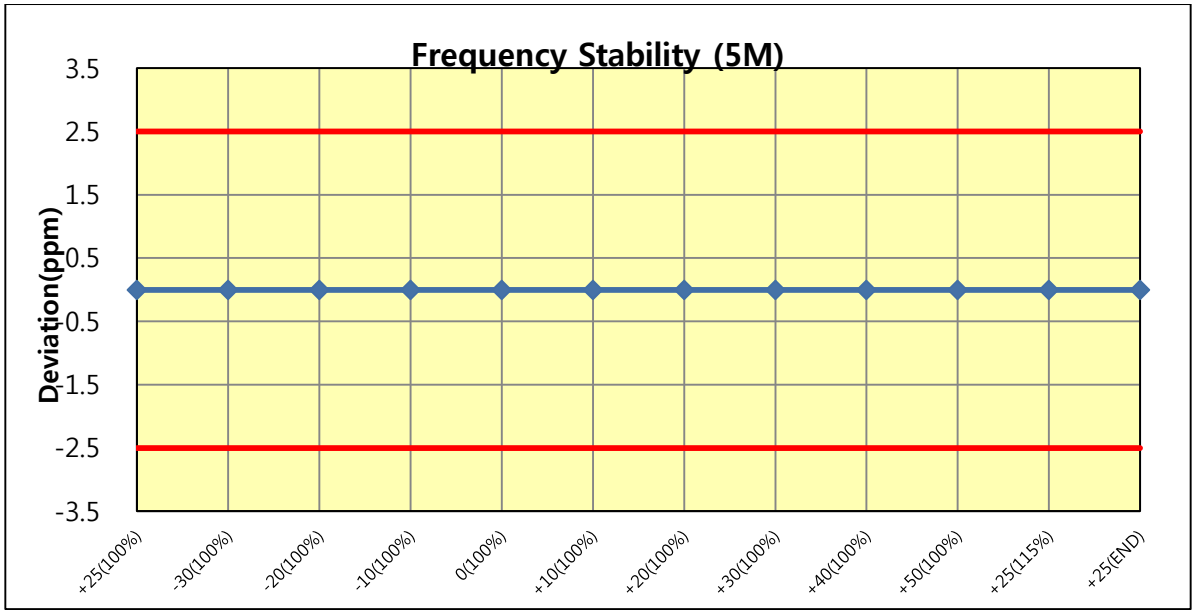


Note. Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. as such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability tests is applied. therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

7.7.3 LTE Band 5

OPERATING FREQUENCY : 836.5 MHz
CHANNEL : 20525
REFERENCE VOLTAGE : 3.80 VDC
DEVIATION LIMIT(FCC & IC) : ± 0.00025 % or 2.5 ppm

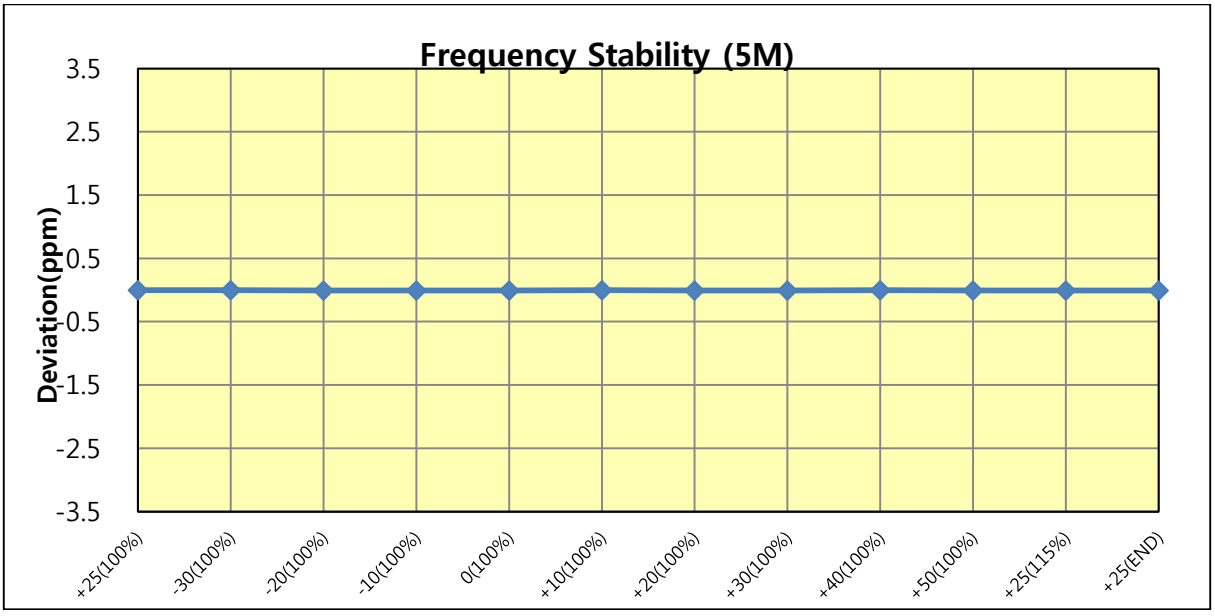
VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	3.80	+25(Ref)	836,499,996	-4	-0.0045	-0.000000454
100%		-30	836,499,997	-3	-0.0031	-0.000000311
100%		-20	836,499,995	-5	-0.0060	-0.000000598
100%		-10	836,499,997	-3	-0.0033	-0.000000335
100%		0	836,499,998	-2	-0.0024	-0.000000239
100%		10	836,499,997	-3	-0.0032	-0.000000323
100%		20	836,499,997	-4	-0.0042	-0.000000418
100%		30	836,499,997	-3	-0.0038	-0.000000383
100%		40	836,499,997	-3	-0.0036	-0.000000359
100%		50	836,499,998	-2	-0.0027	-0.000000275
115%	4.37	25	836,499,997	-3	-0.0031	-0.000000311
BATT.ENDPOINT	3.50	25	836,499,998	-2	-0.0020	-0.000000203



7.7.4 LTE Band 4

OPERATING FREQUENCY : 1732.5 MHz
CHANNEL : 20175
REFERENCE VOLTAGE : 3.80 VDC
LIMIT(FCC & IC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays wthin the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	3.80	+25(Ref)	1,732,499,993	-8	-0.0043	-0.000000433
100%		-30	1,732,499,999	-1	-0.0008	-0.000000081
100%		-20	1,732,499,989	-11	-0.0062	-0.000000623
100%		-10	1,732,499,988	-12	-0.0068	-0.000000675
100%		0	1,732,499,987	-13	-0.0077	-0.000000768
100%		10	1,732,499,997	-3	-0.0017	-0.000000167
100%		20	1,732,499,988	-12	-0.0069	-0.000000687
100%		30	1,732,499,992	-9	-0.0049	-0.000000491
100%		40	1,732,499,993	-7	-0.0043	-0.000000427
100%		50	1,732,499,987	-13	-0.0076	-0.000000762
115%	4.37	25	1,732,499,985	-15	-0.0085	-0.000000854
BATT.ENDPOINT	3.50	25	1,732,499,990	-10	-0.0058	-0.000000583

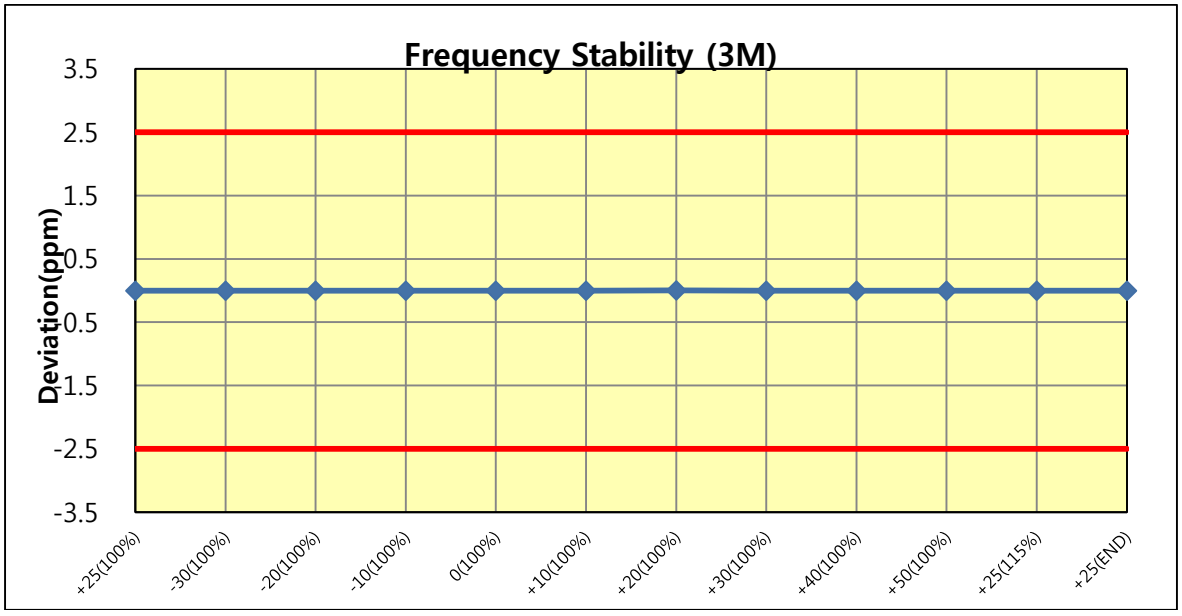


Note. Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. as such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability tests is applied. therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

7.7.5 LTE Band 2

OPERATING FREQUENCY : 1880 MHz
CHANNEL : 18900
REFERENCE VOLTAGE : 3.80 VDC
LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays wthin the authorized frequency block.
DEVIATION LIMIT(IC) : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	3.80	+25(Ref)	1,879,999,992	-8	-0.0041	-0.000000415
100%		-30	1,879,999,996	-4	-0.0022	-0.000000223
100%		-20	1,879,999,994	-7	-0.0035	-0.000000346
100%		-10	1,879,999,994	-6	-0.0032	-0.000000319
100%		0	1,879,999,995	-5	-0.0025	-0.000000250
100%		+10	1,879,999,994	-7	-0.0035	-0.000000346
100%		+20	1,880,000,004	4	0.0023	0.000000234
100%		+30	1,879,999,995	-5	-0.0028	-0.000000282
100%		+40	1,879,999,996	-4	-0.0023	-0.000000229
100%		+50	1,879,999,993	-7	-0.0035	-0.000000351
115%	4.37	+25	1,879,999,992	-8	-0.0040	-0.000000404
BATT.ENDPOINT	3.50	+25	1,879,999,992	-8	-0.0043	-0.000000431



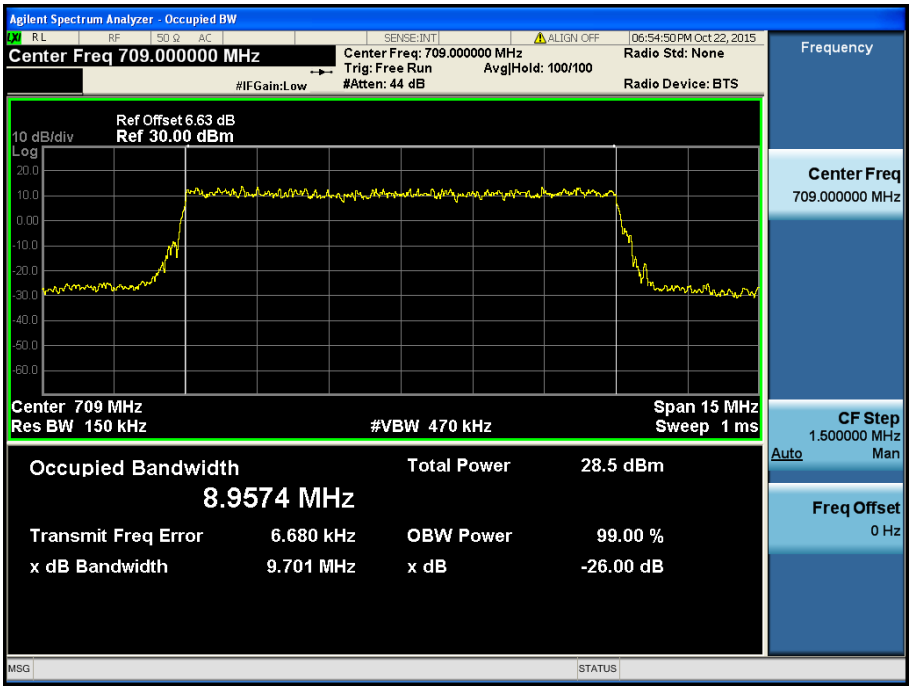
Note. Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. as such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability tests is applied. therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

8. TEST PLOTS

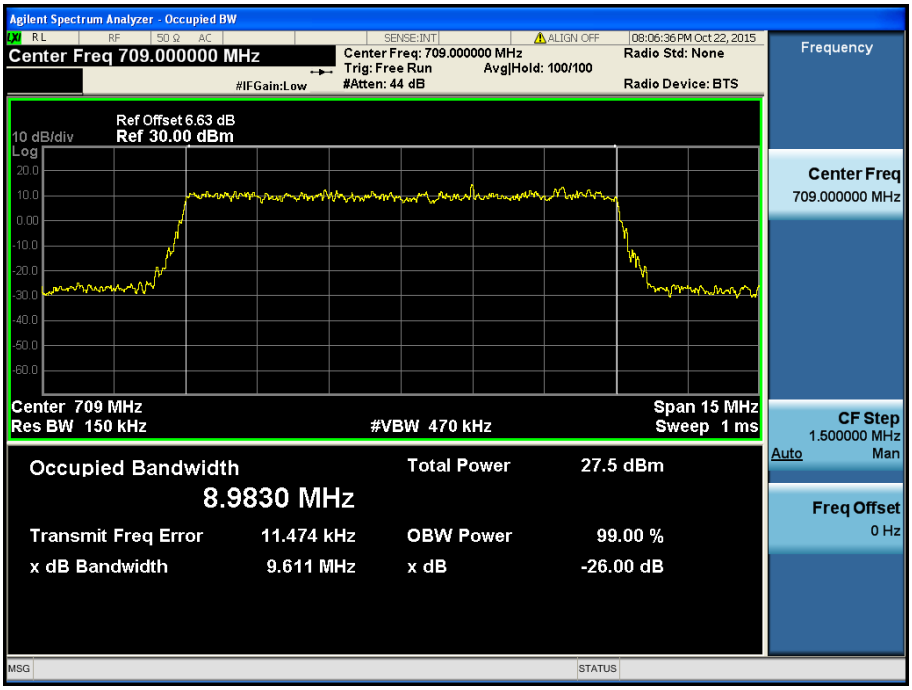
Note: All bandwidths, RB configurations, and modulations were investigated. The worst case test results are reported below.

8.1 OCCUPIED BANDWIDTH

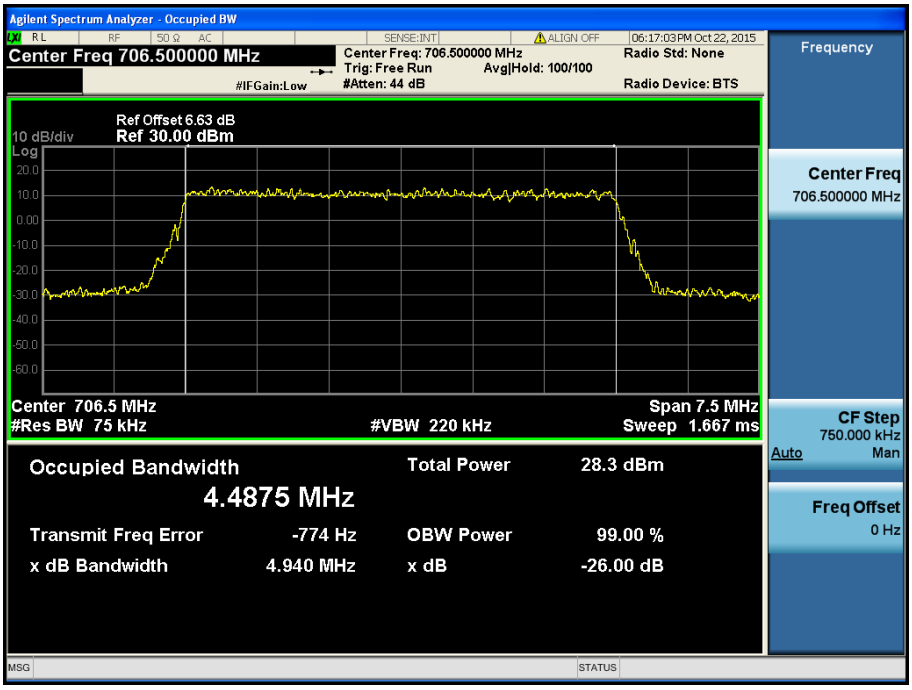
8.1.1 LTE Band 17



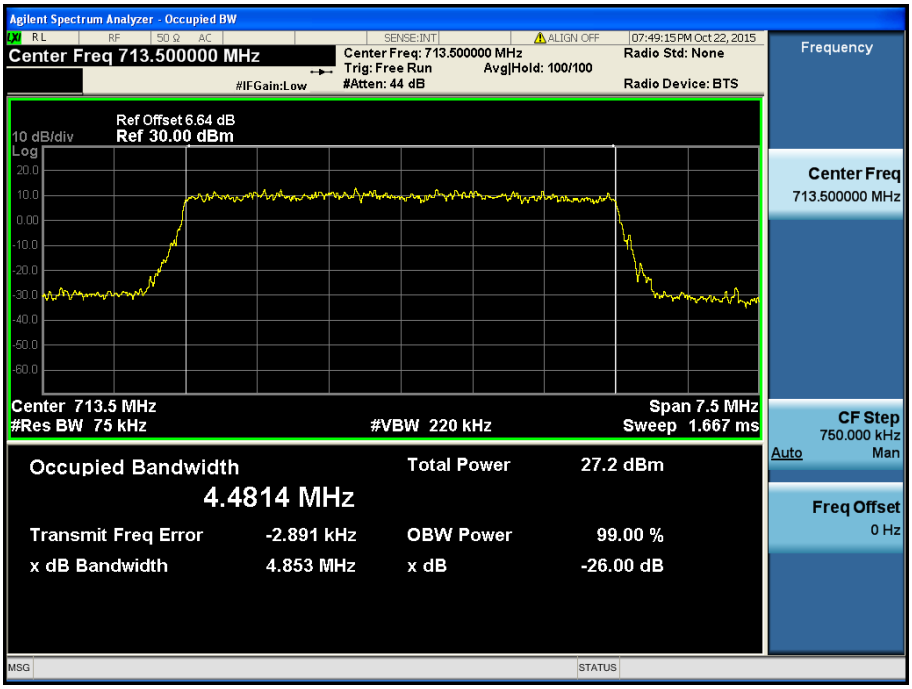
LTE Band 17 / 10 MHz / QPSK - RB Size 50



LTE Band 17 / 10 MHz / 16QAM - RB Size 50

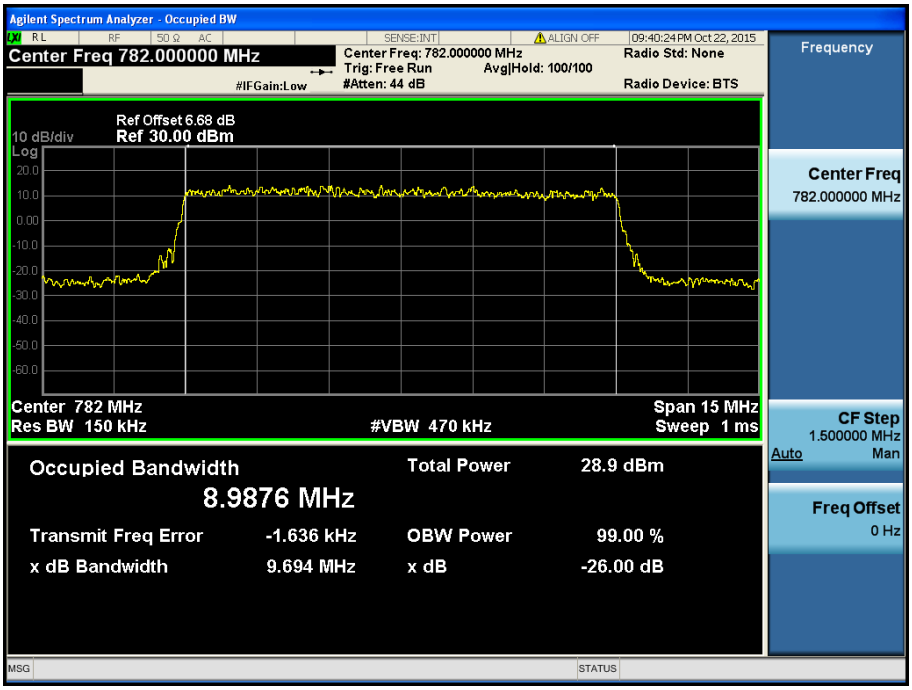


LTE Band 17 / 5 MHz / QPSK - RB Size 25

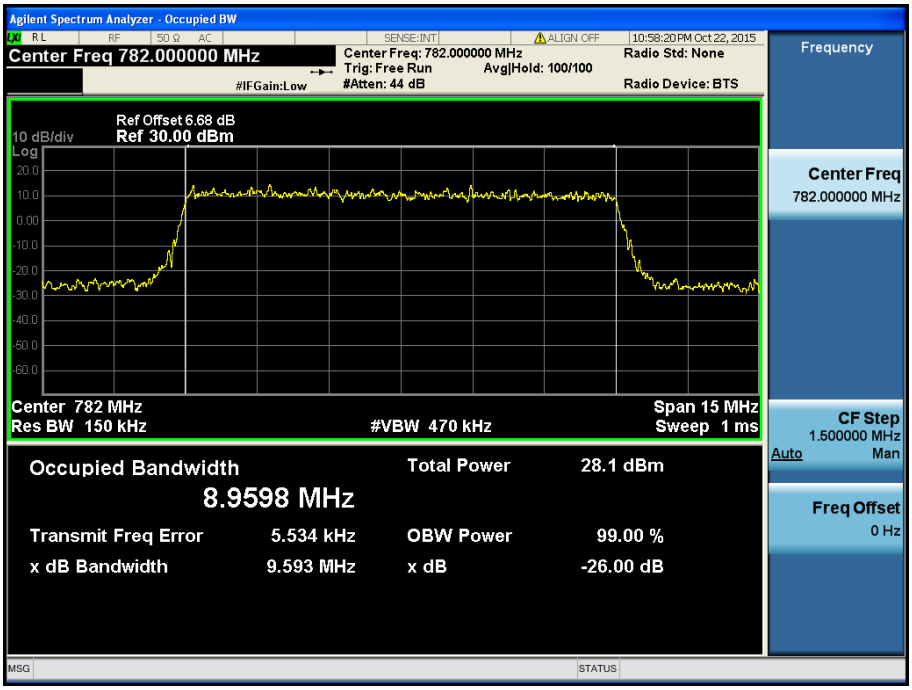


LTE Band 17 / 5 MHz / 16QAM - RB Size 25

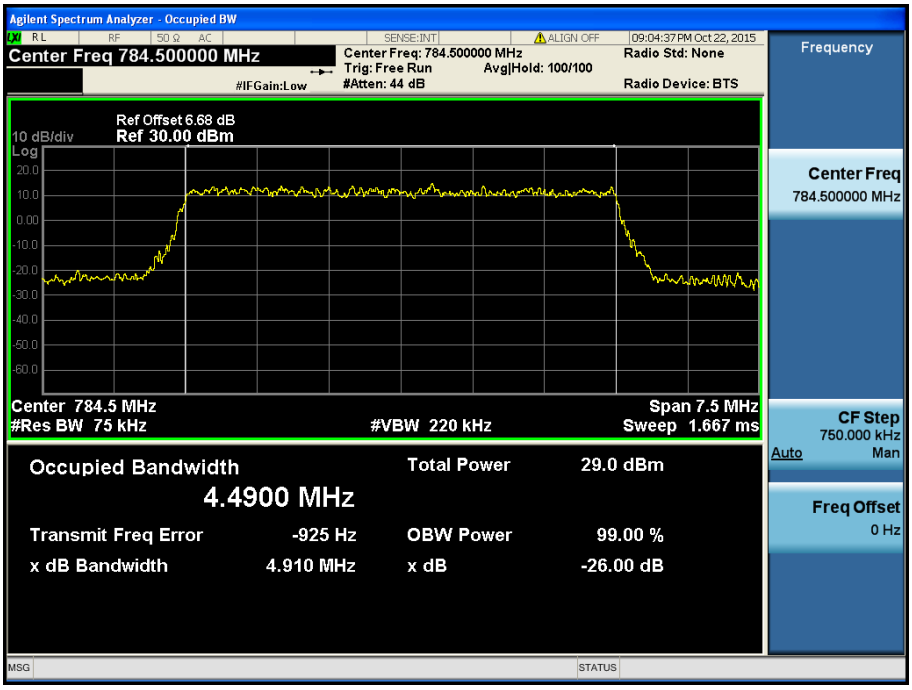
8.1.2 LTE Band 13



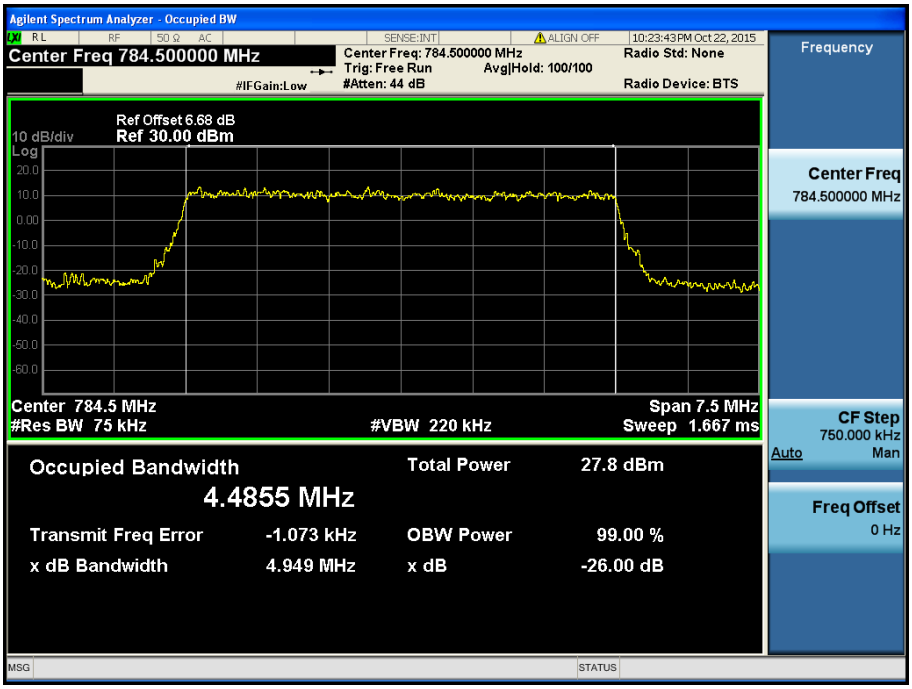
LTE Band 13 / 10 MHz / QPSK - RB Size 50



LTE Band 13 / 10 MHz / 16QAM - RB Size 50

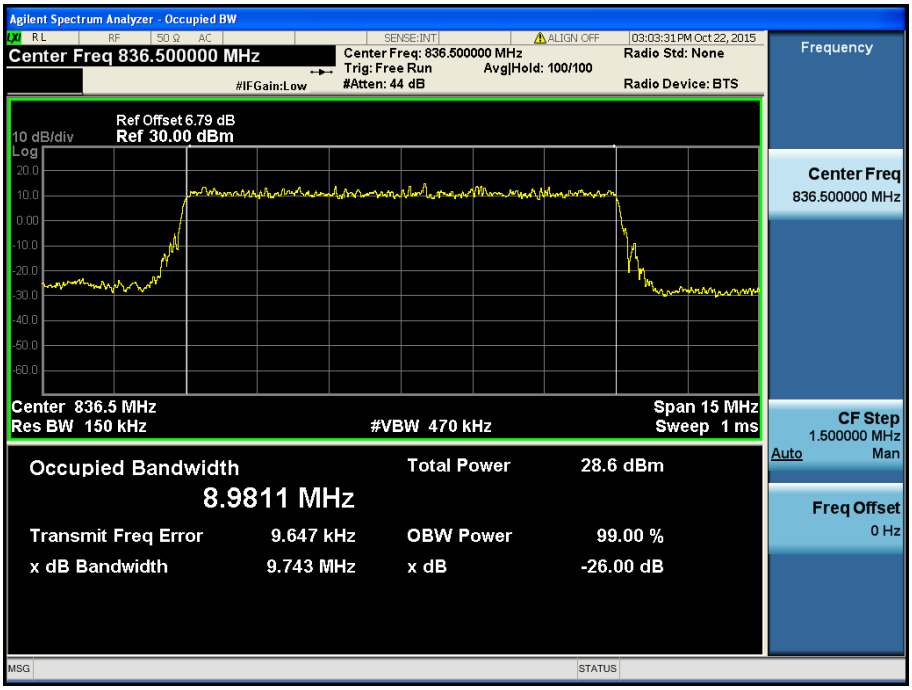


LTE Band 13 / 5 MHz / QPSK - RB Size 25

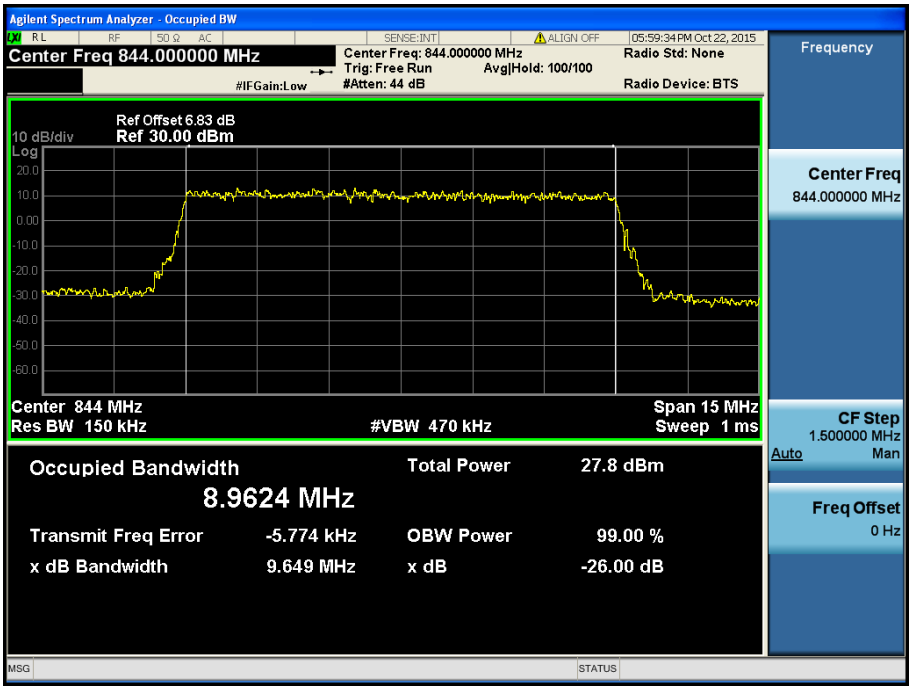


LTE Band 13 / 5 MHz / 16QAM - RB Size 25

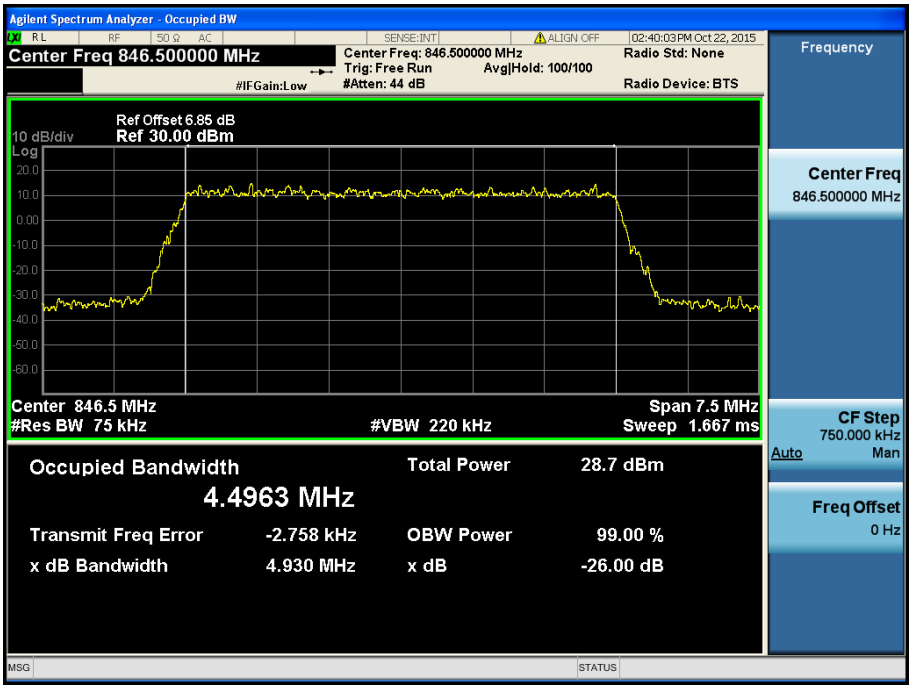
8.1.3 LTE Band 5



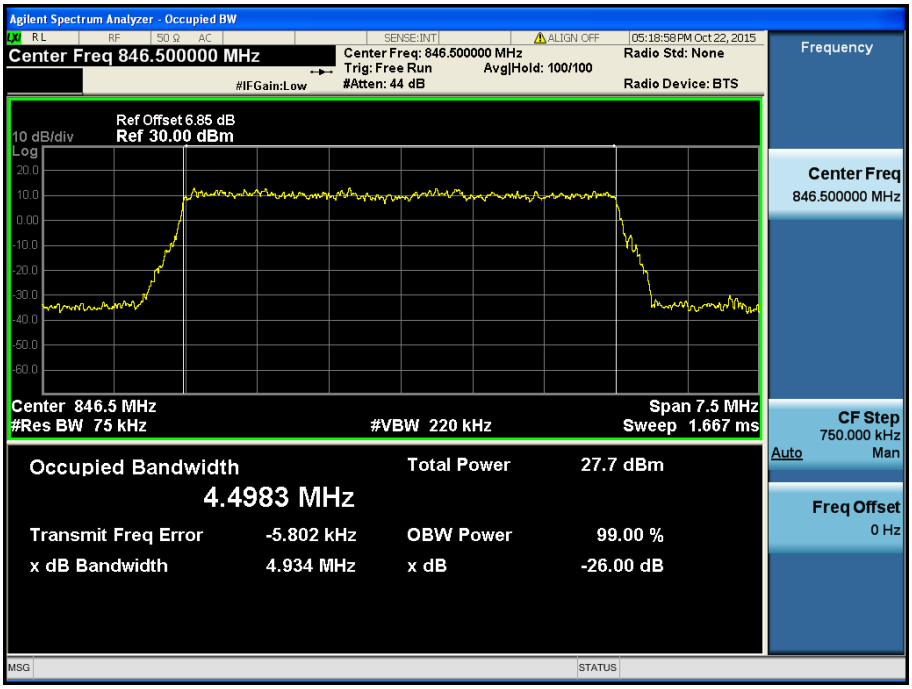
LTE Band 5 / 10 MHz / QPSK - RB Size 50



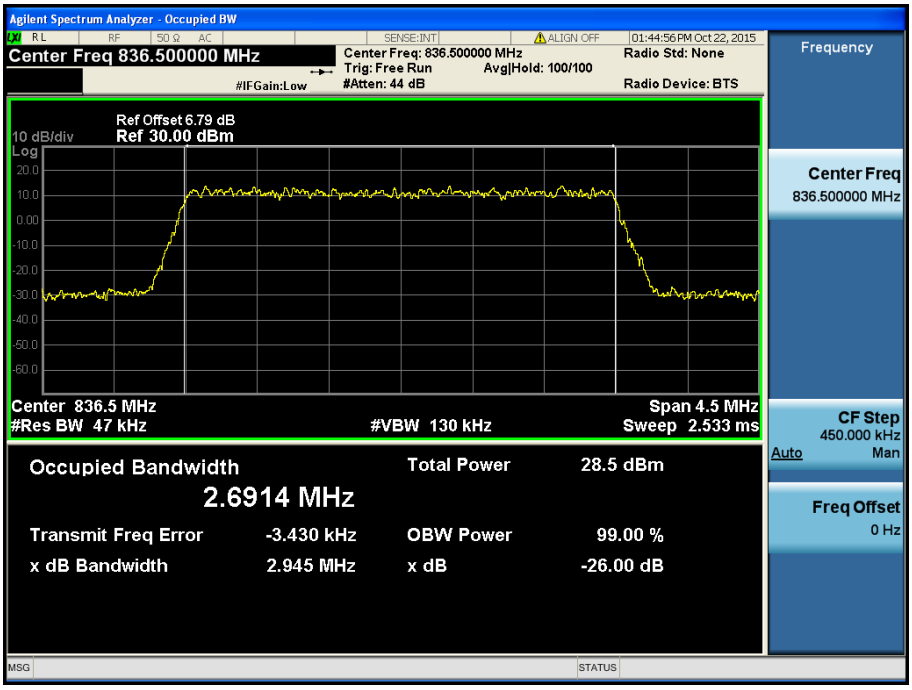
LTE Band 5 / 10 MHz / 16QAM - RB Size 50



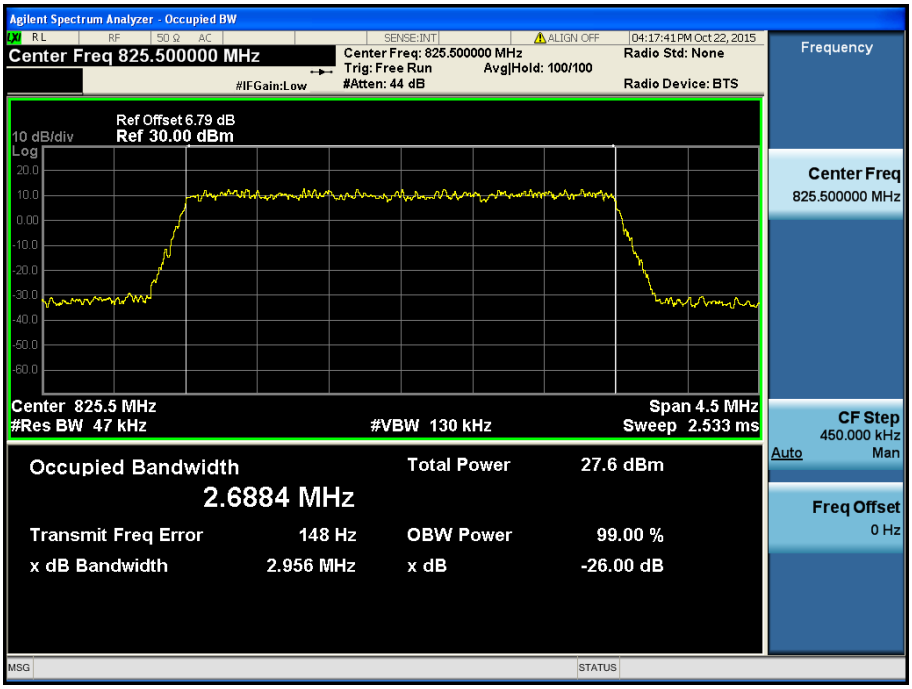
LTE Band 5 / 5 MHz / QPSK - RB Size 25



LTE Band 5 / 5 MHz / 16QAM - RB Size 25

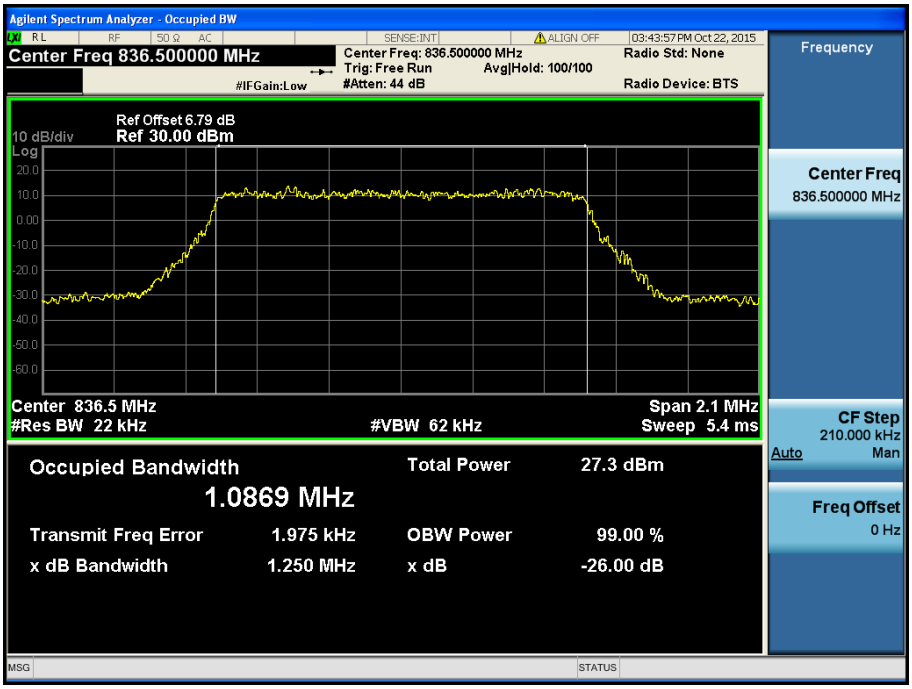


LTE Band 5 / 3 MHz / QPSK - RB Size 15



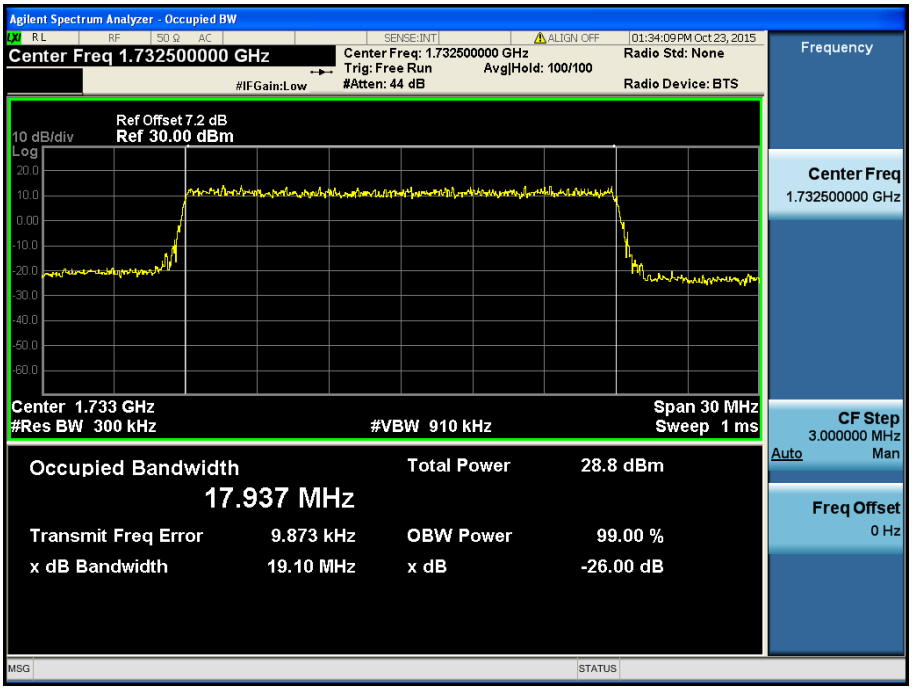
LTE Band 5 / 3 MHz / 16QAM - RB Size 15

LTE Band 5 / 1.4 MHz / QPSK - RB Size 6

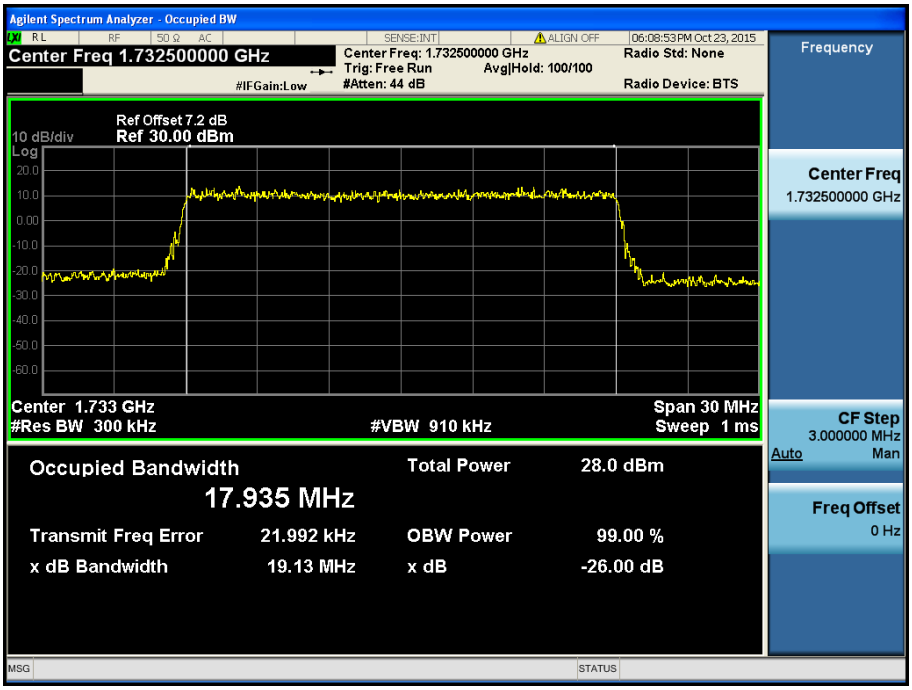


LTE Band 5 / 1.4 MHz / 16QAM - RB Size 6

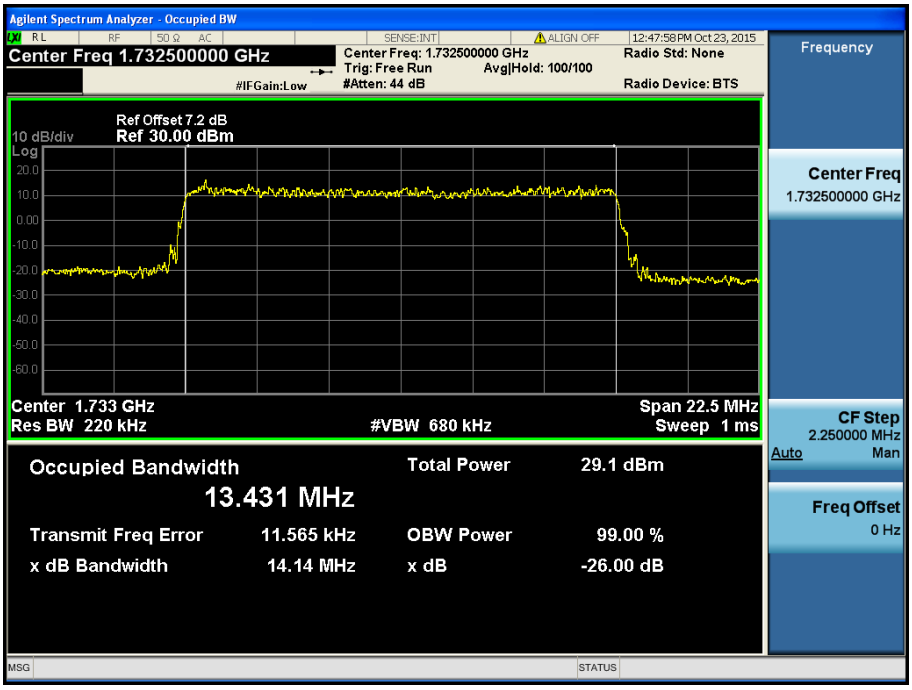
8.1.4 LTE Band 4



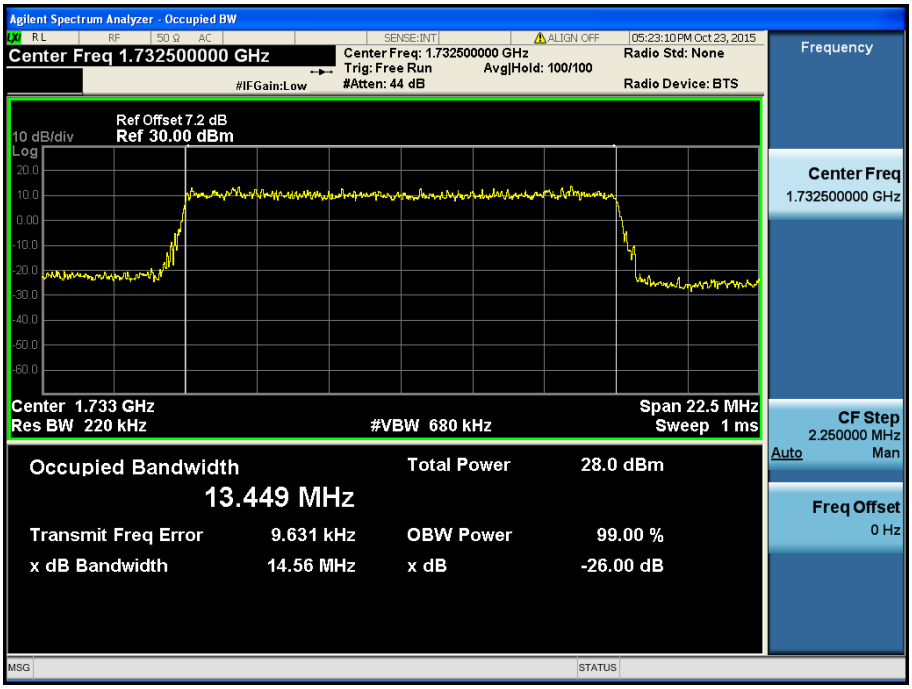
LTE Band 4 / 20 MHz / QPSK - RB Size 100



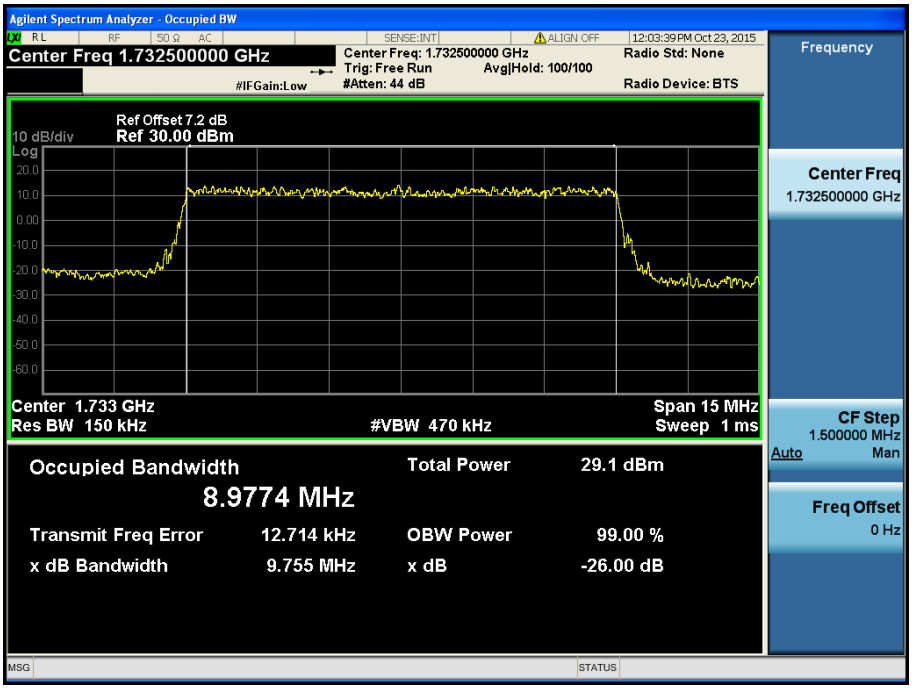
LTE Band 4 / 20 MHz / 16QAM - RB Size 100



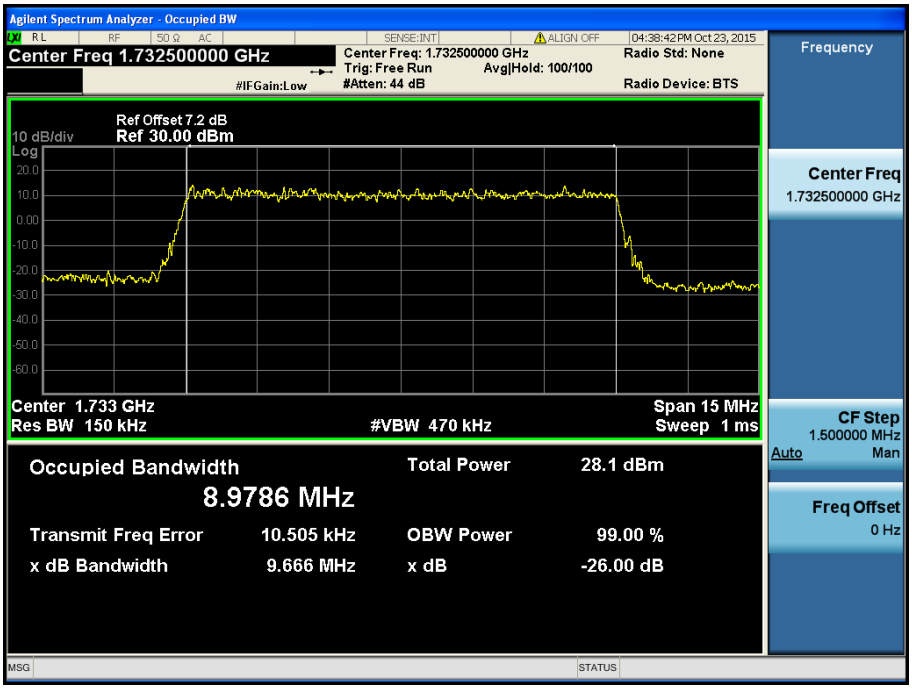
LTE Band 4 / 15 MHz / QPSK - RB Size 75



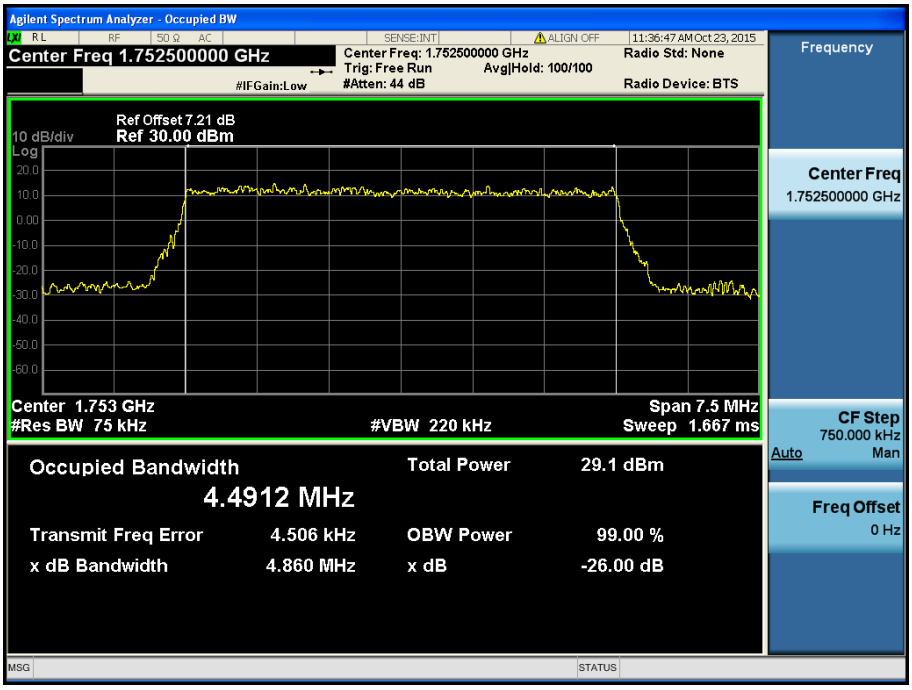
LTE Band 4 / 15 MHz / 16QAM - RB Size 75



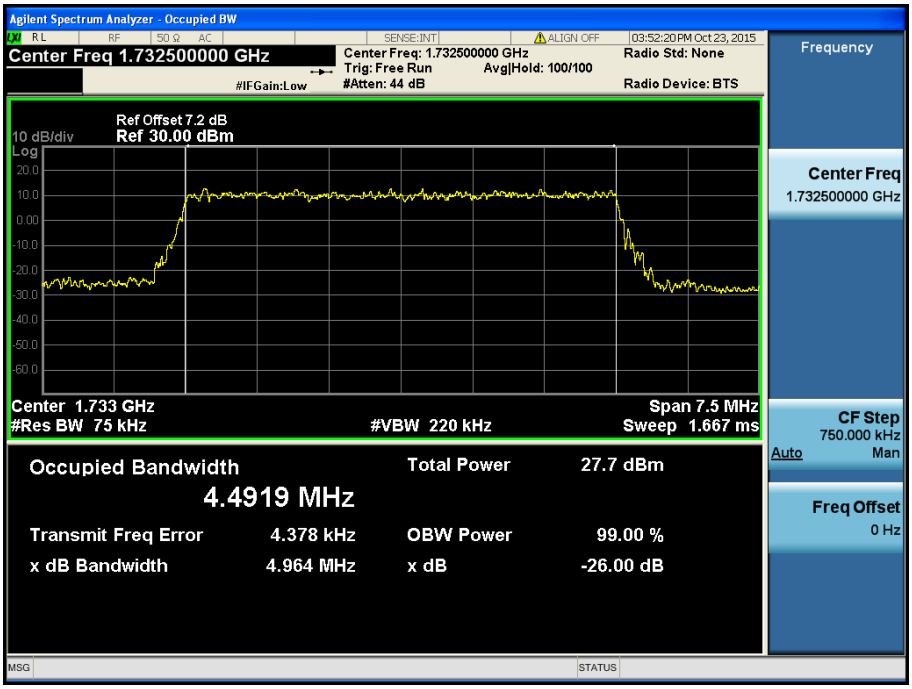
LTE Band 4 / 10 MHz / QPSK - RB Size 50



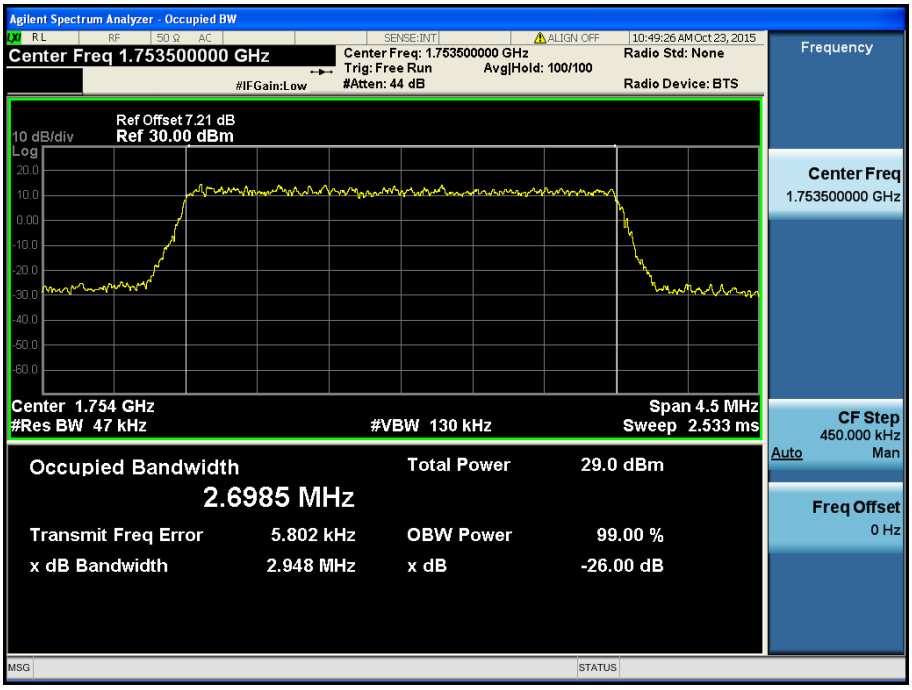
LTE Band 4 / 10 MHz / 16QAM - RB Size 50



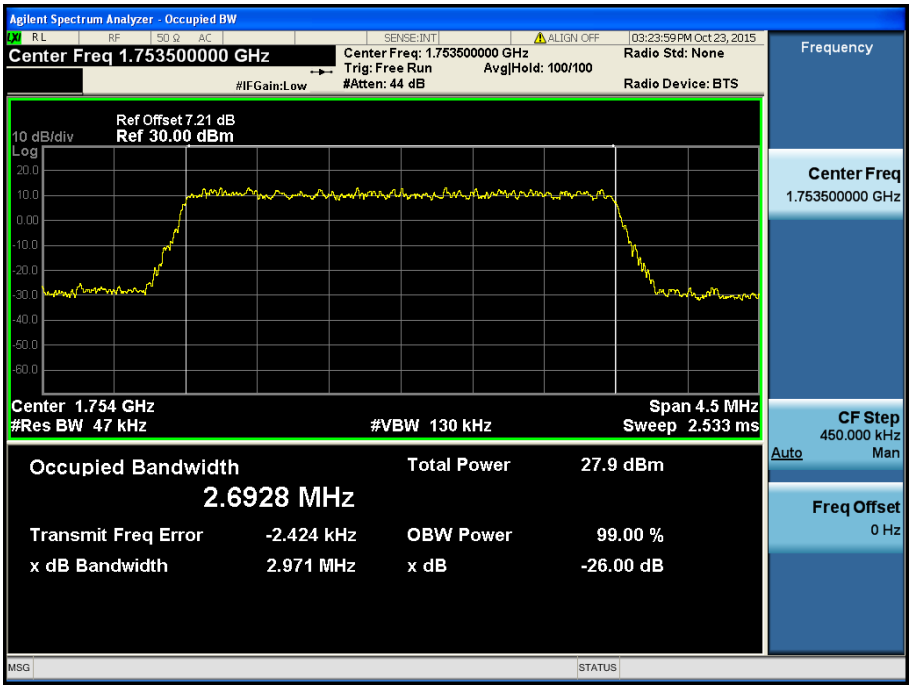
LTE Band 4 / 5 MHz / QPSK - RB Size 25



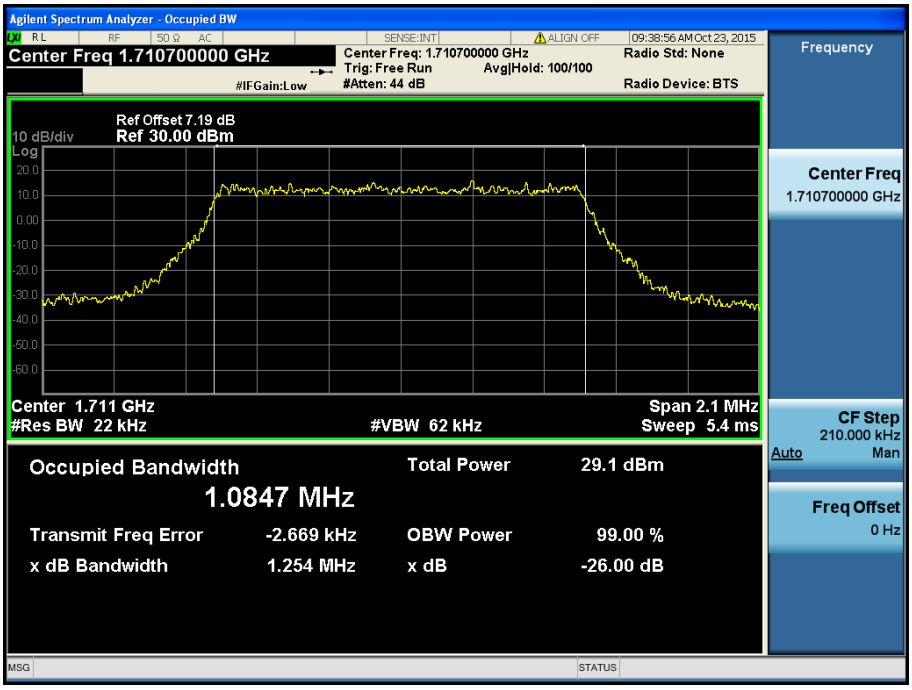
LTE Band 4 / 5 MHz / 16QAM - RB Size 25



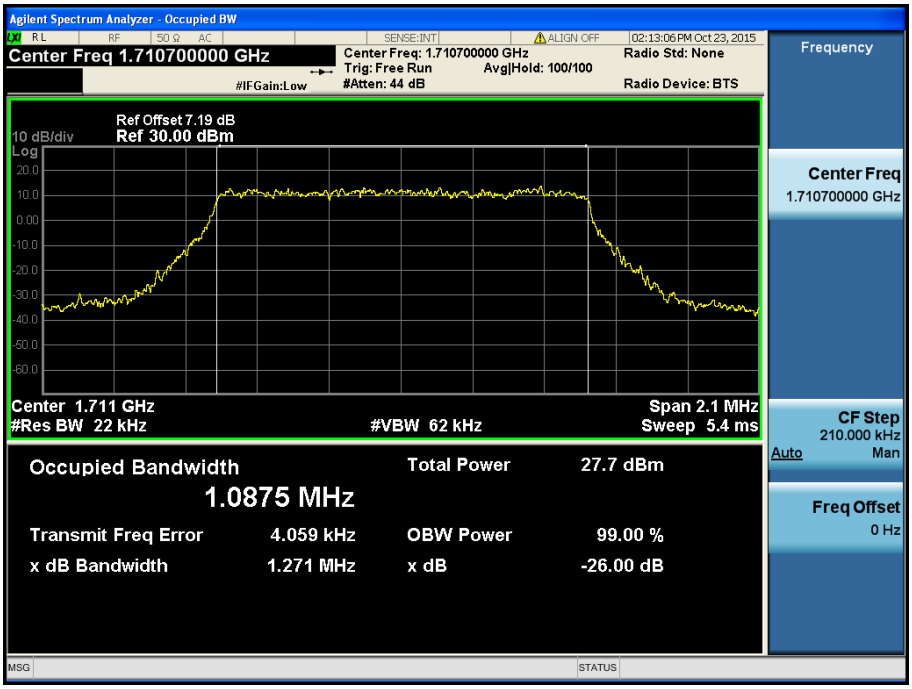
LTE Band 4 / 3 MHz / QPSK - RB Size 15



LTE Band 4 / 3 MHz / 16QAM - RB Size 15

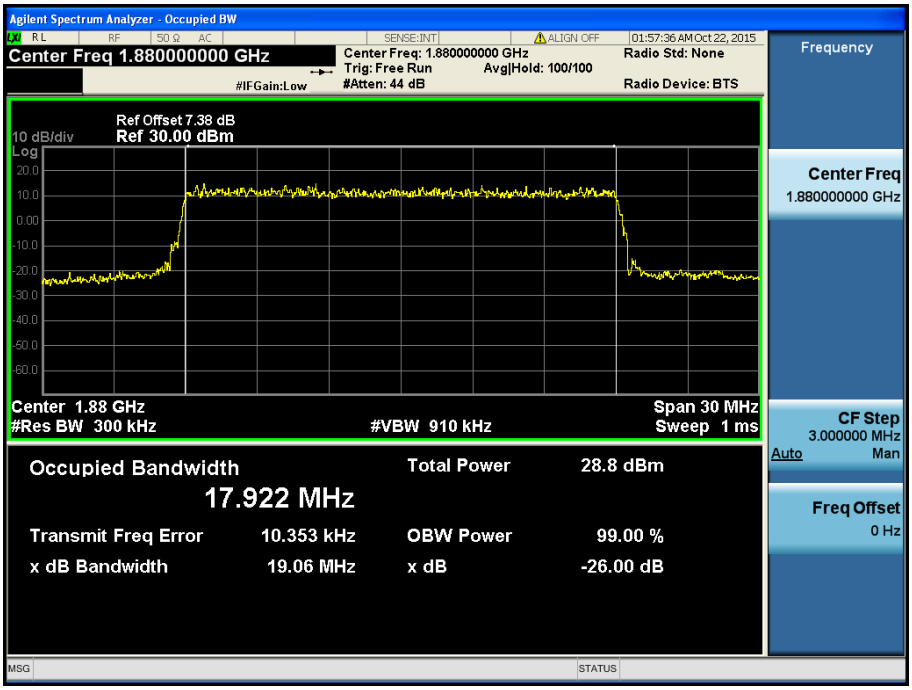


LTE Band 4 / 1.4 MHz / QPSK - RB Size 6

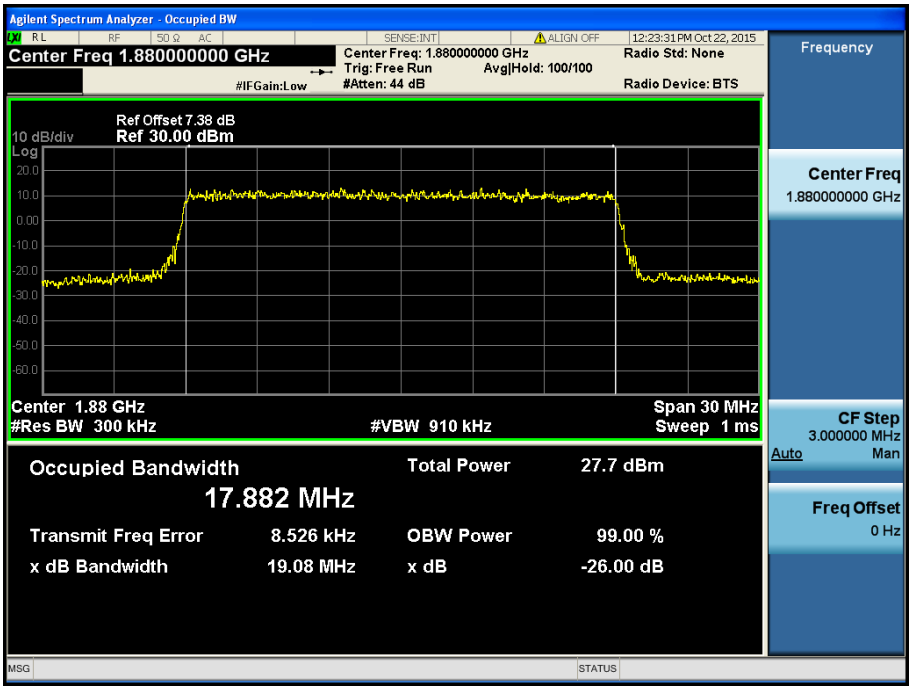


LTE Band 4 / 1.4 MHz / 16QAM - RB Size 6

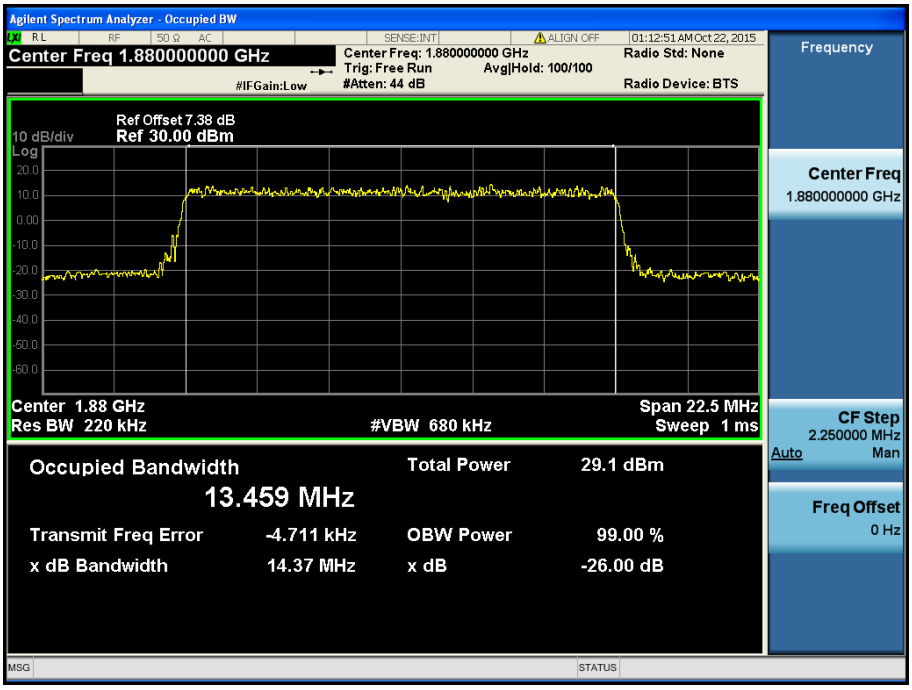
8.1.5 LTE Band 2



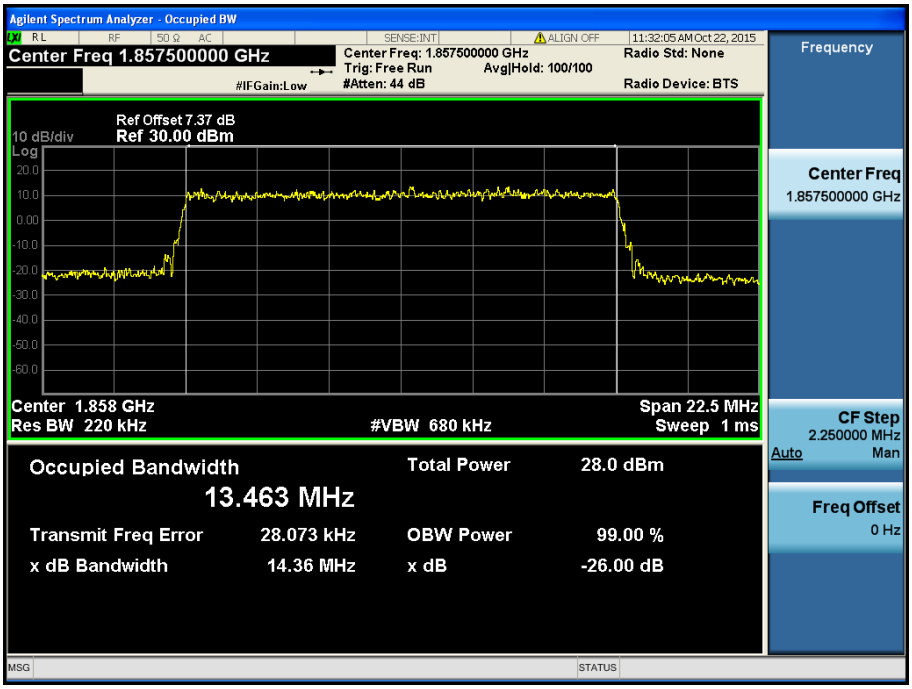
LTE Band 2 / 20 MHz / QPSK - RB Size 100



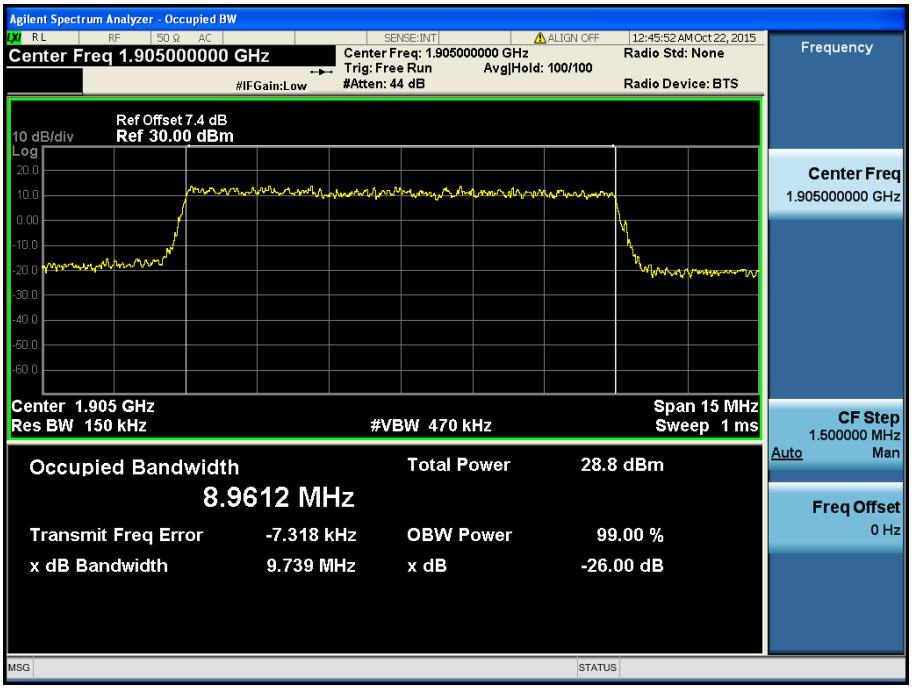
LTE Band 2 / 20 MHz / 16QAM - RB Size 100



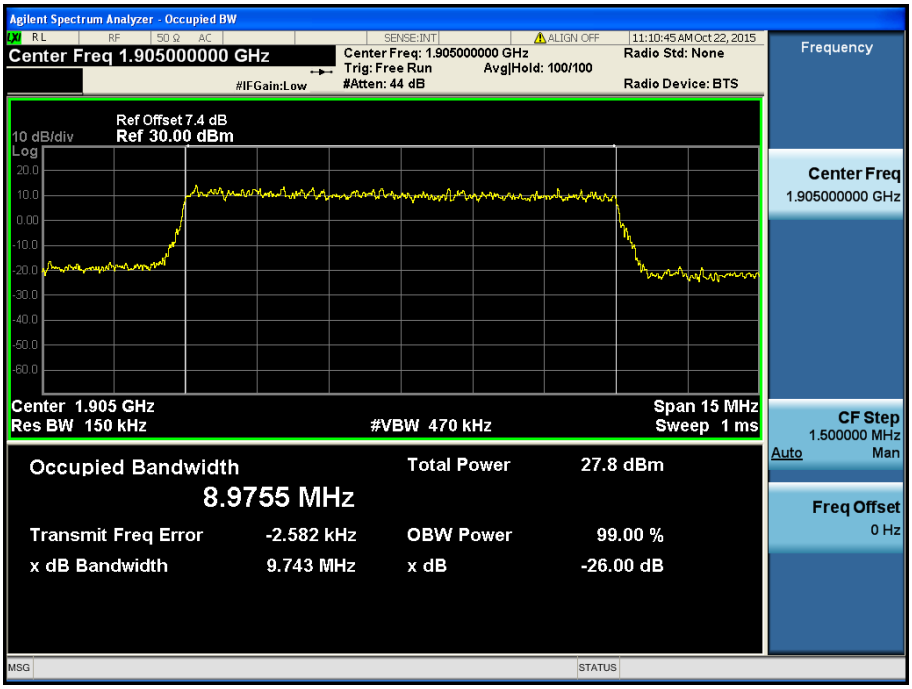
LTE Band 2 / 15 MHz / QPSK - RB Size 75



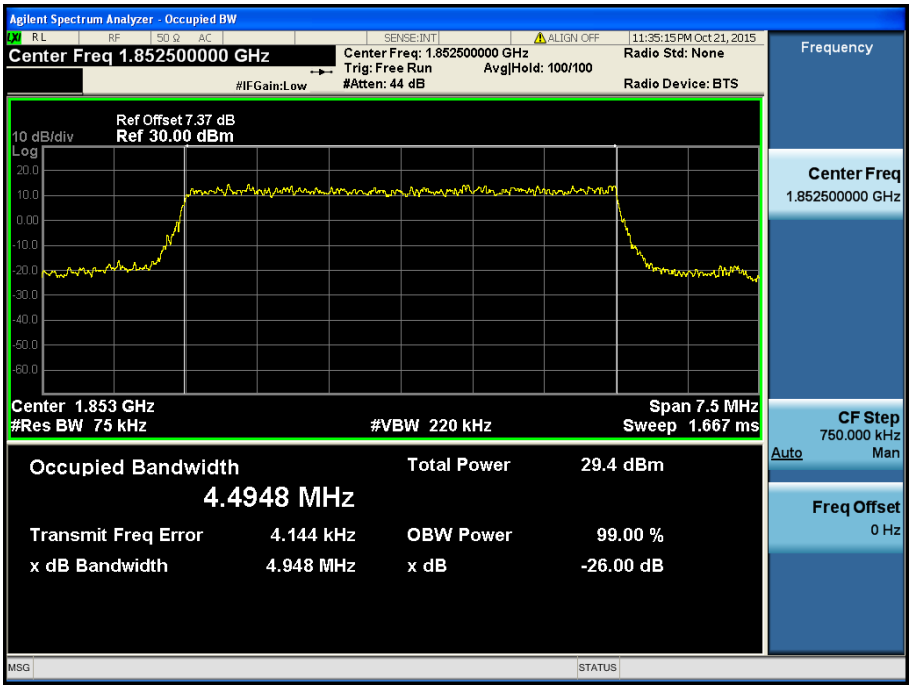
LTE Band 2 / 15 MHz / 16QAM - RB Size 75



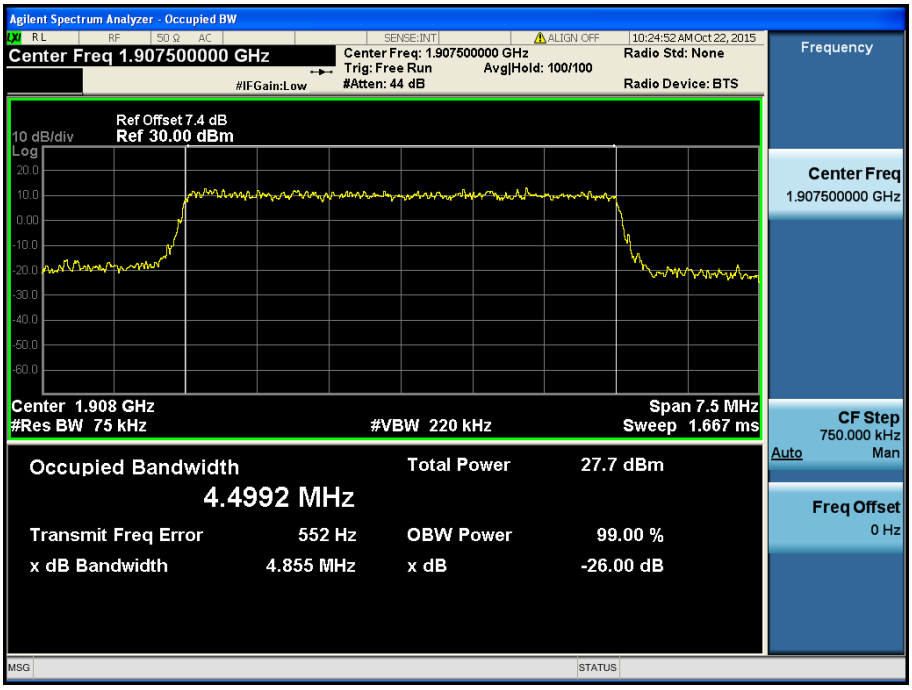
LTE Band 2 / 10 MHz / QPSK - RB Size 50



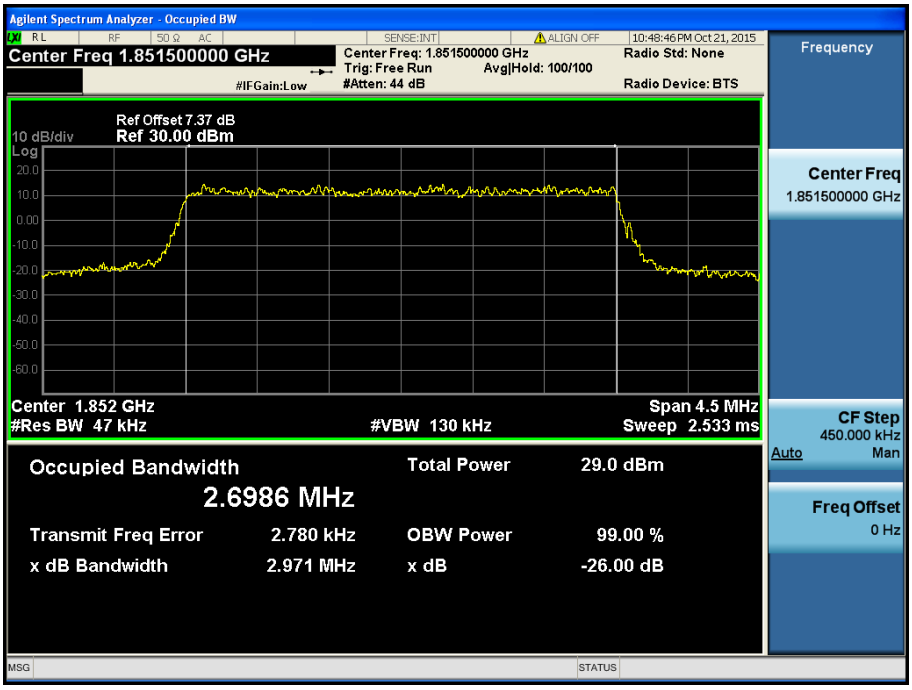
LTE Band 2 / 10 MHz / 16QAM - RB Size 50



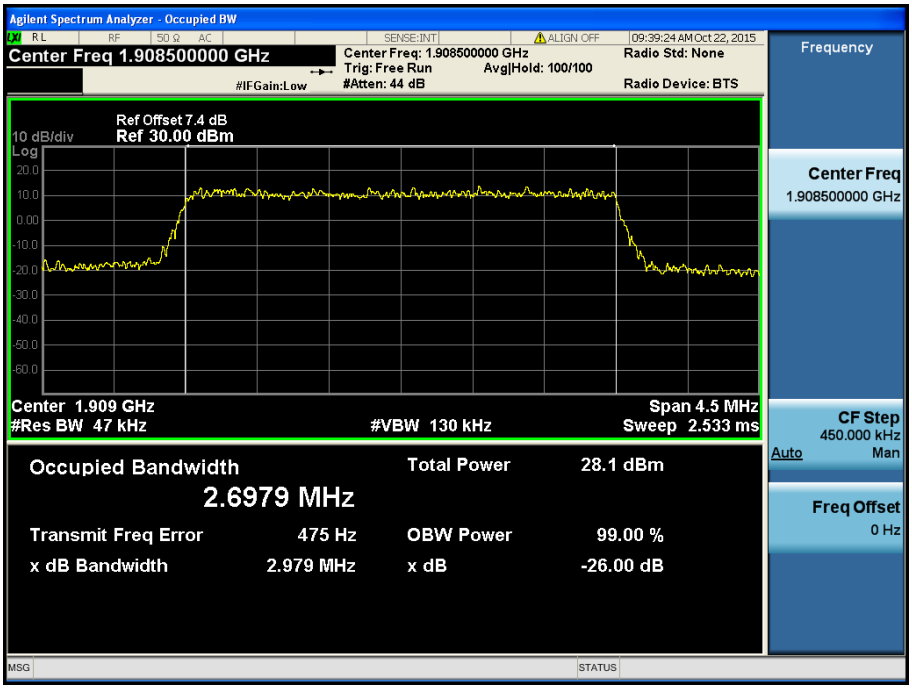
LTE Band 2 / 5 MHz / QPSK - RB Size 25



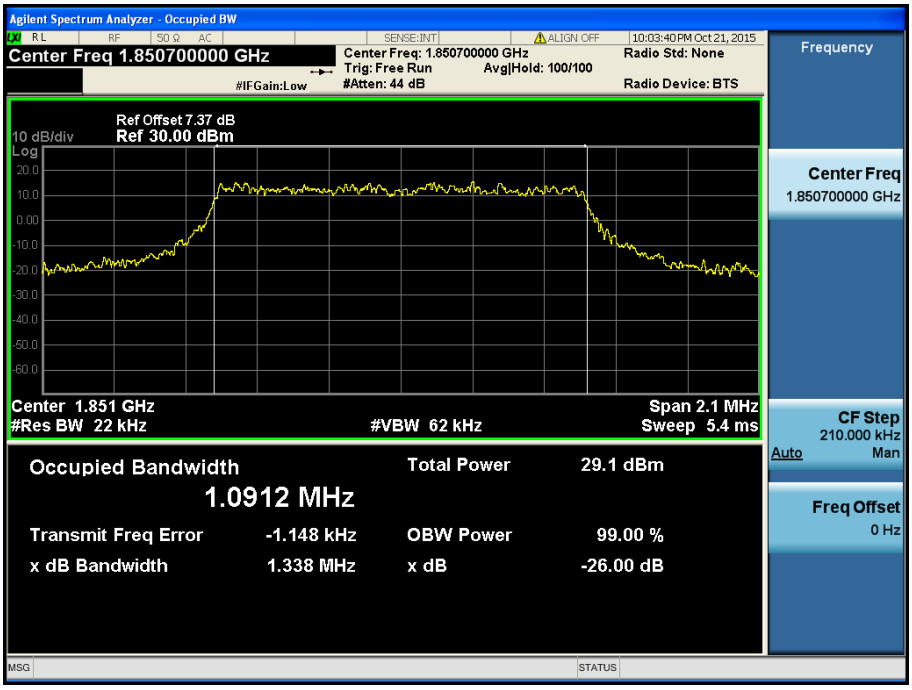
LTE Band 2 / 5 MHz / 16QAM - RB Size 25



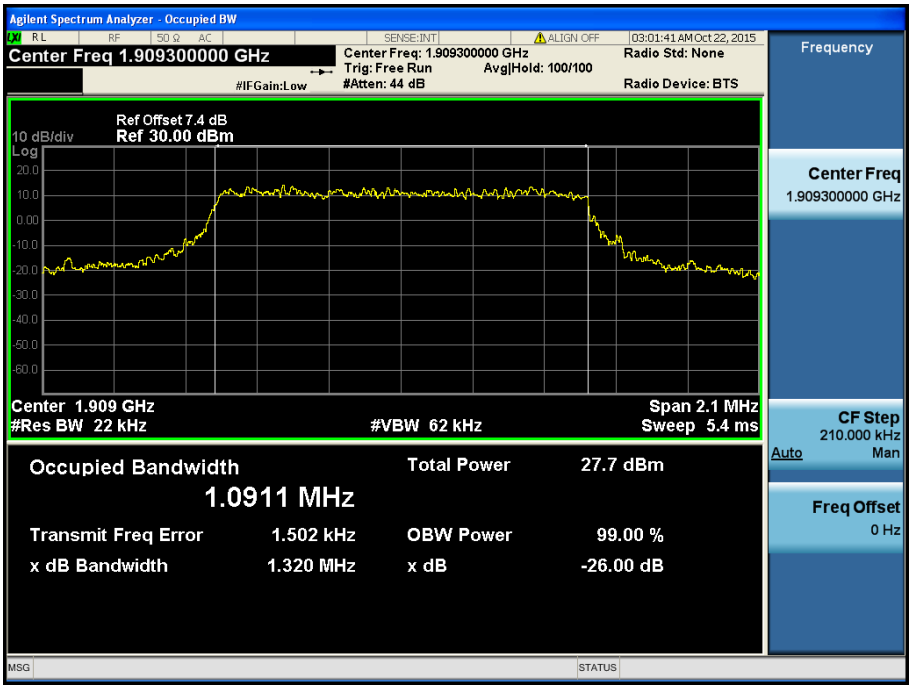
LTE Band 2 / 3 MHz / QPSK - RB Size 15



LTE Band 2 / 3 MHz / 16QAM - RB Size 15



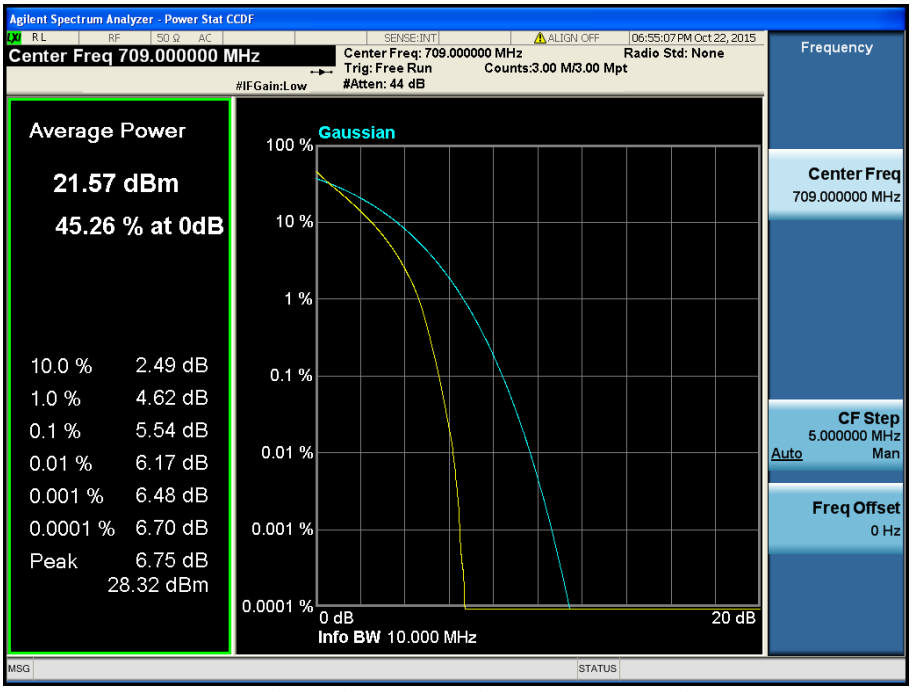
LTE Band 2 / 1.4 MHz / QPSK - RB Size 6



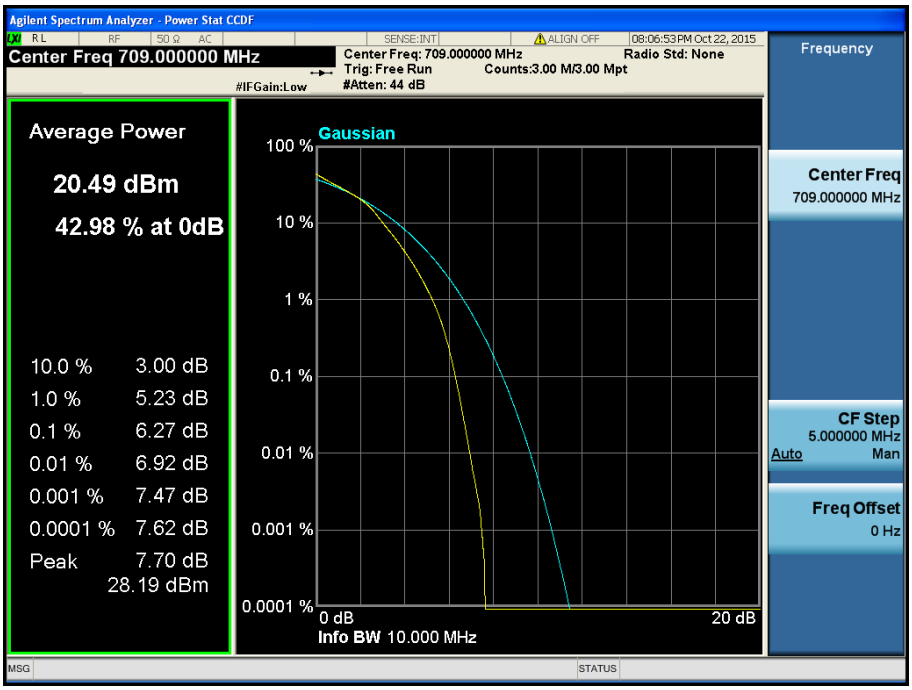
LTE Band 2 / 1.4 MHz / 16QAM - RB Size 6

8.2 PEAK TO AVERAGE RATIO

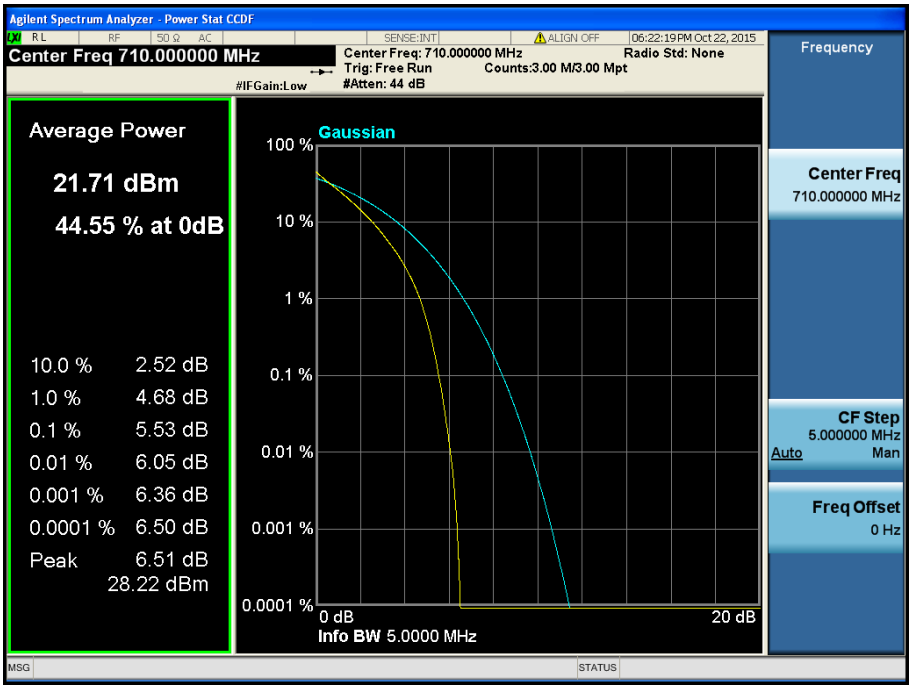
8.2.1 LTE Band 17



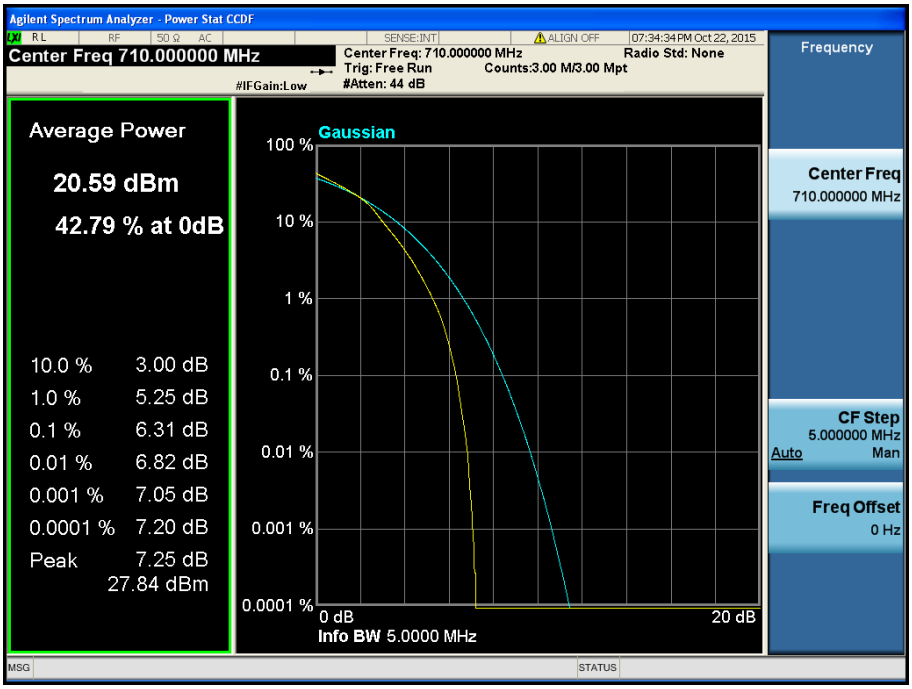
LTE Band 17 / 10 MHz / QPSK - RB Size 50



LTE Band 17 / 10 MHz / 16QAM - RB Size 50

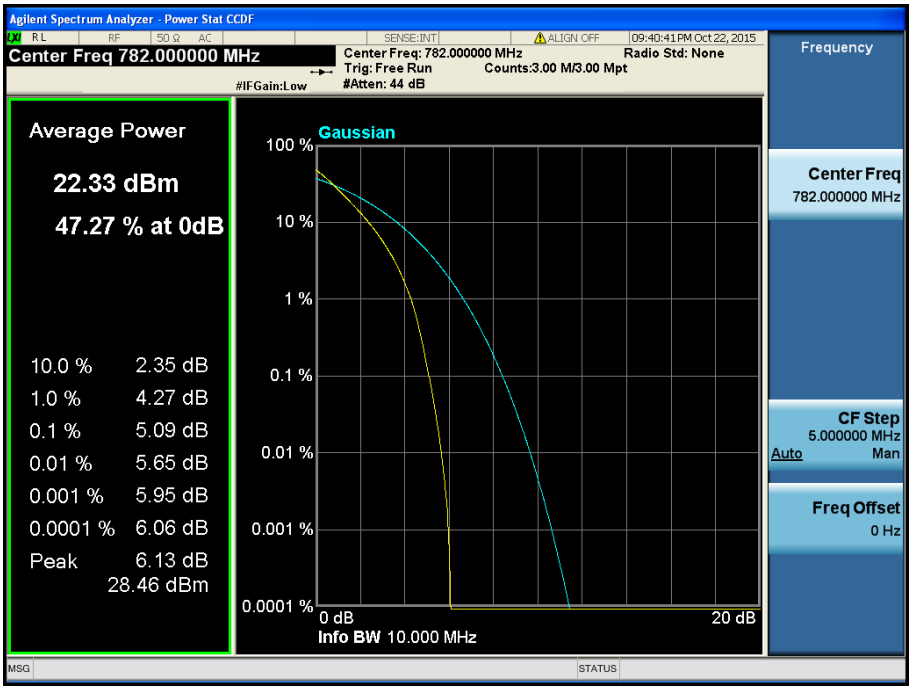


LTE Band 17 / 5 MHz / QPSK - RB Size 25

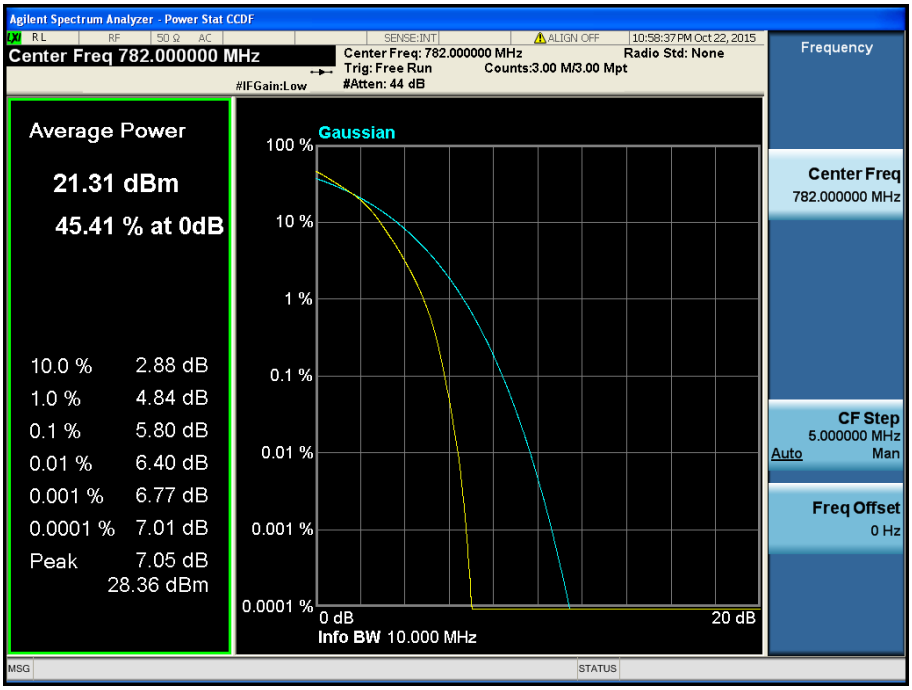


LTE Band 17 / 5 MHz / 16QAM - RB Size 25

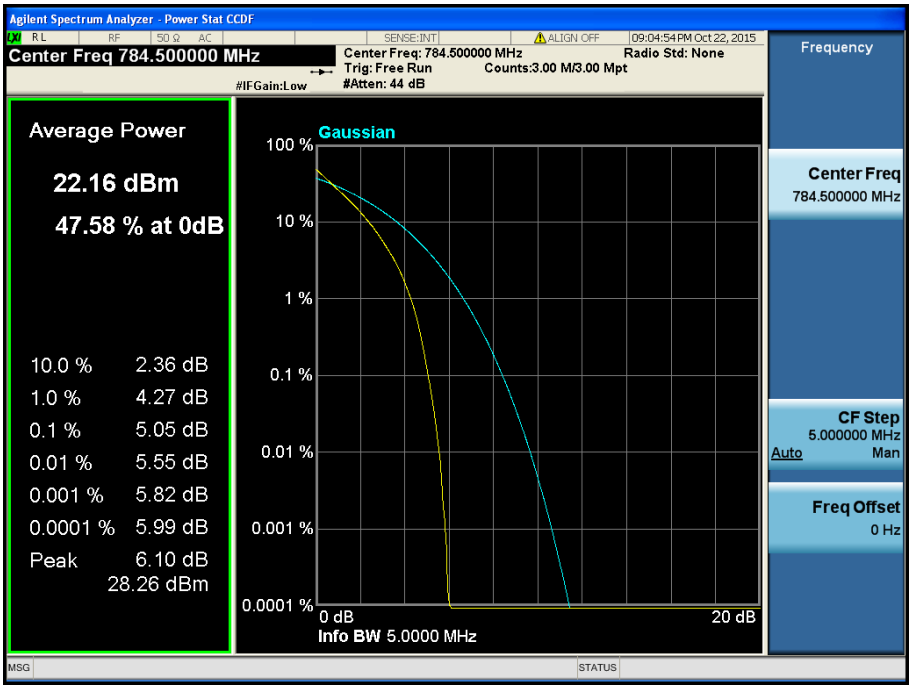
8.2.2 LTE Band 13



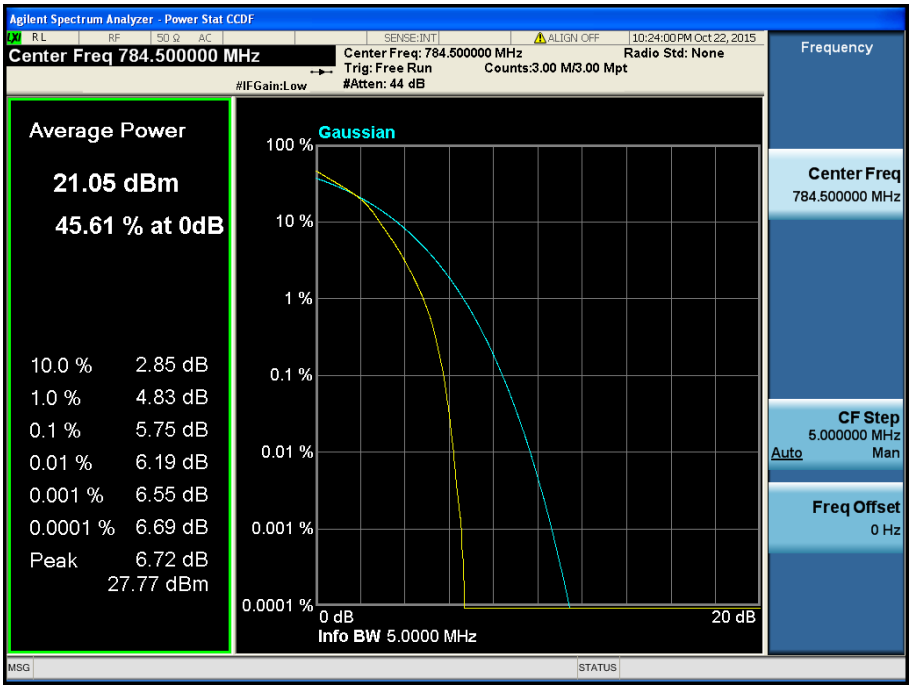
LTE Band 13 / 10 MHz / QPSK - RB Size 50



LTE Band 13 / 10 MHz / 16QAM - RB Size 50

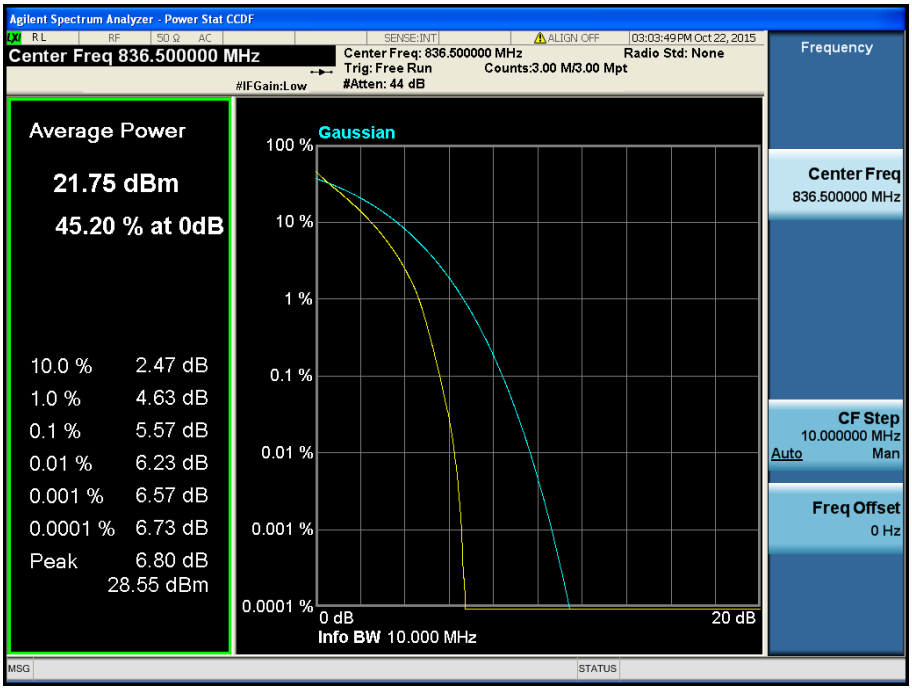


LTE Band 13 / 5 MHz / QPSK - RB Size 25

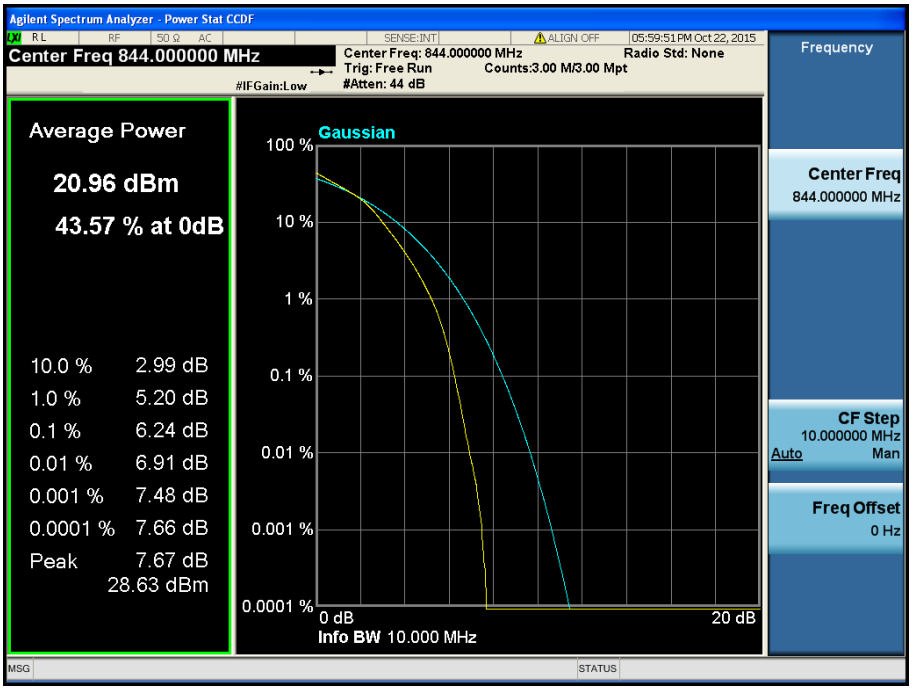


LTE Band 13 / 5 MHz / 16QAM - RB Size 25

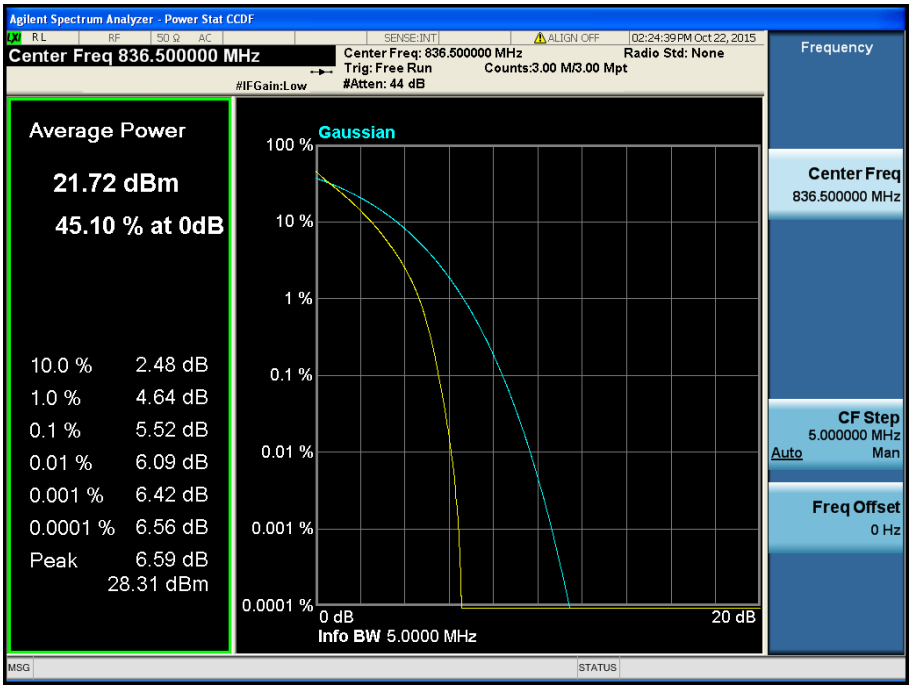
8.2.3 LTE Band 5



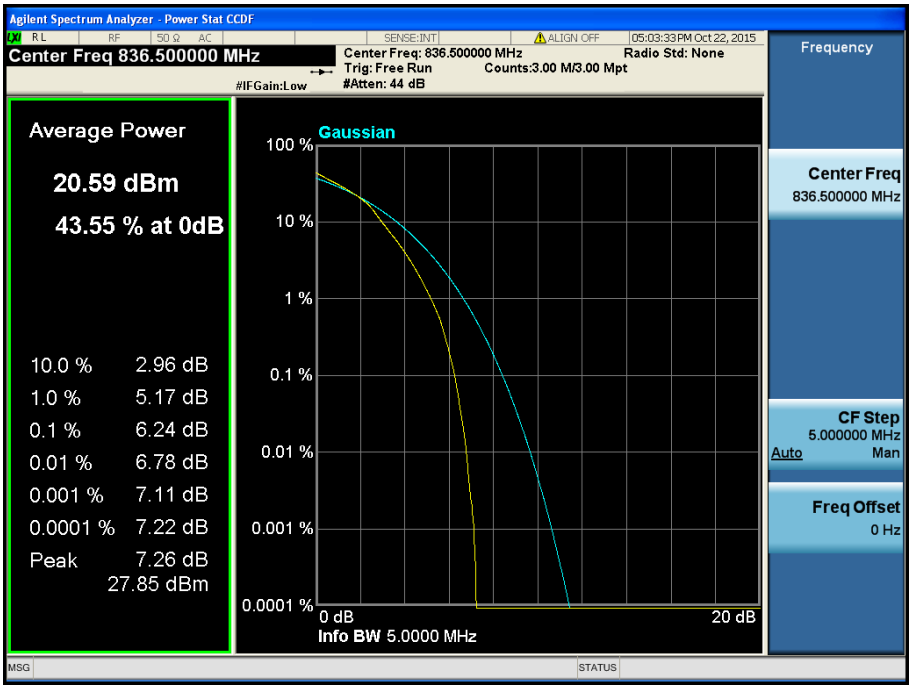
LTE Band 5 / 10 MHz / QPSK - RB Size 50



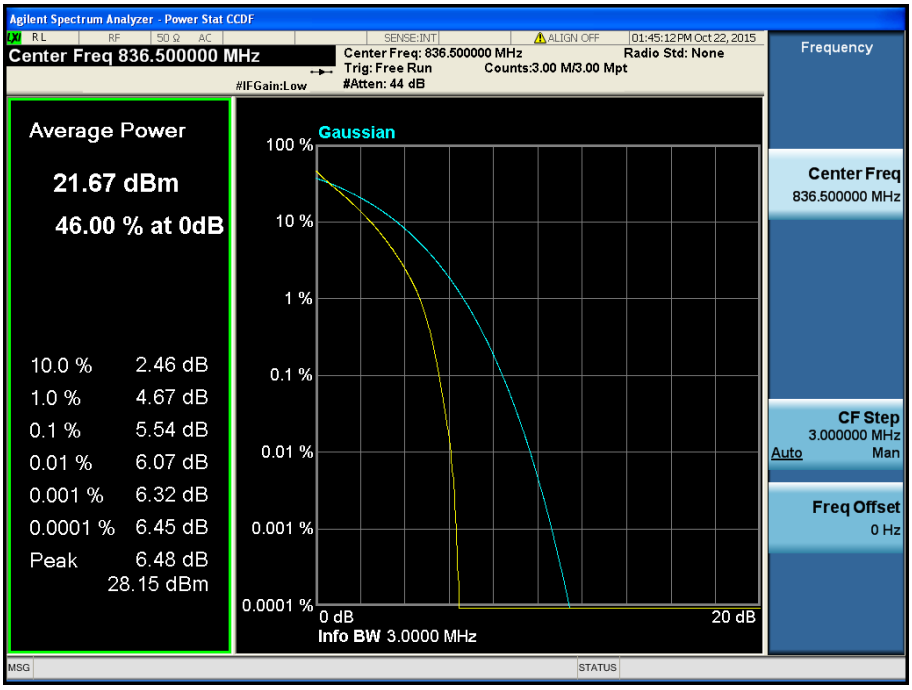
LTE Band 5 / 10 MHz / 16QAM - RB Size 50



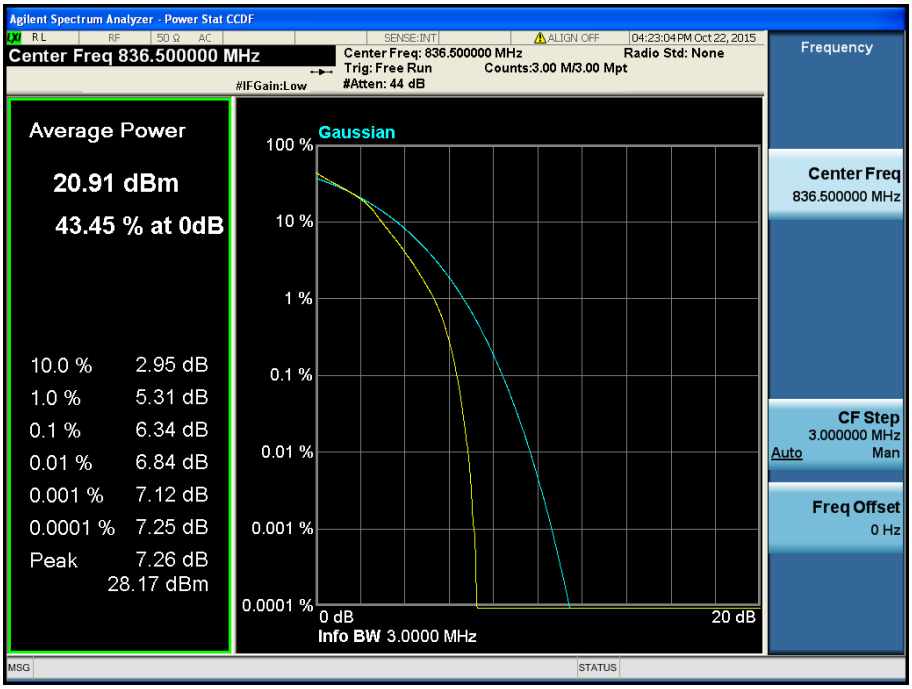
LTE Band 5 / 5 MHz / QPSK - RB Size 25



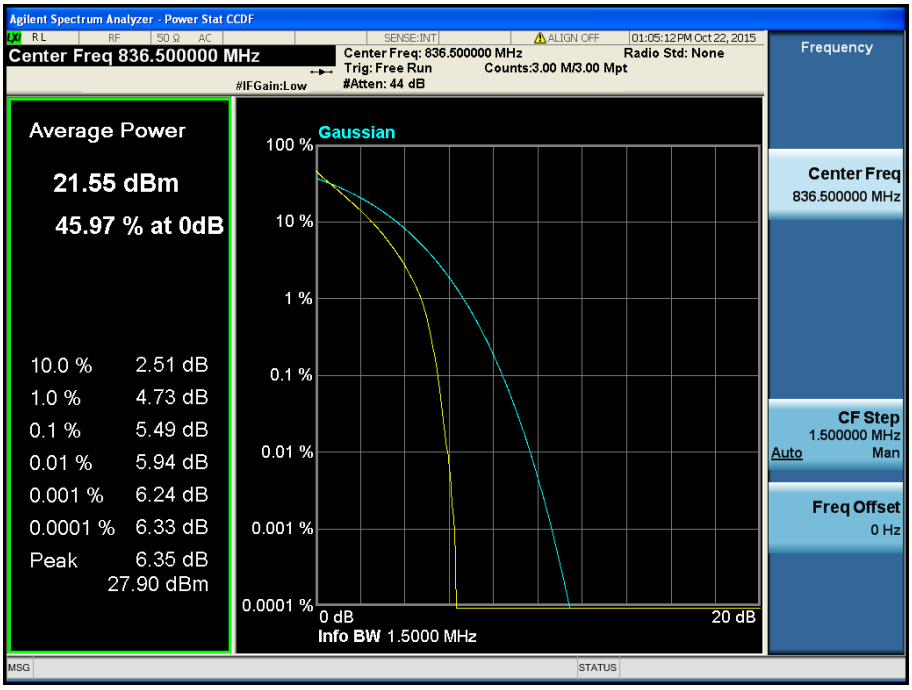
LTE Band 5 / 5 MHz / 16QAM - RB Size 25



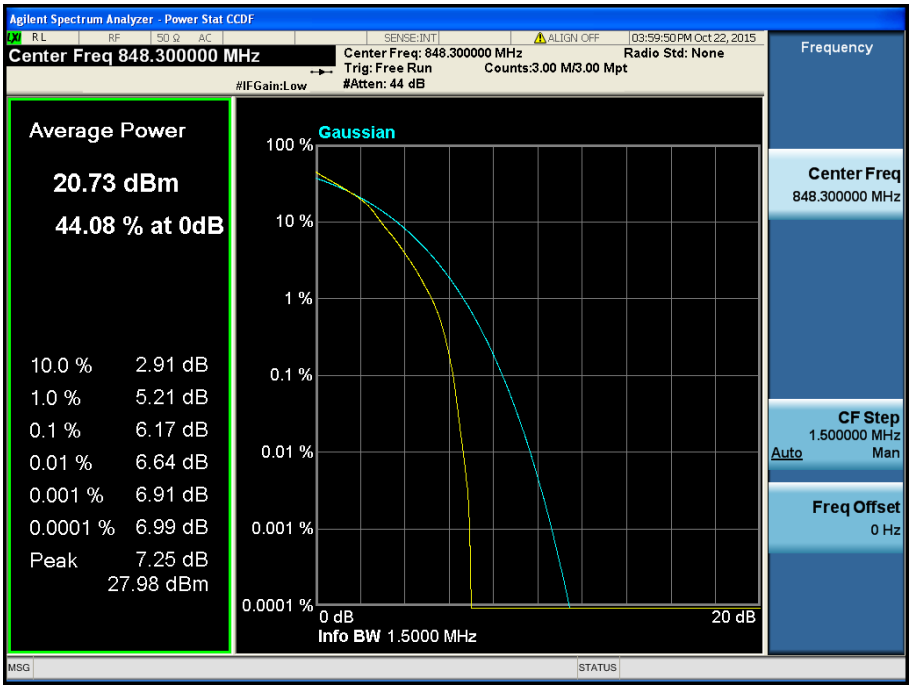
LTE Band 5 / 3 MHz / QPSK - RB Size 15



LTE Band 5 / 3 MHz / 16QAM - RB Size 15

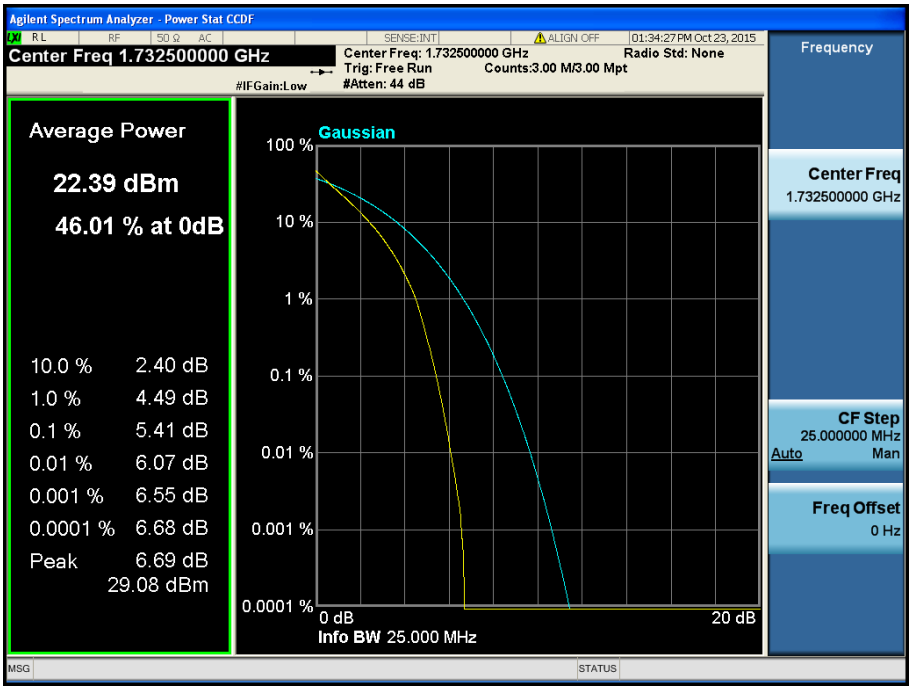


LTE Band 5 / 1.4 MHz / QPSK - RB Size 6

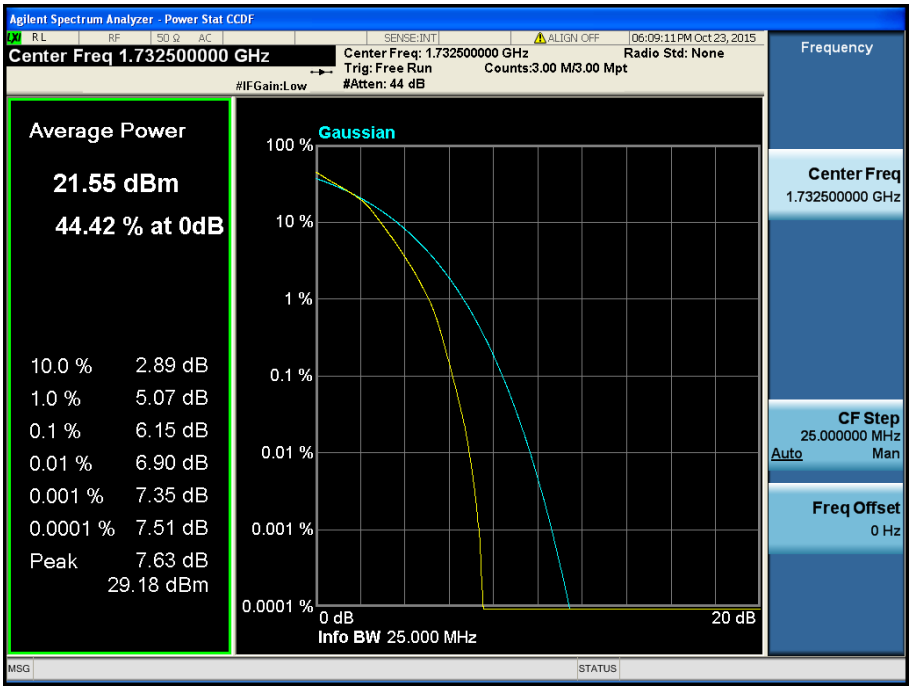


LTE Band 5 / 1.4 MHz / 16QAM - RB Size 6

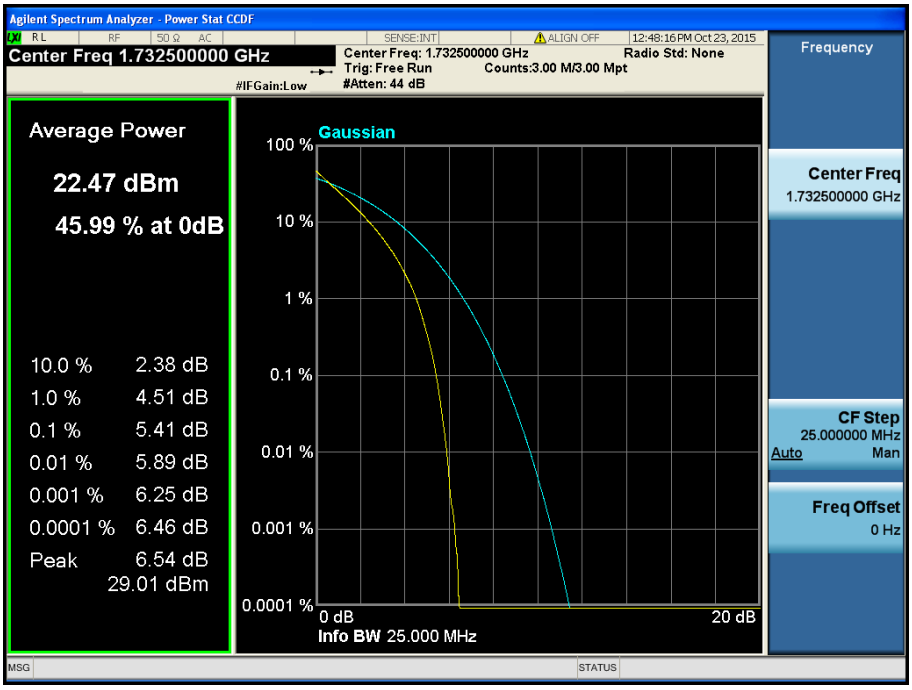
8.2.4 LTE Band 4



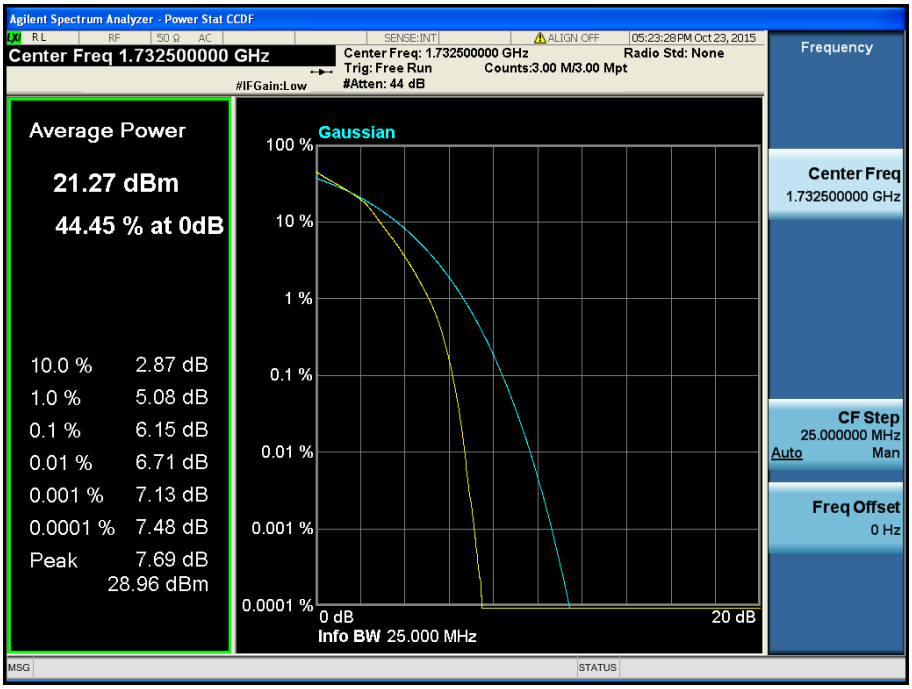
LTE Band 4 / 20 MHz / QPSK - RB Size 100



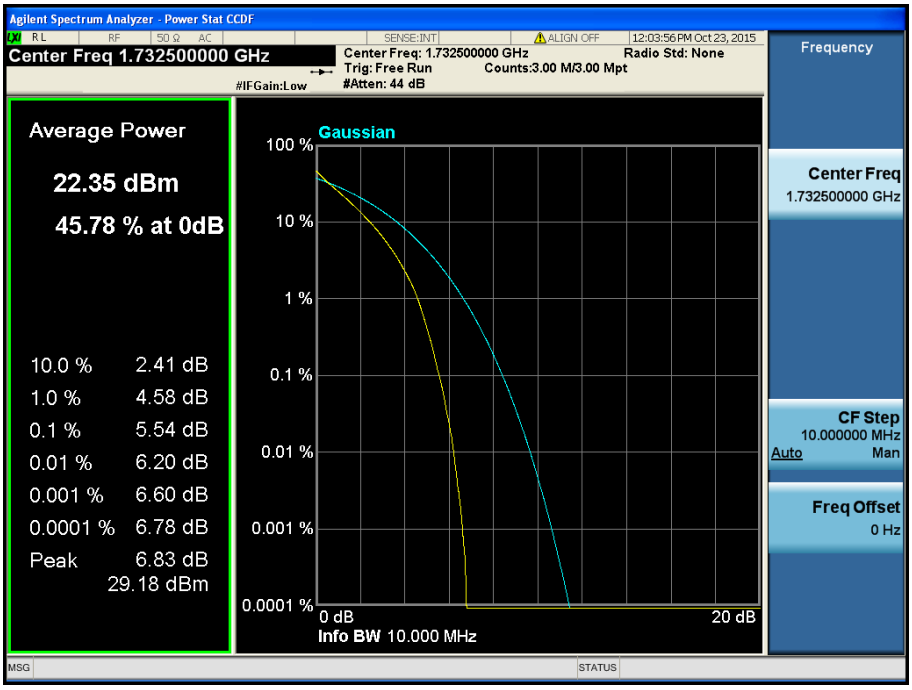
LTE Band 4 / 20 MHz / 16QAM - RB Size 100



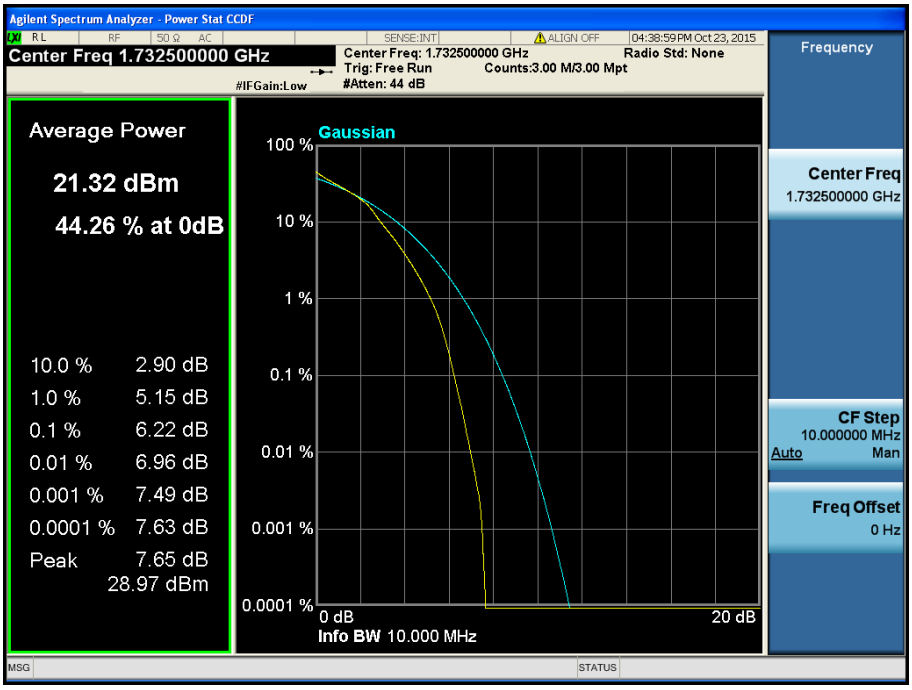
LTE Band 4 / 15 MHz / QPSK - RB Size 75



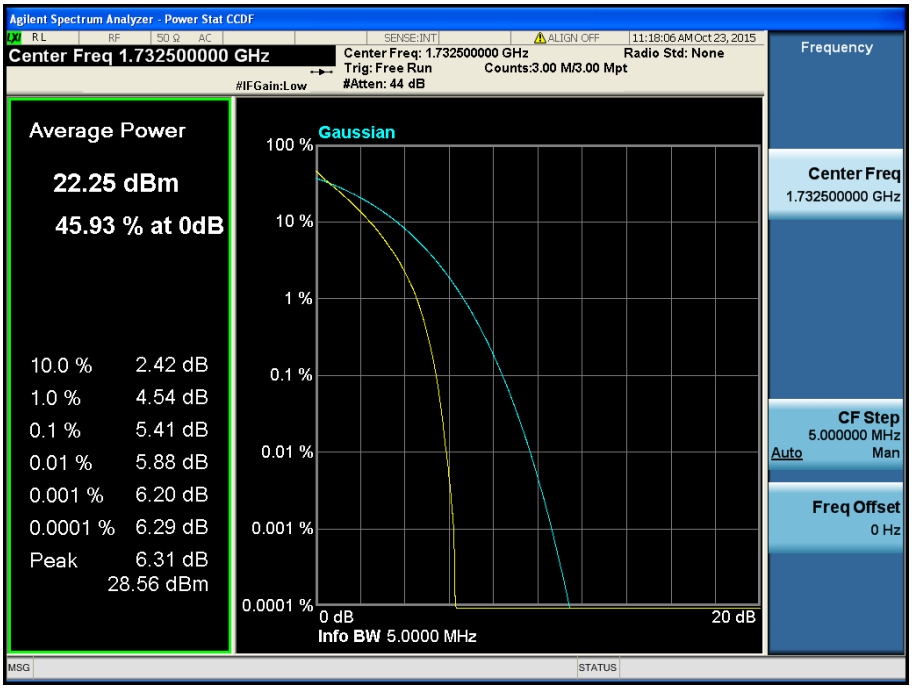
LTE Band 4 / 15 MHz / 16QAM - RB Size 75



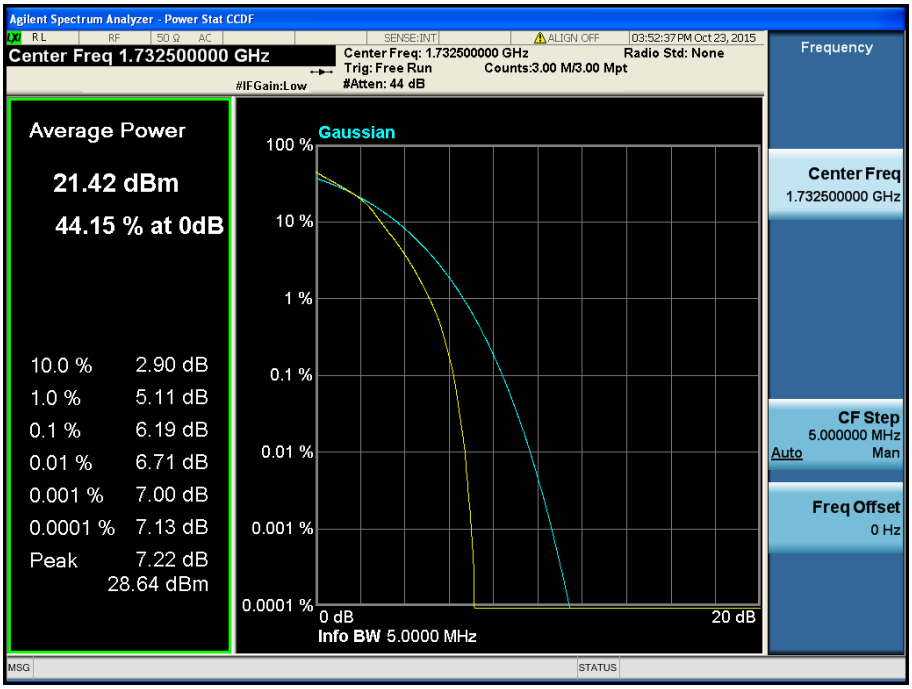
LTE Band 4 / 10 MHz / QPSK - RB Size 50



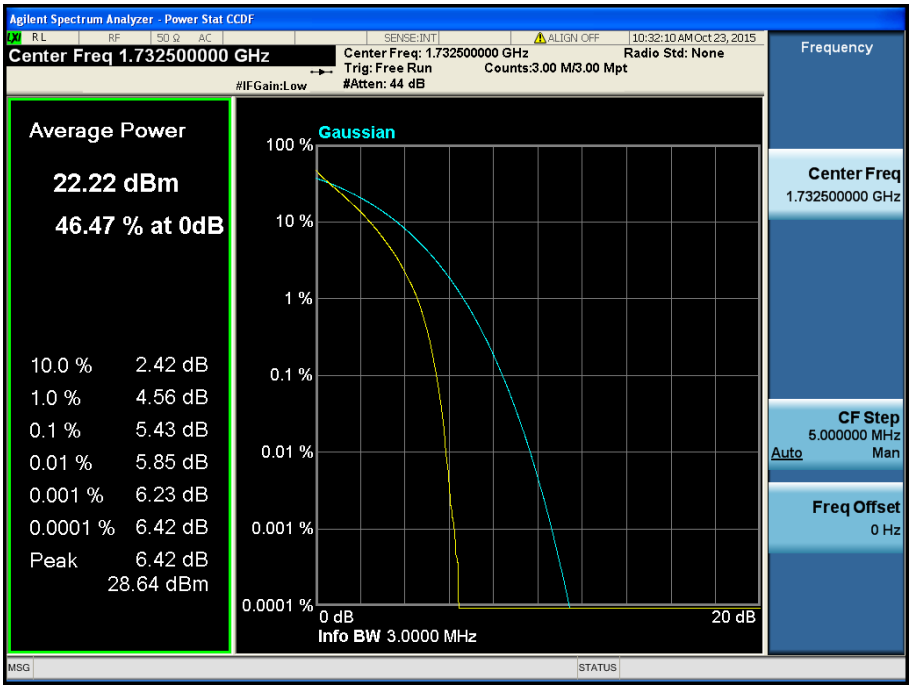
LTE Band 4 / 10 MHz / 16QAM - RB Size 50



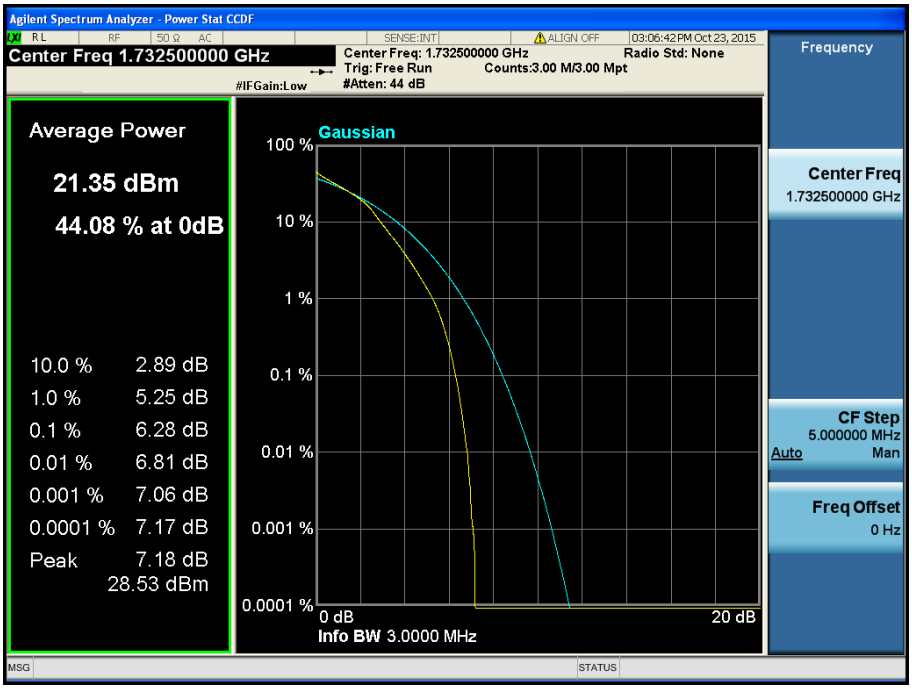
LTE Band 4 / 5 MHz / QPSK - RB Size 25



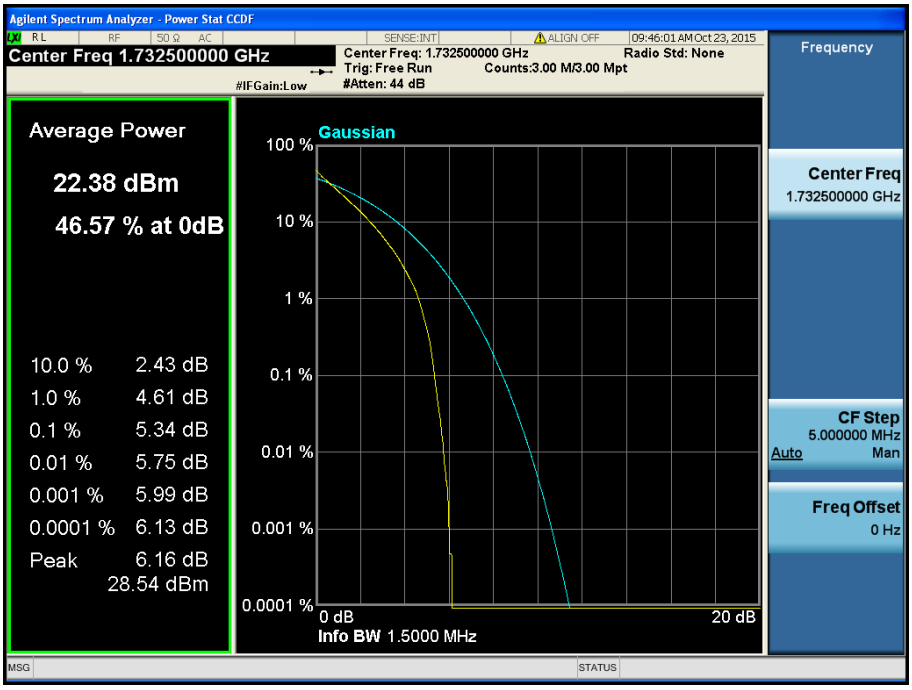
LTE Band 4 / 5 MHz / 16QAM - RB Size 25



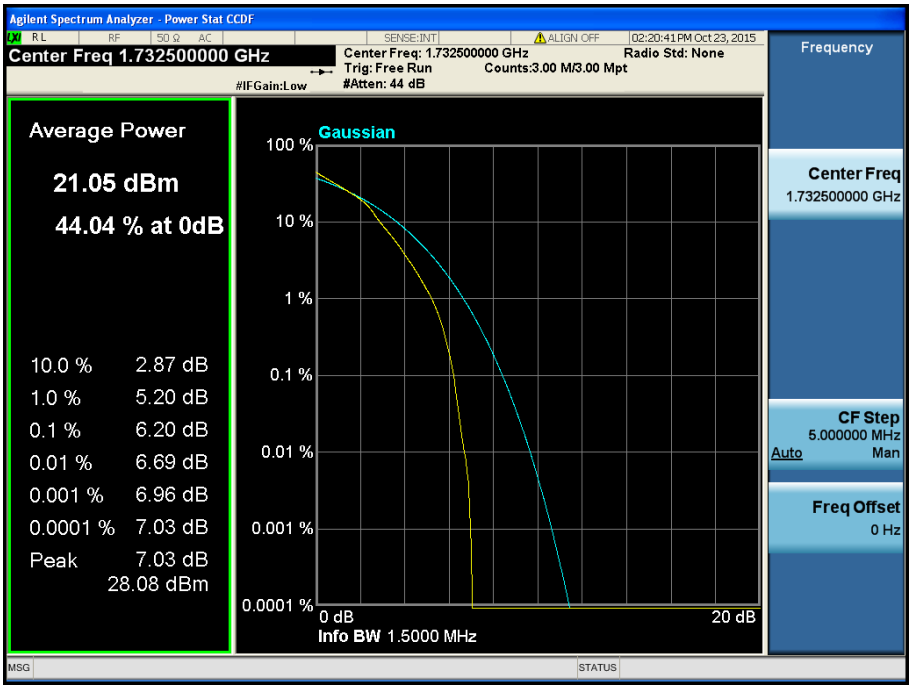
LTE Band 4 / 3 MHz / QPSK - RB Size 15



LTE Band 4 / 3 MHz / 16QAM - RB Size 15

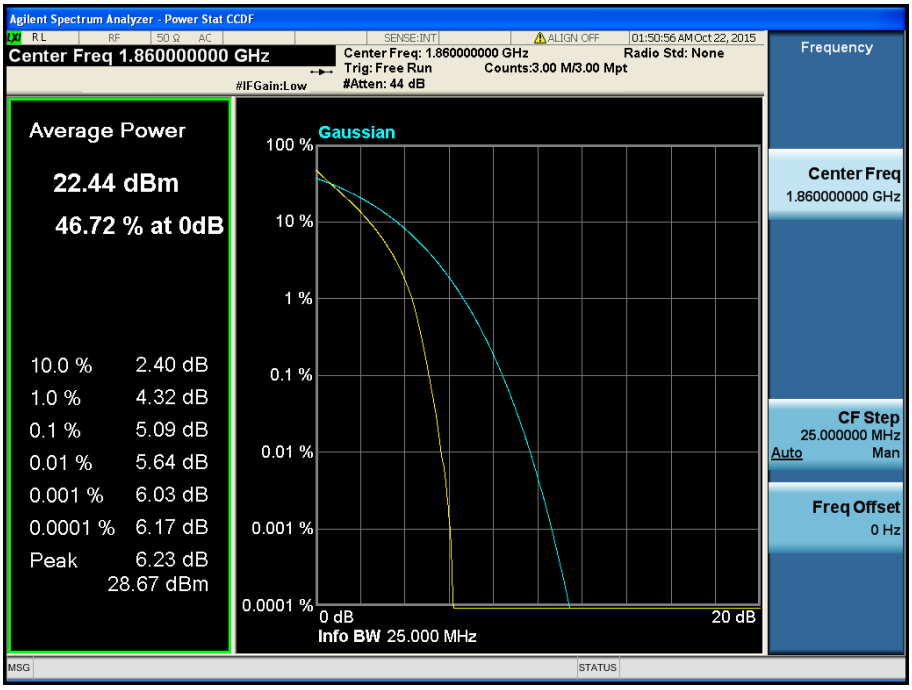


LTE Band 4 / 1.4 MHz / QPSK - RB Size 6

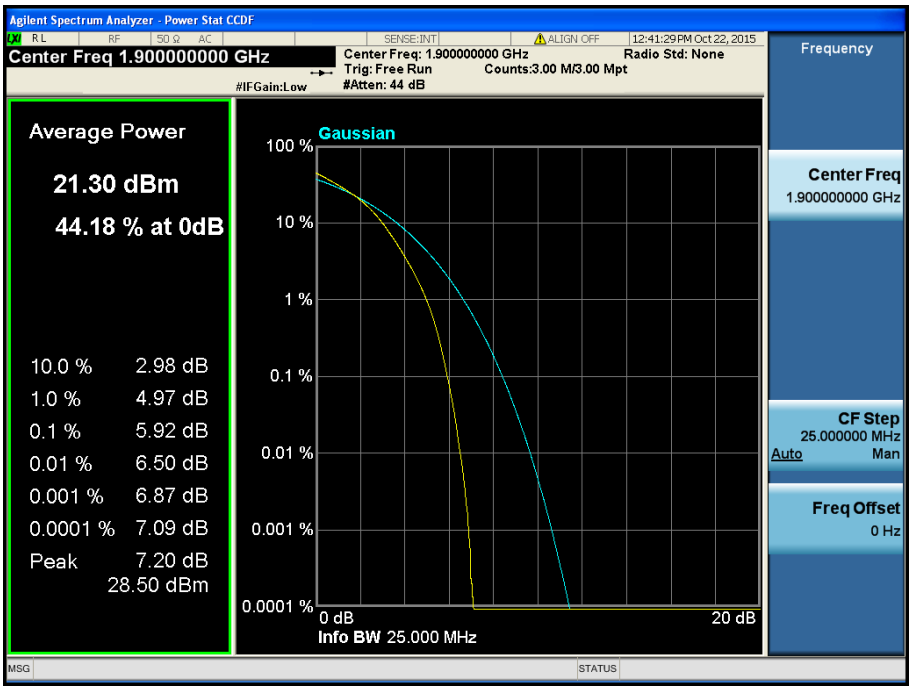


LTE Band 4 / 1.4 MHz / 16QAM - RB Size 6

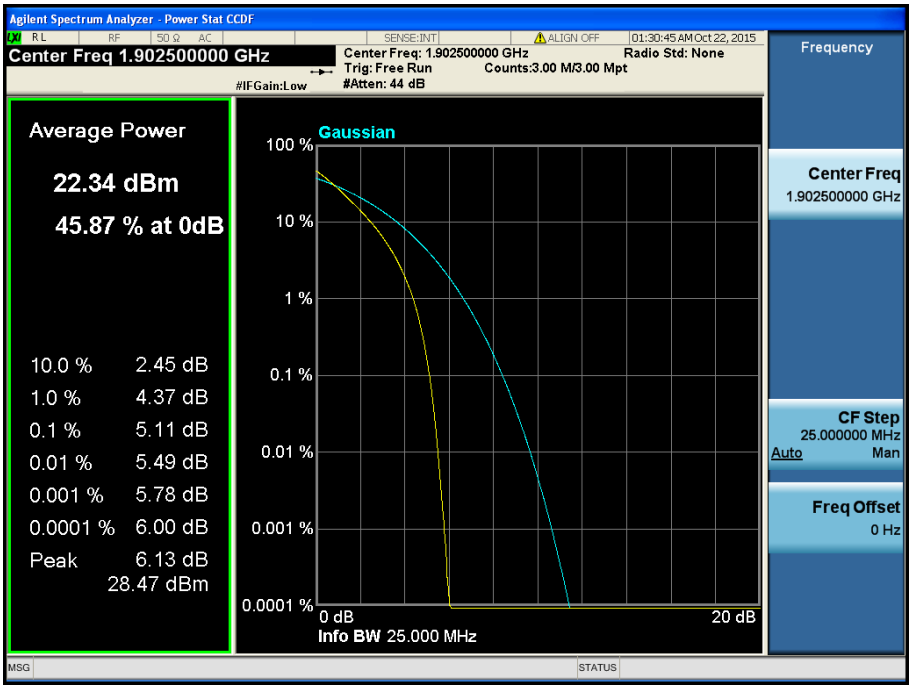
8.2.5 LTE Band 2



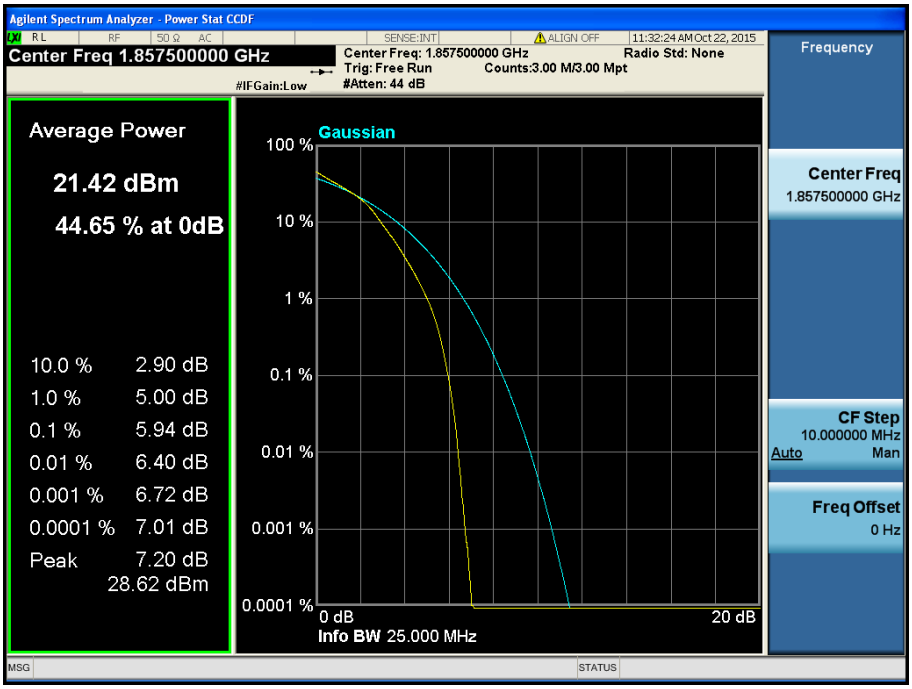
LTE Band 2 / 20 MHz / QPSK - RB Size 100



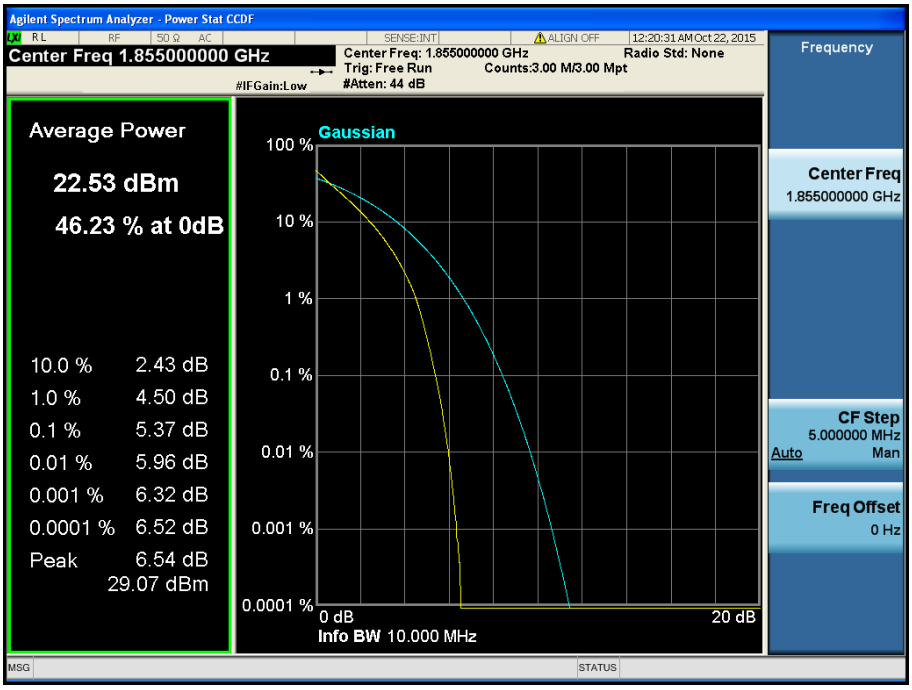
LTE Band 2 / 20 MHz / 16QAM - RB Size 100



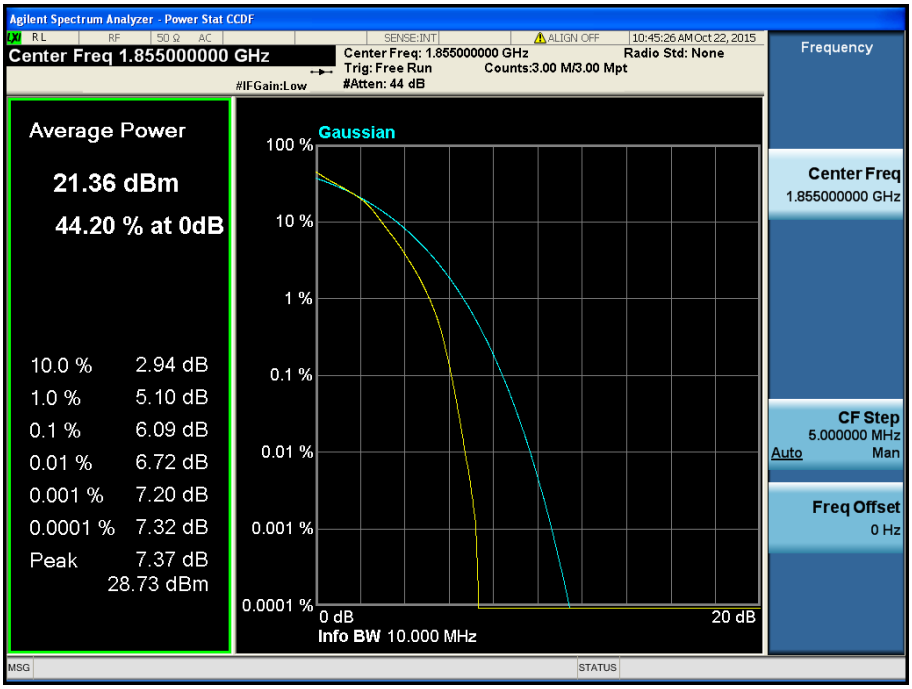
LTE Band 2 / 15 MHz / QPSK - RB Size 75



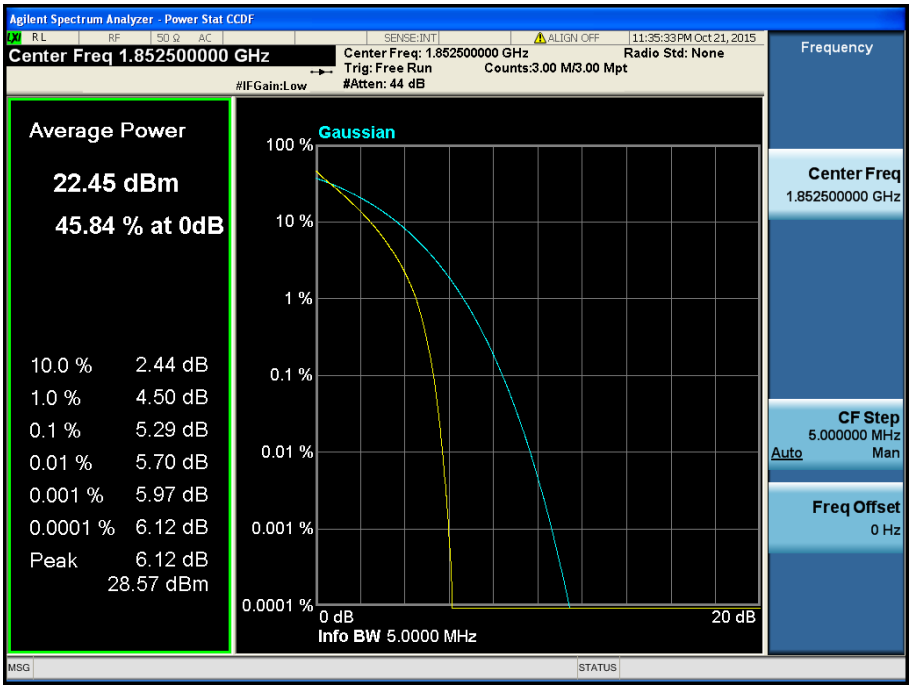
LTE Band 2 / 15 MHz / 16QAM - RB Size 75



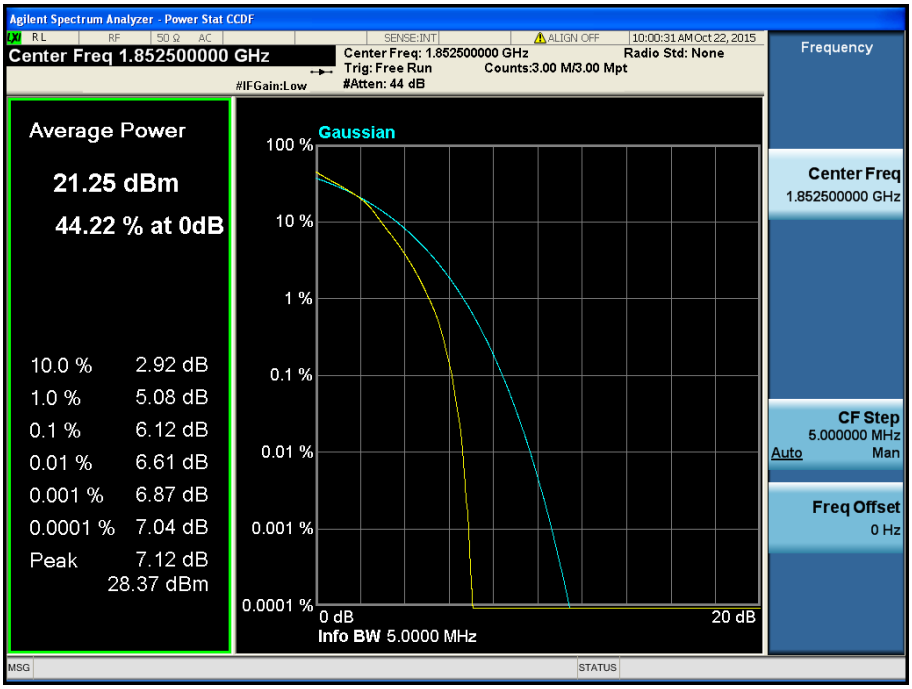
LTE Band 2 / 10 MHz / QPSK - RB Size 50



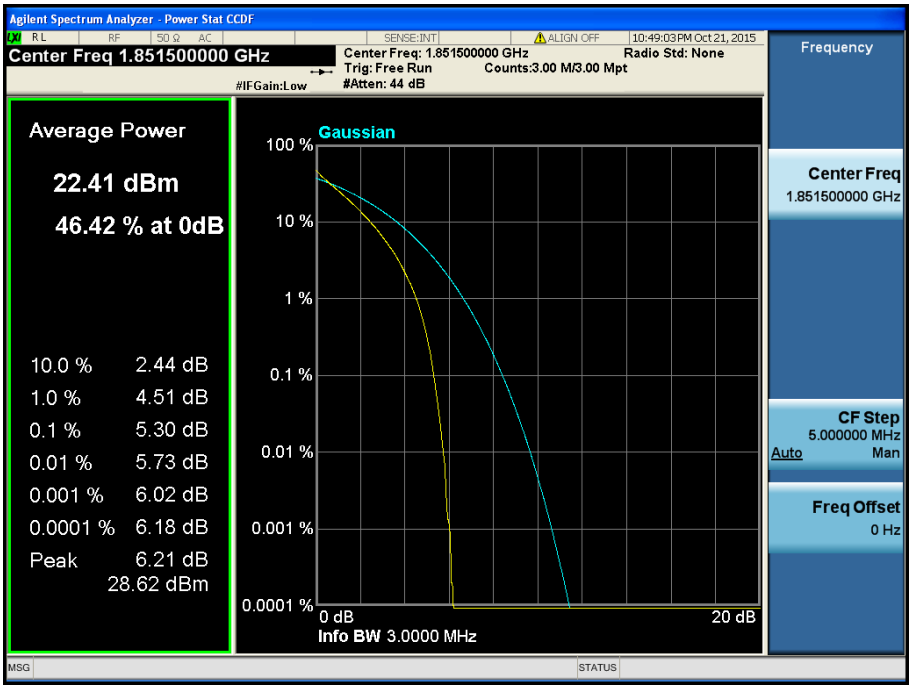
LTE Band 2 / 10 MHz / 16QAM - RB Size 50



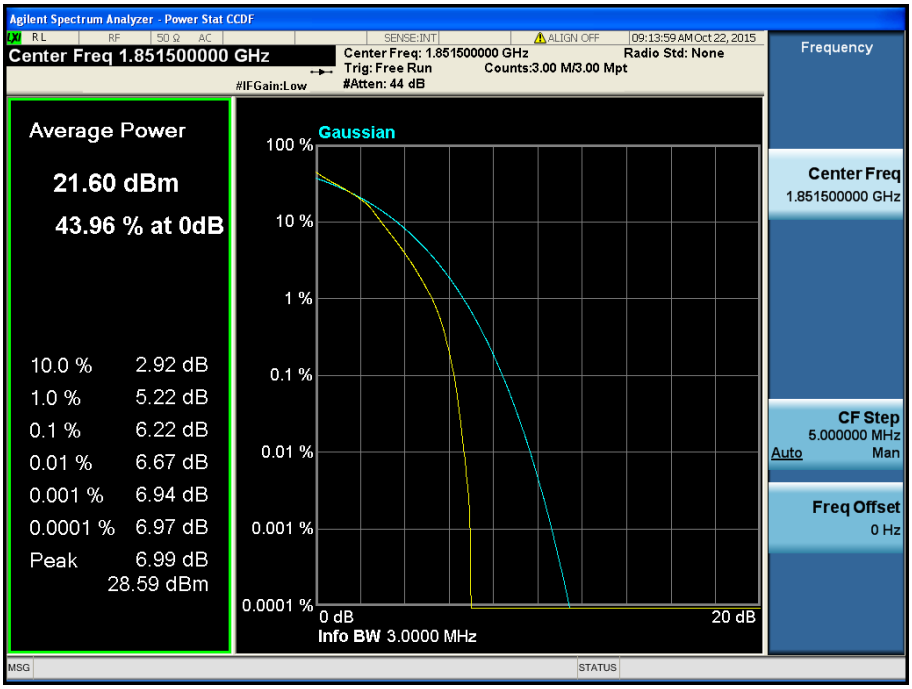
LTE Band 2 / 5 MHz / QPSK - RB Size 25



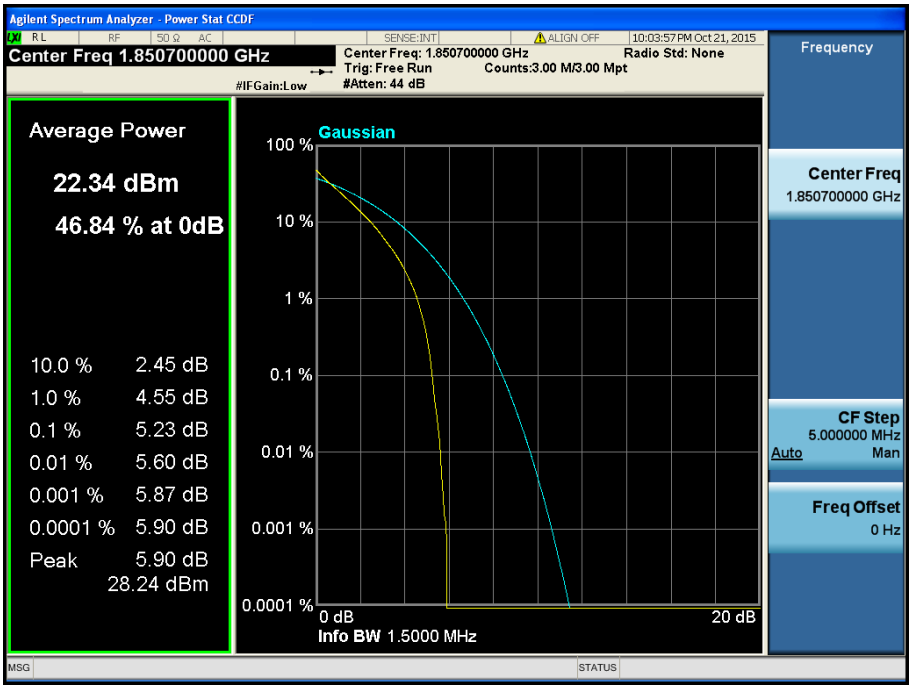
LTE Band 2 / 5 MHz / 16QAM - RB Size 25



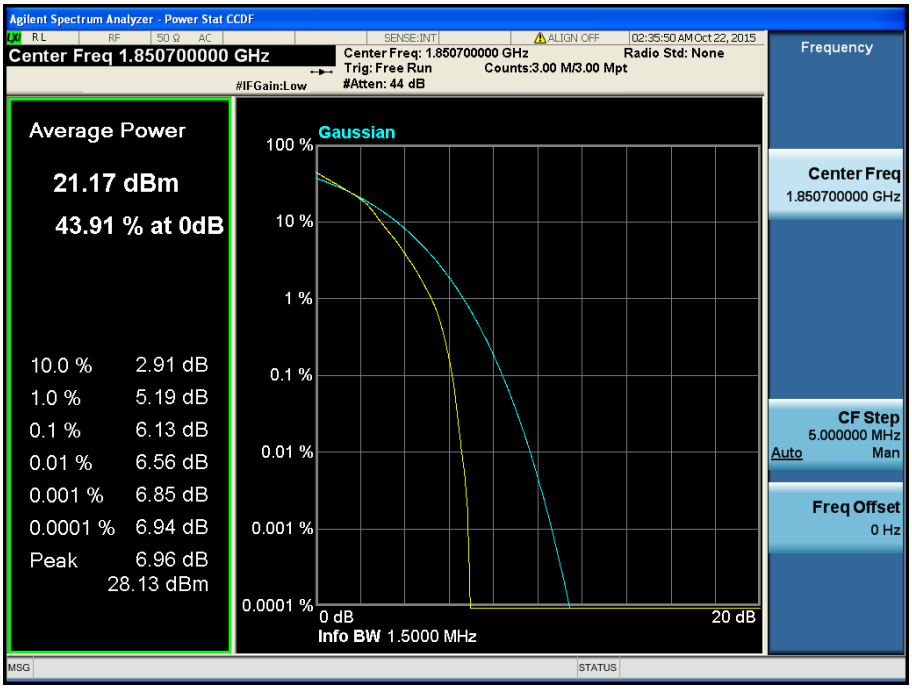
LTE Band 2 / 3 MHz / QPSK - RB Size 15



LTE Band 2 / 3 MHz / 16QAM - RB Size 15



LTE Band 2 / 1.4 MHz / QPSK - RB Size 6



LTE Band 2 / 1.4 MHz / 16QAM - RB Size 6

8.3 BAND EDGE EMISSIONS(Conducted)

8.3.1 LTE Band 17

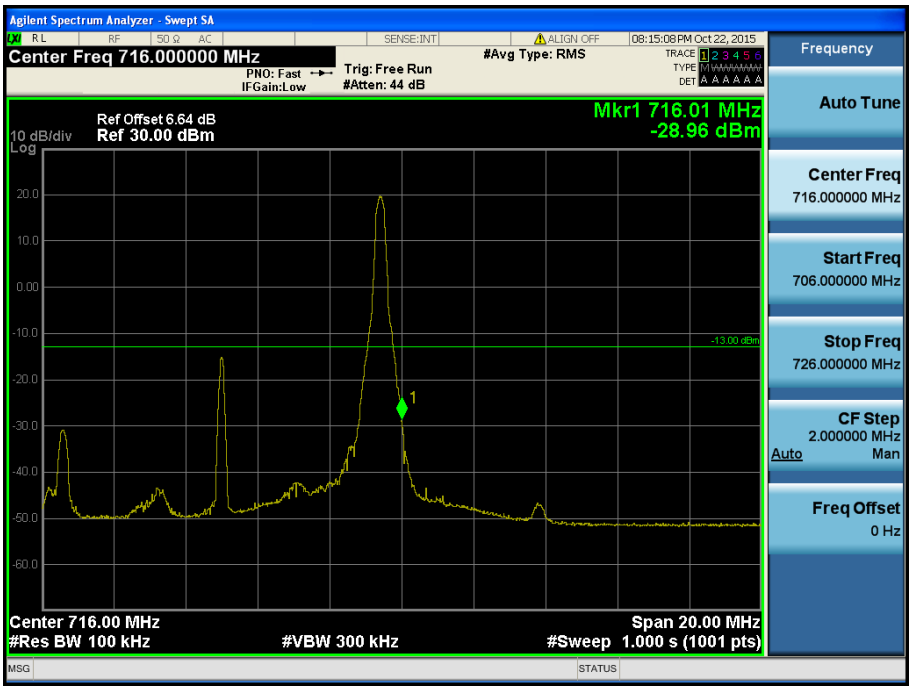
- Lower Band Edge

LTE Band 17 / 10MHz / QPSK - RB Size/Offset (25/0)

- Lower Extended Band Edge

LTE Band 17 / 10MHz / QPSK - RB Size/Offset (25/0)

- Upper Band Edge

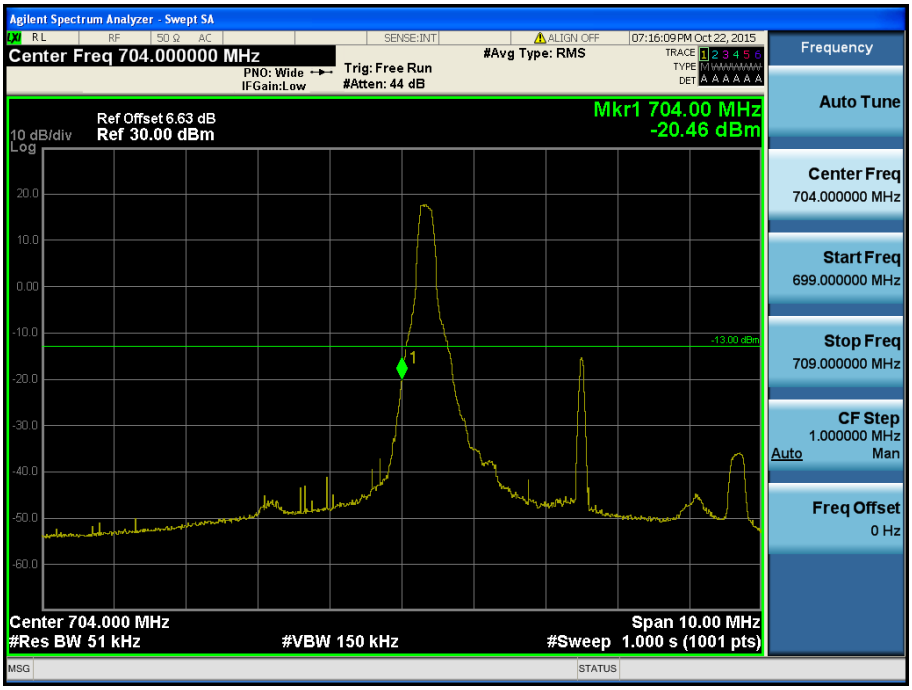


LTE Band 17 / 10MHz / 16QAM - RB Size/Offset (1/49)

- Upper Extended Band Edge

LTE Band 17 / 10MHz / QPSK - RB Size/Offset (25/25)

- Lower Band Edge

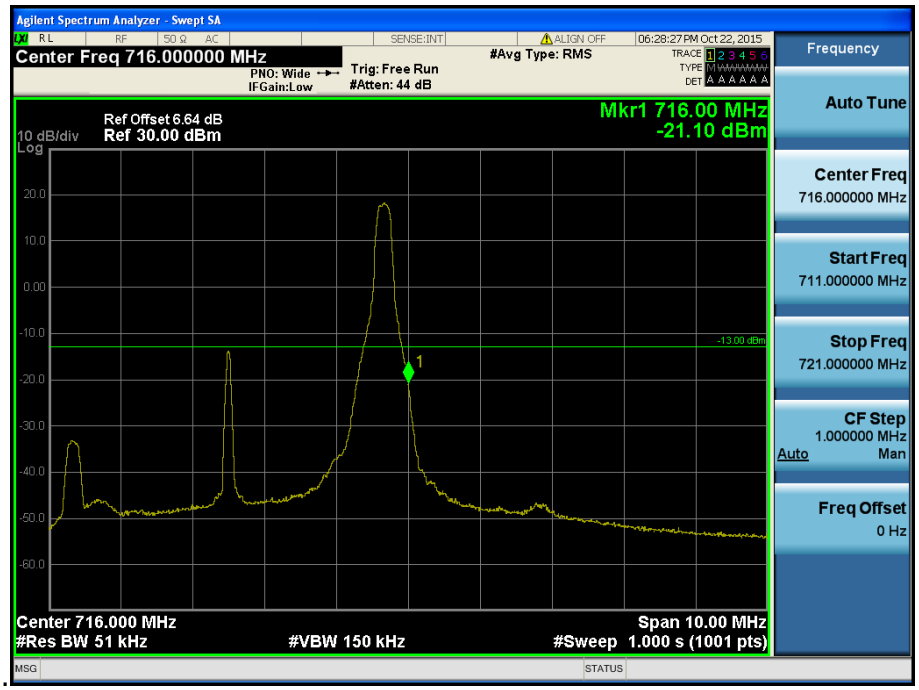


LTE Band 17 / 5MHz / 16QAM RB Size/Offset (1/0)

- Lower Extended Band Edge

LTE Band 17 / 5MHz / QPSK RB Size/Offset (12/0)

- Upper Band Edge



LTE Band 17 / 5MHz / QPSK - RB Size/Offset (1/24)

- Upper Extended Band Edge

LTE Band 17 / 5MHz / 16QAM - RB Size/Offset (1/24)

8.3.2 LTE Band 13

- Lower Band Edge

LTE Band 13 / 10MHz / QPSK - RB Size/Offset (25/0)

- Lower Extended Band Edge

LTE Band 13 / 10MHz / QPSK - RB Size/Offset (25/0)

- Lower Extended Band Edge (763 ~ 775 MHz)

LTE Band 13 / 10MHz / QPSK - RB Size/Offset (50/0)

- Upper Band Edge

LTE Band 13 / 10MHz / QPSK - RB Size/Offset (25/25)

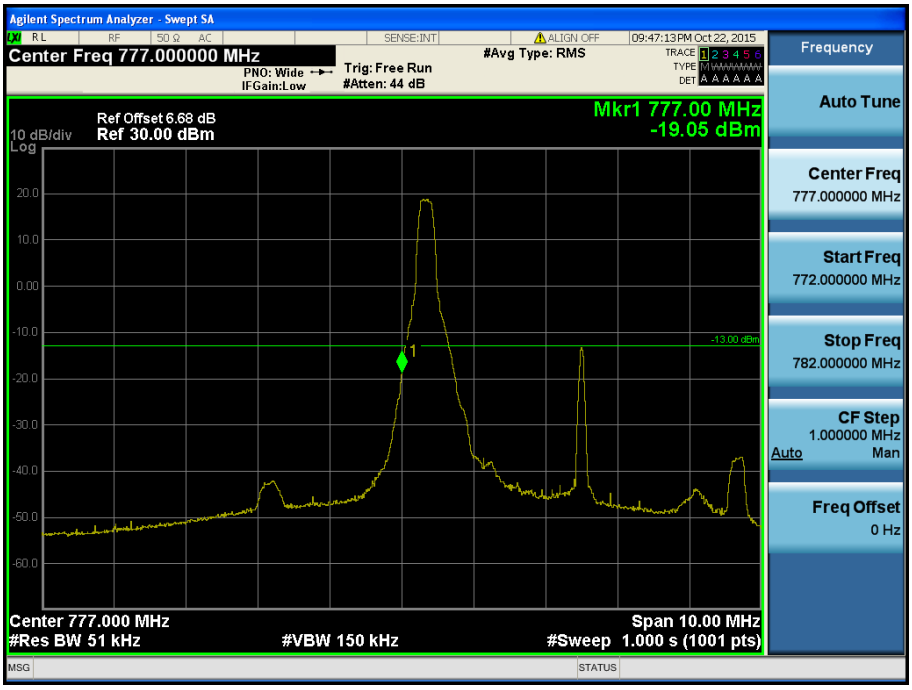
- Upper Extended Band Edge

LTE Band 13 / 10MHz / QPSK - RB Size/Offset (25/25)

- Upper Extended Band Edge (793 ~ 805 MHz)

LTE Band 13 / 10MHz / QPSK - RB Size/Offset (50/0)

- Lower Band Edge



LTE Band 13 / 5MHz / 16QAM RB Size/Offset (1/0)

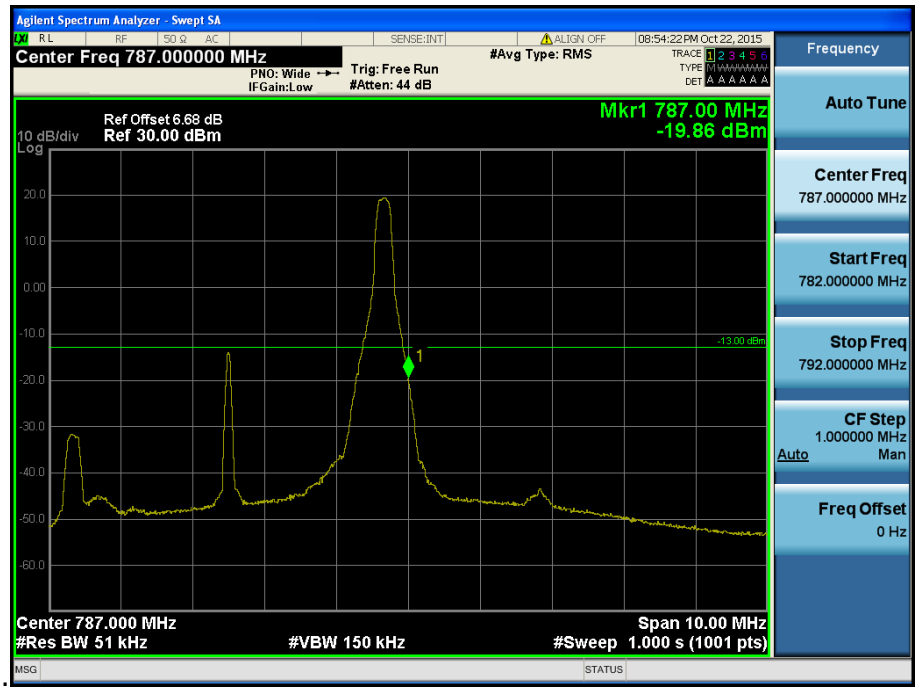
- Lower Extended Band Edge

LTE Band 13 / 5MHz / QPSK RB Size/Offset (12/0)

- Lower Extended Band Edge (763 ~ 775 MHz)

LTE Band 13 / 5MHz / QPSK - RB Size/Offset (25/0)

- Upper Band Edge



LTE Band 13 / 5MHz / QPSK - RB Size/Offset (1/24)

- Upper Extended Band Edge

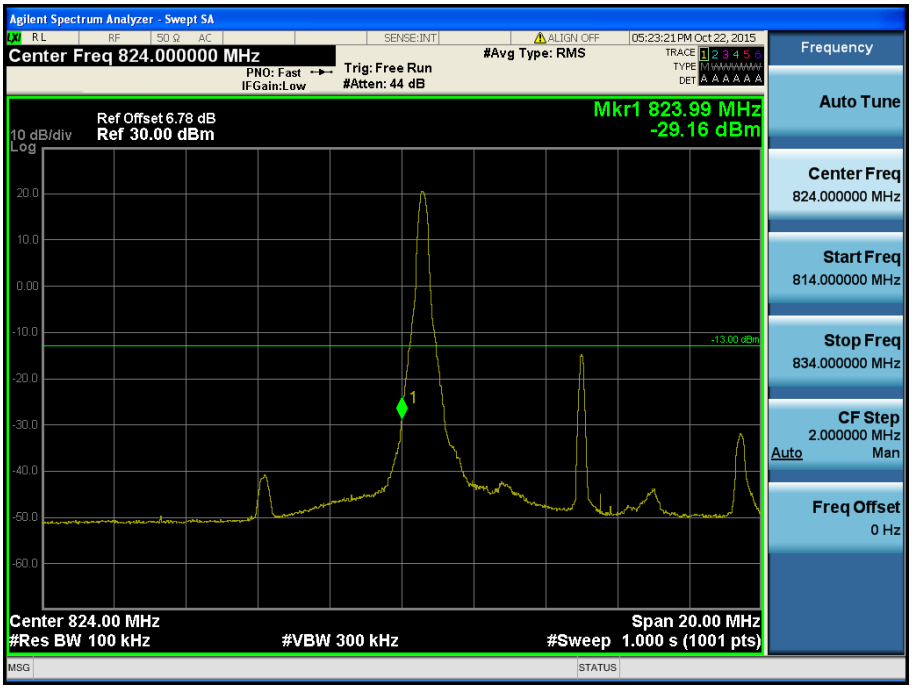
LTE Band 13 / 5MHz / QPSK - RB Size/Offset (12/13)

- Upper Extended Band Edge (793 ~ 805 MHz)

LTE Band 13 / 5MHz / QPSK - RB Size/Offset (25/0)

8.3.3 LTE Band 5

- Lower Band Edge

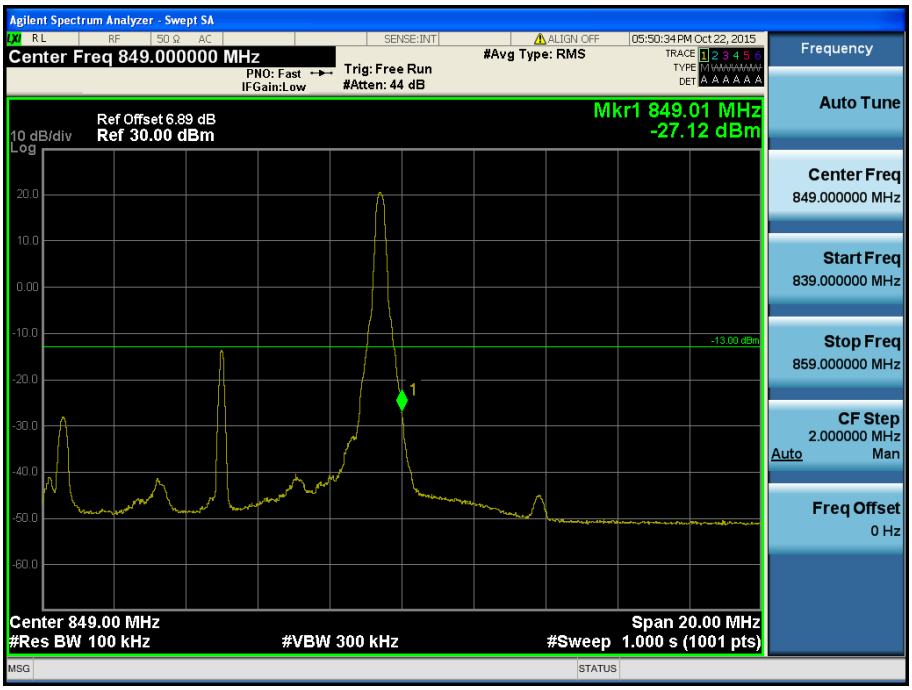


LTE Band 5 / 10MHz / 16QAM - RB Size/Offset (1/0)

- Lower Extended Band Edge

LTE Band 5 / 10MHz / 16QAM - RB Size/Offset (25/0)

- Upper Band Edge

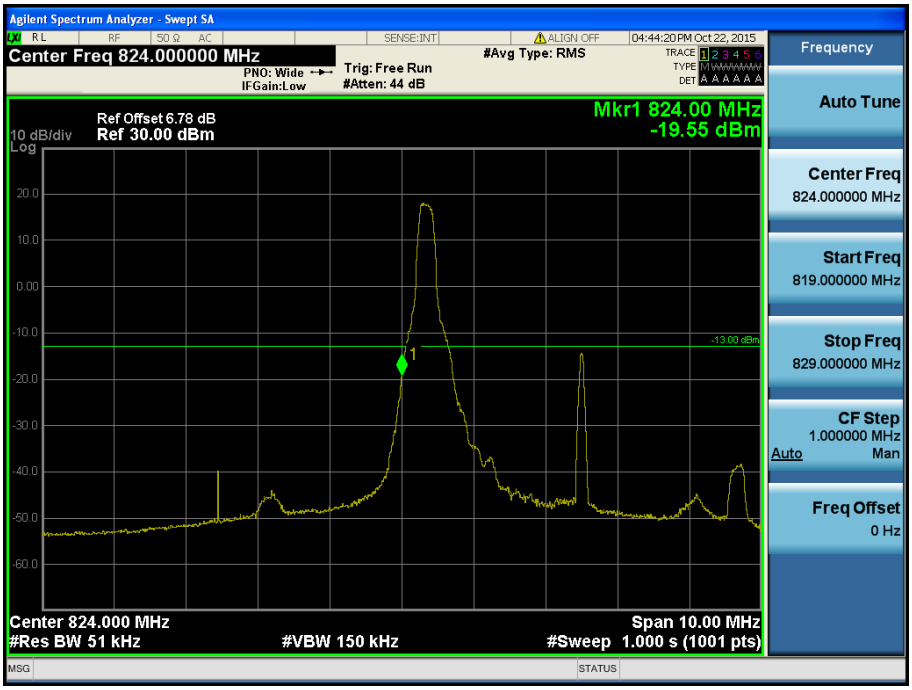


LTE Band 5 / 10MHz / 16QAM - RB Size/Offset (1/49)

- Upper Extended Band Edge

LTE Band 5 / 10MHz / QPSK - RB Size/Offset (50/0)

- Lower Band Edge

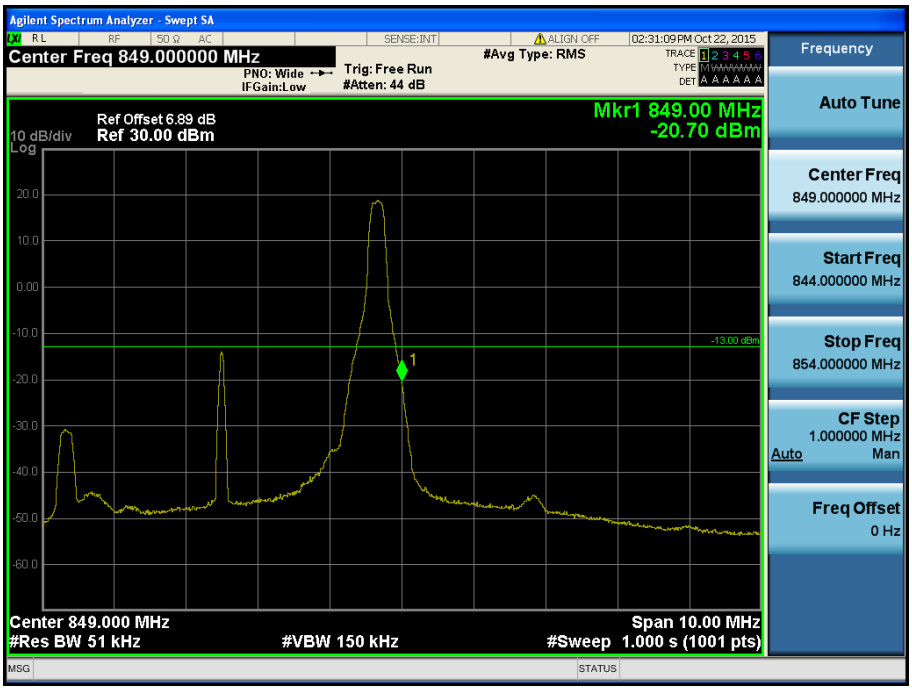


LTE Band 5 / 5MHz / 16QAM Offset/Size (1/0)

- Lower Extended Band Edge

LTE Band 5 / 5MHz / QPSK Offset/Size (1/0)

- Upper Band Edge

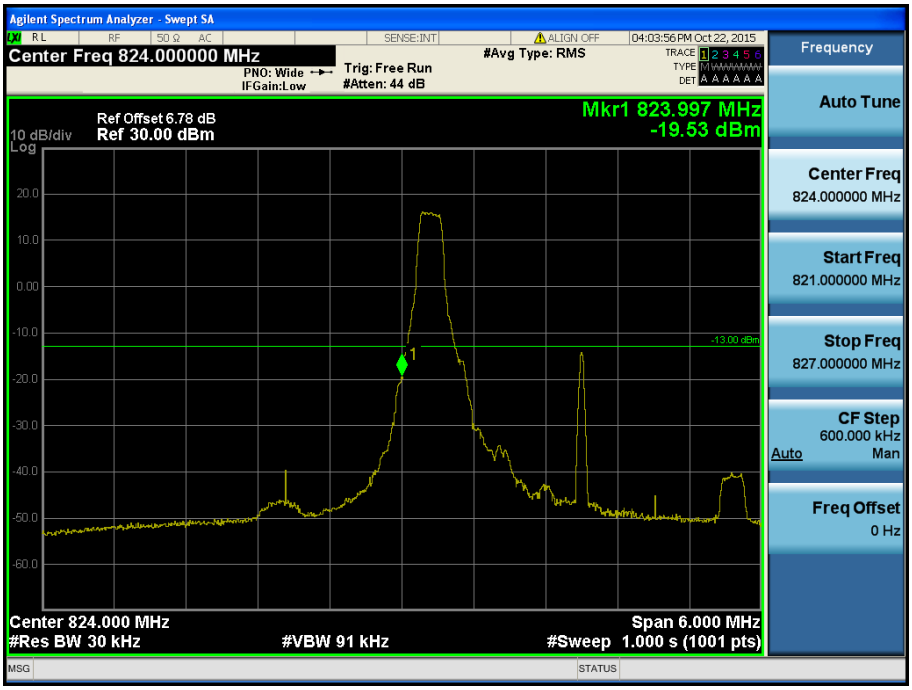


LTE Band 5 / 5MHz / QPSK - RB Size/Offset (1/24)

- Upper Extended Band Edge

LTE Band 5 / 5MHz / QPSK - RB Size/Offset (12/13)

- Lower Band Edge

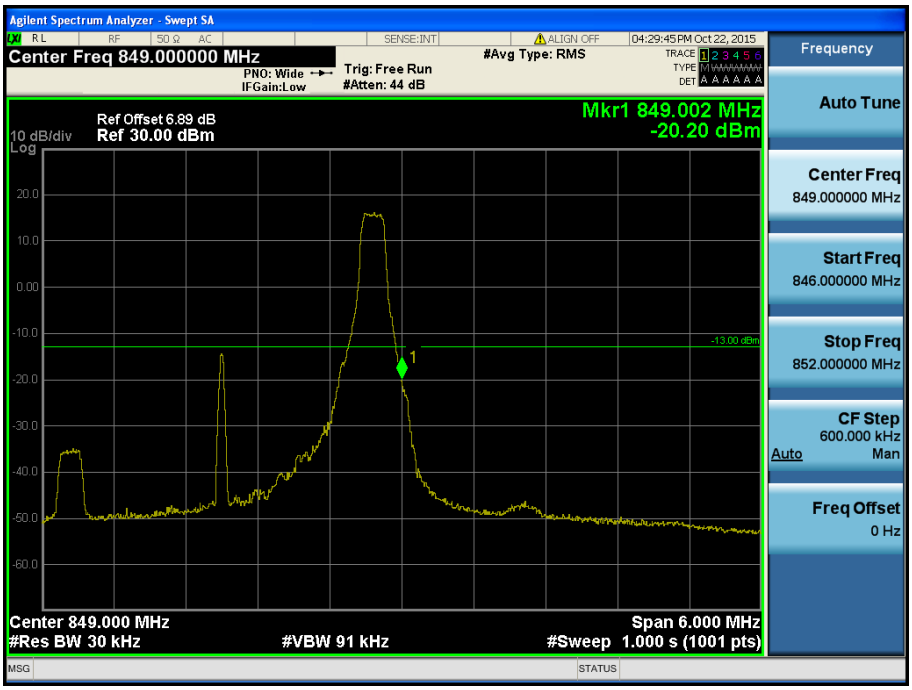


LTE Band 5 / 3MHz / 16QAM - RB Size/Offset (1/0)

- Lower Extended Band Edge

LTE Band 5 / 3MHz / QPSK - RB Size/Offset (8/0)

- Upper Band Edge

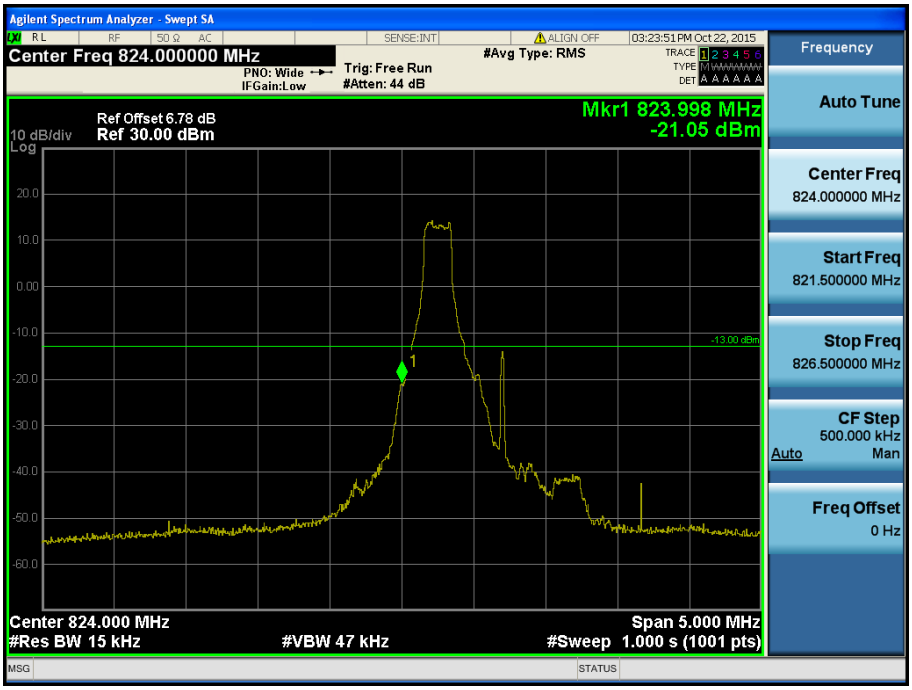


LTE Band 5 / 3MHz / 16QAM - RB Size/Offset (1/14)

- Upper Extended Band Edge

LTE Band 5 / 3MHz / QPSK - RB Size/Offset (15/0)

- Lower Band Edge



LTE Band 5 / 1.4MHz / 16QAM - RB Size/Offset (1/0)

- Lower Extended Band Edge

LTE Band 5 / 1.4MHz / QPSK - RB Size/Offset (6/0)

- Upper Band Edge

LTE Band 5 / 1.4MHz / 16QAM - RB Size/Offset (1/5)

- Upper Extended Band Edge

LTE Band 5 / 1.4MHz / QPSK - RB Size/Offset (3/3)