TEST REPORT

Dt&C Co., Ltd.
42, Yurim-ro, 154Beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea, 17042
Tel : 031-321-2664, Fax : 031-321-1664

1. Report No : DRTFCC2305-0068

2. Customer

- Name (FCC) : LG Electronics USA, Inc. / Name (IC) : LG ELECTRONICS INC.
- Address (FCC) : 111 Sylvan Avenue North Building Englewood Cliffs New Jersey United States 07632
  Address (IC) : 222, LG-ro, Jinwi-myeon Pyeongtaek-si, Gyeonggi-do 451-713 Korea (Republic Of)

3. Use of Report : FCC & IC Certification

4. Product Name / Model Name : Telematics / TLVUM3IU-N
   FCC ID : BEJTLVUM3IU-N
   IC : 2703H-TLVUM3IUN

5. FCC Regulation(s): Part 2, 22, 24, 27
   IC Standard(s): RSS-Gen Issue 5, 130 Issue 2, 132 Issue 4, 133 Issue 6, 139 Issue 4
   Test Method Used : KDB971168 D01v03, ANSI/TIA-603-E-2016, ANSI C63.26-2015

6. Date of Test : 2023.04.13 ~ 2023.05.10

7. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

8. Testing Environment : See appended test report.

9. Test Result : Refer to the attached test result.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test report is not related to KOLAS accreditation.

Affirmation	Tested by	Technical Manager
	Name : SeungMin Gil (Signature)	Name : JaeJin Lee (Signature)

2023 . 05 . 18 .

Dt&C Co., Ltd.

If this report is required to confirmation of authenticity, please contact to report@dtnc.net

Test Report Version

Test Report No.	Date	Description	Revised by	Reviewed by
DRTFCC2305-0068	May. 18, 2023	Initial issue	SeungMin Gil	JaeJin Lee

Table of Contents

1. GENERAL INFORMATION

Equipment Class	PCS Licensed Transmitter (PCB)
Product Name	Telematics
Model Name	TLVUM3IU-N
Add Model Name	-
FVIN(Firmware Version Identification Number)	X507
EUT Serial Number	303VIBBE98397
Supplying power	DC 12 V
Antenna Information	Antenna Type: Shark Fin antenna (Model : 5Q0.035.507.AK)

	Antenna gain (dBi)	Cable loss(dB)	Antenna gain including connected cable loss between transmitter and antenna (dBi)
LTE Band 12(17)	3.58	1.60	1.98
LTE Band 13	3.58	1.72	1.86
LTE Band 5	3.58	1.78	1.80
LTE Band 4	5.21	2.66	2.55
LTE Band 2	5.21	2.82	2.39

Mode	TX Frequency (MHz)	Emission Designator	Modulation	Conducted output power		ERP	
				dBm	W	dBm	W
LTE Band 12(17)	704 ~ 711	8M94G7D	QPSK	21.60	0.145	16.76	0.047
LTE Band 12(17)	704 ~ 711	8M92W7D	16QAM	20.81	0.121	15.97	0.040
LTE Band 12(17)	701.5 ~ 713.5	4M48G7D	QPSK	21.51	0.142	15.85	0.038
LTE Band 12(17)	701.5 ~ 713.5	4M48W7D	16QAM	20.70	0.117	14.99	0.032
LTE Band 12	700.5 ~ 714.5	2M69G7D	QPSK	21.49	0.141	16.60	0.046
LTE Band 12	700.5 ~ 714.5	2M69W7D	16QAM	20.69	0.117	15.57	0.036
LTE Band 12	699.7 ~ 715.3	1M08G7D	QPSK	21.56	0.143	16.37	0.043
LTE Band 12	699.7 ~ 715.3	1M08W7D	16QAM	20.82	0.121	15.66	0.037
LTE Band 13	782 ~ 782	8M94G7D	QPSK	21.05	0.127	16.99	0.050
LTE Band 13	782 ~ 782	8M91W7D	16QAM	20.29	0.107	16.55	0.045
LTE Band 13	779.5 ~ 784.5	4M47G7D	QPSK	21.25	0.133	17.32	0.054
LTE Band 13	779.5 ~ 784.5	4M47W7D	16QAM	20.73	0.118	16.44	0.044
LTE Band 5	829 ~ 844	8M96G7D	QPSK	21.36	0.137	18.12	0.065
LTE Band 5	829 ~ 844	8M93W7D	16QAM	20.73	0.118	17.18	0.052
LTE Band 5	826.5 ~ 846.5	4M47G7D	QPSK	21.51	0.142	18.34	0.068
LTE Band 5	826.5 ~ 846.5	4M48W7D	16QAM	20.87	0.122	17.32	0.054
LTE Band 5	825.5 ~ 847.5	2M68G7D	QPSK	21.47	0.140	18.16	0.065
LTE Band 5	825.5 ~ 847.5	2M68W7D	16QAM	20.84	0.121	17.39	0.055
LTE Band 5	824.7 ~ 848.3	1M08G7D	QPSK	21.52	0.142	18.20	0.066
LTE Band 5	824.7 ~ 848.3	1M08W7D	16QAM	20.85	0.122	17.51	0.056

Mode	TX Frequency (MHz)	Emission Designator	Modulation	Conducted output power		EIRP	
				dBm	W	dBm	W
LTE Band 4	1 720 ~ 1 770	17M9G7D	QPSK	21.71	0.148	21.54	0.143
LTE Band 4	1 720 ~ 1 770	17M8W7D	16QAM	20.96	0.125	20.77	0.119
LTE Band 4	1 717.5 ~ 1 772.5	13M4G7D	QPSK	21.65	0.146	21.53	0.142
LTE Band 4	1 717.5 ~ 1 772.5	13M4W7D	16QAM	21.02	0.126	20.79	0.120
LTE Band 4	1 715 ~ 1 775	8M95G7D	QPSK	21.81	0.152	21.82	0.152
LTE Band 4	1 715 ~ 1 775	8M95W7D	16QAM	21.12	0.129	20.99	0.126
LTE Band 4	1 712.5 ~ 1 777.5	4M48G7D	QPSK	21.76	0.150	20.68	0.117
LTE Band 4	1 712.5 ~ 1 777.5	4M47W7D	16QAM	21.05	0.127	19.97	0.099
LTE Band 4	1 711.5 ~ 1 778.5	2M69G7D	QPSK	21.64	0.146	21.31	0.135
LTE Band 4	1 711.5 ~ 1 778.5	2M69W7D	16QAM	21.07	0.128	20.75	0.119
LTE Band 4	1 710.7 ~ 1 779.3	1M08G7D	QPSK	21.68	0.147	20.92	0.124
LTE Band 4	1 710.7 ~ 1 779.3	1M08W7D	16QAM	20.95	0.124	20.26	0.106
LTE Band 2	1 860 ~ 1 905	17M9G7D	QPSK	21.76	0.150	21.10	0.129
LTE Band 2	1 860 ~ 1 905	17M9W7D	16QAM	21.02	0.126	20.00	0.100
LTE Band 2	1 857.5 ~ 1 907.5	13M4G7D	QPSK	21.64	0.146	20.97	0.125
LTE Band 2	1 857.5 ~ 1 907.5	13M4W7D	16QAM	20.90	0.123	20.28	0.107
LTE Band 2	1 855 ~ 1 910	8M94G7D	QPSK	21.83	0.152	20.85	0.122
LTE Band 2	1 855 ~ 1 910	8M92W7D	16QAM	21.09	0.129	20.31	0.107
LTE Band 2	1 852.5 ~ 1 912.5	4M48G7D	QPSK	21.66	0.147	21.10	0.129
LTE Band 2	1 852.5 ~ 1 912.5	4M47W7D	16QAM	20.91	0.123	19.73	0.094
LTE Band 2	1 851.5 ~ 1 913.5	2M69G7D	QPSK	21.58	0.144	20.50	0.112
LTE Band 2	1 851.5 ~ 1 913.5	2M68W7D	16QAM	20.89	0.123	19.63	0.092
LTE Band 2	1 850.7 ~ 1 914.3	1M08G7D	QPSK	21.64	0.146	20.24	0.106
LTE Band 2	1 850.7 ~ 1 914.3	1M08W7D	16QAM	20.90	0.123	19.45	0.088

2. INTRODUCTION

2.1. EUT DESCRIPTION

The Equipment Under Test (EUT) supports 850/1900 GSM, 850/1700/1900 WCDMA, Multi-band LTE.

2.2. TESTING ENVIRONMENT

Ambient Condition	
▪ Temperature	+21 ℃ ~ +25 ℃
▪ Relative Humidity	41 % ~ 44 %

2.3. 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.

2.4. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C 63.4-2014. All measurement uncertainty values are shown with a coverage factor of *k* = 2 to indicate a 95 % level of confidence.

Parameter	Measurement uncertainty
Radiated Disturbance (Below 1 GHz)	4.8 dB (The confidence level is about 95 %, k = 2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.0 dB (The confidence level is about 95 %, k = 2)
Radiated Disturbance (Above 18 GHz)	5.2 dB (The confidence level is about 95 %, k = 2)

2.5. TEST FACILITY

Dt&C Co., Ltd.

The 3 m 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 17042.
The test site complies with the requirements of Part 2.948 according to ANSI C63.4-2014.

- FCC & IC MRA Designation No. : KR0034

- ISED#: 5740A

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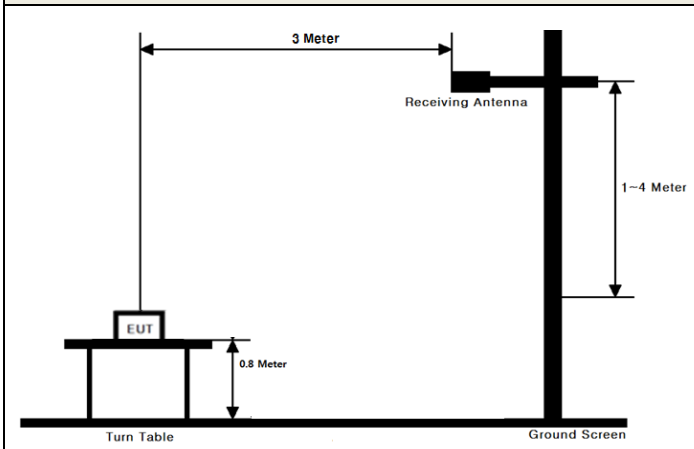
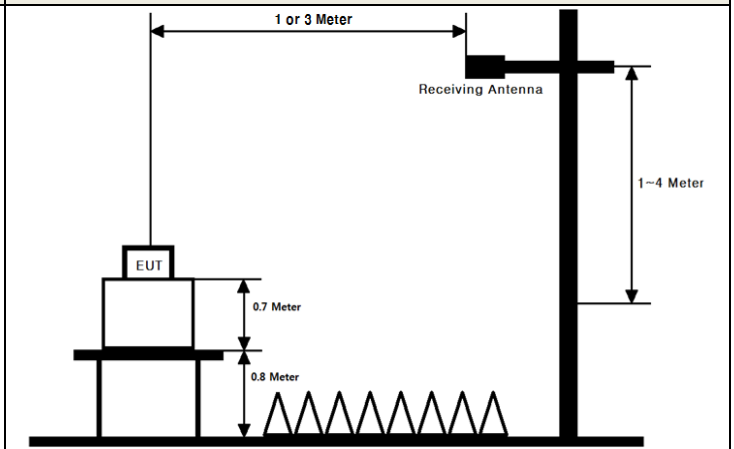
3. DESCRIPTION OF TESTS

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

Test Set-up

Below 1GHz	Above 1GHz
	

These measurements were performed at 3 m test site. The equipment under test is placed on a non-conductive table 0.8 or 1.5-meters above a turntable which is flush with the ground plane and 3 meters from the receive antenna. For measurements above 1GHz absorbers are placed 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 1 GHz, the absorbers are removed.

Test Procedure

- **ANSI/TIA-603-E-2016 - Section 2.2.17**
- **KDB971168 D01v03 - Section 5.2.2**
- **ANSI C63.26-2015 – Section 5.2.4.4.1**

Test setting

1. Set span to 2 x to 3 x the OBW.
2. Set RBW = 1 % to 5 % of the OBW.
3. Set VBW ≥ 3 x RBW.
4. Set number of points in sweep ≥ 2 × span / RBW.
5. Sweep time:
   1) Set = auto-couple, or
   2) Set ≥ [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. Transmission period is the on and off time of the transmitter.
6. Detector = power averaging (rms).
7. If the EUT can be configured to transmit continuously, then set the trigger to free run.
8. If the EUT cannot be configured to transmit continuously, 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. Verify that the sweep time is less than or equal to the transmission burst duration. Time gating can also be used under similar constraints (i.e., configured such that measurement data is collected only during active full-power transmissions).
9. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over multiple symbols, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.
10. Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band or

channel power measurement function, with the band/channel limits set equal to the OBW band edges. If the instrument does not have a band or channel 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 receiver 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.

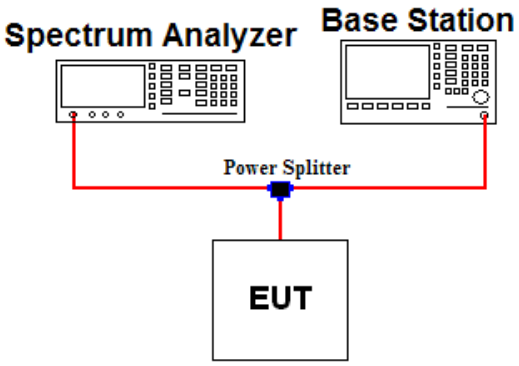
The ERP/EIRP is calculated using the following formula:

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 D01v03 - Section 5.7.2**
- **ANSI C63.26-2015 – Section 5.2.3.4**

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.

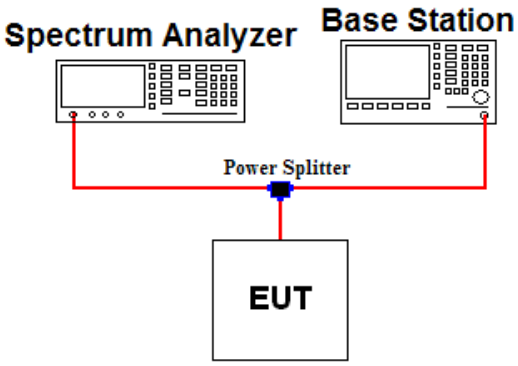
Test setting

The spectrum Analyzer`s CCDF measurement function is enabled.

1. Set resolution/measurement bandwidth ≥ OBW or specified reference 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 the greater of [10 × (number of points in sweep) × (transmission symbol period)] or 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. Set the measurement interval to a time that is less than or equal to the burst duration.
   3) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.
4. Record the maximum PAPR level associated with a probability of 0.1 %.
5. The peak power level is calculated form the sum of the PAPR value from step d) to the measured average power.

3.3. OCCUPIED BANDWIDTH

Test set-up



Test Procedure

- **KDB971168 D01v03 - Section 4.3**
- **ANSI C63.26-2015 – Section 5.4.4**

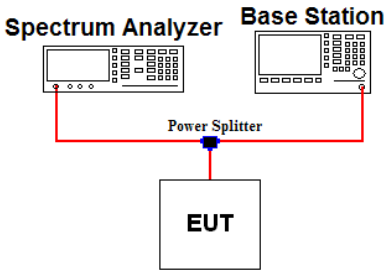
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

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 AT ANTENNA TERMINAL

Test set-up



Test Procedure

- **KDB971168 D01v03 - Section 6**
- **ANSI C63.26-2015 – Section 5.7**

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.

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
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

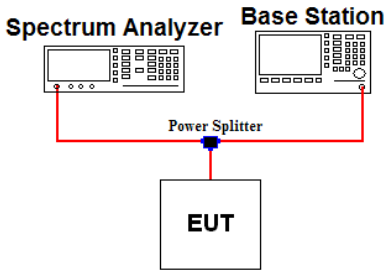
Note 1: Per Part 22.917(b)(1) / 24.238(b) / 27.53(h) in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band 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: Per Part 27(g) for operations in the 600 MHz band and the 698-746 MHz band, compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Note 3: Per Part 27.53(c.4) for all frequencies between 763 MHz - 775 MHz and 793 MHz - 805 MHz, the FCC limit is 65 + 10 log10(P[Watts]) = -35 dBm in a 6.25 kHz bandwidth.

3.5. SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL

Test set-up



Test Procedure

- **KDB971168 D01v03 - Section 6**
- **ANSI C63.26-2015 – Section 5.7**

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 9 kHz up to a frequency including its 10^{th} harmonic.

The power of any spurious emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB.

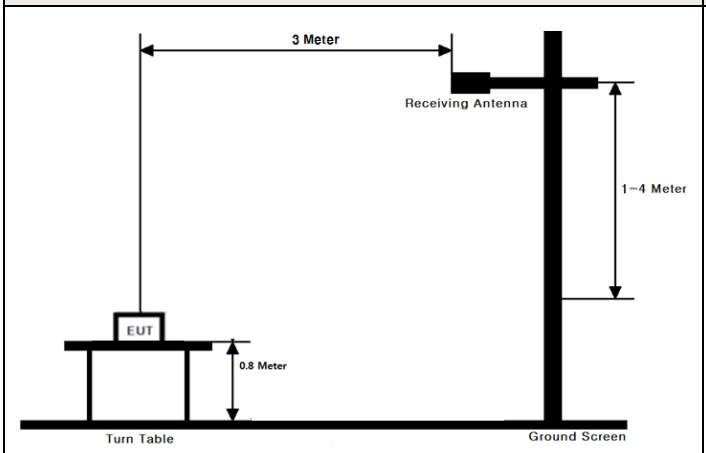
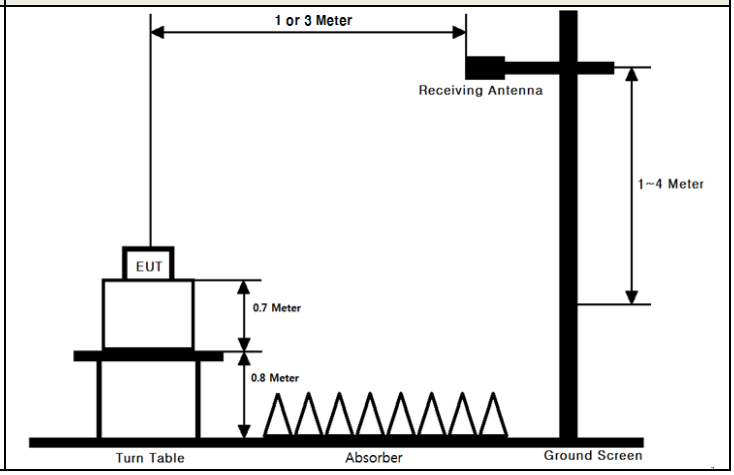
Test setting

1. RBW = 100 kHz(Below 1 GHz) or 1 MHz(Above 1 GHz) & 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 frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1GHz.

3.6. UNDESIRABLE EMISSIONS

Test Set-up

Below 1GHz	Above 1GHz
	

These measurements were performed at 3 test site. The equipment under test is placed on a non-conductive table 0.8 or 1.5 meters above a turntable which is flush with the ground plane and 3 meters from the receive antenna. For measurements above 1 GHz absorbers are placed 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 1 GHz, the absorbers are removed.

Test Procedure

- **ANSI/TIA-603-E-2016 - Section 2.2.12**
- **KDB971168 D01v03 - Section 5.8**
- **ANSI C63.26-2015 – Section 5.5**

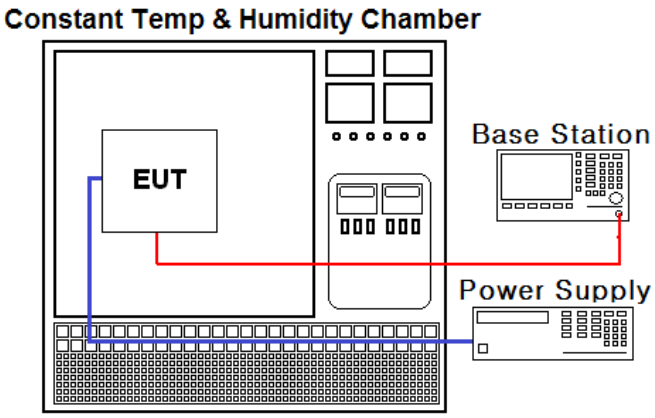
Test setting

1. RBW = 100 kHz for below 1 GHz and 1 MHz for above 1 GHz / VBW ≥ 3 X RBW
2. Detector = RMS & Trace mode = Trace Average
3. Sweep time = Auto couple
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-E-2016**
- **KDB971168 D01v03 - Section 9**

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.
(20 °C to provide a reference)

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

3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C.
A 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
Spectrum Analyzer	Agilent Technologies	N9020A	22/06/24	23/06/24	US47360812
Spectrum Analyzer	Agilent Technologies	N9020A	22/12/16	23/12/16	MY48010133
DC power supply	Agilent Technologies	66332A	22/06/24	23/06/24	US37473422
Multimeter	FLUKE	17B+	22/12/16	23/12/16	36390701WS
Power Splitter	Anritsu	K241B	22/12/16	23/12/16	1301184
Temp & Humi	SJ Science	SJ-TH-S50	22/06/22	23/06/22	SJ-TH-S50-130930
Radio Communication Analyzer	Anritsu	MT8820C	22/06/24	23/06/24	6200978101
Thermohygrometer	BODYCOM	BJ5478	22/12/16	23/12/16	120612-1
Thermohygrometer	BODYCOM	BJ5478	22/12/16	23/12/16	120612-2
Signal Generator	Rohde Schwarz	SMBV100A	22/12/16	23/12/16	255571
Signal Generator	ANRITSU	MG3695C	22/12/16	23/12/16	173501
Loop Antenna	ETS-Lindgren	6502	22/12/16	24/12/16	00226186
BILOG ANTENNA	Schwarzbeck	VULB9160	22/12/16	23/12/16	3362
Dipole Antenna	Schwarzbeck	UHA9105	22/12/16	24/12/16	2262
HORN ANT	ETS	3117	22/12/16	23/12/16	00140394
HORN ANT	A.H.Systems	SAS-574	22/06/24	23/06/24	155
PreAmplifier	H.P	8447D	22/12/16	23/12/16	2944A07774
PreAmplifier	Agilent	8449B	22/06/24	23/06/24	3008A02108
PreAmplifier	tsj	MLA-1840-J02-45	22/06/24	23/06/24	16966-10728
High Pass Filter	Wainwright Instruments	WHKX12-935-1000-15000-40SS	22/06/24	23/06/24	7
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	22/06/24	23/06/24	2
High Pass Filter	Wainwright Instruments	WHKX6-6320-8000-26500-40CC	22/06/24	23/06/24	2
Cable	HUBER+SUHNER	SUCOFLEX100	23/01/04	24/01/04	M-01
Cable	HUBER+SUHNER	SUCOFLEX100	23/01/04	24/01/04	M-02
Cable	JUNKOSHA	MWX241/B	23/01/04	24/01/04	M-03
Cable	JUNKOSHA	MWX221	23/01/04	24/01/04	M-04
Cable	JUNKOSHA	MWX221	23/01/04	24/01/04	M-05
Cable	DTNC	Cable	23/01/04	24/01/04	M-06
Cable	JUNFLON	J12J101757-00	23/01/04	24/01/04	M-07
Cable	HUBER+SUHNER	SUCOFLEX104	23/01/04	24/01/04	M-08
Cable	HUBER+SUHNER	SUCOFLEX106	23/01/04	24/01/04	M-09
Cable	JUNKOSHA	MWX241	23/01/03	24/01/03	mmW-1
Cable	JUNKOSHA	MWX241	23/01/03	24/01/03	mmW-4
Cable	Dt&C	Cable	23/01/04	24/01/04	RFC-44

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.
Note2: The cable is not a regular calibration item, so it has been calibrated by Dt&C itself.

5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Status Note 1
2.1046	-	Conducted Output Power	N/A	Conducted	C
2.1049	RSS-Gen[6.7]	Occupied Bandwidth	N/A		C
24.232(d) 27.50(d.5)	RSS-130 [4.6] RSS-132 [5.4] RSS-133 [6.4] RSS-139 [5.5]	Peak to Average Ratio	< 13 dB		C
2.1051 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	RSS-130 [4.7] RSS-132 [5.5] RSS-133 [6.5] RSS-139 [5.6]	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 [4.7.2]	Undesirable emissions in 763 ~ 775MHz & 793 ~ 806MHz	>65 + 10 log (P) dB in a 6.25 kHz band segment frequencies between 763-775 MHz and 793-805 MHz		C
2.1055 22.355 24.235 27.54	RSS-130 [4.5] RSS-132 [5.3] RSS-133 [6.3] RSS-139 [5.4]	Frequency Stability	< 2.5 ppm (Part 22) or Fundamental emissions must stay within Authorized frequency block (Part 24, 27)		C
27.50(b) 27.50(c)	RSS-130 [4.6]	Radiated Output Power (B12, 13, 17)	< 3 Watts max. ERP (Portable) < 30 Watts max. ERP (Mobile)	Radiated	C Note2
22.913(a.5)	RSS-132 [5.4]	Radiated Output Power (B 5)	< 7 Watts max. ERP (FCC&IC: Mobile, FCC: Portable) < 3 Watts max. ERP (IC: Portable)		C Note2
27.50(d)	RSS-139 [5.5]	Radiated Output Power (B 4)	< 1 Watts max. EIRP (Mobile, Potable)		C Note2
24.232(c)	RSS-133 [6.4]	Radiated Output Power (B 2)	< 2 Watts max. EIRP (Mobile, Potable)		C Note2
2.1053 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	RSS-130 [4.7] RSS-132 [5.5] RSS-133 [6.5] RSS-139 [5.6]	Undesirable Emissions	> 43 + 10log$_{10}$ (P) dB for all out-of-band emissions		C Note2
27.53(f)	RSS-130 [4.7.2]	Undesirable Emissions in 1559 ~ 1610 MHz (B13)	< -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions of less than 700 Hz bandwidth)		C Note2

Note 1: **C**=Comply **NC**=Not Comply **NT**=Not Tested **NA**=Not Applicable
Note 2: This test item was performed in three orthogonal EUT positions and the worst case data was reported.

6. SAMPLE CALCULATION

A. Emission Designator

LTE Band 5(QPSK)

Emission Designator = **8M96G7D**
LTE OBW = 8.955 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5(16QAM)

Emission Designator = **8M93W7D**
LTE OBW = 8.929 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

B. For substitution method

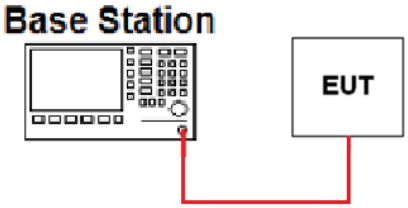
1) The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1 GHz respectively above ground.
2) The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3) During the test, the turn table is rotated until the maximum signal is found.
4) Record the field strength meter's level. (ex. Spectrum reading level is -8.5 dBm)
5) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
6) Increase the signal generator output till the field strength meter's level is equal to the item (4). (ex. Signal generator level is -18.04 dBm)
7) The gain of the cable and amplifier between the signal generator and terminals of substituted antenna is 46.92 dB at test frequency.
8) Record the level at substituted antenna terminal. (ex. 28.88dBm)
9) The result is calculated as below;

EIRP(dBm) = LEVLE@ANTENNA TERMINAL + TX Antenna Gain (dBi)
ERP(dBm) = LEVLE@ANTENNA TERMINAL + TX Antenna Gain (dBd)
Where, TX Antenna Gain (dBd) = TX Antenna Gain (dBi) - 2.15 dB

7. TEST DATA

7.1. CONDUCTED OUTPUT POWER

A base station simulator was used to establish communication with the EUT. The base station simulator parameters were set to produce the maximum power from the EUT. This device was tested under all configurations and the highest power is reported. Conducted Output Powers of EUT are reported below.



Note 1: The conducted output power was measured using the Anritsu MT8820C.

▪ **Band 12**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
10	704	QPSK	21.53	21.43	21.57	20.42	20.45	20.45	20.48
		16QAM	20.77	20.65	20.80	19.44	19.45	19.47	19.50
	711	QPSK	21.49	21.47	21.60	20.49	20.48	20.49	20.48
		16QAM	20.69	20.70	20.81	19.49	19.47	19.49	19.49
5	701.5	QPSK	21.42	21.45	21.32	20.31	20.35	20.33	20.29
		16QAM	20.66	20.66	20.58	19.38	19.42	19.38	19.32
	707.5	QPSK	21.42	21.48	21.40	20.34	20.40	20.43	20.34
		16QAM	20.60	20.69	20.61	19.40	19.44	19.46	19.40
	713.5	QPSK	21.38	21.51	21.35	20.34	20.42	20.36	20.40
		16QAM	20.65	20.70	20.47	19.38	19.46	19.39	19.45
3	700.5	QPSK	21.49	21.46	21.39	20.33	20.38	20.32	20.36
		16QAM	20.69	20.67	20.56	19.46	19.50	19.44	19.40
	707.5	QPSK	21.34	21.42	21.30	20.36	20.42	20.39	20.35
		16QAM	20.60	20.65	20.54	19.45	19.51	19.48	19.43
	714.5	QPSK	21.41	21.42	21.42	20.34	20.43	20.35	20.39
		16QAM	20.64	20.63	20.63	19.46	19.52	19.49	19.45
1.4	699.7	QPSK	21.49	21.56	21.43	21.43	21.51	21.38	20.48
		16QAM	20.75	20.82	20.69	20.52	20.59	20.40	19.57
	707.5	QPSK	21.37	21.44	21.39	21.43	21.46	21.42	20.37
		16QAM	20.63	20.75	20.59	20.40	20.52	20.40	19.48
	715.3	QPSK	21.42	21.45	21.38	21.40	21.42	21.35	20.40
		16QAM	20.69	20.69	20.63	20.44	20.45	20.36	19.52

▪ **Band 13**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
10	782	QPSK	20.84	21.05	21.03	20.08	20.12	20.10	20.17
		16QAM	20.11	20.29	20.25	18.98	19.09	19.32	19.48
5	779.5	QPSK	20.94	21.14	21.01	20.01	20.10	20.03	20.09
		16QAM	20.22	20.42	20.29	19.11	19.13	19.02	19.03
	784.5	QPSK	21.10	21.25	21.12	20.10	20.09	20.15	20.15
		16QAM	20.37	20.56	20.43	20.17	20.42	20.73	20.43

▪ **Band 5**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
10	829	QPSK	20.94	21.23	21.15	20.17	20.32	20.29	20.22
		16QAM	20.52	20.57	20.45	19.82	19.84	19.51	19.67
	836.5	QPSK	21.23	21.35	21.27	20.31	20.40	20.31	20.31
		16QAM	20.56	20.71	20.60	19.80	19.84	19.96	19.87
	844	QPSK	21.25	21.36	21.36	20.31	20.43	20.43	20.44
		16QAM	20.59	20.73	20.69	19.80	19.88	19.80	19.80
5	826.5	QPSK	21.00	21.25	21.20	20.08	20.23	20.16	20.16
		16QAM	20.44	20.54	20.53	19.76	19.91	19.87	19.84
	836.5	QPSK	21.29	21.41	21.28	20.29	20.41	20.34	20.27
		16QAM	20.53	20.74	20.55	20.01	20.08	20.18	19.97
	846.5	QPSK	21.51	21.51	21.44	20.49	20.54	20.53	20.49
		16QAM	20.77	20.87	20.78	19.97	19.94	19.54	19.54
3	825.5	QPSK	20.91	20.98	21.05	20.58	20.64	20.62	20.60
		16QAM	20.69	20.81	20.42	19.71	19.77	19.76	19.71
	836.5	QPSK	21.28	21.33	21.30	20.29	20.43	20.33	20.24
		16QAM	20.54	20.64	20.59	19.91	20.00	19.98	19.88
	847.5	QPSK	21.43	21.47	21.47	20.48	20.50	20.52	20.48
		16QAM	20.70	20.84	20.71	19.71	19.57	19.54	19.51
1.4	824.7	QPSK	20.85	20.93	20.96	20.84	20.89	20.93	20.31
		16QAM	20.67	20.32	20.70	20.32	20.48	20.44	19.39
	836.5	QPSK	21.25	21.39	21.31	21.21	21.33	21.29	20.14
		16QAM	20.46	20.68	20.55	20.21	20.37	20.30	19.63
	848.3	QPSK	21.48	21.52	21.43	21.45	21.48	21.43	20.39
		16QAM	20.73	20.85	20.71	20.50	20.50	20.47	19.49

▪ **Band 4**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
20	1 720	QPSK	21.33	21.60	21.25	20.53	20.54	20.42	20.37
		16QAM	20.51	20.94	20.54	19.98	19.98	19.85	19.70
	1 732.5	QPSK	21.33	21.71	21.24	20.45	20.61	20.42	20.43
		16QAM	20.62	20.96	20.46	19.79	19.98	19.83	19.56
	1 745	QPSK	21.27	21.60	21.23	20.41	20.53	20.36	20.42
		16QAM	20.50	20.87	20.47	19.58	19.95	19.63	19.76
15	1 717.5	QPSK	21.24	21.57	21.20	20.53	20.52	20.44	20.48
		16QAM	20.50	20.84	20.43	19.95	19.96	19.81	19.80
	1 732.5	QPSK	21.23	21.65	21.17	20.50	20.62	20.46	20.48
		16QAM	20.56	21.02	20.44	19.84	20.02	19.83	19.78
	1 747.5	QPSK	21.20	21.55	21.16	20.47	20.52	20.39	20.36
		16QAM	20.47	20.88	20.42	19.82	19.96	19.76	19.82
10	1 715	QPSK	21.73	21.57	21.66	20.63	20.63	20.59	20.62
		16QAM	21.03	20.85	20.92	20.24	20.40	20.36	20.28
	1 732.5	QPSK	21.70	21.60	21.73	20.65	20.62	20.61	20.65
		16QAM	20.97	20.87	20.99	20.08	20.22	20.11	20.30
	1 750	QPSK	21.81	21.68	21.80	20.67	20.71	20.73	20.70
		16QAM	21.12	20.93	21.07	20.29	20.26	20.08	20.36
5	1 712.5	QPSK	21.76	21.63	21.47	20.70	20.60	20.47	20.62
		16QAM	21.03	20.96	20.74	19.75	20.24	20.23	19.67
	1 732.5	QPSK	21.68	21.66	21.48	20.64	20.60	20.51	20.61
		16QAM	20.98	20.98	20.78	20.21	20.25	20.22	20.21
	1 752.5	QPSK	21.72	21.69	21.56	20.66	20.67	20.60	20.63
		16QAM	21.05	21.04	20.88	20.35	20.36	20.29	20.30
3	1 711.5	QPSK	21.64	21.55	21.47	20.59	20.61	20.55	20.50
		16QAM	21.07	20.97	20.83	19.74	19.69	19.67	19.61
	1 732.5	QPSK	21.57	21.54	21.48	20.56	20.58	20.54	20.56
		16QAM	20.90	20.93	20.79	20.20	20.21	20.21	20.16
	1 753.5	QPSK	21.64	21.61	21.57	20.63	20.66	20.61	20.62
		16QAM	20.95	20.95	20.83	20.28	20.28	20.25	20.22
1.4	1 710.7	QPSK	21.62	21.64	21.58	21.62	21.61	21.60	20.51
		16QAM	20.89	20.95	20.86	20.66	20.65	20.61	19.63
	1 732.5	QPSK	21.55	21.62	21.53	21.60	21.59	21.58	20.51
		16QAM	20.85	20.90	20.81	20.59	20.67	20.60	20.15
	1 754.3	QPSK	21.60	21.68	21.59	21.66	21.63	21.65	20.61
		16QAM	20.93	20.95	20.90	20.67	20.72	20.67	20.26

▪ **Band 2**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
20	1 860	QPSK	21.47	21.43	21.51	20.47	20.43	20.45	20.41
		16QAM	20.70	20.72	20.76	19.43	19.42	19.39	19.33
	1 880	QPSK	21.76	21.65	21.68	20.61	20.63	20.58	20.59
		16QAM	21.02	20.90	20.92	19.70	19.92	19.71	19.63
	1 900	QPSK	21.59	21.44	21.47	20.50	20.46	20.46	20.49
		16QAM	20.88	20.73	20.73	19.47	19.42	19.39	19.46
15	1 857.5	QPSK	21.46	21.42	21.43	20.49	20.44	20.55	20.49
		16QAM	20.68	20.68	20.62	19.42	19.40	19.47	19.42
	1 880	QPSK	21.62	21.64	21.53	20.63	20.65	20.61	20.62
		16QAM	20.86	20.90	20.78	19.80	19.83	19.78	19.65
	1 902.5	QPSK	21.54	21.37	21.35	20.45	20.39	20.37	20.43
		16QAM	20.77	20.67	20.56	19.34	19.35	19.31	19.36
10	1 855	QPSK	21.65	21.41	21.37	20.55	20.50	20.50	20.50
		16QAM	20.95	20.72	20.66	19.50	19.47	19.43	19.49
	1 880	QPSK	21.83	21.59	21.52	20.73	20.66	20.61	20.66
		16QAM	21.09	20.87	20.78	20.21	20.49	20.58	20.09
	1 905	QPSK	21.57	21.32	21.24	20.39	20.27	20.27	20.35
		16QAM	20.79	20.57	20.50	19.79	20.16	19.23	19.32
5	1 852.5	QPSK	21.41	21.43	21.28	20.43	20.42	20.34	20.38
		16QAM	20.68	20.71	20.58	19.45	19.42	19.39	19.39
	1 880	QPSK	21.64	21.66	21.51	20.63	20.62	20.55	20.60
		16QAM	20.89	20.91	20.79	20.36	20.52	20.30	20.27
	1 907.5	QPSK	21.36	21.30	21.15	20.26	20.25	20.24	20.27
		16QAM	20.64	20.60	20.44	19.28	19.30	19.23	19.24
3	1 851.5	QPSK	21.32	21.31	21.26	20.37	20.38	20.35	20.34
		16QAM	20.62	20.71	20.60	19.40	19.45	19.36	19.40
	1 880	QPSK	21.58	21.58	21.53	20.58	20.59	20.56	20.54
		16QAM	20.85	20.89	20.79	20.20	20.05	20.30	20.09
	1 908.5	QPSK	21.25	21.21	21.16	20.24	20.26	20.21	20.24
		16QAM	20.54	20.50	20.41	19.30	19.33	19.27	19.25
1.4	1 850.7	QPSK	21.26	21.33	21.22	21.31	21.30	21.30	20.25
		16QAM	20.58	20.69	20.54	20.40	20.42	20.36	19.40
	1 880	QPSK	21.55	21.64	21.50	21.56	21.60	21.56	20.52
		16QAM	20.82	20.90	20.77	20.61	20.60	20.58	20.11
	1 909.3	QPSK	21.15	21.24	21.13	21.22	21.23	21.23	20.18
		16QAM	20.50	20.59	20.41	20.25	20.33	20.24	19.24

7.2. OCCUPIED BANDWIDTH

- Plots of the EUT's Occupied Bandwidth are shown in Clause 8.2

7.3. PEAK TO AVERAGE RATIO

- Plots of the EUT's Peak- to- Average Ratio are shown in Clause 8.3

7.4. BAND EDEG EMISSIONS (Conducted)

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

7.5. SPURIOUS AND HARMONICS EMISSIONS (Conducted)

- Plots of the EUT's Spurious Emissions are shown in Clause 8.5

7.6. ERP & EIRP

- Test Notes

1) This is device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the below table.

7.6.1. LTE Band 12(17)

Channel Bandwidth (MHz)	Tx Freq. (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	ERP (dBm)	ERP (W)
10	704	QPSK	1/49	H	16.63	-1.28	15.35	0.034
		16QAM	1/49	H	15.90	-1.28	14.62	0.029
	711	QPSK	1/49	H	18.12	-1.36	16.76	0.047
		16QAM	1/49	H	17.33	-1.36	15.97	0.040
5	701.5	QPSK	1/0	H	14.99	-1.26	13.73	0.024
		16QAM	1/0	H	14.34	-1.26	13.08	0.020
	707.5	QPSK	1/24	H	15.95	-1.32	14.63	0.029
		16QAM	1/24	H	15.08	-1.32	13.76	0.024
	713.5	QPSK	1/24	H	17.24	-1.39	15.85	0.038
		16QAM	1/24	H	16.38	-1.39	14.99	0.032

LTE Band 12

Channel Bandwidth (MHz)	Tx Freq. (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	ERP (dBm)	ERP (W)
3	700.5	QPSK	1/7	H	15.82	-1.25	14.57	0.029
		16QAM	1/7	H	14.95	-1.25	13.70	0.023
	707.5	QPSK	1/14	H	16.49	-1.32	15.17	0.033
		16QAM	1/14	H	15.81	-1.32	14.49	0.028
	714.5	QPSK	1/14	H	18.00	-1.40	16.60	0.046
		16QAM	1/14	H	16.97	-1.40	15.57	0.036
1.4	699.7	QPSK	1/5	H	16.10	-1.24	14.86	0.031
		16QAM	1/5	H	15.40	-1.24	14.16	0.026
	707.5	QPSK	1/2	H	16.65	-1.32	15.33	0.034
		16QAM	1/2	H	15.76	-1.32	14.44	0.028
	715.3	QPSK	1/2	H	17.78	-1.41	16.37	0.043
		16QAM	1/2	H	17.07	-1.41	15.66	0.037

7.6.2. LTE Band 13

Channel Bandwidth (MHz)	Tx Freq. (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	ERP (dBm)	ERP (W)
10	782	QPSK	1/0	H	18.40	-1.41	16.99	0.050
		16QAM	1/0	H	17.96	-1.41	16.55	0.045
5	779.5	QPSK	1/0	H	18.54	-1.41	17.13	0.052
		16QAM	1/0	H	17.63	-1.41	16.22	0.042
	784.5	QPSK	1/0	H	18.73	-1.41	17.32	0.054
		16QAM	1/0	H	17.85	-1.41	16.44	0.044

7.6.3. LTE Band 5

Channel Bandwidth (MHz)	Tx Freq. (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	ERP (dBm)	ERP (W)
10	829	QPSK	1/25	H	19.38	-1.43	17.95	0.062
		16QAM	1/25	H	18.57	-1.43	17.14	0.052
	836.5	QPSK	1/0	H	19.56	-1.44	18.12	0.065
		16QAM	1/0	H	18.62	-1.44	17.18	0.052
	844	QPSK	1/0	H	19.34	-1.45	17.89	0.062
		16QAM	1/0	H	18.58	-1.45	17.13	0.052
5	826.5	QPSK	1/24	H	19.11	-1.43	17.68	0.059
		16QAM	1/24	H	18.30	-1.43	16.87	0.049
	836.5	QPSK	1/0	H	19.78	-1.44	18.34	0.068
		16QAM	1/0	H	18.76	-1.44	17.32	0.054
	846.5	QPSK	1/0	H	18.41	-1.46	16.95	0.050
		16QAM	1/0	H	17.65	-1.46	16.19	0.042
3	825.5	QPSK	1/7	H	19.03	-1.43	17.60	0.058
		16QAM	1/7	H	18.32	-1.43	16.89	0.049
	836.5	QPSK	1/0	H	19.60	-1.44	18.16	0.065
		16QAM	1/0	H	18.83	-1.44	17.39	0.055
	847.5	QPSK	1/0	H	18.37	-1.46	16.91	0.049
		16QAM	1/0	H	17.72	-1.46	16.26	0.042
1.4	824.7	QPSK	1/0	H	18.67	-1.43	17.24	0.053
		16QAM	1/0	H	17.85	-1.43	16.42	0.044
	836.5	QPSK	1/0	H	19.64	-1.44	18.20	0.066
		16QAM	1/0	H	18.95	-1.44	17.51	0.056
	848.3	QPSK	1/0	H	18.16	-1.46	16.70	0.047
		16QAM	1/0	H	17.42	-1.46	15.96	0.039

7.6.4. LTE Band 4

Channel Bandwidth (MHz)	Tx Freq. (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	EIRP (dBm)	EIRP (W)
20	1 720	QPSK	1/50	V	15.01	5.82	20.83	0.121
		16QAM	1/50	V	14.23	5.82	20.05	0.101
	1 732.5	QPSK	1/0	V	15.86	5.68	21.54	0.143
		16QAM	1/0	V	15.09	5.68	20.77	0.119
	1 745	QPSK	1/0	V	14.92	5.54	20.46	0.111
		16QAM	1/0	V	14.12	5.54	19.66	0.092
15	1 717.5	QPSK	1/36	V	15.19	5.85	21.04	0.127
		16QAM	1/36	V	14.17	5.85	20.02	0.100
	1 732.5	QPSK	1/0	V	15.85	5.68	21.53	0.142
		16QAM	1/0	V	15.11	5.68	20.79	0.120
	1 747.5	QPSK	1/36	V	14.58	5.51	20.09	0.102
		16QAM	1/36	V	13.81	5.51	19.32	0.086
10	1 715	QPSK	1/49	V	14.56	5.88	20.44	0.111
		16QAM	1/49	V	13.69	5.88	19.57	0.091
	1 732.5	QPSK	1/0	V	16.14	5.68	21.82	0.152
		16QAM	1/0	V	15.31	5.68	20.99	0.126
	1 750	QPSK	1/0	V	15.49	5.49	20.98	0.125
		16QAM	1/0	V	14.47	5.49	19.96	0.099
5	1 712.5	QPSK	1/0	V	13.93	5.91	19.84	0.096
		16QAM	1/0	V	12.99	5.91	18.90	0.078
	1 732.5	QPSK	1/0	V	15.00	5.68	20.68	0.117
		16QAM	1/0	V	14.29	5.68	19.97	0.099
	1 752.5	QPSK	1/12	V	14.07	5.46	19.53	0.090
		16QAM	1/12	V	13.49	5.46	18.95	0.079
3	1 711.5	QPSK	1/14	V	14.11	5.92	20.03	0.101
		16QAM	1/14	V	13.23	5.92	19.15	0.082
	1 732.5	QPSK	1/0	V	15.63	5.68	21.31	0.135
		16QAM	1/0	V	15.07	5.68	20.75	0.119
	1 753.5	QPSK	1/0	V	15.58	5.44	21.02	0.126
		16QAM	1/0	V	15.06	5.44	20.50	0.112
1.4	1 710.7	QPSK	1/0	V	14.13	5.93	20.06	0.101
		16QAM	1/0	V	13.42	5.93	19.35	0.086
	1 732.5	QPSK	1/0	V	15.24	5.68	20.92	0.124
		16QAM	1/0	V	14.58	5.68	20.26	0.106
	1 754.3	QPSK	1/0	V	14.88	5.44	20.32	0.108
		16QAM	1/0	V	14.24	5.44	19.68	0.093

7.6.5. LTE Band 2

Channel Bandwidth (MHz)	Tx Freq. (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	EIRP (dBm)	EIRP (W)
20	1 860	QPSK	1/50	V	15.71	4.62	20.33	0.108
		16QAM	1/50	V	15.23	4.62	19.85	0.097
	1 880	QPSK	1/0	V	16.58	4.52	21.10	0.129
		16QAM	1/0	V	15.48	4.52	20.00	0.100
	1 900	QPSK	1/0	V	14.93	4.42	19.35	0.086
		16QAM	1/0	V	14.22	4.42	18.64	0.073
15	1 857.5	QPSK	1/74	V	16.16	4.63	20.79	0.120
		16QAM	1/74	V	15.52	4.63	20.15	0.104
	1 880	QPSK	1/0	V	16.45	4.52	20.97	0.125
		16QAM	1/0	V	15.76	4.52	20.28	0.107
	1 902.5	QPSK	1/0	V	15.11	4.43	19.54	0.090
		16QAM	1/0	V	14.22	4.43	18.65	0.073
10	1 855	QPSK	1/0	V	15.58	4.65	20.23	0.105
		16QAM	1/0	V	14.84	4.65	19.49	0.089
	1 880	QPSK	1/0	V	16.33	4.52	20.85	0.122
		16QAM	1/0	V	15.79	4.52	20.31	0.107
	1 905	QPSK	1/0	V	15.59	4.44	20.03	0.101
		16QAM	1/0	V	14.90	4.44	19.34	0.086
5	1 852.5	QPSK	1/12	V	15.80	4.66	20.46	0.111
		16QAM	1/12	V	15.06	4.66	19.72	0.094
	1 880	QPSK	1/0	V	16.58	4.52	21.10	0.129
		16QAM	1/0	V	15.21	4.52	19.73	0.094
	1 907.5	QPSK	1/0	V	15.15	4.44	19.59	0.091
		16QAM	1/0	V	14.40	4.44	18.84	0.077
3	1 851.5	QPSK	1/14	V	14.92	4.66	19.58	0.091
		16QAM	1/14	V	14.11	4.66	18.77	0.075
	1 880	QPSK	1/0	V	15.98	4.52	20.50	0.112
		16QAM	1/0	V	15.11	4.52	19.63	0.092
	1 908.5	QPSK	1/0	V	15.90	4.45	20.35	0.108
		16QAM	1/0	V	15.08	4.45	19.53	0.090
1.4	1 850.7	QPSK	1/5	V	14.87	4.67	19.54	0.090
		16QAM	1/5	V	14.08	4.67	18.75	0.075
	1 880	QPSK	1/2	V	15.72	4.52	20.24	0.106
		16QAM	1/2	V	14.93	4.52	19.45	0.088
	1 909.3	QPSK	1/0	V	15.64	4.45	20.09	0.102
		16QAM	1/0	V	14.76	4.45	19.21	0.083

7.7. UNDESIRABLE EMISSIONS (Radiated)

- Test Notes

1) This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported.
2) 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.
3) Limit for Band 12(17)/13/5/4/2 = -13dBm
   Limit for 1 559 MHz ~ 1 610 MHz in Band 13 = −40dBm/MHz
   (equivalent isotropically radiated power for wideband signals)

7.7.1. LTE Band 12(17)

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
10	704	1/49	QPSK	1 416.78	H	-52.85	3.30	-49.55	-13.00	36.55
			16QAM	1 416.81	H	-53.40	3.30	-50.10	-13.00	37.10
	711	1/49	QPSK	1 430.89	H	-49.79	3.39	-46.40	-13.00	33.40
			16QAM	1 430.85	H	-50.95	3.39	-47.56	-13.00	34.56

7.7.2. LTE Band 13

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
10	782	1/0	QPSK	1 555.26	V	-50.93	3.74	-47.19	-13.00	34.19
			16QAM	1 555.32	V	-51.76	3.74	-48.02	-13.00	35.02
5	779.5	1/0	QPSK	1 554.67	V	-50.03	3.74	-46.29	-13.00	33.29
			16QAM	1 554.57	V	-51.41	3.74	-47.67	-13.00	34.67

UNDESIRABLE EMISSIONS IN 1 559 MHz ~ 1 610 MHz (LTE Band 13)

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
10	782	1/25	QPSK	1 564.28	V	-53.17	5.87	-47.30	-40.00	7.30
			16QAM	1 564.01	V	-53.73	5.87	-47.86	-40.00	7.86
5	779.5	1/12	QPSK	1 559.06	V	-51.59	5.88	-45.71	-40.00	5.71
			16QAM	1 559.03	V	-52.59	5.88	-46.71	-40.00	6.71

7.7.3. LTE Band 5

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBd)	Result (dBm)	Limit (dBm)	Margin (dB)
10	829	1/25	QPSK	1 658.18	H	-67.31	3.54	-63.77	-13.00	50.77
			16QAM	1 658.11	H	-67.90	3.54	-64.36	-13.00	51.36
	836.5	1/0	QPSK	1 664.23	H	-64.64	3.52	-61.12	-13.00	48.12
			16QAM	1 664.06	H	-65.32	3.53	-61.79	-13.00	48.79
	844	1/0	QPSK	1 679.09	H	-64.16	3.50	-60.66	-13.00	47.66
			16QAM	1 679.19	H	-64.53	3.50	-61.03	-13.00	48.03
5	836.5	1/0	QPSK	1 668.74	H	-62.99	3.52	-59.47	-13.00	46.47
			16QAM	1 668.71	H	-63.62	3.52	-60.10	-13.00	47.10

7.7.4. LTE Band 4

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
20	1 720	1/50	QPSK	3 440.16	V	-67.28	8.13	-59.15	-13.00	46.15
			16QAM	3 440.12	V	-67.65	8.13	-59.52	-13.00	46.52
	1 732.5	1/0	QPSK	3 445.31	V	-68.23	8.14	-60.09	-13.00	47.09
			16QAM	3 445.74	V	-68.42	8.14	-60.28	-13.00	47.28
	1 745	1/0	QPSK	3 472.26	V	-67.63	8.18	-59.45	-13.00	46.45
			16QAM	3 472.35	V	-67.85	8.18	-59.67	-13.00	46.67
10	1 732.5	1/0	QPSK	3 456.17	V	-67.54	8.15	-59.39	-13.00	46.39
			16QAM	3 456.27	V	-67.63	8.15	-59.48	-13.00	46.48

7.7.5. LTE Band 2

Channel Bandwidth (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level at Antenna Terminal(dBm)	Substitute Antenna Gain(dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
20	1 860	1/50	QPSK	3 720.23	V	-68.46	8.52	-59.94	-13.00	46.94
			16QAM	3 720.09	V	-68.51	8.51	-60.00	-13.00	47.00
	1 880	1/0	QPSK	3 742.14	V	-67.72	8.54	-59.18	-13.00	46.18
			16QAM	3 742.21	V	-67.71	8.54	-59.17	-13.00	46.17
	1 900	1/0	QPSK	3 782.16	V	-67.94	8.60	-59.34	-13.00	46.34
			16QAM	3 782.03	V	-67.97	8.60	-59.37	-13.00	46.37
5	1 880	1/0	QPSK	3 755.65	V	-67.65	8.56	-59.09	-13.00	46.09
			16QAM	3 755.55	V	-67.73	8.56	-59.17	-13.00	46.17

7.8. FREQUENCY STABILITY

- Test Notes

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 in-band 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.

7.8.1. LTE Band 12(17)

OPERATING FREQUENCY : 707.5 MHz
REFERENCE VOLTAGE : 12 V DC
LIMIT(FCC&IC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	12	+20(Ref)	707,500,005	+0.000 000 707	+0.007 1
100 %		-30	707,500,003	+0.000 000 424	+0.004 2
100 %		-20	707,500,003	+0.000 000 424	+0.004 2
100 %		-10	707,499,997	-0.000 000 424	-0.004 2
100 %		0	707,499,998	-0.000 000 283	-0.002 8
100 %		+10	707,500,004	+0.000 000 565	+0.005 7
100 %		+20	707,500,005	+0.000 000 707	+0.007 1
100 %		+30	707,500,002	+0.000 000 283	+0.002 8
100 %		+40	707,499,996	-0.000 000 565	-0.005 7
100 %		+50	707,499,997	-0.000 000 424	-0.004 2
115 %	13.8	+20	707,500,003	+0.000 000 424	+0.004 2
85 %	10.2	+20	707,500,002	+0.000 000 283	+0.002 8

7.8.2. LTE Band 13

OPERATING FREQUENCY : 784.5 MHz
REFERENCE VOLTAGE : 12 V DC
LIMIT(FCC&IC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	12	+20(Ref)	784,499,994	-0.000 000 765	-0.007 6
100 %		-30	784,500,004	+0.000 000 510	+0.005 1
100 %		-20	784,500,004	+0.000 000 510	+0.005 1
100 %		-10	784,499,997	-0.000 000 382	-0.003 8
100 %		0	784,499,998	-0.000 000 255	-0.002 5
100 %		+10	784,499,999	-0.000 000 127	-0.001 3
100 %		+20	784,499,994	-0.000 000 765	-0.007 6
100 %		+30	784,500,003	+0.000 000 382	+0.003 8
100 %		+40	784,500,003	+0.000 000 382	+0.003 8
100 %		+50	784,500,004	+0.000 000 510	+0.005 1
115 %	13.8	+20	784,499,996	-0.000 000 510	-0.005 1
85 %	10.2	+20	784,499,999	-0.000 000 127	-0.001 3

7.8.3. LTE Band 5

OPERATING FREQUENCY : 836.5 MHz
REFERENCE VOLTAGE : 12 V DC
DEVIATION LIMIT(FCC) : ± 0.000 25 % or 2.5 ppm
DEVIATION LIMIT(IC) The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	12	+20(Ref)	836,500,004	+0.000 000 478	+0.004 8
100 %		-30	836,500,002	+0.000 000 239	+0.002 4
100 %		-20	836,500,002	+0.000 000 239	+0.002 4
100 %		-10	836,499,998	-0.000 000 239	-0.002 4
100 %		0	836,499,997	-0.000 000 359	-0.003 6
100 %		+10	836,500,003	+0.000 000 359	+0.003 6
100 %		+20	836,500,004	+0.000 000 478	+0.004 8
100 %		+30	836,500,004	+0.000 000 478	+0.004 8
100 %		+40	836,500,004	+0.000 000 478	+0.004 8
100 %		+50	836,499,998	-0.000 000 239	-0.002 4
115 %	13.8	+20	836,500,001	+0.000 000 120	+0.001 2
85 %	10.2	+20	836,500,001	+0.000 000 120	+0.001 2

7.8.4. LTE Band 4

OPERATING FREQUENCY : 1 732.5 MHz
REFERENCE VOLTAGE : 12 V DC
LIMIT(FCC&IC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	12	+20(Ref)	1,732,500,007	+0.000 000 404	+0.004 0
100 %		-30	1,732,500,003	+0.000 000 173	+0.001 7
100 %		-20	1,732,499,998	-0.000 000 115	-0.001 2
100 %		-10	1,732,499,997	-0.000 000 173	-0.001 7
100 %		0	1,732,500,002	+0.000 000 115	+0.001 2
100 %		+10	1,732,499,999	-0.000 000 058	-0.000 6
100 %		+20	1,732,500,007	+0.000 000 404	+0.004 0
100 %		+30	1,732,500,001	+0.000 000 058	+0.000 6
100 %		+40	1,732,500,003	+0.000 000 173	+0.001 7
100 %		+50	1,732,499,997	-0.000 000 173	-0.001 7
115 %	13.8	+20	1,732,500,004	+0.000 000 231	+0.002 3
85 %	10.2	+20	1,732,500,004	+0.000 000 231	+0.002 3

7.8.5. LTE Band 2

OPERATING FREQUENCY : 1 880 MHz
REFERENCE VOLTAGE 12 V DC
LIMIT(FCC) : The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.
LIMIT(IC) : ± 0.000 25 % or 2.5 ppm

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100 %	12	+20(Ref)	1,880,000,005	+0.000 000 266	+0.002 7
100 %		-30	1,880,000,003	+0.000 000 160	+0.001 6
100 %		-20	1,879,999,998	-0.000 000 106	-0.001 1
100 %		-10	1,879,999,999	-0.000 000 053	-0.000 5
100 %		0	1,880,000,001	+0.000 000 053	+0.000 5
100 %		+10	1,880,000,004	+0.000 000 213	+0.002 1
100 %		+20	1,880,000,005	+0.000 000 266	+0.002 7
100 %		+30	1,880,000,004	+0.000 000 213	+0.002 1
100 %		+40	1,880,000,002	+0.000 000 106	+0.001 1
100 %		+50	1,879,999,998	-0.000 000 106	-0.001 1
115 %	13.8	+20	1,879,999,999	-0.000 000 053	-0.000 5
85 %	10.2	+20	1,880,000,003	+0.000 000 160	+0.001 6

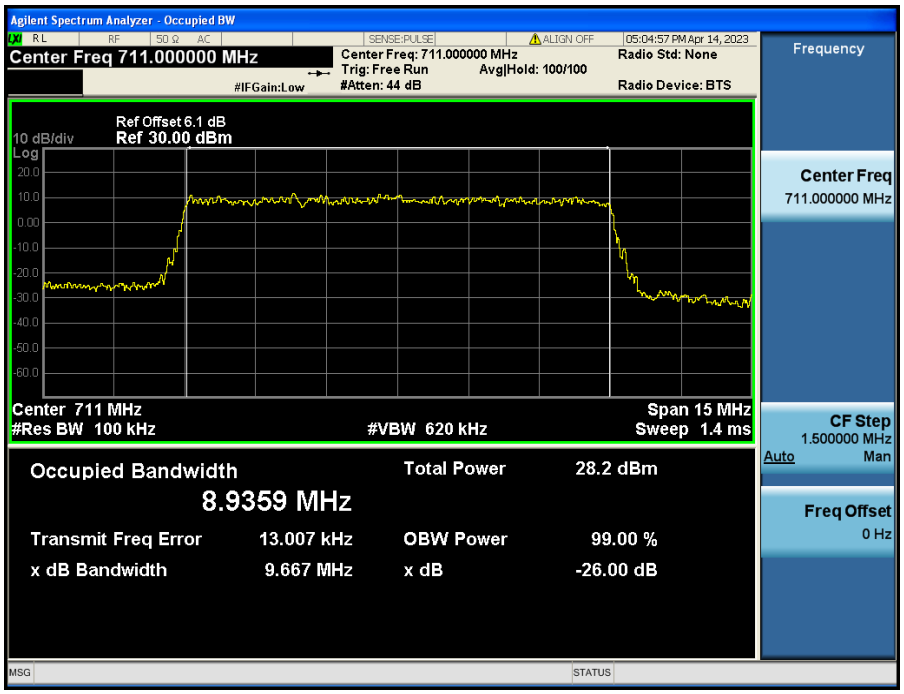
8. TEST PLOTS

- Test Notes:

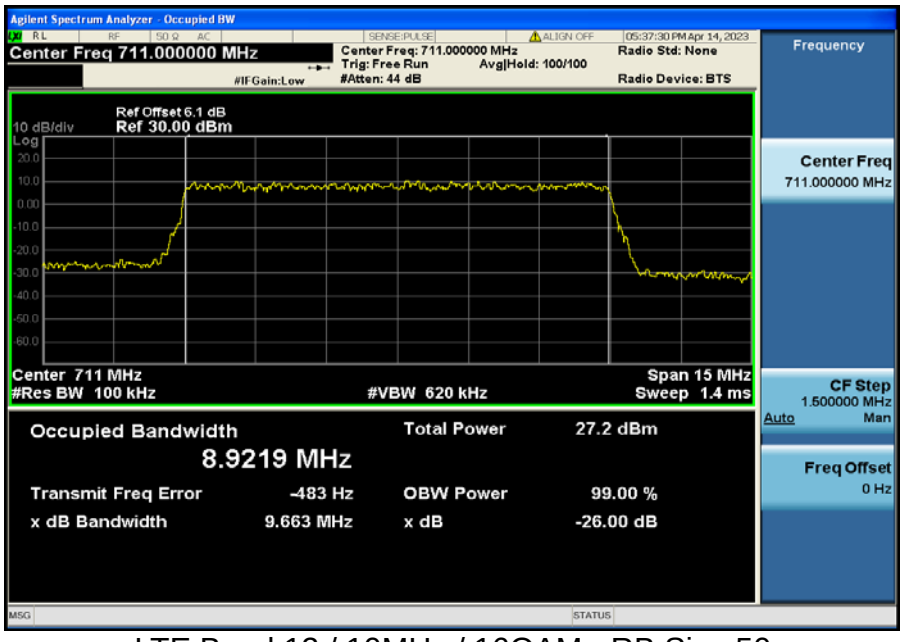
All bandwidths, RB configurations, and modulations were investigated.
The worst case test results are reported.

8.1. OCCUPIED BANDWIDTH

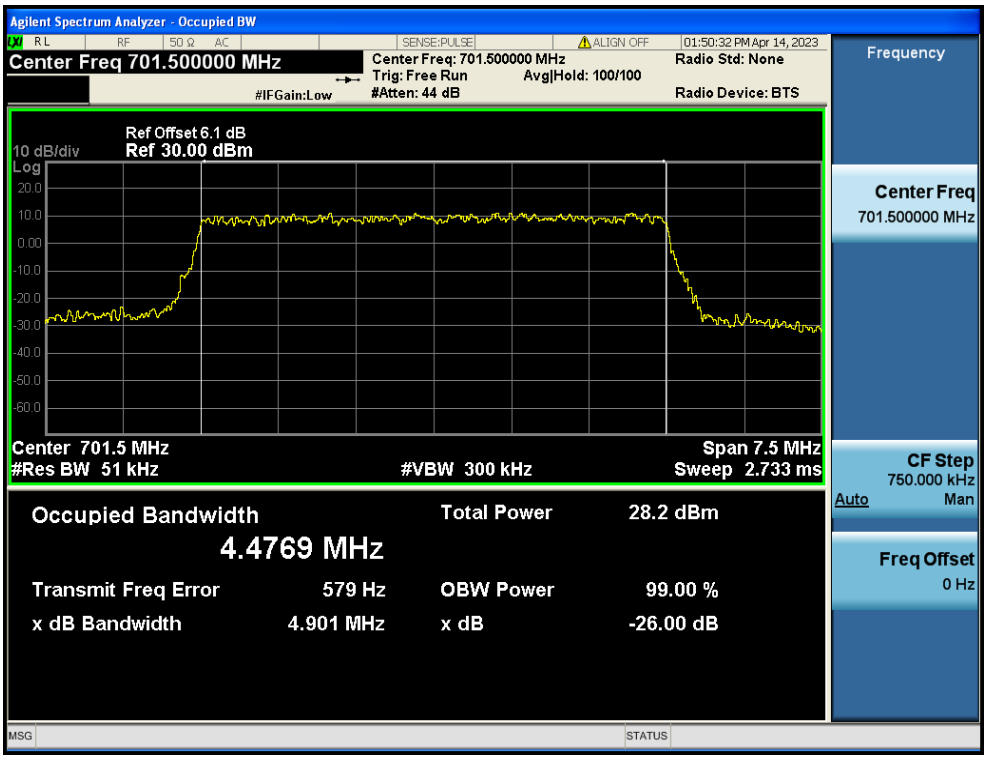
8.1.1. LTE Band 12(17)



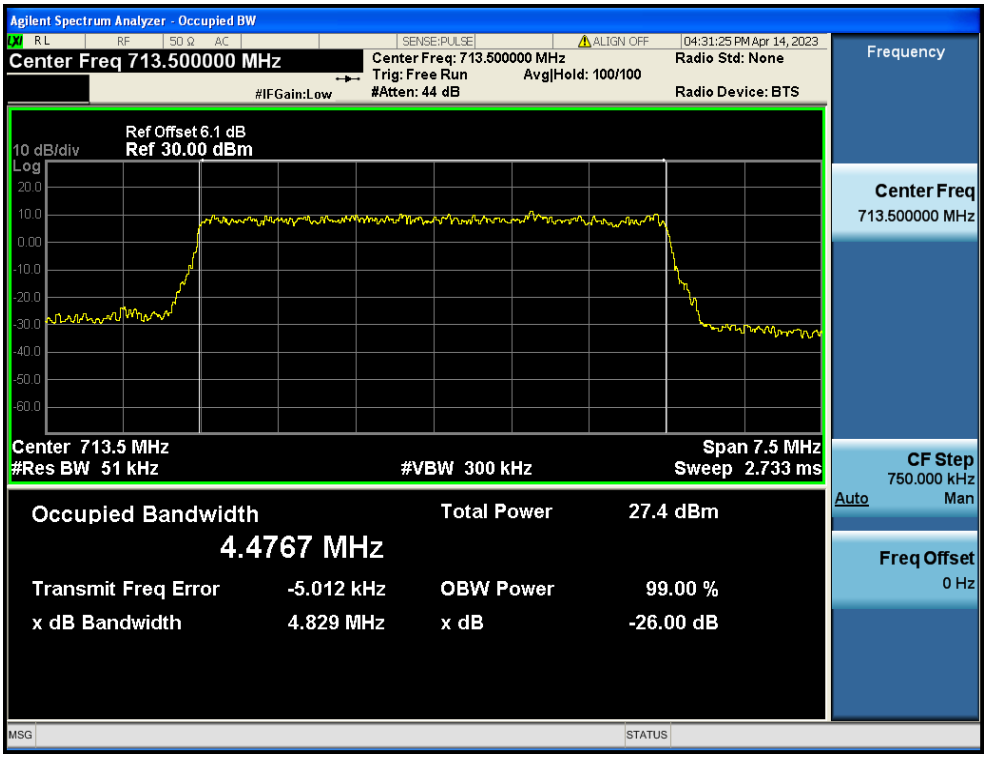
LTE Band 12 / 10MHz / QPSK - RB Size 50



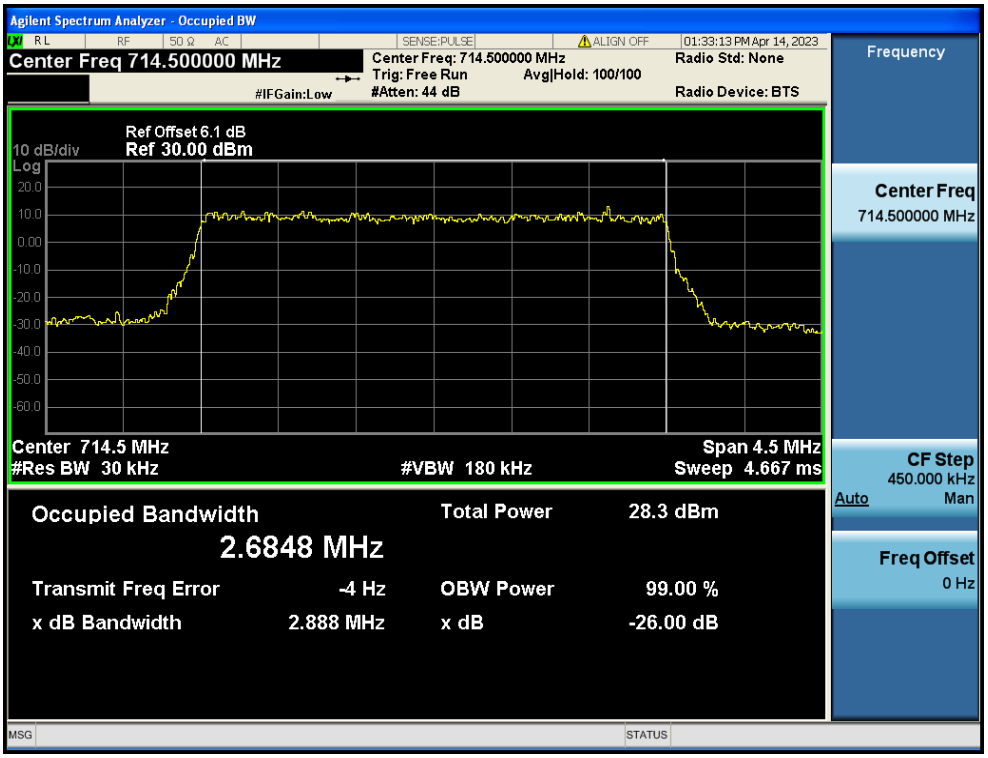
LTE Band 12 / 10MHz / 16QAM - RB Size 50



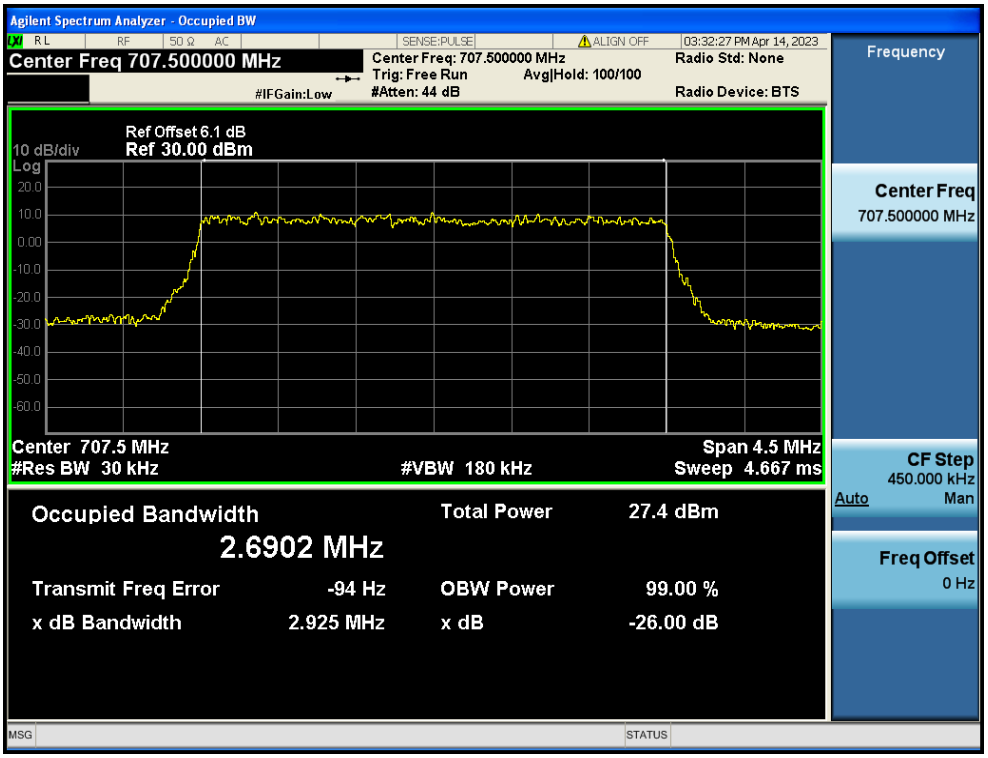
LTE Band 12 / 5MHz / QPSK - RB Size 25



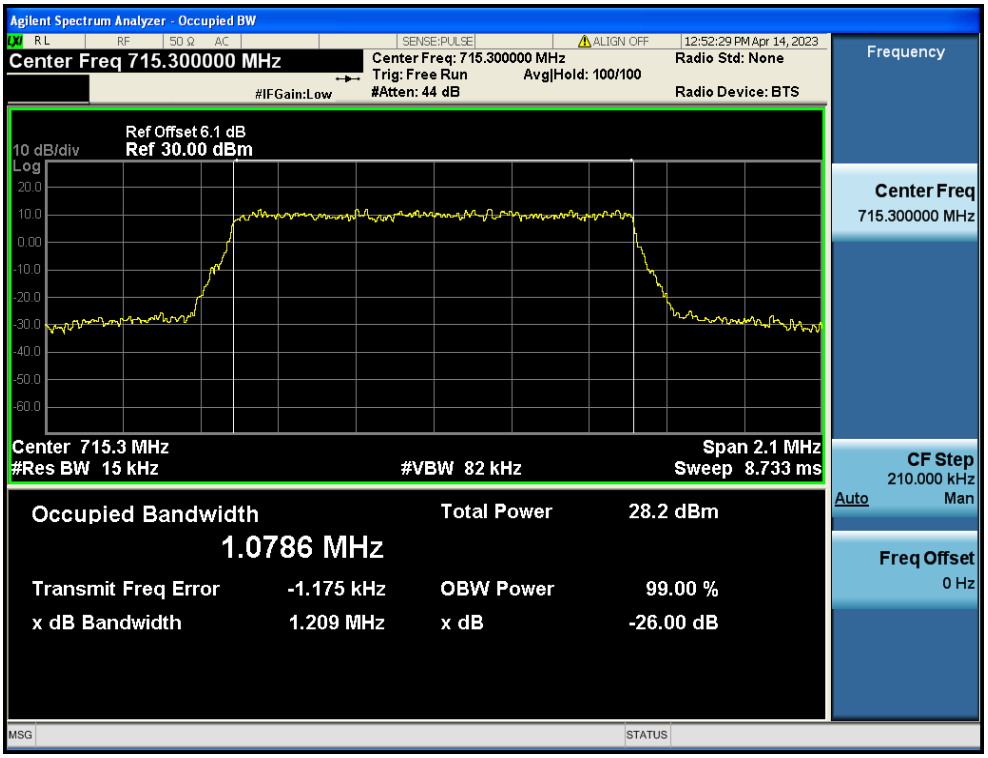
LTE Band 12 / 5MHz / 16QAM - RB Size 25



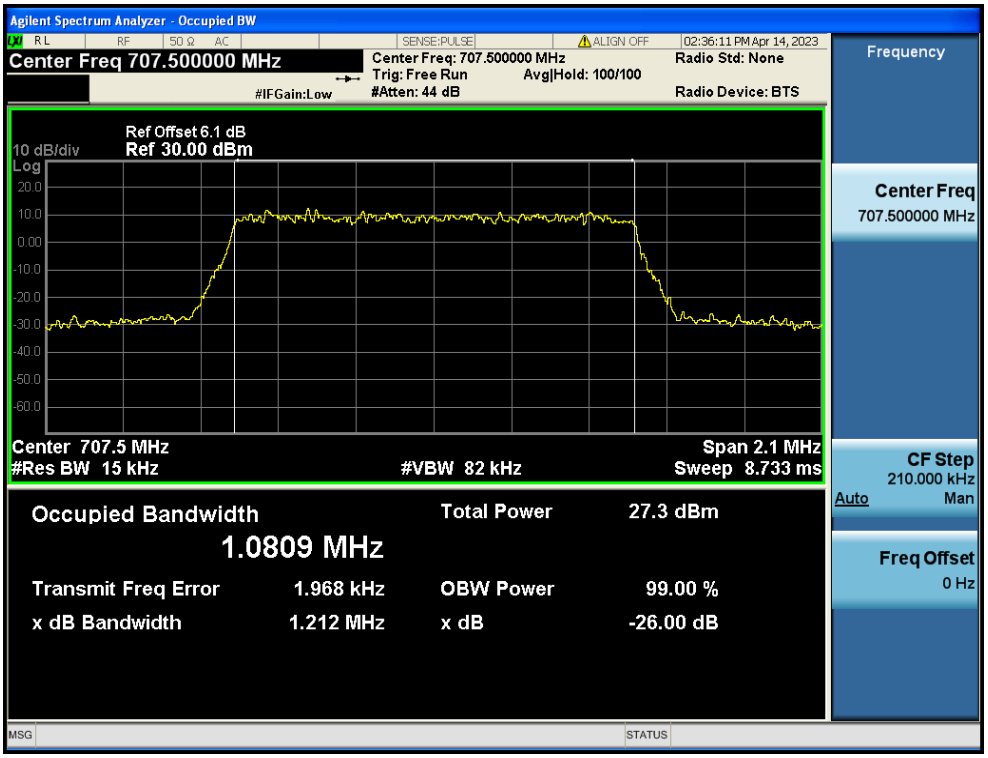
LTE Band 12 / 3MHz / QPSK - RB Size 15



LTE Band 12 / 3MHz / 16QAM - RB Size 15

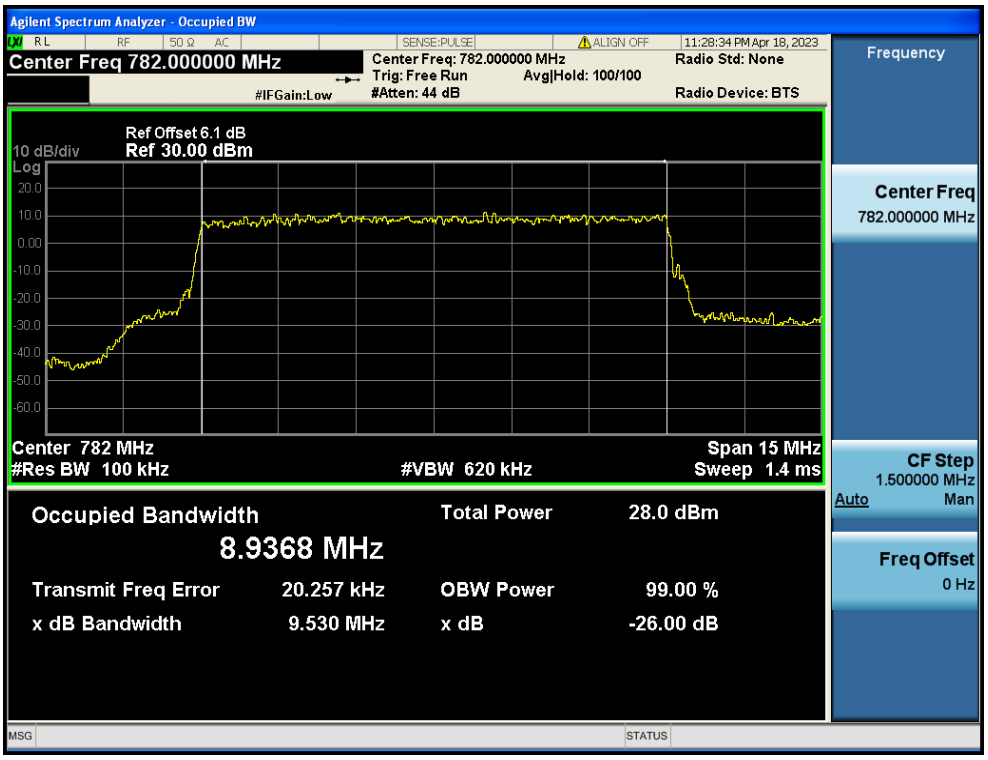


LTE Band 12 / 1.4MHz / QPSK - RB Size 6

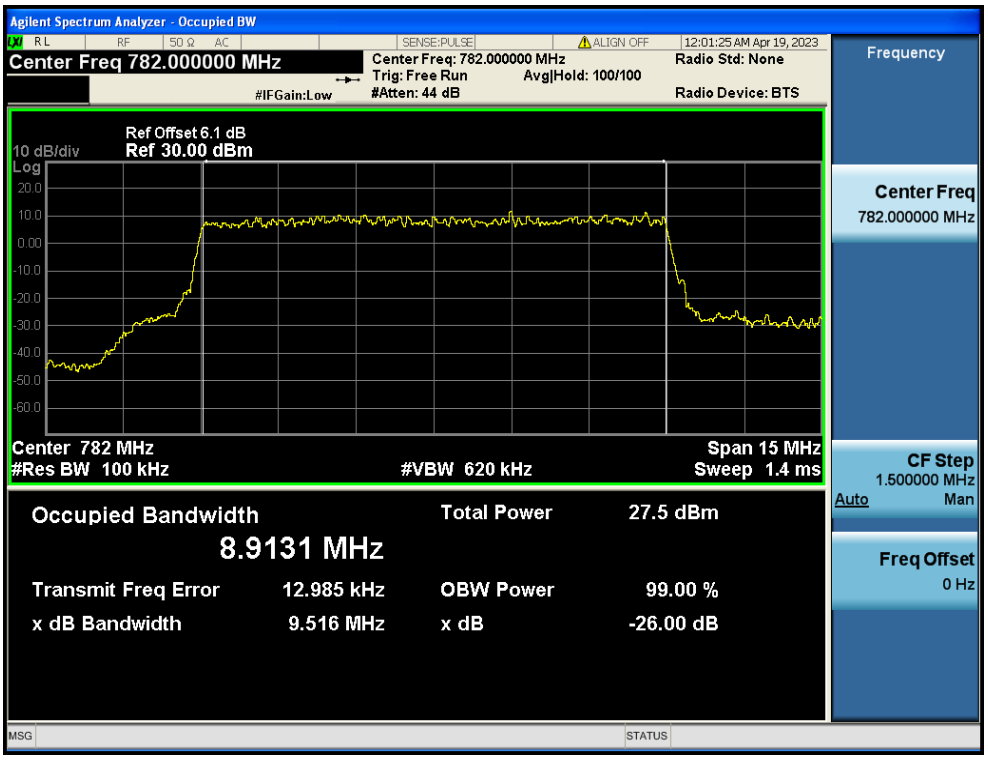


LTE Band 12 / 1.4MHz / 16QAM - RB Size 6

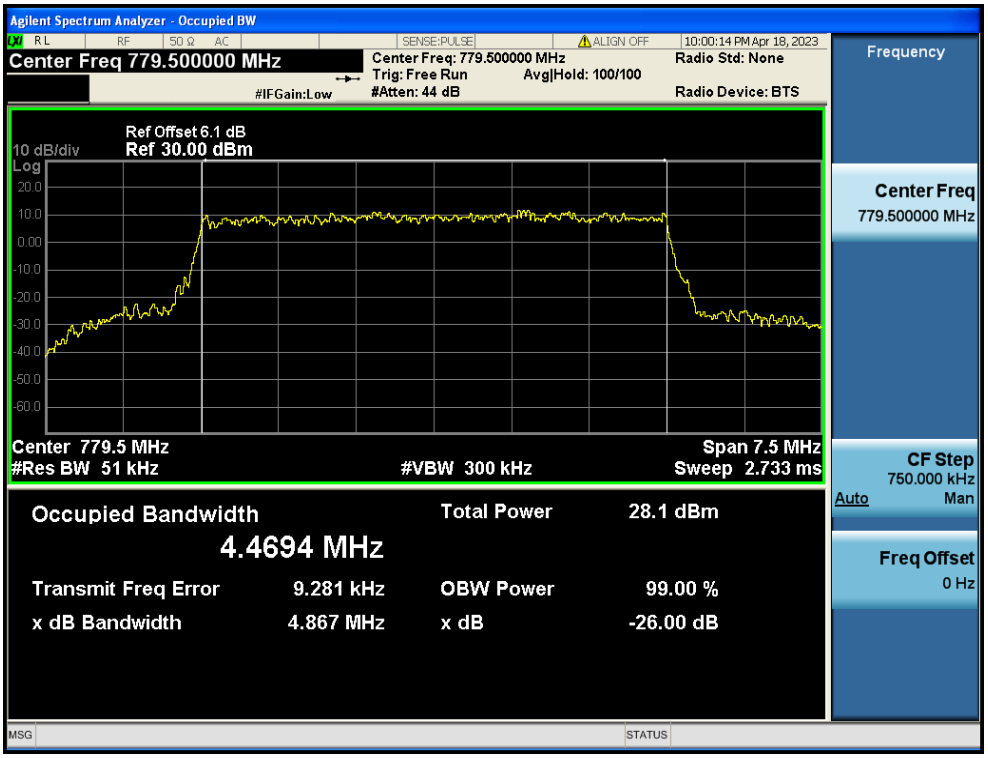
8.1.2. LTE Band 13



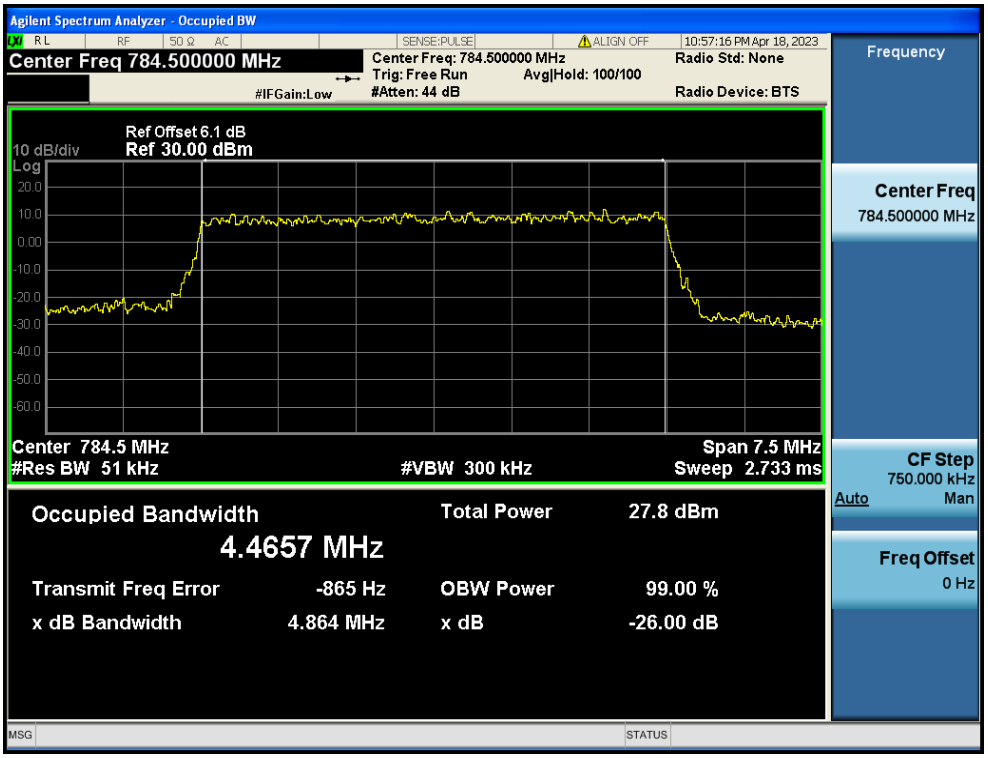
LTE Band 13 / 10MHz / QPSK - RB Size 50



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

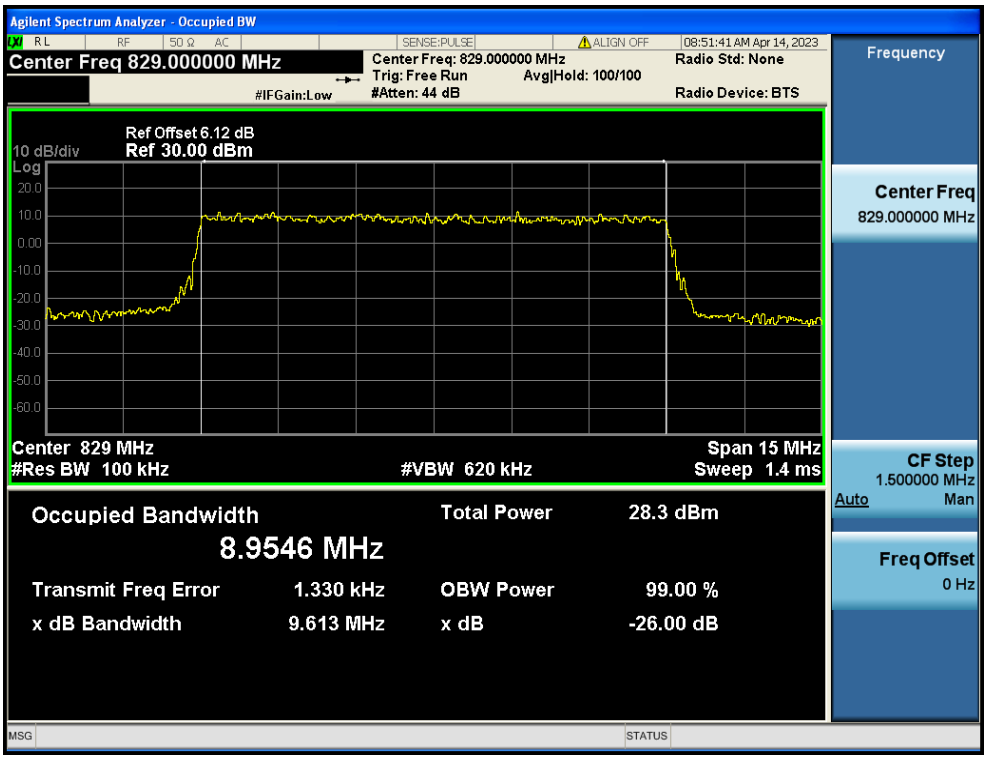


LTE Band 13 / 5MHz / QPSK - RB Size 25

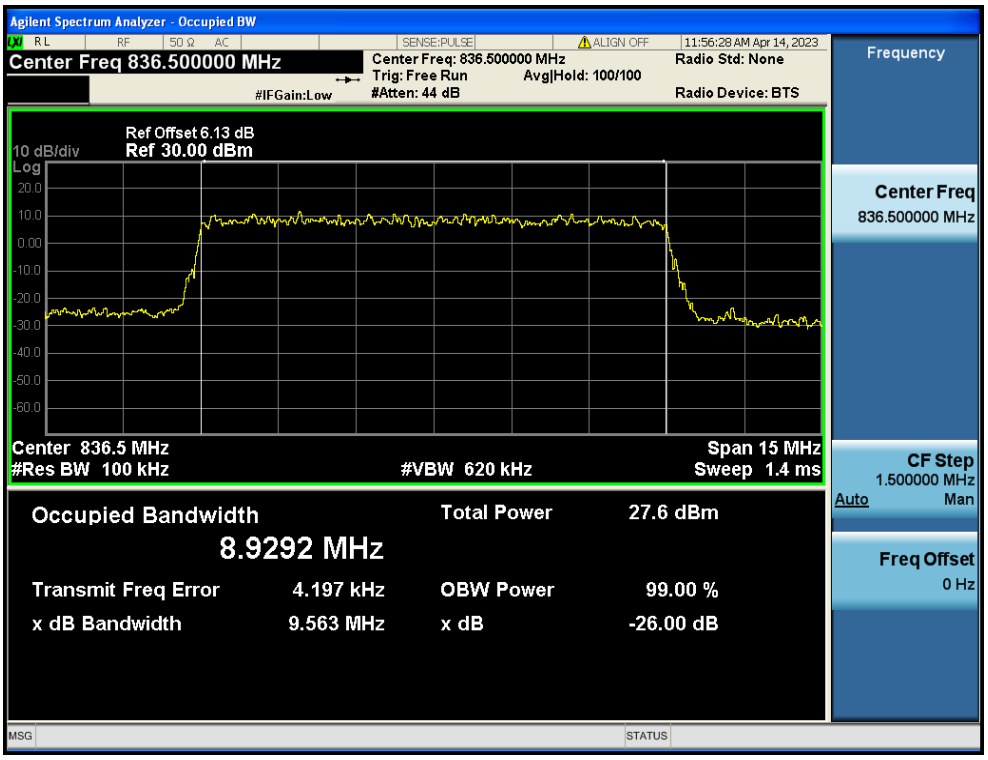


LTE Band 13 / 5MHz / 16QAM - RB Size 25

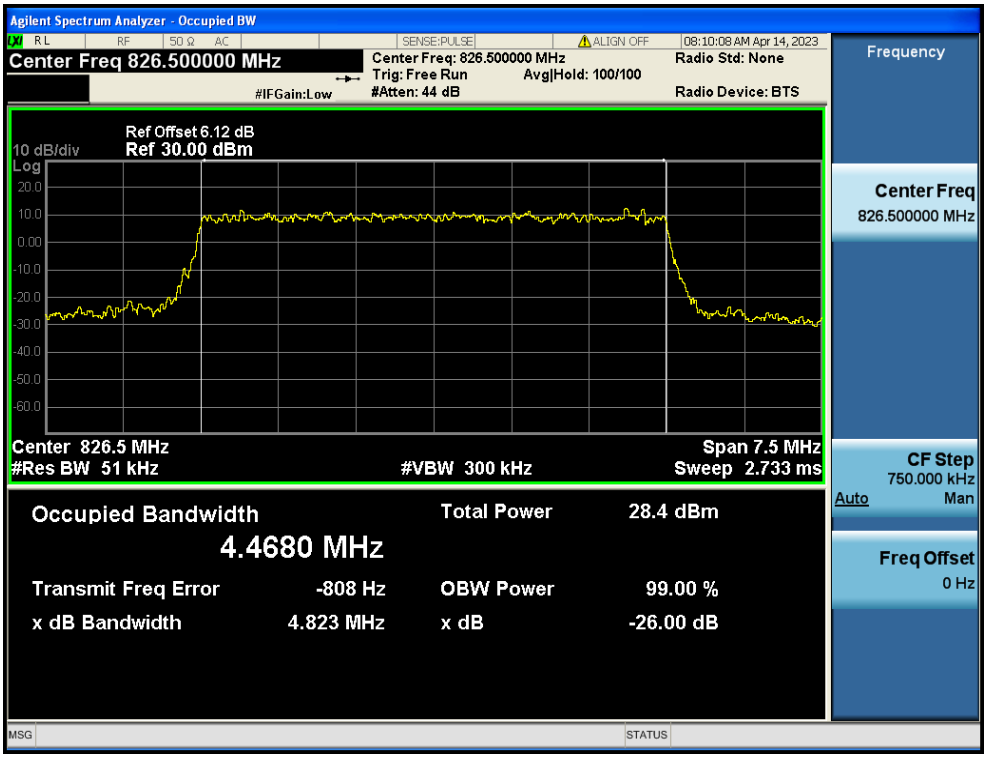
8.1.3. LTE Band 5



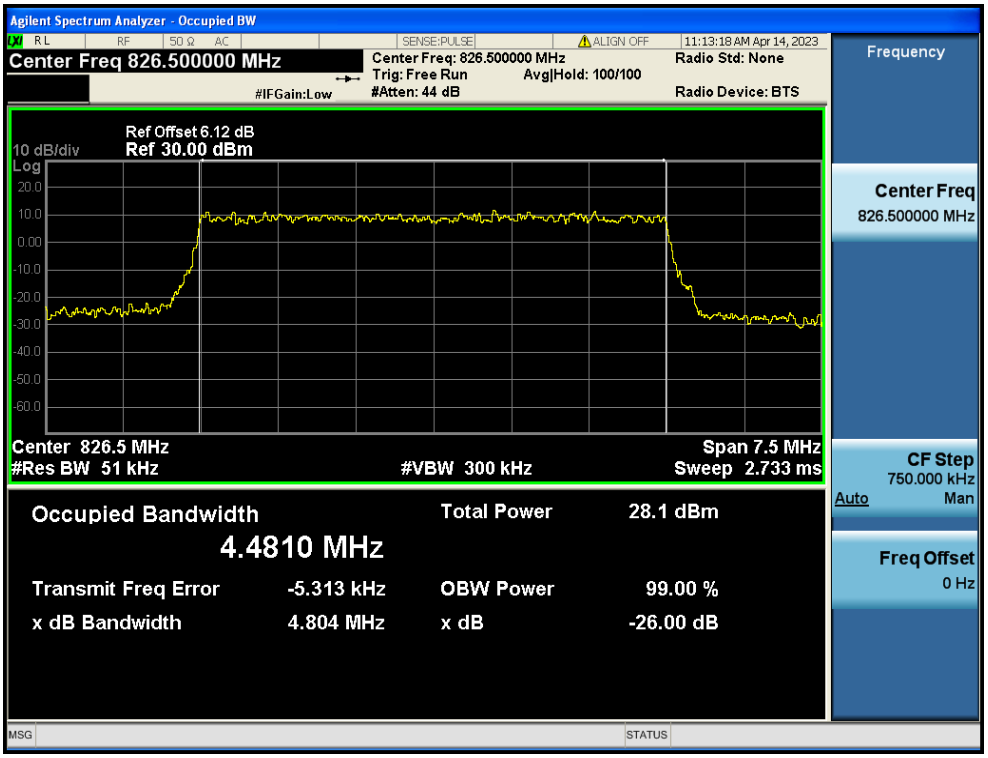
LTE Band 5 / 10MHz / QPSK - RB Size 50



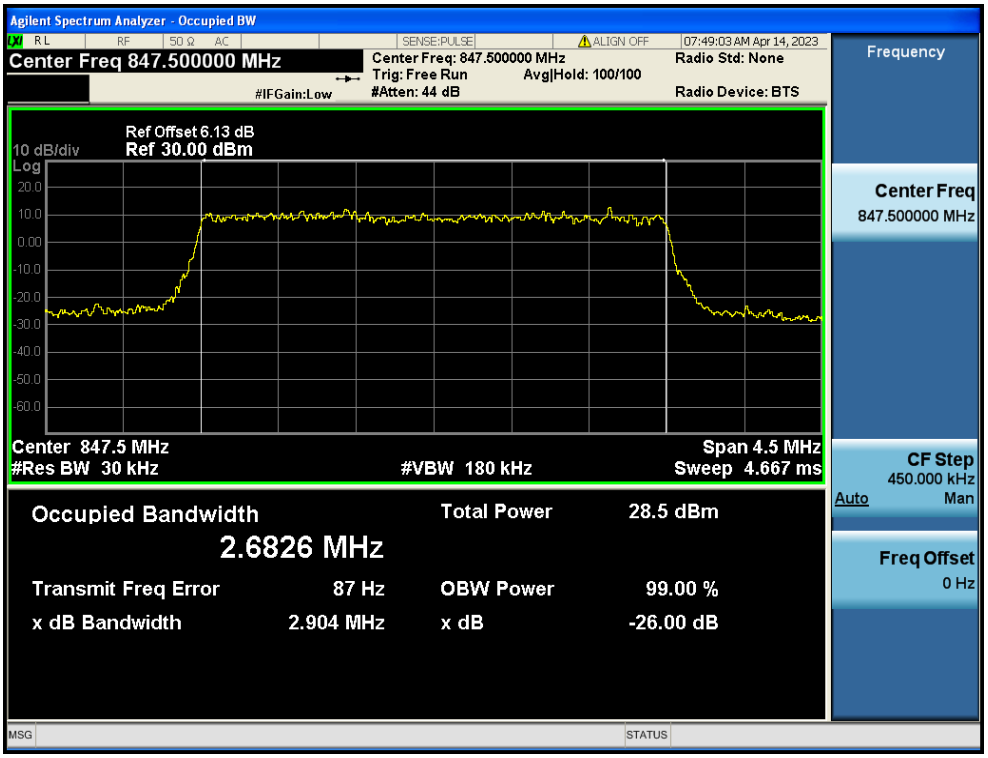
LTE Band 5 / 10MHz / 16QAM - RB Size 50



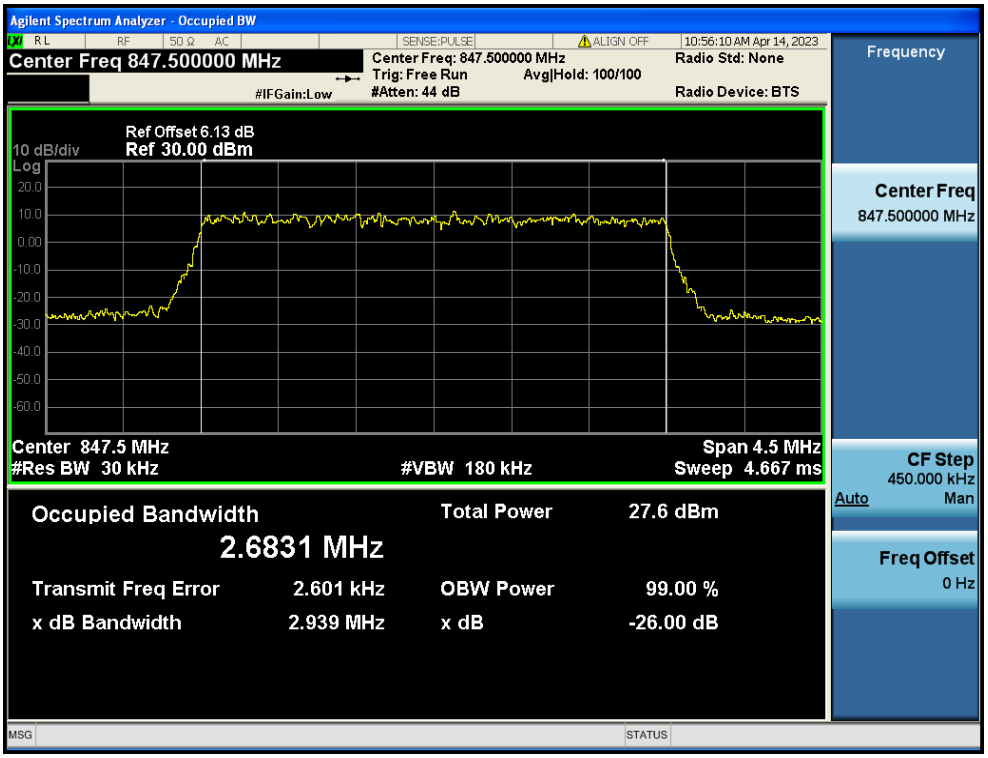
LTE Band 5 / 5MHz / QPSK - RB Size 25



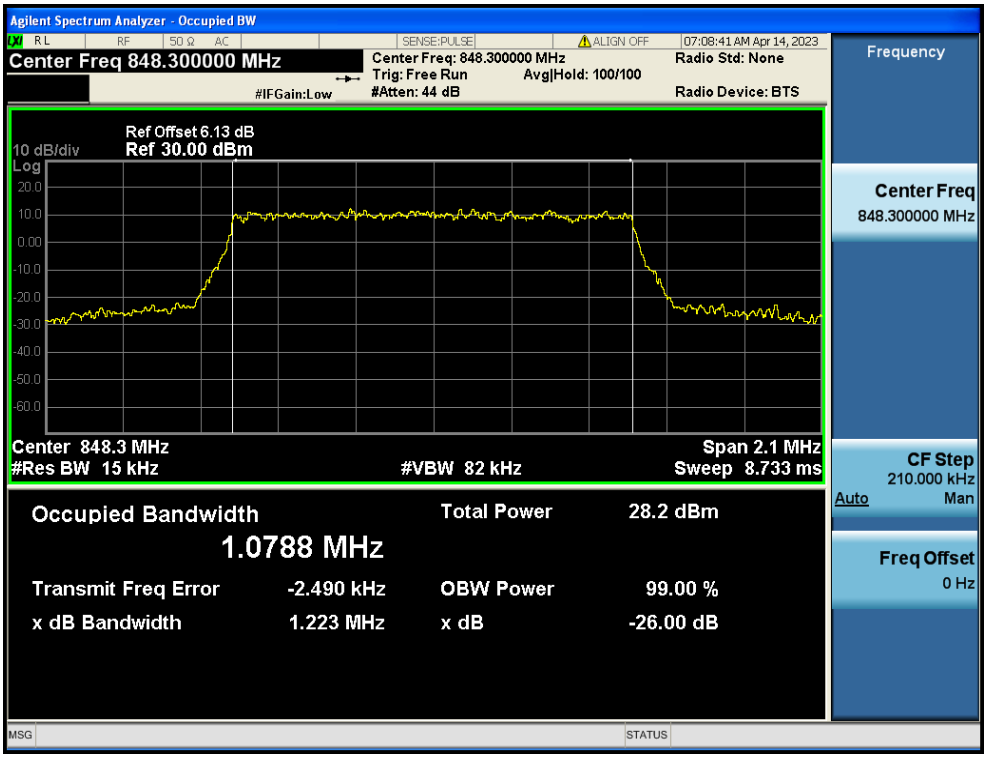
LTE Band 5 / 5MHz / 16QAM - RB Size 25



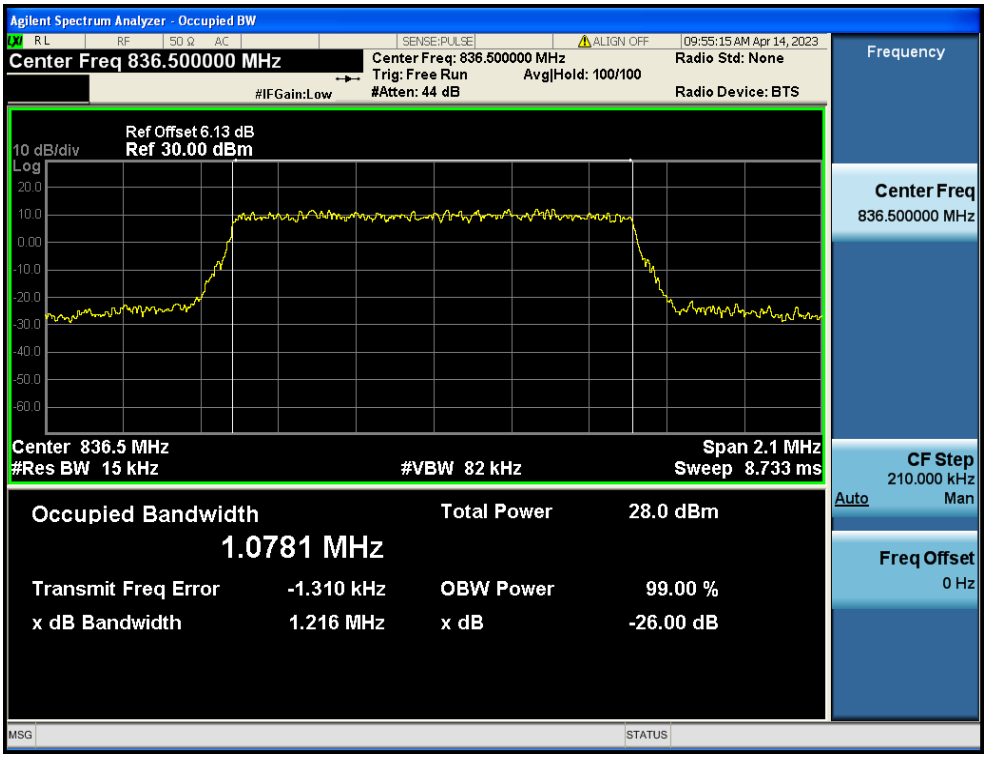
LTE Band 5 / 3MHz / QPSK - RB Size 15



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

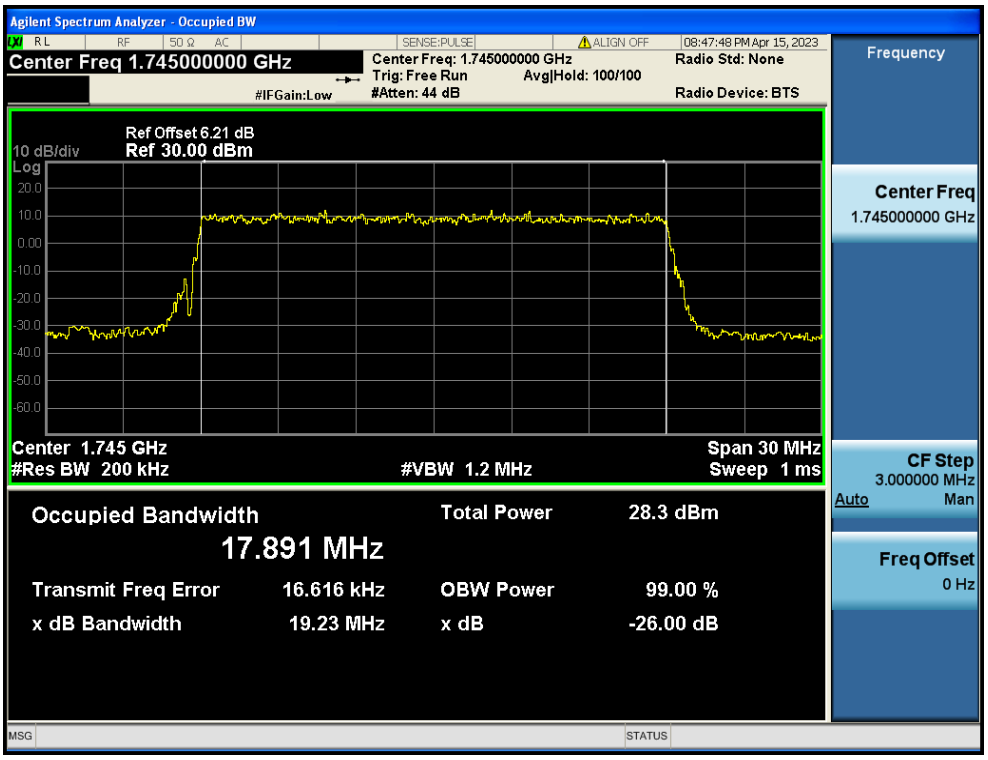


LTE Band 5 / 1.4MHz / QPSK - RB Size 6

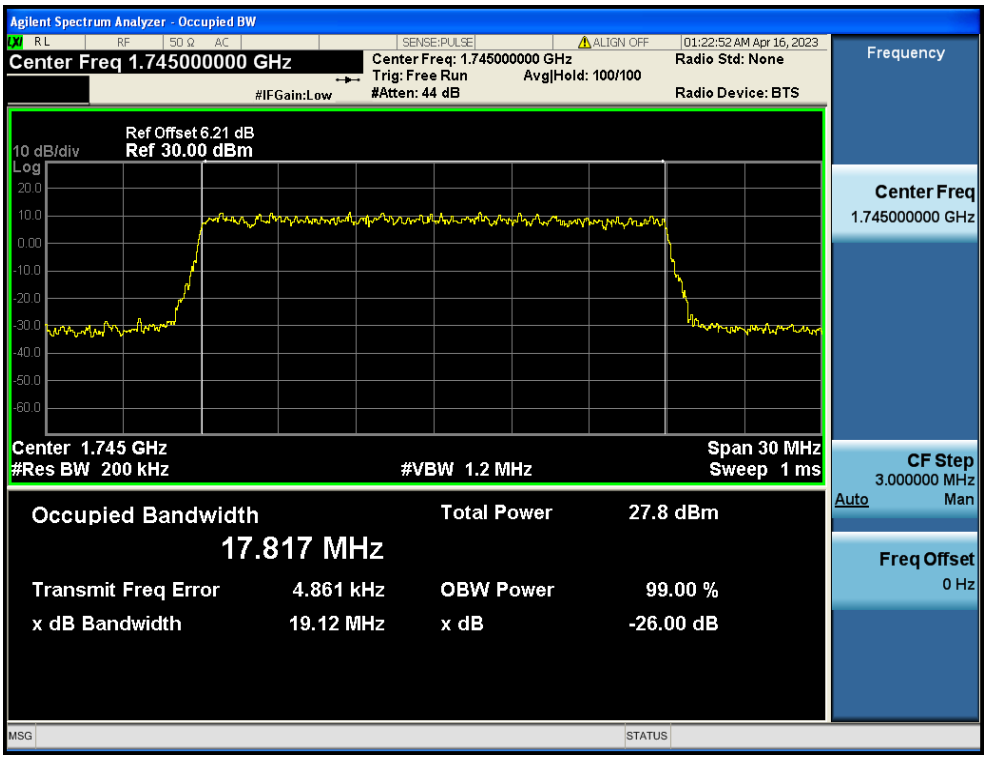


LTE Band 5 / 1.4MHz / 16QAM - RB Size 6

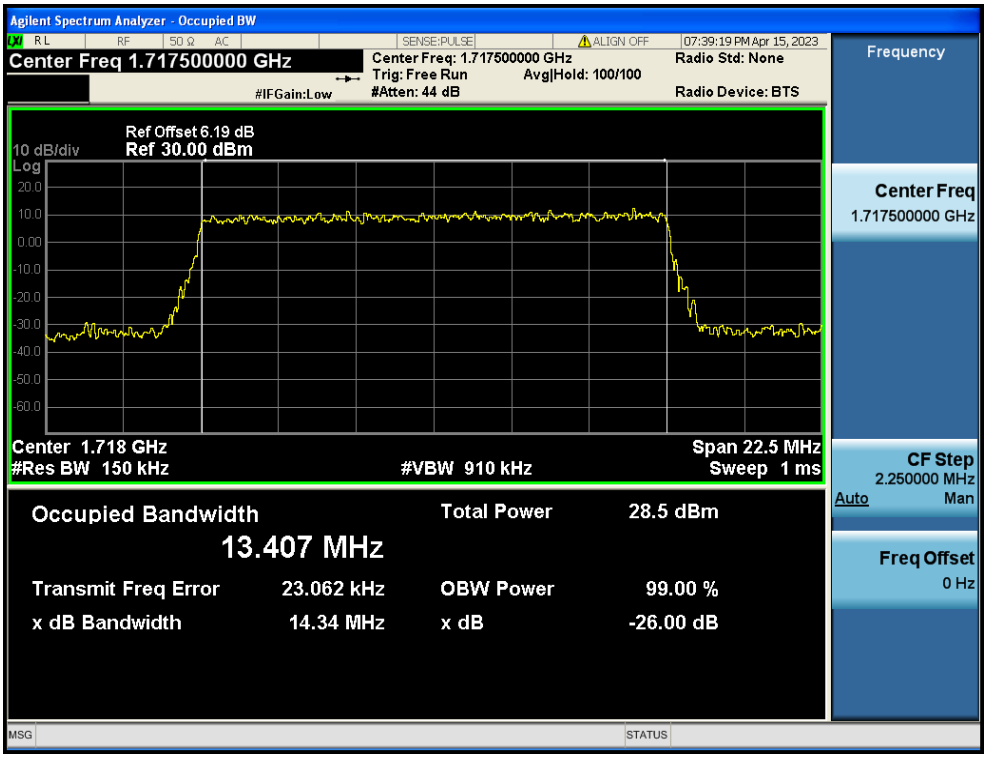
8.1.4. LTE Band 4



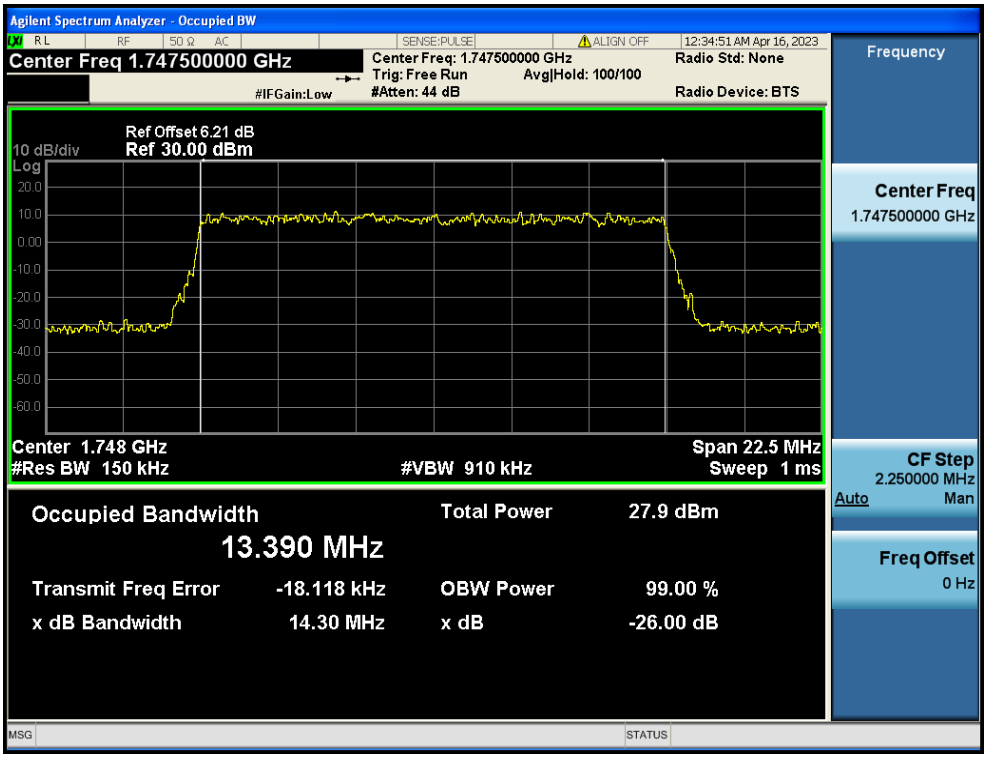
LTE Band 4 / 20MHz / QPSK - RB Size 100



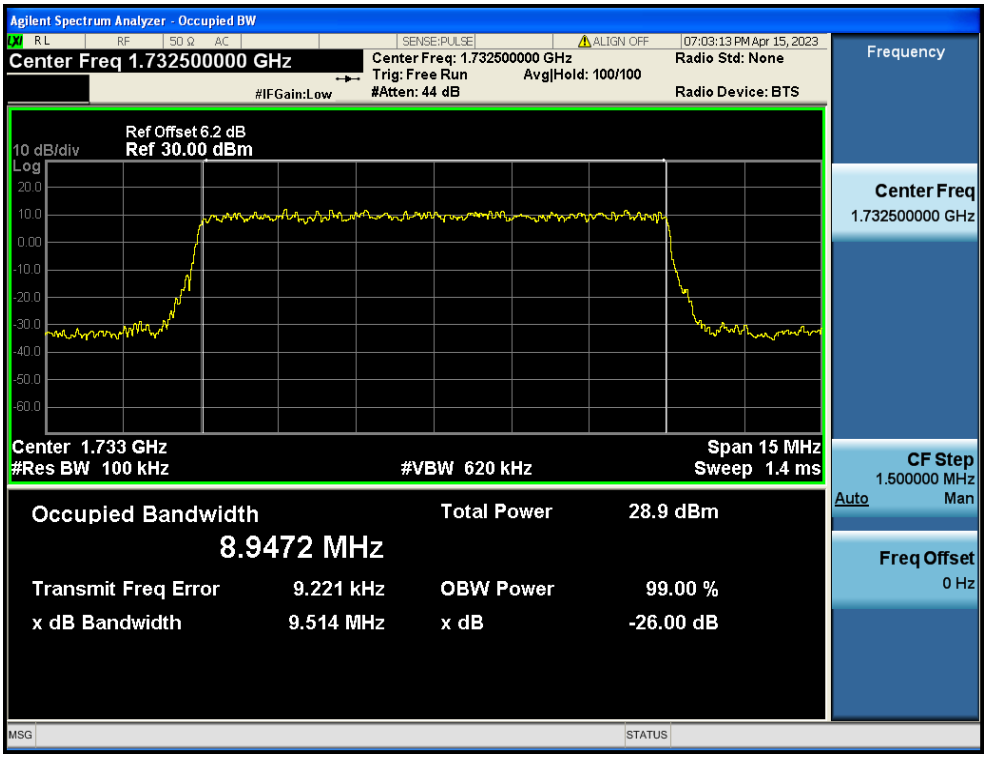
LTE Band 4 / 20MHz / 16QAM - RB Size 100



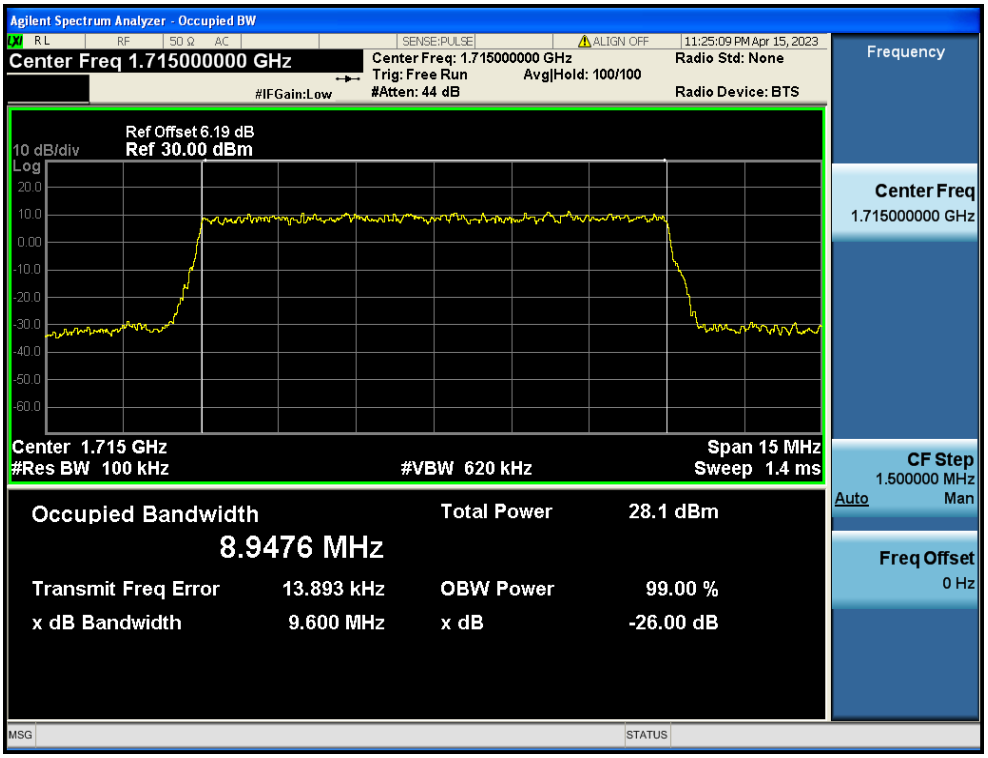
LTE Band 4 / 15MHz / QPSK - RB Size 75



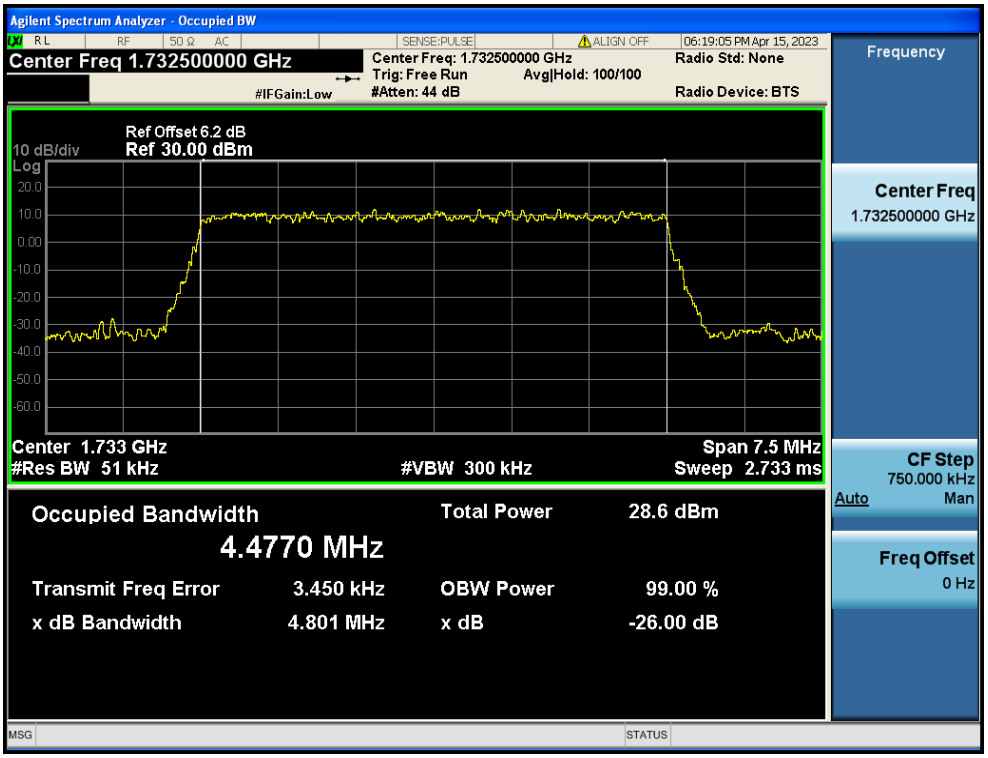
LTE Band 4 / 15MHz / 16QAM - RB Size 75



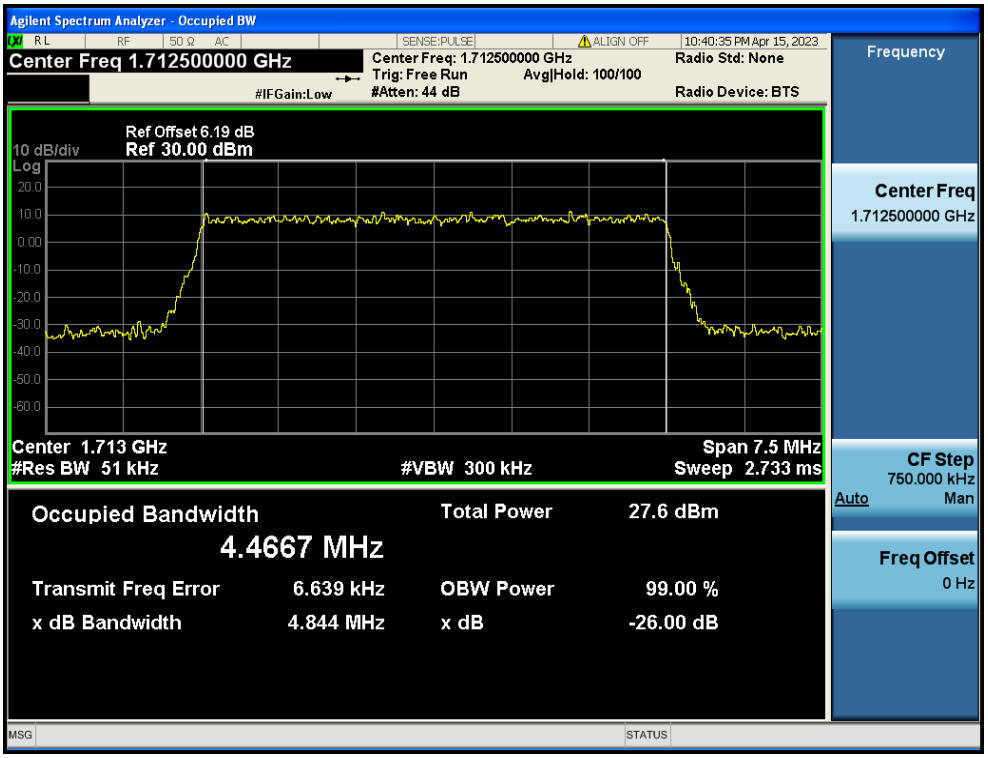
LTE Band 4 / 10MHz / QPSK - RB Size 50



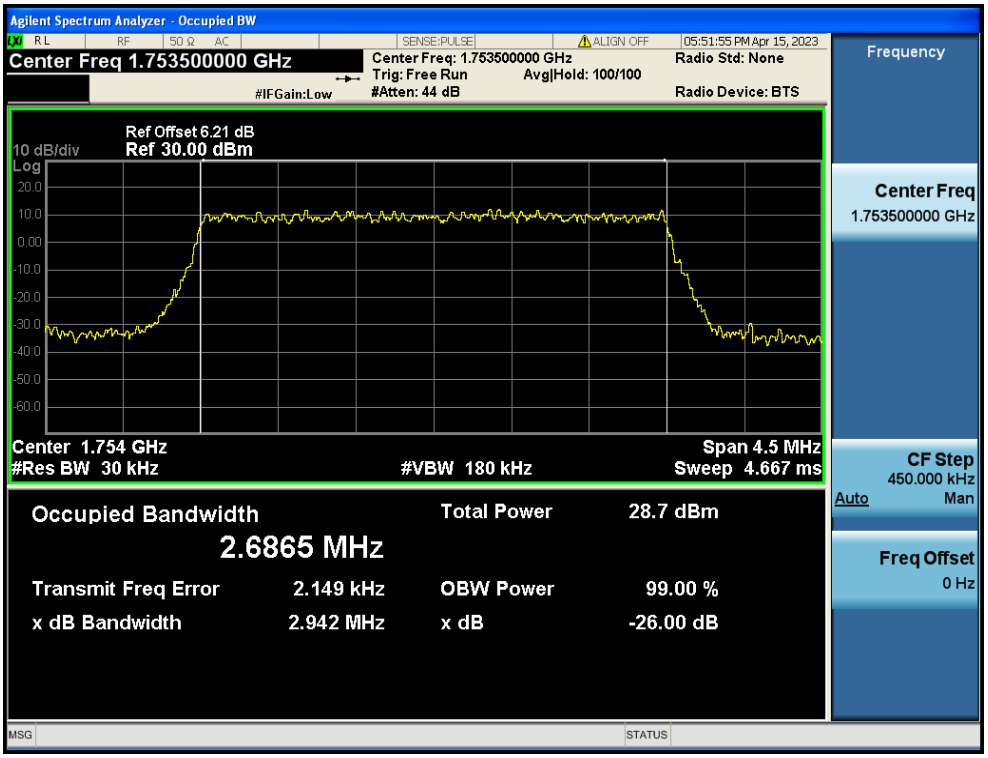
LTE Band 4 / 10MHz / 16QAM - RB Size 50



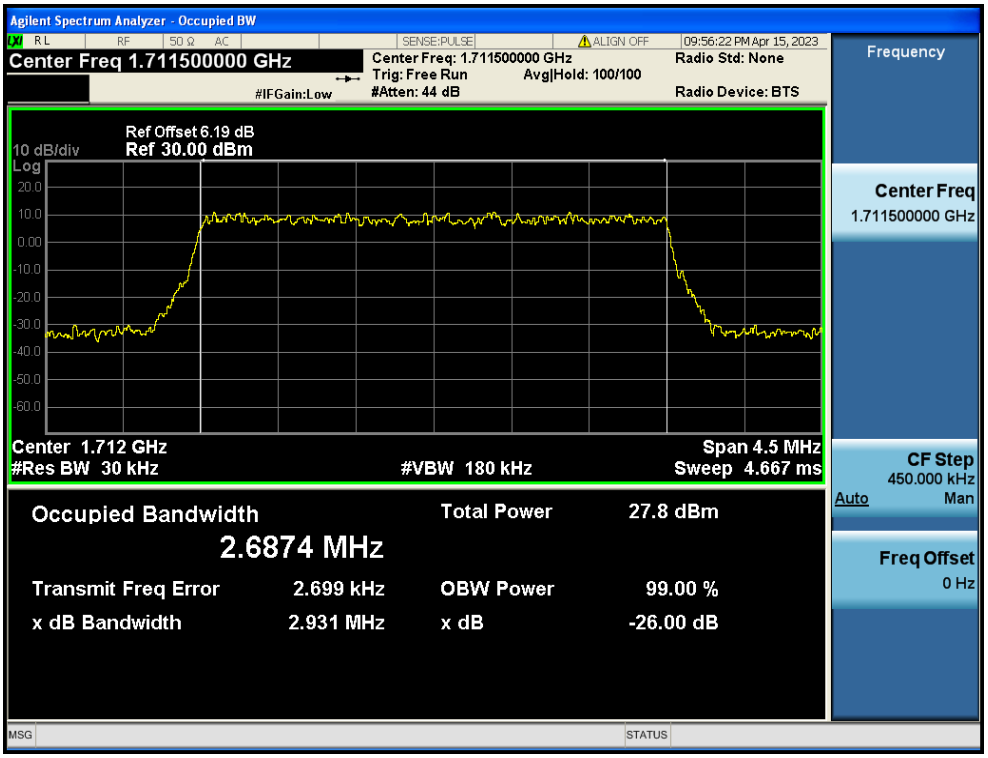
LTE Band 4 / 5MHz / QPSK - RB Size 25



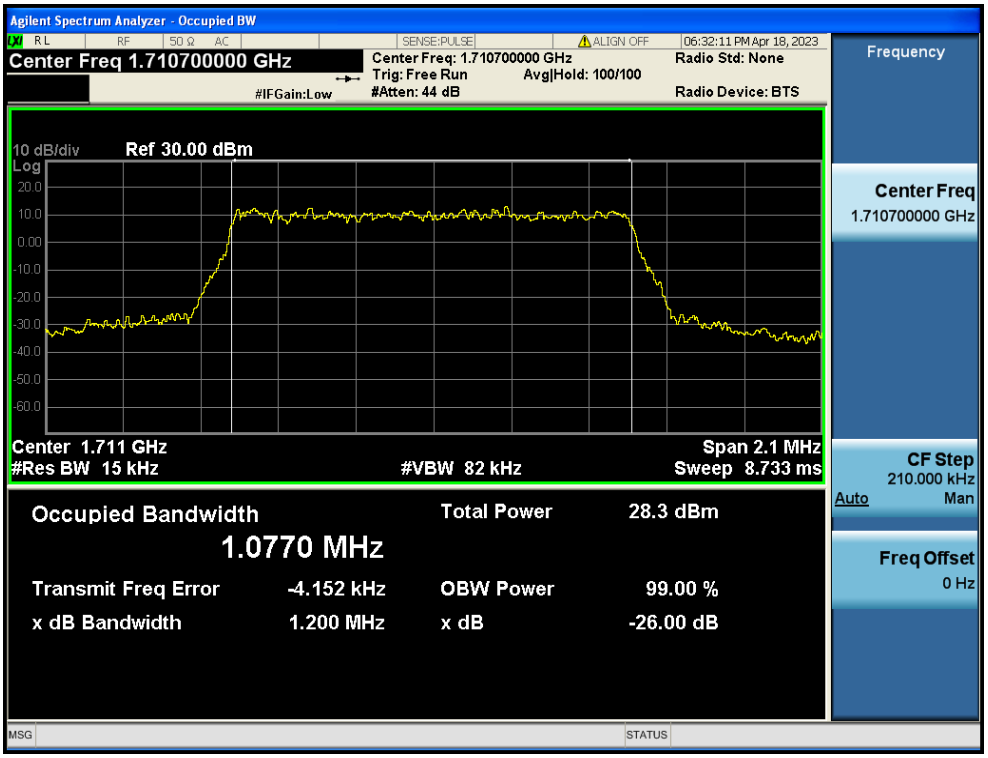
LTE Band 4 / 5MHz / 16QAM - RB Size 25



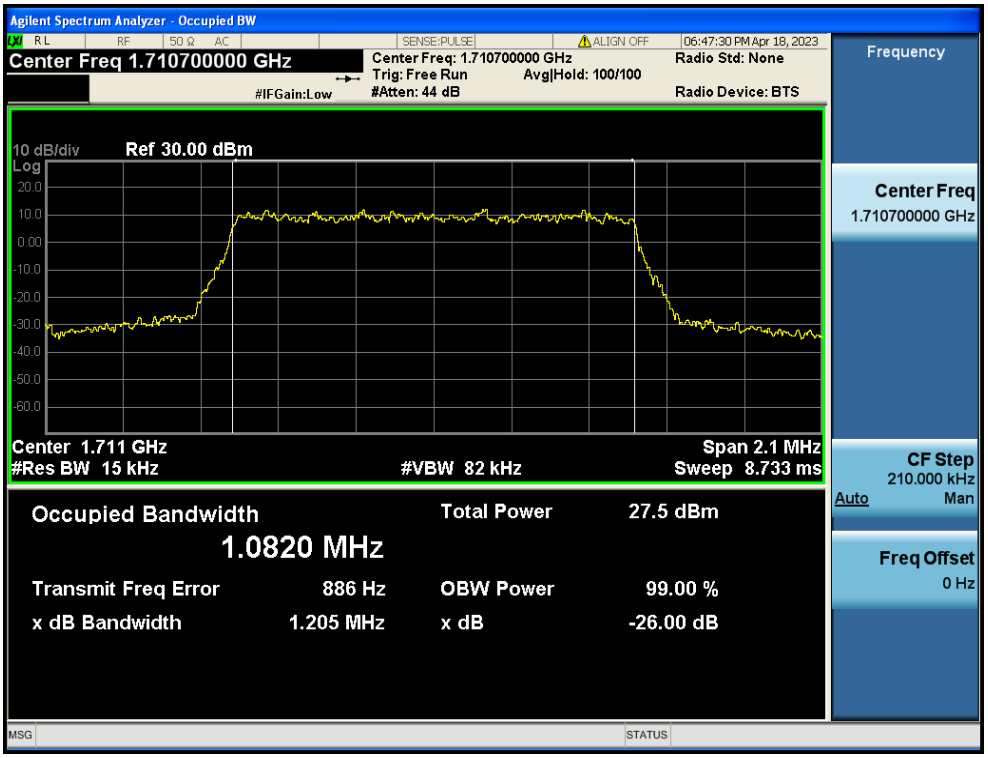
LTE Band 4 / 3MHz / QPSK - RB Size 15



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

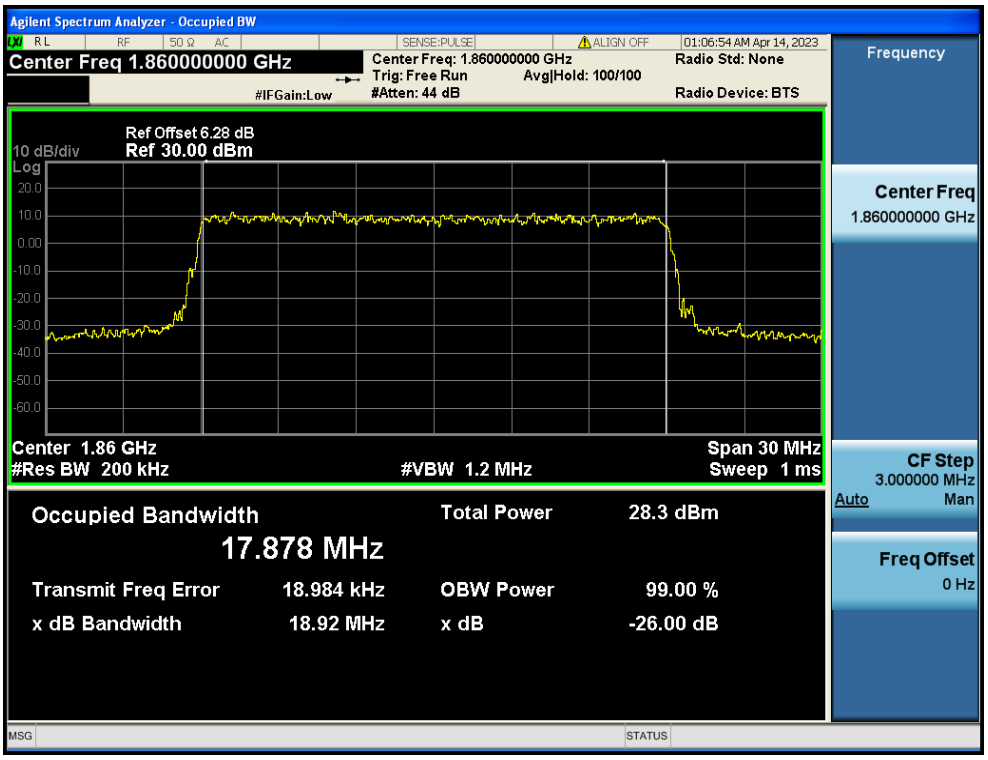


LTE Band 4 / 1.4MHz / QPSK - RB Size 6

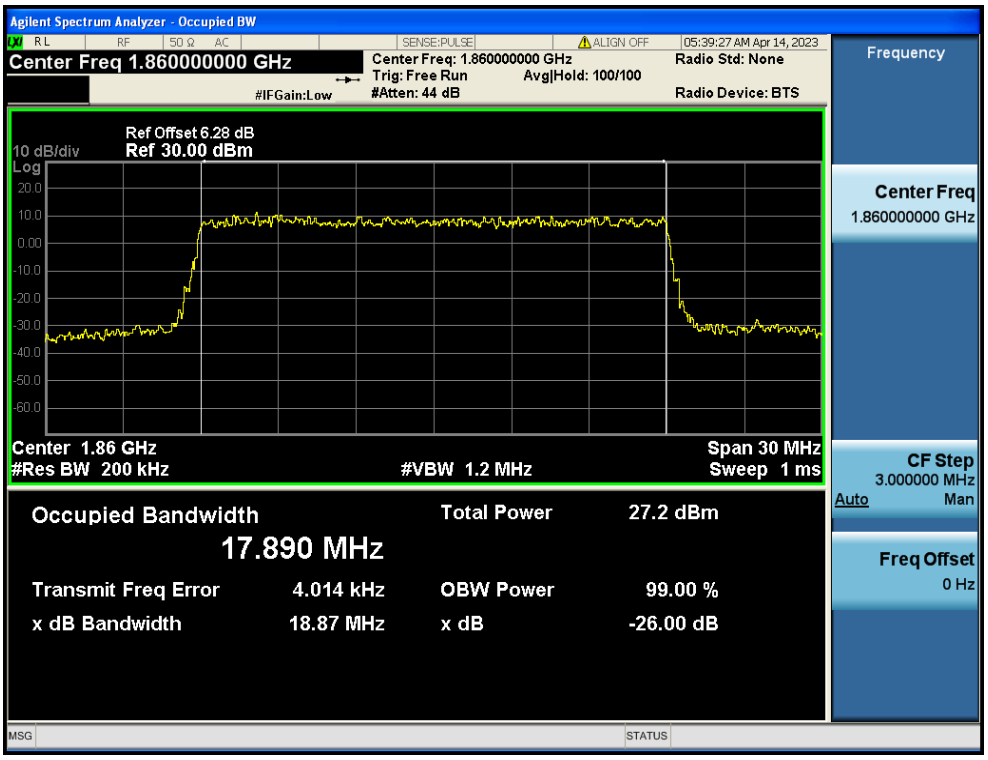


LTE Band 4 / 1.4MHz / 16QAM - RB Size 6

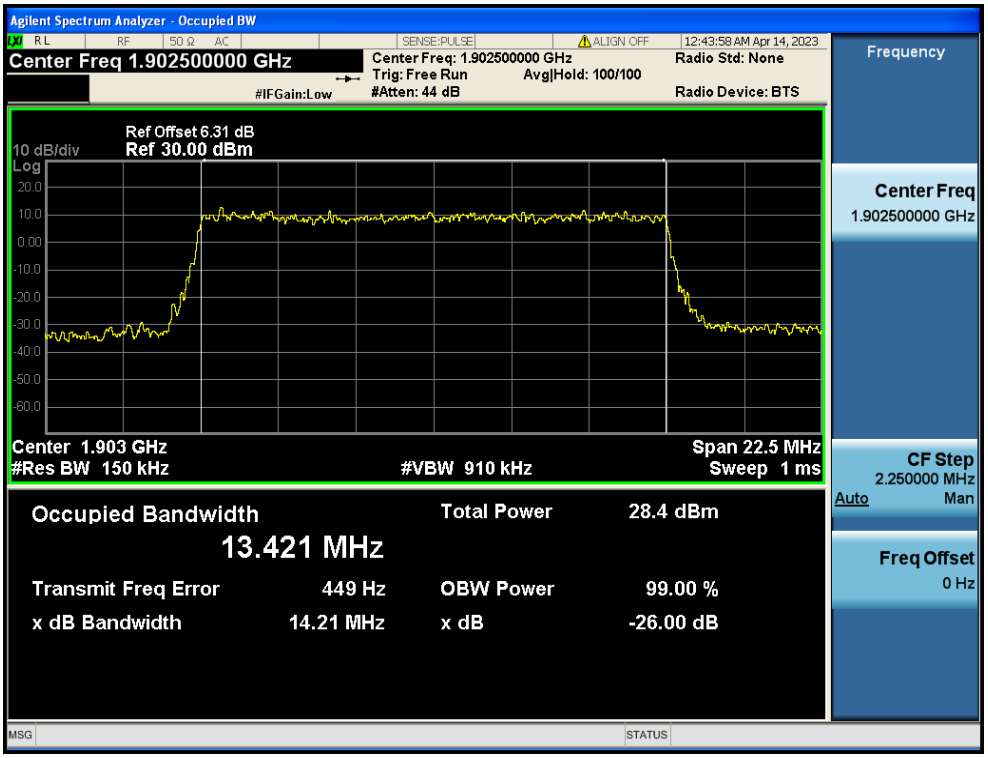
8.1.5. LTE Band 2



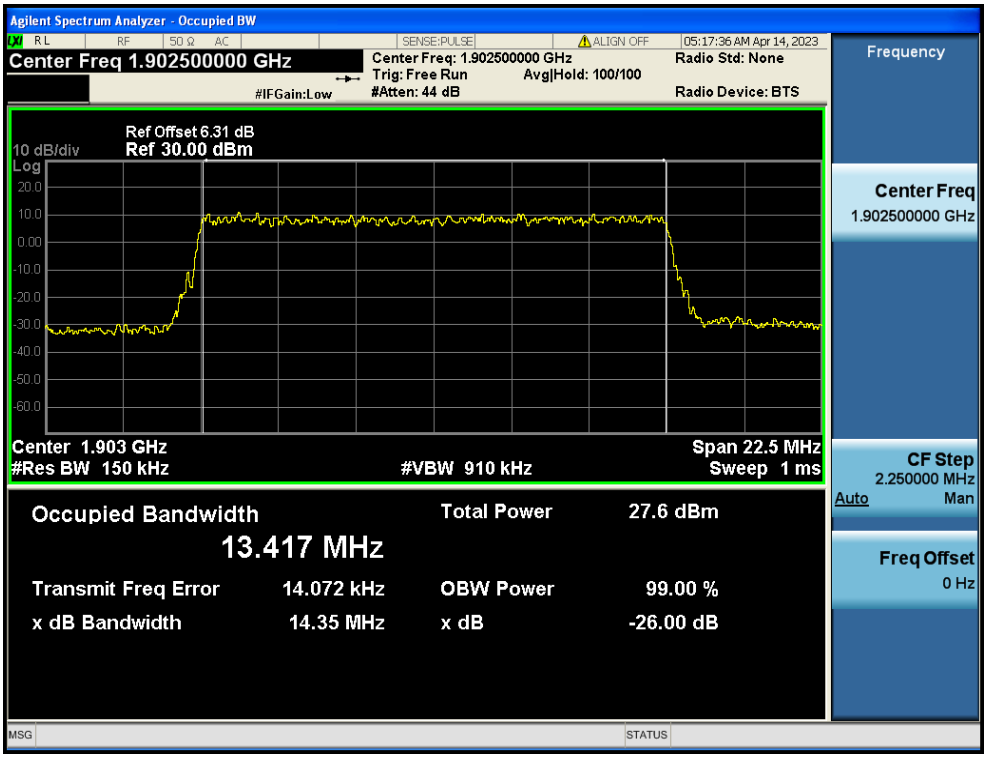
LTE Band 2 / 20MHz / QPSK - RB Size 100



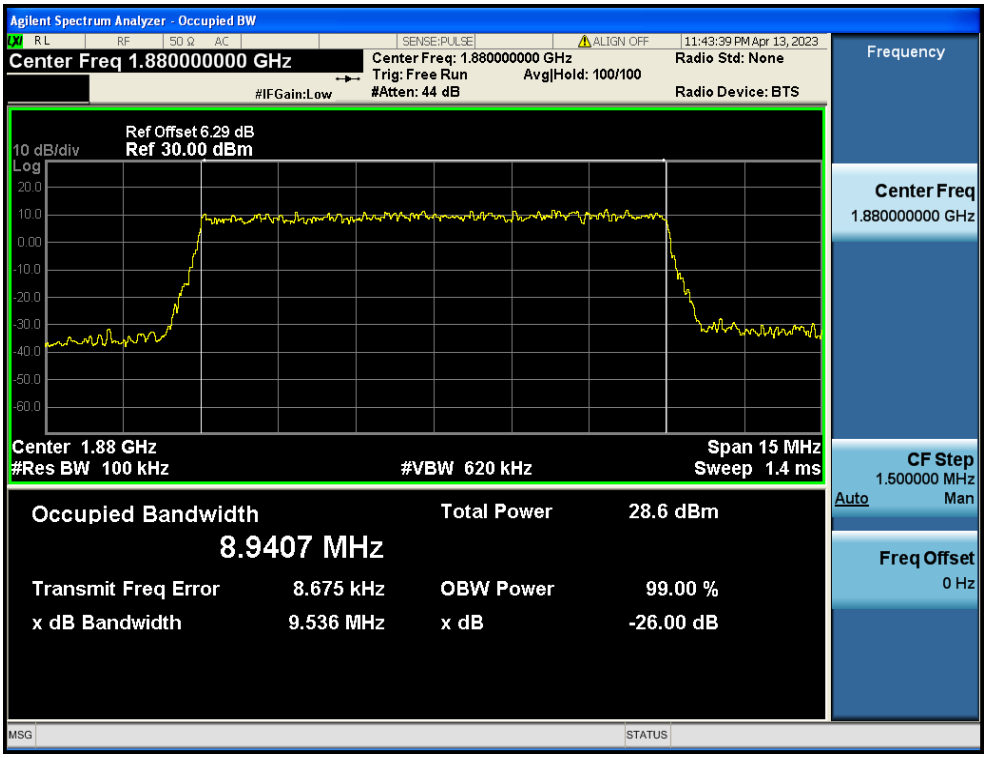
LTE Band 2 / 20MHz / 16QAM - RB Size 100



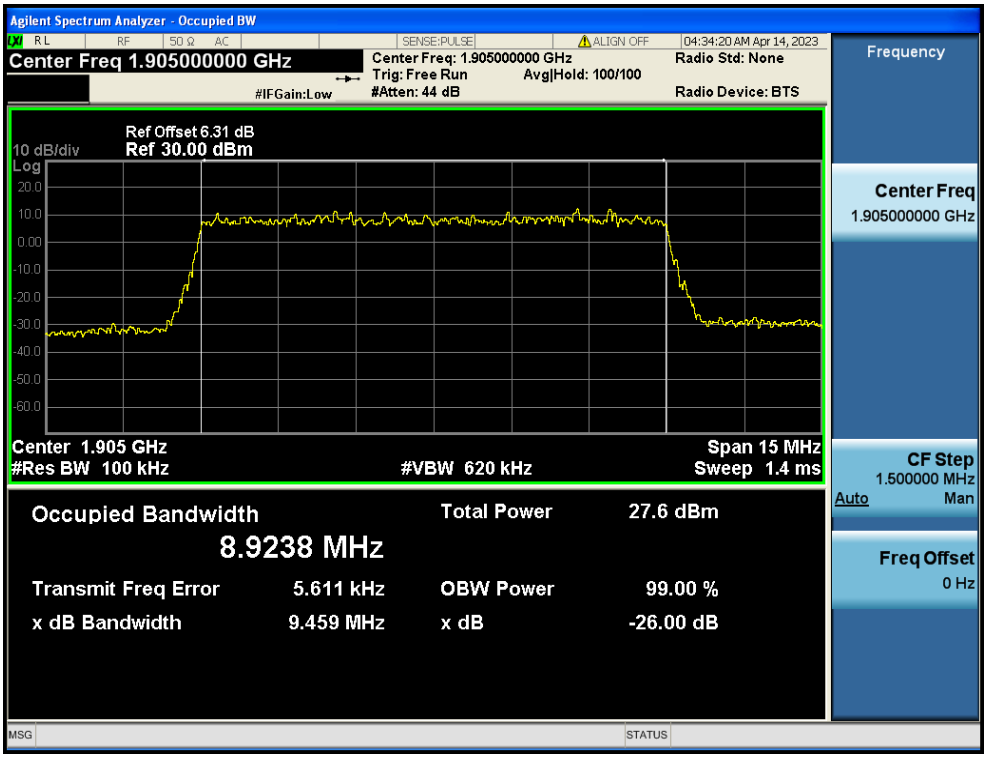
LTE Band 2 / 15MHz / QPSK - RB Size 75



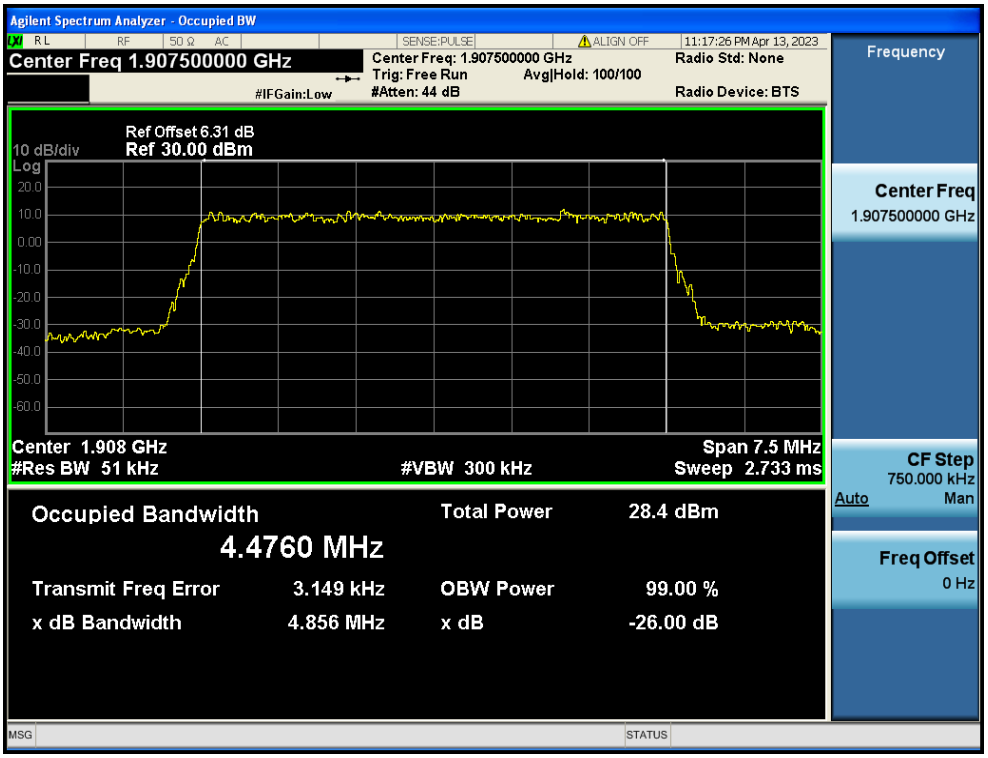
LTE Band 2 / 15MHz / 16QAM - RB Size 75



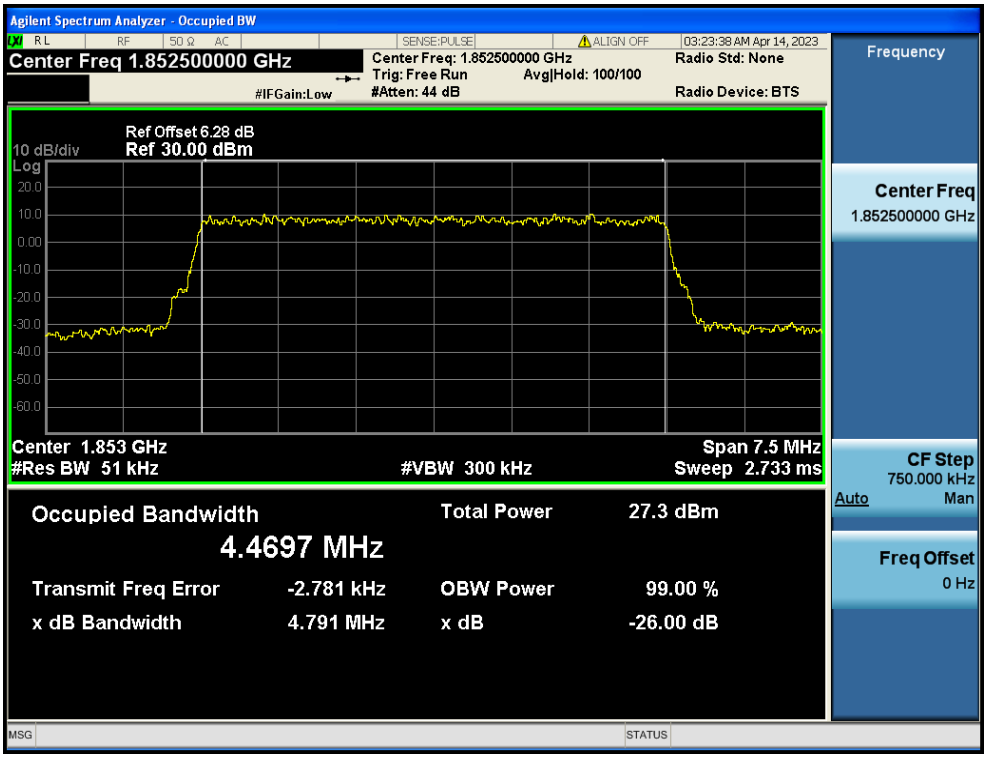
LTE Band 2 / 10MHz / QPSK - RB Size 50



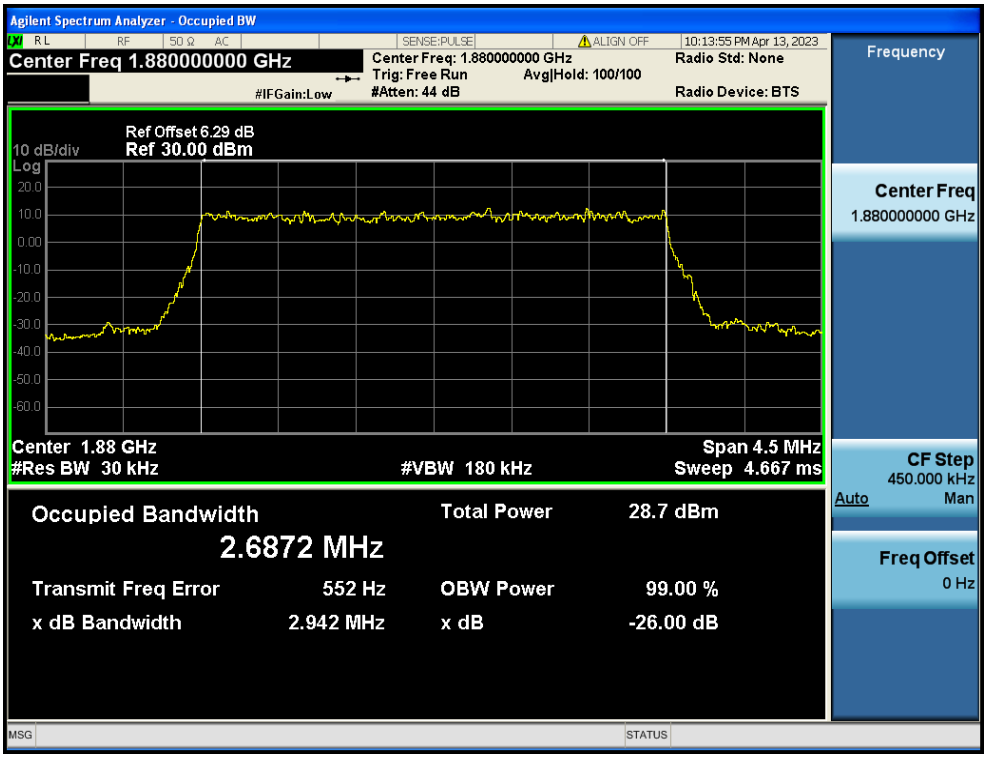
LTE Band 2 / 10MHz / 16QAM - RB Size 50



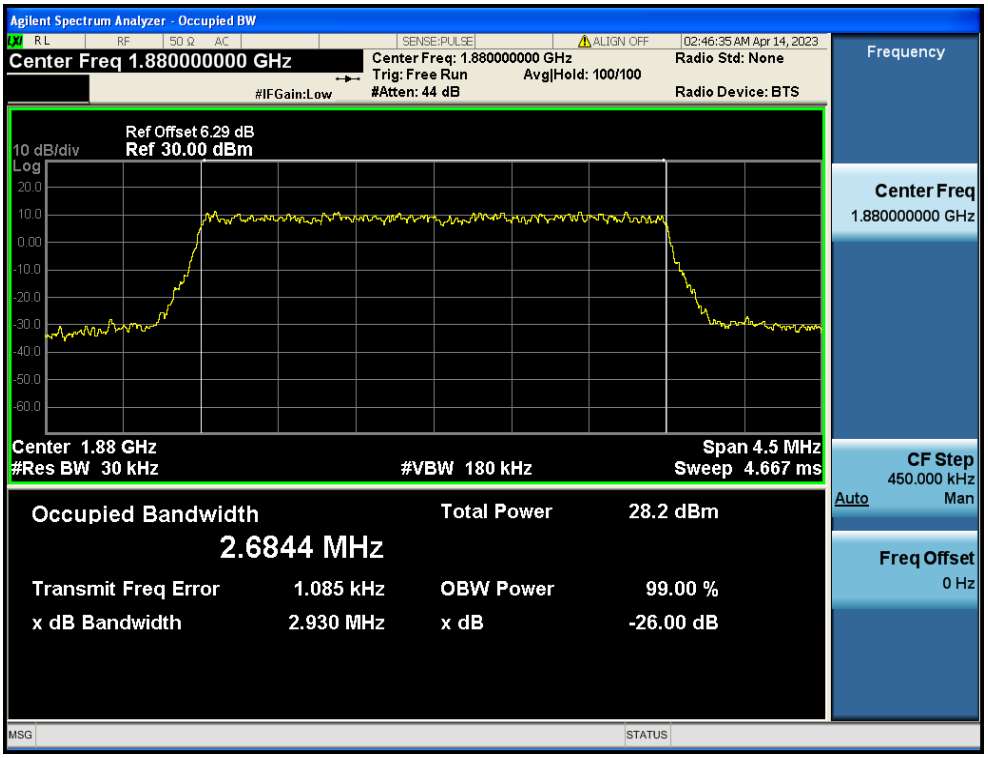
LTE Band 2 / 5MHz / QPSK - RB Size 25



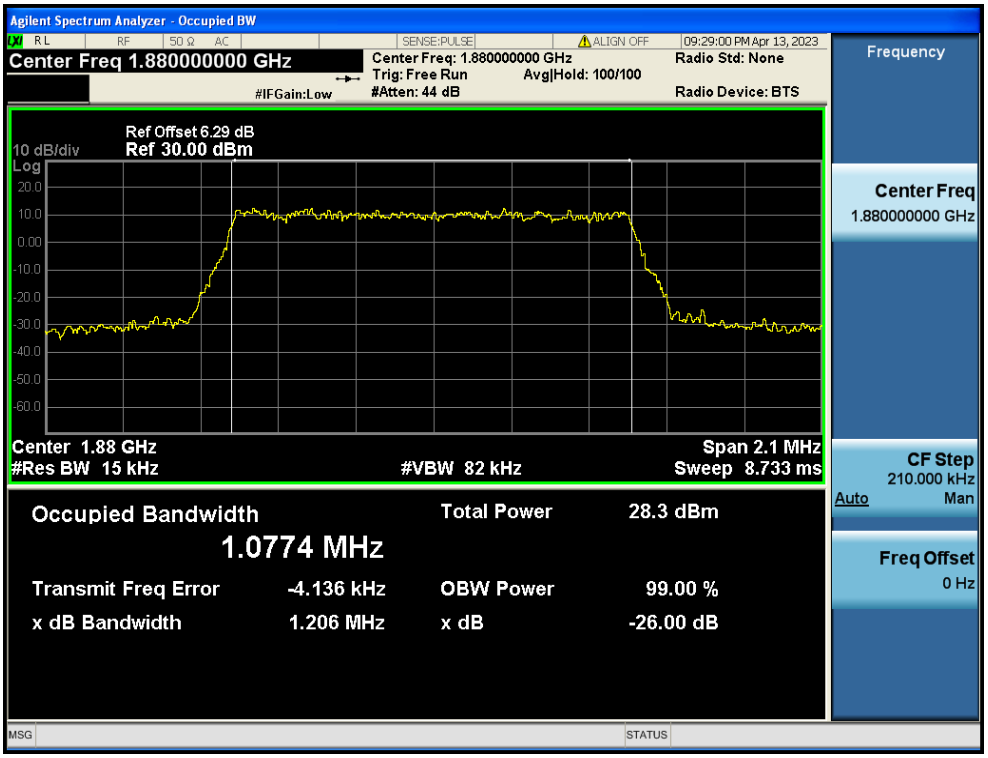
LTE Band 2 / 5MHz / 16QAM - RB Size 25



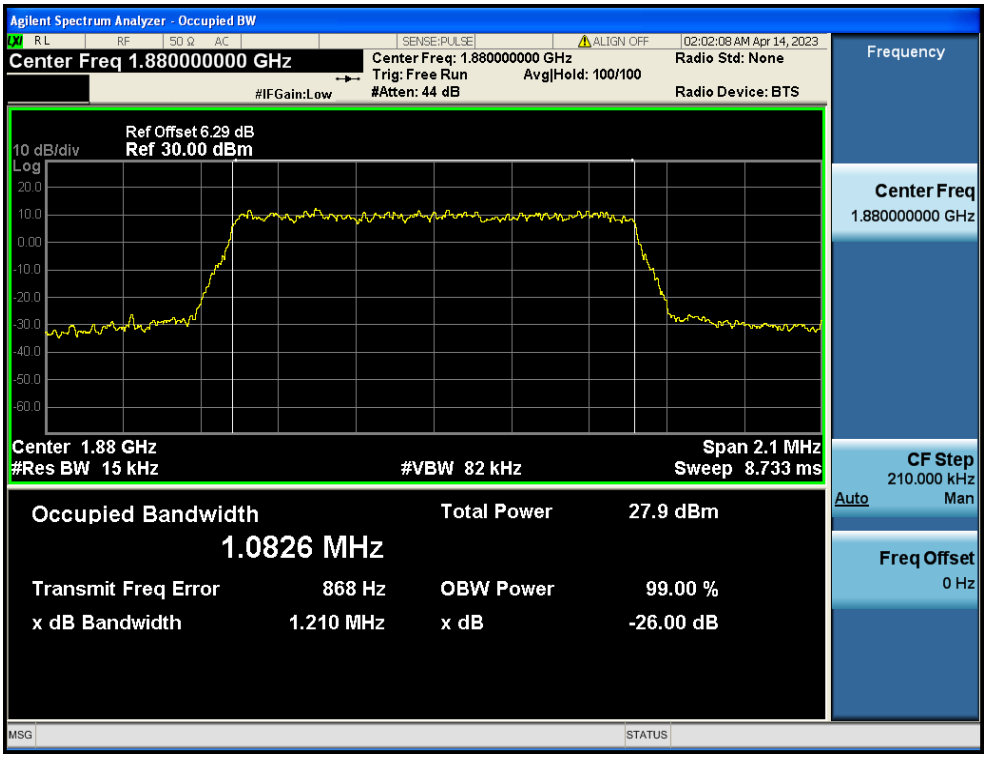
LTE Band 2 / 3MHz / QPSK - RB Size 15



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



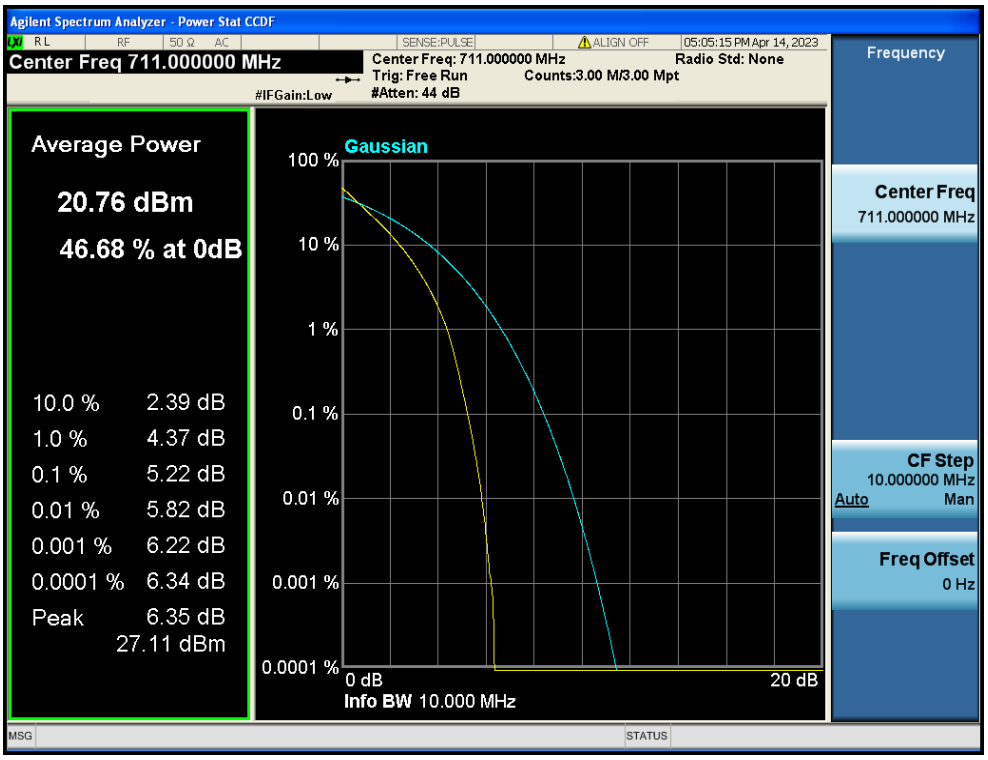
LTE Band 2 / 1.4MHz / QPSK - RB Size 6



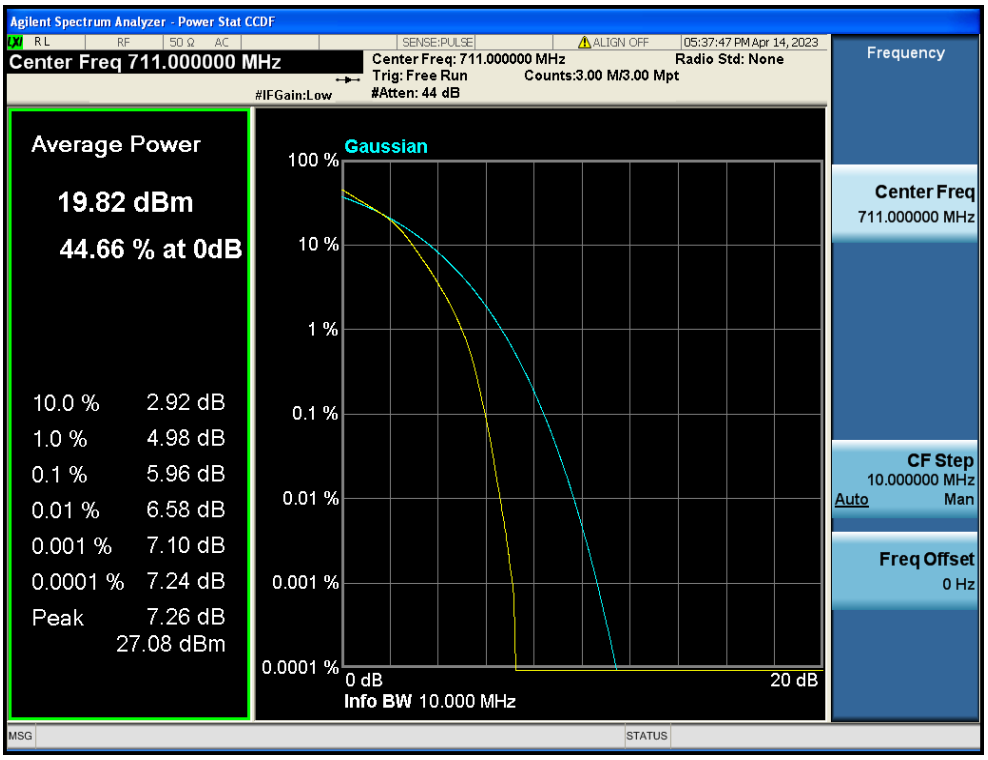
LTE Band 2 / 1.4MHz / 16QAM - RB Size 6

8.2. PEAK TO AVERAGE RATIO

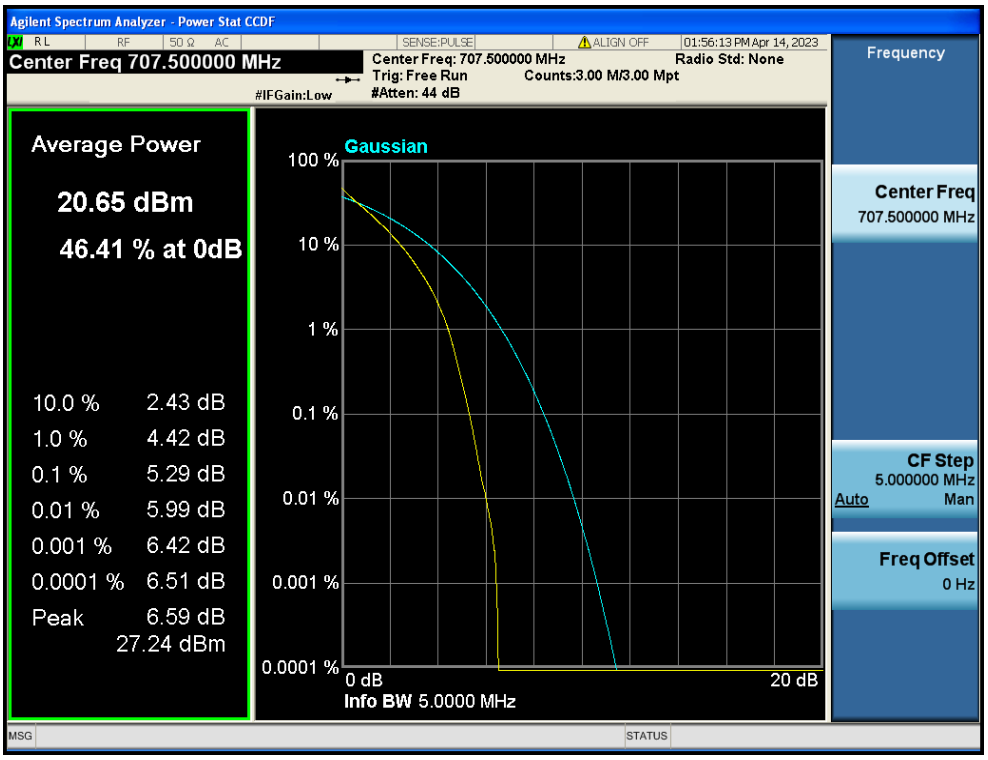
8.2.1. LTE Band 12



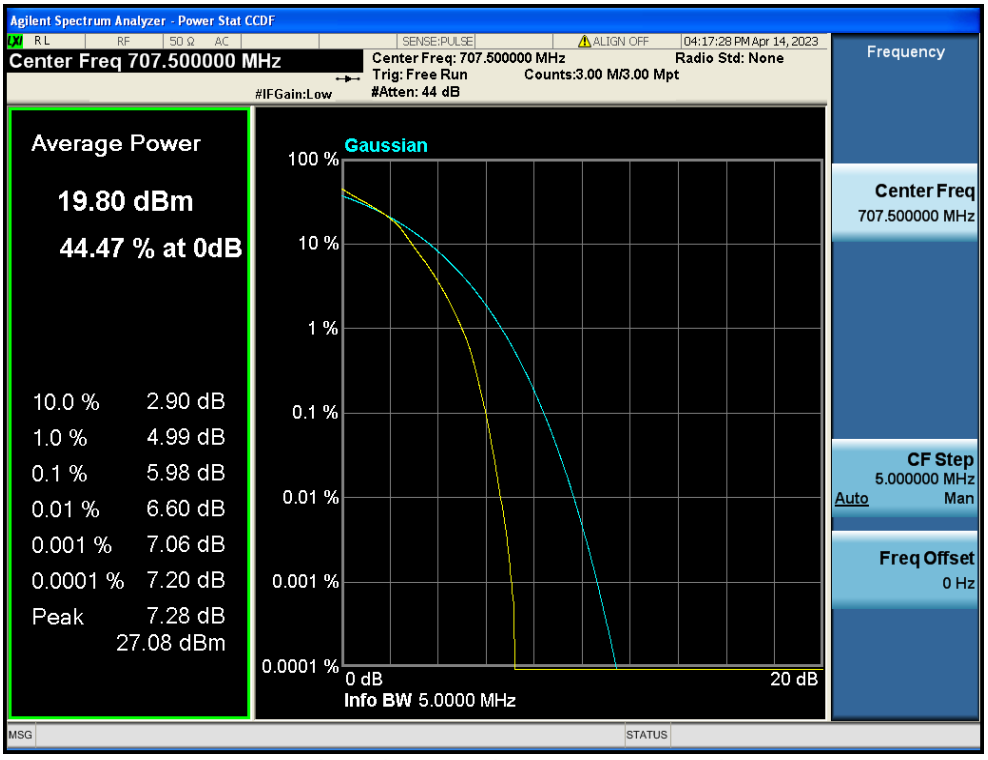
LTE Band 12 / 10MHz / QPSK - RB Size 50



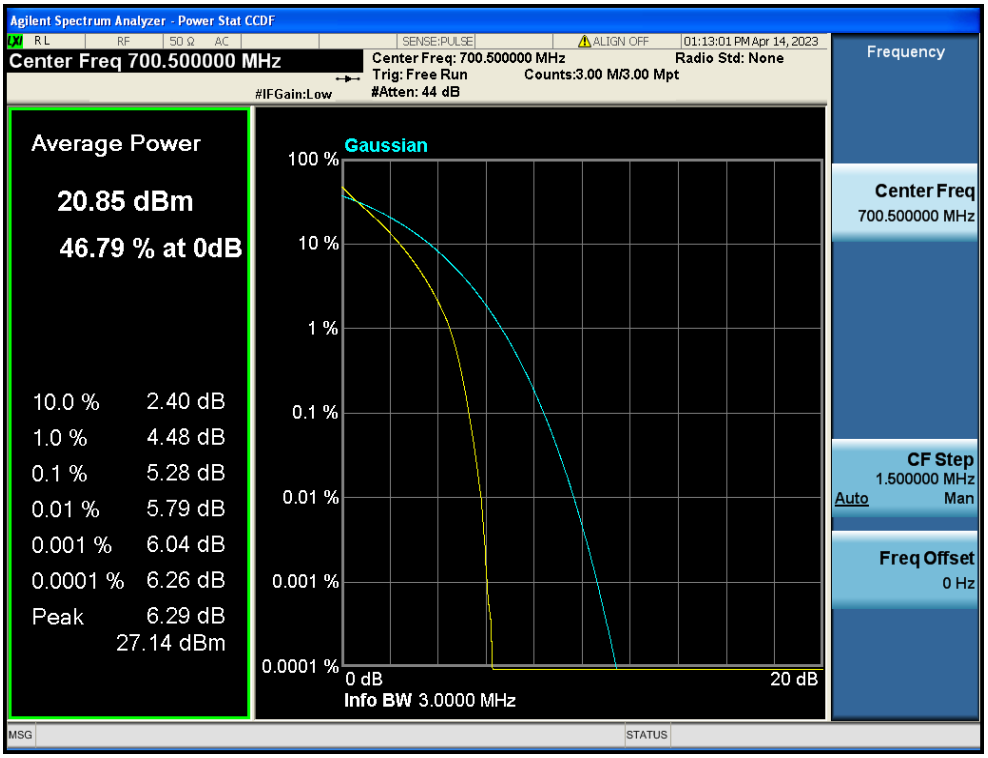
LTE Band 12 / 10MHz / 16QAM - RB Size 50



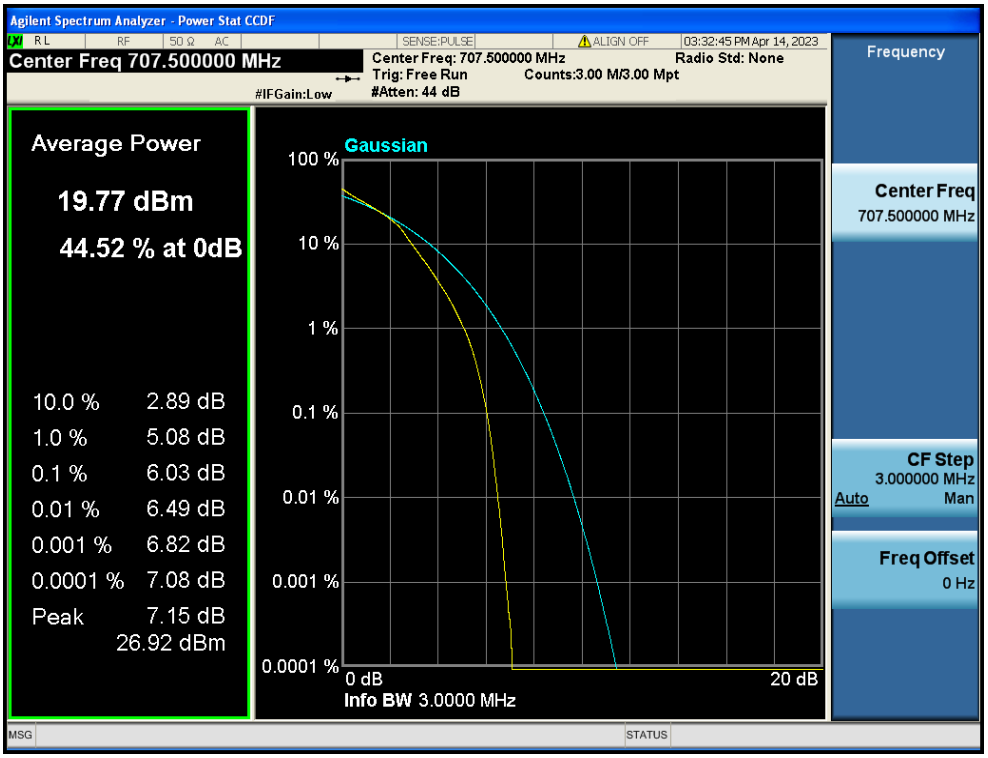
LTE Band 12 / 5MHz / QPSK - RB Size 25



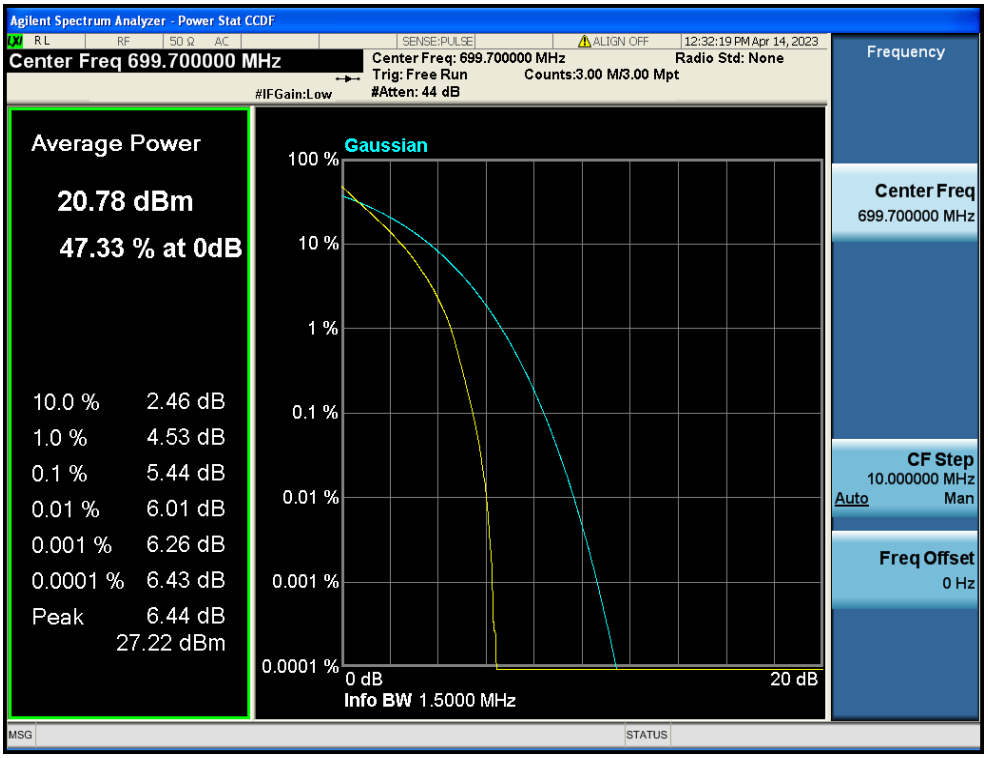
LTE Band 12 / 5MHz / 16QAM - RB Size 25



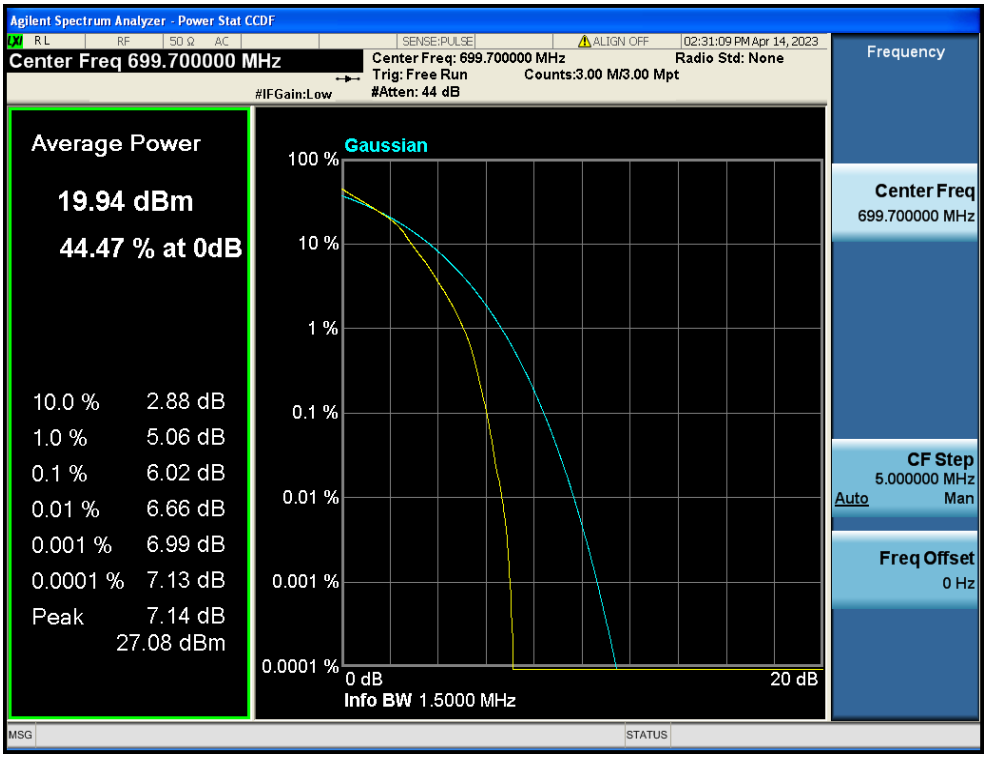
LTE Band 12 / 3MHz / QPSK - RB Size 15



LTE Band 12 / 3MHz / 16QAM - RB Size 15

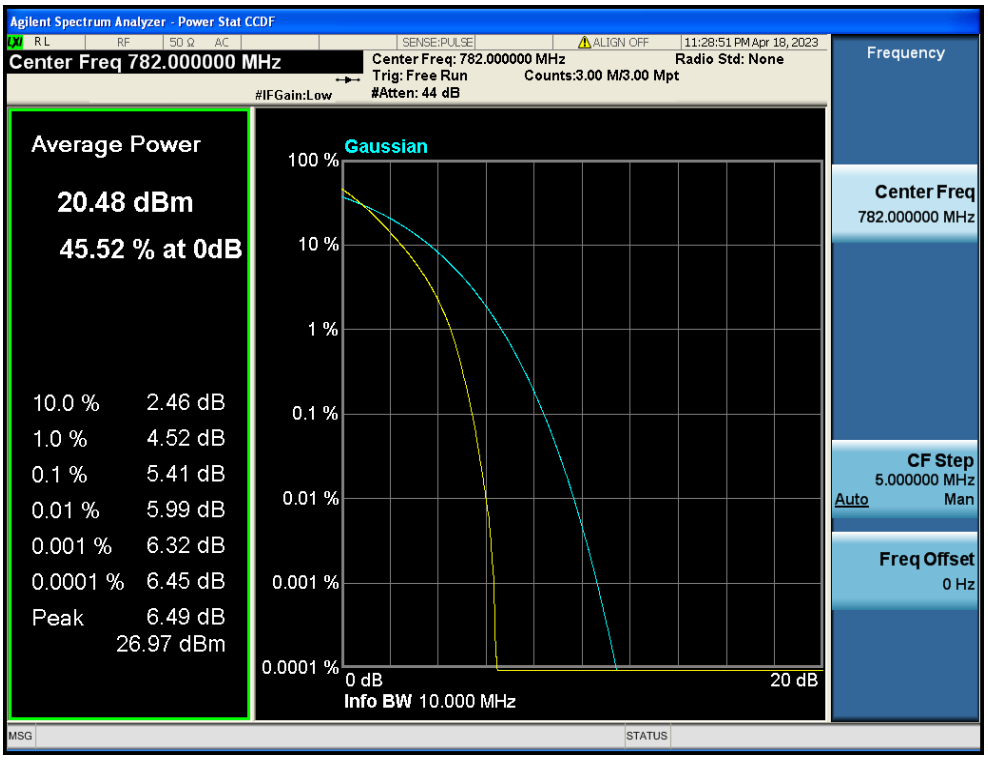


LTE Band 12 / 1.4MHz / QPSK - RB Size 6

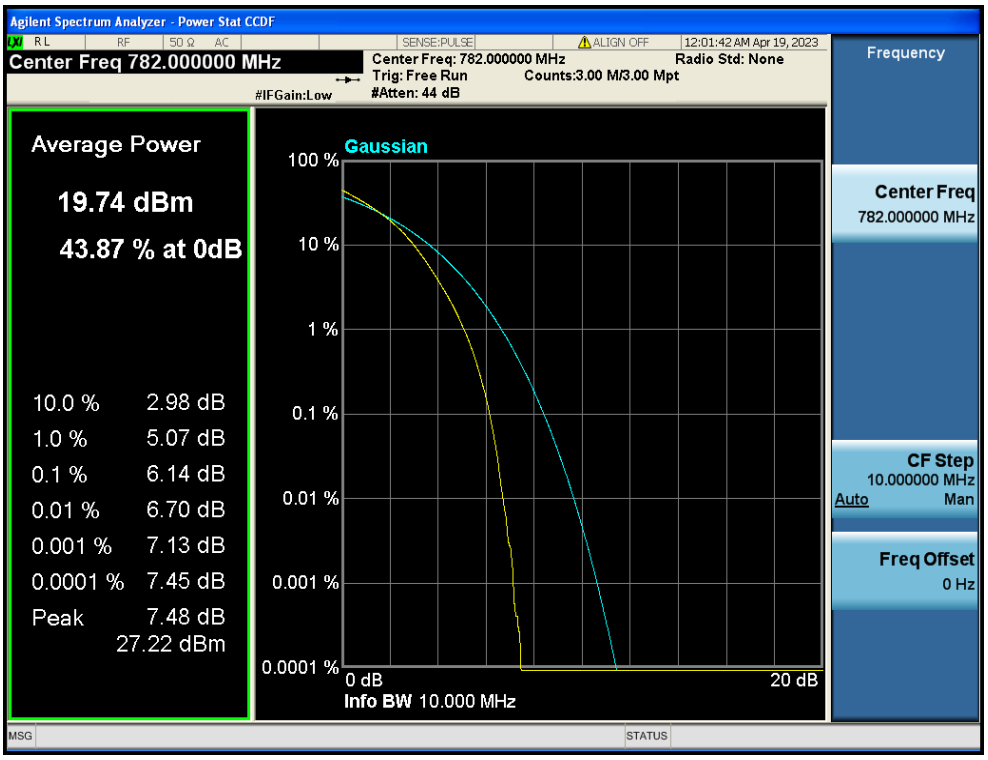


LTE Band 12 / 1.4MHz / 16QAM - RB Size 6

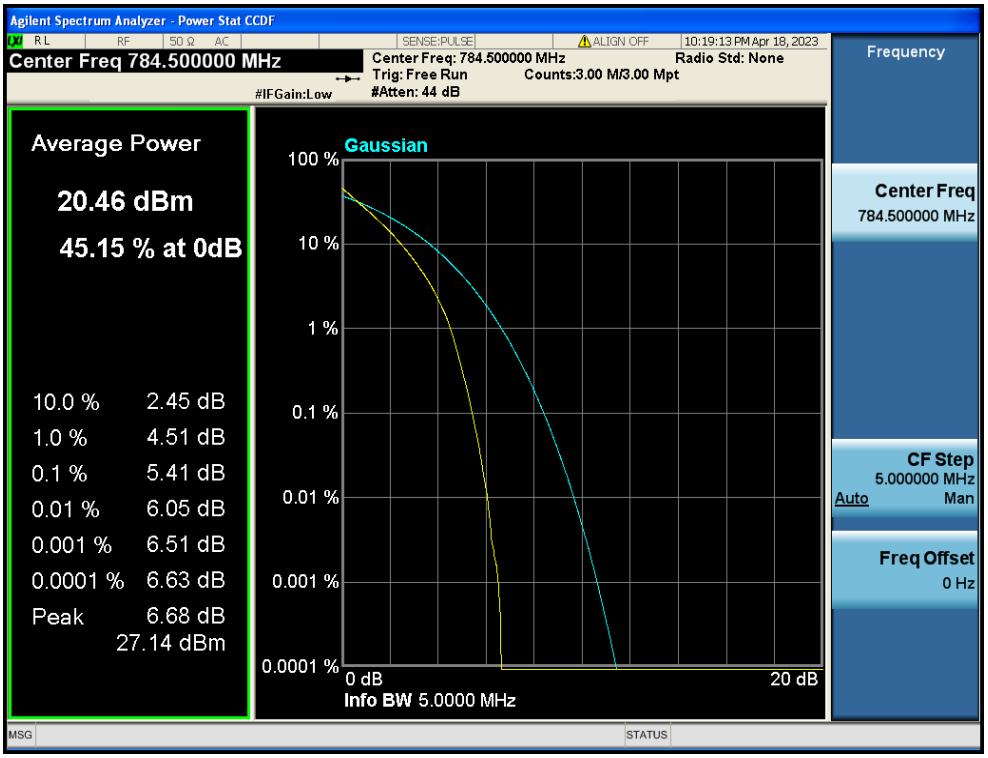
8.2.2. LTE Band 13



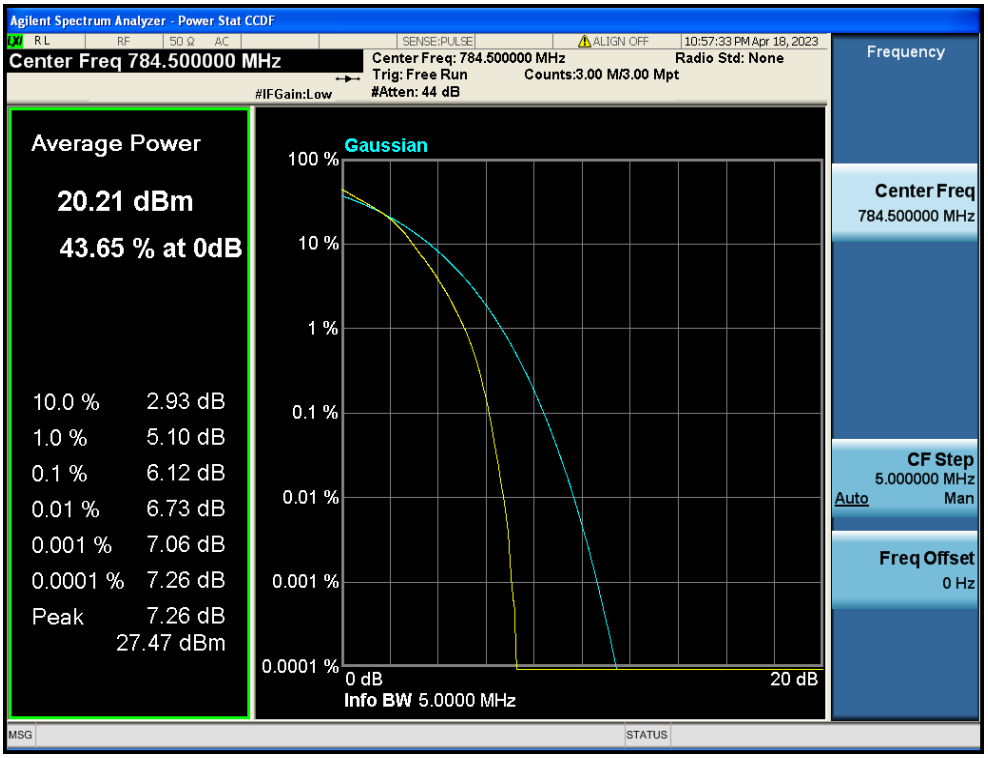
LTE Band 13 / 10MHz / QPSK - RB Size 50



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

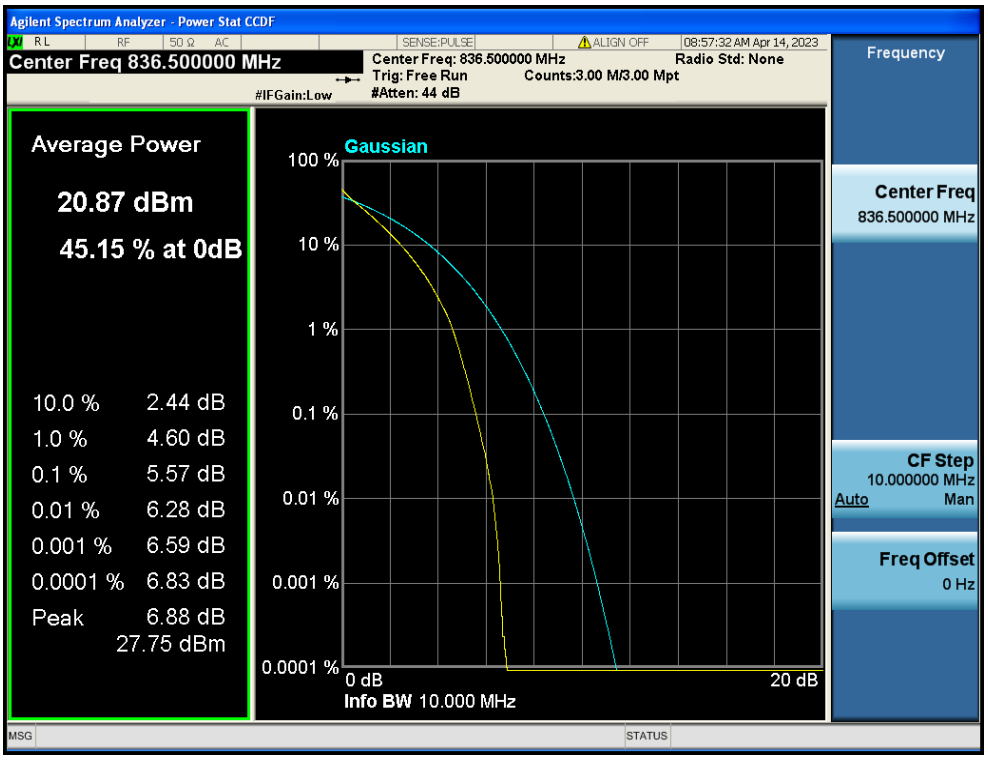


LTE Band 13 / 5MHz / QPSK - RB Size 25

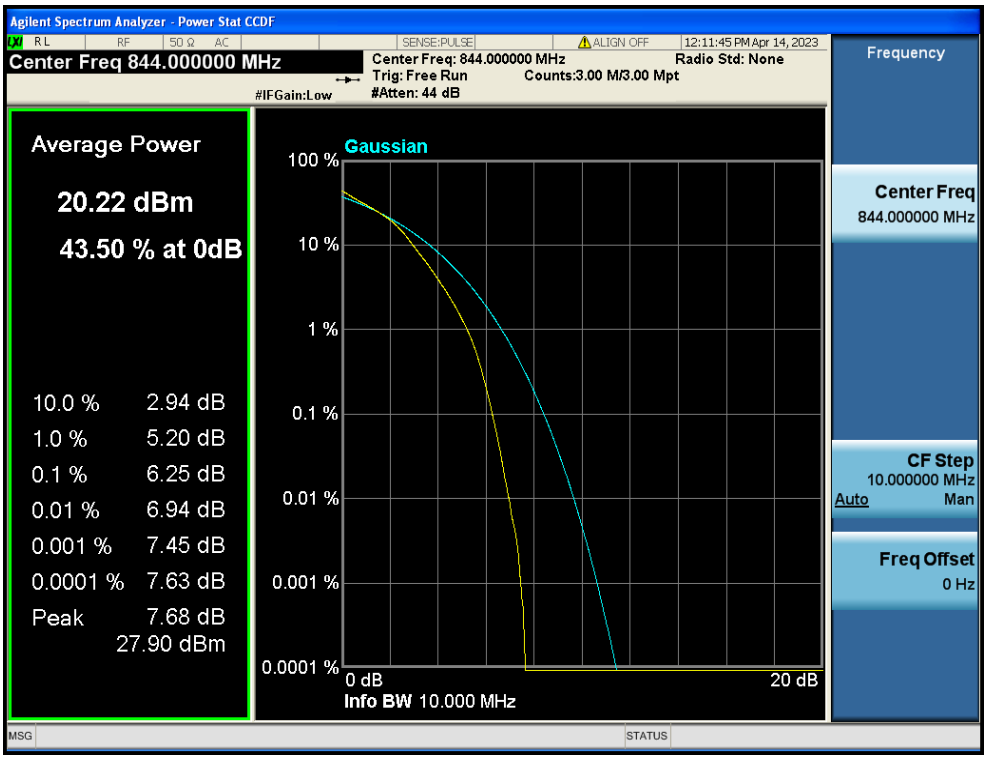


LTE Band 13 / 5MHz / 16QAM - RB Size 25

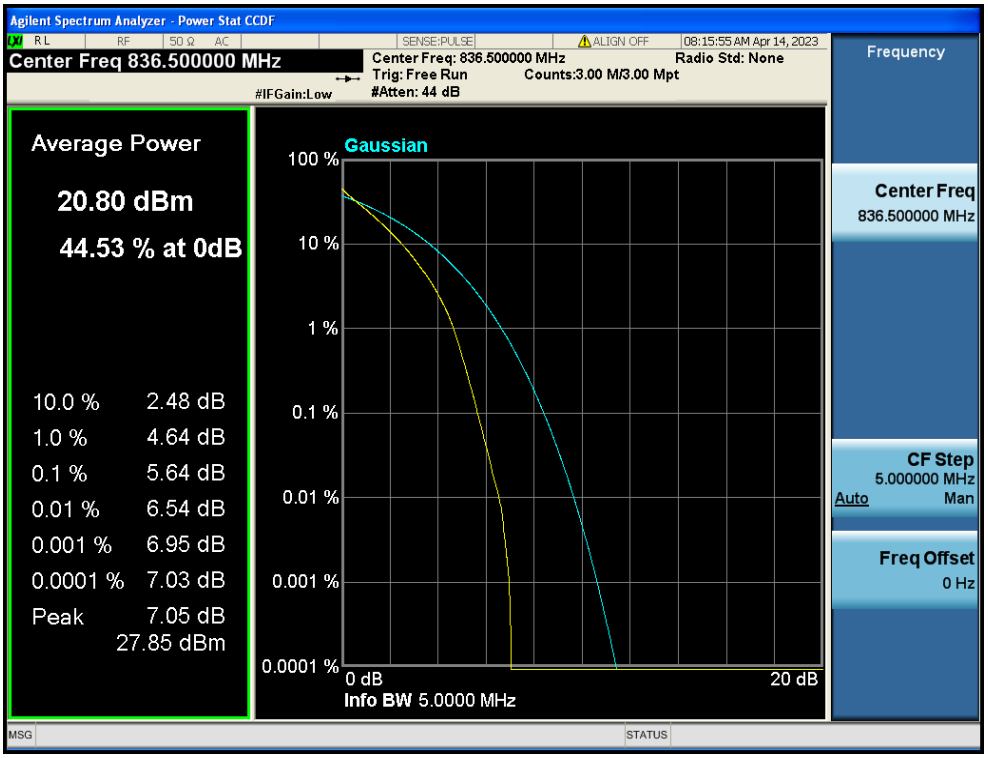
8.2.3. LTE Band 5



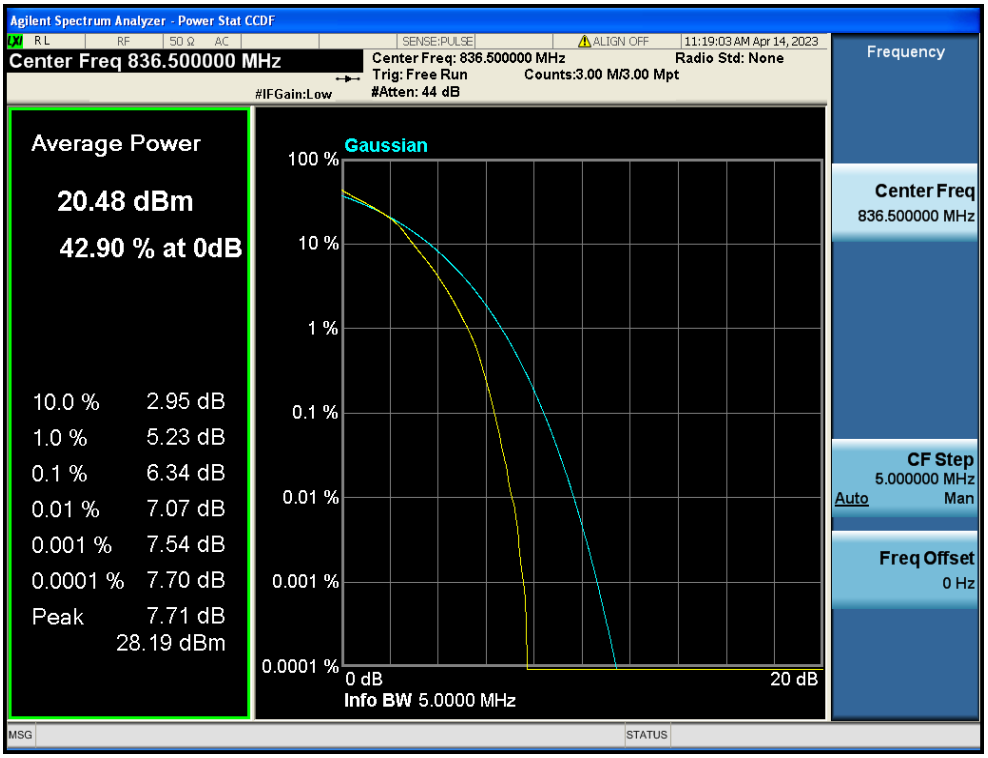
LTE Band 5 / 10MHz / QPSK - RB Size 50



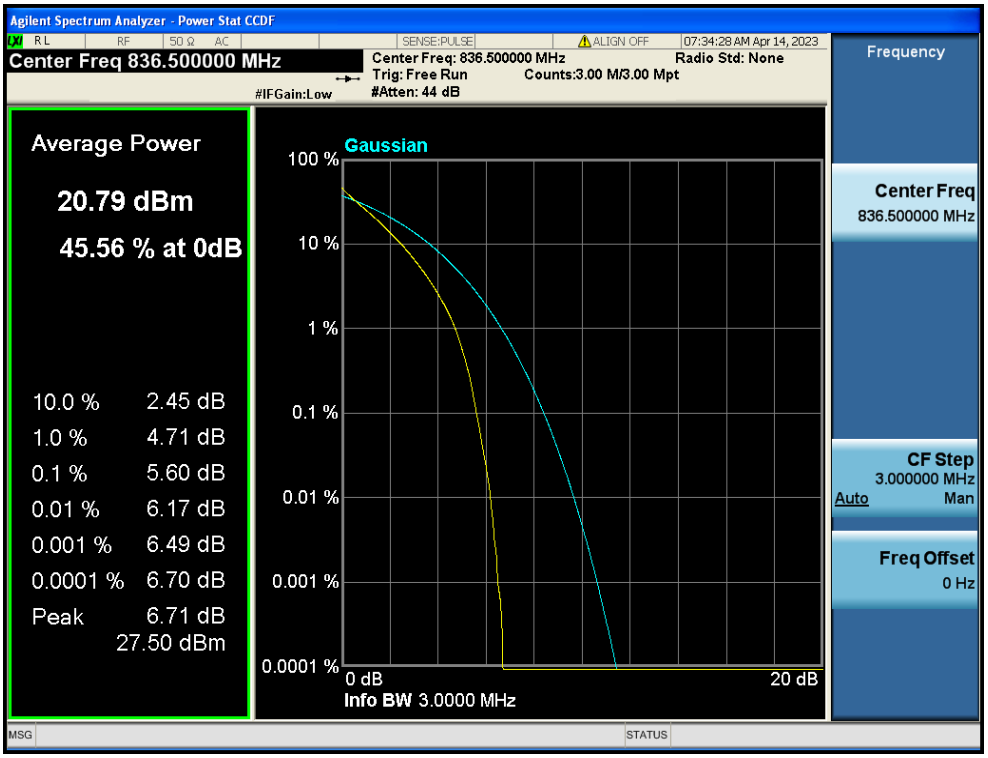
LTE Band 5 / 10MHz / 16QAM - RB Size 50



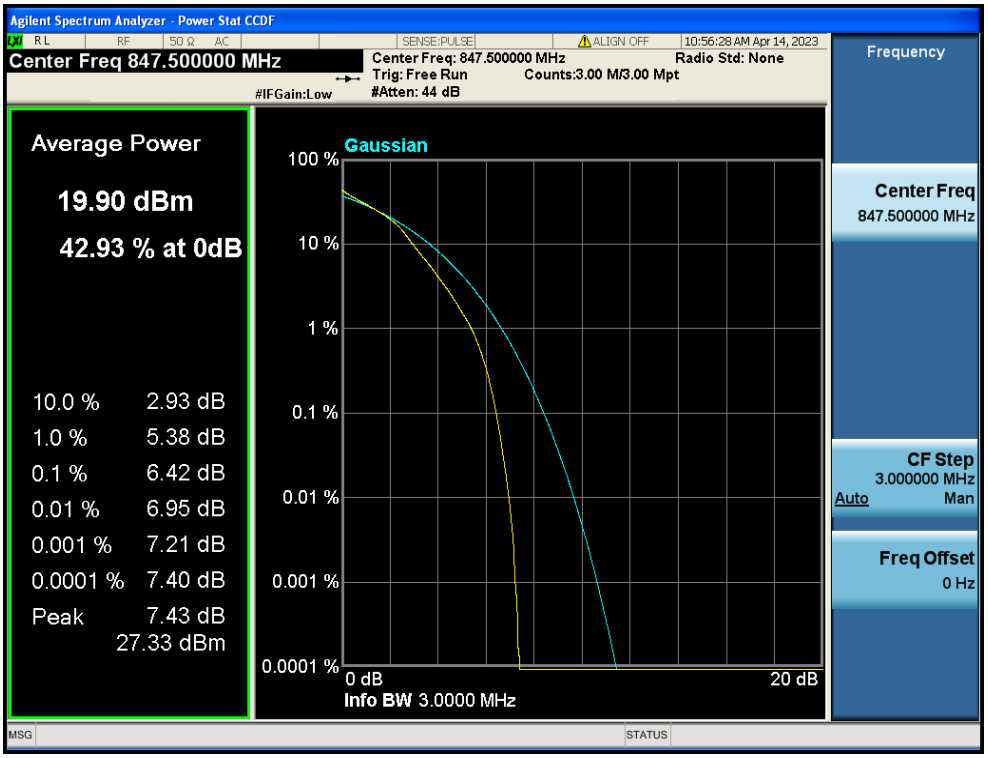
LTE Band 5 / 5MHz / QPSK - RB Size 25



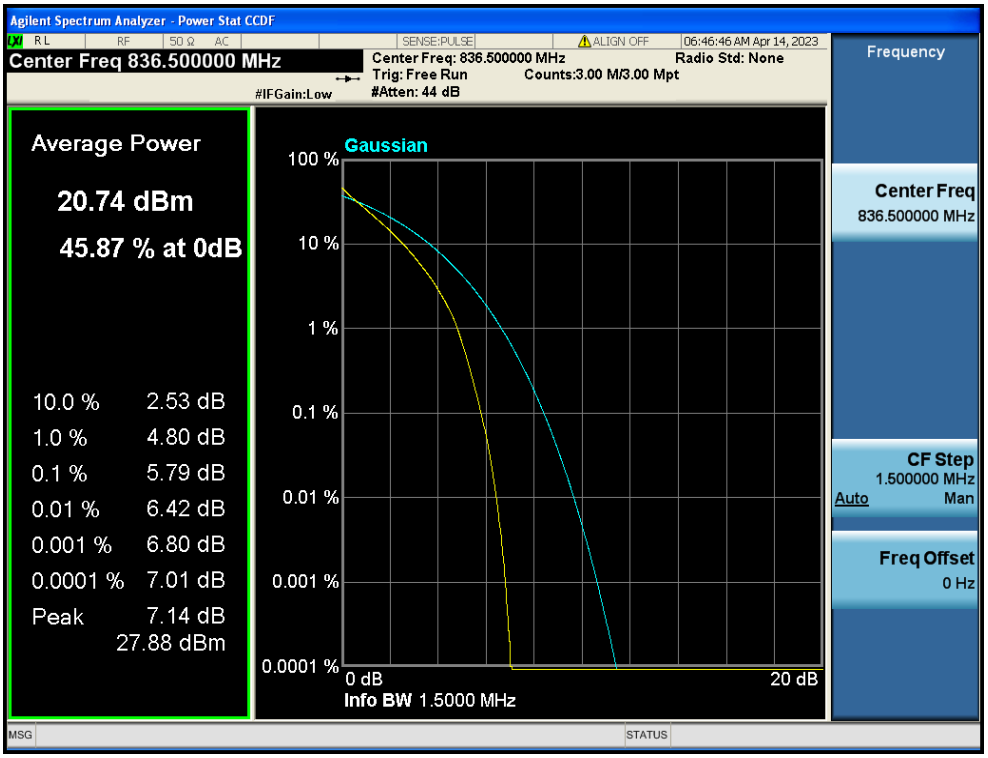
LTE Band 5 / 5MHz / 16QAM - RB Size 25



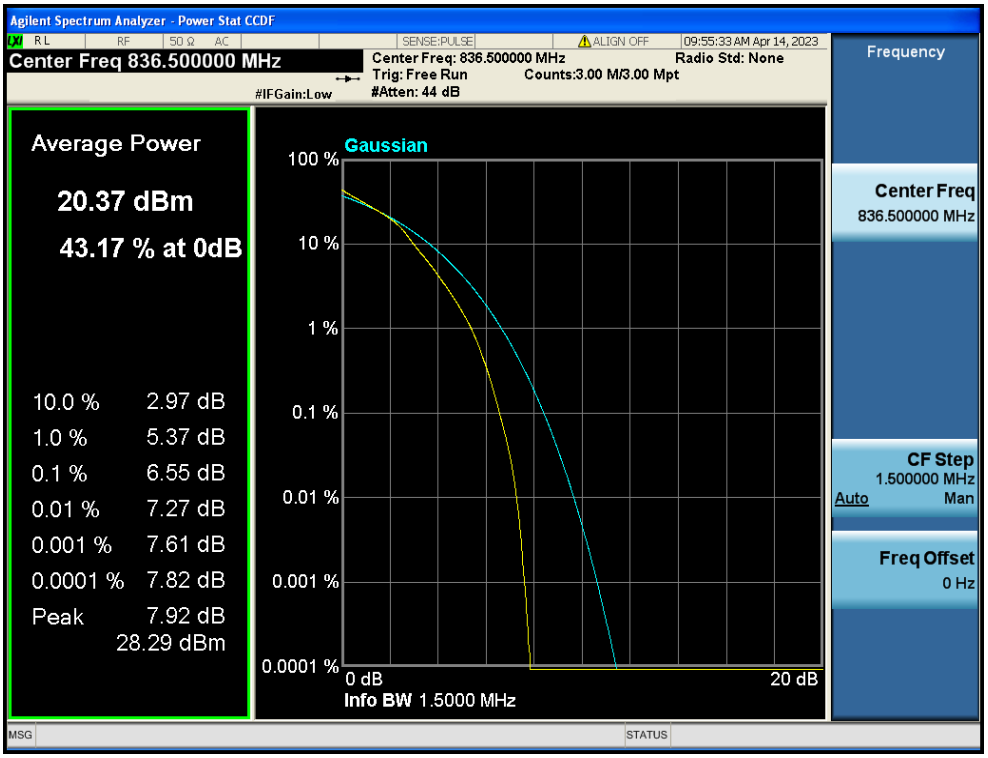
LTE Band 5 / 3MHz / QPSK - RB Size 15



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

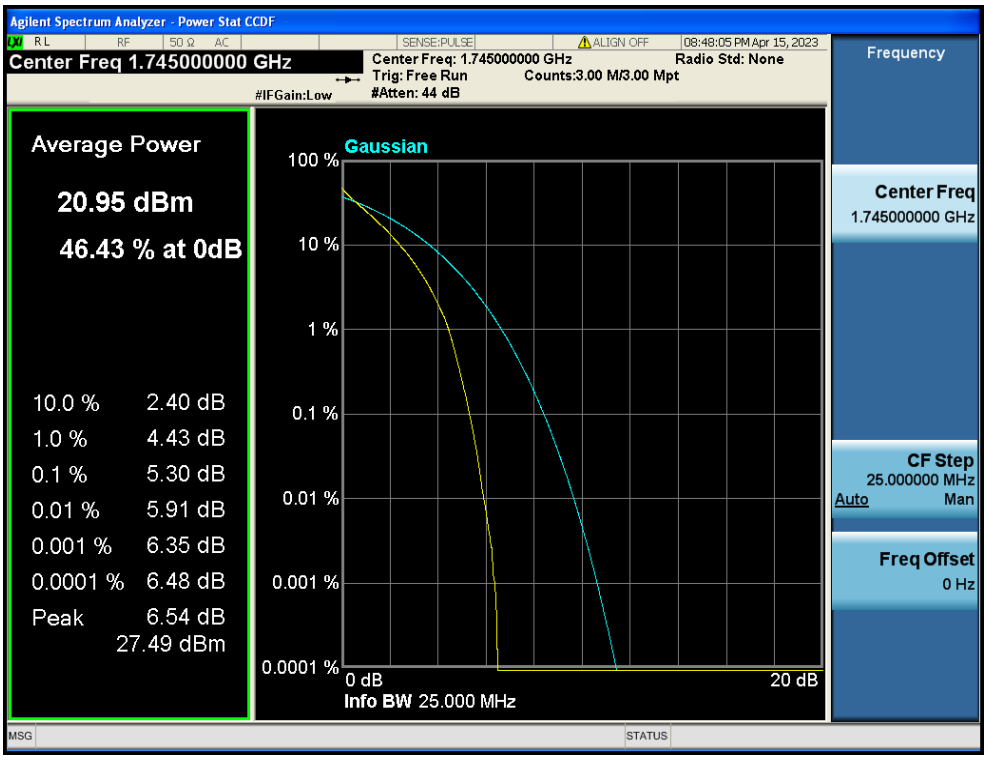


LTE Band 5 / 1.4MHz / QPSK - RB Size 6

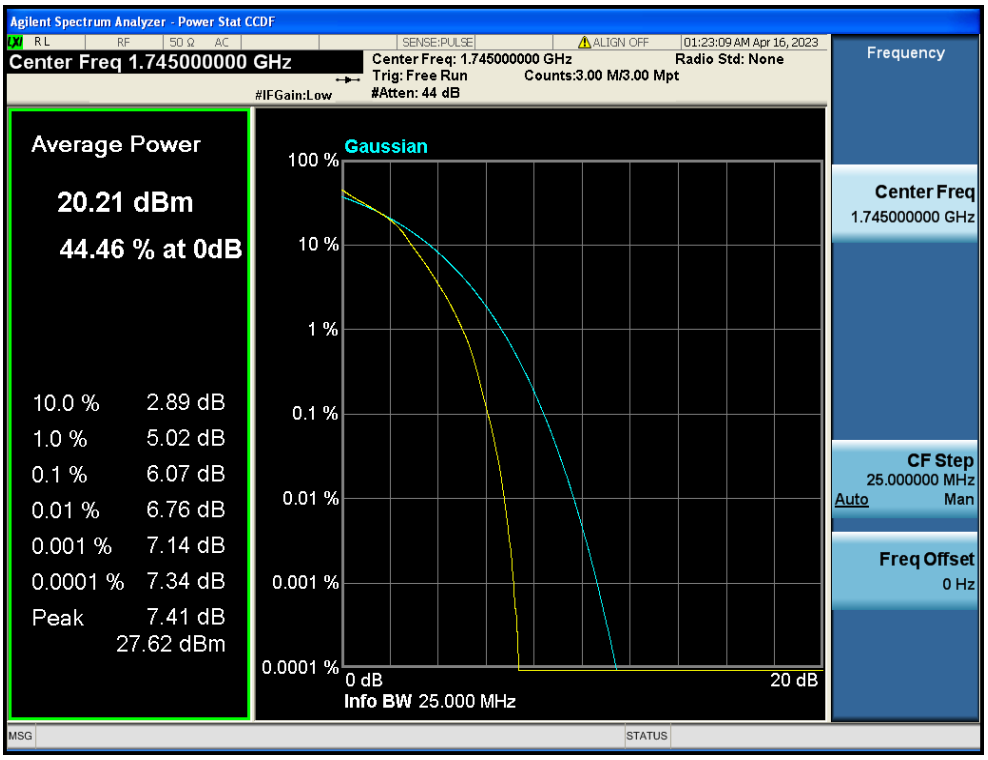


LTE Band 5 / 1.4MHz / 16QAM - RB Size 6

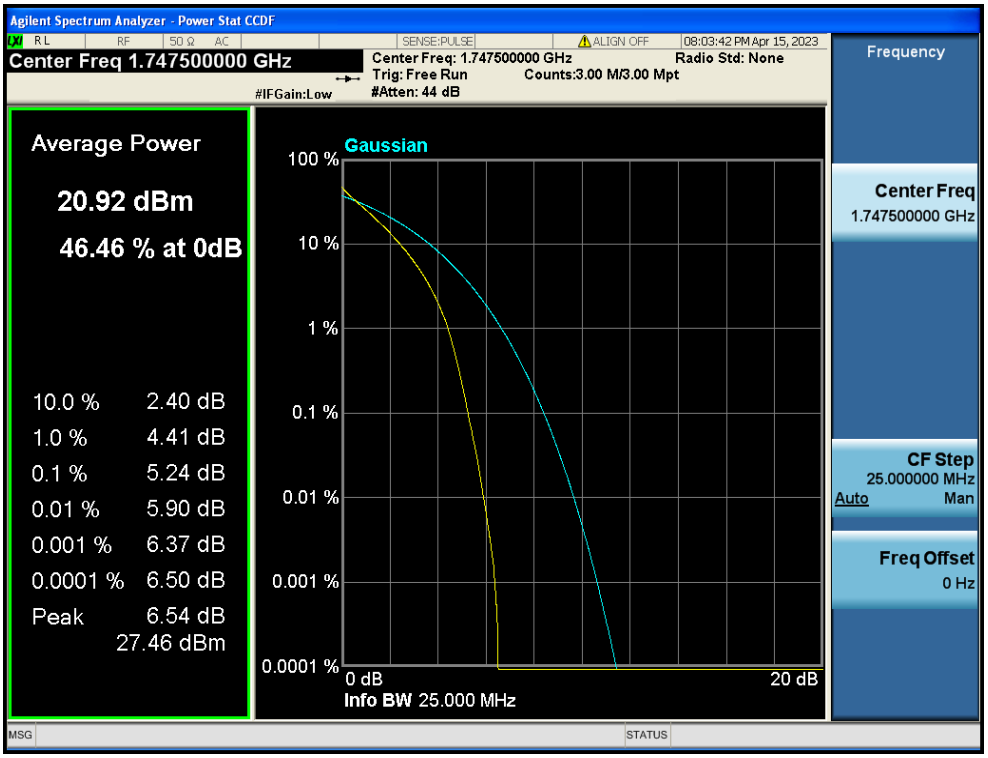
8.2.4. LTE Band 4



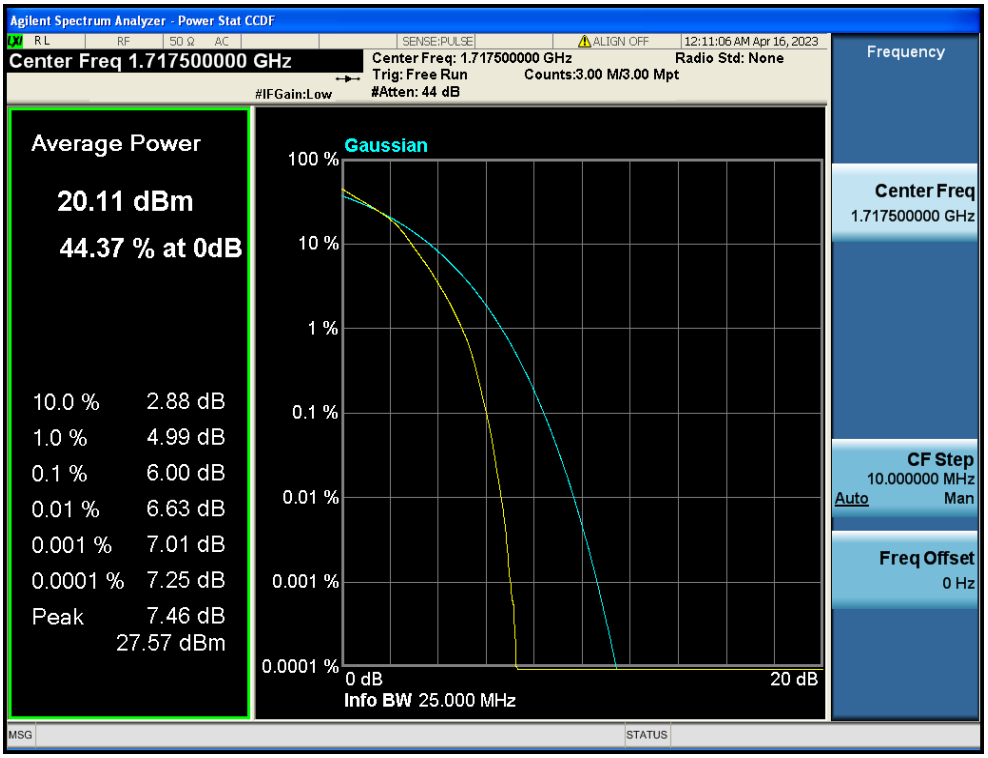
LTE Band 4 / 20MHz / QPSK - RB Size 100



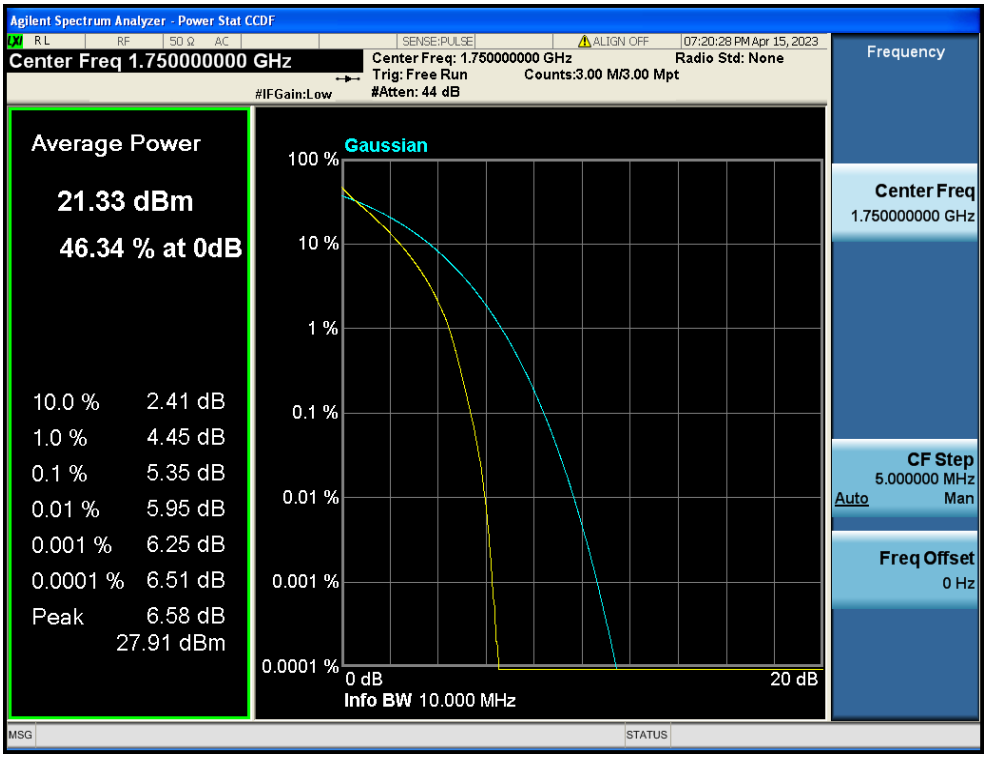
LTE Band 4 / 20MHz / 16QAM - RB Size 100



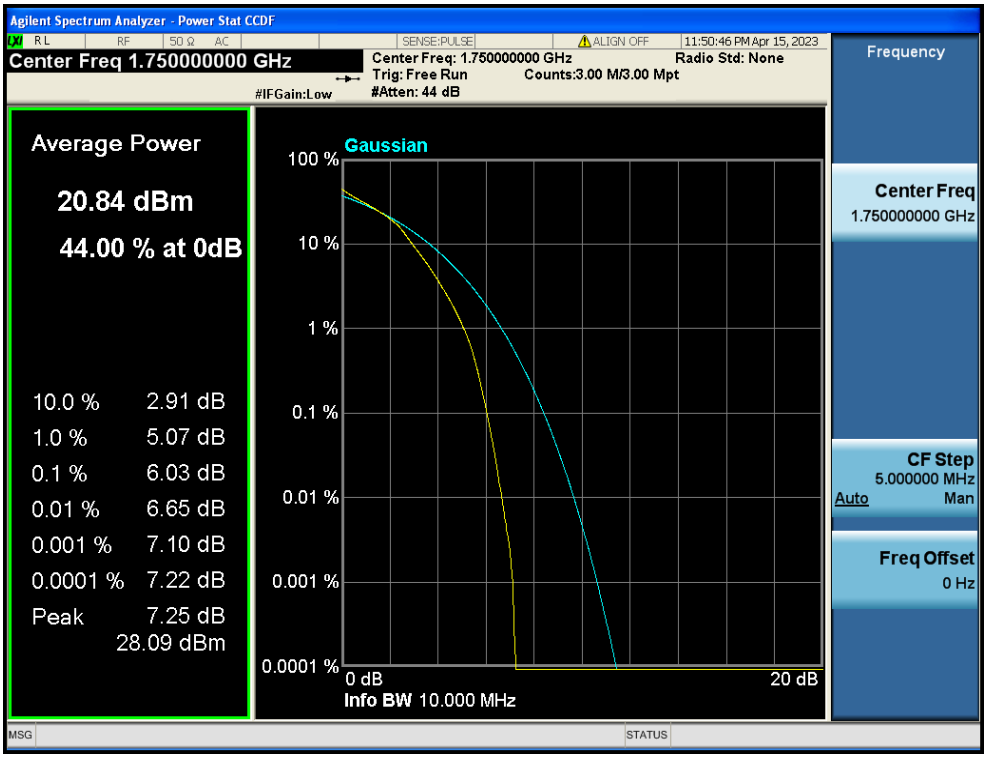
LTE Band 4 / 15MHz / QPSK - RB Size 75



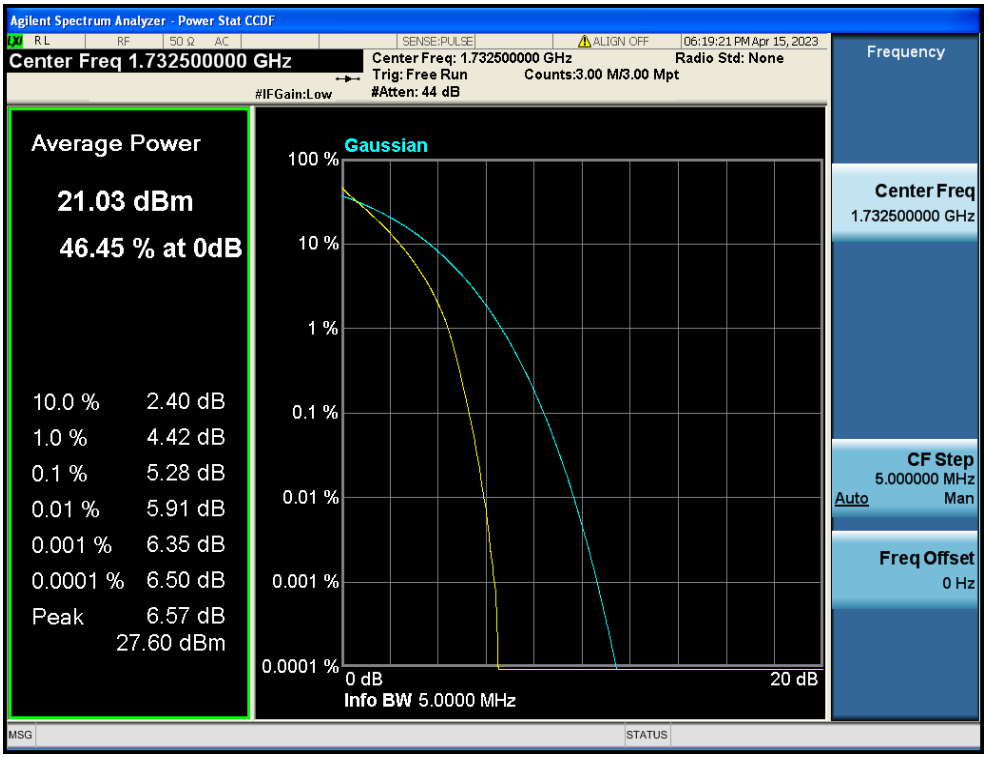
LTE Band 4 / 15MHz / 16QAM - RB Size 75



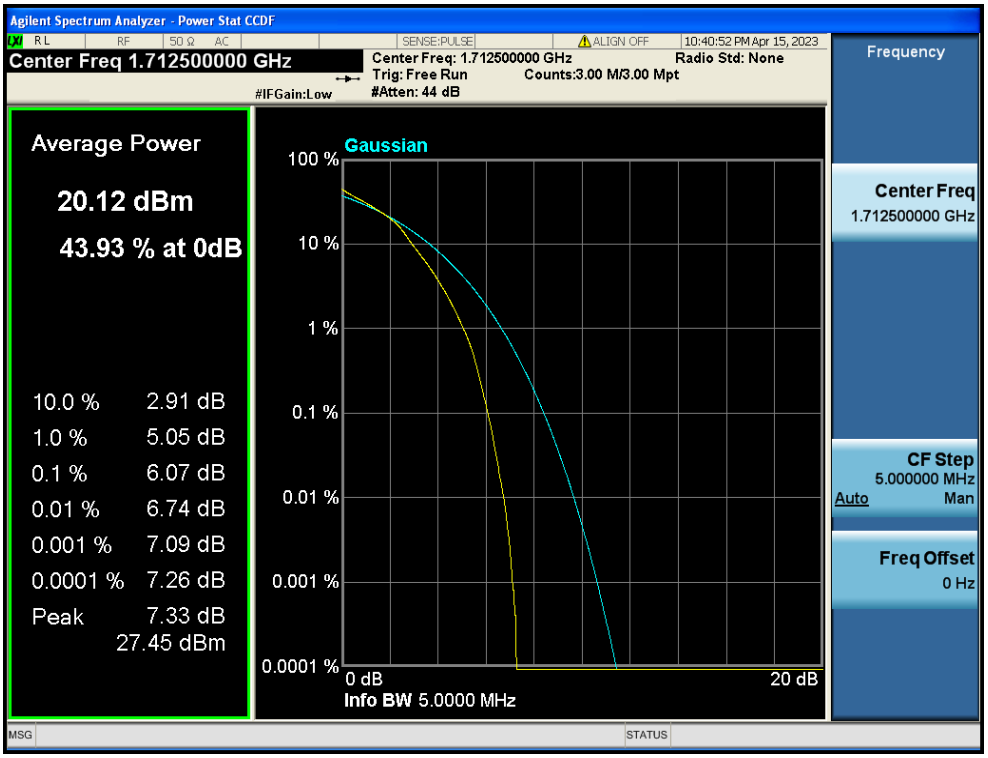
LTE Band 4 / 10MHz / QPSK - RB Size 50



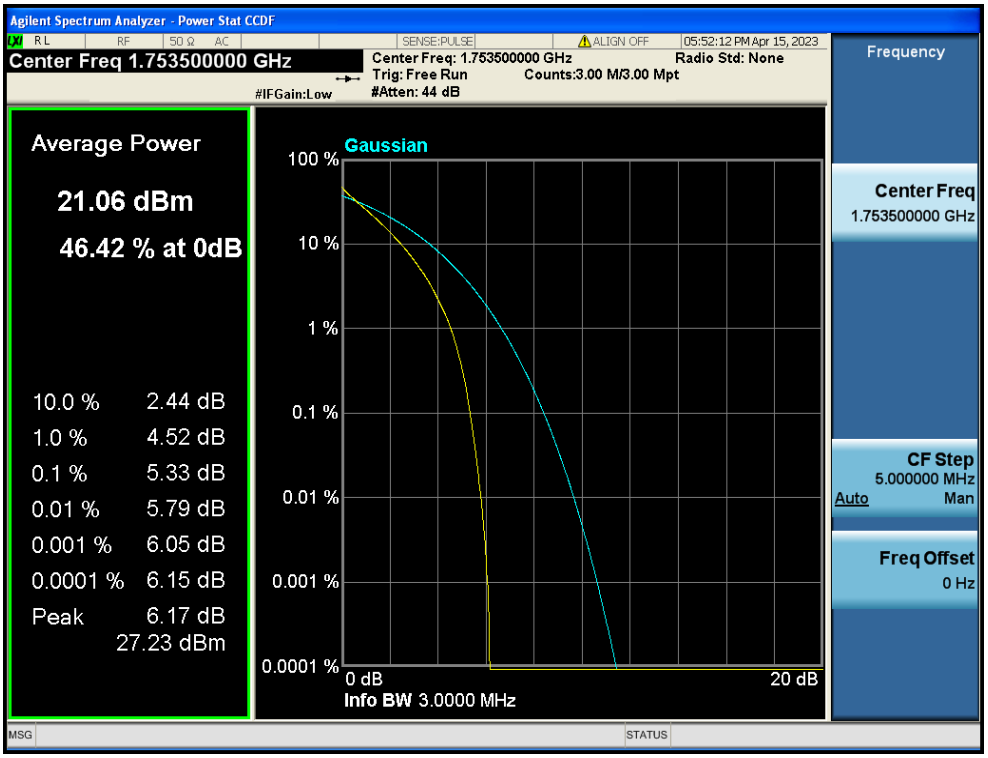
LTE Band 4 / 10MHz / 16QAM - RB Size 50



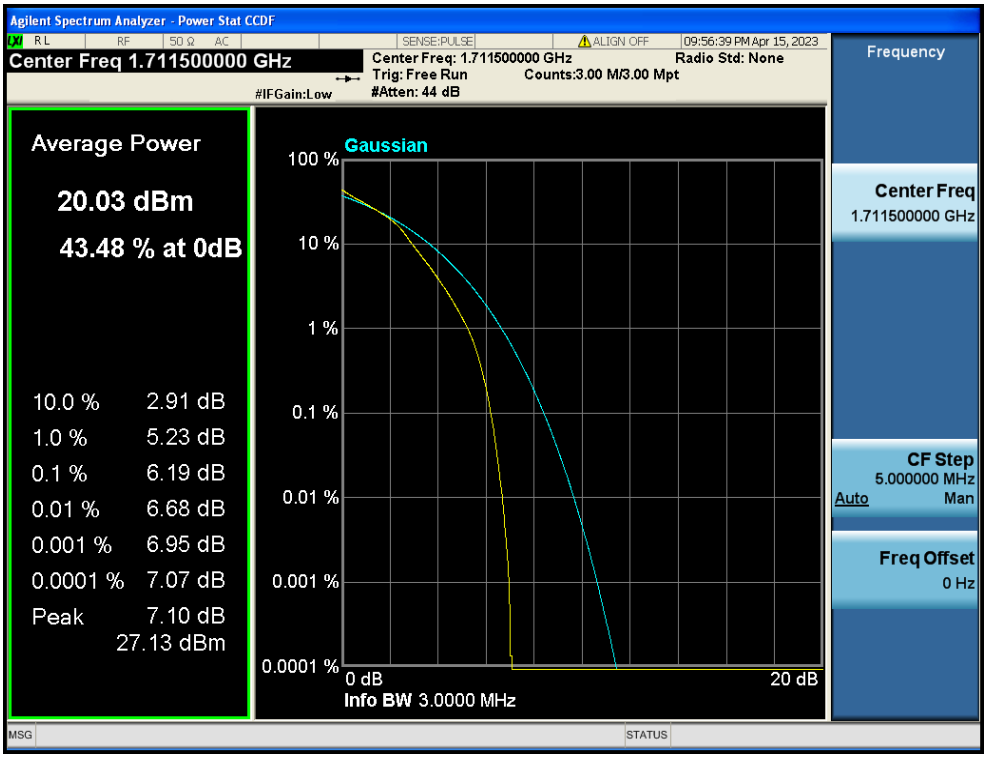
LTE Band 4 / 5MHz / QPSK - RB Size 25



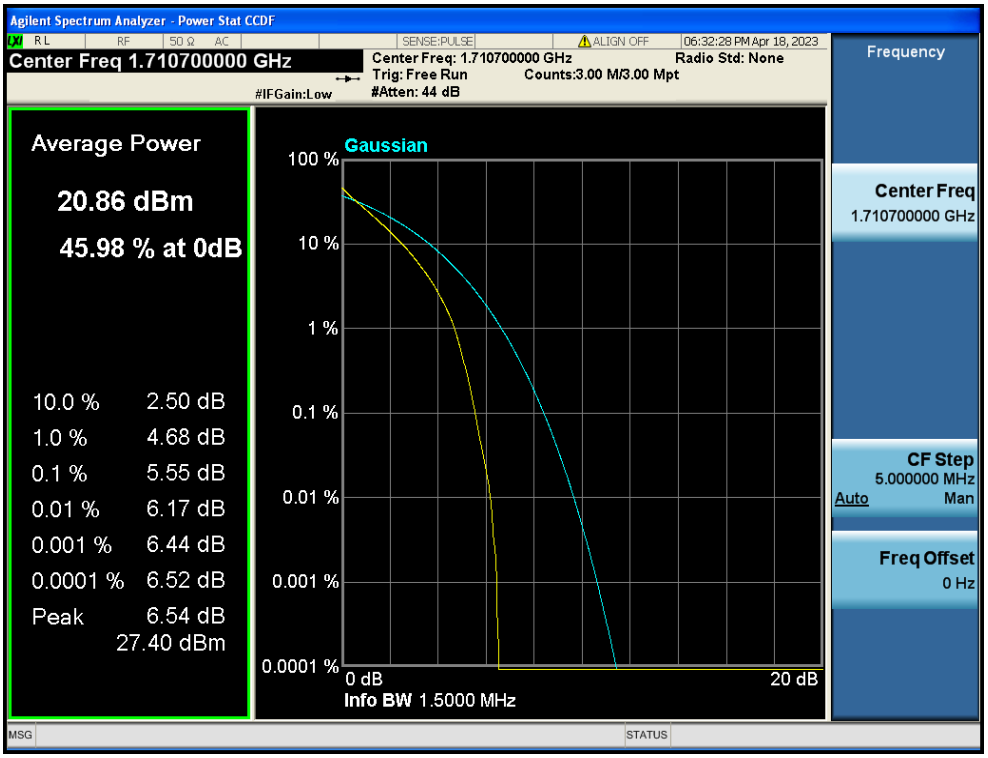
LTE Band 4 / 5MHz / 16QAM - RB Size 25



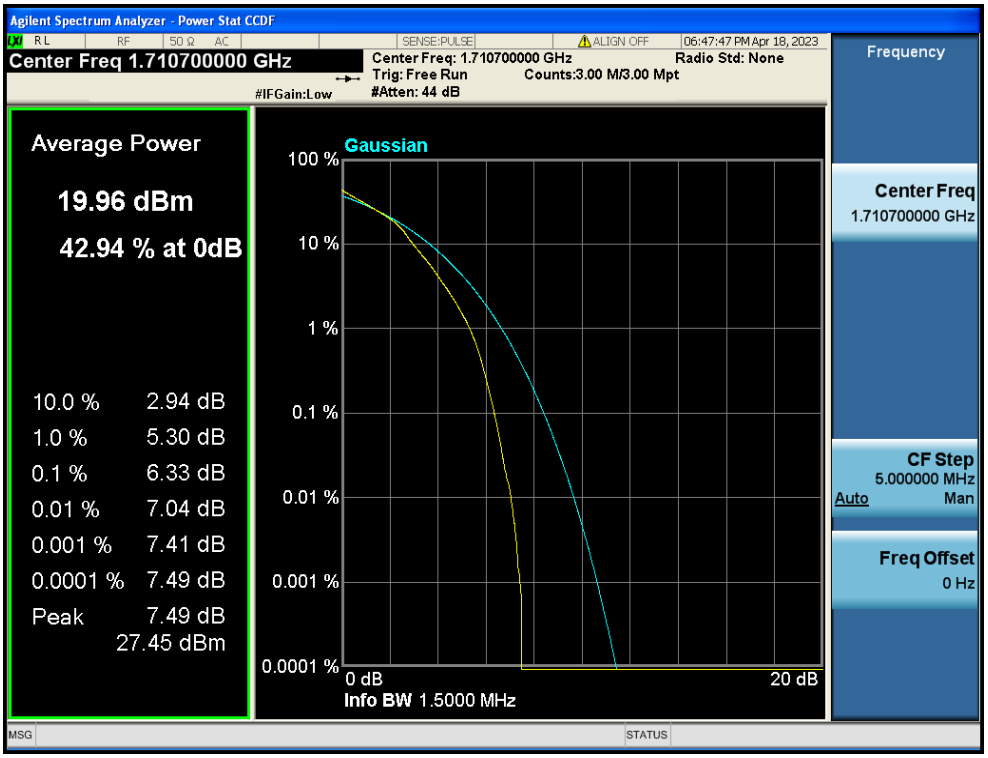
LTE Band 4 / 3MHz / QPSK - RB Size 15



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

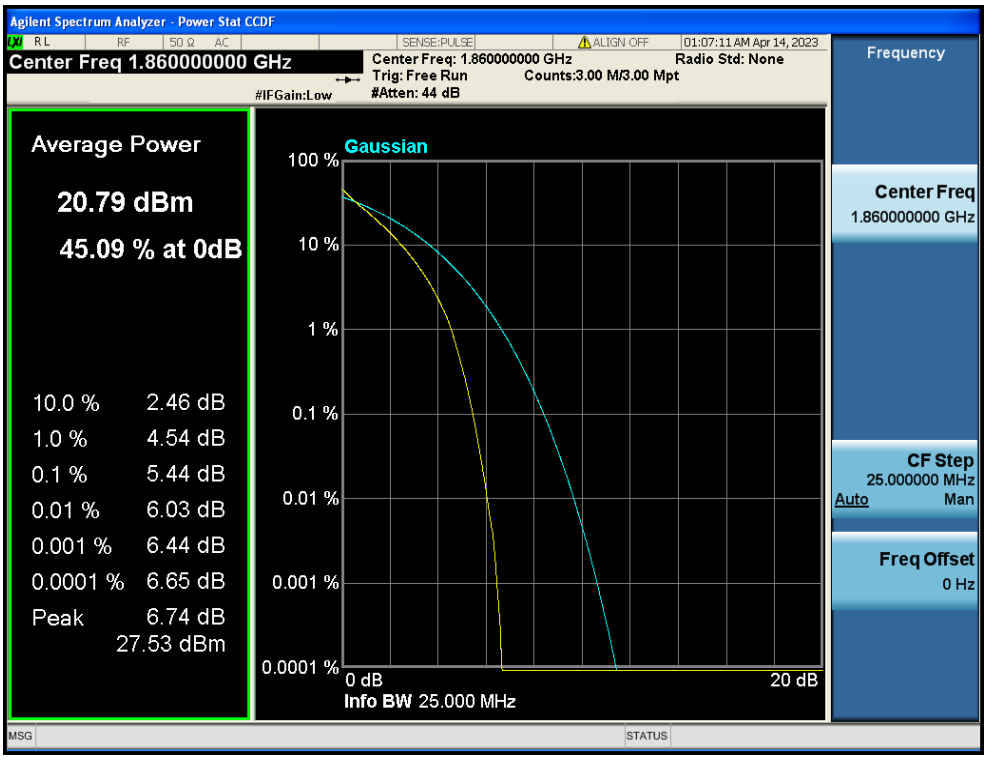


LTE Band 4 / 1.4MHz / QPSK - RB Size 6

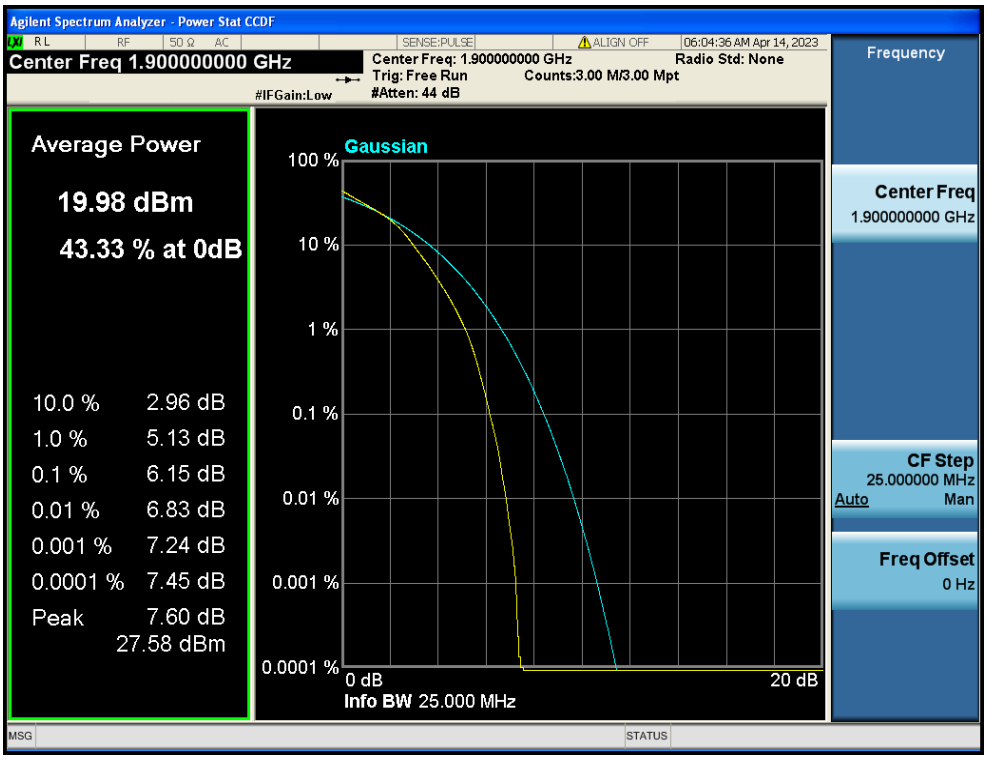


LTE Band 4 / 1.4MHz / 16QAM - RB Size 6

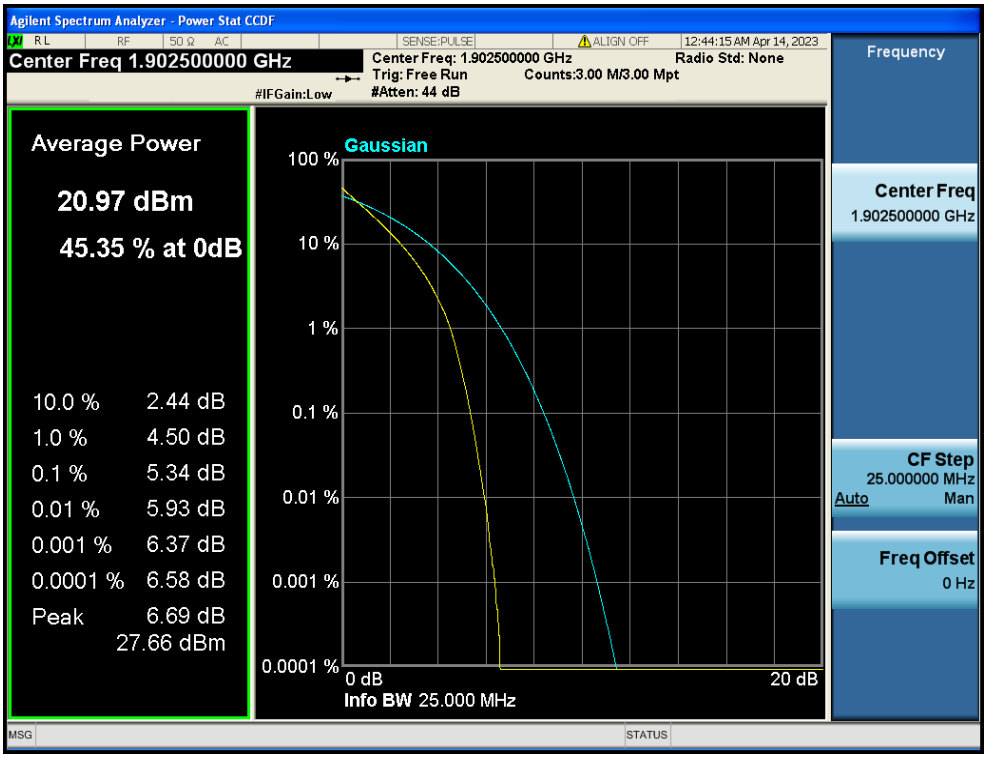
8.2.5. LTE Band 2



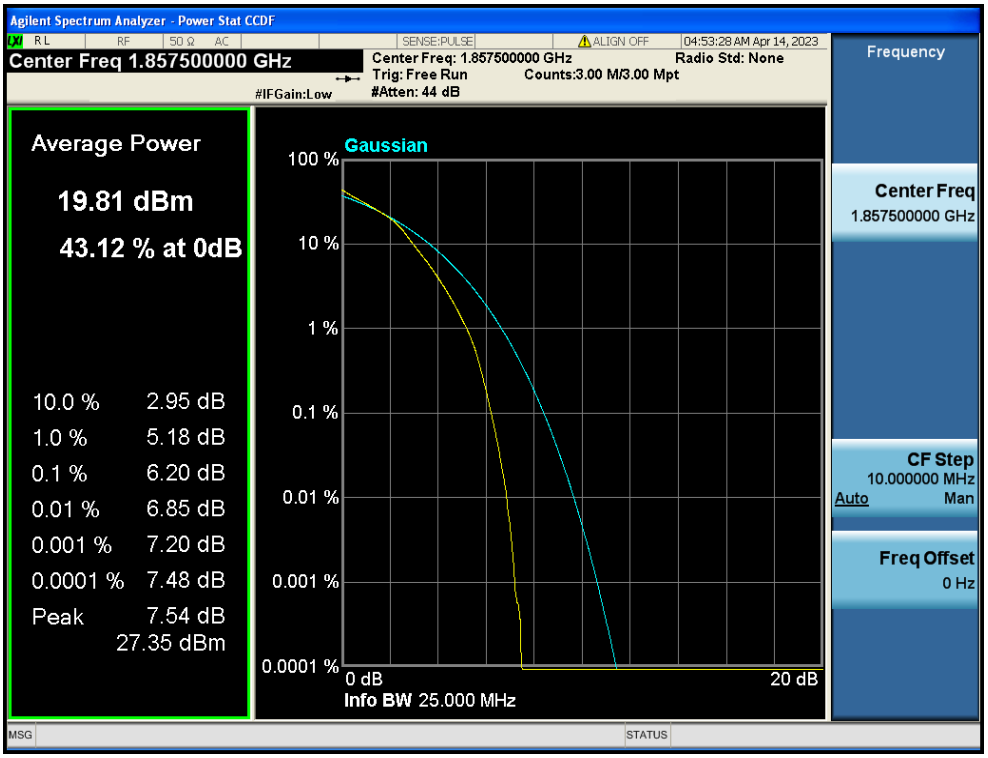
LTE Band 2 / 20MHz / QPSK - RB Size 100



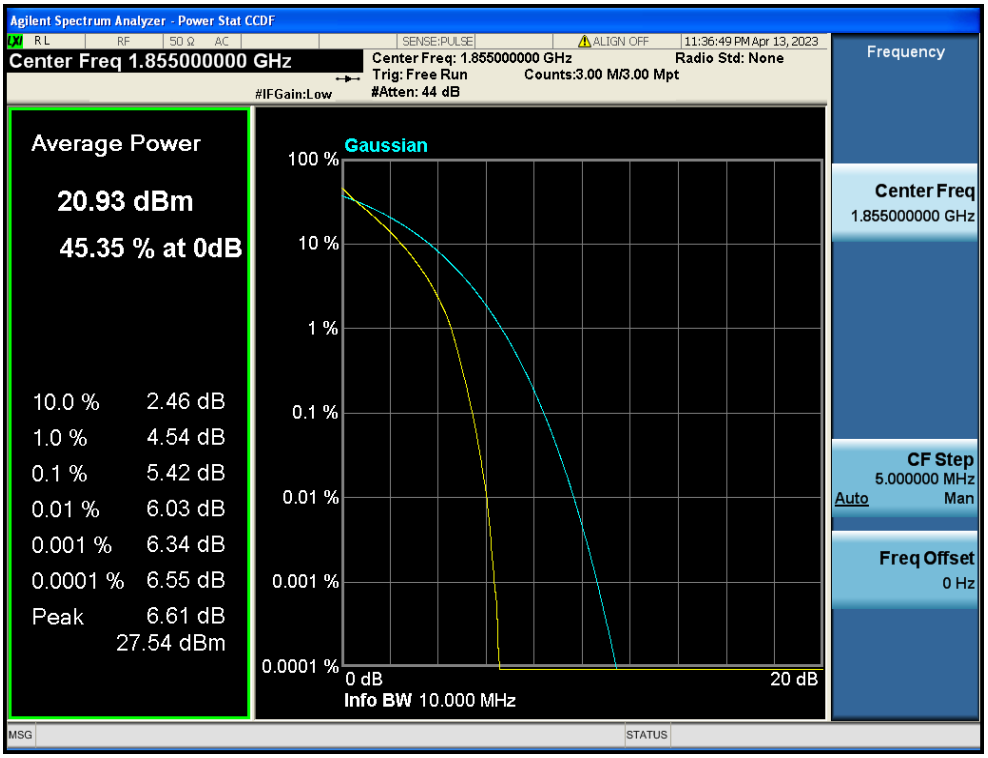
LTE Band 2 / 20MHz / 16QAM - RB Size 100



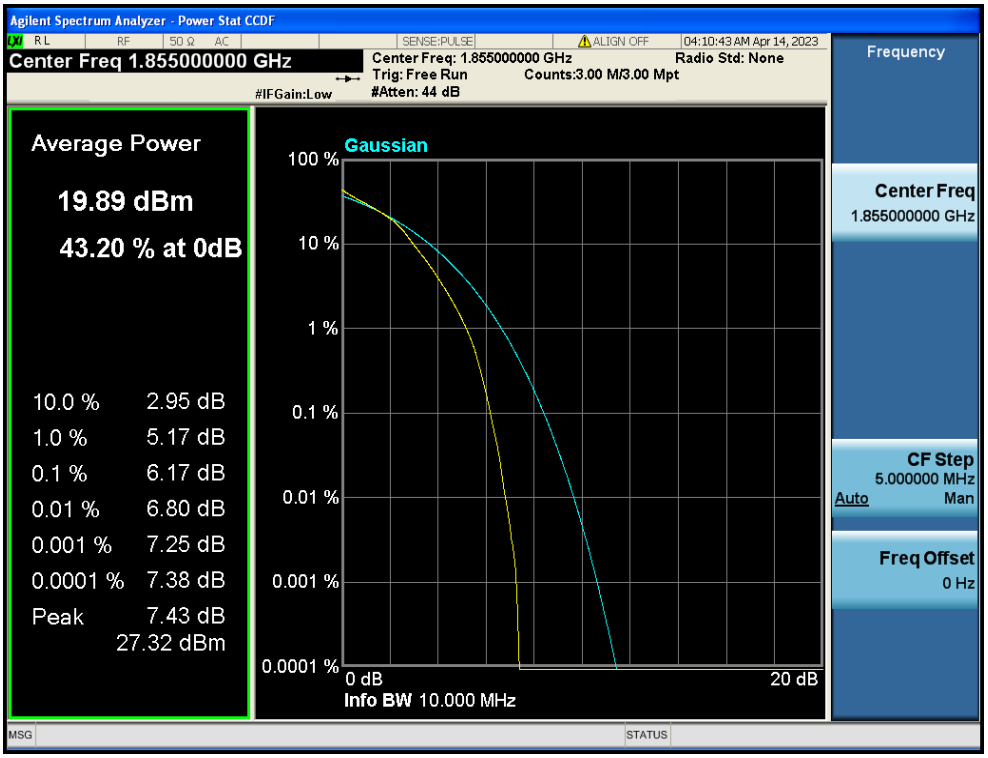
LTE Band 2 / 15MHz / QPSK - RB Size 75



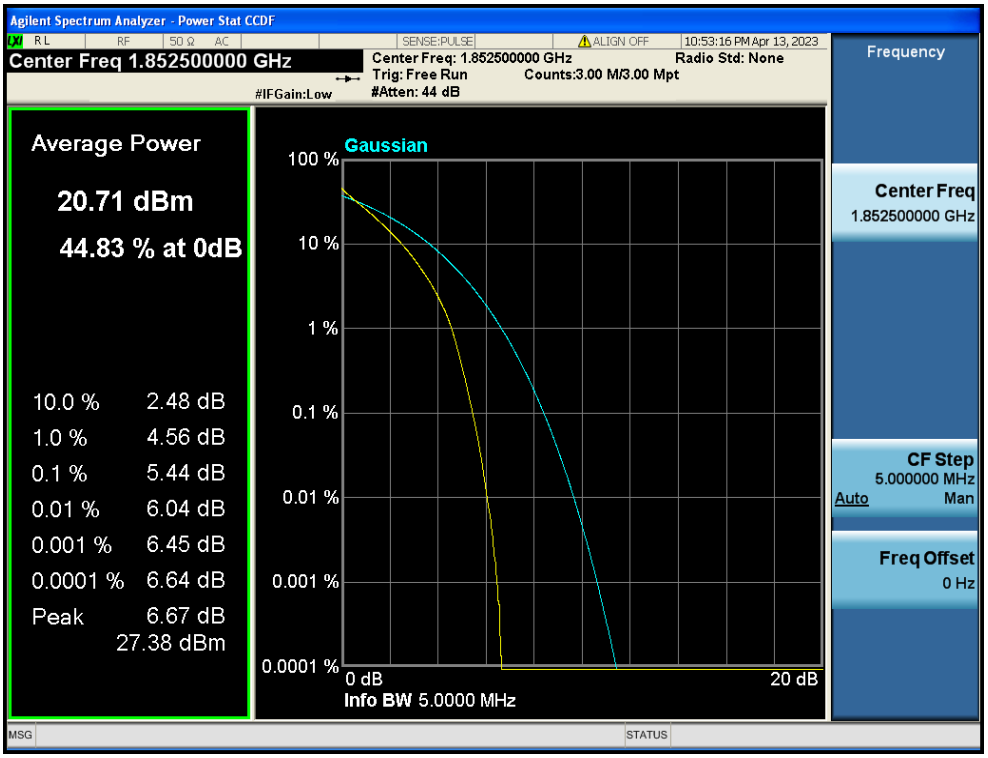
LTE Band 2 / 15MHz / 16QAM - RB Size 75



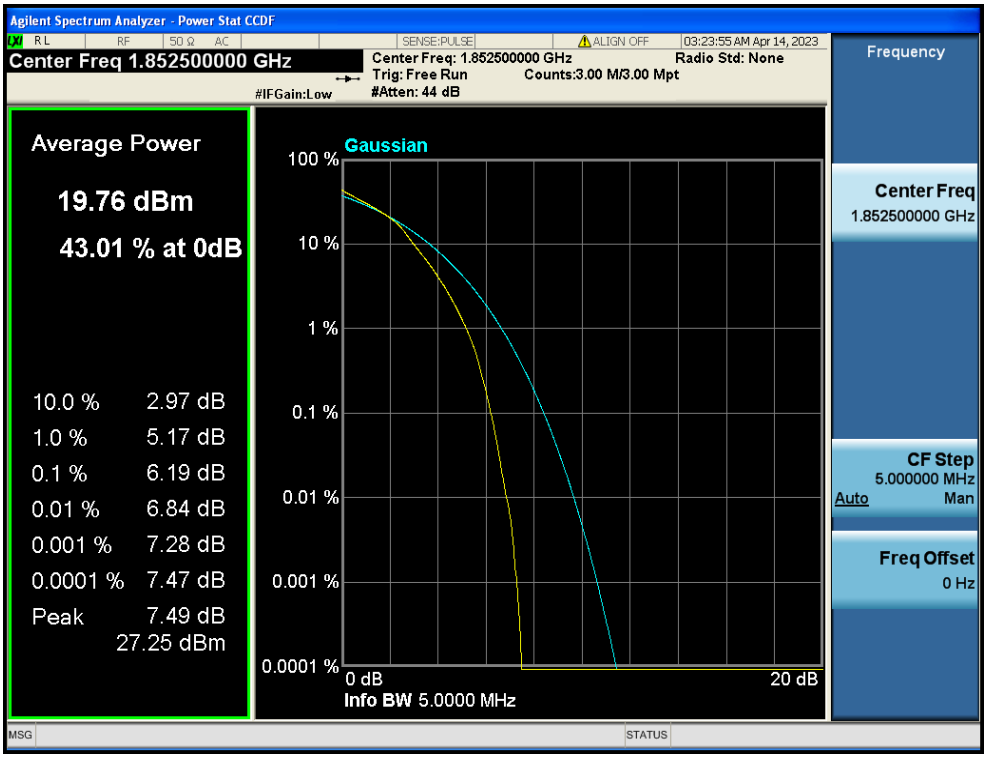
LTE Band 2 / 10MHz / QPSK - RB Size 50



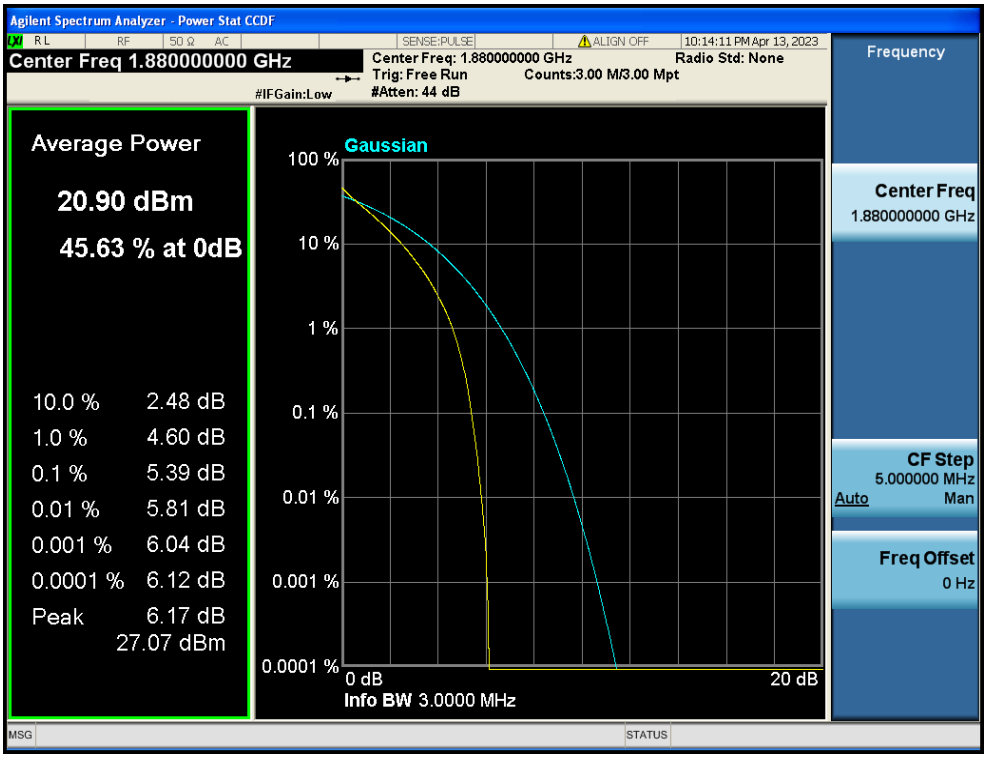
LTE Band 2 / 10MHz / 16QAM - RB Size 50



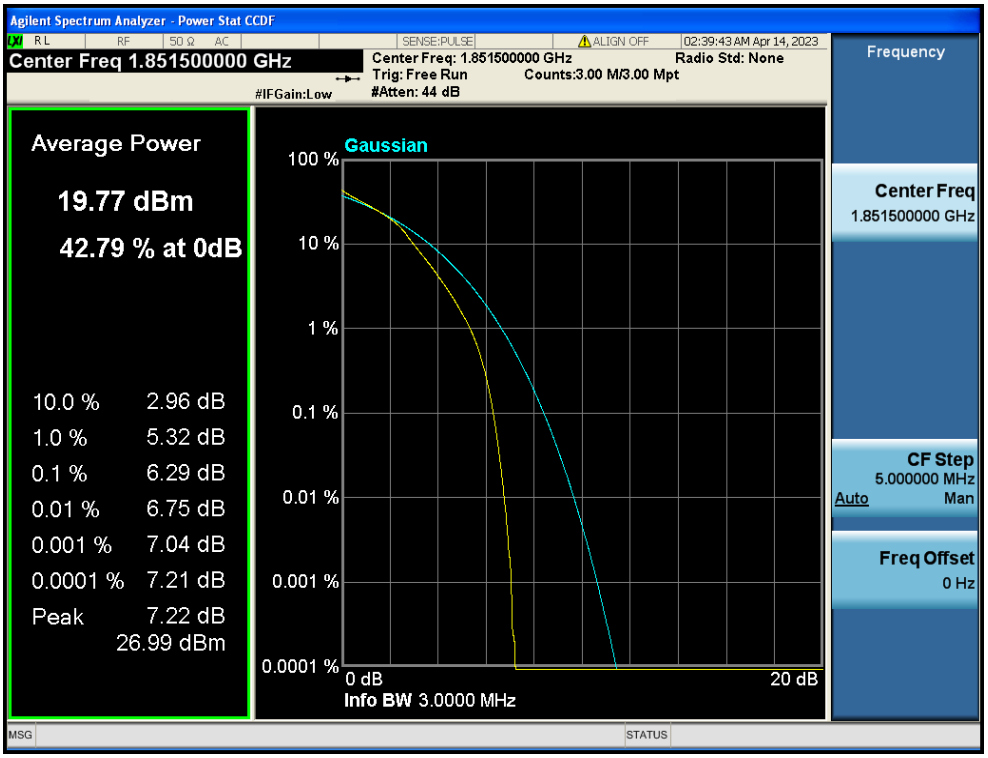
LTE Band 2 / 5MHz / QPSK - RB Size 25



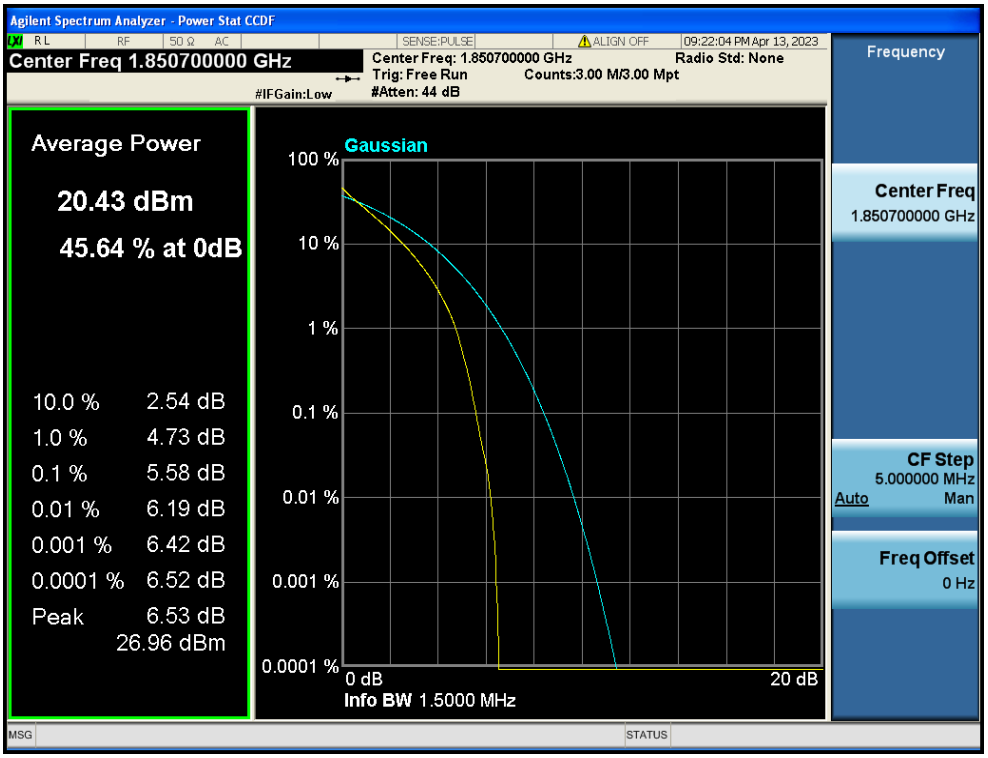
LTE Band 2 / 5MHz / 16QAM - RB Size 25



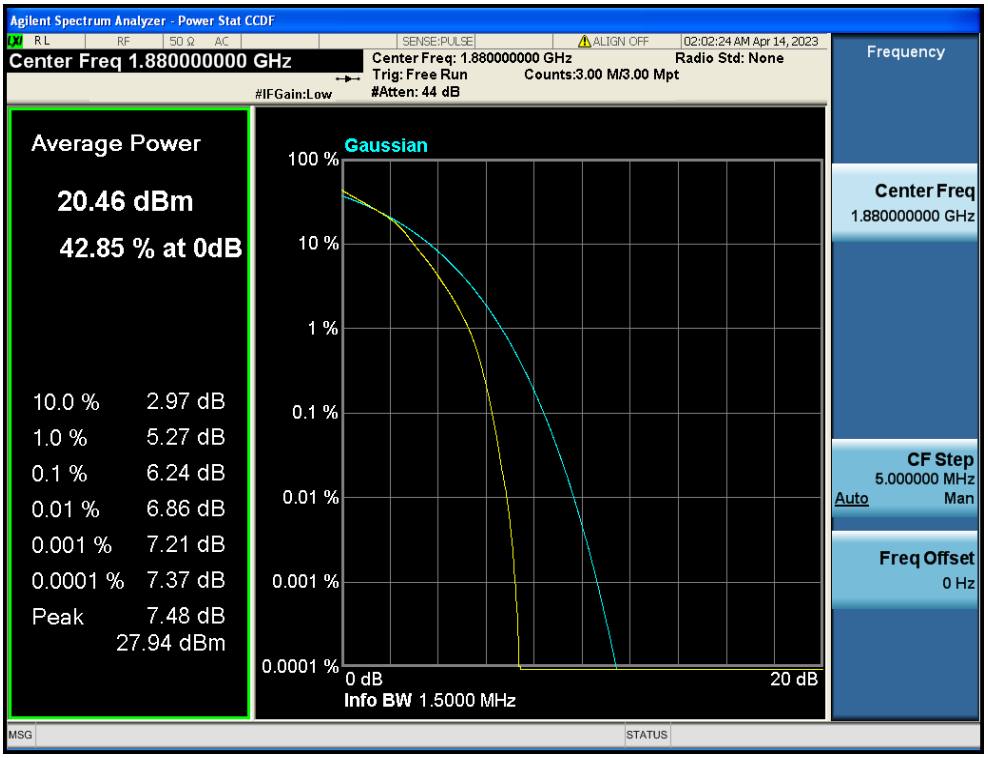
LTE Band 2 / 3MHz / QPSK - RB Size 15



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



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



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

8.3. BAND EDGE EMISSIONS(Conducted)

8.3.1. LTE Band 12

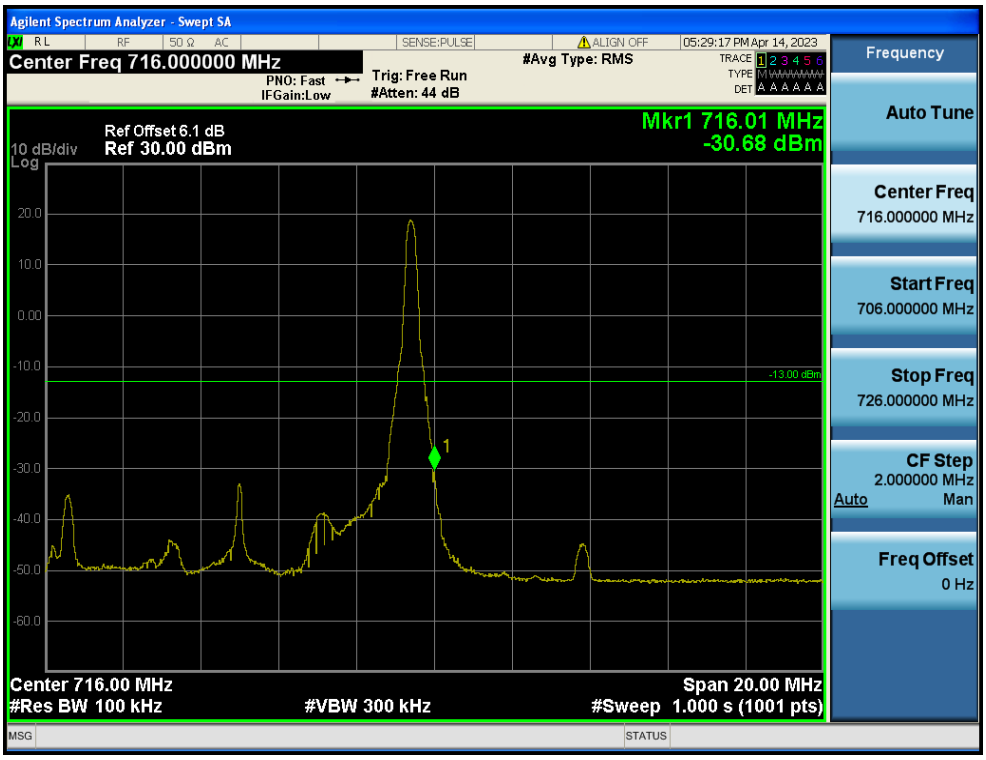
- **Lower Band Edge**

LTE Band 12 / 10MHz / 16QAM - RB Size/Offset (25/0)

- **Lower Extended Band Edge**

LTE Band 12 / 10MHz / QPSK - RB Size/Offset (25/0)

- **Upper Band Edge**



LTE Band 12 / 10MHz / 16QAM - RB Size/Offset (1/49)

- **Upper Extended Band Edge**

LTE Band 12 / 10MHz / QPSK - RB Size/Offset (25/25)

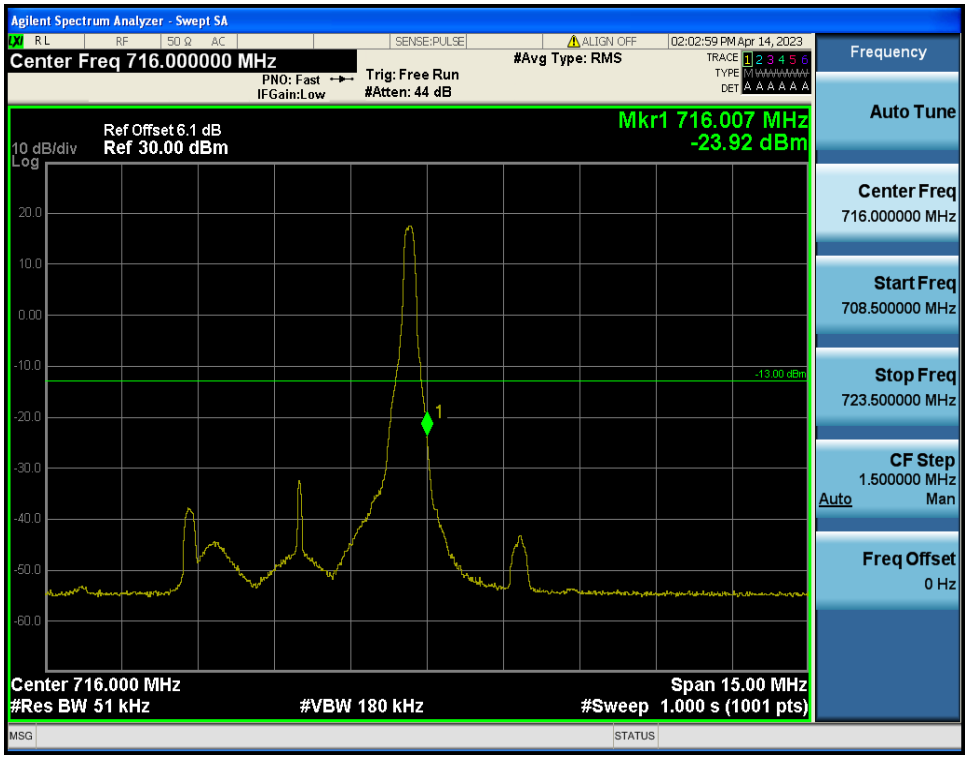
- **Lower Band Edge**

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

- **Lower Extended Band Edge**

LTE Band 12 / 5MHz / QPSK - RB Size/Offset (25/0)

- **Upper Band Edge**



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

- **Upper Extended Band Edge**

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

- **Lower Band Edge**

LTE Band 12 / 3MHz / QPSK - RB Size/Offset (15/0)

- **Lower Extended Band Edge**

LTE Band 12 / 3MHz / QPSK - RB Size/Offset (15/0)

- **Upper Band Edge**

LTE Band 12 / 3MHz / QPSK - RB Size/Offset (1/14)

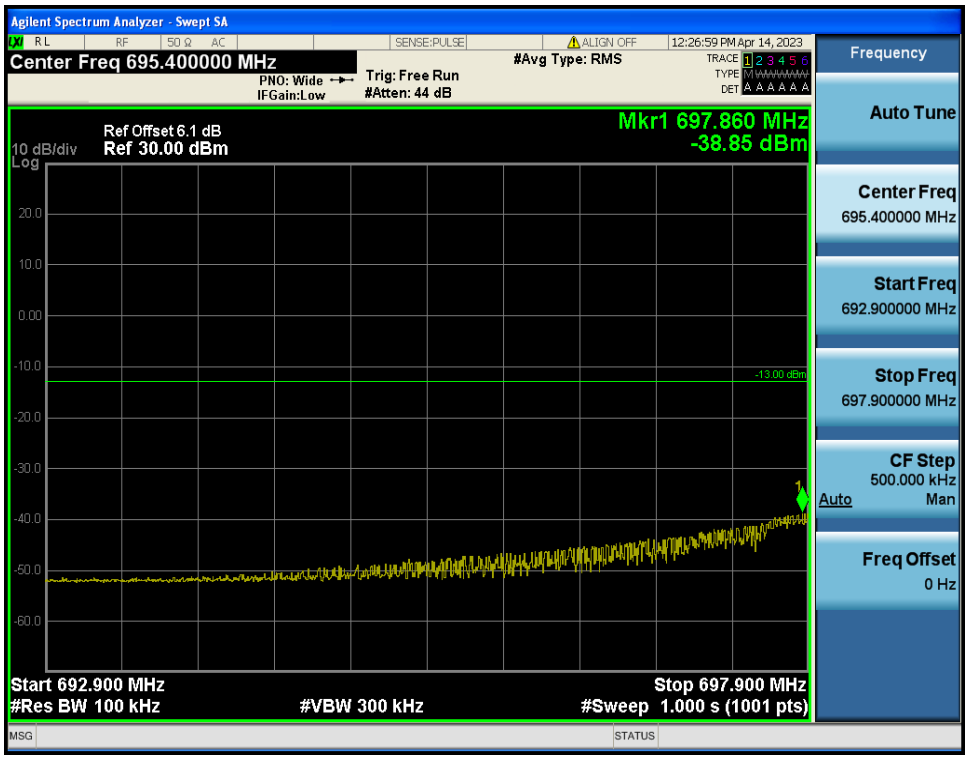
- **Upper Extended Band Edge**

LTE Band 12 / 3MHz / QPSK - RB Size/Offset (1/14)

- **Lower Band Edge**

LTE Band 12 / 1.4MHz / 16QAM - RB Size/Offset (6/0)

- **Lower Extended Band Edge**



LTE Band 12 / 1.4MHz / QPSK - RB Size/Offset (3/0)

- **Upper Band Edge**

LTE Band 12 / 1.4MHz / QPSK - RB Size/Offset (3/3)

- **Upper Extended Band Edge**

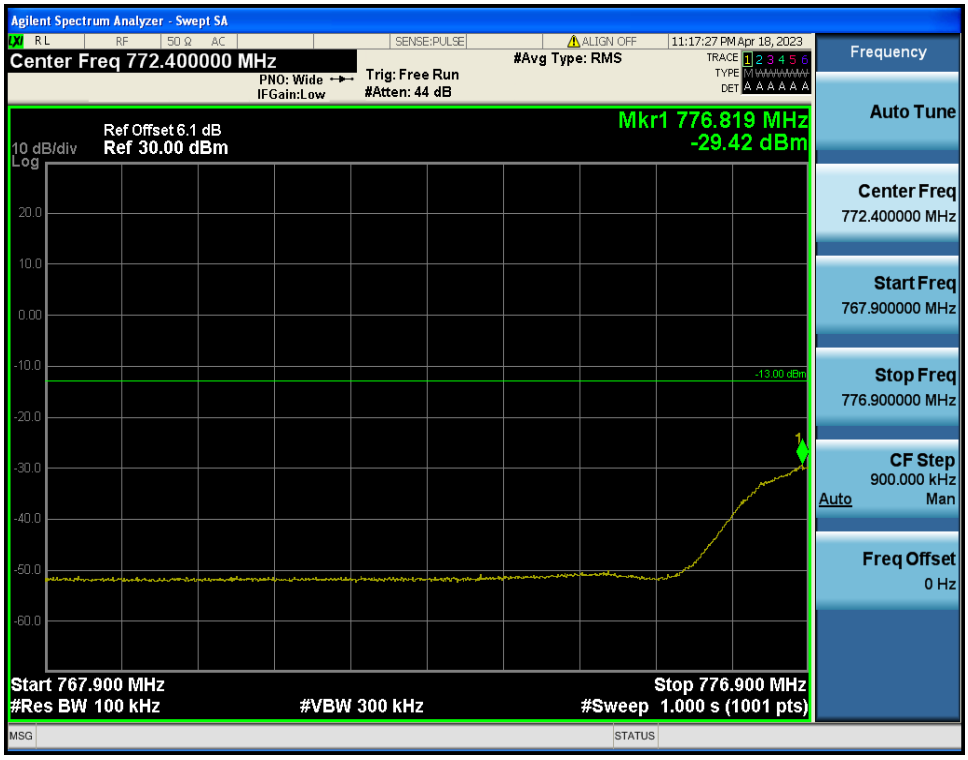
LTE Band 12 / 1.4MHz / QPSK - RB Size/Offset (3/3)

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)