TEST REPORT

Dt&C

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 : DRTFCC1809-0237
2. Customer
   - Name : LG Electronics USA
   - Address : 1000 Sylvan Avenue, Englewood Cliffs, New Jersey, United States, 07632
3. Use of Report : FCC Original Grant
4. Product Name / Model Name : RF Module / TM03LNNATY0
   FCC ID : BEJTM03LNNATY0
5. Test Method Used : KDB971168 D01v03r01, ANSI/TIA-603-E-2016, ANSI C63.26-2015
   Test Specification : §2, §22, §24, §27
6. Date of Test : 2018.01.15 ~ 2018.03.23
7. Testing Environment : Refer to appended test report.
8. Test Result : Refer to the attached test result.

Affirmation	Tested by Name : JaeHyeok Bang (Signature)	Reviewed by Name : GeunKi Son (Signature)

2018 . 09 . 21 .

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
DRTFCC1809-0237	Sep. 21, 2018	Initial issue

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1 GENERAL INFORMATION

Applicant Name	:	LG Electronics USA
Address	:	1000 Sylvan Avenue, Englewood Cliffs, New Jersey, United States, 07632
FCC ID	:	BEJTM03LNNATY0
FCC Classification	:	PCS Licensed Transmitter (PCB)
EUT Type	:	RF Module
Model Name	:	TM03LNNATY0
Add Model Name	:	NA
Supplying power	:	DC 12 V
Antenna Information	:	External antenna

Mode	TX Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max power (dBm)	Max power (W)
LTE Band 12, 17	704 ~ 711	8M95G7D	QPSK	19.91	0.098
LTE Band 12, 17	704 ~ 711	8M93W7D	16QAM	18.63	0.073
LTE Band 12, 17	701.5 ~ 713.5	4M49G7D	QPSK	20.14	0.103
LTE Band 12, 17	701.5 ~ 713.5	4M49W7D	16QAM	18.86	0.077
LTE Band 12	700.5 ~ 714.5	2M71G7D	QPSK	20.64	0.116
LTE Band 12	700.5 ~ 714.5	2M70W7D	16QAM	19.46	0.088
LTE Band 12	699.7 ~ 715.3	1M09G7D	QPSK	20.66	0.116
LTE Band 12	699.7 ~ 715.3	1M09W7D	16QAM	19.48	0.089
LTE Band 13	782 ~ 782	8M93G7D	QPSK	19.15	0.082
LTE Band 13	782 ~ 782	8M91W7D	16QAM	17.97	0.063
LTE Band 13	779.5 ~ 784.5	4M50G7D	QPSK	19.41	0.087
LTE Band 13	779.5 ~ 784.5	4M47W7D	16QAM	18.26	0.067
LTE Band 26	831.5 ~ 841.5	13M4G7D	QPSK	20.56	0.114
LTE Band 26	831.5 ~ 841.5	13M4W7D	16QAM	19.13	0.082
LTE Band 5, 26	829 ~ 844	8M95G7D	QPSK	20.55	0.114
LTE Band 5, 26	829 ~ 844	8M97W7D	16QAM	19.10	0.081
LTE Band 5, 26	826.5 ~ 846.5	4M51G7D	QPSK	20.02	0.100
LTE Band 5, 26	826.5 ~ 846.5	4M50W7D	16QAM	18.88	0.077
LTE Band 5, 26	825.5 ~ 847.5	2M70G7D	QPSK	19.69	0.093
LTE Band 5, 26	825.5 ~ 847.5	2M70W7D	16QAM	18.51	0.071
LTE Band 5, 26	824.7 ~ 848.3	1M09G7D	QPSK	19.96	0.099
LTE Band 5, 26	824.7 ~ 848.3	1M09W7D	16QAM	18.85	0.077

Mode	TX Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max power (dBm)	Max power (W)
LTE Band 4	1720 ~ 1745	17M9G7D	QPSK	21.81	0.152
LTE Band 4	1720 ~ 1745	17M9W7D	16QAM	20.57	0.114
LTE Band 4	1717.5 ~ 1747.5	13M4G7D	QPSK	22.04	0.160
LTE Band 4	1717.5 ~ 1747.5	13M4W7D	16QAM	21.05	0.127
LTE Band 4	1715 ~ 1750	8M96G7D	QPSK	21.82	0.152
LTE Band 4	1715 ~ 1750	8M95W7D	16QAM	20.64	0.116
LTE Band 4	1712.5 ~ 1752.5	4M50G7D	QPSK	21.71	0.148
LTE Band 4	1712.5 ~ 1752.5	4M50W7D	16QAM	20.54	0.113
LTE Band 4	1711.5 ~ 1753.5	2M70G7D	QPSK	21.56	0.143
LTE Band 4	1711.5 ~ 1753.5	2M71W7D	16QAM	20.37	0.109
LTE Band 4	1710.7 ~ 1754.3	1M09G7D	QPSK	21.44	0.139
LTE Band 4	1710.7 ~ 1754.3	1M09W7D	16QAM	20.16	0.104
LTE Band 2	1860 ~ 1900	17M9G7D	QPSK	22.55	0.180
LTE Band 2	1860 ~ 1900	17M9W7D	16QAM	21.38	0.137
LTE Band 2	1857.5 ~ 1902.5	13M4G7D	QPSK	21.45	0.140
LTE Band 2	1857.5 ~ 1902.5	13M4W7D	16QAM	20.38	0.109
LTE Band 2	1855 ~ 1905	8M95G7D	QPSK	21.45	0.140
LTE Band 2	1855 ~ 1905	8M98W7D	16QAM	20.29	0.107
LTE Band 2	1852.5 ~ 1907.5	4M50G7D	QPSK	21.71	0.148
LTE Band 2	1852.5 ~ 1907.5	4M50W7D	16QAM	20.40	0.110
LTE Band 2	1851.5 ~ 1908.5	2M69G7D	QPSK	21.28	0.134
LTE Band 2	1851.5 ~ 1908.5	2M70W7D	16QAM	20.17	0.104
LTE Band 2	1850.7 ~ 1909.3	1M09G7D	QPSK	21.23	0.133
LTE Band 2	1850.7 ~ 1909.3	1M09W7D	16QAM	19.91	0.098

Note1: This device supports both LTE Band 12(699 ~ 716MHz) and LTE Band 17(704 ~ 716MHz). And LTE Band 12 overlaps the entire frequency range of LTE Band 17. Therefore, test data provided in this report covers Band 17 as well as Band 12.
Note2: This device supports both LTE Band 5(824 ~ 849MHz) and LTE Band 26(814 ~ 849MHz). And LTE Band 26 overlaps the entire frequency range of LTE Band 5. Therefore, test data provided in this report covers Band 5 as well as Band 26.
Note3: LTE Band 26(814 ~ 824MHz) test data is refer to the §90 test report.

2 INTRODUCTION

2.1 EUT DESCRIPTION

This module is limited to be installed in the specific host product. Model name for the host device: TL19BNN.

And the module was installed into host product during test.

2.2 EUT CAPABILITIES

This ETU contains the following capabilities:
850/1700/1900 WCDMA/HSUPA, Multi-band LTE.

2.3 TESTING ENVIRONMENT

Ambient Condition	
▪ Temperature	+21 ℃ ~ +24 ℃
▪ Relative Humidity	41 % ~ 44 %

2.4 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.

2.5 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)	± 5.1 dB (The confidence level is about 95 %, k = 2)
Radiated Disturbance (1 GHz ~ 18 GHz)	± 5.4 dB (The confidence level is about 95 %, k = 2)
Radiated Disturbance (Above 18 GHz)	± 5.3 dB (The confidence level is about 95 %, k = 2)

2.6 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 site is constructed in conformance with the requirements. **- FCC MRA Accredited Test Firm No. : KR0034**		
www.dtnc.net		
Telephone	:	+ 82-31-321-2664
FAX	:	+ 82-31-321-1664

2.7 REFERENCING TEST DATA EXPLIANATIONS

- Reference FCC ID: BEJTL19BNN

Equipment Class	Rule Parts	Frequency range(MHz)	Technology	Note
PCB	22H	826.4 ~ 846.6	WCDMA 850	-
PCB	27	1712.4 ~ 1752.6	WCDMA 1700	-
PCB	24E	1852.4 ~ 1907.6	WCMDA 1900	-
PCB	27	701.5 ~ 713.5	LTE Band 12(17)	-
PCB	27	699.7 ~ 715.3	LTE Band 12	-
PCB	27	779.5 ~ 784.5	LTE Band 13	-
PCB	22	831.5 ~ 841.5	LTE Band 26	-
PCB	22	824.7 ~ 848.3	LTE Band 26(5)	-
PCB	90	814.7 ~ 823.3	LTE Band 26	
PCB	27	1710.7 ~ 1754.3	LTE Band 4	-
PCB	24E	1850.7 ~ 1909.3	LTE Band 2	-

This report includes the test data of FCC ID: BEJTL19BN.

The applicant takes full responsibility that the test data as below(reference section) represents compliance for the new FCC ID.

- Explain the differences

The module (FCC ID: BEJTM03LNNAT0) is limited to being integrated only for MODEL: TL19BNN

And the “Model: TL19BNN” is already approved to FCC ID: BEJTL19BNN.

That is, the model where the FCC ID: BEJTL19BNN and the limited module(BEJTM03LLATY0) are integrated is exactly the same product.

- Spot check verification data

Not checked.

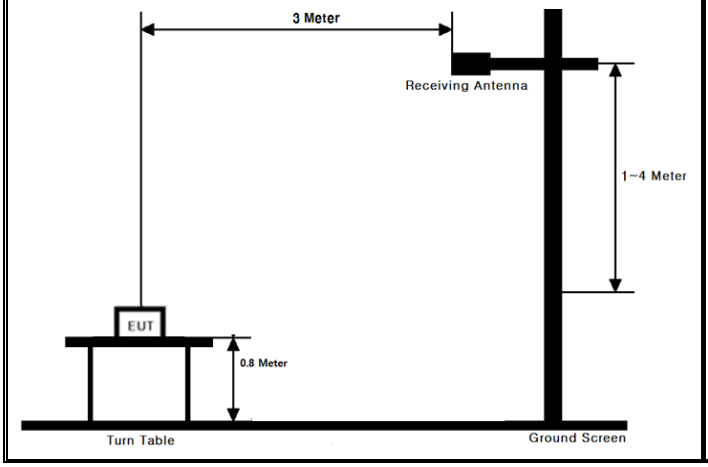
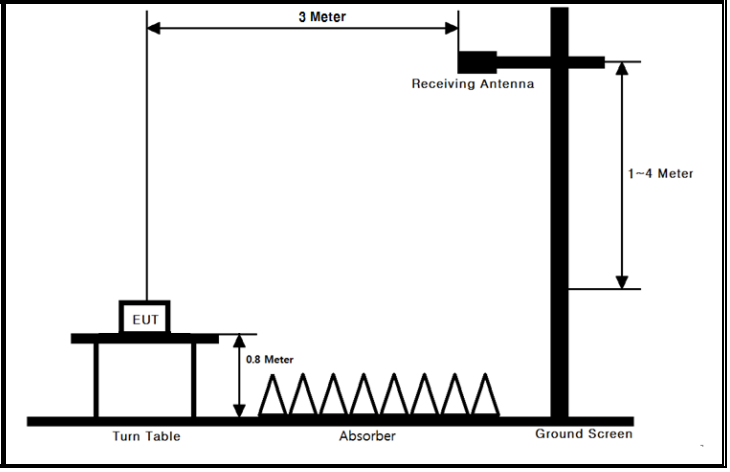
- Reference section

Reference FCC ID	Equipment Class	Rule Parts	Frequency range(MHz)	Technology	Report Title	Exhibit type	Sections
BEJTL19BNN	PCB	27	701.5 ~ 713.5	LTE Band 12(17)	PCB LTE	Test report	All
BEJTL19BNN	PCB	27	699.7 ~ 715.3	LTE Band 12	PCB LTE	Test report	All
BEJTL19BNN	PCB	27	779.5 ~ 784.5	LTE Band 13	PCB LTE	Test report	All
BEJTL19BNN	PCB	22	831.5 ~ 841.5	LTE Band 26	PCB LTE	Test report	All
BEJTL19BNN	PCB	22	824.7 ~ 848.3	LTE Band 26(5)	PCB LTE	Test report	All
BEJTL19BNN	PCB	27	1710.7 ~ 1754.3	LTE Band 4	PCB LTE	Test report	All
BEJTL19BNN	PCB	24E	1850.7 ~ 1909.3	LTE Band 2	PCB LTE	Test report	All

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-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.

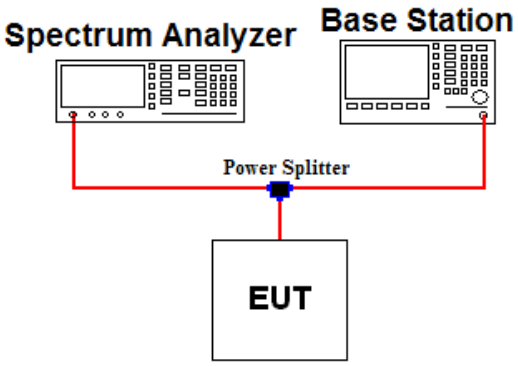
The ERP/EIRP is calculated using the following formula:

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

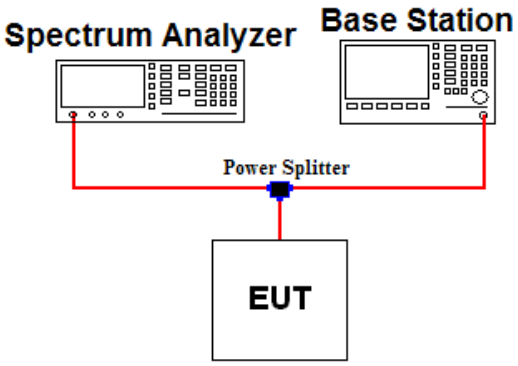
The spectrum Analyzer`s CCDF measurement function is enabled.

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%.

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**

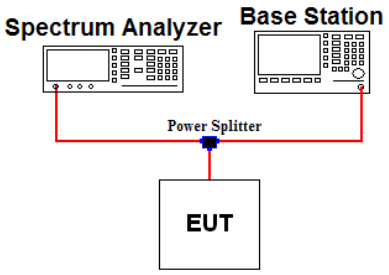
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

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.

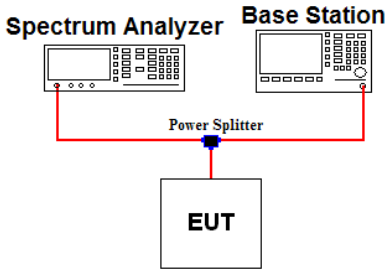
Note 2: Per Part 27.53(c.5) for operations in the 776-788 MHz band, compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

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

Note 4: Per Part 27.53(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.

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 10th harmonic.

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

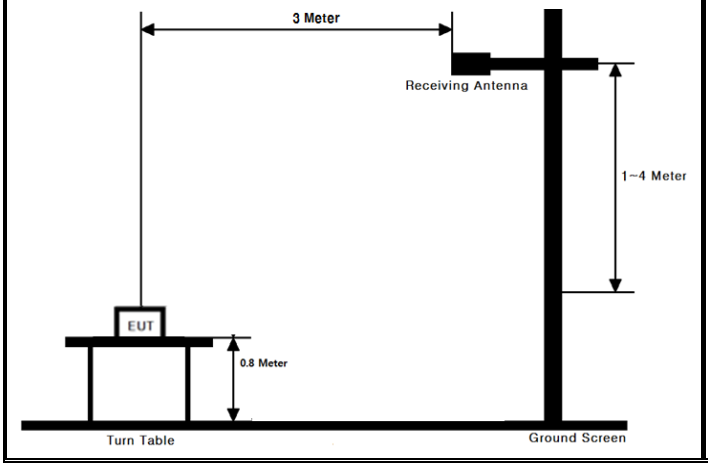
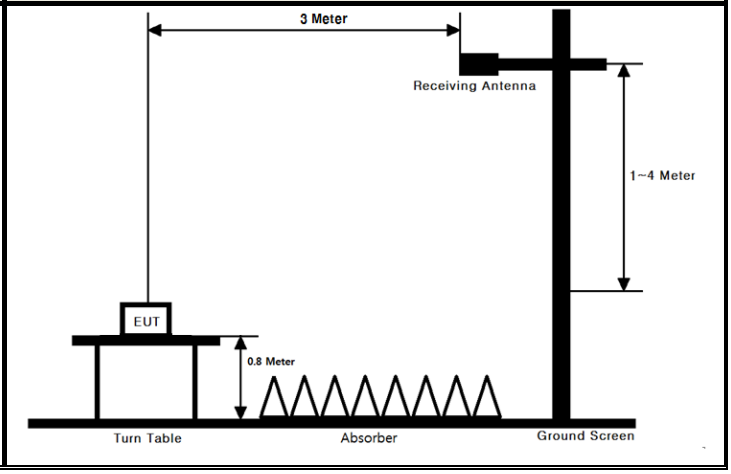
Test setting

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 1GHz and 1MHz 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-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 2.2.12**
- **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 = Max hold
3. Sweep time = Auto couple
4. Number of sweep point ≥ 2 X span / RBW
5. The trace was allowed to stabilize

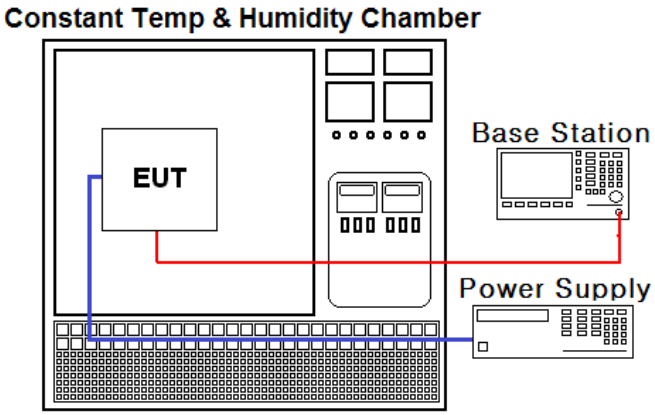
The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

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.

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	17/09/05	18/09/05	MY46471251
Spectrum Analyzer	Agilent Technologies	N9020A	17/09/06	18/09/06	MY48011075
DC power supply	Agilent Technologies	66332A	17/09/05	18/09/05	US37473422
Multimeter	FLUKE	17B	17/12/26	18/12/26	26030065WS
Power Splitter	Anritsu	K241B	17/12/27	18/12/27	1301183
Temp & Humi Test Chamber	SJ Science	SJ-TH-S50	17/09/07	18/09/07	U5542113
Thermohygrometer	BODYCOM	BJ5478	18/01/03	19/01/03	120612-2
Radio Communication Analyzer	Anritsu	MT8820C	17/09/07	18/09/07	6201127429
Signal Generator	Rohde Schwarz	SMBV100A	17/12/27	18/12/27	255571
Signal Generator	Rohde Schwarz	SMF100A	17/12/27	18/12/27	102341
Loop Antenna	Schwarzbeck	FMZB1513	16/04/22	18/04/22	1513-128
BILOG ANTENNA	Schwarzbeck	VULB 9160	16/08/05	18/08/05	9160-3362
Dipole Antenna	Schwarzbeck	VHA9103	17/03/14	19/03/14	2116
Dipole Antenna	Schwarzbeck	VHA9103	16/04/15	18/04/15	2117
Dipole Antenna	Schwarzbeck	UHA9105	17/03/14	19/03/14	2261
Dipole Antenna	Schwarzbeck	UHA9105	16/04/15	18/04/15	2262
HORN ANT	ETS	3117	16/05/13	18/05/13	00140394
HORN ANT	ETS	3117	17/08/02	19/08/02	00154312
HORN ANT	A.H.Systems	SAS-574	17/04/25	19/04/25	154
HORN ANT	A.H.Systems	SAS-574	17/07/31	19/07/31	155
Amplifier	RF Bay Inc	MPA-40-40	17/12/28	18/12/28	21151801
Amplifier	EMPOWER	BBS3Q7ELU	17/09/06	18/09/06	1020
PreAmplifier	TSJ	MLA-010K01-B01-27	17/03/06	18/03/06	1844539
			18/03/05	19/03/05	
PreAmplifier	Agilent	8449B	17/09/05	18/09/05	3008A02108
High-pass filter	Wainwright	WHKX12-935-1000-15000-40SS	17/09/05	18/09/05	7
High-pass filter	Wainwright	WHKX12-2580-3000-18000-80SS	17/09/05	18/09/05	3

Note: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

5 SUMMARY OF TEST RESULTS

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Status Note 1
2.1046	Conducted Output Power	N/A	Conducted	C Note3
2.1049	Occupied Bandwidth	N/A		C Note4
24.232(d) 27.50(d.5)	Peak to Average Ratio	< 13 dB		C Note4
2.1051 22.917(a) 24.238(a) 27.53(h) 27.53(c.2) 27.53(g)	Band Edge / Conducted Spurious Emissions	> 43 + 10log$_{10}$(P) dB at Band edge and for all out-of-band emissions		C Note4
27.53(c.4)	Undesirable Emissions in 763 ~ 775MHz & 793 ~ 805MHz	< 65 + 10 log10(P) dB		C Note4
2.1055 22.355 24.235 27.54	Frequency Stability	< 2.5 ppm (Part 22) Fundamental emissions must stay within Authorized frequency block (Part 24, 27)		C Note4
22.913(a.5) 24.232(c) 27.50(b.10) 27.50(c.10) 27.50(d.4)	Radiated Output Power	< 7 Watts max. ERP (B5, 26) < 2 Watts max. EIRP (B2) < 3 Watts max. ERP (B12, 13, 17) < 1 Watts max. EIRP (B4)	Radiated	C Note3
2.1053 22.917(a) 24.238(a) 27.53(h) 27.53(c.2) 27.53(g)	Undesirable Emissions	> 43 + 10log$_{10}$(P) dB for all out-of-band emissions		C Note3
27.53(f)	Undesirable Emissions in 1559 ~ 1610MHz	< -70 dBW/MHz (for wideband signals) < -80 dBW (for discrete emissions of less than 700 Hz bandwidth)		C Note3

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

Note 2: This device supports the dynamic antenna switching that allows for radiated transmission from one of two antennas. But two antennas cannot transmit simultaneously.

Note 3: This test item was performed for each antenna.(Ant 1, 2)
(The antenna was connected to the device with the provided cable by applicant.)

Note 4: This test item was performed at the antenna configuration that provides highest conducted output power. (Antenna 1)

6 SAMPLE CALCULATION

A. Emission Designator

LTE Band 12, 17(QPSK)

Emission Designator = **8M95G7D**
LTE OBW = 8.950 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 12, 17(16QAM)

Emission Designator = **8M93W7D**
LTE OBW = 8.934 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 13(QPSK)

Emission Designator = **8M93G7D**
LTE OBW = 8.934 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 13(16QAM)

Emission Designator **= 8M91W7D**
LTE OBW = 8.905 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5, 26(QPSK)

Emission Designator = **8M95G7D**
LTE OBW = 8.951 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5, 26(16QAM)

Emission Designator = **8M97W7D**
LTE OBW = 8.967 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 4(QPSK)

Emission Designator = **17M9G7D**
LTE OBW = 17.867 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 4(16QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.860 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 2(QPSK)

Emission Designator = **17M9G7D**
LTE OBW = 17.867 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 2(16QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.894 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

B. For substitution method

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)
15	1747.5	QPSK	1/0	-25.54	X	V	16.38	5.66	22.04	0.160

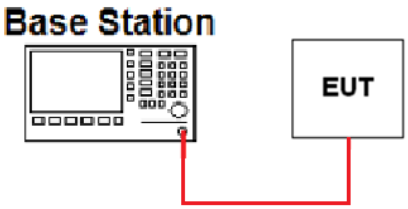
ERP or EIRP = Level @ Ant Terminal LEVEL(dBm) + Tx Ant. Gain

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 substituted antenna gain is the rating of ERP, EIRP or Radiated spurious emission.

7 TEST DATA

7.1 CONDUCTED OUPPUT 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, 17 <Test case: ANT 1>**

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	23.02	23.48	23.26	22.08	22.10	22.26	22.18
		16QAM	22.27	22.69	22.38	21.21	21.17	21.29	21.29
	711	QPSK	23.16	23.69	23.17	22.21	22.26	22.36	22.24
		16QAM	22.38	22.73	22.25	21.35	21.36	21.33	21.34
5	701.5	QPSK	22.96	23.22	23.03	22.13	22.21	22.14	22.09
		16QAM	22.15	22.51	22.33	21.25	21.26	21.26	21.23
	707.5	QPSK	23.04	23.22	23.09	22.21	22.24	22.25	22.23
		16QAM	22.14	22.46	22.40	21.25	21.29	21.36	21.33
	713.5	QPSK	23.15	23.29	23.31	22.23	22.25	22.26	22.20
		16QAM	22.47	22.61	22.26	21.52	21.44	21.41	21.32

▪ **Band 12, 17 <Test case: ANT 2>**

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	22.20	22.66	22.41	21.16	21.25	21.28	21.22
		16QAM	21.28	21.58	21.50	20.09	20.21	20.22	20.18
	711	QPSK	22.07	22.37	22.27	21.25	21.29	21.30	21.22
		16QAM	21.11	21.52	21.46	20.23	20.29	20.30	20.25
5	701.5	QPSK	22.33	22.54	22.12	21.33	21.35	21.17	21.14
		16QAM	21.30	21.46	21.38	20.33	20.30	20.22	20.14
	707.5	QPSK	22.11	22.40	22.19	21.21	21.25	21.29	21.24
		16QAM	21.27	21.28	21.35	20.19	20.33	20.33	20.22
	713.5	QPSK	22.30	22.46	22.17	21.20	21.25	21.22	21.26
		16QAM	21.41	21.66	21.43	20.25	20.38	20.35	20.24

▪ **Band 12 <Test case: ANT 1>**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
3	700.5	QPSK	22.95	23.20	23.17	22.25	22.23	22.16	22.20
		16QAM	22.23	22.52	22.47	21.35	21.36	21.27	21.34
	707.5	QPSK	23.23	23.40	23.32	22.37	22.25	22.21	22.19
		16QAM	22.34	22.61	22.52	21.41	21.30	21.34	21.35
	714.5	QPSK	23.33	23.62	23.32	22.29	22.34	22.26	22.29
		16QAM	22.52	22.55	22.68	21.45	21.38	21.41	21.44
1.4	699.7	QPSK	22.88	23.04	23.04	22.94	23.13	23.04	22.07
		16QAM	22.23	22.64	22.26	22.17	22.40	22.29	21.19
	707.5	QPSK	23.26	23.16	23.08	23.27	23.12	23.06	22.12
		16QAM	22.44	22.58	22.42	22.47	22.42	22.37	21.31
	715.3	QPSK	23.22	23.41	23.21	23.20	23.33	23.12	22.11
		16QAM	22.46	22.46	22.61	22.47	22.64	22.53	21.31

▪ **Band 12 <Test case: ANT 2>**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
3	700.5	QPSK	22.35	22.29	22.38	21.49	21.63	21.61	21.55
		16QAM	21.33	21.49	21.54	20.26	20.40	20.35	20.31
	707.5	QPSK	22.44	22.56	22.44	21.50	21.53	21.46	21.47
		16QAM	21.32	21.54	21.24	20.32	20.20	20.24	20.27
	714.5	QPSK	22.46	22.64	22.85	21.49	21.47	21.45	21.52
		16QAM	21.38	21.49	21.52	20.38	20.47	20.44	20.28
1.4	699.7	QPSK	22.25	22.46	22.34	22.23	22.27	22.33	21.27
		16QAM	21.50	21.67	21.66	21.57	21.45	21.40	20.29
	707.5	QPSK	22.14	22.28	22.29	22.21	22.32	22.34	21.32
		16QAM	21.47	21.54	21.34	21.44	21.48	21.42	20.26
	715.3	QPSK	22.27	22.37	22.27	22.27	22.33	22.35	21.23
		16QAM	21.58	21.72	21.45	21.65	21.67	21.67	20.54

▪ **Band 13 <Test case: ANT 1>**

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	22.42	22.65	22.46	21.32	21.34	21.32	21.41
		16QAM	21.71	21.56	21.56	20.32	20.47	20.45	20.41
5	779.5	QPSK	22.27	22.46	22.25	21.32	21.45	21.41	21.32
		16QAM	21.80	21.43	21.34	20.51	20.57	20.45	20.35
	784.5	QPSK	22.37	22.44	22.49	21.37	21.36	21.30	21.31
		16QAM	21.44	21.53	21.35	20.48	20.52	20.46	20.44

▪ **Band 13 <Test case: ANT 2>**

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	22.41	22.33	21.85	20.79	20.74	20.70	20.70
		16QAM	21.08	21.01	20.98	19.73	19.66	19.71	19.66
5	779.5	QPSK	21.85	21.83	21.93	20.76	20.80	20.77	20.78
		16QAM	20.93	20.85	21.03	19.92	19.89	19.84	19.75
	784.5	QPSK	21.59	21.90	21.87	20.73	20.72	20.84	20.69
		16QAM	20.78	20.78	20.87	19.77	19.80	19.86	19.70

▪ **Band 26 <Test case: ANT 1>**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
15	831.5	QPSK	22.84	23.06	22.69	21.77	21.85	21.47	21.83
		16QAM	21.98	21.92	22.01	20.84	20.83	20.71	20.57
	841.5	QPSK	22.87	22.84	22.59	21.70	21.70	21.63	21.80
		16QAM	21.86	21.81	21.94	20.84	20.84	20.84	20.75

▪ **Band 26 <Test case: ANT 2>**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
15	831.5	QPSK	21.97	21.99	22.07	20.85	20.94	20.84	20.93
		16QAM	21.08	21.10	21.25	19.93	19.97	19.93	19.92
	841.5	QPSK	21.94	22.13	22.03	20.90	20.93	20.90	20.97
		16QAM	21.12	20.98	21.13	20.00	20.03	19.97	20.02

▪ **Band 5, 26 <Test case: ANT 1>**

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	22.78	23.35	22.78	21.74	21.69	21.57	21.72
		16QAM	21.97	22.05	21.85	20.74	20.69	20.69	20.75
	836.5	QPSK	22.83	23.10	22.84	21.64	21.67	21.58	21.61
		16QAM	21.90	21.92	21.81	20.73	20.73	20.63	20.70
	844	QPSK	22.75	23.17	22.76	21.69	21.53	21.53	21.62
		16QAM	21.87	21.91	22.16	20.82	20.62	20.65	20.66
5	826.5	QPSK	22.70	22.75	22.62	21.73	21.69	21.53	21.71
		16QAM	22.00	21.78	21.74	20.86	20.73	20.63	20.78
	836.5	QPSK	22.69	22.72	22.64	21.82	21.62	21.58	21.64
		16QAM	22.02	21.71	21.71	20.78	20.80	20.69	20.67
	846.5	QPSK	22.66	22.67	22.87	21.59	21.51	21.60	21.56
		16QAM	21.93	21.63	22.05	20.77	20.66	20.67	20.58
3	825.5	QPSK	22.78	22.95	22.89	21.83	21.83	21.81	21.81
		16QAM	21.88	21.89	21.67	20.77	20.81	20.74	20.74
	836.5	QPSK	22.89	22.90	22.76	21.77	21.70	21.67	21.75
		16QAM	21.89	21.75	21.79	20.84	20.63	20.67	20.74
	847.5	QPSK	22.82	22.76	23.00	21.65	21.70	21.73	21.65
		16QAM	21.70	21.85	22.14	20.66	20.63	20.65	20.58
1.4	824.7	QPSK	22.52	22.62	22.67	22.61	22.66	22.59	21.64
		16QAM	21.82	21.98	21.87	21.78	21.93	21.92	20.75
	836.5	QPSK	22.62	22.73	22.54	22.60	22.53	22.53	21.62
		16QAM	21.73	22.06	21.84	21.75	21.82	21.82	20.79
	848.3	QPSK	22.76	22.97	22.74	22.70	22.77	22.69	21.76
		16QAM	21.81	21.97	21.86	21.74	22.01	21.92	20.85

▪ **Band 5, 26 <Test case: ANT 2>**

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	22.07	22.30	22.04	20.92	20.95	20.89	20.94
		16QAM	21.17	21.24	21.26	19.87	20.00	19.92	20.00
	836.5	QPSK	22.05	22.13	21.99	20.87	20.89	20.88	20.92
		16QAM	21.14	21.50	21.10	19.89	19.93	19.93	19.94
	844	QPSK	22.01	22.21	22.25	20.89	21.02	21.02	20.99
		16QAM	21.19	21.30	21.30	19.93	19.99	20.11	20.00
5	826.5	QPSK	21.94	22.03	21.98	20.86	20.91	20.86	20.92
		16QAM	20.93	21.01	20.98	19.82	19.91	19.86	19.83
	836.5	QPSK	21.91	22.08	21.91	20.79	20.99	20.81	20.84
		16QAM	20.91	20.99	20.98	19.77	19.91	19.69	19.72
	846.5	QPSK	22.01	22.20	22.08	20.87	21.10	20.99	21.03
		16QAM	20.91	21.04	21.04	19.80	20.16	19.92	19.95
3	825.5	QPSK	21.97	21.99	21.96	20.89	20.87	20.88	20.90
		16QAM	20.93	21.21	21.07	19.87	19.93	19.92	19.87
	836.5	QPSK	21.98	22.09	21.90	20.81	20.96	20.92	20.90
		16QAM	20.97	21.11	20.98	19.86	19.91	19.87	19.81
	847.5	QPSK	22.19	22.13	22.14	20.99	21.05	21.03	21.08
		16QAM	21.19	21.16	21.18	20.01	19.98	20.13	19.98
1.4	824.7	QPSK	21.86	21.91	21.85	21.72	21.79	21.70	20.82
		16QAM	21.03	21.11	20.99	20.92	21.10	21.07	19.89
	836.5	QPSK	21.87	21.89	21.90	21.79	21.90	21.89	20.87
		16QAM	21.14	21.06	21.03	21.14	21.15	21.04	19.95
	848.3	QPSK	22.05	22.06	22.05	21.91	21.94	21.89	20.97
		16QAM	21.26	21.33	21.14	21.14	21.18	21.12	20.04

▪ **Band 4 <Test case: ANT 1>**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
20	1720	QPSK	23.08	23.06	23.19	22.03	22.08	22.14	22.12
		16QAM	22.15	22.30	22.30	21.06	21.09	21.19	21.13
	1732.5	QPSK	23.26	23.70	23.32	22.24	22.27	22.07	22.18
		16QAM	22.48	22.66	22.32	21.20	21.23	21.18	21.24
	1745	QPSK	23.41	23.48	23.12	22.38	22.21	22.01	22.19
		16QAM	22.61	22.39	22.10	21.38	21.24	20.96	21.24
15	1717.5	QPSK	23.11	23.03	23.18	22.08	22.03	22.04	22.06
		16QAM	22.25	22.15	22.36	21.13	21.04	21.07	21.03
	1732.5	QPSK	23.20	23.34	23.07	22.15	22.12	22.17	22.13
		16QAM	22.40	22.40	22.19	21.23	21.12	21.23	21.19
	1747.5	QPSK	23.46	23.19	23.12	22.28	22.15	22.00	22.10
		16QAM	22.59	22.29	22.21	21.33	21.15	21.03	21.13
10	1715	QPSK	23.13	23.43	23.01	22.07	22.13	22.01	22.04
		16QAM	22.28	22.43	22.11	21.13	21.12	21.00	21.11
	1732.5	QPSK	23.27	23.51	23.10	22.18	22.12	22.24	22.13
		16QAM	22.41	22.77	22.34	21.27	21.12	21.23	21.16
	1750	QPSK	23.25	23.35	23.30	22.08	22.01	21.94	21.97
		16QAM	22.25	22.30	22.37	21.16	21.10	21.02	21.06
5	1712.5	QPSK	23.00	23.09	23.06	22.06	22.06	22.05	21.98
		16QAM	22.06	22.14	22.08	21.19	21.18	21.15	21.07
	1732.5	QPSK	23.02	23.19	23.18	22.05	22.11	22.18	22.07
		16QAM	22.01	22.32	22.34	21.39	21.21	21.22	21.16
	1752.5	QPSK	23.12	23.07	23.10	22.00	22.00	22.06	21.95
		16QAM	22.08	22.05	22.16	21.03	21.12	21.18	21.00
3	1711.5	QPSK	23.12	23.04	22.95	22.10	22.04	22.07	22.06
		16QAM	22.26	22.33	22.33	21.16	21.17	21.23	21.13
	1732.5	QPSK	23.07	23.18	23.19	22.15	22.19	22.27	22.15
		16QAM	22.33	22.33	22.36	21.40	21.20	21.42	21.19
	1753.5	QPSK	22.94	23.05	23.04	22.00	22.00	22.02	21.96
		16QAM	21.98	22.29	22.35	21.08	21.04	20.95	20.99
1.4	1710.7	QPSK	23.11	23.18	22.88	22.99	23.08	23.05	22.06
		16QAM	22.23	22.51	22.20	22.38	22.37	22.39	21.23
	1732.5	QPSK	23.07	23.15	23.09	23.07	23.11	23.16	22.12
		16QAM	22.18	22.56	22.43	22.34	22.49	22.48	21.22
	1754.3	QPSK	22.99	23.12	23.06	22.95	23.09	22.97	22.01
		16QAM	22.11	22.53	22.33	22.13	22.29	22.30	21.17

▪ **Band 4 <Test case: ANT 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	1720	QPSK	22.17	22.19	21.73	20.92	20.85	20.84	20.90
		16QAM	21.23	21.12	20.84	20.00	19.99	20.00	19.95
	1732.5	QPSK	21.86	22.18	21.84	20.91	20.87	20.81	20.90
		16QAM	21.49	21.27	21.03	19.99	20.05	20.01	19.98
	1745	QPSK	22.07	22.03	21.96	21.00	20.92	20.82	21.01
		16QAM	21.50	21.58	21.20	20.07	19.99	19.96	20.08
15	1717.5	QPSK	22.18	21.96	21.90	20.98	20.89	20.83	20.83
		16QAM	21.57	21.11	21.24	20.02	19.94	19.92	19.97
	1732.5	QPSK	21.87	21.91	21.84	20.93	20.93	20.83	20.94
		16QAM	21.11	21.19	21.11	20.01	20.04	20.04	19.98
	1747.5	QPSK	22.08	22.05	22.05	20.90	20.85	20.84	20.82
		16QAM	21.13	21.14	21.27	20.05	20.00	19.97	19.96
10	1715	QPSK	22.01	22.20	21.80	20.91	20.89	20.82	20.87
		16QAM	21.20	21.10	21.08	20.14	19.96	19.89	19.94
	1732.5	QPSK	21.83	22.11	21.93	20.85	20.84	20.83	20.84
		16QAM	21.11	21.32	21.11	19.95	19.97	20.01	20.01
	1750	QPSK	21.91	22.31	22.07	20.91	20.87	20.83	20.83
		16QAM	21.14	21.22	21.18	20.05	20.05	19.98	19.95
5	1712.5	QPSK	21.94	21.98	21.74	20.97	20.92	20.92	20.96
		16QAM	21.36	21.03	20.82	20.27	20.07	20.10	20.00
	1732.5	QPSK	21.78	21.84	21.77	20.87	20.91	20.86	20.86
		16QAM	20.97	20.99	21.06	20.05	20.20	20.11	19.99
	1752.5	QPSK	21.95	21.92	21.83	20.89	20.90	20.97	20.85
		16QAM	21.07	21.24	21.11	20.02	20.11	20.16	20.01
3	1711.5	QPSK	22.04	22.03	21.91	21.09	20.98	20.92	20.95
		16QAM	21.20	21.00	21.12	20.26	20.16	20.10	20.08
	1732.5	QPSK	21.99	21.98	21.97	20.92	20.86	20.94	20.92
		16QAM	21.00	20.93	20.99	20.10	20.16	20.10	20.01
	1753.5	QPSK	21.85	21.79	21.75	20.79	20.89	20.89	20.85
		16QAM	20.81	21.07	20.95	19.90	20.02	20.02	20.02
1.4	1710.7	QPSK	21.87	22.21	22.07	21.95	22.04	22.00	21.07
		16QAM	21.15	21.27	21.04	21.17	21.20	21.19	20.14
	1732.5	QPSK	21.81	21.85	21.75	21.79	21.82	21.77	20.87
		16QAM	21.11	21.17	21.03	21.23	21.15	21.09	20.06
	1754.3	QPSK	21.69	21.80	21.73	21.79	21.75	21.71	20.80
		16QAM	21.19	21.01	20.82	20.98	21.23	21.10	19.96

▪ **Band 2 <Test case: ANT 1>**

Conducted Power [dBm]									
RB Alloc			1 RB			MID RB			FULL RB
B.W(MHz)	Freq.(MHz)	Modulation	LOW	MID	HIGH	LOW	MID	HIGH	
20	1860	QPSK	22.89	22.97	22.99	21.73	21.82	21.80	21.80
		16QAM	22.24	22.34	22.14	20.92	20.90	20.90	20.88
	1880	QPSK	23.10	23.18	22.98	22.05	21.91	21.89	21.91
		16QAM	22.10	22.49	22.24	21.09	21.02	21.07	21.01
	1900	QPSK	23.05	23.09	23.05	21.95	21.84	21.86	21.81
		16QAM	22.25	22.24	22.27	21.03	20.95	20.96	20.90
15	1857.5	QPSK	22.96	22.76	22.89	21.65	21.71	21.77	21.66
		16QAM	22.34	22.14	22.20	20.82	20.82	20.88	20.83
	1880	QPSK	23.05	23.00	22.97	21.89	21.88	21.88	21.89
		16QAM	22.27	22.16	22.33	21.03	21.03	21.09	21.05
	1902.5	QPSK	23.01	22.92	23.00	21.85	21.88	21.85	21.87
		16QAM	22.28	22.36	22.47	20.96	21.00	20.99	20.97
10	1855	QPSK	22.97	22.79	22.77	21.81	21.68	21.72	21.68
		16QAM	22.20	22.11	22.05	20.92	20.84	20.85	20.83
	1880	QPSK	23.02	22.96	22.99	21.91	21.93	21.92	21.91
		16QAM	22.30	22.32	22.23	21.02	21.02	21.02	21.05
	1905	QPSK	22.92	23.02	23.05	21.88	21.84	21.82	21.85
		16QAM	22.29	22.22	22.36	20.98	21.08	21.06	20.97
5	1852.5	QPSK	22.68	22.76	22.61	21.72	21.72	21.75	21.71
		16QAM	22.08	21.93	21.87	20.87	20.95	20.89	20.85
	1880	QPSK	22.89	22.89	22.81	21.88	21.92	21.79	21.80
		16QAM	22.14	22.00	22.05	21.08	21.18	21.01	21.08
	1907.5	QPSK	22.83	22.94	22.92	21.83	21.84	21.90	21.87
		16QAM	22.14	22.13	22.19	21.02	21.13	21.17	21.10
3	1851.5	QPSK	22.77	22.67	22.70	21.68	21.72	21.71	21.73
		16QAM	21.94	21.90	22.08	21.09	20.91	20.96	20.91
	1880	QPSK	22.83	22.86	22.83	21.90	21.93	21.91	21.86
		16QAM	22.07	22.10	22.36	21.02	21.10	21.09	21.05
	1908.5	QPSK	22.91	22.95	22.92	21.87	21.90	21.92	21.88
		16QAM	22.21	22.05	22.24	21.07	21.21	21.21	21.04
1.4	1850.7	QPSK	22.65	22.78	22.63	22.54	22.65	22.59	21.65
		16QAM	22.00	22.17	22.14	22.03	22.09	22.06	20.86
	1880	QPSK	22.80	22.96	22.83	22.76	22.82	22.74	21.79
		16QAM	22.04	22.45	22.10	22.11	22.32	22.19	21.02
	1909.3	QPSK	22.82	22.96	22.83	22.83	22.93	22.83	21.87
		16QAM	22.13	22.39	22.22	22.19	22.30	22.27	21.07

▪ **Band 2 <Test case: ANT 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	1860	QPSK	21.90	22.11	22.09	20.83	20.87	20.90	20.90
		16QAM	20.93	21.08	21.15	19.87	19.89	19.85	19.82
	1880	QPSK	22.18	22.11	21.89	21.00	20.97	20.92	20.88
		16QAM	21.22	21.21	20.87	19.96	19.93	19.89	19.93
	1900	QPSK	22.00	22.19	22.14	21.11	20.99	21.01	20.96
		16QAM	21.20	21.23	21.21	19.98	19.95	19.98	19.90
15	1857.5	QPSK	21.89	21.90	22.00	20.82	20.83	20.80	20.79
		16QAM	21.05	20.93	21.09	19.79	19.85	19.81	19.79
	1880	QPSK	22.14	22.01	21.86	20.90	20.88	20.93	20.88
		16QAM	21.21	21.11	21.00	19.97	19.89	19.93	19.89
	1902.5	QPSK	22.15	21.95	22.20	21.05	20.89	21.00	20.94
		16QAM	21.35	20.91	21.44	19.99	19.89	20.03	19.93
10	1855	QPSK	21.98	21.96	21.95	20.79	20.83	20.82	20.80
		16QAM	21.00	21.13	20.86	19.75	19.76	19.77	19.74
	1880	QPSK	22.07	22.10	22.03	20.94	20.97	20.97	20.95
		16QAM	21.05	21.14	21.21	19.93	19.91	19.90	19.90
	1905	QPSK	22.13	22.11	22.22	20.92	20.88	21.02	21.00
		16QAM	21.08	21.20	21.26	19.88	19.96	20.02	20.03
5	1852.5	QPSK	21.72	21.76	21.76	20.74	20.72	20.71	20.69
		16QAM	20.90	20.90	20.81	19.83	19.73	19.72	19.71
	1880	QPSK	21.88	22.00	21.99	20.93	20.97	20.91	20.93
		16QAM	20.98	20.94	21.09	19.84	20.00	19.93	19.92
	1907.5	QPSK	21.99	22.09	22.10	21.03	21.09	21.06	21.03
		16QAM	21.01	21.20	21.22	20.20	20.05	20.16	19.98
3	1851.5	QPSK	21.91	21.88	21.91	20.90	20.89	20.79	20.75
		16QAM	21.03	21.00	21.32	19.94	19.87	19.84	19.89
	1880	QPSK	21.97	22.02	22.09	20.99	20.96	21.02	20.96
		16QAM	21.27	21.14	21.45	20.15	20.06	20.01	19.91
	1908.5	QPSK	22.13	22.16	22.04	21.08	21.02	21.10	21.05
		16QAM	21.25	21.19	21.32	20.07	20.17	20.05	20.03
1.4	1850.7	QPSK	21.71	21.94	21.75	21.67	21.76	21.63	20.61
		16QAM	20.93	21.45	20.96	20.98	20.94	20.92	19.79
	1880	QPSK	21.87	21.99	21.84	21.79	21.90	21.87	20.87
		16QAM	21.17	21.08	21.26	21.08	21.25	21.04	20.04
	1909.3	QPSK	22.00	22.18	22.06	22.02	22.13	22.01	21.10
		16QAM	21.41	21.64	21.20	21.20	21.25	21.32	20.18

7.2 OCCUPIED BANDWIDTH

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

7.3 PEAK TO AVERAGE RATIO

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

7.4 BAND EDEG EMISSIONS (Conducted)

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

7.5 SPURIOUS AND HARMONICS EMISSIONS (Conducted)

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

7.6 ERP & EIRP

7.6.1 LTE Band 12, 17

. **<Test case: ANT 1>**

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	704	QPSK	1/25	H	18.63	1.28	19.91	0.098
		16QAM	1/25	H	17.35	1.28	18.63	0.073
	711	QPSK	1/49	H	18.20	1.28	19.48	0.089
		16QAM	1/49	H	16.88	1.28	18.16	0.065
5	701.5	QPSK	1/12	H	18.82	1.28	20.10	0.102
		16QAM	1/12	H	17.34	1.28	18.62	0.073
	707.5	QPSK	1/12	H	18.86	1.28	20.14	0.103
		16QAM	1/12	H	17.58	1.28	18.86	0.077
	713.5	QPSK	1/0	H	18.43	1.28	19.71	0.094
		16QAM	1/0	H	17.14	1.28	18.42	0.070

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

<Test case: ANT 2>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	704	QPSK	1/25	H	16.76	1.28	18.04	0.064
		16QAM	1/25	H	15.51	1.28	16.79	0.048
	711	QPSK	1/25	H	16.39	1.28	17.67	0.058
		16QAM	1/25	H	15.05	1.28	16.33	0.043
5	701.5	QPSK	1/12	H	17.10	1.28	18.38	0.069
		16QAM	1/12	H	15.91	1.28	17.19	0.052
	707.5	QPSK	1/12	H	17.16	1.28	18.44	0.070
		16QAM	1/12	H	15.84	1.28	17.12	0.052
	713.5	QPSK	1/0	H	15.79	1.28	17.07	0.051
		16QAM	1/0	H	14.63	1.28	15.91	0.039

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

7.6.2 LTE Band 12

<Test case: ANT 1>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
3	700.5	QPSK	1/7	H	19.36	1.28	20.64	0.116
		16QAM	1/7	H	18.18	1.28	19.46	0.088
	707.5	QPSK	1/7	H	18.99	1.28	20.27	0.106
		16QAM	1/7	H	17.72	1.28	19.00	0.079
	714.5	QPSK	1/7	H	18.12	1.28	19.40	0.087
		16QAM	1/7	H	16.79	1.28	18.07	0.064
1.4	699.7	QPSK	1/2	H	19.32	1.28	20.60	0.115
		16QAM	1/2	H	17.89	1.28	19.17	0.083
	707.5	QPSK	1/2	H	19.38	1.28	20.66	0.116
		16QAM	1/2	H	18.20	1.28	19.48	0.089
	715.3	QPSK	1/5	H	17.95	1.28	19.23	0.084
		16QAM	1/5	H	16.61	1.28	17.89	0.062

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

<Test case: ANT 2>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
3	700.5	QPSK	1/0	H	16.62	1.28	17.90	0.062
		16QAM	1/0	H	15.49	1.28	16.77	0.048
	707.5	QPSK	1/0	H	16.76	1.28	18.04	0.064
		16QAM	1/0	H	15.65	1.28	16.93	0.049
	714.5	QPSK	1/7	H	15.34	1.28	16.62	0.046
		16QAM	1/7	H	14.02	1.28	15.30	0.034
1.4	699.7	QPSK	1/2	H	17.24	1.28	18.52	0.071
		16QAM	1/2	H	15.97	1.28	17.25	0.053
	707.5	QPSK	1/0	H	16.97	1.28	18.25	0.067
		16QAM	1/0	H	15.76	1.28	17.04	0.051
	715.3	QPSK	1/0	H	15.69	1.28	16.97	0.050
		16QAM	1/0	H	14.43	1.28	15.71	0.037

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

7.6.3 LTE Band 13

<Test case: ANT 1>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	782	QPSK	1/0	H	17.89	1.26	19.15	0.082
		16QAM	1/0	H	16.71	1.26	17.97	0.063
5	779.5	QPSK	1/0	H	17.80	1.26	19.06	0.081
		16QAM	1/0	H	16.57	1.26	17.83	0.061
	784.5	QPSK	1/12	H	18.16	1.25	19.41	0.087
		16QAM	1/12	H	17.01	1.25	18.26	0.067

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

<Test case: ANT 2>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	782	QPSK	1/0	H	16.45	1.26	17.71	0.059
		16QAM	1/0	H	15.06	1.26	16.32	0.043
5	779.5	QPSK	1/12	H	16.32	1.26	17.58	0.057
		16QAM	1/12	H	14.77	1.26	16.03	0.040
	784.5	QPSK	1/12	H	16.26	1.25	17.51	0.056
		16QAM	1/12	H	15.37	1.25	16.62	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.

7.6.4 LTE Band 26

<Test case: ANT 1>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
15	831.5	QPSK	1/0	H	19.34	1.22	20.56	0.114
		16QAM	1/0	H	17.91	1.22	19.13	0.082
	841.5	QPSK	1/0	H	16.20	1.22	17.42	0.055
		16QAM	1/0	H	14.67	1.22	15.89	0.039

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

<Test case: ANT 2>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
15	831.5	QPSK	1/0	H	18.85	1.22	20.07	0.102
		16QAM	1/0	H	17.64	1.22	18.86	0.077
	841.5	QPSK	1/36	H	18.41	1.22	19.63	0.092
		16QAM	1/36	H	17.28	1.22	18.50	0.071

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

7.6.5 LTE Band 5, 26

<Test case: ANT 1>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	829	QPSK	1/0	H	19.32	1.23	20.55	0.114
		16QAM	1/0	H	17.87	1.23	19.10	0.081
	836.5	QPSK	1/0	H	17.42	1.22	18.64	0.073
		16QAM	1/0	H	16.25	1.22	17.47	0.056
	844	QPSK	1/25	H	16.08	1.21	17.29	0.054
		16QAM	1/25	H	14.88	1.21	16.09	0.041
5	826.5	QPSK	1/0	H	18.79	1.23	20.02	0.100
		16QAM	1/0	H	17.65	1.23	18.88	0.077
	836.5	QPSK	1/0	H	17.55	1.22	18.77	0.075
		16QAM	1/0	H	16.38	1.22	17.60	0.058
	846.5	QPSK	1/12	H	16.42	1.21	17.63	0.058
		16QAM	1/12	H	15.20	1.21	16.41	0.044
3	825.5	QPSK	1/0	H	18.46	1.23	19.69	0.093
		16QAM	1/0	H	17.28	1.23	18.51	0.071
	836.5	QPSK	1/0	H	17.21	1.22	18.43	0.070
		16QAM	1/0	H	16.11	1.22	17.33	0.054
	847.5	QPSK	1/0	H	15.36	1.21	16.57	0.045
		16QAM	1/0	H	14.16	1.21	15.37	0.034
1.4	824.7	QPSK	1/0	H	18.73	1.23	19.96	0.099
		16QAM	1/0	H	17.62	1.23	18.85	0.077
	836.5	QPSK	1/0	H	17.46	1.22	18.68	0.074
		16QAM	1/0	H	16.26	1.22	17.48	0.056
	848.3	QPSK	1/2	H	16.03	1.21	17.24	0.053
		16QAM	1/2	H	14.44	1.21	15.65	0.037

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

<Test case: ANT 2>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBd)	ERP (dBm)	ERP (W)
10	829	QPSK	1/0	H	18.10	1.23	19.33	0.086
		16QAM	1/0	H	16.87	1.23	18.10	0.065
	836.5	QPSK	1/0	H	18.13	1.22	19.35	0.086
		16QAM	1/0	H	16.64	1.22	17.86	0.061
	844	QPSK	1/25	H	17.93	1.21	19.14	0.082
		16QAM	1/25	H	16.63	1.21	17.84	0.061
5	826.5	QPSK	1/0	H	17.69	1.23	18.92	0.078
		16QAM	1/0	H	16.45	1.23	17.68	0.059
	836.5	QPSK	1/0	H	18.25	1.22	19.47	0.089
		16QAM	1/0	H	17.20	1.22	18.42	0.070
	846.5	QPSK	1/24	H	18.22	1.21	19.43	0.088
		16QAM	1/24	H	16.93	1.21	18.14	0.065
3	825.5	QPSK	1/7	H	18.35	1.23	19.58	0.091
		16QAM	1/7	H	17.19	1.23	18.42	0.070
	836.5	QPSK	1/7	H	18.14	1.22	19.36	0.086
		16QAM	1/7	H	16.87	1.22	18.09	0.064
	847.5	QPSK	1/0	H	17.98	1.21	19.19	0.083
		16QAM	1/0	H	16.89	1.21	18.10	0.065
1.4	824.7	QPSK	1/2	H	16.97	1.23	18.20	0.066
		16QAM	1/2	H	15.70	1.23	16.93	0.049
	836.5	QPSK	1/0	H	17.32	1.22	18.54	0.071
		16QAM	1/0	H	16.11	1.22	17.33	0.054
	848.3	QPSK	1/0	H	17.67	1.21	18.88	0.077
		16QAM	1/0	H	16.41	1.21	17.62	0.058

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

7.6.6 LTE Band 4

<Test case: ANT 1>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBi)	EIRP (dBm)	EIRP (W)
20	1720	QPSK	1/50	V	14.91	5.82	20.73	0.118
		16QAM	1/50	V	13.67	5.82	19.49	0.089
	1732.5	QPSK	1/50	V	15.19	5.75	20.94	0.124
		16QAM	1/50	V	14.01	5.75	19.76	0.095
	1745	QPSK	1/99	V	16.14	5.67	21.81	0.152
		16QAM	1/99	V	14.90	5.67	20.57	0.114
15	1717.5	QPSK	1/36	V	15.45	5.84	21.29	0.135
		16QAM	1/36	V	14.32	5.84	20.16	0.104
	1732.5	QPSK	1/74	V	14.78	5.75	20.53	0.113
		16QAM	1/74	V	13.61	5.75	19.36	0.086
	1747.5	QPSK	1/0	V	16.38	5.66	22.04	0.160
		16QAM	1/0	V	15.39	5.66	21.05	0.127
10	1715	QPSK	1/0	V	15.52	5.85	21.37	0.137
		16QAM	1/0	V	14.28	5.85	20.13	0.103
	1732.5	QPSK	1/49	V	15.28	5.75	21.03	0.127
		16QAM	1/49	V	14.14	5.75	19.89	0.097
	1750	QPSK	1/49	V	16.18	5.64	21.82	0.152
		16QAM	1/49	V	15.00	5.64	20.64	0.116
5	1712.5	QPSK	1/0	V	15.10	5.87	20.97	0.125
		16QAM	1/0	V	13.77	5.87	19.64	0.092
	1732.5	QPSK	1/0	V	15.17	5.75	20.92	0.124
		16QAM	1/0	V	13.99	5.75	19.74	0.094
	1752.5	QPSK	1/24	V	16.08	5.63	21.71	0.148
		16QAM	1/24	V	14.91	5.63	20.54	0.113
3	1711.5	QPSK	1/7	V	15.69	5.87	21.56	0.143
		16QAM	1/7	V	14.50	5.87	20.37	0.109
	1732.5	QPSK	1/14	V	14.80	5.75	20.55	0.114
		16QAM	1/14	V	13.47	5.75	19.22	0.084
	1753.5	QPSK	1/7	V	15.52	5.62	21.14	0.130
		16QAM	1/7	V	14.41	5.62	20.03	0.101
1.4	1710.7	QPSK	1/2	V	15.00	5.88	20.88	0.122
		16QAM	1/2	V	13.75	5.88	19.63	0.092
	1732.5	QPSK	1/2	V	13.54	5.75	19.29	0.085
		16QAM	1/2	V	12.10	5.75	17.85	0.061
	1754.3	QPSK	1/2	V	15.83	5.61	21.44	0.139
		16QAM	1/2	V	14.55	5.61	20.16	0.104

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

<Test case: ANT 2>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBi)	EIRP (dBm)	EIRP (W)
20	1720	QPSK	1/99	H	12.35	5.82	18.17	0.066
		16QAM	1/99	H	11.84	5.82	17.66	0.058
	1732.5	QPSK	1/99	H	12.37	5.75	18.12	0.065
		16QAM	1/99	H	11.14	5.75	16.89	0.049
	1745	QPSK	1/50	H	12.38	5.67	18.05	0.064
		16QAM	1/50	H	11.43	5.67	17.10	0.051
15	1717.5	QPSK	1/0	H	12.97	5.84	18.81	0.076
		16QAM	1/0	H	11.93	5.84	17.77	0.060
	1732.5	QPSK	1/0	H	12.52	5.75	18.27	0.067
		16QAM	1/0	H	11.41	5.75	17.16	0.052
	1747.5	QPSK	1/0	H	12.47	5.66	18.13	0.065
		16QAM	1/0	H	11.20	5.66	16.86	0.049
10	1715	QPSK	1/0	H	12.33	5.85	18.18	0.066
		16QAM	1/0	H	11.13	5.85	16.98	0.050
	1732.5	QPSK	1/0	H	12.29	5.75	18.04	0.064
		16QAM	1/0	H	11.27	5.75	17.02	0.050
	1750	QPSK	1/0	H	12.34	5.64	17.98	0.063
		16QAM	1/0	H	11.41	5.64	17.05	0.051
5	1712.5	QPSK	1/0	H	11.85	5.87	17.72	0.059
		16QAM	1/0	H	10.71	5.87	16.58	0.045
	1732.5	QPSK	1/0	H	11.53	5.75	17.28	0.053
		16QAM	1/0	H	10.19	5.75	15.94	0.039
	1752.5	QPSK	1/24	H	11.76	5.63	17.39	0.055
		16QAM	1/24	H	10.63	5.63	16.26	0.042
3	1711.5	QPSK	1/14	H	11.97	5.87	17.84	0.061
		16QAM	1/14	H	10.73	5.87	16.60	0.046
	1732.5	QPSK	1/14	H	11.80	5.75	17.55	0.057
		16QAM	1/14	H	10.60	5.75	16.35	0.043
	1753.5	QPSK	1/14	H	11.88	5.62	17.50	0.056
		16QAM	1/14	H	10.68	5.62	16.30	0.043
1.4	1710.7	QPSK	1/2	H	12.55	5.88	18.43	0.070
		16QAM	1/2	H	11.55	5.88	17.43	0.055
	1732.5	QPSK	1/2	H	11.90	5.75	17.65	0.058
		16QAM	1/2	H	10.84	5.75	16.59	0.046
	1754.3	QPSK	1/5	H	11.03	5.61	16.64	0.046
		16QAM	1/5	H	9.81	5.61	15.42	0.035

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

7.6.7 LTE Band 2

<Test case: ANT 1>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBi)	EIRP (dBm)	EIRP (W)
20	1860	QPSK	1/0	V	16.80	5.02	21.82	0.152
		16QAM	1/0	V	15.71	5.02	20.73	0.118
	1880	QPSK	1/0	V	17.64	4.91	22.55	0.180
		16QAM	1/0	V	16.47	4.91	21.38	0.137
	1900	QPSK	1/0	V	17.25	4.81	22.06	0.161
		16QAM	1/0	V	16.11	4.81	20.92	0.124
15	1857.5	QPSK	1/0	V	16.42	5.03	21.45	0.140
		16QAM	1/0	V	15.35	5.03	20.38	0.109
	1880	QPSK	1/0	V	16.45	4.91	21.36	0.137
		16QAM	1/0	V	15.38	4.91	20.29	0.107
	1902.5	QPSK	1/0	V	16.46	4.80	21.26	0.134
		16QAM	1/0	V	15.34	4.80	20.14	0.103
10	1855	QPSK	1/0	V	16.12	5.05	21.17	0.131
		16QAM	1/0	V	15.03	5.05	20.08	0.102
	1880	QPSK	1/0	V	15.83	4.91	20.74	0.119
		16QAM	1/0	V	14.53	4.91	19.44	0.088
	1905	QPSK	1/25	V	16.66	4.79	21.45	0.140
		16QAM	1/25	V	15.50	4.79	20.29	0.107
5	1852.5	QPSK	1/12	V	16.62	5.06	21.68	0.147
		16QAM	1/12	V	15.34	5.06	20.40	0.110
	1880	QPSK	1/12	V	16.80	4.91	21.71	0.148
		16QAM	1/12	V	15.40	4.91	20.31	0.107
	1907.5	QPSK	1/24	V	16.32	4.77	21.09	0.129
		16QAM	1/24	V	14.98	4.77	19.75	0.094
3	1851.5	QPSK	1/7	V	15.95	5.06	21.01	0.126
		16QAM	1/7	V	14.82	5.06	19.88	0.097
	1880	QPSK	1/7	V	16.37	4.91	21.28	0.134
		16QAM	1/7	V	15.26	4.91	20.17	0.104
	1908.5	QPSK	1/0	V	16.35	4.77	21.12	0.129
		16QAM	1/0	V	15.19	4.77	19.96	0.099
1.4	1850.7	QPSK	1/2	V	16.08	5.07	21.15	0.130
		16QAM	1/2	V	14.84	5.07	19.91	0.098
	1880	QPSK	1/0	V	16.32	4.91	21.23	0.133
		16QAM	1/0	V	15.00	4.91	19.91	0.098
	1909.3	QPSK	1/0	V	16.19	4.76	20.95	0.124
		16QAM	1/0	V	15.15	4.76	19.91	0.098

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

<Test case: ANT 2>

Channel Bandwidth (MHz)	Test Frequency (MHz)	Test Mode	RB Size/ Offset	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain (dBi)	EIRP (dBm)	EIRP (W)
20	1860	QPSK	1/99	H	15.32	5.02	20.34	0.108
		16QAM	1/99	H	13.90	5.02	18.92	0.078
	1880	QPSK	1/50	H	14.69	4.91	19.60	0.091
		16QAM	1/50	H	13.47	4.91	18.38	0.069
	1900	QPSK	1/50	H	15.28	4.81	20.09	0.102
		16QAM	1/50	H	13.80	4.81	18.61	0.073
15	1857.5	QPSK	1/74	H	15.24	5.03	20.27	0.106
		16QAM	1/74	H	13.91	5.03	18.94	0.078
	1880	QPSK	1/36	H	14.55	4.91	19.46	0.088
		16QAM	1/36	H	13.33	4.91	18.24	0.067
	1902.5	QPSK	1/36	H	14.97	4.80	19.77	0.095
		16QAM	1/36	H	13.87	4.80	18.67	0.074
10	1855	QPSK	1/0	H	14.49	5.05	19.54	0.090
		16QAM	1/0	H	13.35	5.05	18.40	0.069
	1880	QPSK	1/49	H	14.34	4.91	19.25	0.084
		16QAM	1/49	H	12.98	4.91	17.89	0.062
	1905	QPSK	1/49	H	15.05	4.79	19.84	0.096
		16QAM	1/49	H	13.76	4.79	18.55	0.072
5	1852.5	QPSK	1/24	H	14.92	5.06	19.98	0.099
		16QAM	1/24	H	13.96	5.06	19.02	0.080
	1880	QPSK	1/12	H	15.21	4.91	20.12	0.103
		16QAM	1/12	H	14.38	4.91	19.29	0.085
	1907.5	QPSK	1/12	H	15.14	4.77	19.91	0.098
		16QAM	1/12	H	14.01	4.77	18.78	0.076
3	1851.5	QPSK	1/14	H	15.22	5.06	20.28	0.107
		16QAM	1/14	H	13.92	5.06	18.98	0.079
	1880	QPSK	1/7	H	15.37	4.91	20.28	0.107
		16QAM	1/7	H	14.31	4.91	19.22	0.084
	1908.5	QPSK	1/7	H	14.77	4.77	19.54	0.090
		16QAM	1/7	H	13.62	4.77	18.39	0.069
1.4	1850.7	QPSK	1/2	H	14.67	5.07	19.74	0.094
		16QAM	1/2	H	13.54	5.07	18.61	0.073
	1880	QPSK	1/2	H	15.25	4.91	20.16	0.104
		16QAM	1/2	H	14.20	4.91	19.11	0.081
	1909.3	QPSK	1/5	H	14.87	4.76	19.63	0.092
		16QAM	1/5	H	13.59	4.76	18.35	0.068

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

7.7 UNDESIRABLE EMISSIONS (Radiated)

7.7.1 LTE Band 12, 17

<Test case: ANT 1>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	704	1/25	QPSK	1408.22	H	-44.01	2.95	-41.06	60.97	32.91
				2112.48	H	-52.84	2.53	-50.31	70.22	
		1/25	16QAM	1408.23	H	-43.94	2.95	-40.99	59.62	31.63
				2112.48	H	-52.84	2.53	-50.31	68.94	
	711	1/49	QPSK	1430.90	H	-41.59	3.09	-38.50	57.98	32.48
				2146.53	H	-51.66	2.84	-48.82	68.30	
		1/49	16QAM	1430.83	H	-41.59	3.08	-38.51	56.67	31.16
				2146.55	H	-52.03	2.84	-49.19	67.35	
5	701.5	1/12	QPSK	1403.21	H	-44.31	2.92	-41.39	61.49	33.10
				2104.54	H	-53.04	2.46	-50.58	70.68	
		1/12	16QAM	1403.15	H	-44.38	2.92	-41.46	60.08	31.62
				2104.56	H	-52.93	2.46	-50.47	69.09	
	707.5	1/12	QPSK	1415.24	H	-46.00	2.99	-43.01	63.15	33.14
				2122.67	H	-52.92	2.63	-50.29	70.43	
		1/12	16QAM	1415.31	H	-45.00	2.99	-42.01	60.87	31.86
				2122.74	H	-52.40	2.63	-49.77	68.63	
	713.5	1/0	QPSK	1422.57	H	-42.64	3.04	-39.60	59.31	32.71
				2134.12	H	-51.99	2.73	-49.26	68.97	
		1/0	16QAM	1422.71	H	-42.60	3.04	-39.56	57.98	31.42
				2134.09	H	-52.18	2.73	-49.45	67.87	

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.

<Test case: ANT 2>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	704	1/25	QPSK	1408.35	H	-46.52	2.95	-43.57	61.61	31.04
				2112.12	H	-51.06	2.53	-48.53	66.57	
		1/25	16QAM	1408.56	H	-46.58	2.95	-43.63	60.42	29.79
				2122.03	H	-51.45	2.62	-48.83	65.62	
	711	1/25	QPSK	1422.32	H	-46.45	3.03	-43.42	61.09	30.67
				2133.05	H	-50.61	2.72	-47.89	65.56	
		1/25	16QAM	1422.24	H	-47.28	3.03	-44.25	60.58	29.33
				2132.95	H	-51.32	2.72	-48.60	64.93	
5	701.5	1/12	QPSK	1398.65	H	-45.89	2.88	-43.01	61.39	31.38
				2098.02	H	-50.56	2.42	-48.14	66.52	
		1/12	16QAM	1398.51	H	-46.05	2.88	-43.17	60.36	30.19
				2098.10	H	-50.46	2.42	-48.04	65.23	
	707.5	1/12	QPSK	1415.22	H	-46.92	2.99	-43.93	62.37	31.44
				2122.74	H	-51.22	2.63	-48.59	67.03	
		1/12	16QAM	1415.21	H	-46.94	2.99	-43.95	61.07	30.12
				2122.80	H	-51.37	2.63	-48.74	65.86	
	713.5	1/0	QPSK	1422.80	H	-46.55	3.04	-43.51	60.58	30.07
				2134.02	H	-50.64	2.73	-47.91	64.98	
		1/0	16QAM	1422.67	H	-47.15	3.04	-44.11	60.02	28.91
				2134.01	H	-50.46	2.73	-47.73	63.64	

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.

7.7.2 LTE Band 12

<Test case: ANT 1>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	700.5	1/7	QPSK	1403.52	H	-48.20	2.92	-45.28	65.92	33.64
				2105.22	H	-52.56	2.47	-50.09	70.73	
		1/7	16QAM	1403.47	H	-48.12	2.92	-45.20	64.66	32.46
				2105.48	H	-52.81	2.47	-50.34	69.80	
	707.5	1/7	QPSK	1415.07	H	-43.11	2.99	-40.12	60.39	33.27
				2122.63	H	-52.91	2.63	-50.28	70.55	
		1/7	16QAM	1415.08	H	-43.68	2.99	-40.69	59.69	32.00
				2122.44	H	-52.58	2.62	-49.96	68.96	
	714.5	1/7	QPSK	1429.05	H	-41.69	3.07	-38.62	58.02	32.40
				2143.53	H	-52.75	2.82	-49.93	69.33	
		1/7	16QAM	1429.07	H	-42.81	3.07	-39.74	57.81	31.07
				2143.63	H	-52.45	2.82	-49.63	67.70	
1.4	699.7	1/2	QPSK	1399.56	H	-43.88	2.90	-40.98	61.58	33.60
				2099.30	H	-52.67	2.42	-50.25	70.85	
		1/2	16QAM	1399.64	H	-43.58	2.90	-40.68	59.85	32.17
				2099.26	H	-52.76	2.42	-50.34	69.51	
	707.5	1/2	QPSK	1415.15	H	-42.61	2.99	-39.62	60.28	33.66
				2122.65	H	-52.41	2.63	-49.78	70.44	
		1/2	16QAM	1415.23	H	-42.62	2.99	-39.63	59.11	32.48
				2122.69	H	-52.41	2.63	-49.78	69.26	
	715.3	1/5	QPSK	1431.95	H	-41.69	3.09	-38.60	57.83	32.23
				2144.32	H	-52.24	2.82	-49.42	68.65	
		1/5	16QAM	1432.00	H	-41.78	3.09	-38.69	56.58	30.89
				2144.50	H	-51.96	2.82	-49.14	67.03	

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.

<Test case: ANT 2>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	700.5	1/0	QPSK	1398.55	H	-46.07	2.88	-43.19	61.09	30.90
				2097.90	H	-51.03	2.42	-48.61	66.51	
		1/0	16QAM	1398.84	H	-46.47	2.89	-43.58	60.35	29.77
				2097.74	H	-50.67	2.42	-48.25	65.02	
	707.5	1/0	QPSK	1412.54	H	-46.76	2.98	-43.78	61.82	31.04
				2118.85	H	-50.66	2.59	-48.07	66.11	
		1/0	16QAM	1412.57	H	-46.60	2.98	-43.62	60.55	29.93
				2118.91	H	-50.53	2.59	-47.94	64.87	
	714.5	1/7	QPSK	1429.12	H	-46.62	3.07	-43.55	60.17	29.62
				2143.84	H	-50.72	2.82	-47.90	64.52	
		1/7	16QAM	1429.34	H	-46.88	3.08	-43.80	59.10	28.30
				2143.51	H	-51.07	2.82	-48.25	63.55	
1.4	699.7	1/2	QPSK	1399.45	H	-45.66	2.89	-42.77	61.29	31.52
				2099.05	H	-50.46	2.42	-48.04	66.56	
		1/2	16QAM	1399.55	H	-45.59	2.89	-42.70	59.95	30.25
				2099.12	H	-50.08	2.42	-47.66	64.91	
	707.5	1/0	QPSK	1413.76	H	-45.66	2.98	-42.68	60.93	31.25
				2120.80	H	-50.66	2.61	-48.05	66.30	
		1/0	16QAM	1413.54	H	-46.16	2.98	-43.18	60.22	30.04
				2120.72	H	-50.85	2.61	-48.24	65.28	
	715.3	1/0	QPSK	1429.33	H	-46.70	3.08	-43.62	60.59	29.97
				2144.22	H	-50.39	2.82	-47.57	64.54	
		1/0	16QAM	1423.30	H	-46.78	3.04	-43.74	59.45	28.71
				2144.13	H	-49.92	2.82	-47.10	62.81	

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.

7.7.3 LTE Band 13

<Test case: ANT 1>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	782	1/0	QPSK	2332.70	V	-49.79	3.97	-45.82	64.97	32.15
		1/0	16QAM	2332.58	V	-50.16	3.97	-46.19	64.16	30.97
5	779.5	1/0	QPSK	2344.67	V	-51.15	3.99	-47.16	66.22	32.06
		1/0	16QAM	2344.88	V	-51.55	3.99	-47.56	65.39	30.83
	784.5	1/12	QPSK	2353.60	V	-50.02	4.00	-46.02	65.43	32.41
		1/12	16QAM	2353.45	V	-51.35	4.00	-47.35	65.61	31.26

Note 1: Limit Calculation = 43 + 10log$_{10}$ (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 1559~1610MHz (LTE Band 13)

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result	Margin	Limit (dBm/MHz)
								(dBm)	(dB)	
10	782	1/25	QPSK	1563.09	V	-57.09	6.36	-50.73	10.73	-40.00
		1/25	16QAM	1563.24	V	-56.95	6.36	-50.59	10.59	
5	779.5	1/24	QPSK	1562.94	V	-56.62	6.36	-50.26	10.26	
		1/24	16QAM	1562.84	V	-56.47	6.36	-50.11	10.11	
	784.5	1/12	QPSK	1569.13	V	-56.68	6.33	-50.35	10.35	
		1/12	16QAM	1568.94	V	-56.50	6.33	-50.17	10.17	

Note 1: Limit Calculation = −70 dBW/MHz (equivalent isotropically radiated power for wideband signals)

Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

<Test case: ANT 2>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	782	1/0	QPSK	1555.17	H	-54.10	3.64	-50.46	68.17	30.71
				2332.81	H	-52.34	3.97	-48.37	66.08	
		1/0	16QAM	1555.41	H	-54.38	3.64	-50.74	67.06	29.32
				2332.92	H	-52.31	3.97	-48.34	64.66	
5	779.5	1/12	QPSK	1558.25	H	-54.14	3.65	-50.49	68.07	30.58
				2338.54	H	-53.43	3.98	-49.45	67.03	
		1/12	16QAM	1559.11	H	-53.87	3.65	-50.22	66.25	29.03
				2338.13	H	-52.98	3.97	-49.01	65.04	
	784.5	1/12	QPSK	1564.54	H	-53.99	3.67	-50.32	67.83	30.51
				2346.94	H	-53.30	3.99	-49.31	66.82	
		1/12	16QAM	1564.74	H	-54.47	3.67	-50.80	67.42	29.62
				2347.04	H	-53.15	3.99	-49.16	65.78	

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 1559~1610MHz (LTE Band 13)

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result	Margin	Limit (dBm/MHz)
								(dBm)	(dB)	
10	782	1/49	QPSK	1572.97	H	-53.41	6.31	-47.10	7.10	-40.00
		1/49	16QAM	1572.80	H	-53.88	6.32	-47.56	7.56	
5	779.5	1/24	QPSK	1563.45	H	-53.73	6.36	-47.37	7.37	
		1/24	16QAM	1563.44	H	-53.87	6.36	-47.51	7.51	
	784.5	1/24	QPSK	1573.11	H	-52.81	6.31	-46.50	6.50	
		1/24	16QAM	1573.52	H	-52.99	6.31	-46.68	6.68	

Note 1: Limit Calculation = −70 dBW/MHz (equivalent isotropically radiated power for wideband signals)

Note 2: This device was tested under all bandwidths, modulations and RB configurations and the worst case data are reported in the table above.

7.7.4 LTE Band 26

<Test case: ANT 1>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
15	831.5	1/0	QPSK	1649.86	V	-54.91	3.77	-51.14	71.70	33.56
				2474.81	V	-49.68	4.05	-45.63	66.19	
		1/0	16QAM	1649.84	V	-54.82	3.77	-51.05	70.18	32.13
				2474.75	V	-49.62	4.05	-45.57	64.70	
	841.5	1/0	QPSK	1669.84	V	-54.00	3.78	-50.22	67.64	30.42
				2504.81	V	-48.96	4.04	-44.92	62.34	
		1/0	16QAM	1669.85	V	-53.53	3.78	-49.75	65.64	28.89
				2504.90	V	-48.77	4.04	-44.73	60.62	

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.

<Test case: ANT 2>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
15	831.5	1/0	QPSK	1649.85	V	-49.77	3.77	-46.00	66.07	33.07
				2474.84	V	-49.30	4.05	-45.25	65.32	
		1/0	16QAM	1649.87	V	-49.51	3.77	-45.74	64.60	31.86
				2474.96	V	-49.39	4.05	-45.34	64.20	
	841.5	1/36	QPSK	1683.21	V	-49.19	3.78	-45.41	65.04	32.63
				2524.52	V	-49.20	4.05	-45.15	64.78	
		1/36	16QAM	1683.56	V	-49.13	3.79	-45.34	63.84	31.50
				2524.35	V	-48.91	4.05	-44.86	63.36	

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.

7.7.5 LTE Band 5, 26

<Test case: ANT 1>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	829	1/0	QPSK	1649.41	V	-55.51	3.77	-51.74	72.29	33.55
				2473.84	V	-49.80	4.05	-45.75	66.30	
		1/0	16QAM	1649.41	V	-54.20	3.77	-50.43	69.53	32.10
				2473.55	V	-49.54	4.05	-45.49	64.59	
	836.5	1/0	QPSK	1664.20	V	-55.82	3.78	-52.04	70.68	31.64
				2496.30	V	-49.55	4.04	-45.51	64.15	
		1/0	16QAM	1664.25	V	-55.28	3.78	-51.50	68.97	30.47
				2496.34	V	-49.20	4.04	-45.16	62.63	
	844	1/25	QPSK	1678.80	V	-55.38	3.78	-51.60	68.89	30.29
				2518.75	V	-51.46	4.05	-47.41	64.70	
		1/25	16QAM	1678.76	V	-54.96	3.78	-51.18	67.27	29.09
				2518.49	V	-50.77	4.05	-46.72	62.81	
5	826.5	1/0	QPSK	1648.71	V	-55.57	3.77	-51.80	71.82	33.02
				2473.14	V	-48.69	4.05	-44.64	64.66	
		1/0	16QAM	1648.85	V	-55.42	3.77	-51.65	70.53	31.88
				2472.93	V	-48.59	4.05	-44.54	63.42	
	836.5	1/0	QPSK	1668.58	V	-55.43	3.78	-51.65	70.42	31.77
				2502.94	V	-48.51	4.04	-44.47	63.24	
		1/0	16QAM	1668.48	V	-55.22	3.78	-51.44	69.04	30.60
				2502.88	V	-48.28	4.04	-44.24	61.84	
	846.5	1/12	QPSK	1693.10	V	-55.48	3.79	-51.69	69.32	30.63
				2539.84	V	-49.37	4.06	-45.31	62.94	
		1/12	16QAM	1693.16	V	-55.30	3.79	-51.51	67.92	29.41
				2539.74	V	-49.09	4.06	-45.03	61.44	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	825.5	1/0	QPSK	1648.56	V	-55.17	3.77	-51.40	71.09	32.69
				2472.80	V	-48.11	4.05	-44.06	63.75	
		1/0	16QAM	1648.75	V	-55.06	3.77	-51.29	69.80	31.51
				2472.99	V	-47.96	4.05	-43.91	62.42	
	836.5	1/0	QPSK	1670.60	V	-53.33	3.78	-49.55	67.98	31.43
				2505.89	V	-46.76	4.04	-42.72	61.15	
		1/0	16QAM	1670.71	V	-53.35	3.78	-49.57	66.90	30.33
				2505.94	V	-46.69	4.04	-42.65	59.98	
	847.5	1/0	QPSK	1692.76	V	-52.07	3.79	-48.28	64.85	29.57
				2538.61	V	-47.02	4.06	-42.96	59.53	
		1/0	16QAM	1692.89	V	-51.86	3.79	-48.07	63.44	28.37
				2538.68	V	-46.99	4.06	-42.93	58.30	
1.4	824.7	1/0	QPSK	1648.20	V	-54.37	3.77	-50.60	70.56	32.96
				2472.31	V	-48.44	4.05	-44.39	64.35	
		1/0	16QAM	1648.23	V	-54.09	3.77	-50.32	69.17	31.85
				2472.33	V	-48.38	4.05	-44.33	63.18	
	836.5	1/0	QPSK	1672.02	V	-53.41	3.78	-49.63	68.31	31.68
				2507.84	V	-47.98	4.04	-43.94	62.62	
		1/0	16QAM	1671.94	V	-53.08	3.78	-49.30	66.78	30.48
				2507.88	V	-47.60	4.04	-43.56	61.04	
	848.3	1/2	QPSK	1696.80	V	-51.88	3.79	-48.09	65.33	30.24
				2545.06	V	-47.27	4.06	-43.21	60.45	
		1/2	16QAM	1696.77	V	-51.73	3.79	-47.94	63.59	28.65
				2545.18	V	-47.09	4.06	-43.03	58.68	

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.

<Test case: ANT 2>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	829	1/0	QPSK	1649.09	V	-51.01	3.77	-47.24	66.57	32.33
				2473.54	V	-50.24	4.05	-46.19	65.52	
		1/0	16QAM	1648.97	V	-51.18	3.77	-47.41	65.51	31.10
				2473.27	V	-50.07	4.05	-46.02	64.12	
	836.5	1/0	QPSK	1664.32	V	-49.65	3.78	-45.87	65.22	32.35
				2496.05	V	-49.74	4.04	-45.70	65.05	
		1/0	16QAM	1664.29	V	-49.90	3.78	-46.12	63.98	30.86
				2496.35	V	-49.97	4.04	-45.93	63.79	
	844	1/25	QPSK	1688.33	V	-50.04	3.79	-46.25	65.39	32.14
				2531.79	V	-50.09	4.05	-46.04	65.18	
		1/25	16QAM	1688.03	V	-50.15	3.79	-46.36	64.20	30.84
				2532.07	V	-49.76	4.05	-45.71	63.55	
5	826.5	1/0	QPSK	1648.58	V	-51.28	3.77	-47.51	66.43	31.92
				2472.91	V	-50.63	4.05	-46.58	65.50	
		1/0	16QAM	1648.41	V	-51.17	3.77	-47.40	65.08	30.68
				2472.80	V	-50.54	4.05	-46.49	64.17	
	836.5	1/0	QPSK	1668.65	V	-50.12	3.78	-46.34	65.81	32.47
				2502.90	V	-50.42	4.04	-46.38	65.85	
		1/0	16QAM	1668.51	V	-50.17	3.78	-46.39	64.81	31.42
				2502.97	V	-49.82	4.04	-45.78	64.20	
	846.5	1/24	QPSK	1697.51	V	-50.25	3.79	-46.46	65.89	32.43
				2546.12	V	-50.67	4.06	-46.61	66.04	
		1/24	16QAM	1697.57	V	-50.52	3.79	-46.73	64.87	31.14
				2546.36	V	-50.38	4.06	-46.32	64.46	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBd)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	825.5	1/7	QPSK	1651.25	V	-50.22	3.78	-46.44	66.02	32.58
				2476.55	V	-49.79	4.05	-45.74	65.32	
		1/7	16QAM	1651.45	V	-50.12	3.78	-46.34	64.76	31.42
				2476.60	V	-50.02	4.05	-45.97	64.39	
	836.5	1/7	QPSK	1673.15	V	-49.45	3.78	-45.67	65.03	32.36
				2509.45	V	-48.77	4.04	-44.73	64.09	
		1/7	16QAM	1673.04	V	-49.33	3.78	-45.55	63.64	31.09
				2509.62	V	-48.68	4.04	-44.64	62.73	
	847.5	1/0	QPSK	1692.56	V	-49.22	3.79	-45.43	64.62	32.19
				2538.76	V	-48.94	4.06	-44.88	64.07	
		1/0	16QAM	1692.72	V	-49.46	3.79	-45.67	63.77	31.10
				2538.80	V	-49.35	4.06	-45.29	63.39	
1.4	824.7	1/2	QPSK	1649.42	V	-50.18	3.77	-46.41	64.61	31.20
				2474.07	V	-49.99	4.05	-45.94	64.14	
		1/2	16QAM	1649.50	V	-50.05	3.77	-46.28	63.21	29.93
				2474.07	V	-49.88	4.05	-45.83	62.76	
	836.5	1/0	QPSK	1671.76	V	-49.25	3.78	-45.47	64.01	31.54
				2507.66	V	-48.96	4.04	-44.92	63.46	
		1/0	16QAM	1671.55	V	-49.43	3.78	-45.65	62.98	30.33
				2507.69	V	-49.10	4.04	-45.06	62.39	
	848.3	1/0	QPSK	1695.36	V	-49.33	3.79	-45.54	64.42	31.88
				2543.12	V	-49.46	4.06	-45.40	64.28	
		1/0	16QAM	1695.29	V	-49.34	3.79	-45.55	63.17	30.62
				2543.35	V	-49.16	4.06	-45.10	62.72	

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.

7.7.6 LTE Band 4

<Test case: ANT 1>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
20	1720	1/50	QPSK	3440.24	V	-53.24	8.30	-44.94	65.67	33.73
				6880.21	V	-47.05	11.51	-35.54	56.27	
		1/50	16QAM	3440.18	V	-53.34	8.30	-45.04	64.53	32.49
				6880.07	V	-46.87	11.51	-35.36	54.85	
	1732.5	1/50	QPSK	3465.12	V	-53.52	8.39	-45.13	66.07	33.94
				6930.21	V	-44.56	11.63	-32.93	53.87	
		1/50	16QAM	3465.25	V	-53.46	8.39	-45.07	64.83	32.76
				6930.15	V	-44.53	11.63	-32.90	52.66	
	1745	1/99	QPSK	3490.25	V	-52.99	8.48	-44.51	66.32	34.81
				6980.12	V	-41.59	11.63	-29.96	51.77	
		1/99	16QAM	3490.15	V	-53.52	8.48	-45.04	65.61	33.57
				6980.08	V	-41.92	11.63	-30.29	50.86	
15	1717.5	1/36	QPSK	3435.15	V	-53.52	8.28	-45.24	66.53	34.29
				6870.15	V	-47.20	11.51	-35.69	56.98	
		1/36	16QAM	3435.20	V	-53.20	8.28	-44.92	65.08	33.16
				6870.08	V	-47.53	11.51	-36.02	56.18	
	1732.5	1/74	QPSK	3478.31	V	-53.73	8.43	-45.30	65.83	33.53
				6956.45	V	-45.09	11.63	-33.46	53.99	
		1/74	16QAM	3478.24	V	-53.57	8.43	-45.14	64.50	32.36
				6956.54	V	-45.15	11.63	-33.52	52.88	
	1747.5	1/0	QPSK	3481.80	V	-53.74	8.45	-45.29	67.33	35.04
				6963.66	V	-41.95	11.63	-30.32	52.36	
		1/0	16QAM	3481.86	V	-53.58	8.45	-45.13	66.18	34.05
				6963.54	V	-42.13	11.63	-30.50	51.55	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	1715	1/0	QPSK	3421.20	V	-53.78	8.23	-45.55	66.92	34.37
				6842.40	V	-47.16	11.51	-35.65	57.02	
		1/0	16QAM	3421.18	V	-54.29	8.23	-46.06	66.19	33.13
				6842.38	V	-47.00	11.51	-35.49	55.62	
	1732.5	1/49	QPSK	3473.85	V	-53.72	8.42	-45.30	66.33	34.03
				6947.88	V	-44.86	11.63	-33.23	54.26	
		1/49	16QAM	3473.90	V	-53.84	8.42	-45.42	65.31	32.89
				6947.74	V	-44.73	11.63	-33.10	52.99	
	1750	1/49	QPSK	3508.88	V	-52.99	8.51	-44.48	66.30	34.82
				7017.66	V	-41.52	11.76	-29.76	51.58	
		1/49	16QAM	3508.94	V	-53.13	8.51	-44.62	65.26	33.64
				7017.56	V	-41.63	11.76	-29.87	50.51	
5	1712.5	1/0	QPSK	3420.56	V	-53.49	8.23	-45.26	66.23	33.97
				6841.62	V	-47.18	11.51	-35.67	56.64	
		1/0	16QAM	3420.54	V	-53.28	8.23	-45.05	64.69	32.64
				6841.57	V	-47.49	11.51	-35.98	55.62	
	1732.5	1/0	QPSK	3460.72	V	-54.10	8.37	-45.73	66.65	33.92
				6921.21	V	-44.76	11.63	-33.13	54.05	
		1/0	16QAM	3460.55	V	-54.24	8.37	-45.87	65.61	32.74
				6921.25	V	-45.12	11.63	-33.49	53.23	
	1752.5	1/24	QPSK	3509.19	V	-54.21	8.51	-45.70	67.41	34.71
				7018.81	V	-41.62	11.76	-29.86	51.57	
		1/24	16QAM	3509.21	V	-54.05	8.51	-45.54	66.08	33.54
				7018.83	V	-41.51	11.76	-29.75	50.29	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	1711.5	1/7	QPSK	3423.07	V	-53.61	8.24	-45.37	66.93	34.56
				6846.05	V	-47.46	11.51	-35.95	57.51	
		1/7	16QAM	3423.11	V	-53.14	8.24	-44.90	65.27	33.37
				6846.15	V	-47.34	11.51	-35.83	56.20	
	1732.5	1/14	QPSK	3467.51	V	-53.62	8.40	-45.22	65.77	33.55
				6935.05	V	-45.00	11.63	-33.37	53.92	
		1/14	16QAM	3467.58	V	-53.98	8.40	-45.58	64.80	32.22
				6934.94	V	-44.80	11.63	-33.17	52.39	
	1753.5	1/7	QPSK	3507.02	V	-53.93	8.51	-45.42	66.56	34.14
				7014.12	V	-41.80	11.76	-30.04	51.18	
		1/7	16QAM	3507.14	V	-54.15	8.51	-45.64	65.67	33.03
				7014.08	V	-41.56	11.76	-29.80	49.83	
1.4	1710.7	1/2	QPSK	3421.48	V	-53.00	8.24	-44.76	65.64	33.88
				6842.74	V	-46.74	11.51	-35.23	56.11	
		1/2	16QAM	3421.28	V	-53.31	8.23	-45.08	64.71	32.63
				6842.89	V	-46.60	11.51	-35.09	54.72	
	1732.5	1/2	QPSK	3465.15	V	-53.40	8.39	-45.01	64.30	32.29
				6930.04	V	-44.70	11.63	-33.07	52.36	
		1/2	16QAM	3465.07	V	-53.25	8.39	-44.86	62.71	30.85
				6930.20	V	-44.95	11.63	-33.32	51.17	
	1754.3	1/2	QPSK	3508.28	V	-53.93	8.51	-45.42	66.86	34.44
				7017.10	V	-42.06	11.76	-30.30	51.74	
		1/2	16QAM	3508.19	V	-53.51	8.51	-45.00	65.16	33.16
				7017.08	V	-41.85	11.76	-30.09	50.25	

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.

<Test case: ANT 2>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
20	1720	1/99	QPSK	3457.90	V	-31.67	8.36	-23.31	41.48	31.17
				5186.83	V	-38.45	10.43	-28.02	46.19	
				6915.47	V	-44.86	11.63	-33.23	51.40	
		1/99	16QAM	3457.83	V	-31.79	8.36	-23.43	41.09	30.66
				5186.97	V	-38.65	10.43	-28.22	45.88	
				6915.83	V	-45.54	11.63	-33.91	51.57	
	1732.5	1/99	QPSK	3482.97	V	-34.12	8.45	-25.67	43.79	31.12
				5224.33	V	-40.28	10.47	-29.81	47.93	
				6965.70	V	-48.33	11.63	-36.70	54.82	
		1/99	16QAM	3482.80	V	-34.40	8.45	-25.95	42.84	29.89
				5224.40	V	-40.34	10.47	-29.87	46.76	
				6965.80	V	-48.29	11.63	-36.66	53.55	
	1745	1/50	QPSK	3490.17	V	-35.45	8.48	-26.97	45.02	31.05
				5235.22	V	-39.29	10.47	-28.82	46.87	
				6980.50	V	-47.10	11.63	-35.47	53.52	
		1/50	16QAM	3490.15	V	-35.43	8.48	-26.95	44.05	30.10
				5235.27	V	-38.84	10.47	-28.37	45.47	
				6980.53	V	-46.76	11.63	-35.13	52.23	
15	1717.5	1/0	QPSK	3421.62	V	-34.34	8.24	-26.10	44.91	31.81
				5132.62	V	-39.72	10.34	-29.38	48.19	
				6843.40	V	-48.30	11.51	-36.79	55.60	
		1/0	16QAM	3421.77	V	-34.37	8.24	-26.13	43.90	30.77
				5132.48	V	-39.50	10.34	-29.16	46.93	
				6843.27	V	-48.40	11.51	-36.89	54.66	
	1732.5	1/0	QPSK	3451.68	V	-31.61	8.34	-23.27	41.54	31.27
				5177.63	V	-40.48	10.41	-30.07	48.34	
				6903.17	V	-45.96	11.63	-34.33	52.60	
		1/0	16QAM	3451.73	V	-31.55	8.34	-23.21	40.37	30.16
				5177.58	V	-40.41	10.41	-30.00	47.16	
				6903.40	V	-45.82	11.63	-34.19	51.35	
	1747.5	1/0	QPSK	3481.65	V	-34.69	8.45	-26.24	44.37	31.13
				5222.71	V	-39.23	10.47	-28.76	46.89	
				6963.48	V	-47.94	11.63	-36.31	54.44	
		1/0	16QAM	3481.73	V	-34.29	8.45	-25.84	42.70	29.86
				5222.53	V	-38.93	10.47	-28.46	45.32	
				6963.02	V	-48.01	11.63	-36.38	53.24	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	1715	1/0	QPSK	3421.18	V	-31.54	8.23	-23.31	41.49	31.18
				5131.88	V	-39.15	10.33	-28.82	47.00	
				6842.52	V	-47.18	11.51	-35.67	53.85	
		1/0	16QAM	3421.22	V	-31.68	8.23	-23.45	40.43	29.98
				5131.75	V	-39.40	10.33	-29.07	46.05	
				6842.50	V	-46.61	11.51	-35.10	52.08	
	1732.5	1/0	QPSK	3456.24	V	-29.73	8.36	-21.37	39.41	31.04
				5184.23	V	-37.52	10.42	-27.10	45.14	
				6912.32	V	-45.04	11.63	-33.41	51.45	
		1/0	16QAM	3456.13	V	-30.11	8.36	-21.75	38.77	30.02
				5184.27	V	-38.07	10.42	-27.65	44.67	
				6912.32	V	-44.98	11.63	-33.35	50.37	
	1750	1/0	QPSK	3491.22	V	-33.94	8.48	-25.46	43.44	30.98
				5236.87	V	-41.62	10.48	-31.14	49.12	
				6982.60	V	-48.23	11.63	-36.60	54.58	
		1/0	16QAM	3491.20	V	-34.20	8.48	-25.72	42.77	30.05
				5236.77	V	-41.21	10.48	-30.73	47.78	
				6982.35	V	-48.59	11.63	-36.96	54.01	
5	1712.5	1/0	QPSK	3420.73	V	-33.97	8.23	-25.74	43.46	30.72
				5130.23	V	-40.85	10.33	-30.52	48.24	
				6841.37	V	-48.11	11.51	-36.60	54.32	
		1/0	16QAM	3420.55	V	-34.02	8.23	-25.79	42.37	29.58
				5131.23	V	-40.71	10.33	-30.38	46.96	
				6841.33	V	-48.26	11.51	-36.75	53.33	
	1732.5	1/0	QPSK	3460.65	V	-31.67	8.37	-23.30	40.58	30.28
				5191.17	V	-39.23	10.43	-28.80	46.08	
				6921.28	V	-44.56	11.63	-32.93	50.21	
		1/0	16QAM	3460.67	V	-31.36	8.37	-22.99	38.93	28.94
				5191.13	V	-39.30	10.43	-28.87	44.81	
				6921.32	V	-44.99	11.63	-33.36	49.30	
	1752.5	1/24	QPSK	3509.38	V	-35.30	8.51	-26.79	44.18	30.39
				5263.02	V	-41.18	10.49	-30.69	48.08	
				7018.78	V	-48.43	11.76	-36.67	54.06	
		1/24	16QAM	3509.35	V	-35.12	8.51	-26.61	42.87	29.26
				5263.72	V	-41.06	10.49	-30.57	46.83	
				7018.63	V	-48.16	11.76	-36.40	52.66	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	1711.5	1/14	QPSK	3425.54	V	-32.05	8.25	-23.80	41.64	30.84
				5138.34	V	-39.39	10.35	-29.04	46.88	
				6850.98	V	-46.29	11.51	-34.78	52.62	
		1/14	16QAM	3425.61	V	-31.93	8.25	-23.68	40.28	29.60
				5138.37	V	-39.10	10.35	-28.75	45.35	
				6850.95	V	-46.49	11.51	-34.98	51.58	
	1732.5	1/14	QPSK	3467.57	V	-33.17	8.40	-24.77	42.32	30.55
				5201.34	V	-39.92	10.45	-29.47	47.02	
				6934.95	V	-48.65	11.63	-37.02	54.57	
		1/14	16QAM	3467.52	V	-32.91	8.40	-24.51	40.86	29.35
				5201.37	V	-39.56	10.45	-29.11	45.46	
				6934.98	V	-49.08	11.63	-37.45	53.80	
	1753.5	1/14	QPSK	3509.69	V	-34.93	8.51	-26.42	43.92	30.50
				5264.33	V	-39.89	10.50	-29.39	46.89	
				7018.55	V	-47.95	11.76	-36.19	53.69	
		1/14	16QAM	3509.51	V	-34.55	8.51	-26.04	42.34	29.30
				5264.18	V	-39.73	10.49	-29.24	45.54	
				7019.05	V	-47.62	11.76	-35.86	52.16	
1.4	1710.7	1/2	QPSK	3421.22	V	-34.96	8.23	-26.73	45.16	31.43
				5131.89	V	-41.06	10.33	-30.73	49.16	
				6842.43	V	-48.18	11.51	-36.67	55.10	
		1/2	16QAM	3421.04	V	-34.58	8.23	-26.35	43.78	30.43
				5131.85	V	-41.11	10.33	-30.78	48.21	
				6842.27	V	-48.02	11.51	-36.51	53.94	
	1732.5	1/2	QPSK	3464.83	V	-33.80	8.39	-25.41	43.06	30.65
				5197.18	V	-39.55	10.45	-29.10	46.75	
				6929.76	V	-47.75	11.63	-36.12	53.77	
		1/2	16QAM	3464.77	V	-53.45	8.39	-45.06	61.65	29.59
				5197.23	V	-39.56	10.45	-29.11	45.70	
				6929.50	V	-47.53	11.63	-35.90	52.49	
	1754.3	1/5	QPSK	3509.44	V	-35.78	8.51	-27.27	43.91	29.64
				5264.23	V	-39.63	10.49	-29.14	45.78	
				7019.22	V	-50.09	11.76	-38.33	54.97	
		1/5	16QAM	3509.53	V	-36.19	8.51	-27.68	43.10	28.42
				5264.41	V	-39.35	10.50	-28.85	44.27	
				7018.73	V	-50.02	11.76	-38.26	53.68	

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.

7.7.7 LTE Band 2

<Test case: ANT 1>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
20	1860	1/0	QPSK	3702.05	V	-51.98	8.49	-43.49	65.31	34.82
				7404.94	V	-43.11	12.23	-30.88	52.70	
		1/0	16QAM	3702.18	V	-53.13	8.49	-44.64	65.37	33.73
				7404.66	V	-43.32	12.23	-31.09	51.82	
	1880	1/0	QPSK	3742.33	V	-53.53	8.51	-45.02	67.57	35.55
				7484.27	V	-41.61	12.23	-29.38	51.93	
		1/0	16QAM	3742.28	V	-53.65	8.51	-45.14	66.52	34.38
				7484.65	V	-41.44	12.23	-29.21	50.59	
	1900	1/0	QPSK	3781.95	V	-52.34	8.52	-43.82	65.88	35.06
				7564.37	V	-36.22	12.35	-23.87	45.93	
		1/0	16QAM	3782.47	V	-53.29	8.52	-44.77	65.69	33.92
				7564.53	V	-35.97	12.35	-23.62	44.54	
15	1857.5	1/0	QPSK	3701.78	V	-53.44	8.49	-44.95	66.40	34.45
				7403.28	V	-43.41	12.23	-31.18	52.63	
		1/0	16QAM	3701.23	V	-53.47	8.49	-44.98	65.36	33.38
				7403.41	V	-43.34	12.23	-31.11	51.49	
	1880	1/0	QPSK	3746.23	V	-53.35	8.51	-44.84	66.20	34.36
				7493.28	V	-41.53	12.23	-29.30	50.66	
		1/0	16QAM	3746.37	V	-53.40	8.51	-44.89	65.18	33.29
				7493.19	V	-41.17	12.23	-28.94	49.23	
	1902.5	1/0	QPSK	3792.12	V	-53.88	8.53	-45.35	66.61	34.26
				7583.94	V	-37.17	12.35	-24.82	46.08	
		1/0	16QAM	3791.87	V	-54.12	8.53	-45.59	65.73	33.14
				7583.87	V	-37.01	12.35	-24.66	44.80	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	1855	1/0	QPSK	3701.28	V	-53.34	8.49	-44.85	66.02	34.17
				7402.08	V	-43.56	12.23	-31.33	52.50	
		1/0	16QAM	3701.13	V	-53.62	8.49	-45.13	65.21	33.08
				7402.31	V	-43.42	12.23	-31.19	51.27	
	1880	1/0	QPSK	3751.23	V	-52.98	8.51	-44.47	65.21	33.74
				7502.37	V	-41.12	12.35	-28.77	49.51	
		1/0	16QAM	3751.27	V	-53.48	8.51	-44.97	64.41	32.44
				7502.15	V	-41.45	12.35	-29.10	48.54	
	1905	1/25	QPSK	3810.13	V	-53.66	8.54	-45.12	66.57	34.45
				7637.84	V	-36.83	12.46	-24.37	45.82	
		1/25	16QAM	3810.07	V	-54.17	8.54	-45.63	65.92	33.29
				7637.54	V	-36.70	12.46	-24.24	44.53	
5	1852.5	1/12	QPSK	3704.88	V	-53.66	8.49	-45.17	66.85	34.68
				7409.99	V	-43.49	12.23	-31.26	52.94	
		1/12	16QAM	3704.97	V	-53.40	8.49	-44.91	65.31	33.40
				7410.02	V	-43.39	12.23	-31.16	51.56	
	1880	1/12	QPSK	3760.12	V	-53.54	8.51	-45.03	66.74	34.71
				7519.52	V	-41.35	12.35	-29.00	50.71	
		1/12	16QAM	3760.09	V	-53.68	8.51	-45.17	65.48	33.31
				7519.93	V	-41.81	12.35	-29.46	49.77	
	1907.5	1/24	QPSK	3819.41	V	-52.28	8.55	-43.73	64.82	34.09
				7638.69	V	-36.07	12.46	-23.61	44.70	
		1/24	16QAM	3819.66	V	-52.71	8.55	-44.16	63.91	32.75
				7638.50	V	-36.90	12.46	-24.44	44.19	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	1851.5	1/7	QPSK	3703.07	V	-53.77	8.49	-45.28	66.29	34.01
				7405.68	V	-43.65	12.23	-31.42	52.43	
		1/7	16QAM	3703.02	V	-53.70	8.49	-45.21	65.09	32.88
				7406.15	V	-43.43	12.23	-31.20	51.08	
	1880	1/7	QPSK	3760.17	V	-53.58	8.51	-45.07	66.35	34.28
				7520.00	V	-41.81	12.35	-29.46	50.74	
		1/7	16QAM	3760.13	V	-53.47	8.51	-44.96	65.13	33.17
				7520.07	V	-41.60	12.35	-29.25	49.42	
	1908.5	1/0	QPSK	3814.52	V	-52.55	8.55	-44.00	65.12	34.12
				7629.06	V	-36.58	12.46	-24.12	45.24	
		1/0	16QAM	3814.54	V	-52.33	8.55	-43.78	63.74	32.96
				7629.02	V	-36.50	12.46	-24.04	44.00	
1.4	1850.7	1/2	QPSK	3701.53	V	-53.32	8.49	-44.83	65.98	34.15
				7402.64	V	-43.42	12.23	-31.19	52.34	
		1/2	16QAM	3701.46	V	-53.19	8.49	-44.70	64.61	32.91
				7402.56	V	-43.31	12.23	-31.08	50.99	
	1880	1/0	QPSK	3758.54	V	-52.68	8.51	-44.17	65.40	34.23
				7517.34	V	-41.68	12.35	-29.33	50.56	
		1/0	16QAM	3758.43	V	-52.71	8.51	-44.20	64.11	32.91
				7517.56	V	-41.45	12.35	-29.10	49.01	
	1909.3	1/0	QPSK	3817.24	V	-52.25	8.55	-43.70	64.65	33.95
				7634.56	V	-36.10	12.46	-23.64	44.59	
		1/0	16QAM	3817.18	V	-52.53	8.55	-43.98	63.89	32.91
				7634.23	V	-36.24	12.46	-23.78	43.69	

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.

<Test case: ANT 2>

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
20	1860	1/99	QPSK	3737.98	V	-30.89	8.51	-22.38	42.72	33.34
				5607.03	V	-44.24	10.70	-33.54	53.88	
				7476.08	V	-46.54	12.23	-34.31	54.65	
				9344.90	V	-46.77	13.49	-33.28	53.62	
		1/99	16QAM	3737.92	V	-30.49	8.51	-21.98	40.90	31.92
				5607.00	V	-44.20	10.70	-33.50	52.42	
				7475.87	V	-46.14	12.23	-33.91	52.83	
				9344.80	V	-46.35	13.49	-32.86	51.78	
	1880	1/50	QPSK	3760.16	V	-29.67	8.51	-21.16	40.76	32.60
				5640.33	V	-43.56	10.75	-32.81	52.41	
				7520.15	V	-46.48	12.35	-34.13	53.73	
				9400.16	V	-45.69	13.38	-32.31	51.91	
		1/50	16QAM	3760.07	V	-29.35	8.51	-20.84	39.22	31.38
				5640.30	V	-42.80	10.75	-32.05	50.43	
				7520.23	V	-46.00	12.35	-33.65	52.03	
				9440.23	V	-45.07	13.38	-31.69	50.07	
	1900	1/50	QPSK	3800.09	V	-27.23	8.53	-18.70	38.79	33.09
				5700.45	V	-42.91	10.85	-32.06	52.15	
				7600.44	V	-46.31	12.46	-33.85	53.94	
				9500.39	V	-45.27	13.38	-31.89	51.98	
		1/50	16QAM	3800.26	V	-27.93	8.53	-19.40	38.01	31.61
				5700.02	V	-42.78	10.85	-31.93	50.54	
				7600.41	V	-45.63	12.46	-33.17	51.78	
				9500.43	V	-45.09	13.38	-31.71	50.32	
15	1857.5	1/74	QPSK	3728.52	V	-27.78	8.50	-19.28	39.55	33.27
				5592.40	V	-44.88	10.69	-34.19	54.46	
				7457.10	V	-46.77	12.23	-34.54	54.81	
				9320.47	V	-47.16	13.49	-33.67	53.94	
		1/74	16QAM	3728.32	V	-27.68	8.50	-19.18	38.12	31.94
				5592.35	V	-44.75	10.69	-34.06	53.00	
				7456.77	V	-47.28	12.23	-35.05	53.99	
				9320.17	V	-46.87	13.49	-33.38	52.32	
	1880	1/36	QPSK	3759.69	V	-27.45	8.51	-18.94	38.40	32.46
				5639.55	V	-44.32	10.75	-33.57	53.03	
				7518.84	V	-46.15	12.35	-33.80	53.26	
				9399.01	V	-44.85	13.49	-31.36	50.82	
		1/36	16QAM	3759.61	V	-27.31	8.51	-18.80	37.04	31.24
				5639.45	V	-44.45	10.75	-33.70	51.94	
				7519.29	V	-45.77	12.35	-33.42	51.66	
				9398.76	V	-44.38	13.49	-30.89	49.13	
	1902.5	1/36	QPSK	3804.65	V	-26.46	8.54	-17.92	37.69	32.77
				5707.06	V	-43.01	10.86	-32.15	51.92	
				7609.18	V	-46.05	12.46	-33.59	53.36	
				9511.29	V	-43.66	13.38	-30.28	50.05	
		1/36	16QAM	3804.71	V	-26.25	8.54	-17.71	36.38	31.67
				5706.95	V	-42.78	10.86	-31.92	50.59	
				7608.96	V	-45.73	12.46	-33.27	51.94	
				9511.04	V	-43.06	13.38	-29.68	48.35	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
10	1855	1/0	QPSK	3701.12	V	-28.47	8.49	-19.98	39.52	32.54
				5552.05	V	-42.83	10.67	-32.16	51.70	
				7402.02	V	-46.29	12.23	-34.06	53.60	
				9253.15	V	-46.26	13.40	-32.86	52.40	
		1/0	16QAM	3701.15	V	-28.38	8.49	-19.89	38.29	31.40
				5551.73	V	-42.85	10.67	-32.18	50.58	
				7402.25	V	-46.55	12.23	-34.32	52.72	
				9252.75	V	-45.32	13.40	-31.92	50.32	
	1880	1/49	QPSK	3768.72	V	-28.16	8.52	-19.64	38.89	32.25
				5653.33	V	-41.91	10.78	-31.13	50.38	
				7537.66	V	-46.20	12.35	-33.85	53.10	
				9421.78	V	-45.89	13.38	-32.51	51.76	
		1/49	16QAM	3768.87	V	-27.80	8.52	-19.28	37.17	30.89
				5653.55	V	-41.98	10.78	-31.20	49.09	
				7537.61	V	-46.33	12.35	-33.98	51.87	
				9422.27	V	-45.23	13.38	-31.85	49.74	
	1905	1/49	QPSK	3818.80	V	-28.19	8.55	-19.64	39.48	32.84
				5728.48	V	-41.97	10.89	-31.08	50.92	
				7637.28	V	-45.78	12.46	-33.32	53.16	
				9547.25	V	-45.38	13.38	-32.00	51.84	
		1/49	16QAM	3818.88	V	-28.29	8.55	-19.74	38.29	31.55
				5728.25	V	-41.73	10.89	-30.84	49.39	
				7637.50	V	-45.09	12.46	-32.63	51.18	
				9547.03	V	-44.91	13.38	-31.53	50.08	
5	1852.5	1/24	QPSK	3709.38	V	-32.75	8.49	-24.26	44.24	32.98
				5563.88	V	-43.48	10.67	-32.81	52.79	
				7418.47	V	-47.74	12.23	-35.51	55.49	
				9273.85	V	-47.95	13.40	-34.55	54.53	
		1/24	16QAM	3709.17	V	-32.54	8.49	-24.05	43.07	32.02
				5564.08	V	-43.00	10.67	-32.33	51.35	
				7418.88	V	-47.51	12.23	-35.28	54.30	
				9272.80	V	-47.35	13.40	-33.95	52.97	
	1880	1/12	QPSK	3760.03	V	-30.17	8.51	-21.66	41.78	33.12
				5640.05	V	-42.73	10.75	-31.98	52.10	
				7520.30	V	-45.21	12.35	-32.86	52.98	
				9400.03	V	-45.83	13.38	-32.45	52.57	
		1/12	16QAM	3760.01	V	-29.97	8.51	-21.46	40.75	32.29
				5640.08	V	-42.42	10.75	-31.67	50.96	
				7520.23	V	-44.83	12.35	-32.48	51.77	
				9400.30	V	-45.54	13.38	-32.16	51.45	
	1907.5	1/12	QPSK	3814.95	V	-28.29	8.55	-19.74	39.65	32.91
				5722.63	V	-41.20	10.88	-30.32	50.23	
				7629.72	V	-44.43	12.46	-31.97	51.88	
				9537.45	V	-44.79	13.38	-31.41	51.32	
		1/12	16QAM	3815.02	V	-28.12	8.55	-19.57	38.35	31.78
				5722.40	V	-41.19	10.88	-30.31	49.09	
				7629.25	V	-44.15	12.46	-31.69	50.47	
				9537.43	V	-44.38	13.38	-31.00	49.78	

B.W (MHz)	Test Freq. (MHz)	RB Size/ Offset	Test Mode	Freq.(MHz)	Ant Pol (H/V)	Level(dBm) @ Ant Terminal	TX Ant Gain(dBi)	Result		Limit (dBc)
								(dBm)	(dBc)	
3	1851.5	1/14	QPSK	3705.50	V	-31.32	8.49	-22.83	43.11	33.28
				5558.26	V	-42.66	10.67	-31.99	52.27	
				7411.01	V	-46.92	12.23	-34.69	54.97	
				9263.57	V	-47.26	13.40	-33.86	54.14	
		1/14	16QAM	3705.47	V	-31.10	8.49	-22.61	41.59	31.98
				5558.64	V	-42.38	10.67	-31.71	50.69	
				7410.13	V	-46.55	12.23	-34.32	53.30	
				9263.63	V	-50.28	10.49	-39.79	58.77	
	1880	1/7	QPSK	3760.05	V	-30.32	8.51	-21.81	42.09	33.28
				5640.11	V	-42.46	10.75	-31.71	51.99	
				7520.30	V	-47.22	12.35	-34.87	55.15	
				9400.21	V	-46.71	13.38	-33.33	53.61	
		1/7	16QAM	3759.77	V	-30.10	8.51	-21.59	40.81	32.22
				5640.09	V	-42.26	10.75	-31.51	50.73	
				7520.36	V	-47.03	12.35	-34.68	53.90	
				9400.19	V	-46.90	13.38	-33.52	52.74	
	1908.5	1/7	QPSK	3817.05	V	-29.04	8.55	-20.49	40.03	32.54
				5725.67	V	-41.52	10.89	-30.63	50.17	
				7633.69	V	-45.97	12.46	-33.51	53.05	
				9542.49	V	-44.20	13.38	-30.82	50.36	
		1/7	16QAM	3816.99	V	-28.71	8.55	-20.16	38.55	31.39
				5725.60	V	-40.94	10.89	-30.05	48.44	
				7633.63	V	-46.12	12.46	-33.66	52.05	
				9542.53	V	-43.99	13.38	-30.61	49.00	
1.4	1850.7	1/2	QPSK	3701.21	V	-29.22	8.49	-20.73	40.47	32.74
				5551.97	V	-39.19	10.67	-28.52	48.26	
				7402.89	V	-47.77	12.23	-35.54	55.28	
				9253.13	V	-46.02	13.40	-32.62	52.36	
		1/2	16QAM	3701.13	V	-29.18	8.49	-20.69	39.30	31.61
				5551.82	V	-40.11	10.67	-29.44	48.05	
				7402.73	V	-47.16	12.23	-34.93	53.54	
				9253.04	V	-45.80	13.40	-32.40	51.01	
	1880	1/2	QPSK	3759.80	V	-28.60	8.51	-20.09	40.25	33.16
				5639.47	V	-39.33	10.75	-28.58	48.74	
				7519.58	V	-46.45	12.35	-34.10	54.26	
				9399.69	V	-46.26	13.49	-32.77	52.93	
		1/2	16QAM	3759.88	V	-28.83	8.51	-20.32	39.43	32.11
				5639.67	V	-39.73	10.75	-28.98	48.09	
				7519.92	V	-46.04	12.35	-33.69	52.80	
				9399.58	V	-46.10	13.49	-32.61	51.72	
	1909.3	1/5	QPSK	3819.60	V	-27.68	8.55	-19.13	38.76	32.63
				5729.13	V	-38.46	10.89	-27.57	47.20	
				7638.89	V	-45.20	12.46	-32.74	52.37	
				9548.98	V	-44.40	13.38	-31.02	50.65	
		1/5	16QAM	3819.49	V	-27.66	8.55	-19.11	37.46	31.35
				5729.21	V	-37.74	10.89	-26.85	45.20	
				7638.67	V	-44.88	12.46	-32.42	50.77	
				9548.72	V	-44.06	13.38	-30.68	49.03	

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.

7.8 FREQUENCY STABILITY

7.8.1 LTE Band 12, 17

OPERATING FREQUENCY : 707.5 MHz
REFERENCE VOLTAGE : 12 VDC
LIMIT : 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%	12.00	+20(Ref)	707,500,002	2	0.0028	0.000000283
100%		-30	707,500,006	6	0.0085	0.000000848
100%		-20	707,500,004	4	0.0057	0.000000565
100%		-10	707,500,003	3	0.0042	0.000000424
100%		0	707,500,003	3	0.0042	0.000000424
100%		+10	707,500,002	2	0.0028	0.000000283
100%		+20	707,500,002	2	0.0028	0.000000283
100%		+30	707,500,000	0	0.0000	0.000000000
100%		+40	707,500,003	3	0.0042	0.000000424
100%		+50	707,500,002	2	0.0028	0.000000283
115%	13.80	+20	707,500,004	4	0.0057	0.000000565
85%	10.20	+20	707,500,001	1	0.0014	0.000000141

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.

7.8.2 LTE Band 13

OPERATING FREQUENCY : 782 MHz
REFERENCE VOLTAGE : 12 VDC
LIMIT : 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%	12.00	+20(Ref)	782,000,002	2	0.0026	0.000000256
100%		-30	782,000,005	5	0.0064	0.000000639
100%		-20	782,000,003	3	0.0038	0.000000384
100%		-10	782,000,002	2	0.0026	0.000000256
100%		0	782,000,002	2	0.0026	0.000000256
100%		+10	782,000,002	2	0.0026	0.000000256
100%		+20	782,000,002	2	0.0026	0.000000256
100%		+30	782,000,001	1	0.0013	0.000000128
100%		+40	782,000,000	0	0.0000	0.000000000
100%		+50	782,000,004	4	0.0051	0.000000512
115%	13.80	+20	782,000,003	3	0.0038	0.000000384
85%	10.20	+20	782,000,004	4	0.0051	0.000000512

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.

7.8.3 LTE Band 5, 26

OPERATING FREQUENCY : 836.5 MHz
REFERENCE VOLTAGE : 12 VDC
LIMIT : < 2.5ppm

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	12.00	+20(Ref)	836,500,001	1	0.0012	0.000000120
100%		-30	836,500,001	1	0.0012	0.000000120
100%		-20	836,500,003	3	0.0036	0.000000359
100%		-10	836,500,001	1	0.0012	0.000000120
100%		0	836,500,002	2	0.0024	0.000000239
100%		+10	836,500,001	1	0.0012	0.000000120
100%		+20	836,500,001	1	0.0012	0.000000120
100%		+30	836,500,002	2	0.0024	0.000000239
100%		+40	836,500,002	2	0.0024	0.000000239
100%		+50	836,500,001	1	0.0012	0.000000120
115%	13.80	+20	836,500,006	6	0.0072	0.000000717
85%	10.20	+20	836,500,002	2	0.0024	0.000000239

7.8.4 LTE Band 4

OPERATING FREQUENCY : 1732.5 MHz
REFERENCE VOLTAGE : 12 VDC
LIMIT : 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%	12.00	+20(Ref)	1,732,500,004	4	0.0023	0.000000231
100%		-30	1,732,500,002	2	0.0012	0.000000115
100%		-20	1,732,500,003	3	0.0017	0.000000173
100%		-10	1,732,500,002	2	0.0012	0.000000115
100%		0	1,732,500,003	3	0.0017	0.000000173
100%		+10	1,732,500,000	0	0.0000	0.000000000
100%		+20	1,732,500,004	4	0.0023	0.000000231
100%		+30	1,732,500,001	1	0.0006	0.000000058
100%		+40	1,732,500,002	2	0.0012	0.000000115
100%		+50	1,732,500,004	4	0.0023	0.000000231
115%	13.80	+20	1,732,500,003	3	0.0017	0.000000173
85%	10.20	+20	1,732,500,001	1	0.0006	0.000000058

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.

7.8.5 LTE Band 2

OPERATING FREQUENCY : 1880 MHz
REFERENCE VOLTAGE : 12 VDC
LIMIT : The frequency stability shall be sufficient to ensure that the
: fundamental emission stays wthin the authorized frequency block.

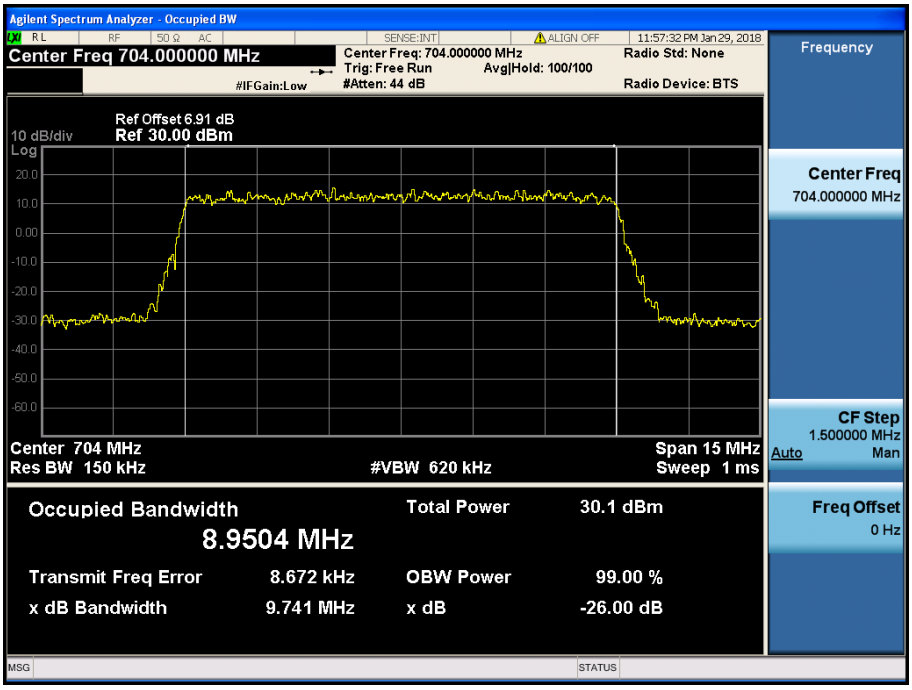
VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	12.00	+20(Ref)	1,880,000,002	2	0.0011	0.000000106
100%		-30	1,880,000,002	2	0.0011	0.000000106
100%		-20	1,880,000,001	1	0.0005	0.000000053
100%		-10	1,880,000,002	2	0.0011	0.000000106
100%		0	1,880,000,003	3	0.0016	0.000000160
100%		+10	1,880,000,003	3	0.0016	0.000000160
100%		+20	1,880,000,002	2	0.0011	0.000000106
100%		+30	1,880,000,001	1	0.0005	0.000000053
100%		+40	1,880,000,001	1	0.0005	0.000000053
100%		+50	1,880,000,001	1	0.0005	0.000000053
115%	13.80	+20	1,880,000,003	3	0.0016	0.000000160
85%	10.20	+20	1,880,000,001	1	0.0005	0.000000053

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.

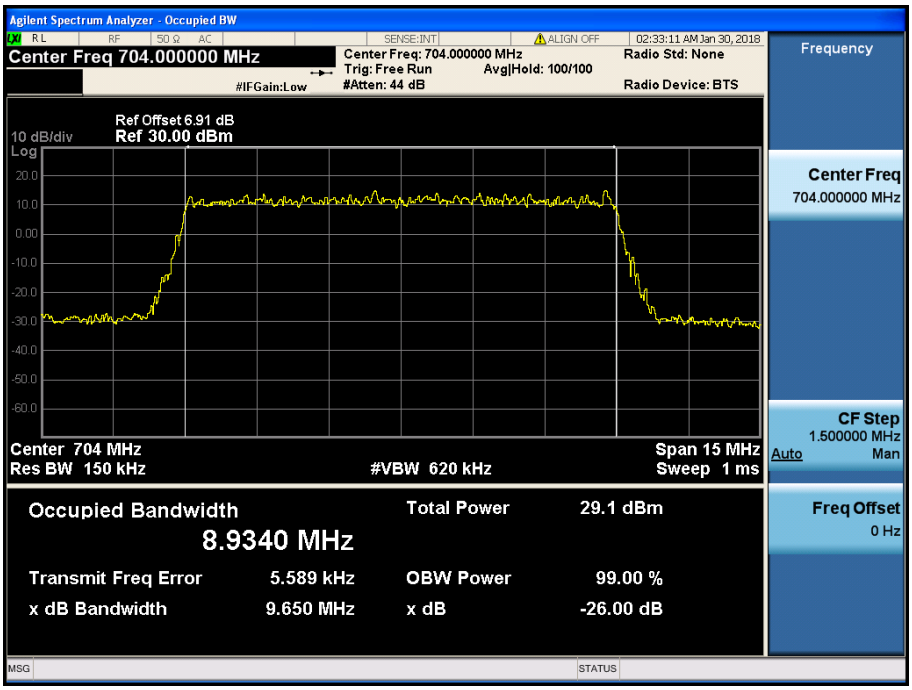
8 TEST PLOTS

8.1 OCCUPIED BANDWIDTH

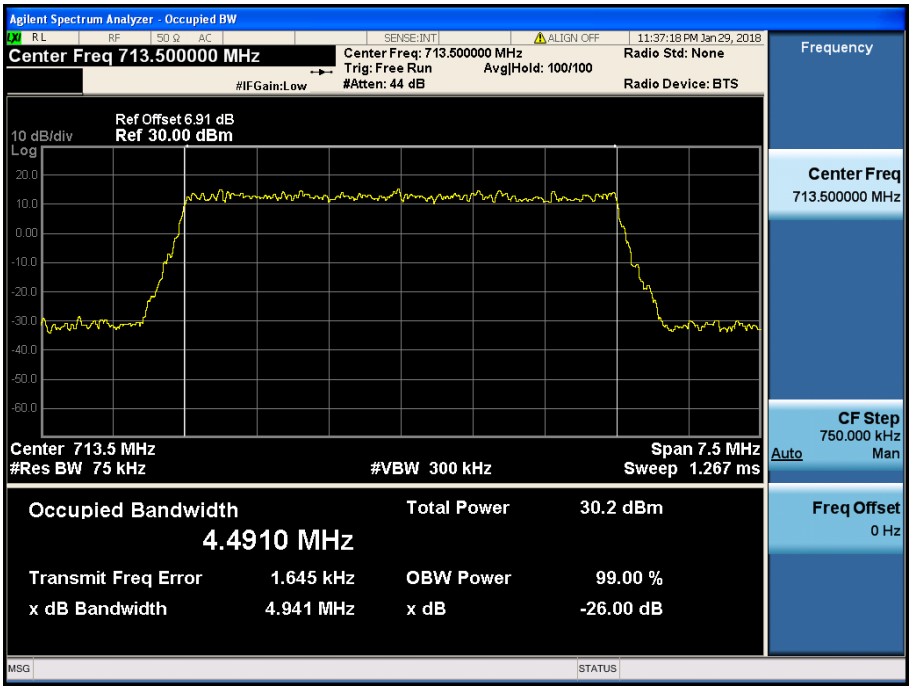
8.1.1 LTE Band 12, 17



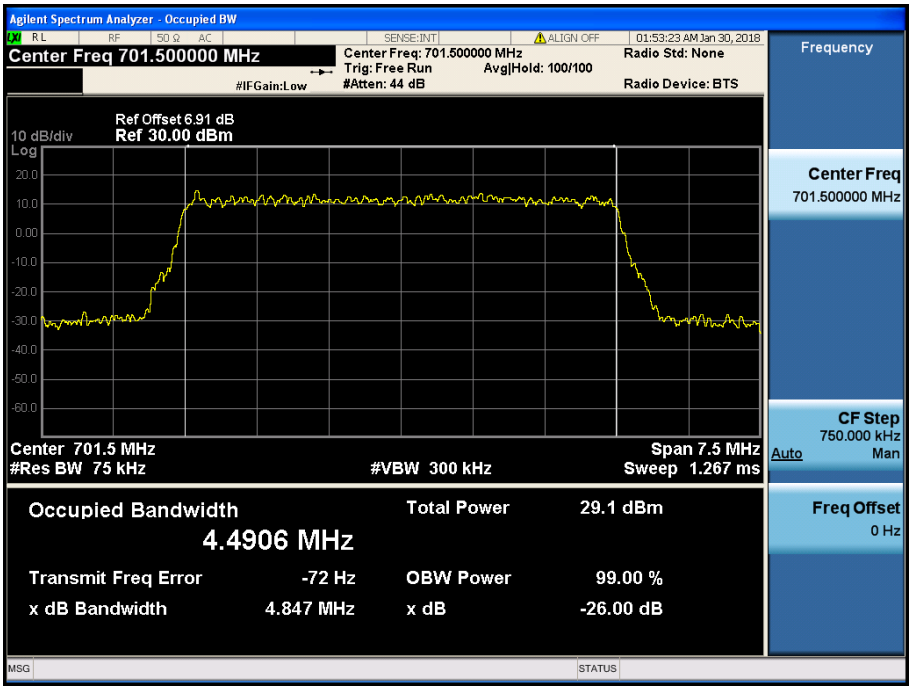
LTE Band 12, 17 / 10 MHz / QPSK - RB Size 50



LTE Band 12, 17 / 10 MHz / 16QAM - RB Size 50

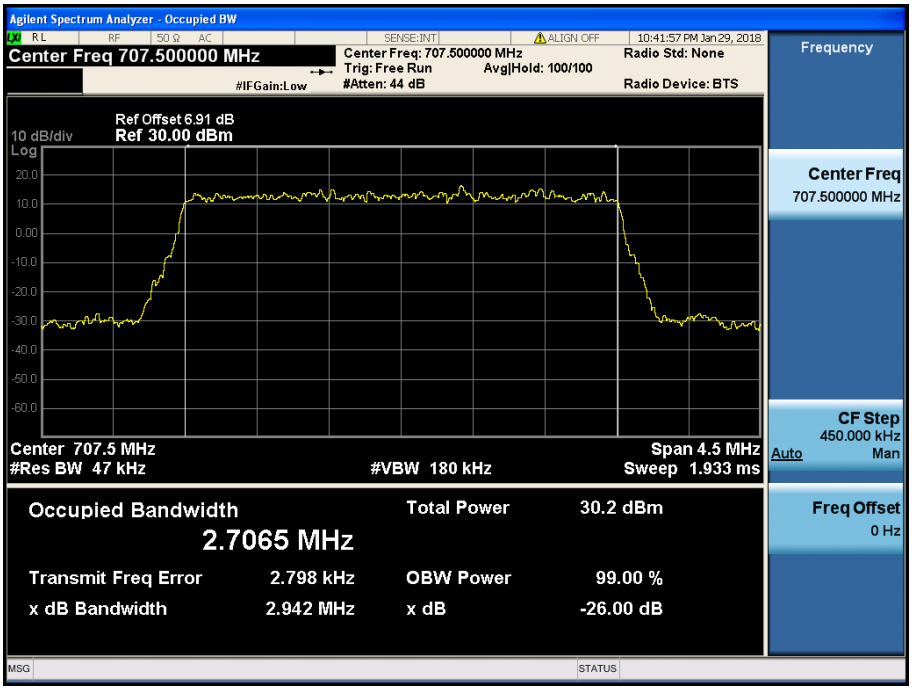


LTE Band 12, 17 / 5 MHz / QPSK - RB Size 25

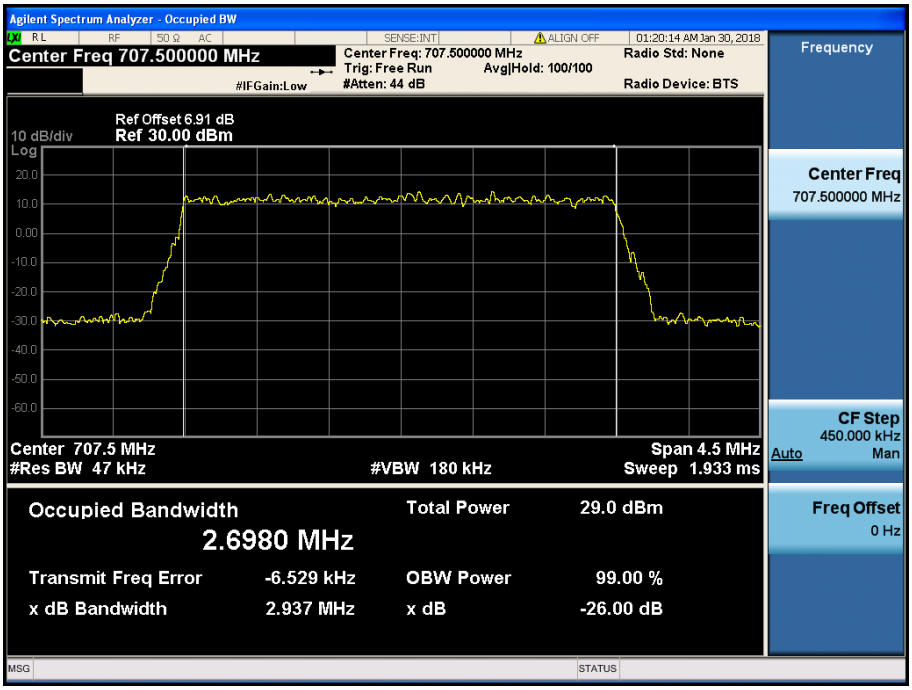


LTE Band 12, 17 / 5 MHz / 16QAM - RB Size 25

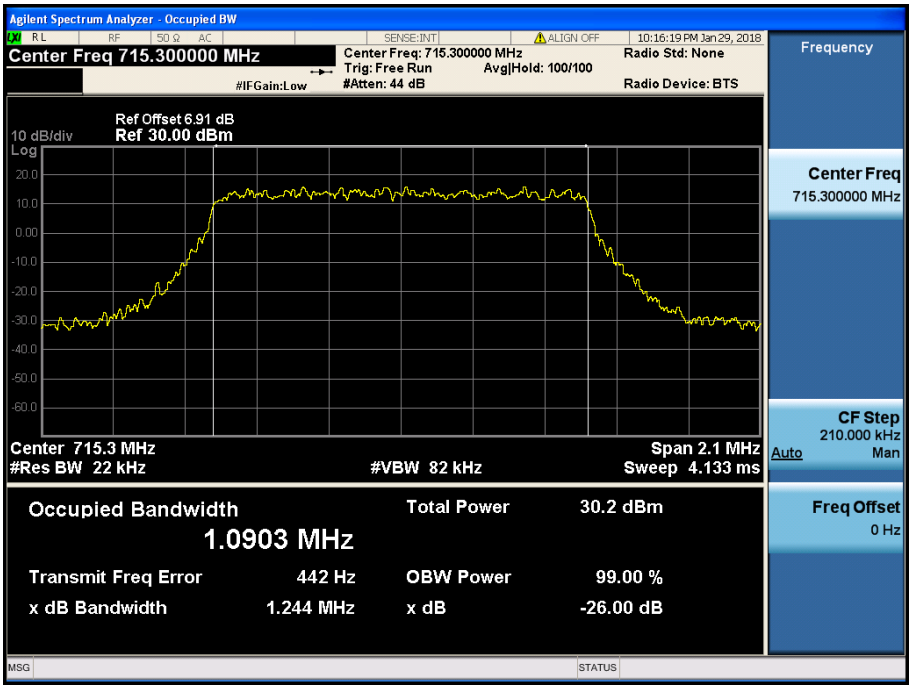
8.1.2 LTE Band 12



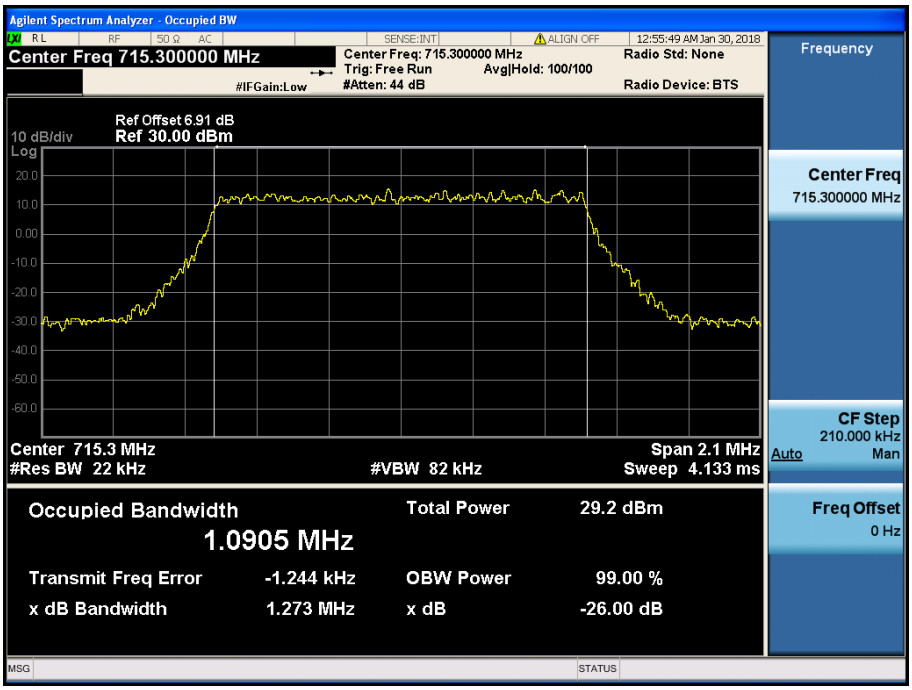
LTE Band 12 / 3 MHz / QPSK - RB Size 15



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

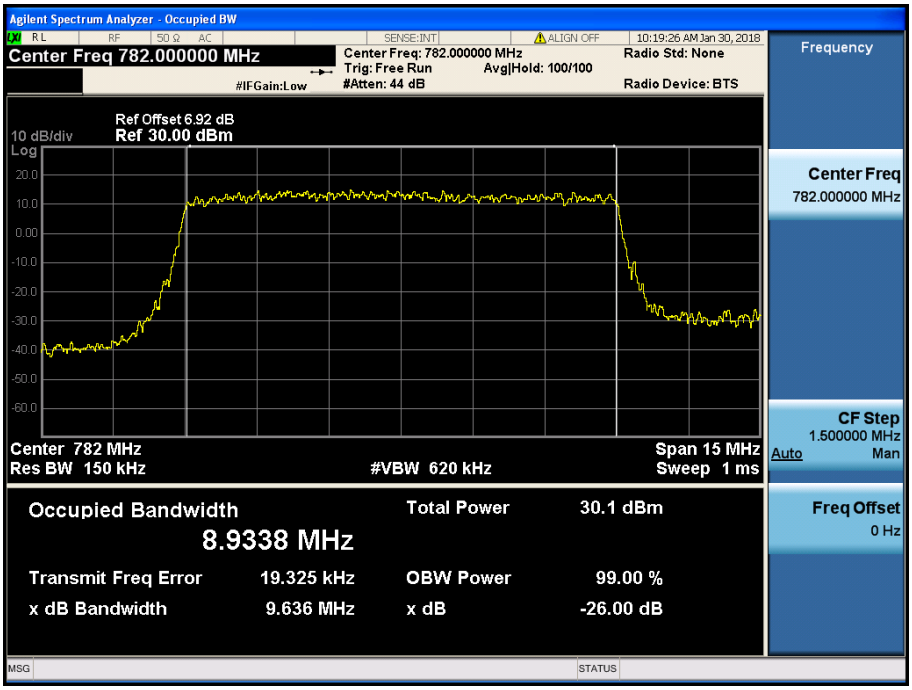


LTE Band 12 / 1.4 MHz / QPSK - RB Size 6

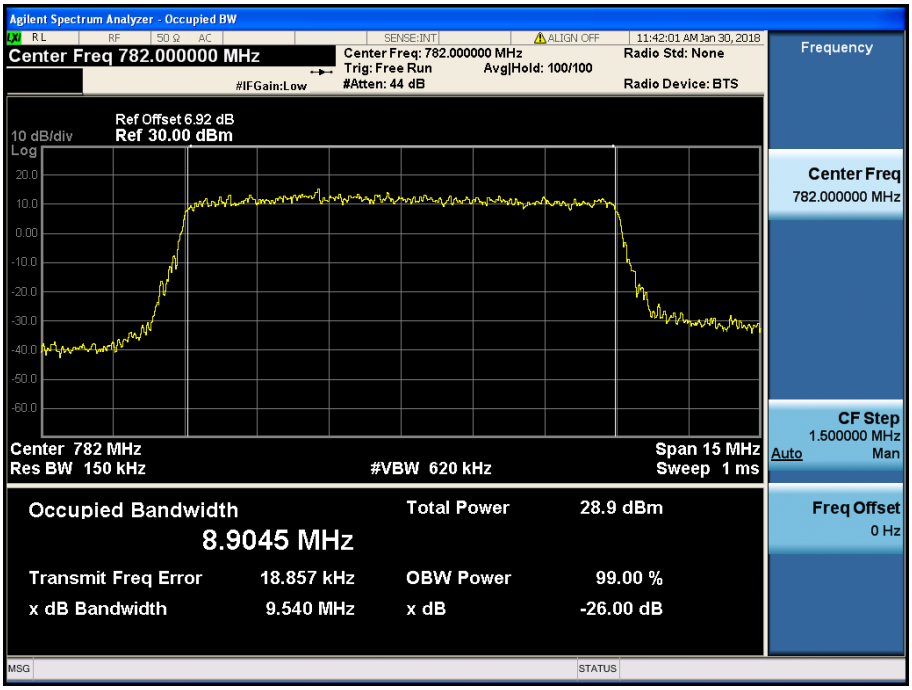


LTE Band 12 / 1.4 MHz / 16QAM - RB Size 6

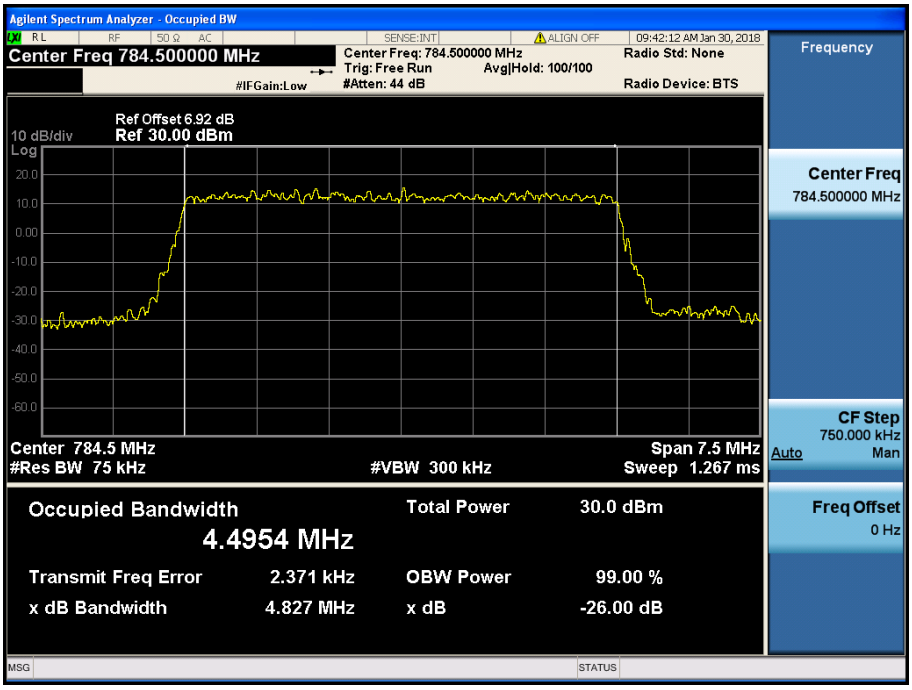
8.1.3 LTE Band 13



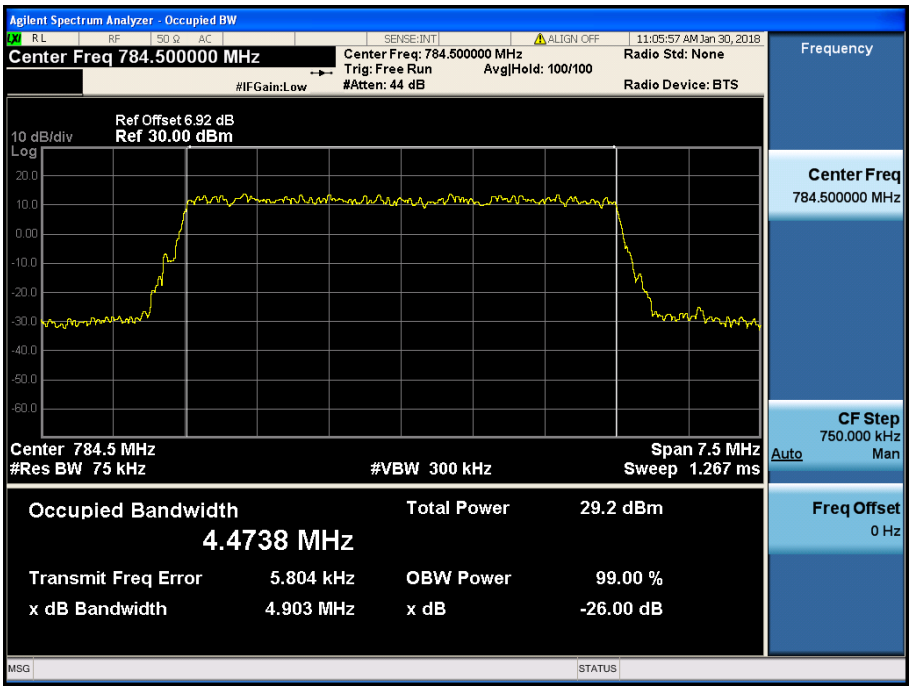
LTE Band 13 / 10 MHz / QPSK - RB Size 50



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

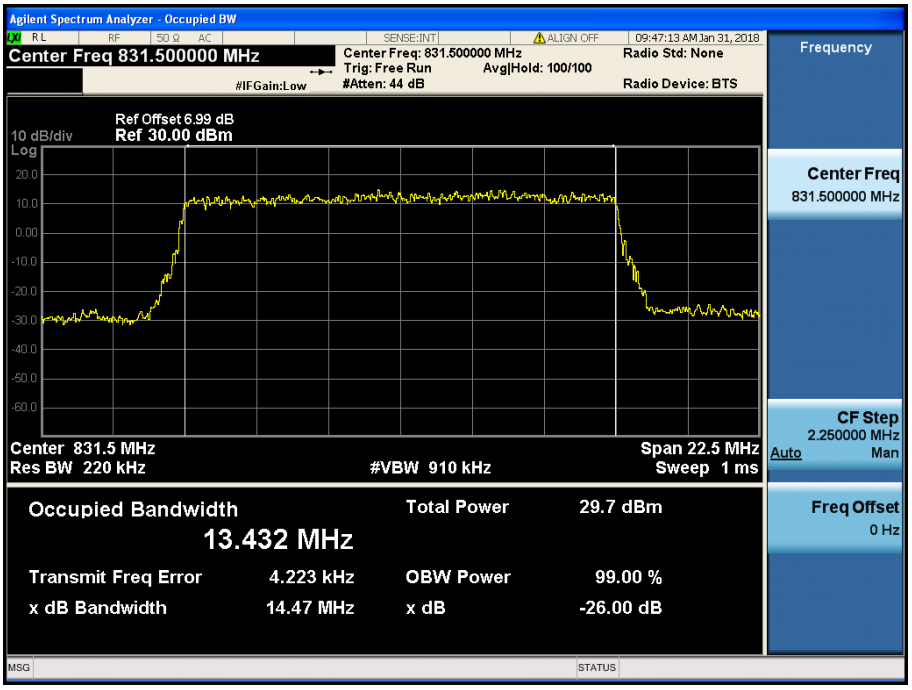


LTE Band 13 / 5 MHz / QPSK - RB Size 25

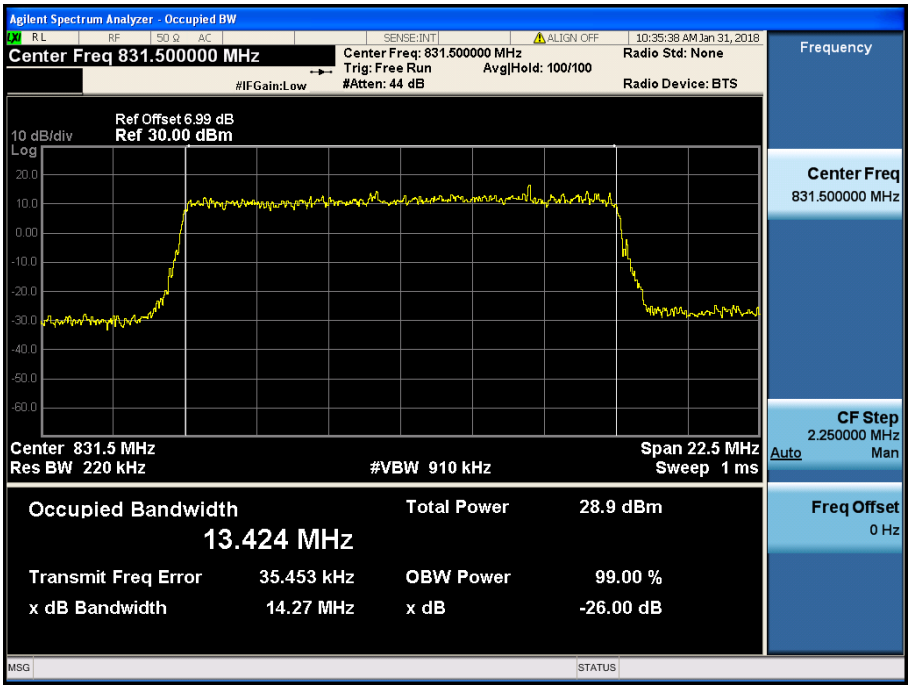


LTE Band 13 / 5 MHz / 16QAM - RB Size 25

8.1.4 LTE Band 26

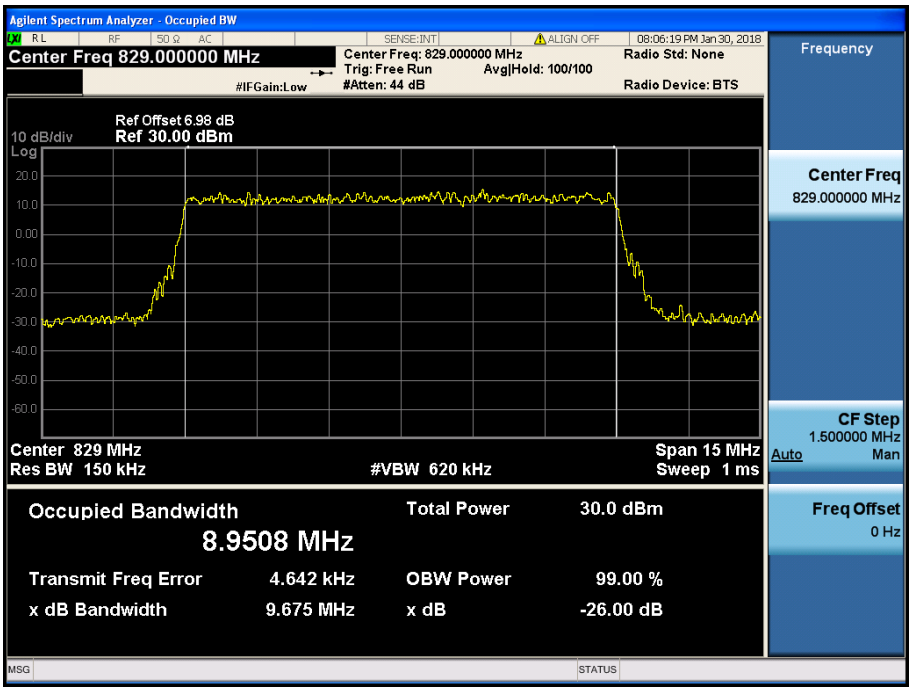


LTE Band 26 / 15 MHz / QPSK - RB Size 75

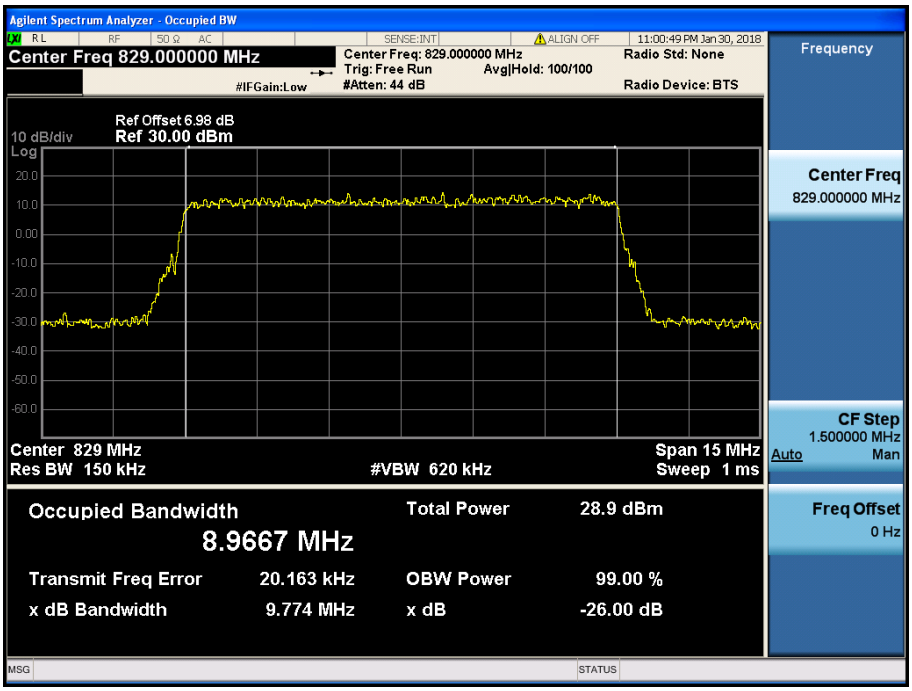


LTE Band 26 / 15 MHz / 16QAM - RB Size 75

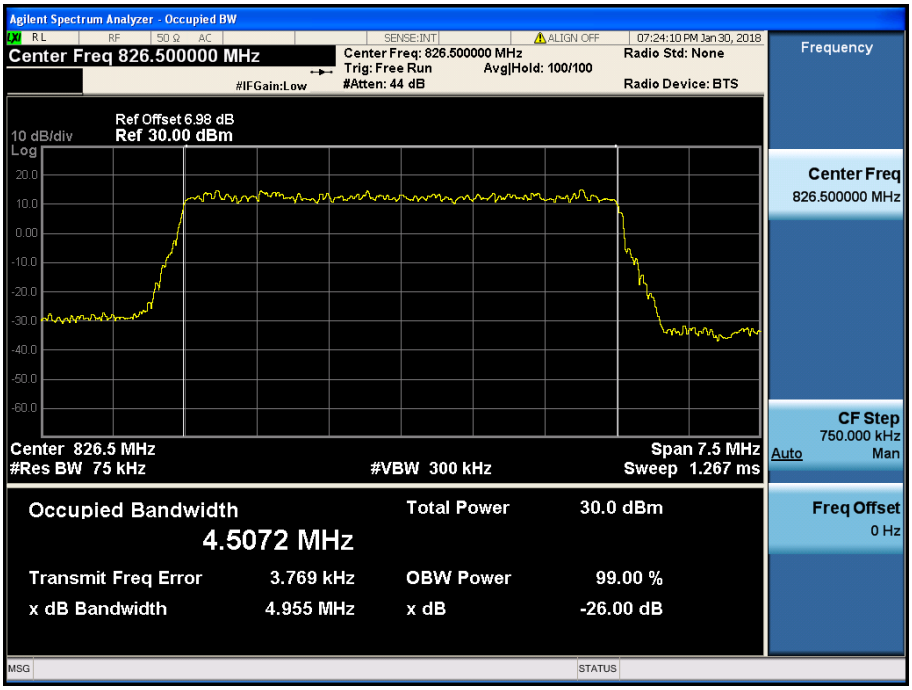
8.1.5 LTE Band 5, 26



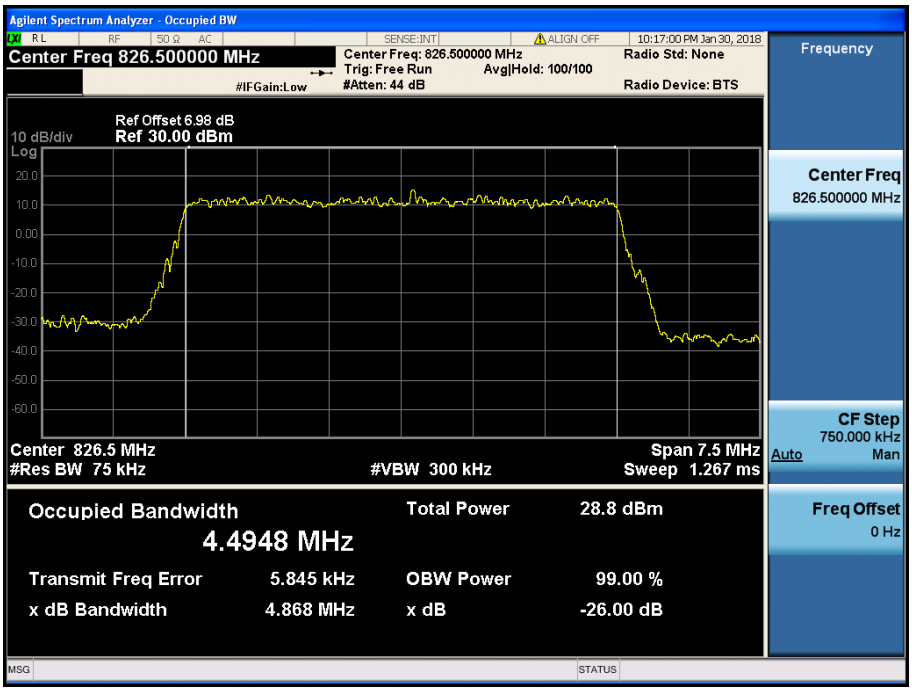
LTE Band 5, 26 / 10 MHz / QPSK - RB Size 50



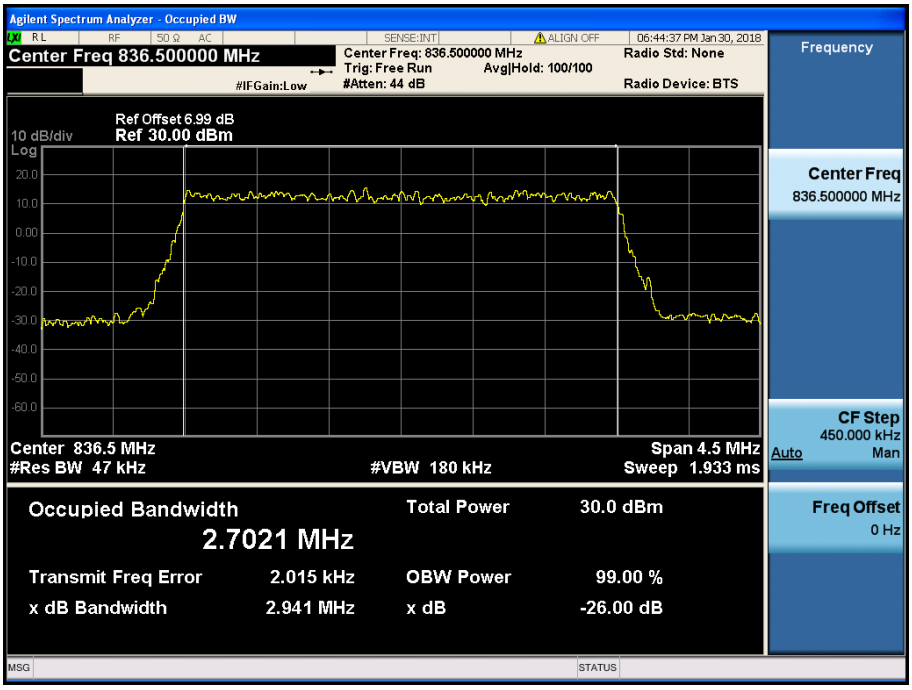
LTE Band 5, 26 / 10 MHz / 16QAM - RB Size 50



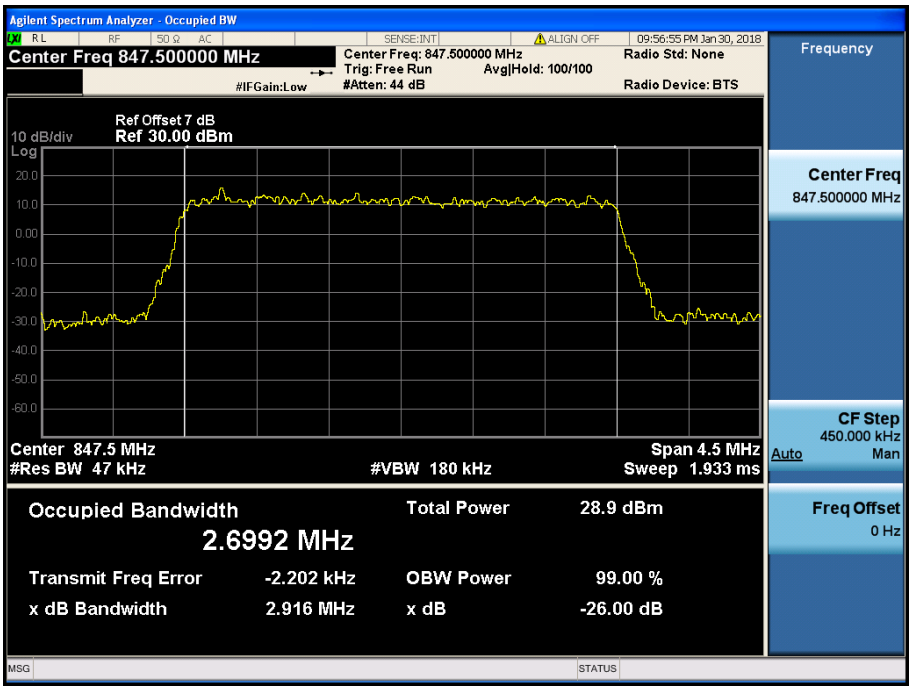
LTE Band 5, 26 / 5 MHz / QPSK - RB Size 25



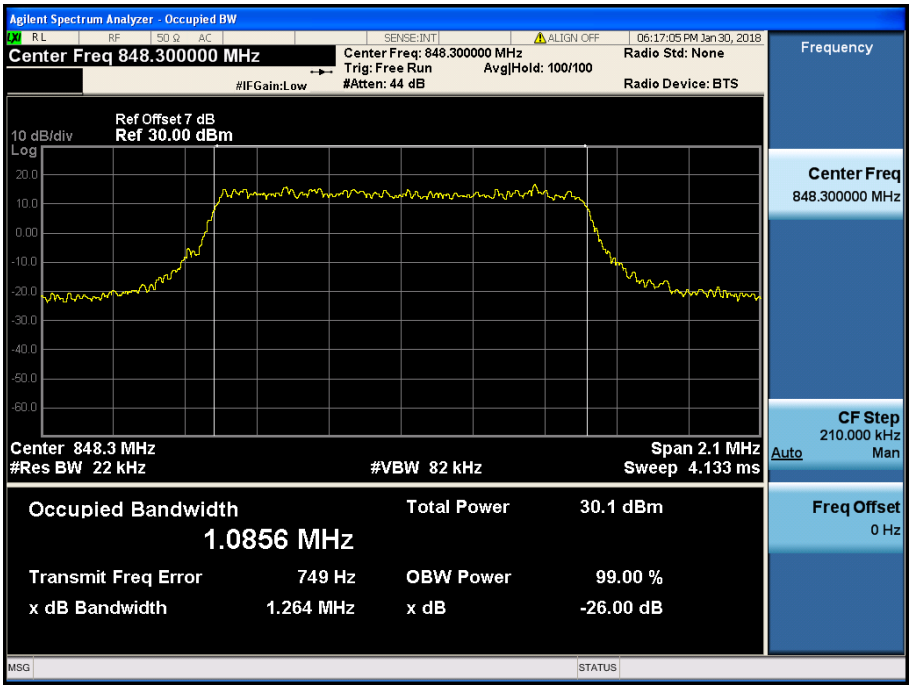
LTE Band 5, 26 / 5 MHz / 16QAM - RB Size 25



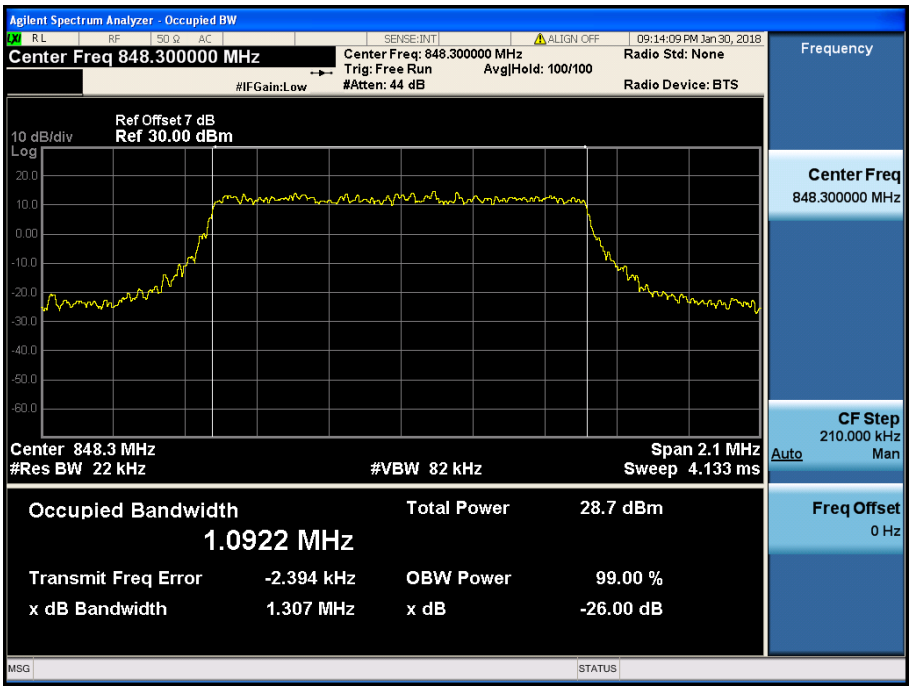
LTE Band 5, 26 / 3 MHz / QPSK - RB Size 15



LTE Band 5, 26 / 3 MHz / 16QAM - RB Size 15

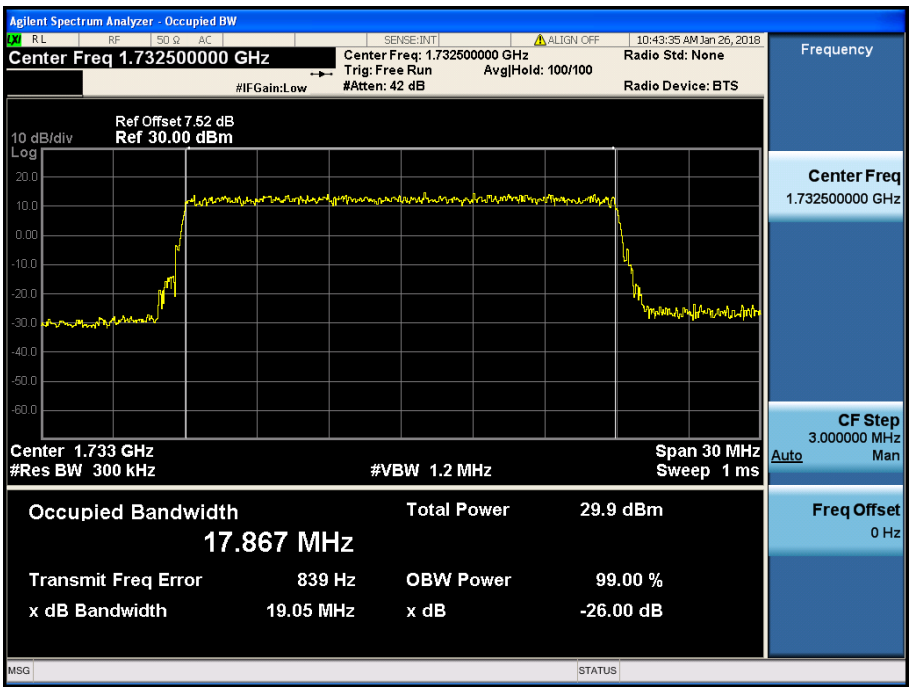


LTE Band 5, 26 / 1.4 MHz / QPSK - RB Size 6

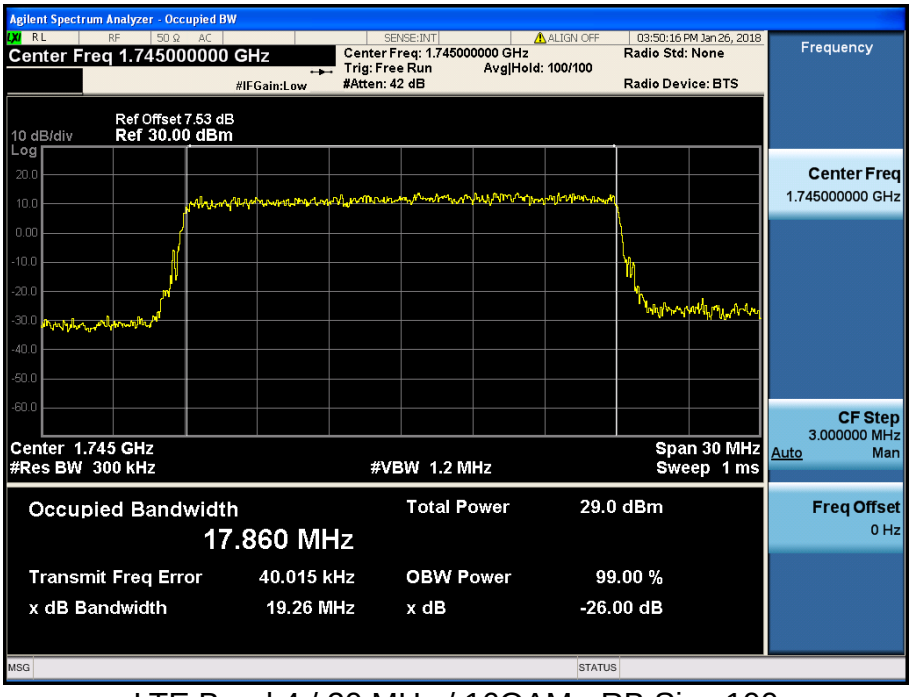


LTE Band 5, 26 / 1.4 MHz / 16QAM - RB Size 6

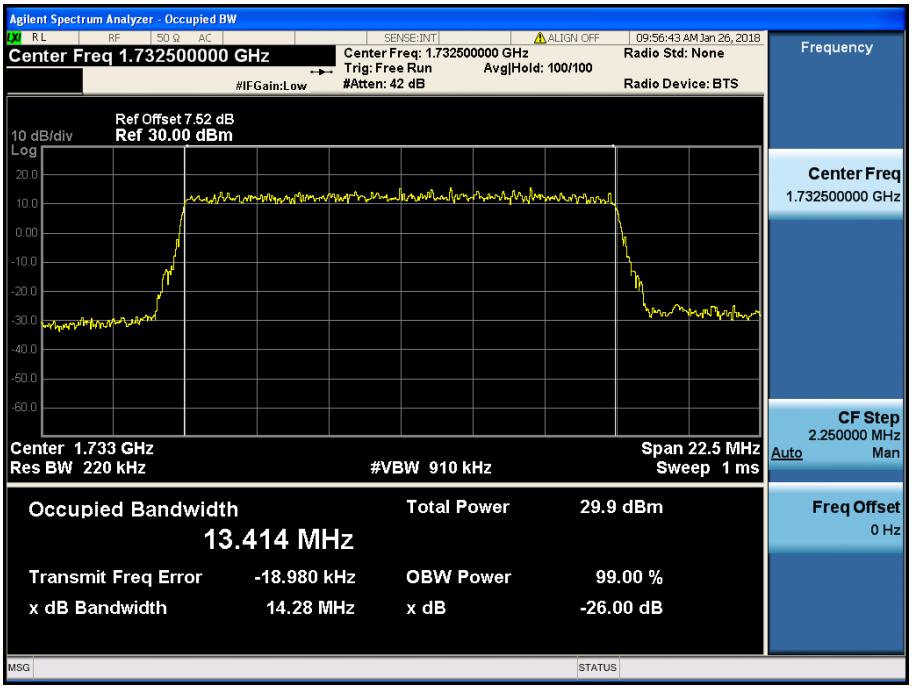
8.1.6 LTE Band 4



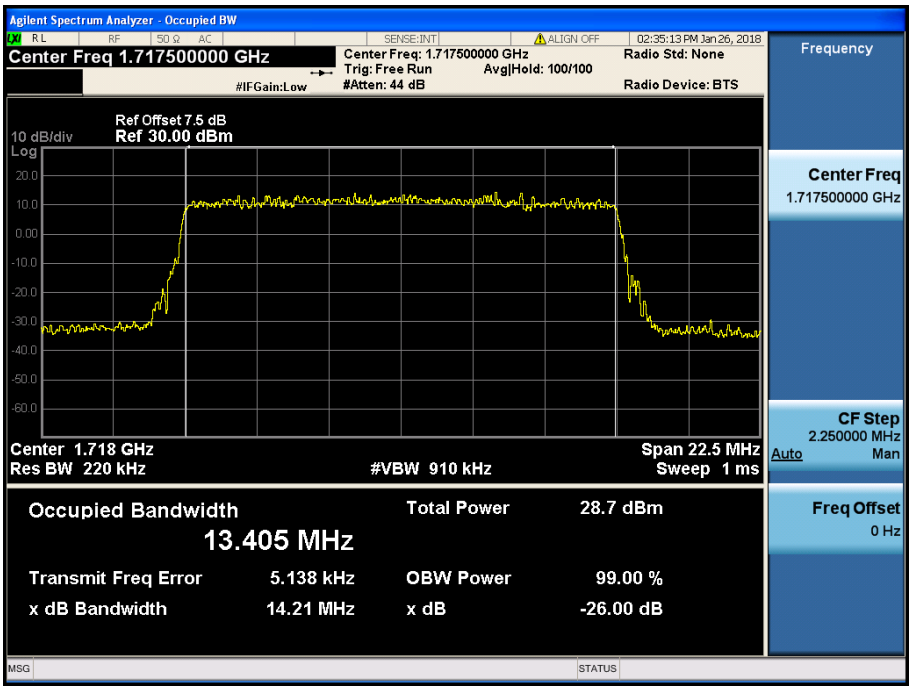
LTE Band 4 / 20 MHz / QPSK - RB Size 100



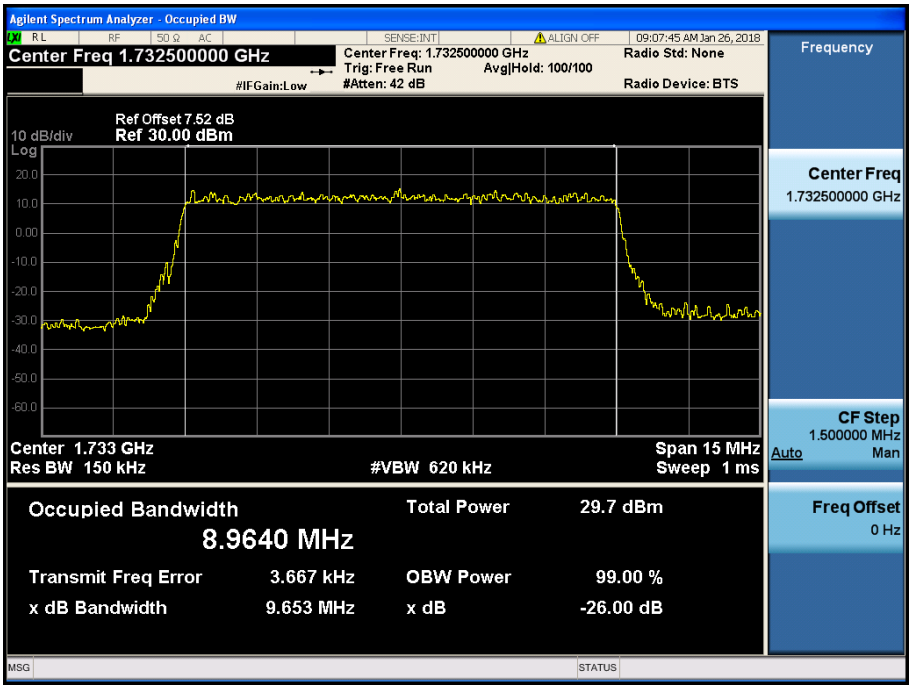
LTE Band 4 / 20 MHz / 16QAM - RB Size 100



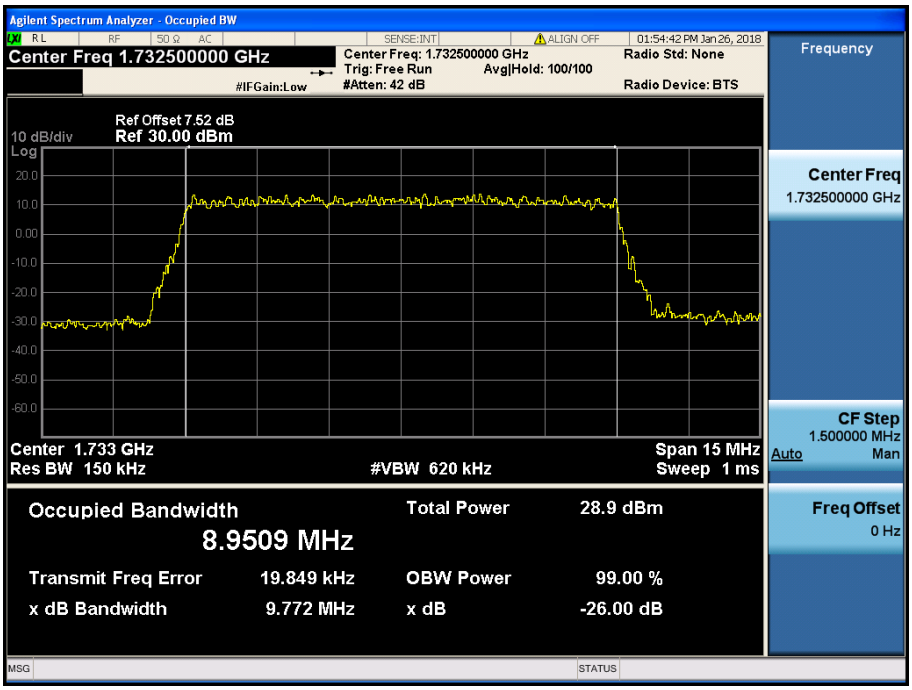
LTE Band 4 / 15 MHz / QPSK - RB Size 75



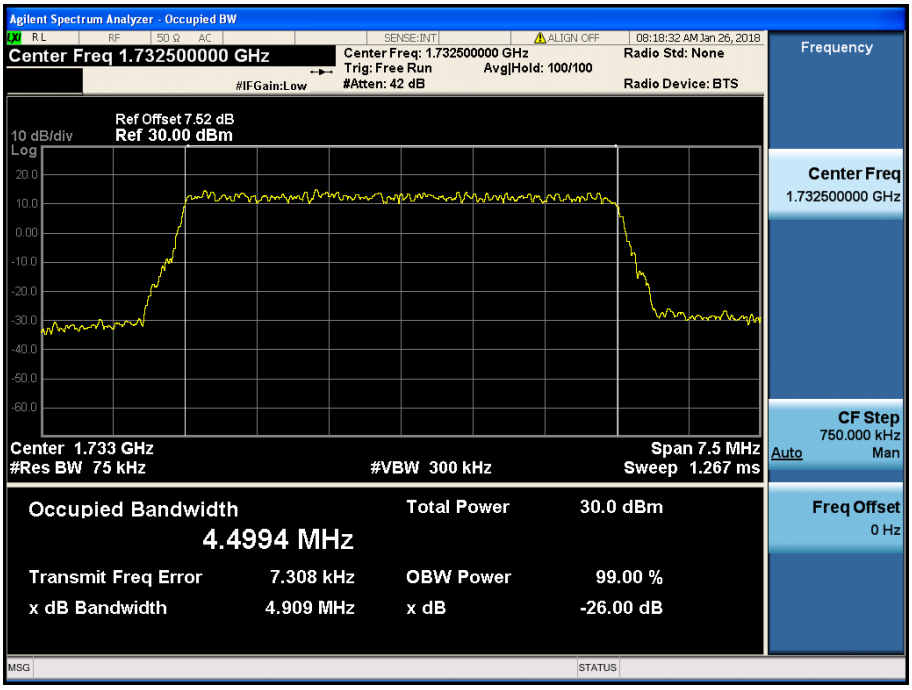
LTE Band 4 / 15 MHz / 16QAM - RB Size 75



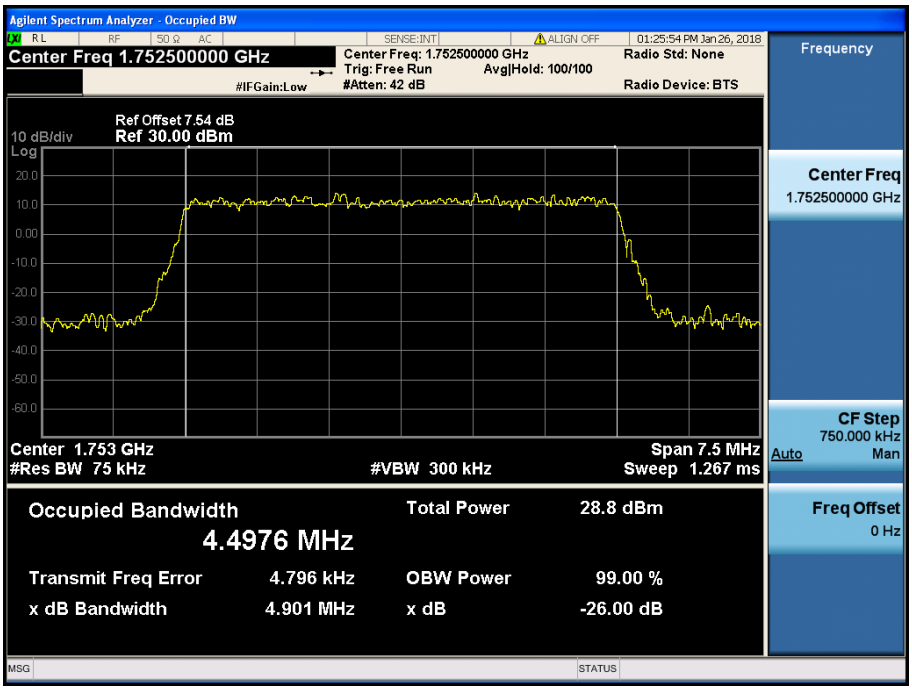
LTE Band 4 / 10 MHz / QPSK - RB Size 50



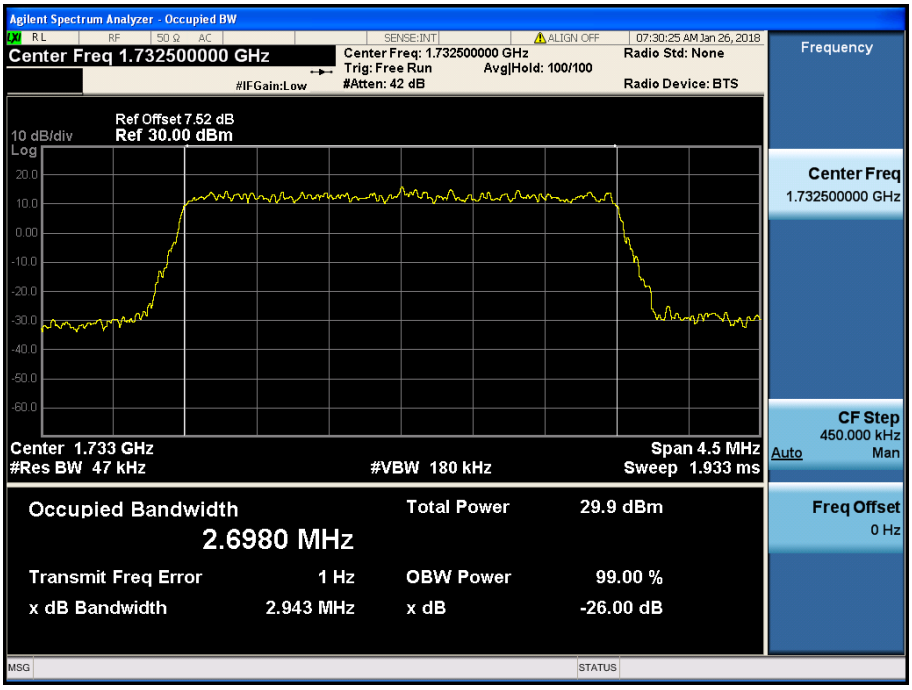
LTE Band 4 / 10 MHz / 16QAM - RB Size 50



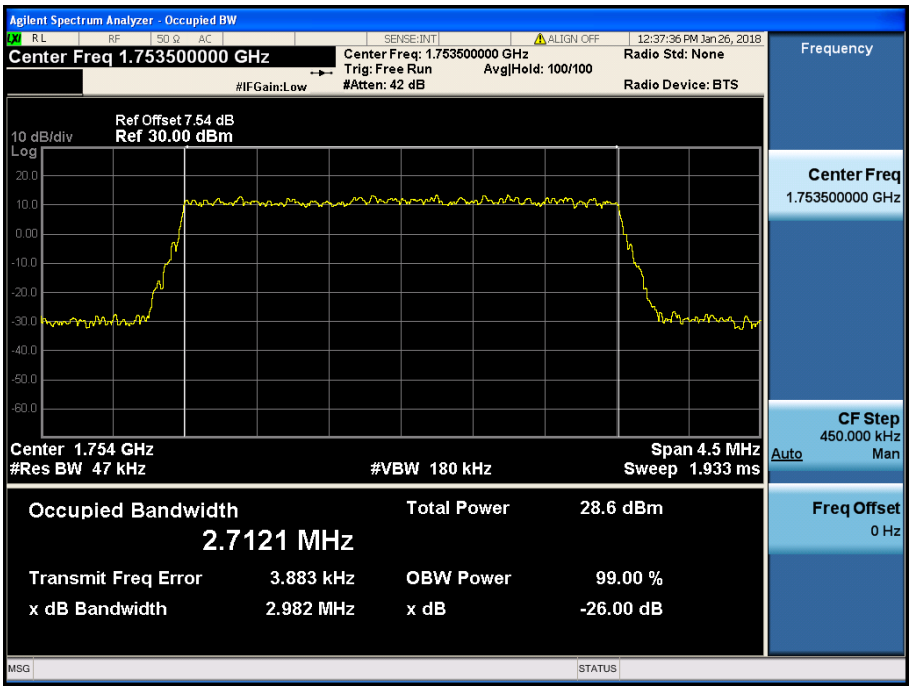
LTE Band 4 / 5 MHz / QPSK - RB Size 25



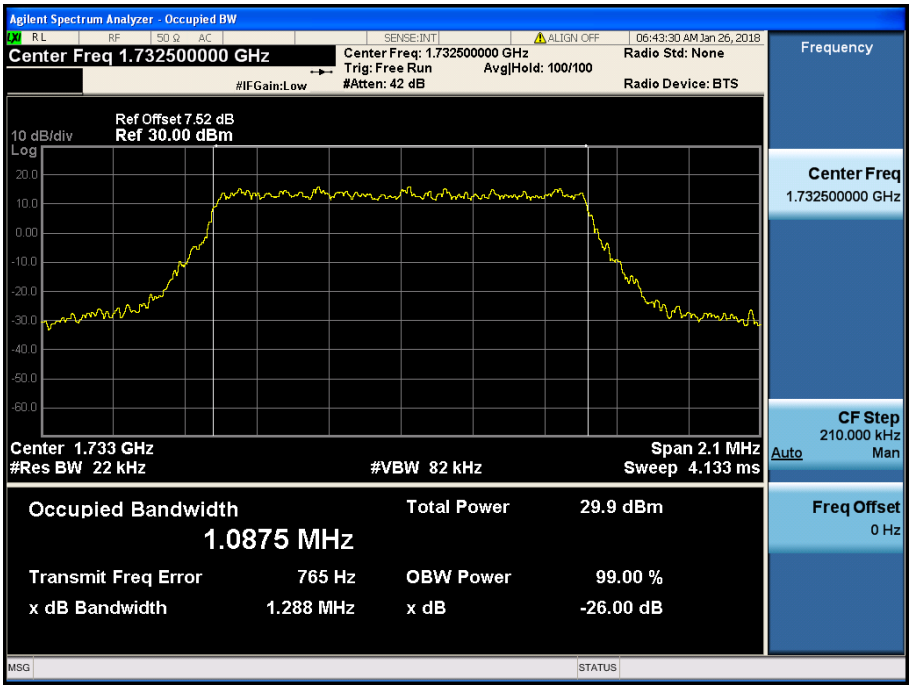
LTE Band 4 / 5 MHz / 16QAM - RB Size 25



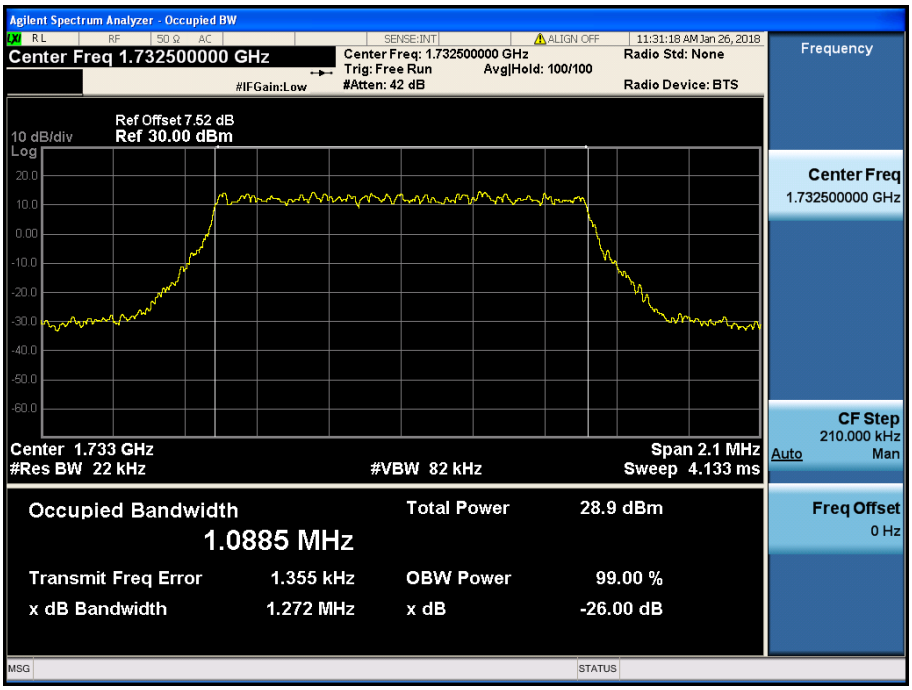
LTE Band 4 / 3 MHz / QPSK - RB Size 15



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

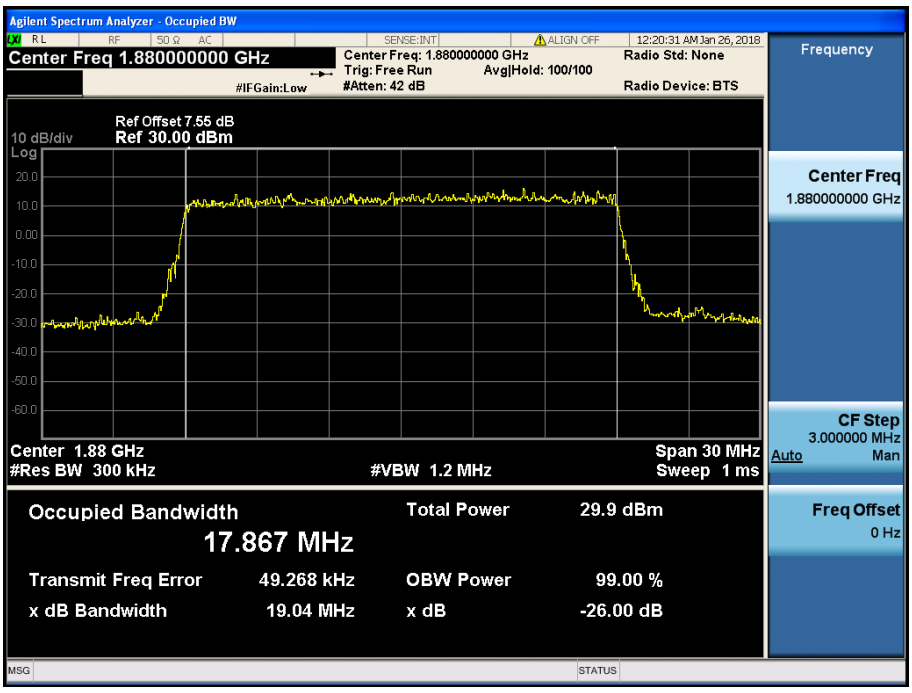


LTE Band 4 / 1.4 MHz / QPSK - RB Size 6

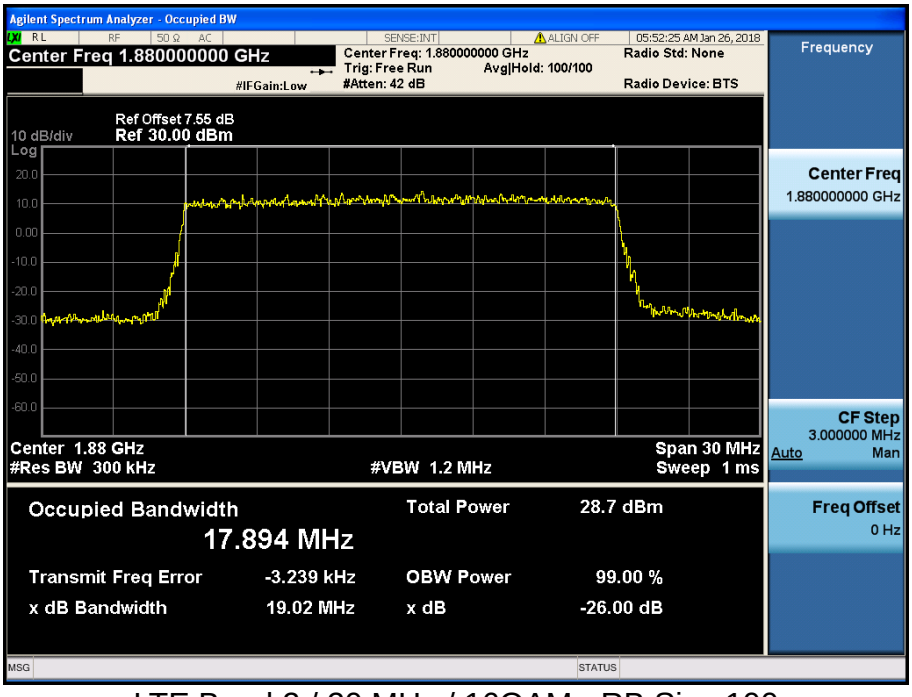


LTE Band 4 / 1.4 MHz / 16QAM - RB Size 6

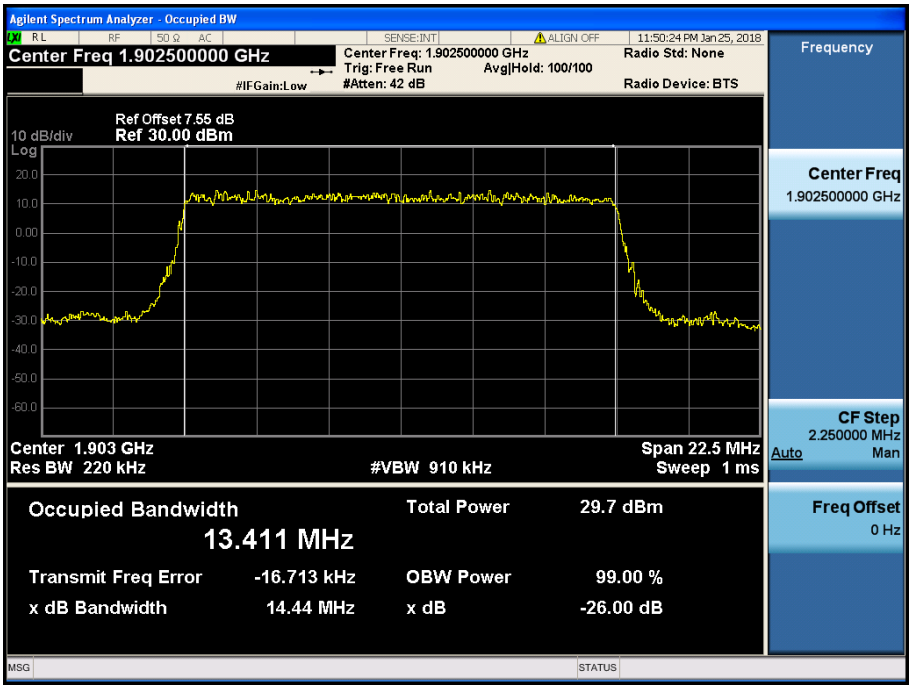
8.1.7 LTE Band 2



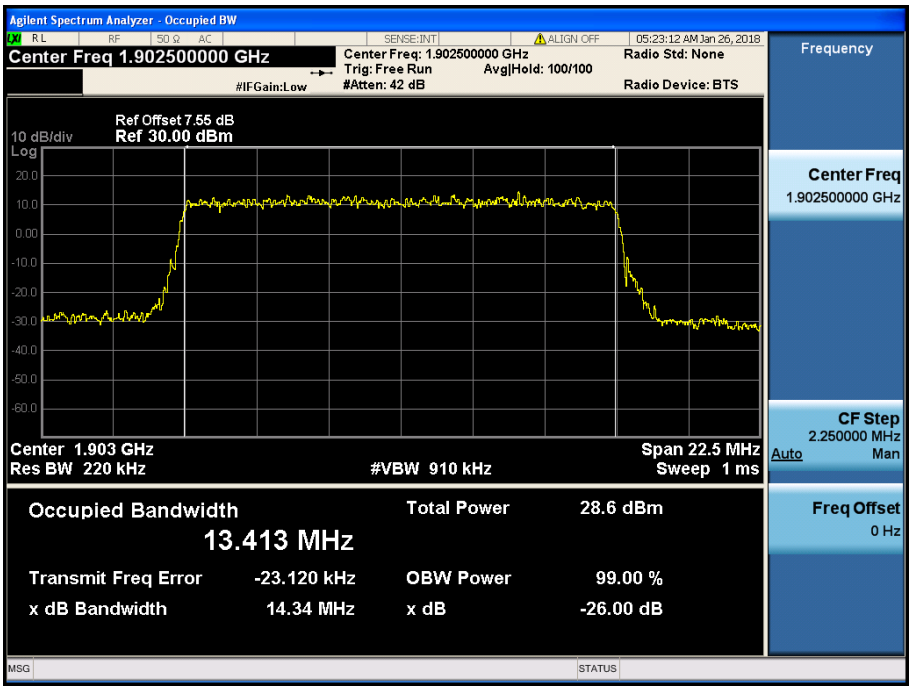
LTE Band 2 / 20 MHz / QPSK - RB Size 100



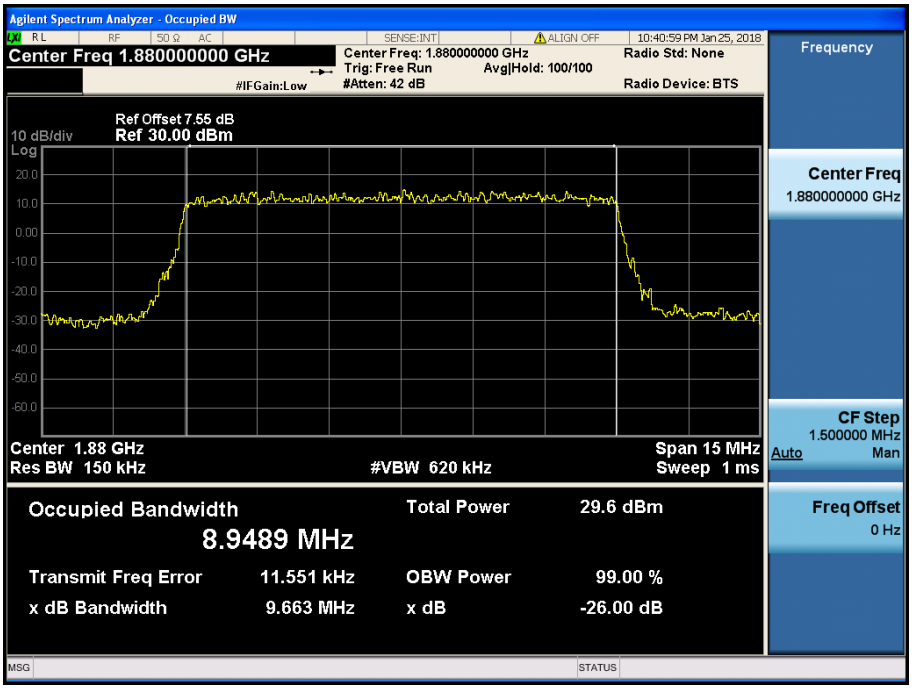
LTE Band 2 / 20 MHz / 16QAM - RB Size 100



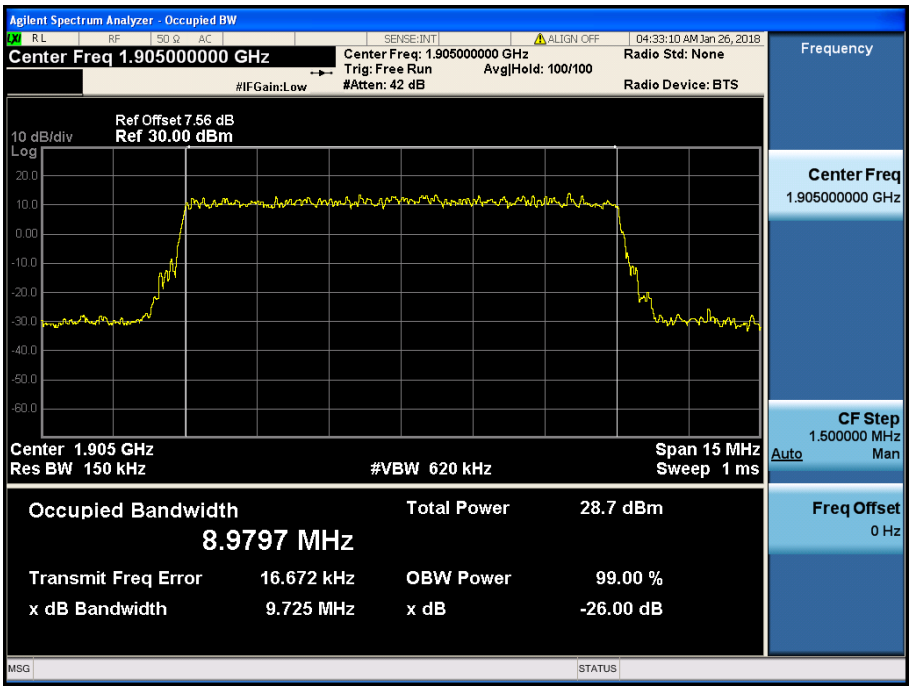
LTE Band 2 / 15 MHz / QPSK - RB Size 75



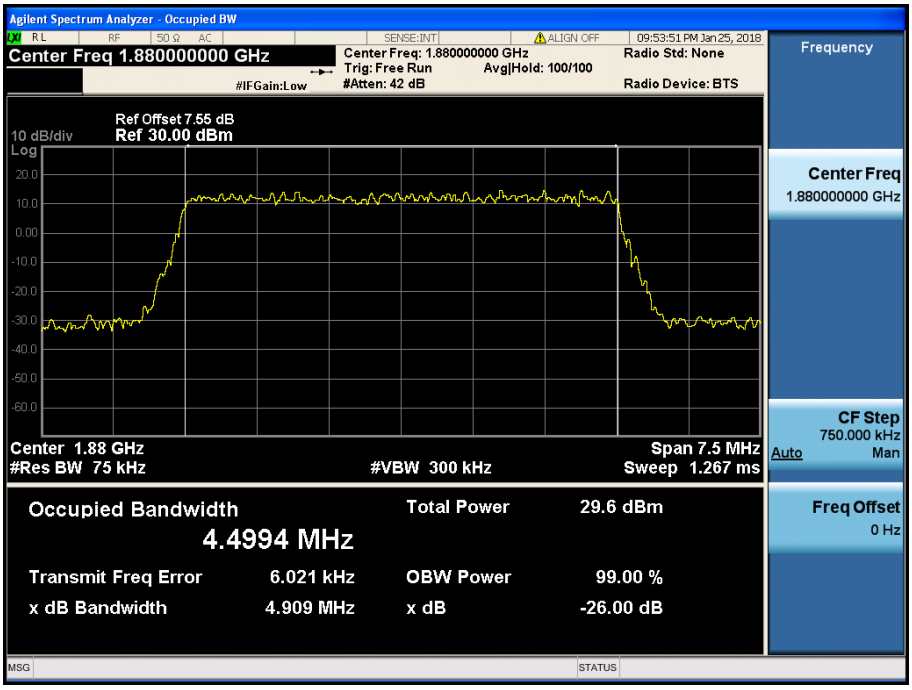
LTE Band 2 / 15 MHz / 16QAM - RB Size 75



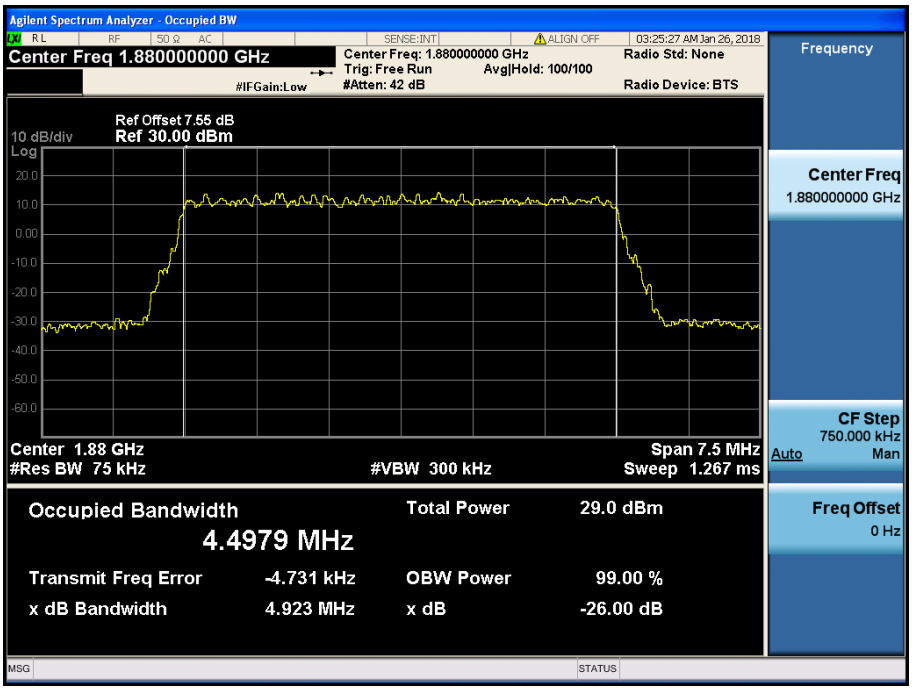
LTE Band 2 / 10 MHz / QPSK - RB Size 50



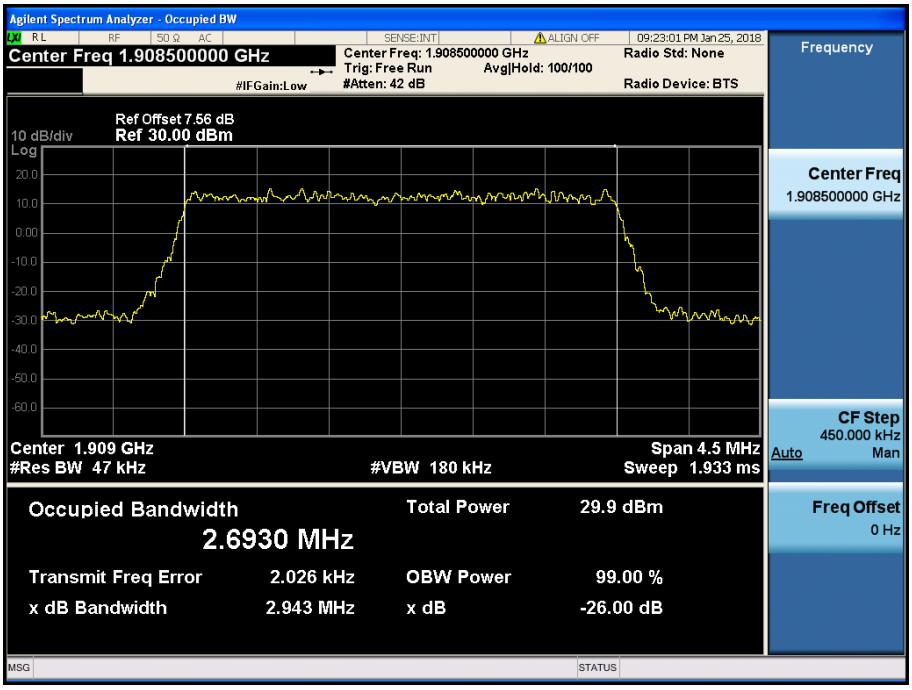
LTE Band 2 / 10 MHz / 16QAM - RB Size 50



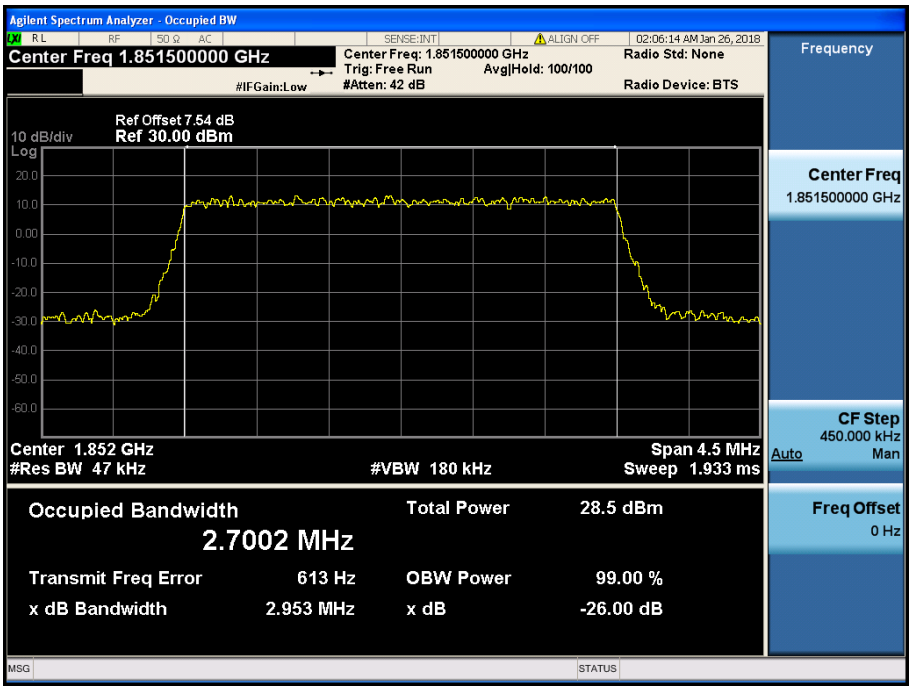
LTE Band 2 / 5 MHz / QPSK - RB Size 25



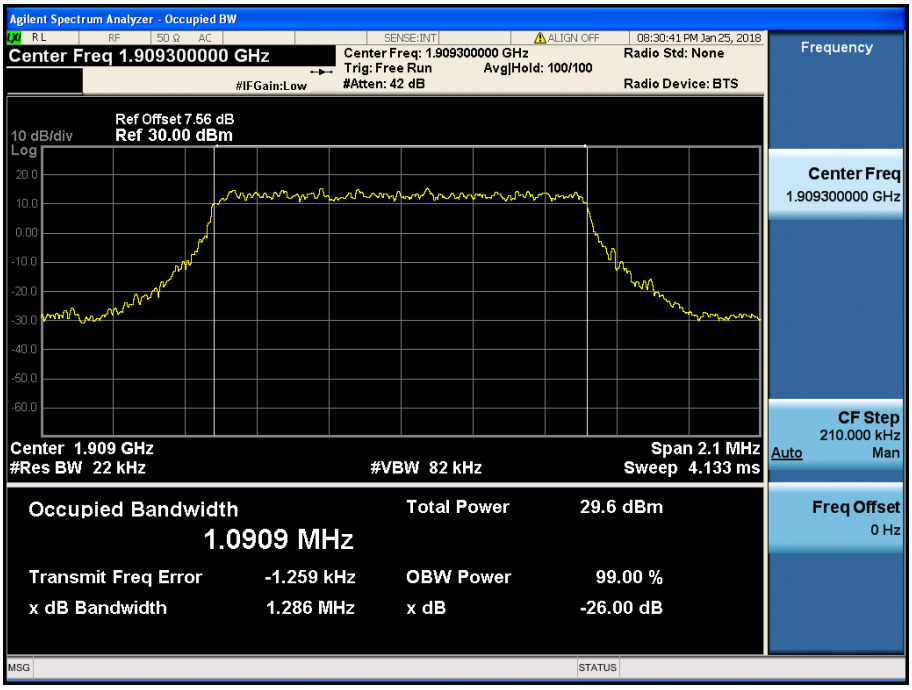
LTE Band 2 / 5 MHz / 16QAM - RB Size 25



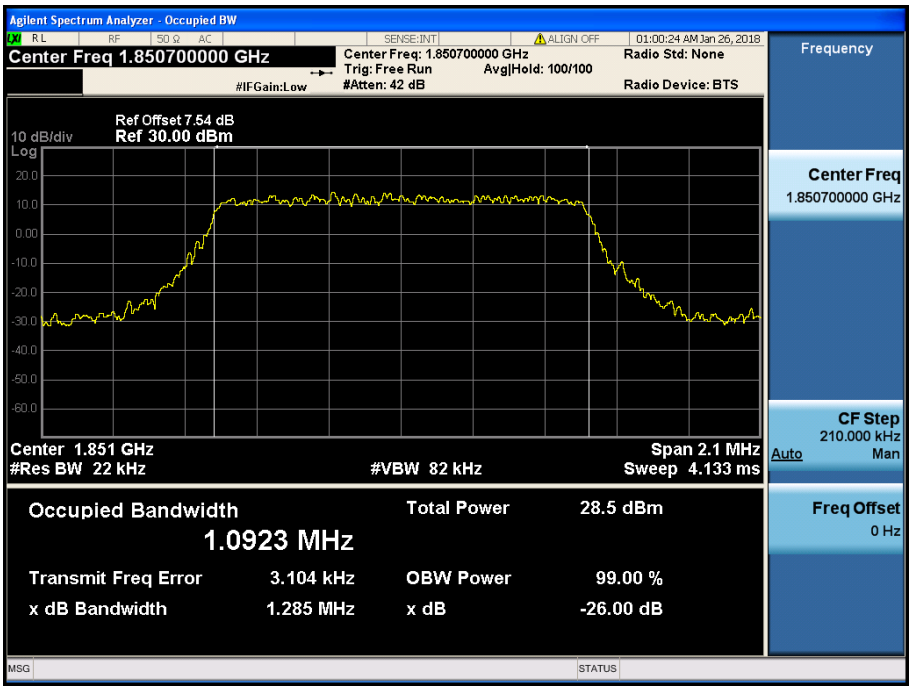
LTE Band 2 / 3 MHz / QPSK - RB Size 15



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



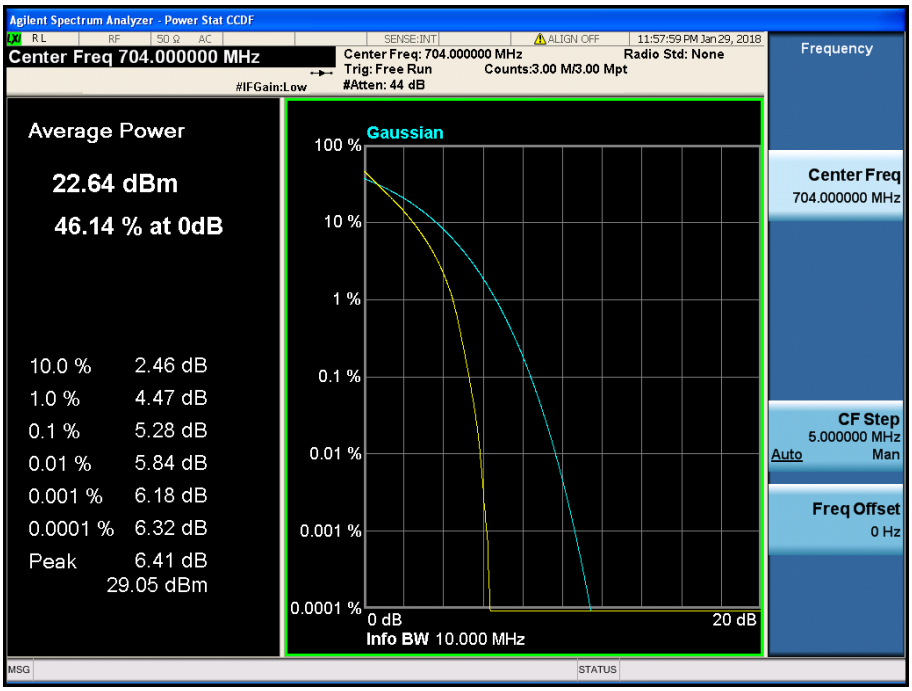
LTE Band 2 / 1.4 MHz / QPSK - RB Size 6



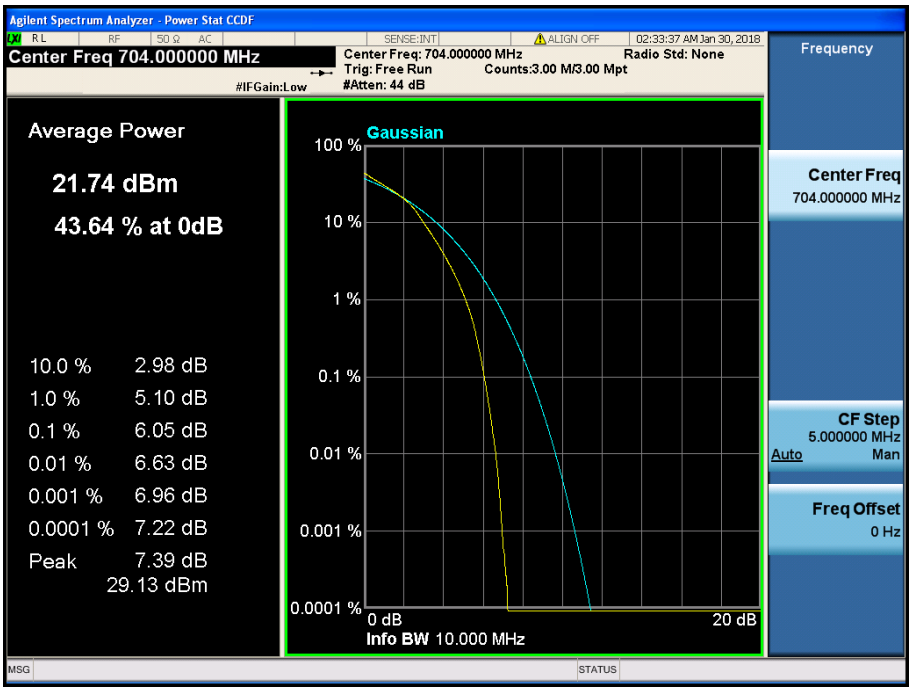
LTE Band 2 / 1.4 MHz / 16QAM - RB Size 6

8.2 PEAK TO AVERAGE RATIO

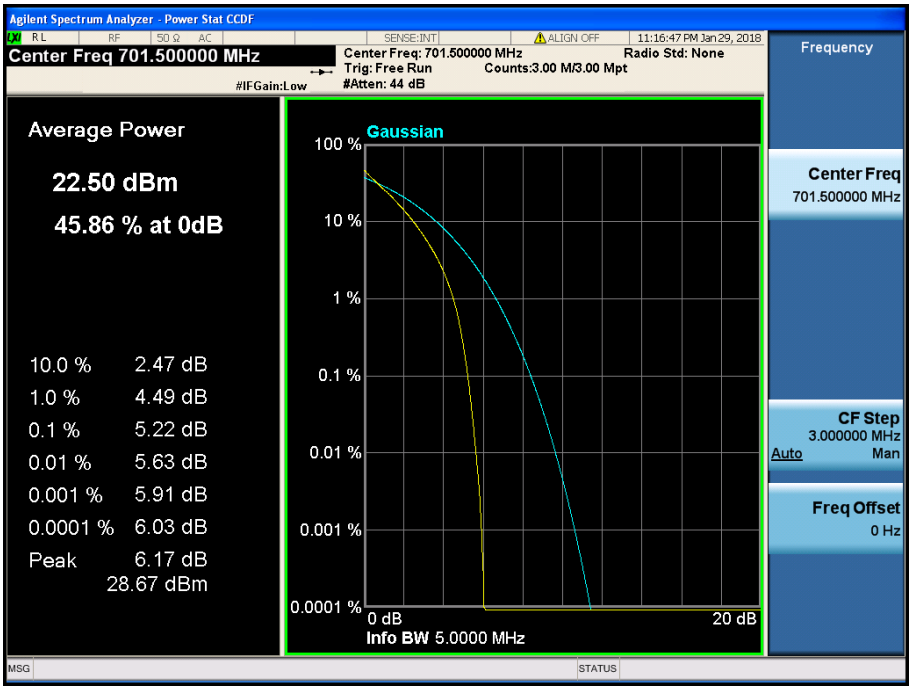
8.2.1 LTE Band 12, 17



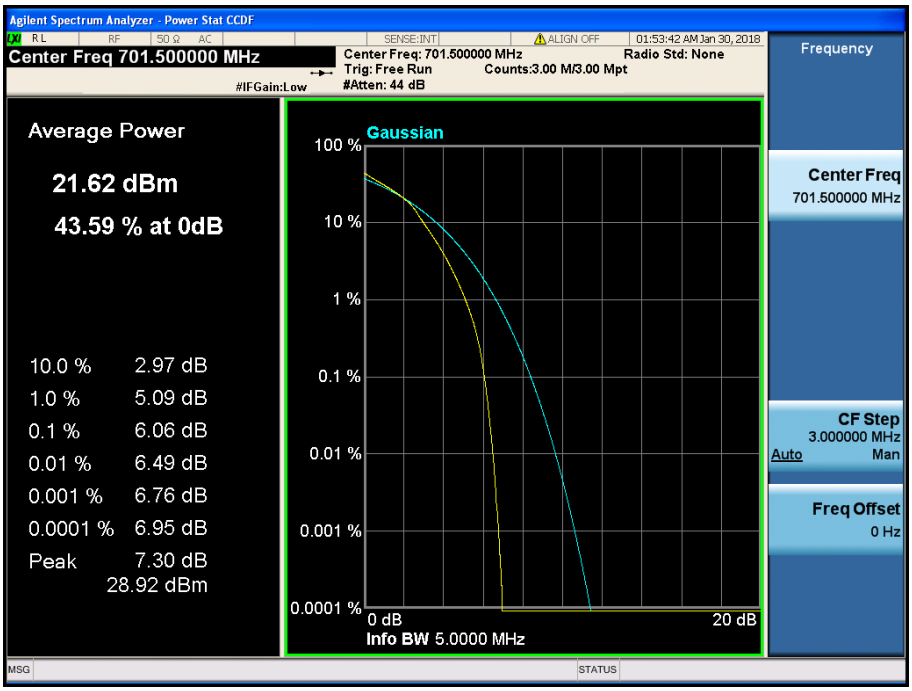
LTE Band 12, 17 / 10 MHz / QPSK - RB Size 50



LTE Band 12, 17 / 10 MHz / 16QAM - RB Size 50

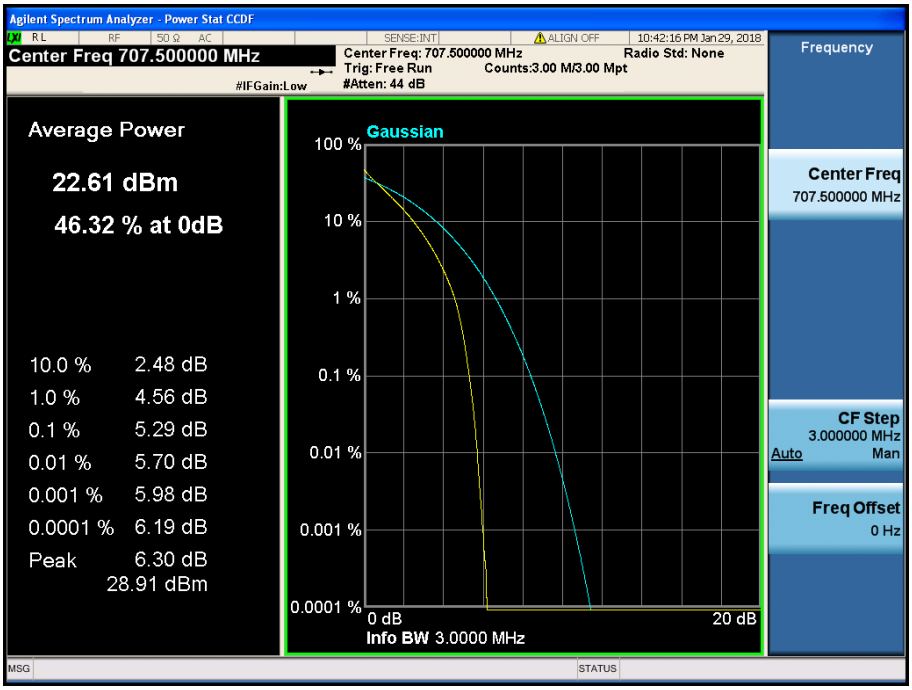


LTE Band 12, 17 / 5 MHz / QPSK - RB Size 25

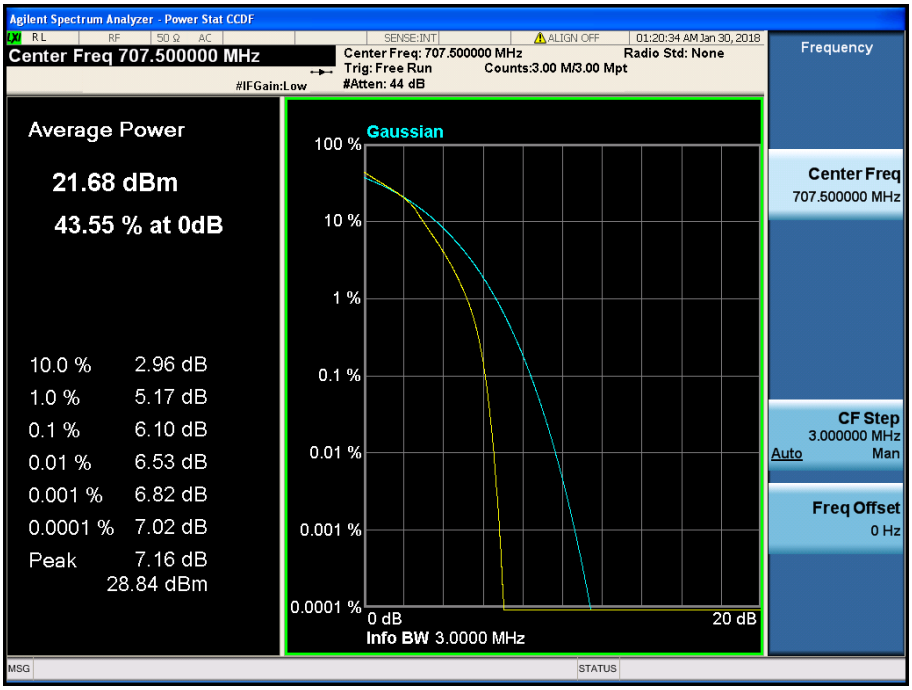


LTE Band 12, 17 / 5 MHz / 16QAM - RB Size 25

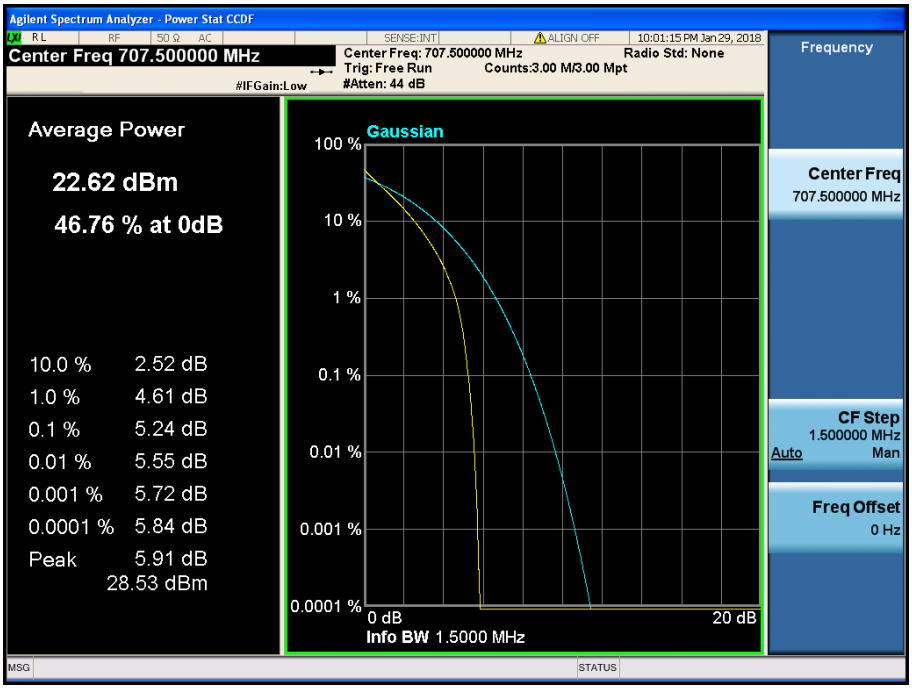
8.2.2 LTE Band 12



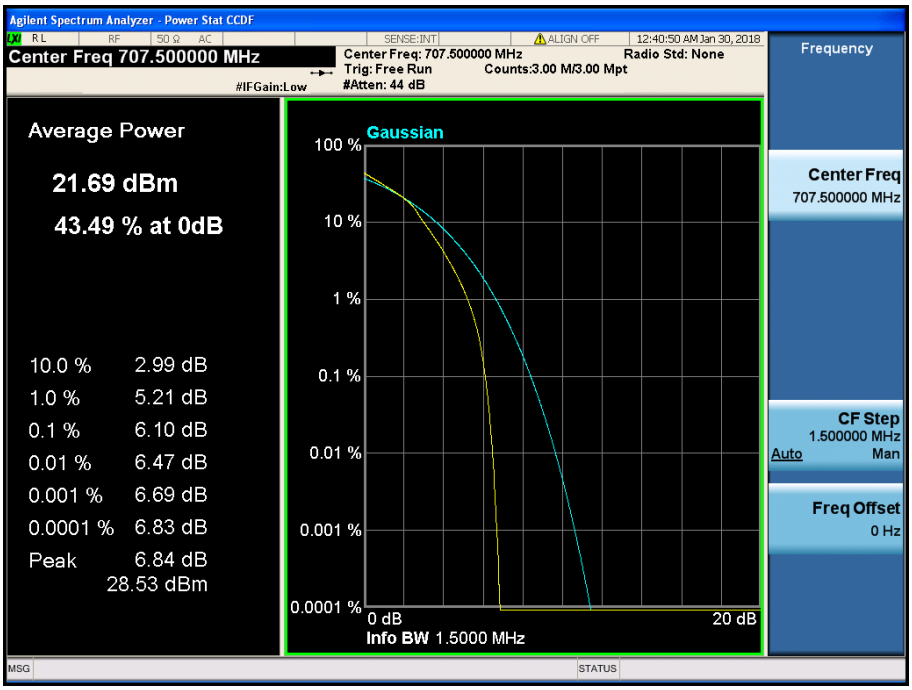
LTE Band 12 / 3 MHz / QPSK - RB Size 15



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

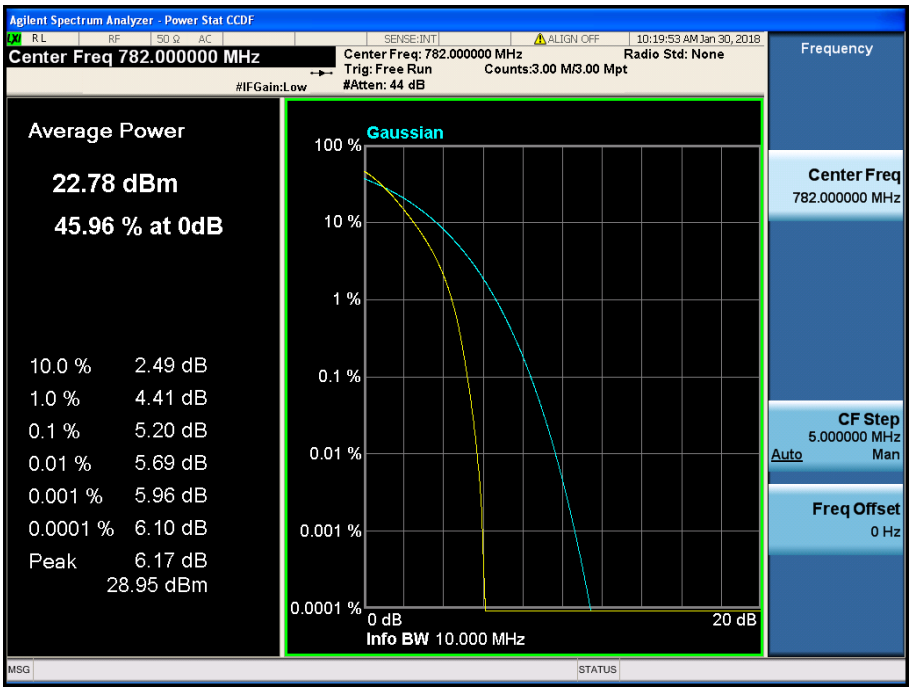


LTE Band 12 / 1.4 MHz / QPSK - RB Size 6

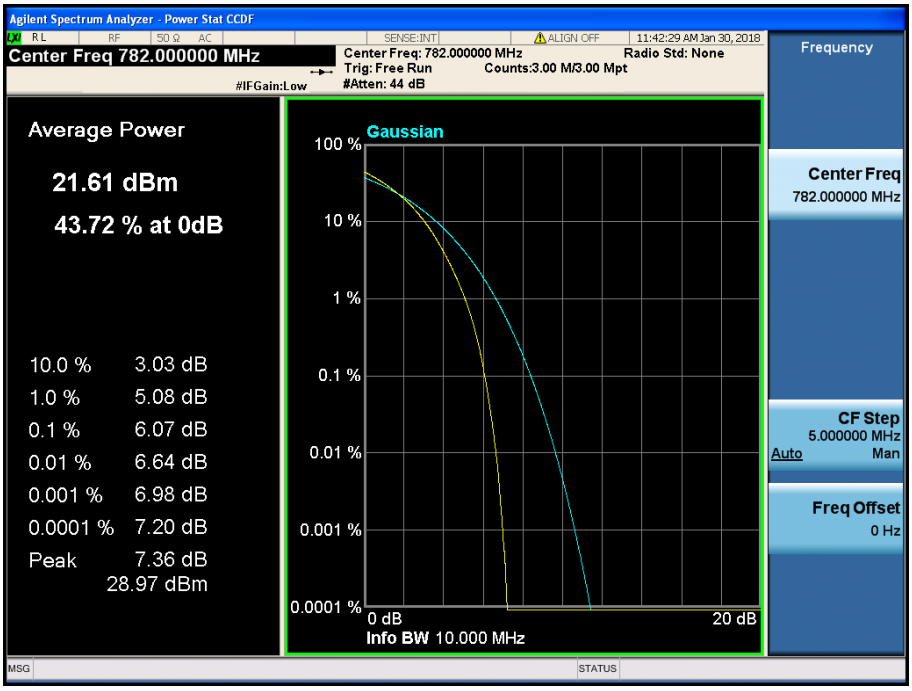


LTE Band 12 / 1.4 MHz / 16QAM - RB Size 6

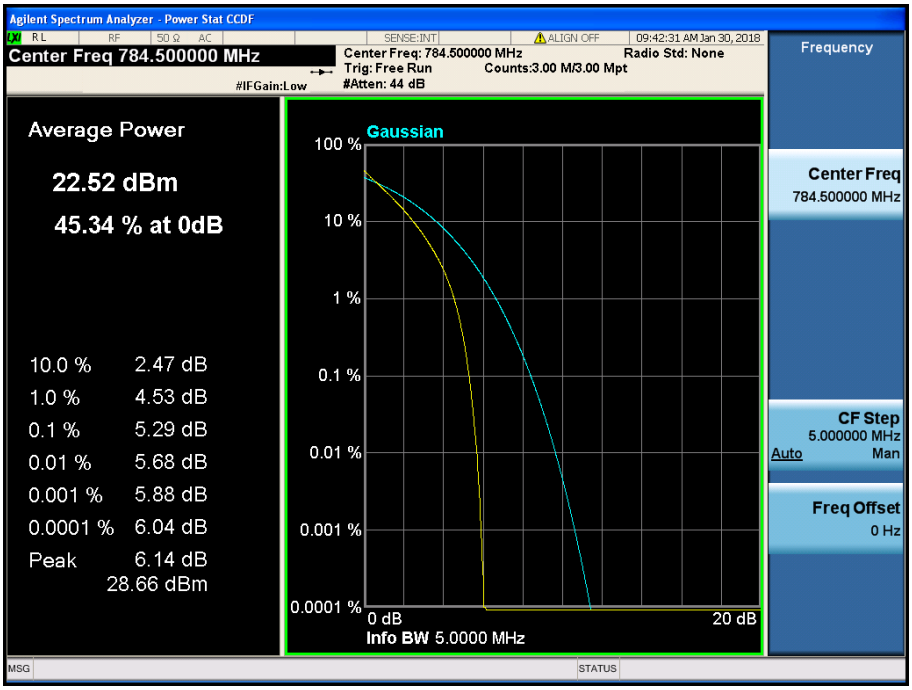
8.2.3 LTE Band 13



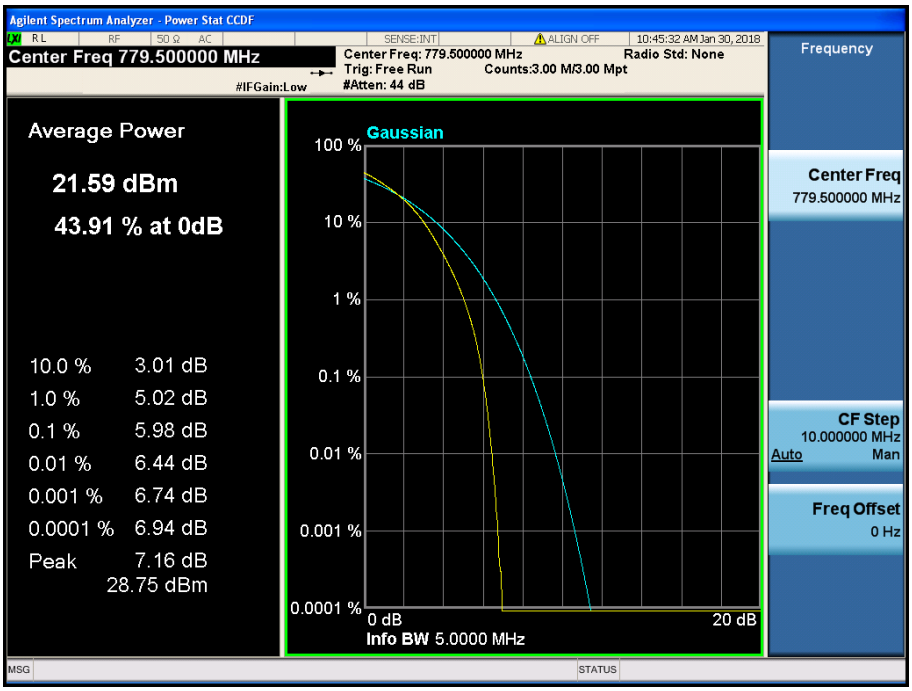
LTE Band 13 / 10 MHz / QPSK - RB Size 50



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

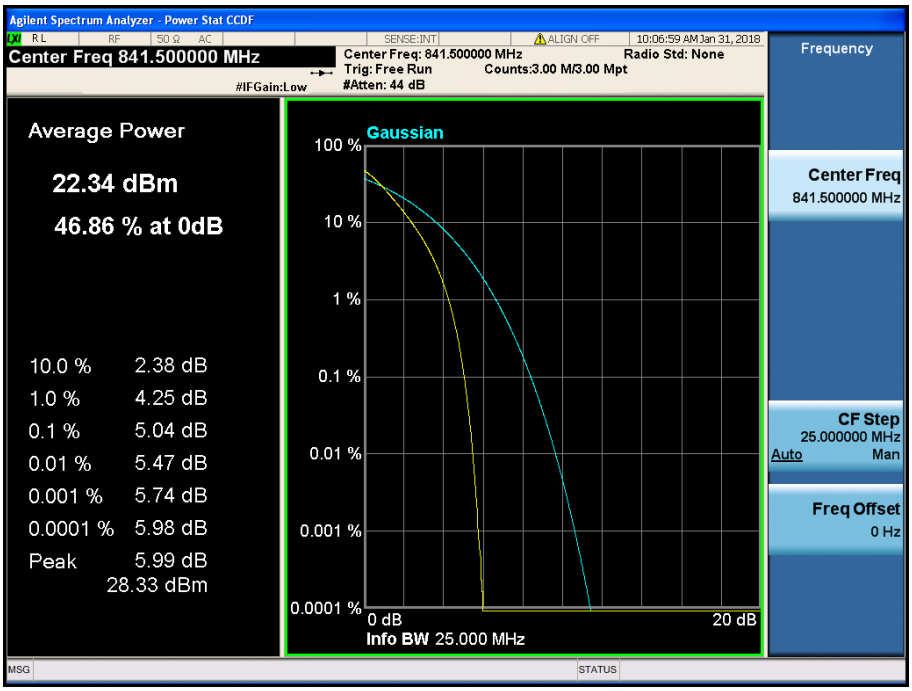


LTE Band 13 / 5 MHz / QPSK - RB Size 25

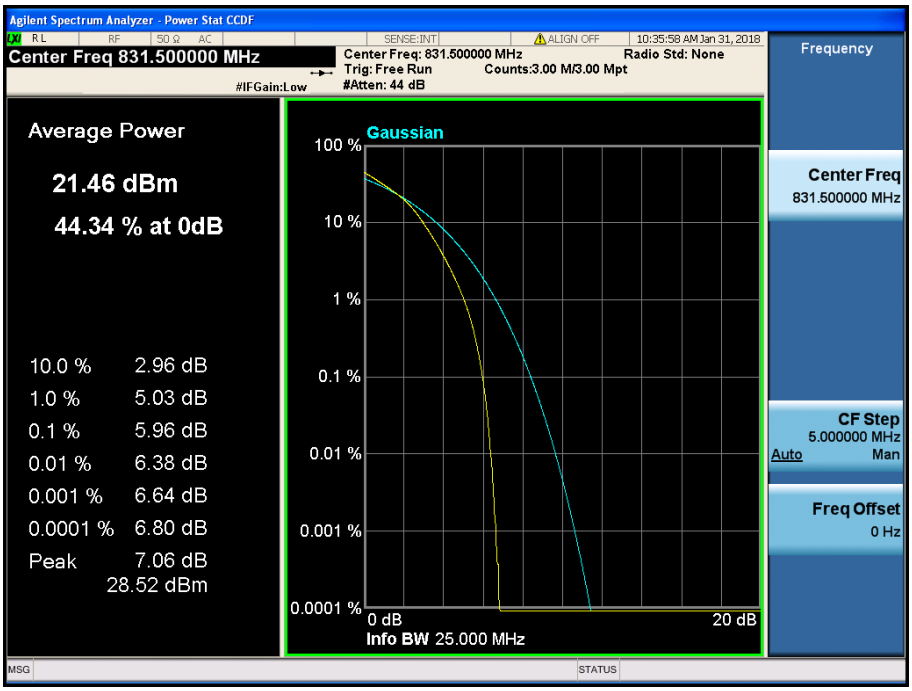


LTE Band 13 / 5 MHz / 16QAM - RB Size 25

8.2.4 LTE Band 26

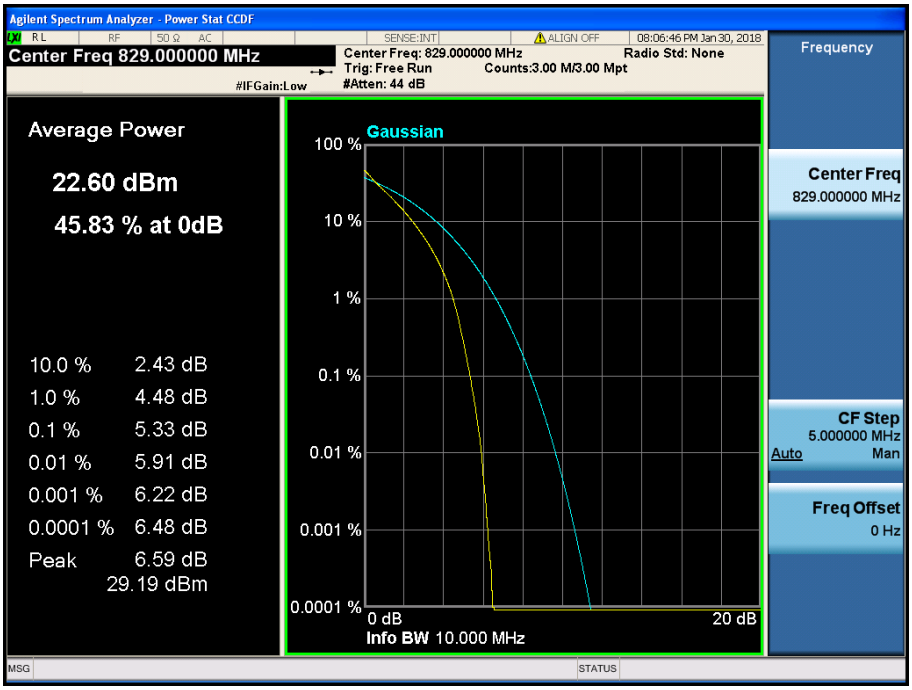


LTE Band 26 / 15 MHz / QPSK - RB Size 75

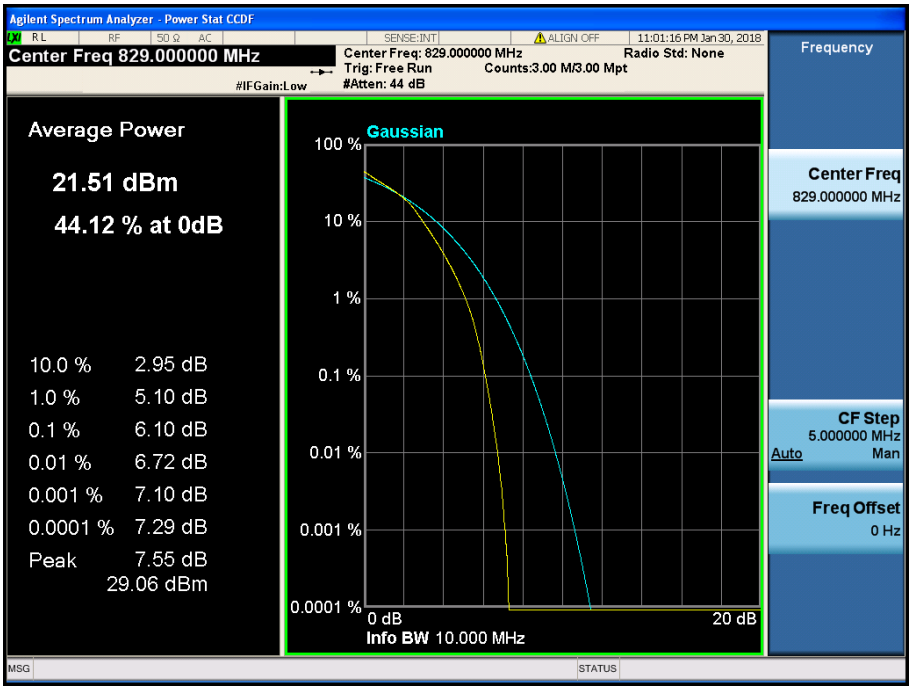


LTE Band 26 / 15 MHz / 16QAM - RB Size 75

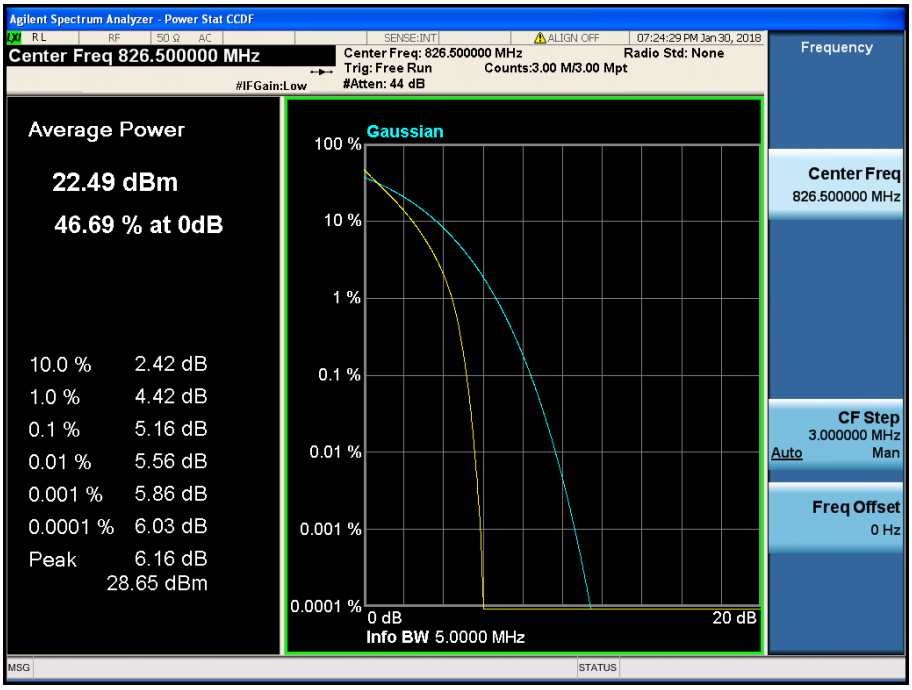
8.2.5 LTE Band 5, 26



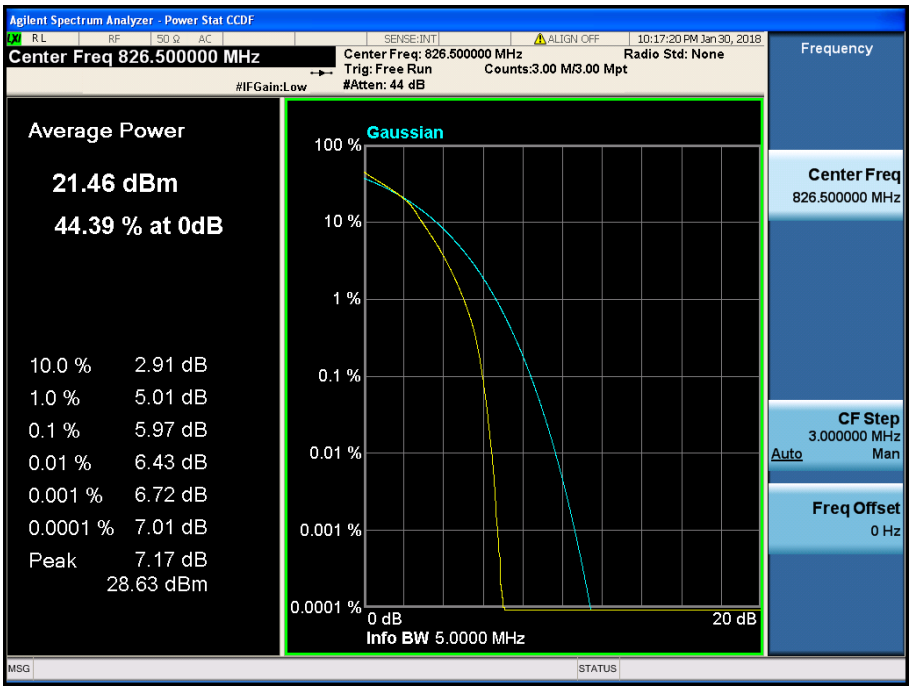
LTE Band 5, 26 / 10 MHz / QPSK - RB Size 50



LTE Band 5, 26 / 10 MHz / 16QAM - RB Size 50



LTE Band 5, 26 / 5 MHz / QPSK - RB Size 25



LTE Band 5, 26 / 5 MHz / 16QAM - RB Size 25