TEST REPORT

DT&C Co., Ltd.
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Tel : 031-321-2664, Fax : 031-321-1664

1. Report No : DRTFCC1811-0267(1)
2. Customer
   - Name : LG Electronics USA, Inc.
   - Address : 1000 Sylvan Ave. Englewood Cliffs, New Jersey, United States 07632
3. Use of Report : FCC Original Grant
4. Product Name / Model Name : Mobile Phone / LM-V405EBW
   FCC ID : ZNFV405EBW
5. Test Method Used : KDB971168 D01v03, ANSI/TIA-603-E-2016, ANSI C63.26-2015
   Test Specification : §2, §22, §24(E), §27
6. Date of Test : 2018.10.30 ~ 2018.11.22
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)

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2018 . 12 . 03 .

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
DRTFCC1811-0267	Nov. 27, 2018	Initial issue
DRTFCC1811-0267(1)	Dec. 03, 2018	Updated the section 4 and 6.B

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1. GENERAL INFORMATION

Applicant Name	:	LG Electronics USA, Inc.
Address	:	1000 Sylvan Ave. Englewood Cliffs, New Jersey, United States 07632
FCC ID	:	ZNFV405EBW
FCC Classification	:	PCS Licensed Transmitter held to ear (PCE)
EUT Type	:	Mobile Phone
Model Name	:	LM-V405EBW
Add Model Name	:	LMV405EBW, V405EBW, LM-V405EAW, LMV405EAW, V405EAW, LM-V405EB, LMV405EB, V405EB, LM-V405EA, LMV405EA, V405EA
Supplying power	:	DC 3.85 V
Antenna Information	:	PIFA Antenna

Mode	TX Frequency (MHz)	Emission Designator	Modulation	ERP	
				Max power (dBm)	Max power (W)
LTE Band 12,17	704 ~ 711	8M94G7D	QPSK	20.40	0.110
LTE Band 12,17	704 ~ 711	8M96W7D	16QAM	19.31	0.085
LTE Band 12,17	704 ~ 711	8M96W7D	64QAM	19.14	0.082
LTE Band 12,17	701.5 ~ 713.5	4M50G7D	QPSK	19.98	0.100
LTE Band 12,17	701.5 ~ 713.5	4M49W7D	16QAM	18.92	0.078
LTE Band 12,17	701.5 ~ 713.5	4M49W7D	64QAM	18.56	0.072
LTE Band 12	700.5 ~ 714.5	2M70G7D	QPSK	19.73	0.094
LTE Band 12	700.5 ~ 714.5	2M69W7D	16QAM	19.31	0.085
LTE Band 12	700.5 ~ 714.5	2M69W7D	64QAM	18.16	0.065
LTE Band 12	699.7 ~ 715.3	1M08G7D	QPSK	19.56	0.090
LTE Band 12	699.7 ~ 715.3	1M09W7D	16QAM	19.23	0.084
LTE Band 12	699.7 ~ 715.3	1M09W7D	64QAM	18.10	0.065
LTE Band 13	782 ~ 782	8M90G7D	QPSK	17.50	0.056
LTE Band 13	782 ~ 782	8M92W7D	16QAM	15.25	0.033
LTE Band 13	782 ~ 782	8M94W7D	64QAM	13.86	0.024
LTE Band 13	779.5 ~ 784.5	4M47G7D	QPSK	17.78	0.060
LTE Band 13	779.5 ~ 784.5	4M48W7D	16QAM	16.36	0.043
LTE Band 13	779.5 ~ 784.5	4M49W7D	64QAM	15.35	0.034
LTE Band 5	829 ~ 844	8M96G7D	QPSK	15.51	0.036
LTE Band 5	829 ~ 844	8M96W7D	16QAM	14.22	0.026
LTE Band 5	829 ~ 844	8M98W7D	64QAM	13.40	0.022
LTE Band 5	826.5 ~ 846.5	4M47G7D	QPSK	16.47	0.044
LTE Band 5	826.5 ~ 846.5	4M49W7D	16QAM	14.45	0.028
LTE Band 5	826.5 ~ 846.5	4M49W7D	64QAM	14.18	0.026
LTE Band 5	825.5 ~ 847.5	2M70G7D	QPSK	16.13	0.041
LTE Band 5	825.5 ~ 847.5	2M69W7D	16QAM	14.35	0.027
LTE Band 5	825.5 ~ 847.5	2M70W7D	64QAM	14.20	0.026
LTE Band 5	824.7 ~ 848.3	1M09G7D	QPSK	16.30	0.043
LTE Band 5	824.7 ~ 848.3	1M09W7D	16QAM	15.08	0.032
LTE Band 5	824.7 ~ 848.3	1M09W7D	64QAM	13.86	0.024

Mode	TX Frequency (MHz)	Emission Designator	Modulation	EIRP	
				Max power(dBm)	Max power(W)
LTE Band 4	1720 ~ 1745	17M9G7D	QPSK	19.43	0.088
LTE Band 4	1720 ~ 1745	17M9W7D	16QAM	19.03	0.080
LTE Band 4	1720 ~ 1745	17M9W7D	64QAM	18.94	0.078
LTE Band 4	1717.5 ~ 1747.5	13M4G7D	QPSK	19.75	0.094
LTE Band 4	1717.5 ~ 1747.5	13M4W7D	16QAM	18.55	0.072
LTE Band 4	1717.5 ~ 1747.5	13M4W7D	64QAM	17.65	0.058
LTE Band 4	1715 ~ 1750	8M95G7D	QPSK	19.64	0.092
LTE Band 4	1715 ~ 1750	8M94W7D	16QAM	19.34	0.086
LTE Band 4	1715 ~ 1750	8M97W7D	64QAM	18.12	0.065
LTE Band 4	1712.5 ~ 1752.5	4M49G7D	QPSK	19.42	0.087
LTE Band 4	1712.5 ~ 1752.5	4M48W7D	16QAM	18.79	0.076
LTE Band 4	1712.5 ~ 1752.5	4M48W7D	64QAM	17.75	0.060
LTE Band 4	1711.5 ~ 1753.5	2M69G7D	QPSK	19.50	0.089
LTE Band 4	1711.5 ~ 1753.5	2M69W7D	16QAM	18.78	0.076
LTE Band 4	1711.5 ~ 1753.5	2M70W7D	64QAM	17.65	0.058
LTE Band 4	1710.7 ~ 1754.3	1M08G7D	QPSK	19.71	0.094
LTE Band 4	1710.7 ~ 1754.3	1M09W7D	16QAM	19.02	0.080
LTE Band 4	1710.7 ~ 1754.3	1M08W7D	64QAM	17.90	0.062
LTE Band 2	1860 ~ 1900	17M9G7D	QPSK	20.10	0.102
LTE Band 2	1860 ~ 1900	17M9W7D	16QAM	19.13	0.082
LTE Band 2	1860 ~ 1900	17M9W7D	64QAM	18.55	0.072
LTE Band 2	1857.5 ~ 1902.5	13M4G7D	QPSK	19.80	0.095
LTE Band 2	1857.5 ~ 1902.5	13M4W7D	16QAM	18.93	0.078
LTE Band 2	1857.5 ~ 1902.5	13M4W7D	64QAM	18.54	0.071
LTE Band 2	1855 ~ 1905	8M94G7D	QPSK	19.52	0.090
LTE Band 2	1855 ~ 1905	8M95W7D	16QAM	18.60	0.072
LTE Band 2	1855 ~ 1905	8M96W7D	64QAM	18.46	0.070
LTE Band 2	1852.5 ~ 1907.5	4M48G7D	QPSK	19.66	0.092
LTE Band 2	1852.5 ~ 1907.5	4M48W7D	16QAM	18.73	0.075
LTE Band 2	1852.5 ~ 1907.5	4M49W7D	64QAM	18.65	0.073
LTE Band 2	1851.5 ~ 1908.5	2M70G7D	QPSK	19.98	0.100
LTE Band 2	1851.5 ~ 1908.5	2M69W7D	16QAM	19.35	0.086
LTE Band 2	1851.5 ~ 1908.5	2M69W7D	64QAM	18.10	0.065
LTE Band 2	1850.7 ~ 1909.3	1M08G7D	QPSK	19.73	0.094
LTE Band 2	1850.7 ~ 1909.3	1M09W7D	16QAM	19.00	0.079
LTE Band 2	1850.7 ~ 1909.3	1M09W7D	64QAM	17.98	0.063
LTE Band 41	2506 ~ 2680	17M7G7D	QPSK	20.55	0.114
LTE Band 41	2506 ~ 2680	17M8W7D	16QAM	19.63	0.092
LTE Band 41	2506 ~ 2680	17M9W7D	64QAM	18.61	0.073
LTE Band 41	2503.5 ~ 2682.5	13M3G7D	QPSK	22.20	0.166
LTE Band 41	2503.5 ~ 2682.5	13M2W7D	16QAM	21.21	0.132
LTE Band 41	2503.5 ~ 2682.5	13M4W7D	64QAM	19.43	0.088
LTE Band 41	2501 ~ 2685	8M93G7D	QPSK	22.48	0.177
LTE Band 41	2501 ~ 2685	8M88W7D	16QAM	21.54	0.143
LTE Band 41	2501 ~ 2685	8M80W7D	64QAM	20.55	0.114
LTE Band 41	2498.5 ~ 2687.5	4M46G7D	QPSK	21.99	0.158
LTE Band 41	2498.5 ~ 2687.5	4M46W7D	16QAM	20.70	0.117
LTE Band 41	2498.5 ~ 2687.5	4M43W7D	64QAM	19.08	0.081

2. INTRODUCTION

2.1 EUT DESCRIPTION

The Equipment Under Test (EUT) supports GSM/WCDMA/LTE Phone with Bluetooth, WLAN, NFC and WPC.

2.2. EUT CAPABILITIES

This EUT contains the following capabilities:
850/1900 GSM/EDGE, 850/1700/1900 WCDMA/HSUPA, Multi-band LTE, 802.11b/g/n/ac WLAN(2.4GHz)
802.11a/n/ac WLAN(5GHz), Bluetooth(BDR, EDR, LE), NFC, WPC.

2.3. TESTING ENVIRONMENT

Ambient Condition	
▪ Temperature	+20 ℃ ~ +25 ℃
▪ Relative Humidity	40 % ~ 45 %

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)

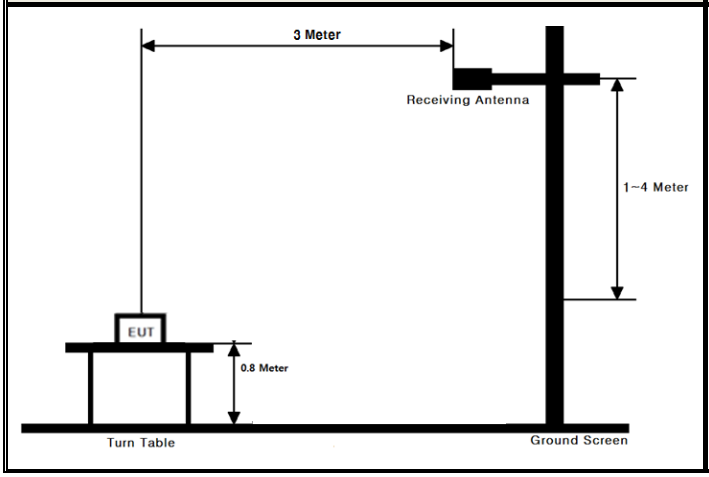
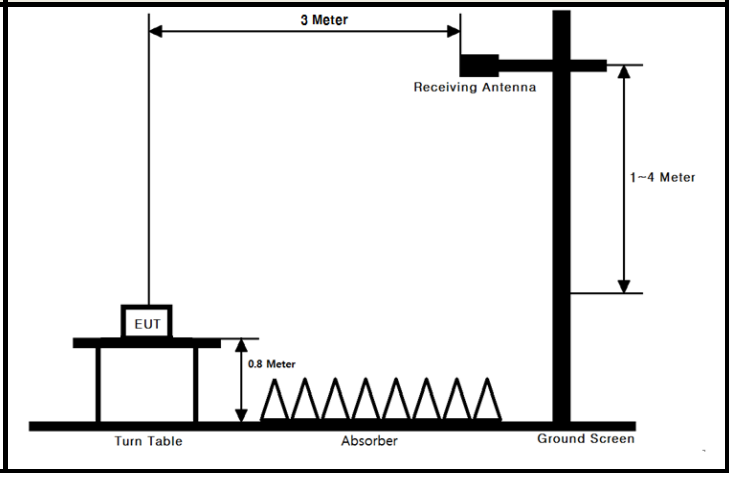
2.6. TEST FACILITY

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 test site comply with the requirements of § 2.948 according to ANSI 63.4-2014. **- FCC MRA Accredited Test Firm No. : KR0034**		
www.dtnc.net		
Telephone	:	+ 82-31-321-2664
FAX	:	+ 82-31-321-1664

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.

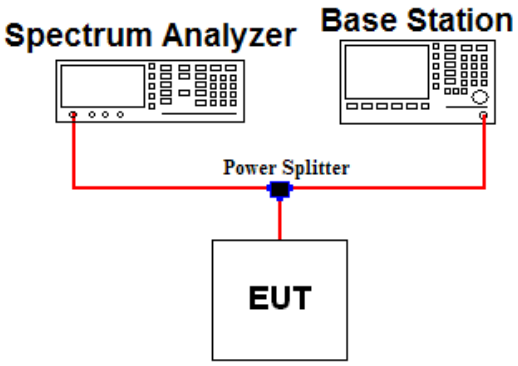
The ERP/EIRP is calculated using the following formula:

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.

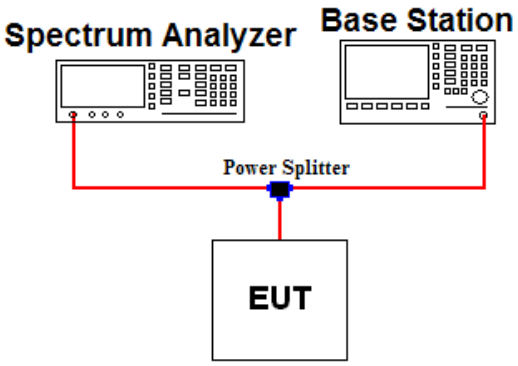
Test setting

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%.
5. The peak power level is calculated form the sum of the PAPR value from step d) to the measured average power.

3.3 OCCUPIED BANDWIDTH.

Test set-up



Test Procedure

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

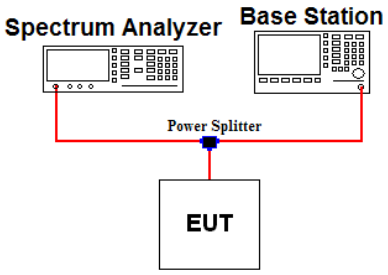
The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

Test setting

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

3.4 BAND EDGE EMISSIONS AT ANTENNA TERMINAL

Test set-up



Test Procedure

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

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

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

Test setting

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

Note 1: Per Part 22.917(b)(1) / 24.238(b) / 27.53(h) in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

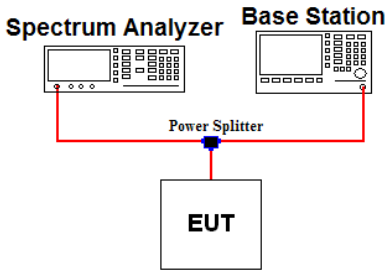
Note 2: Per Part 27(g) for operations in the 600 MHz band and the 698-746 MHz band, compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Note 3: For part 27.53(m)(4) the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.

Note 4: Per part 27.53(m)(6) in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 MHz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed.

3.5 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL

Test set-up



Test Procedure

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

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The EUT was setup to maximum output power at its low, middle, high channel with all bandwidths, modulations and RB configurations. The spectrum is scanned from 9 kHz up to a frequency including its 10^{th} harmonic.

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

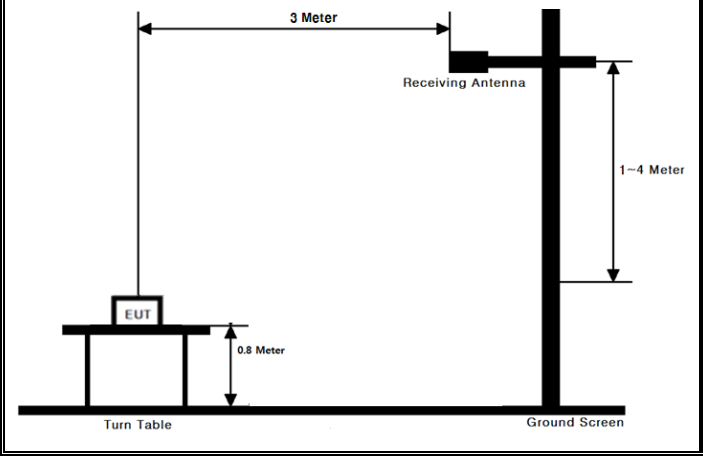
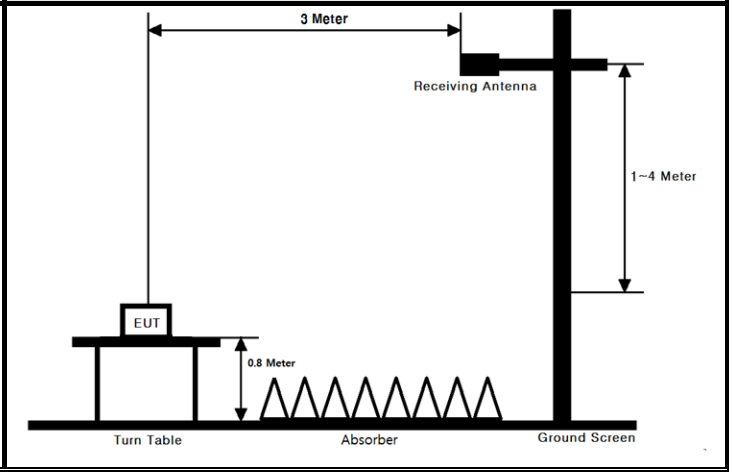
Test setting

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

Note 1: Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 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 1 GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.

Test Procedure

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

Test setting

1. RBW = 100 kHz for below 1 GHz and 1 MHz for above 1 GHz / VBW ≥ 3 X RBW
2. Detector = RMS & Trace mode = 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.

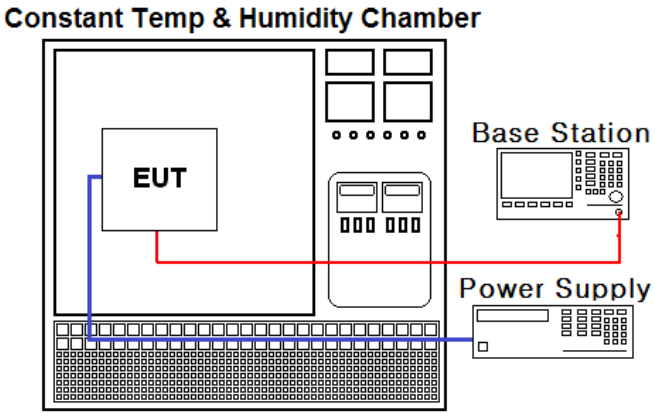
For radiated power measurements below 1 GHz, a half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading.

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.

This measurement was performed with the EUT oriented in 3 orthogonal axis.

3.7 FREQUENCY STABILITY

Test Set-up



Test Procedure

- **ANSI/TIA-603-E-2016**
- **KDB971168 D01v03 - Section 9**

The frequency stability of the transmitter is measured by:

a.) **Temperature:**
The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.

b.) **Primary Supply Voltage:**
The primary supply voltage is varied from 85 % to 115 % of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification:

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block for Part 24, 27. The frequency stability of the transmitter shall be maintained within ± 0.000 25 % (± 2.5 ppm) of the center frequency for Part 22.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature.
(20 °C to provide a reference)

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

3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C.
A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal. Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	18/07/09	19/07/09	MY46471251
Spectrum Analyzer	Agilent Technologies	N9020A	17/12/26	18/12/26	MY50200828
Spectrum Analyzer	Agilent Technologies	N9030A	18/07/09	19/07/09	MY53310140
DC power supply	Agilent Technologies	66332A	18/07/02	19/07/02	MY43001172
Multimeter	FLUKE	17B	17/12/26	18/12/26	26030065WS
Power Splitter	Anritsu	K241B	17/12/27	18/12/27	1301182
Temp & Humi	SJ Science	SJ-TH-S50	18/07/06	19/07/06	U5542113
Radio Communication Analyzer	Anritsu	MT8820C	18/07/03	19/07/03	6200978101
Thermohygrometer	BODYCOM	BJ5478	18/01/03	19/01/03	120612-2
Thermohygrometer	BODYCOM	BJ5478	18/01/03	19/01/03	120612-1
Signal Generator	Rohde Schwarz	SMBV100A	17/12/27	18/12/27	255571
Signal Generator	ANRITSU	SMF100A	18/06/07	19/06/07	102341
Loop Antenna	Schwarzbeck	FMZB1513	18/01/30	20/01/30	1513-128
Bilog Antenna	Schwarzbeck	VULB 9160	18/07/13	20/07/13	3359
Dipole Antenna	Schwarzbeck	VHA9103	17/03/14	19/03/14	2116
Dipole Antenna	Schwarzbeck	VHA9103	18/04/13	20/04/13	2117
Dipole Antenna	Schwarzbeck	UHA9105	17/03/14	19/03/14	2261
Dipole Antenna	Schwarzbeck	UHA9105	18/04/13	20/04/13	2262
HORN ANT	ETS	3117	18/05/10	20/05/10	00140394
HORN ANT	ETS	3117	18/03/26	20/03/26	00152145
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	18/07/10	19/07/10	1020
PreAmplifier	H.P	8447D	17/12/26	18/12/26	2944A07774
PreAmplifier	Agilent	8449B	18/07/05	19/07/05	3008A02108
PreAmplifier	A.H.Systems Inc.	PAM-1840VH	18/07/06	19/07/17	163
High-pass filter	Wainwright	WHKX12-935-1000-15000-40SS	18/07/05	19/07/05	7
High-pass filter	Wainwright	WHKX12-2580-3000-18000-80SS	18/07/05	19/07/05	3
High-pass filter	Wainwright	WHNX8.5/26.5G-6SS	18/07/03	19/07/03	1
Cable	DTNC	Cable	18/07/06	19/07/06	M-01
Cable	DTNC	Cable	18/07/06	19/07/06	M-02
Cable	DTNC	Cable	18/07/06	19/07/06	M-04
Cable	DTNC	Cable	18/07/05	19/07/05	RF-84
Cable	DTNC	Cable	18/07/06	19/07/06	M-01

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

5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Status Note 1
2.1046	Conducted Output Power	N/A	Conducted	C Note2
2.1049	Occupied Bandwidth	N/A		C
24.232(d) 27.50(d.5)	Peak to Average Ratio	< 13 dB		C
2.1051 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	Band Edge / Conducted Spurious Emissions	> 43 + 10log$_{10}$ (P) dB at Band edge and for all out-of-band emissions		C
27.53(m)	Band Edge / Conducted Spurious Emissions	> 40 + 10log10 (P) dB at channel edge and 5 MHz from the channel edge > 43 + 10log10 (P) dB at 5 MHz and X MHz from the channel edge > 55 + 10log10 (P) dB at all frequencies more than X MHz from the channel edge		C
2.1055 22.355 24.235 27.54	Frequency Stability	< 2.5 ppm (Part 22) Fundamental emissions must stay within Authorized frequency block (Part 27)		C
27.50(b.10) 27.50(c.10)	Radiated Output Power (B12,13, 17)	< 3 Watts max. ERP	Radiated Note3	C
22.913(a.5)	Radiated Output Power (B5)	< 7 Watts max. ERP		C
27.50(d.4)	Radiated Output Power (B4)	< 1 Watts max. EIRP		C
24.232(c) 27.50(h.2)	Radiated Output Power(B2, 41)	< 2 Watts max. EIRP		C
2.1053 22.917(a) 24.238(a) 27.53(c) 27.53(g) 27.53(h)	Undesirable Emissions	> 43 + 10log$_{10}$ (P) dB for all out-of-band emissions		C
27.53(m)	Undesirable Emissions(B41)	> 55 + 10log$_{10}$ (P) dB for all out-of-band emissions		C
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

Note 1: **C**=Comply **NC**=Not Comply **NT**=Not Tested **NA**=Not Applicable
Note 2: Refer to RF Exposure Report (Test Report SAR)
Note 3: This device supports wireless charging capability.
So per KDB648474 D03v01r04, the radiated test items were performed both normal and charging conditions. For wireless charging condition, the handset is placed on the representative charging pad under normal conditions and in a simulated call configuration.
And the worst case data was reported.

6. SAMPLE CALCULATION

A. Emission Designator

LTE Band 12,17(QPSK)

Emission Designator = **8M94G7D**
LTE OBW = 8.944 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 12,17(16QAM)

Emission Designator = **8M97W7D**
LTE OBW = 8.965 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 12,17(64QAM)

Emission Designator = **8M96W7D**
LTE OBW = 8.956 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 13(QPSK)

Emission Designator = **8M90G7D**
LTE OBW = 8.904 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 13(16QAM)

Emission Designator **= 8M92W7D**
LTE OBW = 8.921 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 13(64QAM)

Emission Designator = **8M94W7D**
LTE OBW = 8.942 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5(QPSK)

Emission Designator = **8M96G7D**
LTE OBW = 8.956 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5(16QAM)

Emission Designator = **8M96W7D**
LTE OBW = 8.958 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 5(64QAM)

Emission Designator = **8M98W7D**
LTE OBW = 8.982 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 4(QPSK)

Emission Designator = **17M9G7D**
LTE OBW = 17.899 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 4(16QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.896 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 4(64QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.890 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 2(QPSK)

Emission Designator = **17M9G7D**
LTE OBW = 17.872 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 2(16QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.871 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 2(64QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.867 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 41(QPSK)

Emission Designator = **17M7G7D**
LTE OBW = 17.748 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 41(16QAM)

Emission Designator = **17M8W7D**
LTE OBW = 17.772 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

LTE Band 41(64QAM)

Emission Designator = **17M9W7D**
LTE OBW = 17.898 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data Transmission

B. For substitution method

EIRP for Band 41

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)
10	2593	QPSK	1/0	-26.43	Z	H	1/0	6.23	22.48	0.177

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 OCCUPIED BANDWIDTH

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

7.2 PEAK TO AVERAGE RATIO

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

7.3 BAND EDEG EMISSIONS (Conducted)

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

7.4 SPURIOUS AND HARMONICS EMISSIONS (Conducted)

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

7.5 ERP & EIRP

7.5.1 LTE Band 12,17

- Measurement data: Without wireless charging pad

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	1/49	H	18.75	1.28	20.03	0.101
		16QAM	1/49	H	17.34	1.28	18.62	0.073
		64QAM	1/49	H	16.37	1.28	17.65	0.058
	711	QPSK	1/49	H	19.12	1.28	20.40	0.110
		16QAM	1/49	H	18.03	1.28	19.31	0.085
		64QAM	1/49	H	17.86	1.28	19.14	0.082
5	701.5	QPSK	1/12	H	17.92	1.28	19.20	0.083
		16QAM	1/12	H	16.65	1.28	17.93	0.062
		64QAM	1/12	H	15.67	1.28	16.95	0.050
	707.5	QPSK	1/12	H	18.55	1.28	19.83	0.096
		16QAM	1/12	H	17.16	1.28	18.44	0.070
		64QAM	1/12	H	16.94	1.28	18.22	0.066
	713.5	QPSK	1/12	H	18.70	1.28	19.98	0.100
		16QAM	1/12	H	17.64	1.28	18.92	0.078
		64QAM	1/12	H	17.28	1.28	18.56	0.072

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

7.5.2 LTE Band 12

- Measurement data: Without wireless charging pad

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	1/14	H	18.17	1.28	19.45	0.088
		16QAM	1/14	H	16.93	1.28	18.21	0.066
		64QAM	1/14	H	15.83	1.28	17.11	0.051
	707.5	QPSK	1/0	H	18.45	1.28	19.73	0.094
		16QAM	1/0	H	18.03	1.28	19.31	0.085
		64QAM	1/0	H	16.81	1.28	18.09	0.064
	714.5	QPSK	1/7	H	18.44	1.28	19.72	0.094
		16QAM	1/7	H	17.27	1.28	18.55	0.072
		64QAM	1/7	H	16.88	1.28	18.16	0.065
1.4	699.7	QPSK	1/2	H	17.33	1.28	18.61	0.073
		16QAM	1/2	H	16.51	1.28	17.79	0.060
		64QAM	1/2	H	15.65	1.28	16.93	0.049
	707.5	QPSK	1/2	H	18.27	1.28	19.55	0.090
		16QAM	1/2	H	17.95	1.28	19.23	0.084
		64QAM	1/2	H	16.82	1.28	18.10	0.065
	715.3	QPSK	1/2	H	18.28	1.28	19.56	0.090
		16QAM	1/2	H	16.99	1.28	18.27	0.067
		64QAM	1/2	H	15.91	1.28	17.19	0.052

- Measurement data: With wireless charging pad

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	711	QPSK	1/49	H	18.64	1.28	19.92	0.098
5	713.5	QPSK	1/12	H	17.81	1.28	19.09	0.081
3	714.5	QPSK	1/7	H	17.90	1.28	19.18	0.083
1.4	715.3	QPSK	1/2	H	17.81	1.28	19.09	0.081

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

7.5.3 LTE Band 13

- Measurement data: Without wireless charging pad

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	1/49	H	16.04	1.26	17.30	0.054
		16QAM	1/49	H	13.99	1.26	15.25	0.033
		64QAM	1/49	H	12.60	1.26	13.86	0.024
5	779.5	QPSK	1/24	H	16.43	1.26	17.69	0.059
		16QAM	1/24	H	14.59	1.26	15.85	0.038
		64QAM	1/24	H	13.55	1.26	14.81	0.030
	784.5	QPSK	1/12	H	16.53	1.25	17.78	0.060
		16QAM	1/12	H	15.11	1.25	16.36	0.043
		64QAM	1/12	H	14.10	1.25	15.35	0.034

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

- Measurement data: With wireless charging pad

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	1/49	H	16.24	1.26	17.50	0.056
5	784.5	QPSK	1/12	H	16.39	1.25	17.64	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.

7.5.4 LTE Band 5

- Measurement data: Without wireless charging pad

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	1/49	H	14.28	1.23	15.51	0.036
		16QAM	1/49	H	12.99	1.23	14.22	0.026
		64QAM	1/49	H	11.95	1.23	13.18	0.021
	836.5	QPSK	1/49	H	13.25	1.22	14.47	0.028
		16QAM	1/49	H	11.41	1.22	12.63	0.018
		64QAM	1/49	H	11.38	1.22	12.60	0.018
	844	QPSK	1/0	H	13.70	1.21	14.91	0.031
		16QAM	1/0	H	11.89	1.21	13.10	0.020
		64QAM	1/0	H	12.19	1.21	13.40	0.022
5	826.5	QPSK	1/12	H	14.68	1.23	15.91	0.039
		16QAM	1/12	H	13.22	1.23	14.45	0.028
		64QAM	1/12	H	12.95	1.23	14.18	0.026
	836.5	QPSK	1/24	H	13.17	1.22	14.39	0.027
		16QAM	1/24	H	12.10	1.22	13.32	0.021
		64QAM	1/24	H	11.95	1.22	13.17	0.021
	846.5	QPSK	1/0	H	13.86	1.21	15.07	0.032
		16QAM	1/0	H	12.47	1.21	13.68	0.023
		64QAM	1/0	H	12.42	1.21	13.63	0.023
3	825.5	QPSK	1/0	H	14.84	1.23	16.07	0.040
		16QAM	1/0	H	13.12	1.23	14.35	0.027
		64QAM	1/0	H	12.97	1.23	14.20	0.026
	836.5	QPSK	1/0	H	14.14	1.22	15.36	0.034
		16QAM	1/0	H	12.43	1.22	13.65	0.023
		64QAM	1/0	H	12.26	1.22	13.48	0.022
	847.5	QPSK	1/0	H	14.26	1.21	15.47	0.035
		16QAM	1/0	H	12.64	1.21	13.85	0.024
		64QAM	1/0	H	12.46	1.21	13.67	0.023
1.4	824.7	QPSK	1/2	H	14.94	1.23	16.17	0.041
		16QAM	1/2	H	13.85	1.23	15.08	0.032
		64QAM	1/2	H	12.63	1.23	13.86	0.024
	836.5	QPSK	1/2	H	14.01	1.22	15.23	0.033
		16QAM	1/2	H	12.17	1.22	13.39	0.022
		64QAM	1/2	H	11.07	1.22	12.29	0.017
	848.3	QPSK	1/2	H	14.03	1.21	15.24	0.033
		16QAM	1/2	H	12.50	1.21	13.71	0.023
		64QAM	1/2	H	11.47	1.21	12.68	0.019

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

- Measurement data: With wireless charging pad

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	1/49	H	13.99	1.23	15.22	0.033
5	826.5	QPSK	1/12	H	15.24	1.23	16.47	0.044
3	825.5	QPSK	1/0	H	14.90	1.23	16.13	0.041
1.4	824.7	QPSK	1/2	H	15.07	1.23	16.30	0.043

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

7.5.5 LTE Band 4

- Measurement data: Without wireless charging pad

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	1/0	H	13.16	5.82	18.98	0.079
		16QAM	1/0	H	12.72	5.82	18.54	0.071
		64QAM	1/0	H	11.31	5.82	17.13	0.052
	1732.5	QPSK	1/0	H	13.68	5.75	19.43	0.088
		16QAM	1/0	H	12.76	5.75	18.51	0.071
		64QAM	1/0	H	11.62	5.75	17.37	0.055
	1745	QPSK	1/0	H	13.41	5.67	19.08	0.081
		16QAM	1/0	H	13.36	5.67	19.03	0.080
		64QAM	1/0	H	13.27	5.67	18.94	0.078
15	1717.5	QPSK	1/0	H	13.41	5.84	19.25	0.084
		16QAM	1/0	H	12.32	5.84	18.16	0.065
		64QAM	1/0	H	11.42	5.84	17.26	0.053
	1732.5	QPSK	1/0	H	12.74	5.75	18.49	0.071
		16QAM	1/0	H	12.20	5.75	17.95	0.062
		64QAM	1/0	H	11.25	5.75	17.00	0.050
	1747.5	QPSK	1/0	H	12.99	5.66	18.65	0.073
		16QAM	1/0	H	12.89	5.66	18.55	0.072
		64QAM	1/0	H	11.99	5.66	17.65	0.058
10	1715	QPSK	1/0	H	12.18	5.85	18.03	0.064
		16QAM	1/0	H	12.25	5.85	18.10	0.065
		64QAM	1/0	H	11.12	5.85	16.97	0.050
	1732.5	QPSK	1/0	H	12.29	5.75	18.04	0.064
		16QAM	1/0	H	11.87	5.75	17.62	0.058
		64QAM	1/0	H	10.64	5.75	16.39	0.044
	1750	QPSK	1/0	H	13.59	5.64	19.23	0.084
		16QAM	1/0	H	13.70	5.64	19.34	0.086
		64QAM	1/0	H	12.48	5.64	18.12	0.065

- Measurement data: Without wireless charging pad

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)
5	1712.5	QPSK	1/12	H	12.15	5.87	18.02	0.063
		16QAM	1/12	H	12.09	5.87	17.96	0.063
		64QAM	1/12	H	10.76	5.87	16.63	0.046
	1732.5	QPSK	1/12	H	13.07	5.75	18.82	0.076
		16QAM	1/12	H	13.03	5.75	18.78	0.076
		64QAM	1/12	H	12.00	5.75	17.75	0.060
	1752.5	QPSK	1/12	H	13.43	5.63	19.06	0.081
		16QAM	1/12	H	13.16	5.63	18.79	0.076
		64QAM	1/12	H	12.12	5.63	17.75	0.060
3	1711.5	QPSK	1/0	H	12.10	5.87	17.97	0.063
		16QAM	1/0	H	11.65	5.87	17.52	0.056
		64QAM	1/0	H	10.78	5.87	16.65	0.046
	1732.5	QPSK	1/7	H	12.83	5.75	18.58	0.072
		16QAM	1/7	H	12.54	5.75	18.29	0.067
		64QAM	1/7	H	11.53	5.75	17.28	0.053
	1753.5	QPSK	1/0	H	13.34	5.62	18.96	0.079
		16QAM	1/0	H	13.16	5.62	18.78	0.076
		64QAM	1/0	H	12.03	5.62	17.65	0.058
1.4	1710.7	QPSK	1/2	H	12.13	5.88	18.01	0.063
		16QAM	1/2	H	11.82	5.88	17.70	0.059
		64QAM	1/2	H	10.81	5.88	16.69	0.047
	1732.5	QPSK	1/2	H	13.13	5.75	18.88	0.077
		16QAM	1/2	H	12.93	5.75	18.68	0.074
		64QAM	1/2	H	11.92	5.75	17.67	0.058
	1754.3	QPSK	1/2	H	13.60	5.61	19.21	0.083
		16QAM	1/2	H	13.41	5.61	19.02	0.080
		64QAM	1/2	H	12.29	5.61	17.90	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.

- Measurement data: With wireless charging pad

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	1732.5	QPSK	1/0	H	13.14	5.75	18.89	0.077
15	1717.5	QPSK	1/0	H	13.91	5.84	19.75	0.094
10	1750	QPSK	1/0	H	14.00	5.64	19.64	0.092
5	1752.5	QPSK	1/12	H	13.79	5.63	19.42	0.087
3	1753.5	QPSK	1/0	H	13.88	5.62	19.50	0.089
1.4	1754.3	QPSK	1/2	H	14.10	5.61	19.71	0.094

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

7.5.6 LTE Band 2

- Measurement data: Without wireless charging pad

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	H	15.08	5.02	20.10	0.102
		16QAM	1/0	H	14.11	5.02	19.13	0.082
		64QAM	1/0	H	13.53	5.02	18.55	0.072
	1880	QPSK	1/50	H	13.61	4.91	18.52	0.071
		16QAM	1/50	H	12.93	4.91	17.84	0.061
		64QAM	1/50	H	12.91	4.91	17.82	0.061
	1900	QPSK	1/0	H	14.31	4.81	19.12	0.082
		16QAM	1/0	H	13.71	4.81	18.52	0.071
		64QAM	1/0	H	13.17	4.81	17.98	0.063
15	1857.5	QPSK	1/0	H	14.31	5.03	19.34	0.086
		16QAM	1/0	H	13.49	5.03	18.52	0.071
		64QAM	1/0	H	13.22	5.03	18.25	0.067
	1880	QPSK	1/0	H	14.19	4.91	19.10	0.081
		16QAM	1/0	H	13.88	4.91	18.79	0.076
		64QAM	1/0	H	13.46	4.91	18.37	0.069
	1902.5	QPSK	1/0	H	15.00	4.80	19.80	0.095
		16QAM	1/0	H	14.13	4.80	18.93	0.078
		64QAM	1/0	H	13.74	4.80	18.54	0.071
10	1855	QPSK	1/0	H	14.30	5.05	19.35	0.086
		16QAM	1/0	H	13.39	5.05	18.44	0.070
		64QAM	1/0	H	13.26	5.05	18.31	0.068
	1880	QPSK	1/25	H	13.86	4.91	18.77	0.075
		16QAM	1/25	H	12.73	4.91	17.64	0.058
		64QAM	1/25	H	12.59	4.91	17.50	0.056
	1905	QPSK	1/0	H	14.46	4.79	19.25	0.084
		16QAM	1/0	H	13.81	4.79	18.60	0.072
		64QAM	1/0	H	13.67	4.79	18.46	0.070

- Measurement data: Without wireless charging pad

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)
5	1852.5	QPSK	1/0	H	14.40	5.06	19.46	0.088
		16QAM	1/0	H	13.67	5.06	18.73	0.075
		64QAM	1/0	H	13.59	5.06	18.65	0.073
	1880	QPSK	1/12	H	13.60	4.91	18.51	0.071
		16QAM	1/12	H	12.97	4.91	17.88	0.061
		64QAM	1/12	H	12.68	4.91	17.59	0.057
	1907.5	QPSK	1/0	H	14.07	4.77	18.84	0.077
		16QAM	1/0	H	13.20	4.77	17.97	0.063
		64QAM	1/0	H	13.23	4.77	18.00	0.063
3	1851.5	QPSK	1/0	H	14.92	5.06	19.98	0.100
		16QAM	1/0	H	14.29	5.06	19.35	0.086
		64QAM	1/0	H	13.04	5.06	18.10	0.065
	1880	QPSK	1/7	H	14.17	4.91	19.08	0.081
		16QAM	1/7	H	13.25	4.91	18.16	0.065
		64QAM	1/7	H	12.18	4.91	17.09	0.051
	1908.5	QPSK	1/0	H	14.05	4.77	18.82	0.076
		16QAM	1/0	H	13.41	4.77	18.18	0.066
		64QAM	1/0	H	12.62	4.77	17.39	0.055
1.4	1850.7	QPSK	1/2	H	14.66	5.07	19.73	0.094
		16QAM	1/2	H	13.93	5.07	19.00	0.079
		64QAM	1/2	H	12.91	5.07	17.98	0.063
	1880	QPSK	1/2	H	13.51	4.91	18.42	0.070
		16QAM	1/2	H	12.74	4.91	17.65	0.058
		64QAM	1/2	H	11.78	4.91	16.69	0.047
	1909.3	QPSK	1/2	H	14.27	4.76	19.03	0.080
		16QAM	1/2	H	13.48	4.76	18.24	0.067
		64QAM	1/2	H	12.33	4.76	17.09	0.051

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

- Measurement data: With wireless charging pad

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	H	14.27	5.02	19.29	0.085
15	1902.5	QPSK	1/0	H	13.51	4.80	18.31	0.068
10	1855	QPSK	1/0	H	14.47	5.05	19.52	0.090
5	1852.5	QPSK	1/0	H	14.60	5.06	19.66	0.092
3	1851.5	QPSK	1/0	H	13.96	5.06	19.02	0.080
1.4	1850.7	QPSK	1/2	H	14.48	5.07	19.55	0.090

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

7.5.7 LTE Band 41

- Measurement data: Without wireless charging pad

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	2506	QPSK	1/0	H	14.12	6.19	20.31	0.107
		16QAM	1/0	H	13.14	6.19	19.33	0.086
		64QAM	1/0	H	12.12	6.19	18.31	0.068
	2593	QPSK	1/0	H	14.32	6.23	20.55	0.114
		16QAM	1/0	H	13.40	6.23	19.63	0.092
		64QAM	1/0	H	12.38	6.23	18.61	0.073
	2680	QPSK	1/0	H	13.40	6.49	19.89	0.097
		16QAM	1/0	H	12.39	6.49	18.88	0.077
		64QAM	1/0	H	11.42	6.49	17.91	0.062
15	2503.5	QPSK	1/0	H	13.74	6.19	19.93	0.098
		16QAM	1/0	H	13.50	6.19	19.69	0.093
		64QAM	1/0	H	11.62	6.19	17.81	0.060
	2593	QPSK	1/0	H	15.97	6.23	22.20	0.166
		16QAM	1/0	H	14.98	6.23	21.21	0.132
		64QAM	1/0	H	13.20	6.23	19.43	0.088
	2682.5	QPSK	1/0	H	14.70	6.50	21.20	0.132
		16QAM	1/0	H	13.66	6.50	20.16	0.104
		64QAM	1/0	H	11.82	6.50	18.32	0.068
10	2501	QPSK	1/0	H	14.86	6.19	21.05	0.127
		16QAM	1/0	H	13.92	6.19	20.11	0.103
		64QAM	1/0	H	12.92	6.19	19.11	0.081
	2593	QPSK	1/0	H	16.25	6.23	22.48	0.177
		16QAM	1/0	H	15.31	6.23	21.54	0.143
		64QAM	1/0	H	14.32	6.23	20.55	0.114
	2685	QPSK	1/0	H	14.83	6.51	21.34	0.136
		16QAM	1/0	H	13.87	6.51	20.38	0.109
		64QAM	1/0	H	12.88	6.51	19.39	0.087
5	2498.5	QPSK	1/12	H	14.82	6.19	21.01	0.126
		16QAM	1/12	H	13.16	6.19	19.35	0.086
		64QAM	1/12	H	11.65	6.19	17.84	0.061
	2593	QPSK	1/12	H	15.76	6.23	21.99	0.158
		16QAM	1/12	H	14.47	6.23	20.70	0.117
		64QAM	1/12	H	12.85	6.23	19.08	0.081
	2687.5	QPSK	1/12	H	15.06	6.52	21.58	0.144
		16QAM	1/12	H	12.84	6.52	19.36	0.086
		64QAM	1/12	H	12.23	6.52	18.75	0.075

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

- Measurement data: With wireless charging pad

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	2593	QPSK	1/0	H	13.39	6.23	19.62	0.092
15	2593	QPSK	1/0	H	12.27	6.23	18.50	0.071
10	2593	QPSK	1/0	H	12.10	6.23	18.33	0.068
5	2593	QPSK	1/12	H	12.25	6.23	18.48	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.

7.6 UNDESIRABLE EMISSIONS (Radiated)

7.6.1 LTE Band 12,17

- Measurement data: Without wireless charging pad

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	1/49	QPSK	1421.28	H	-57.87	3.03	-54.84	74.87	33.03
			16QAM	1421.50	H	-58.12	3.03	-55.09	73.71	31.62
			64QAM	1422.08	H	-58.20	3.03	-55.17	73.79	30.65
	711	1/49	QPSK	1432.36	H	-58.04	3.09	-54.95	75.35	33.40
			16QAM	1432.36	H	-59.37	3.09	-56.28	75.59	32.31
			64QAM	1432.22	H	-58.79	3.09	-55.70	75.01	32.14
5	701.5	1/12	QPSK	1405.02	H	-57.53	2.93	-54.60	73.80	32.20
			16QAM	1405.11	H	-59.13	2.93	-56.20	74.13	30.93
			64QAM	1405.46	H	-59.64	2.93	-56.71	74.64	29.95
	707.5	1/12	QPSK	1412.53	H	-58.77	2.98	-55.79	75.62	32.83
			16QAM	1412.74	H	-58.66	2.98	-55.68	74.12	31.44
			64QAM	1412.93	H	-59.71	2.98	-56.73	75.17	31.22
	713.5	1/12	QPSK	1430.80	H	-58.58	3.08	-55.50	75.48	32.98
			16QAM	1430.46	H	-58.70	3.08	-55.62	74.54	31.92
			64QAM	1430.54	H	-59.83	3.08	-56.75	75.67	31.56

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])

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

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.2 LTE Band 12

- Measurement data: Without wireless charging pad

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	1/14	QPSK	1402.18	H	-58.34	2.91	-55.43	74.88	32.45
			16QAM	1402.07	H	-59.40	2.91	-56.49	74.70	32.21
			64QAM	1402.18	H	-59.82	2.91	-56.91	75.12	30.11
	707.5	1/0	QPSK	1412.36	H	-58.10	2.97	-55.13	74.86	32.73
			16QAM	1412.37	H	-59.69	2.97	-56.72	76.03	32.31
			64QAM	1412.83	H	-59.45	2.98	-56.47	75.78	31.09
	714.5	1/7	QPSK	1430.99	H	-57.84	3.09	-54.75	74.47	32.72
			16QAM	1431.43	H	-59.04	3.09	-55.95	74.50	31.55
			64QAM	1431.93	H	-59.03	3.09	-55.94	74.49	31.16
1.4	699.7	1/2	QPSK	1401.52	H	-57.93	2.91	-55.02	73.63	31.61
			16QAM	1401.75	H	-58.59	2.91	-55.68	73.47	30.79
			64QAM	1401.65	H	-59.33	2.91	-56.42	74.21	29.93
	707.5	1/2	QPSK	1413.91	H	-58.47	2.98	-55.49	75.04	32.55
			16QAM	1413.87	H	-60.61	2.98	-57.63	76.86	32.23
			64QAM	1414.02	H	-60.07	2.98	-57.09	76.32	31.10
	715.3	1/2	QPSK	1429.78	H	-58.43	3.08	-55.35	74.91	32.56
			16QAM	1429.85	H	-60.02	3.08	-56.94	75.21	31.27
			64QAM	1430.06	H	-58.63	3.08	-55.55	73.82	30.19

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.

- Measurement data: With wireless charging pad

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	711	1/49	QPSK	1434.06	H	-58.19	3.10	-55.09	75.01	32.92
5	713.5	1/12	QPSK	1426.96	H	-58.94	3.06	-55.88	74.97	32.09
3	714.5	1/7	QPSK	1429.99	H	-57.46	3.08	-54.38	73.56	32.18
1.4	715.3	1/2	QPSK	1429.55	H	-59.05	3.08	-55.97	75.06	32.09

Note 1: Limit Calculation = 43 + $10\log_{10}$(P[Watts])

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

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.3 LTE Band 13

- Measurement data: Without wireless charging pad

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 (dBm)	Margin (dB)	Limit (dBm/MHz)
10	782	1/49	QPSK	1571.96	V	-58.02	6.32	-51.70	11.70	-40.00
		1/49	16QAM	1572.00	V	-59.76	6.32	-53.44	13.44	
		1/49	64QAM	1572.28	V	-59.22	6.32	-52.90	12.90	
5	779.5	1/24	QPSK	1565.16	V	-57.71	6.35	-51.36	11.36	
		1/24	16QAM	1565.30	V	-58.84	6.35	-52.49	12.49	
		1/24	64QAM	1565.67	V	-60.17	6.35	-53.82	13.82	
	784.5	1/12	QPSK	1569.91	V	-58.01	6.33	-51.68	11.68	
		1/12	16QAM	1569.96	V	-58.99	6.33	-52.66	12.66	
		1/12	64QAM	1569.52	V	-59.53	6.33	-53.20	13.20	

- Measurement data: With wireless charging pad

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	782	1/49	QPSK	1575.32	H	-58.22	6.30	-51.92	11.92	-40.00
5	784.5	1/12	QPSK	1570.16	V	-58.42	6.33	-52.09	12.09	

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.

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.4 LTE Band 5

- Measurement data: Without wireless charging pad

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	1/49	QPSK	1664.29	H	-57.29	3.78	-53.51	69.02	28.51
			16QAM	1664.68	H	-57.74	3.78	-53.96	68.18	27.22
			64QAM	1664.66	H	-57.90	3.78	-54.12	68.34	26.18
	836.5	1/49	QPSK	1681.84	H	-57.60	3.78	-53.82	68.29	27.47
			16QAM	1681.94	H	-57.94	3.78	-54.16	66.79	25.63
			64QAM	1681.93	H	-58.67	3.78	-54.89	67.52	25.60
	844	1/0	QPSK	1679.50	H	-57.86	3.78	-54.08	68.99	27.91
			16QAM	1679.80	H	-58.60	3.78	-54.82	67.92	26.10
			64QAM	1679.76	H	-59.63	3.78	-55.85	68.95	26.40
5	826.5	1/12	QPSK	1650.38	H	-56.81	3.78	-53.03	68.94	28.91
			16QAM	1650.21	H	-58.93	3.78	-55.15	69.60	27.45
			64QAM	1650.19	H	-58.79	3.78	-55.01	69.46	27.18
	836.5	1/24	QPSK	1675.97	H	-57.75	3.78	-53.97	68.36	27.39
			16QAM	1676.32	H	-58.22	3.78	-54.44	67.76	26.32
			64QAM	1676.46	H	-59.80	3.78	-56.02	69.34	26.17
	846.5	1/0	QPSK	1689.01	H	-57.75	3.79	-53.96	69.03	28.07
			16QAM	1688.84	H	-58.11	3.79	-54.32	68.00	26.68
			64QAM	1688.85	H	-58.62	3.79	-54.83	68.51	26.63
3	825.5	1/0	QPSK	1650.39	H	-57.52	3.78	-53.74	69.81	29.07
			16QAM	1650.66	H	-59.02	3.78	-55.24	69.59	27.35
			64QAM	1650.88	H	-58.90	3.78	-55.12	69.47	27.20
	836.5	1/0	QPSK	1668.63	H	-57.80	3.78	-54.02	69.38	28.36
			16QAM	1669.04	H	-58.55	3.78	-54.77	68.42	26.65
			64QAM	1669.04	H	-59.08	3.78	-55.30	68.95	26.48
	847.5	1/0	QPSK	1692.89	H	-57.83	3.79	-54.04	69.51	28.47
			16QAM	1693.10	H	-59.31	3.79	-55.52	69.37	26.85
			64QAM	1693.03	H	-59.61	3.79	-55.82	69.67	26.67
1.4	824.7	1/2	QPSK	1651.48	H	-57.20	3.78	-53.42	69.59	29.17
			16QAM	1651.84	H	-58.97	3.78	-55.19	70.27	28.08
			64QAM	1651.76	H	-58.72	3.78	-54.94	70.02	26.86
	836.5	1/2	QPSK	1672.03	H	-58.10	3.78	-54.32	69.55	28.23
			16QAM	1672.16	H	-58.89	3.78	-55.11	68.50	26.39
			64QAM	1672.08	H	-58.68	3.78	-54.90	68.29	25.29
	848.3	1/2	QPSK	1699.54	H	-56.96	3.79	-53.17	68.41	28.24
			16QAM	1699.44	H	-58.26	3.79	-54.47	68.18	26.71
			64QAM	1699.30	H	-58.39	3.79	-54.60	68.31	25.68

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.

- Measurement data: With wireless charging pad

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	1/49	QPSK	1670.16	H	-57.98	3.78	-54.20	69.42	28.22
5	826.5	1/12	QPSK	1651.26	H	-57.17	3.78	-53.39	69.86	29.47
3	825.5	1/0	QPSK	1652.56	H	-58.42	3.78	-54.64	70.77	29.13
1.4	824.7	1/2	QPSK	1650.30	H	-58.30	3.78	-54.52	70.82	29.30

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])

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

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.5 LTE Band 4

- Measurement data: Without wireless charging pad

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	1/0	QPSK	3419.12	H	-54.16	8.23	-45.93	64.91	31.98
			16QAM	3418.95	H	-55.52	8.23	-47.29	65.83	31.54
			64QAM	3418.87	H	-56.87	8.23	-48.64	67.18	30.13
	1732.5	1/0	QPSK	3445.32	H	-55.19	8.32	-46.87	66.30	32.43
			16QAM	3444.88	H	-56.33	8.32	-48.01	66.52	31.51
			64QAM	3444.71	H	-55.24	8.32	-46.92	65.43	30.37
	1745	1/0	QPSK	3472.99	H	-55.49	8.42	-47.07	66.15	32.08
			16QAM	3472.74	H	-56.76	8.41	-48.35	67.38	32.03
			64QAM	3472.85	H	-55.76	8.41	-47.35	66.38	31.94
15	1717.5	1/0	QPSK	3418.04	H	-55.30	8.22	-47.08	66.33	32.25
			16QAM	3417.75	H	-55.84	8.22	-47.62	65.78	31.16
			64QAM	3417.57	H	-56.11	8.22	-47.89	66.05	30.26
	1732.5	1/0	QPSK	3453.48	H	-55.64	8.35	-47.29	65.78	31.49
			16QAM	3453.49	H	-56.32	8.35	-47.97	65.92	30.95
			64QAM	3453.39	H	-56.71	8.35	-48.36	66.31	30.00
	1747.5	1/0	QPSK	3484.10	H	-54.45	8.45	-46.00	64.65	31.65
			16QAM	3484.70	H	-56.66	8.46	-48.20	66.75	31.55
			64QAM	3484.92	H	-55.96	8.46	-47.50	66.05	30.65
10	1715	1/0	QPSK	3420.82	H	-56.05	8.23	-47.82	65.85	31.03
			16QAM	3420.74	H	-55.79	8.23	-47.56	65.66	31.10
			64QAM	3421.31	H	-57.09	8.23	-48.86	66.96	29.97
	1732.5	1/0	QPSK	3453.87	H	-56.48	8.35	-48.13	66.17	31.04
			16QAM	3453.71	H	-56.34	8.35	-47.99	65.61	30.62
			64QAM	3453.71	H	-57.73	8.35	-49.38	67.00	29.39
	1750	1/0	QPSK	3491.64	H	-56.19	8.48	-47.71	66.94	32.23
			16QAM	3491.62	H	-55.72	8.48	-47.24	66.58	32.34
			64QAM	3491.86	H	-55.77	8.48	-47.29	66.63	31.12
5	1712.5	1/12	QPSK	3422.89	H	-56.27	8.24	-48.03	66.05	31.02
			16QAM	3423.18	H	-57.55	8.24	-49.31	67.27	30.96
			64QAM	3423.07	H	-57.26	8.24	-49.02	66.98	29.63
	1732.5	1/12	QPSK	3466.61	H	-56.25	8.39	-47.86	66.68	31.82
			16QAM	3466.47	H	-57.56	8.39	-49.17	67.95	31.78
			64QAM	3466.50	H	-57.64	8.39	-49.25	68.03	30.75
	1752.5	1/12	QPSK	3502.34	H	-55.65	8.51	-47.14	66.20	32.06
			16QAM	3502.40	H	-56.59	8.51	-48.08	66.87	31.79
			64QAM	3502.27	H	-56.43	8.51	-47.92	66.71	30.75

- Measurement data: Without wireless charging pad

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	1/0	QPSK	3422.46	H	-55.17	8.24	-46.93	64.90	30.97
			16QAM	3422.70	H	-56.54	8.24	-48.30	65.82	30.52
			64QAM	3422.88	H	-56.79	8.24	-48.55	66.07	29.65
	1732.5	1/7	QPSK	3464.33	H	-55.78	8.39	-47.39	65.97	31.58
			16QAM	3463.74	H	-57.24	8.38	-48.86	67.15	31.29
			64QAM	3463.85	H	-57.76	8.38	-49.38	67.67	30.28
	1753.5	1/0	QPSK	3507.66	H	-55.44	8.51	-46.93	65.89	31.96
			16QAM	3508.36	H	-56.73	8.51	-48.22	67.00	31.78
			64QAM	3508.22	H	-57.41	8.51	-48.90	67.68	30.65
1.4	1710.7	1/2	QPSK	3419.76	H	-56.21	8.23	-47.98	65.99	31.01
			16QAM	3419.70	H	-56.80	8.23	-48.57	66.27	30.70
			64QAM	3419.97	H	-56.36	8.23	-48.13	65.83	29.69
	1732.5	1/2	QPSK	3468.24	H	-55.33	8.40	-46.93	65.81	31.88
			16QAM	3468.80	H	-56.29	8.40	-47.89	66.57	31.68
			64QAM	3468.90	H	-57.05	8.40	-48.65	67.33	30.67
	1754.3	1/2	QPSK	3507.10	H	-56.13	8.51	-47.62	66.83	32.21
			16QAM	3507.57	H	-57.30	8.51	-48.79	67.81	32.02
			64QAM	3507.71	H	-56.89	8.51	-48.38	67.40	30.90

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.

- Measurement data: With wireless charging pad

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	1732.5	1/0	QPSK	3445.98	H	-56.13	8.32	-47.81	66.75	31.94
15	1717.5	1/0	QPSK	3421.74	H	-56.14	8.24	-47.90	67.65	32.75
10	1750	1/0	QPSK	3489.41	H	-55.88	8.47	-47.41	67.05	32.64
5	1752.5	1/12	QPSK	3504.22	H	-55.77	8.51	-47.26	66.68	32.42
3	1753.5	1/0	QPSK	3506.15	H	-55.94	8.51	-47.43	66.93	32.50
1.4	1754.3	1/2	QPSK	3509.64	H	-56.31	8.51	-47.80	67.51	32.71

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])

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

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.6 LTE Band 2

- Measurement data: Without wireless charging pad

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	3697.77	H	-53.46	8.49	-44.97	65.07	33.10
			16QAM	3697.07	H	-55.56	8.49	-47.07	66.20	32.13
			64QAM	3696.58	H	-55.23	8.49	-46.74	65.87	31.55
	1880	1/50	QPSK	3757.58	H	-54.90	8.51	-46.39	64.91	31.52
			16QAM	3757.88	H	-55.43	8.51	-46.92	64.76	30.84
			64QAM	3757.85	H	-56.32	8.51	-47.81	65.65	30.82
	1900	1/0	QPSK	3778.90	H	-54.07	8.52	-45.55	64.67	32.12
			16QAM	3779.98	H	-54.58	8.52	-46.06	64.58	31.52
			64QAM	3776.96	H	-54.06	8.52	-45.54	64.06	30.98
15	1857.5	1/0	QPSK	3696.46	H	-53.63	8.49	-45.14	64.48	32.34
			16QAM	3700.91	H	-54.71	8.49	-46.22	64.74	31.52
			64QAM	3695.66	H	-54.33	8.49	-45.84	64.36	31.25
	1880	1/0	QPSK	3741.08	H	-55.07	8.51	-46.56	65.66	32.10
			16QAM	3740.93	H	-56.27	8.51	-47.76	66.55	31.79
			64QAM	3740.93	H	-56.97	8.51	-48.46	67.25	31.37
	1902.5	1/0	QPSK	3788.62	H	-55.24	8.53	-46.71	66.51	32.80
			16QAM	3788.69	H	-55.24	8.53	-46.71	65.64	31.93
			64QAM	3787.80	H	-55.30	8.53	-46.77	65.70	31.54
10	1855	1/0	QPSK	3688.91	H	-54.34	8.50	-45.84	65.19	32.35
			16QAM	3686.68	H	-54.34	8.50	-45.84	64.28	31.44
			64QAM	3686.71	H	-55.76	8.50	-47.26	65.70	31.31
	1880	1/25	QPSK	3762.08	H	-54.08	8.51	-45.57	64.34	31.77
			16QAM	3761.84	H	-55.75	8.51	-47.24	64.88	30.64
			64QAM	3762.12	H	-56.31	8.51	-47.80	65.44	30.50
	1905	1/0	QPSK	3802.54	H	-55.05	8.53	-46.52	65.77	32.25
			16QAM	3802.16	H	-56.33	8.53	-47.80	66.40	31.60
			64QAM	3801.81	H	-56.12	8.53	-47.59	66.19	31.46
5	1852.5	1/0	QPSK	3698.06	H	-54.84	8.49	-46.35	65.81	32.46
			16QAM	3698.19	H	-55.27	8.49	-46.78	65.51	31.73
			64QAM	3697.94	H	-54.44	8.49	-45.95	64.68	31.65
	1880	1/12	QPSK	3758.74	H	-54.96	8.51	-46.45	64.96	31.51
			16QAM	3759.13	H	-55.98	8.51	-47.47	65.35	30.88
			64QAM	3759.09	H	-57.03	8.51	-48.52	66.40	30.59
	1907.5	1/0	QPSK	3813.92	H	-53.88	8.55	-45.33	64.17	31.84
			16QAM	3814.20	H	-55.49	8.55	-46.94	64.91	30.97
			64QAM	3814.48	H	-55.88	8.55	-47.33	65.30	31.00

- Measurement data: Without wireless charging pad

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	1/0	QPSK	3700.28	H	-54.02	8.49	-45.53	65.51	32.98
			16QAM	3699.96	H	-55.23	8.49	-46.74	66.09	32.35
			64QAM	3699.90	H	-54.63	8.49	-46.14	65.49	31.10
	1880	1/7	QPSK	3762.12	H	-54.18	8.51	-45.67	64.75	32.08
			16QAM	3762.60	H	-55.90	8.52	-47.38	65.54	31.16
			64QAM	3762.47	H	-56.07	8.51	-47.56	65.72	30.09
	1908.5	1/0	QPSK	3815.15	H	-54.29	8.55	-45.74	64.56	31.82
			16QAM	3815.02	H	-56.05	8.55	-47.50	65.68	31.18
			64QAM	3815.28	H	-56.43	8.55	-47.88	66.06	30.39
1.4	1850.7	1/2	QPSK	3698.19	H	-54.58	8.49	-46.09	65.82	32.73
			16QAM	3698.43	H	-55.97	8.49	-47.48	66.48	32.00
			64QAM	3699.08	H	-55.54	8.49	-47.05	66.05	30.98
	1880	1/2	QPSK	3764.67	H	-53.98	8.52	-45.46	63.88	31.42
			16QAM	3764.64	H	-55.94	8.52	-47.42	65.07	30.65
			64QAM	3764.63	H	-55.57	8.52	-47.05	64.70	29.69
	1909.3	1/2	QPSK	3820.07	H	-54.13	8.55	-45.58	64.61	32.03
			16QAM	3819.78	H	-55.97	8.55	-47.42	65.66	31.24
			64QAM	3819.98	H	-55.68	8.55	-47.13	65.37	30.09

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])

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

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

- Measurement data: With wireless charging pad

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	3697.96	H	-54.30	8.49	-45.81	65.10	32.29
15	1902.5	1/0	QPSK	3491.39	H	-55.12	8.48	-46.64	64.95	31.31
10	1855	1/0	QPSK	3701.28	H	-55.27	8.49	-46.78	66.30	32.52
5	1852.5	1/0	QPSK	3700.04	H	-55.41	8.49	-46.92	66.58	32.66
3	1851.5	1/0	QPSK	3700.69	H	-54.81	8.49	-46.32	65.34	32.02
1.4	1850.7	1/2	QPSK	3698.43	H	-55.54	8.49	-47.05	66.60	32.55

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])

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

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.6.7 LTE Band 41

- Measurement data: Without wireless charging pad

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	2506	1/0	QPSK	4992.67	X	-52.11	10.10	-42.01	62.32	45.31
			16QAM	4992.61	X	-54.60	10.10	-44.50	63.83	44.33
			64QAM	4992.60	X	-54.40	10.10	-44.30	63.63	43.31
	2593	1/0	QPSK	5164.77	X	-53.91	10.39	-43.52	64.07	45.55
			16QAM	5164.85	X	-54.85	10.39	-44.46	64.09	44.63
			64QAM	5164.72	X	-54.73	10.39	-44.34	63.97	43.61
	2680	1/0	QPSK	5341.42	X	-52.84	10.54	-42.30	62.19	44.89
			16QAM	8341.78	X	-50.29	13.12	-37.17	56.05	43.88
			64QAM	5341.76	X	-54.61	10.55	-44.06	62.94	42.91
15	2503.5	1/0	QPSK	4994.97	X	-53.37	10.10	-43.27	63.20	44.93
			16QAM	4991.48	X	-52.81	10.09	-42.72	62.41	44.69
			64QAM	4995.20	X	-54.91	10.10	-44.81	64.50	42.81
	2593	1/0	QPSK	5170.27	X	-53.84	10.40	-43.44	65.64	47.20
			16QAM	5170.23	X	-54.45	10.40	-44.05	65.26	46.21
			64QAM	5170.37	X	-55.56	10.40	-45.16	66.37	44.43
	2682.5	1/0	QPSK	5351.52	X	-53.52	10.55	-42.97	64.17	46.20
			16QAM	5351.69	X	-54.39	10.55	-43.84	64.00	45.16
			64QAM	5351.71	X	-54.26	10.55	-43.71	63.87	43.32
10	2501	1/0	QPSK	4993.37	X	-53.75	10.10	-43.65	64.70	46.05
			16QAM	4993.67	X	-52.97	10.10	-42.87	62.98	45.11
			64QAM	4993.67	X	-53.97	10.10	-43.87	63.98	44.11
	2593	1/0	QPSK	5173.30	X	-52.76	10.40	-42.36	64.84	47.48
			16QAM	5173.28	X	-52.56	10.40	-42.16	63.70	46.54
			64QAM	5173.30	X	-53.56	10.40	-43.16	64.70	45.55
	2685	1/0	QPSK	5361.76	X	-53.17	10.56	-42.61	63.95	46.34
			16QAM	5362.66	X	-54.28	10.56	-43.72	64.10	45.38
			64QAM	5362.74	X	-53.99	10.56	-43.43	63.81	44.39
5	2498.5	1/12	QPSK	4996.46	X	-53.63	10.10	-43.53	64.54	46.01
			16QAM	4996.03	X	-53.75	10.10	-43.65	63.00	44.35
			64QAM	4996.40	X	-55.08	10.10	-44.98	64.33	42.84
	2593	1/12	QPSK	5187.56	X	-52.25	10.43	-41.82	63.81	46.99
			16QAM	5187.60	X	-52.25	10.43	-41.82	62.52	45.70
			64QAM	5187.60	X	-52.25	10.43	-41.82	62.52	44.08
	2687.5	1/12	QPSK	5372.08	X	-53.26	10.56	-42.70	64.28	46.58
			16QAM	5372.16	X	-53.96	10.56	-43.40	62.76	44.36
			64QAM	5372.16	X	-53.65	10.56	-43.09	62.45	43.75

- Measurement data: With wireless charging pad

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	2593	1/0	QPSK	5167.56	H	-53.07	10.39	-42.68	62.30	44.62
15	2593	1/0	QPSK	5173.10	H	-52.67	10.40	-42.27	60.77	43.50
10	2593	1/0	QPSK	5175.13	H	-54.30	10.41	-43.89	62.22	43.33
5	2593	1/12	QPSK	5186.31	H	-53.76	10.43	-43.33	61.81	43.48

Note 1: Limit Calculation = 43 + $10\log_{10}$ (P[Watts])

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

Note 3: The frequency spectrum is examined from 9 kHz to the 10th harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

7.7 FREQUENCY STABILITY

7.7.1 LTE Band 12,17

OPERATING FREQUENCY : 707.5 MHz
REFERENCE VOLTAGE : 3.85 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%	3.85	+20(Ref)	707,499,994	-6	-0.0085	-0.000000848
100%		-30	707,499,998	-2	-0.0028	-0.000000283
100%		-20	707,499,996	-4	-0.0057	-0.000000565
100%		-10	707,499,999	-1	-0.0014	-0.000000141
100%		0	707,499,998	-2	-0.0028	-0.000000283
100%		+10	707,500,002	2	0.0028	0.000000283
100%		+20	707,499,994	-6	-0.0085	-0.000000848
100%		+30	707,500,003	3	0.0042	0.000000424
100%		+40	707,499,994	-6	-0.0085	-0.000000848
100%		+50	707,499,995	-5	-0.0071	-0.000000707
115%	4.43	+20	707,499,993	-7	-0.0099	-0.000000989
BATT.ENDPOINT	3.40	+20	707,499,996	-4	-0.0057	-0.000000565

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

7.7.2 LTE Band 13

OPERATING FREQUENCY : 782 MHz
REFERENCE VOLTAGE : 3.85 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%	3.85	+20(Ref)	781,999,999	-1	-0.0013	-0.000000128
100%		-30	781,999,994	-6	-0.0077	-0.000000767
100%		-20	781,999,992	-8	-0.0102	-0.000001023
100%		-10	781,999,998	-2	-0.0026	-0.000000256
100%		0	781,999,994	-6	-0.0077	-0.000000767
100%		+10	781,999,998	-2	-0.0026	-0.000000256
100%		+20	781,999,999	-1	-0.0013	-0.000000128
100%		+30	781,999,997	-3	-0.0038	-0.000000384
100%		+40	781,999,994	-6	-0.0077	-0.000000767
100%		+50	781,999,995	-5	-0.0064	-0.000000639
115%	4.43	+20	781,999,993	-7	-0.0090	-0.000000895
BATT.ENDPOINT	3.40	+20	782,000,002	2	0.0026	0.000000256

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

7.7.3 LTE Band 5

OPERATING FREQUENCY : 836.5 MHz
REFERENCE VOLTAGE : 3.85 VDC
DEVIATION LIMIT : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (V DC)	TEMP (℃)	FREQUENCY (Hz)	FREQ.Dev (Hz)	Deviation	
					(ppm)	(%)
100%	3.85	+20(Ref)	836,500,002	2	0.0024	0.000000239
100%		-30	836,499,999	-1	-0.0012	-0.000000120
100%		-20	836,499,997	-3	-0.0036	-0.000000359
100%		-10	836,500,002	2	0.0024	0.000000239
100%		0	836,499,997	-3	-0.0036	-0.000000359
100%		+10	836,499,996	-4	-0.0048	-0.000000478
100%		+20	836,500,002	2	0.0024	0.000000239
100%		+30	836,499,994	-6	-0.0072	-0.000000717
100%		+40	836,499,992	-8	-0.0096	-0.000000956
100%		+50	836,500,003	3	0.0036	0.000000359
115%	4.43	+20	836,499,993	-7	-0.0084	-0.000000837
BATT.ENDPOINT	3.40	+20	836,499,996	-4	-0.0048	-0.000000478

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

7.7.4 LTE Band 4

OPERATING FREQUENCY : 1732.5 MHz
REFERENCE VOLTAGE 3.85 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%	3.85	+20(Ref)	1,732,500,005	5	0.0029	0.000000289
100%		-30	1,732,500,012	12	0.0069	0.000000693
100%		-20	1,732,500,007	7	0.0040	0.000000404
100%		-10	1,732,500,001	1	0.0006	0.000000058
100%		0	1,732,500,011	11	0.0063	0.000000635
100%		+10	1,732,500,004	4	0.0023	0.000000231
100%		+20	1,732,500,005	5	0.0029	0.000000289
100%		+30	1,732,500,008	8	0.0046	0.000000462
100%		+40	1,732,500,009	9	0.0052	0.000000519
100%		+50	1,732,500,004	4	0.0023	0.000000231
115%	4.43	+20	1,732,500,007	7	0.0040	0.000000404
BATT.ENDPOINT	3.40	+20	1,732,500,006	6	0.0035	0.000000346

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

7.7.5 LTE Band 2

OPERATING FREQUENCY : 1880 MHz
REFERENCE VOLTAGE 3.85 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%	3.85	+20(Ref)	1,879,999,998	-2	-0.0011	-0.000000106
100%		-30	1,879,999,995	-5	-0.0027	-0.000000266
100%		-20	1,880,000,002	2	0.0011	0.000000106
100%		-10	1,879,999,997	-3	-0.0016	-0.000000160
100%		0	1,879,999,998	-2	-0.0011	-0.000000106
100%		+10	1,880,000,002	2	0.0011	0.000000106
100%		+20	1,879,999,998	-2	-0.0011	-0.000000106
100%		+30	1,880,000,003	3	0.0016	0.000000160
100%		+40	1,879,999,998	-2	-0.0011	-0.000000106
100%		+50	1,880,000,002	2	0.0011	0.000000106
115%	4.43	+20	1,880,000,003	3	0.0016	0.000000160
BATT.ENDPOINT	3.40	+20	1,879,999,998	-2	-0.0011	-0.000000106

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

7.7.6 LTE Band 41

OPERATING FREQUENCY : 2593 MHz
REFERENCE VOLTAGE 3.85 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%	3.85	+20(Ref)	2,592,999,996	-4	-0.0015	-0.000000154
100%		-30	2,593,000,002	2	0.0008	0.000000077
100%		-20	2,593,000,014	14	0.0054	0.000000540
100%		-10	2,593,000,010	10	0.0039	0.000000386
100%		0	2,593,000,009	9	0.0035	0.000000347
100%		+10	2,593,000,007	7	0.0027	0.000000270
100%		+20	2,592,999,996	-4	-0.0015	-0.000000154
100%		+30	2,593,000,002	2	0.0008	0.000000077
100%		+40	2,593,000,014	14	0.0054	0.000000540
100%		+50	2,592,999,991	-9	-0.0035	-0.000000347
115%	4.43	+20	2,593,000,011	11	0.0042	0.000000424
BATT.ENDPOINT	3.40	+20	2,593,000,013	13	0.0050	0.000000501

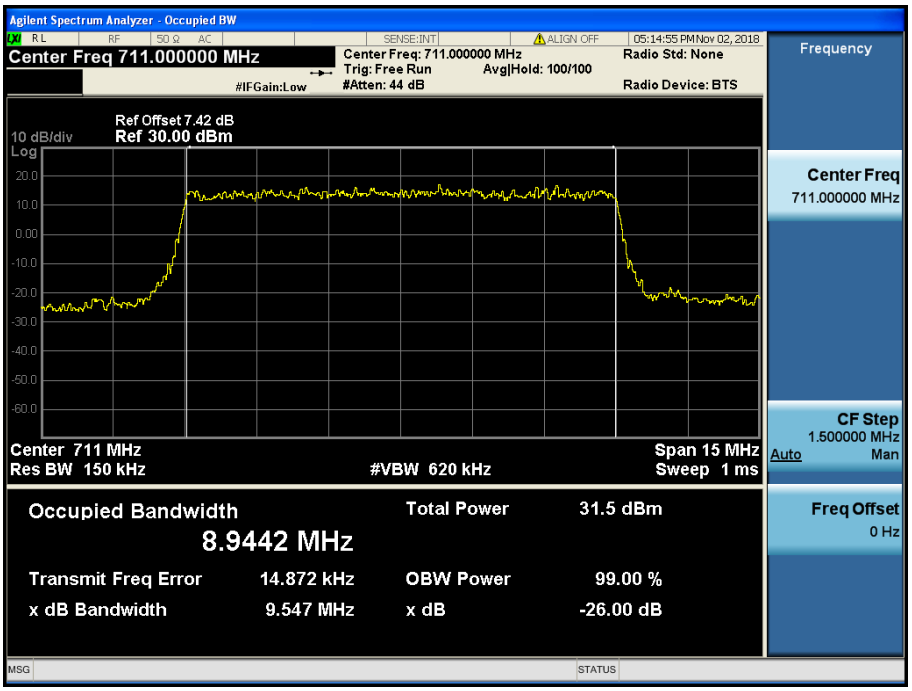
Note. Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain inband when the maximum measured frequency deviation noted during the frequency stability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

8. TEST PLOTS

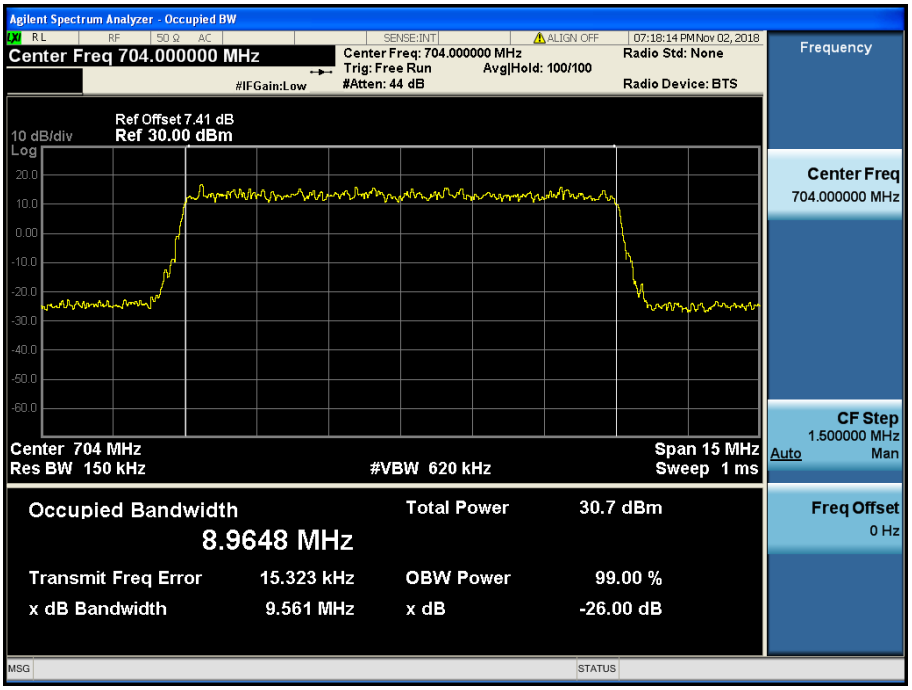
Note: All bandwidths, RB configurations, and modulations were investigated.
The worst case test results are reported.

8.1 OCCUPIED BANDWIDTH

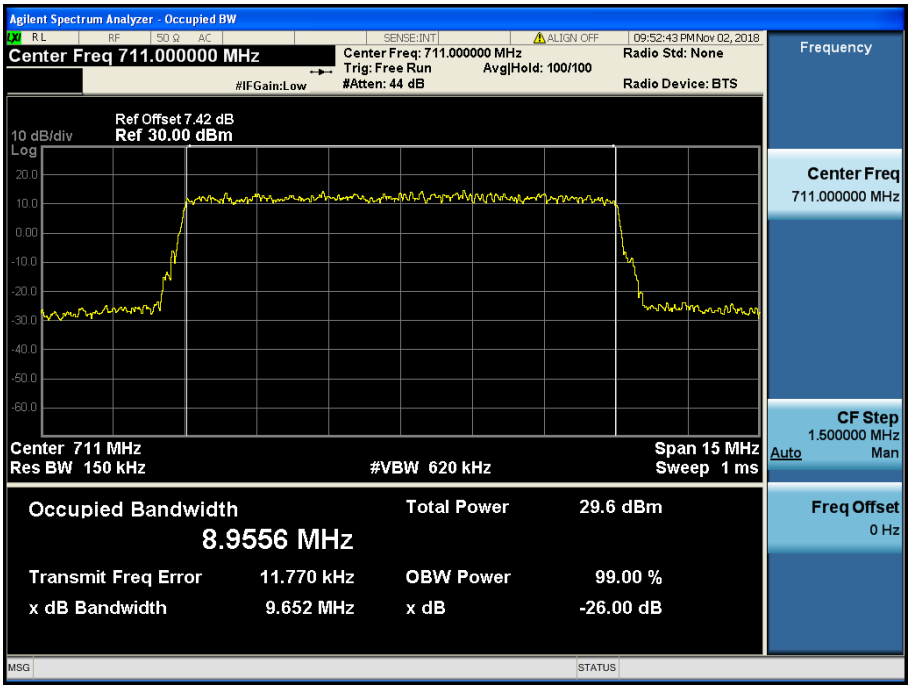
8.1.1 LTE Band 12,17



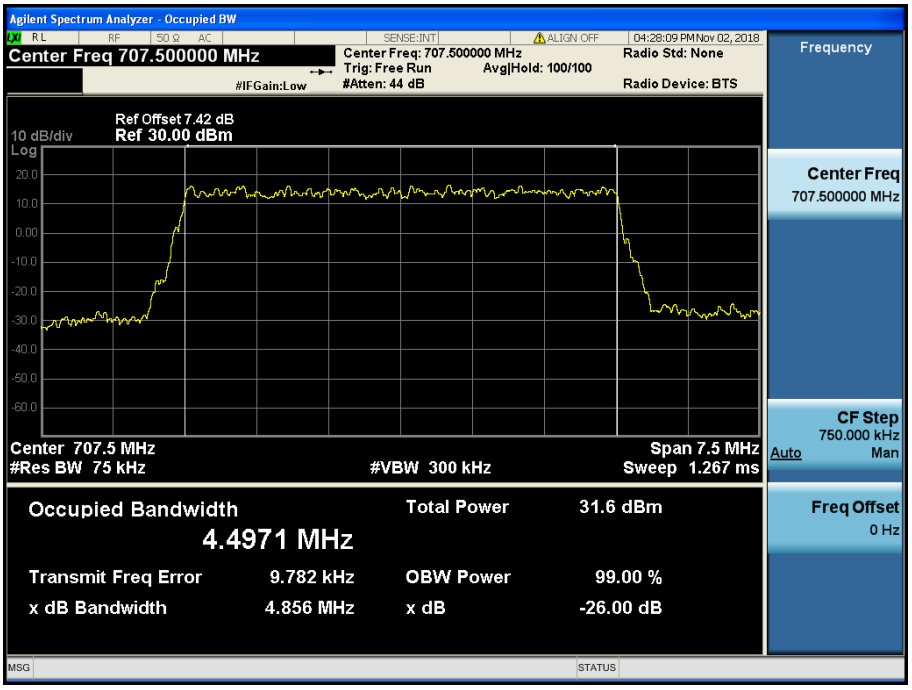
LTE Band 12,17 / 10 MHz / QPSK - RB Size 50



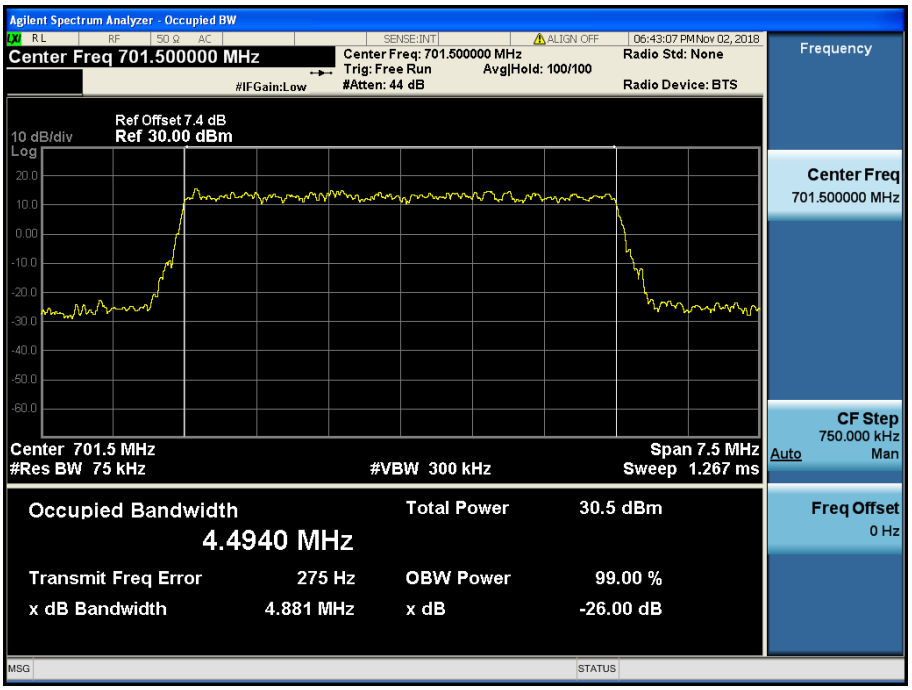
LTE Band 12,17 / 10 MHz / 16QAM - RB Size 50



LTE Band 12,17 / 10 MHz / 64QAM- RB Size 50



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



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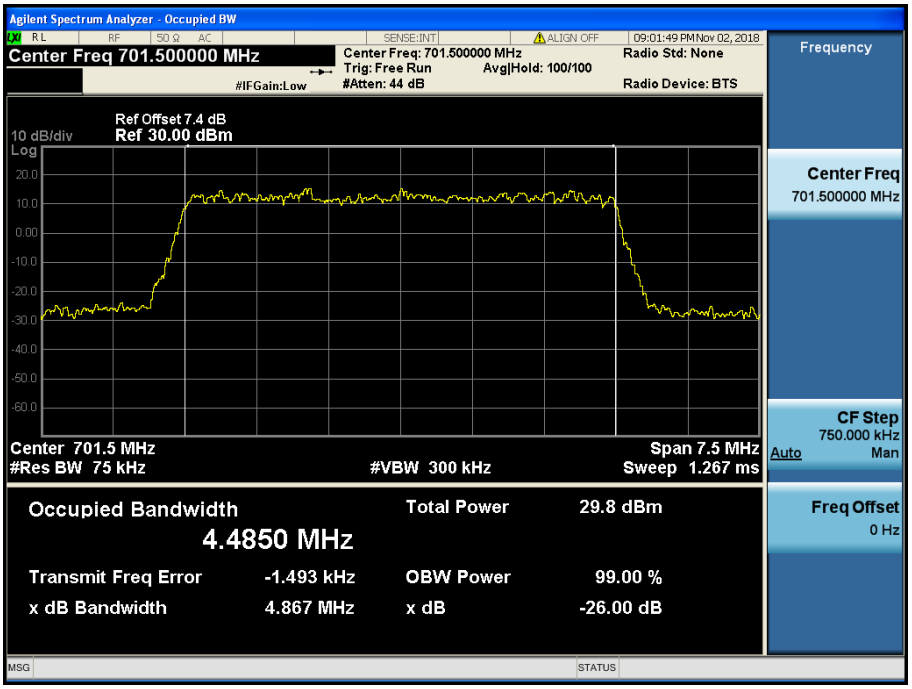
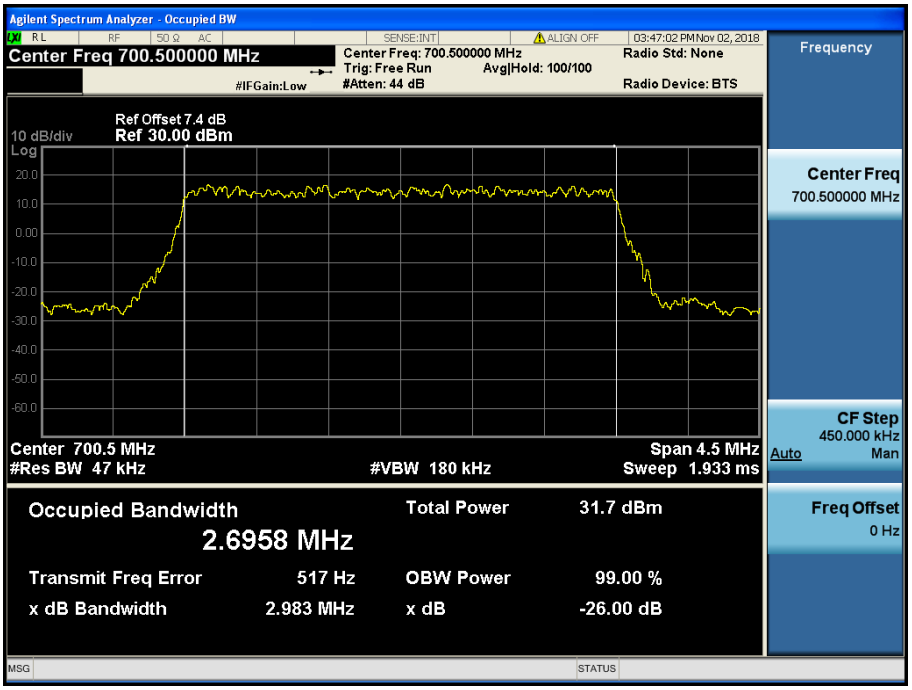
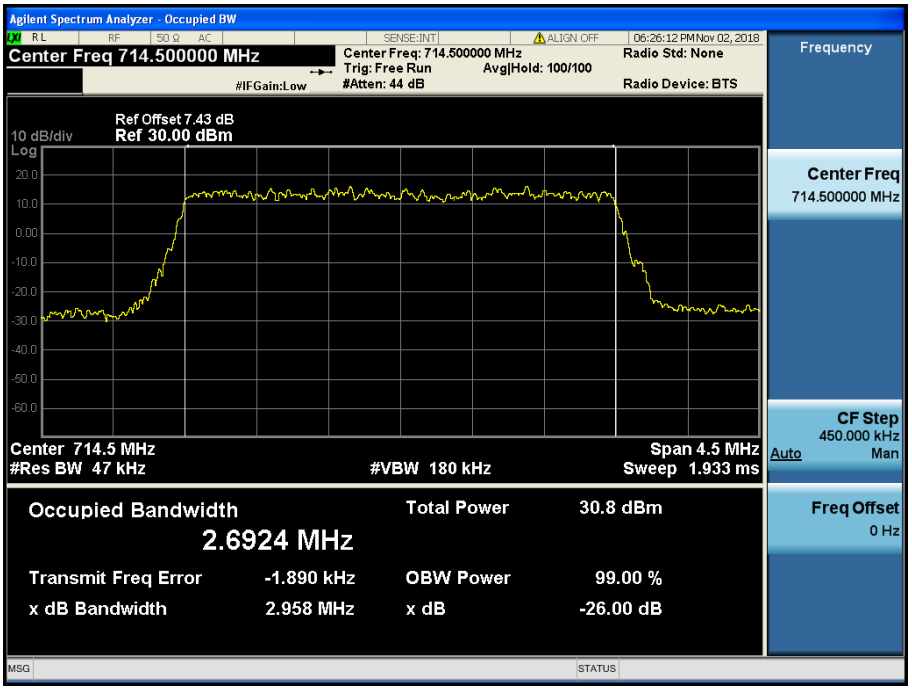


LTE Band 12,17 / 5 MHz / 64QAM - RB Size 25

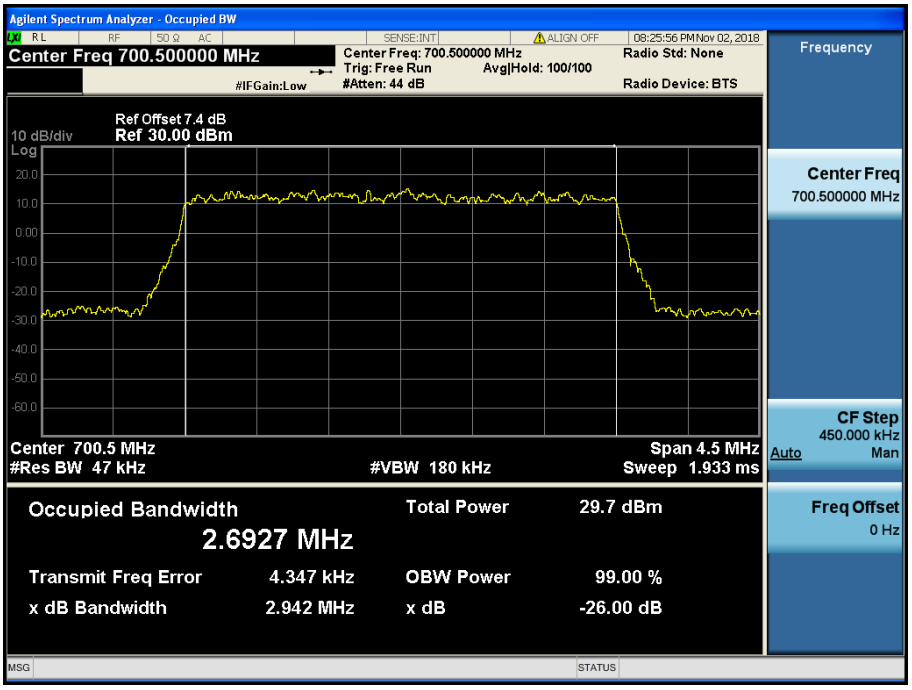
8.1.2 LTE Band 12



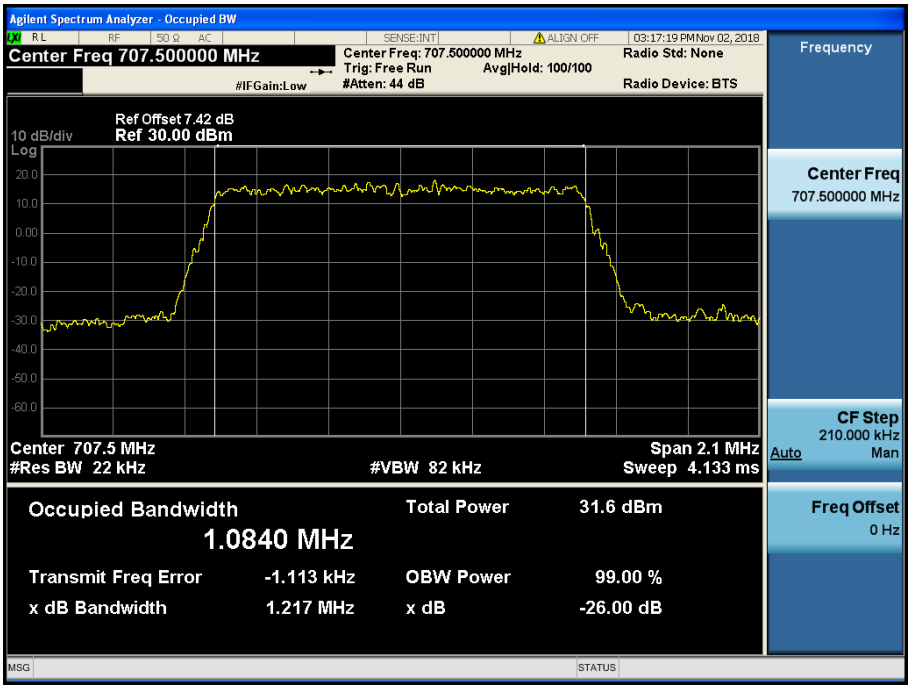
LTE Band 12 / 3 MHz / QPSK - RB Size 15



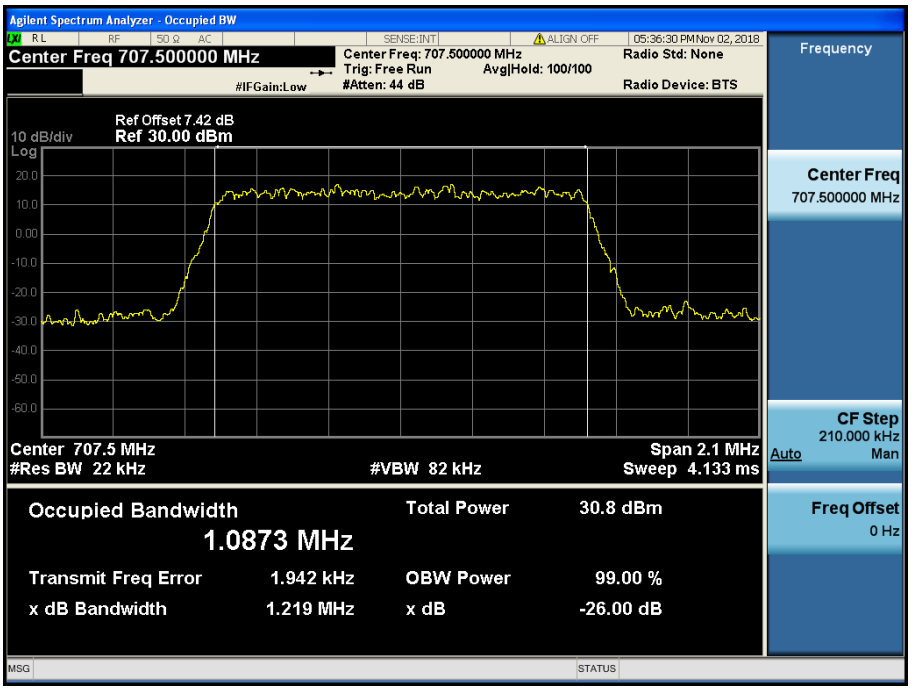
LTE Band 12 / 3 MHz / 16QAM - RB Size 15



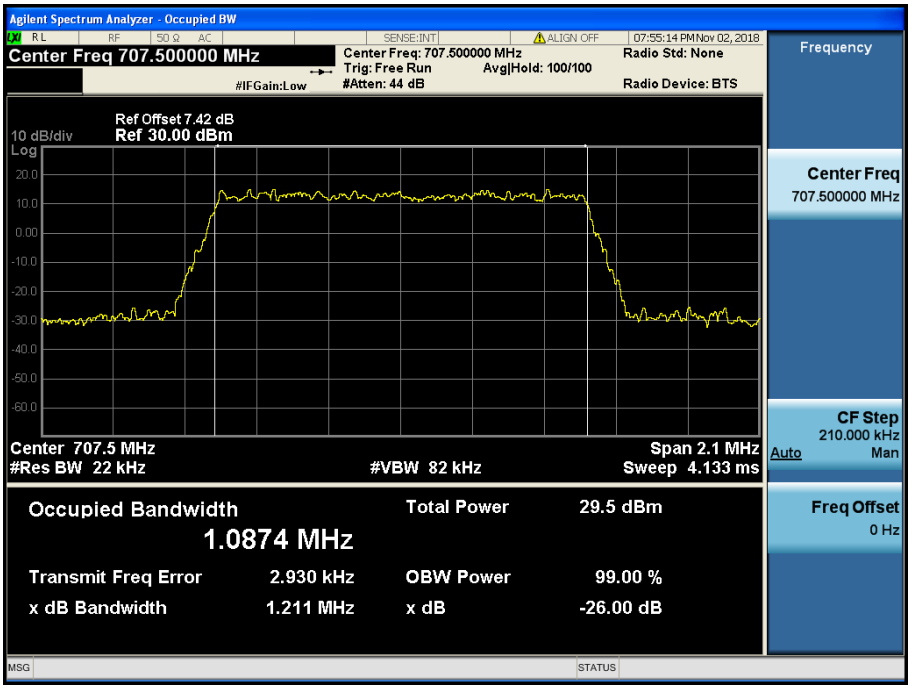
LTE Band 12 / 3 MHz / 64QAM - RB Size 15



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

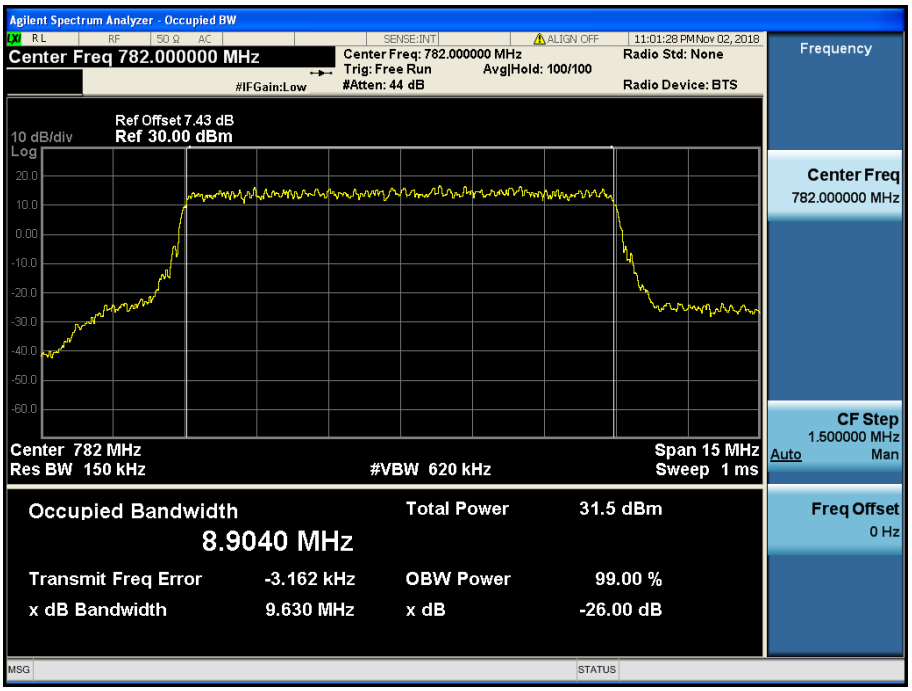


LTE Band 12 / 1.4 MHz / 16QAM - RB Size 6

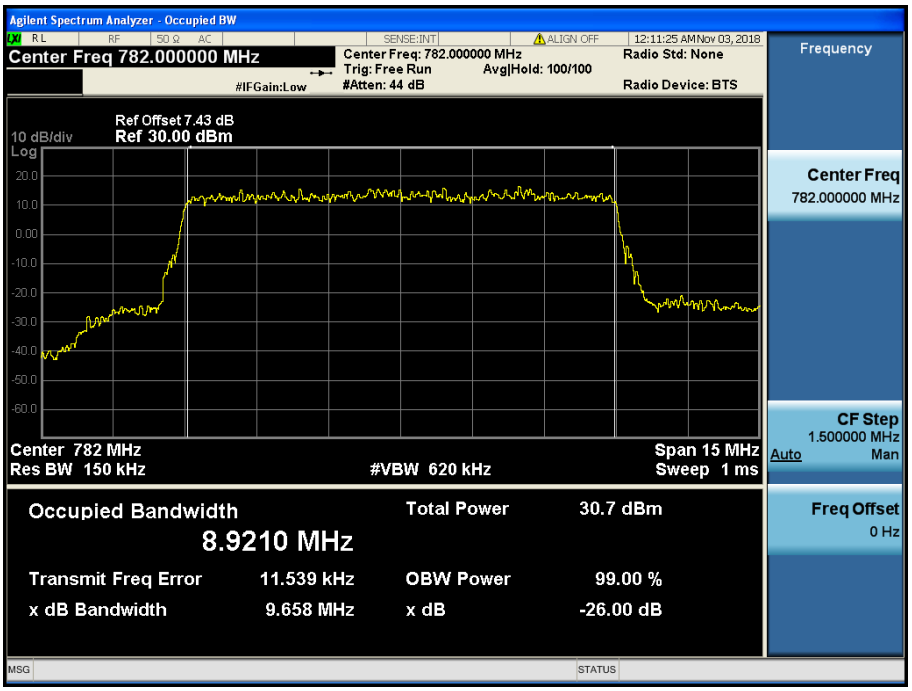


LTE Band 12 / 1.4 MHz / 64QAM - RB Size 6

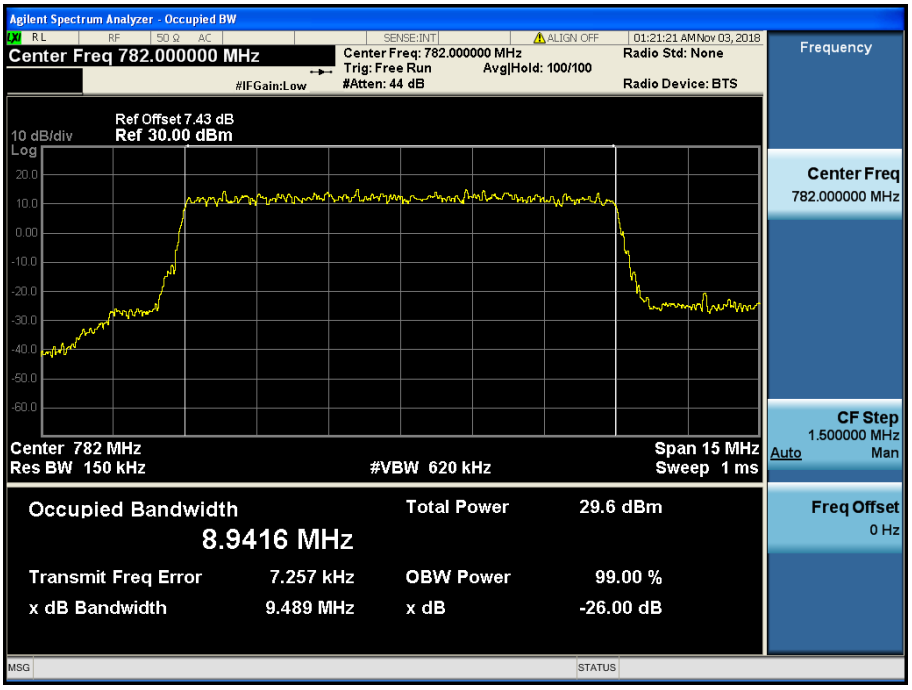
8.1.3 LTE Band 13



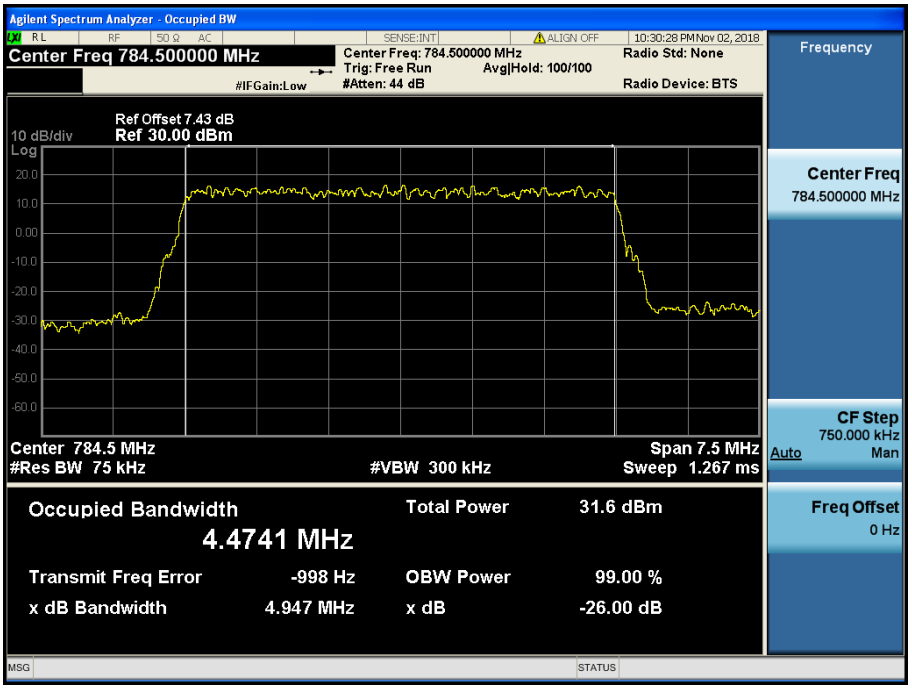
LTE Band 13 / 10 MHz / QPSK - RB Size 50



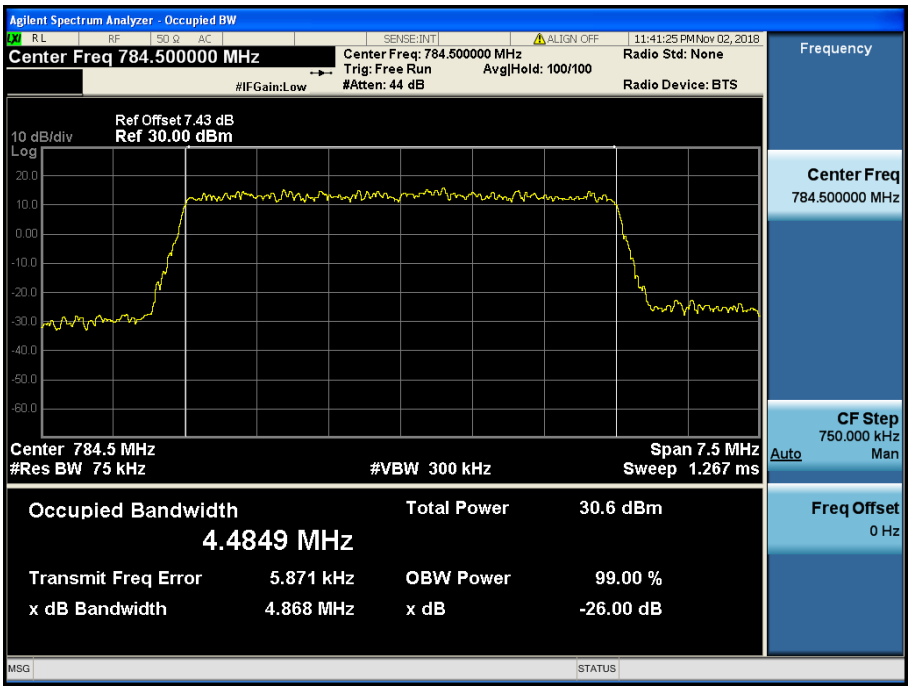
LTE Band 13 / 10 MHz / 16QAM - RB Size 50



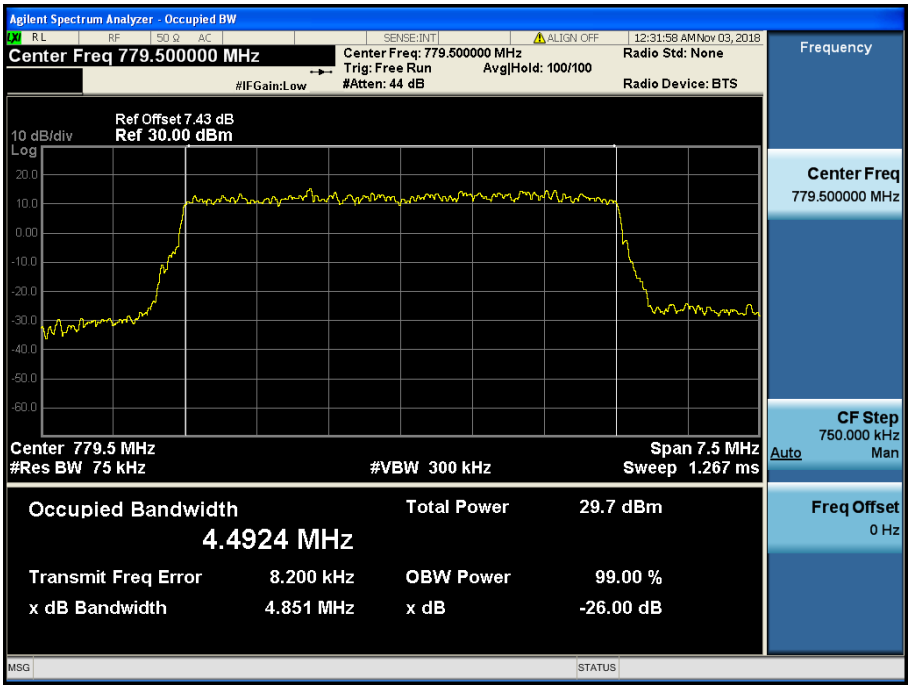
LTE Band 13 / 10 MHz / 64QAM - RB Size 50



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

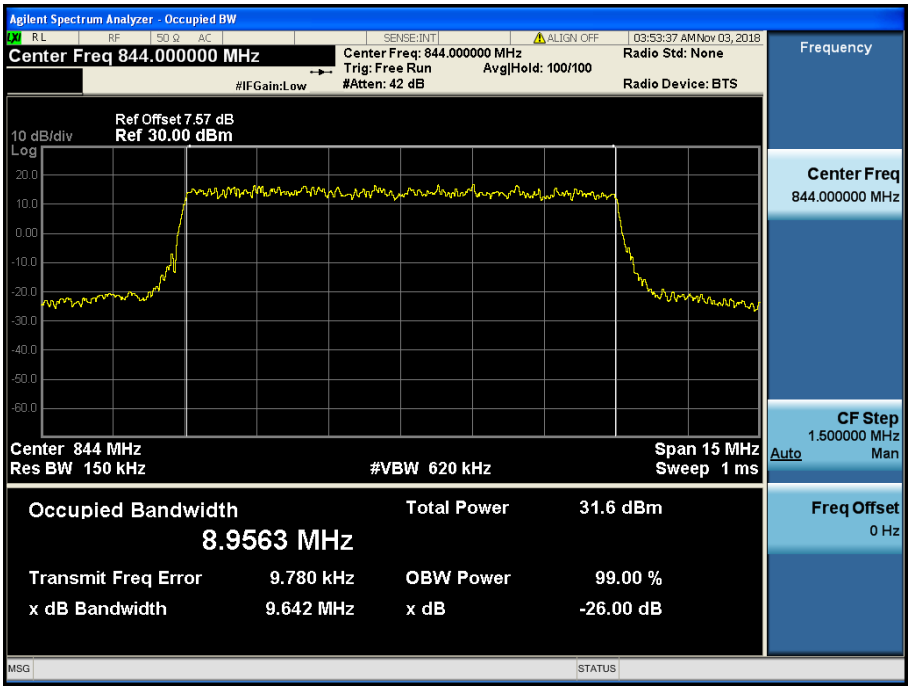


LTE Band 13 / 5 MHz / 16QAM - RB Size 25

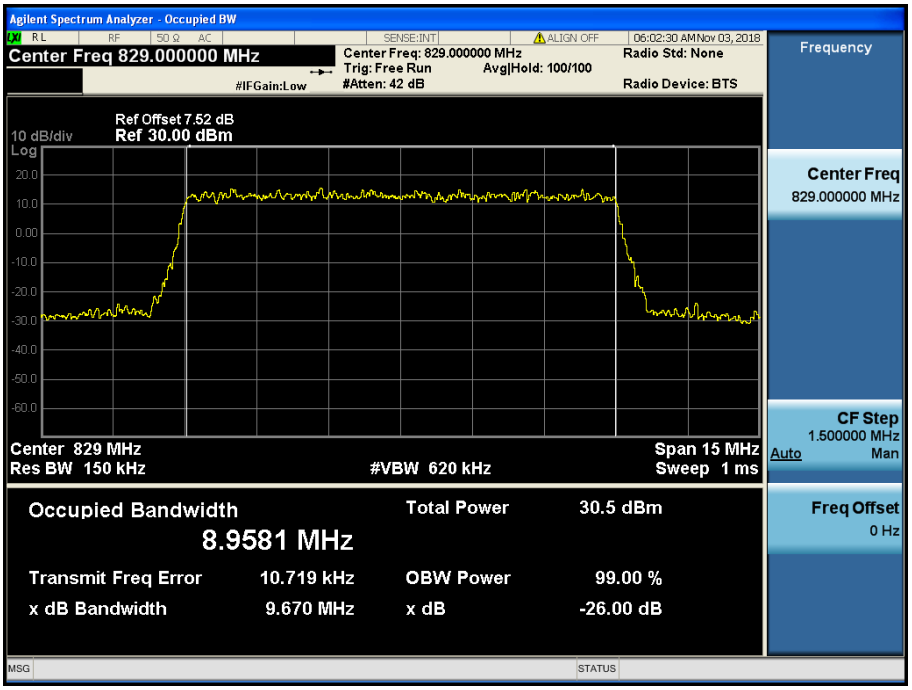


LTE Band 13 / 5 MHz / 64QAM - RB Size 25

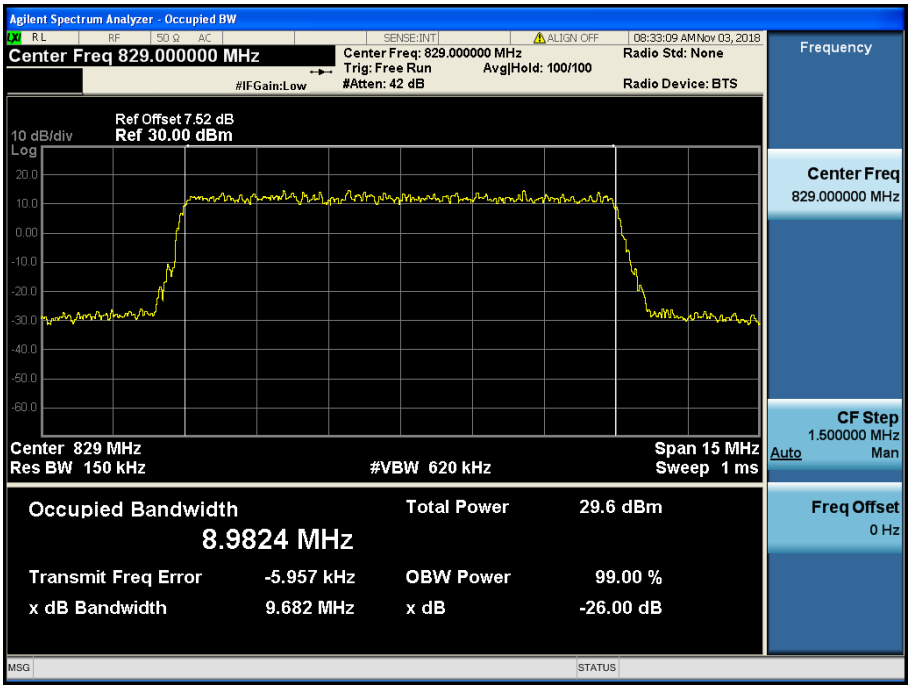
8.1.4 LTE Band 5



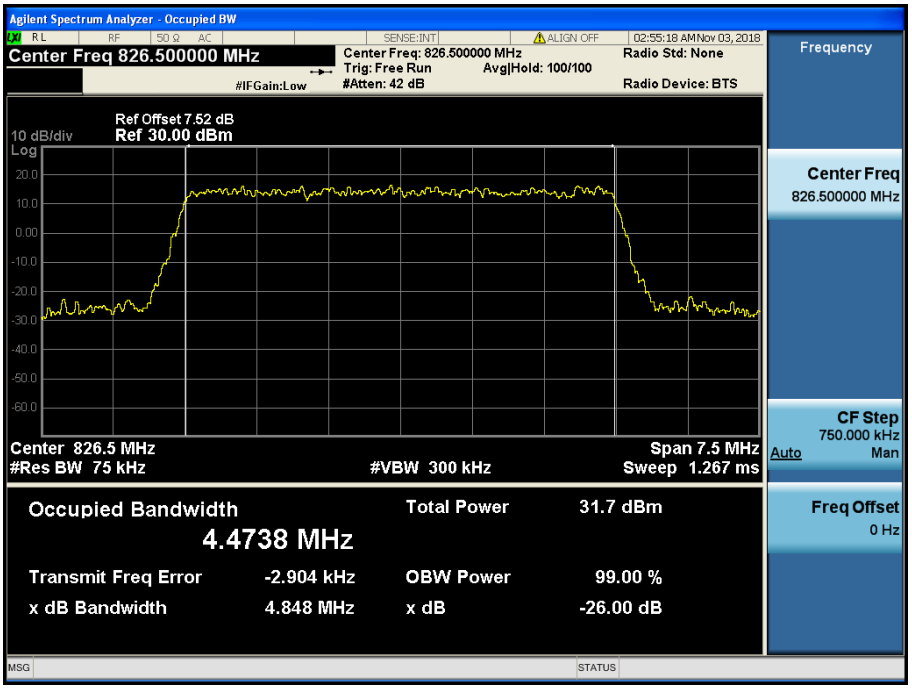
LTE Band 5 / 10 MHz / QPSK - RB Size 50



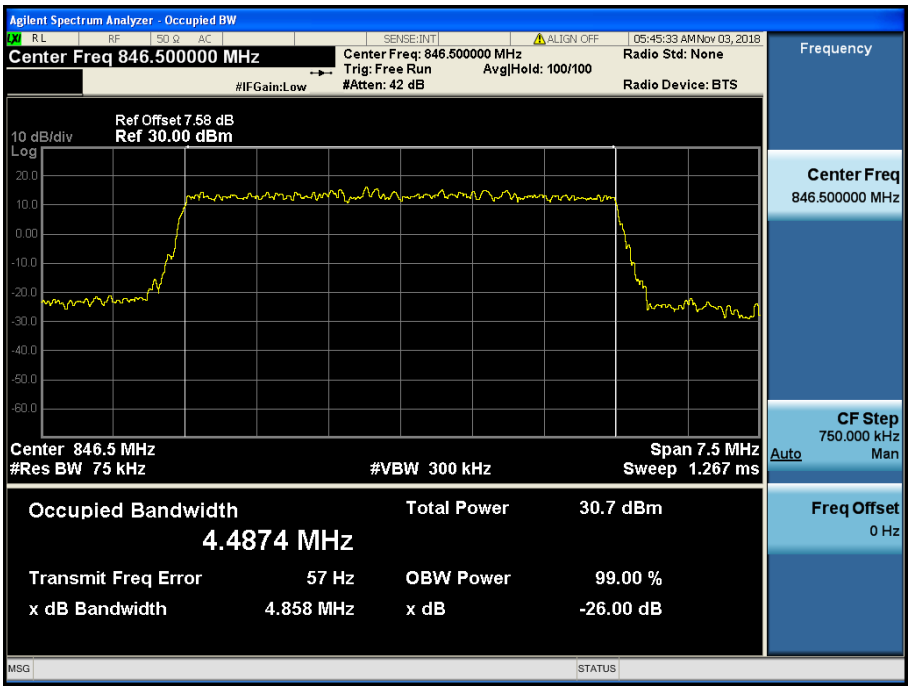
LTE Band 5 / 10 MHz / 16QAM - RB Size 50



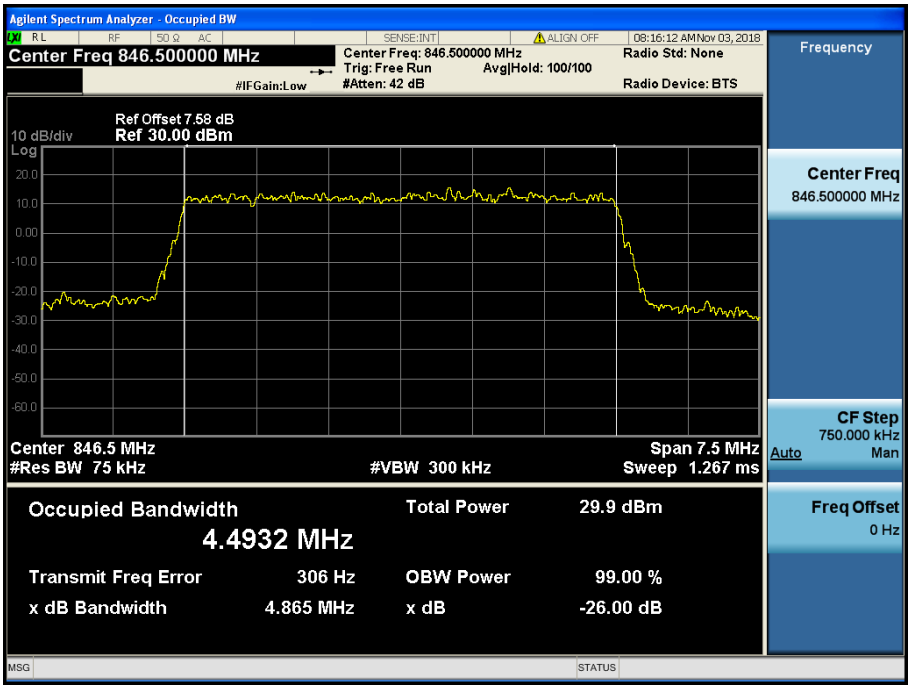
LTE Band 5 / 10 MHz / 64QAM - RB Size 50



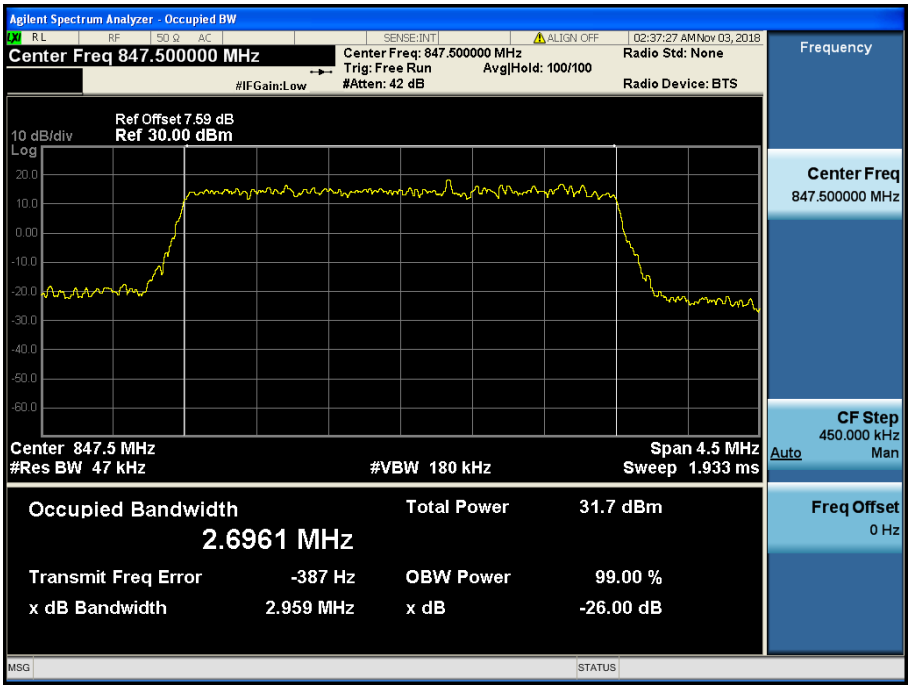
LTE Band 5 / 5 MHz / QPSK - RB Size 25



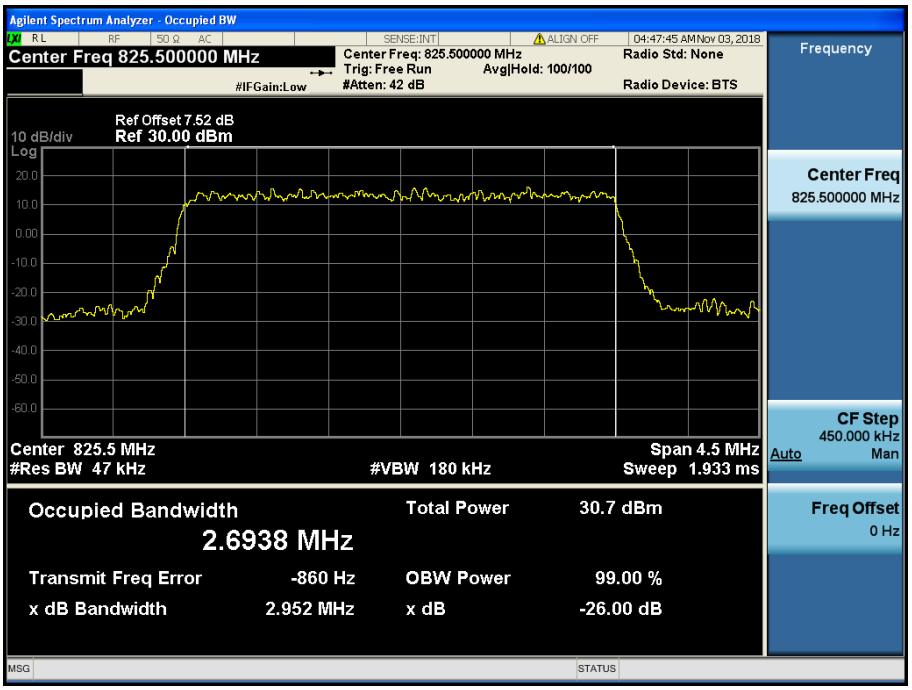
LTE Band 5 / 5 MHz / 16QAM - RB Size 25



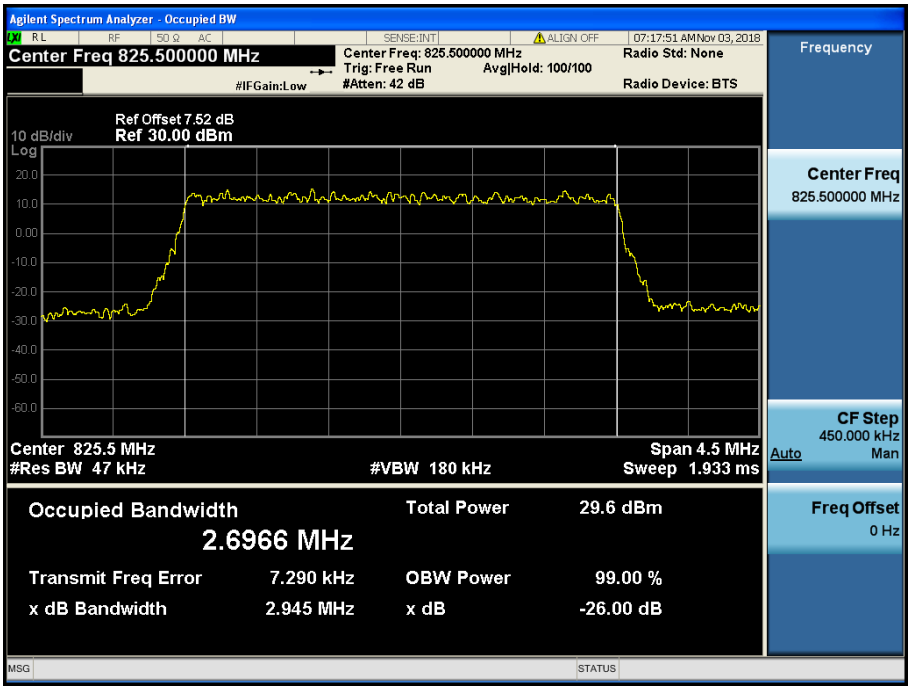
LTE Band 5 / 5 MHz / 64QAM - RB Size 25



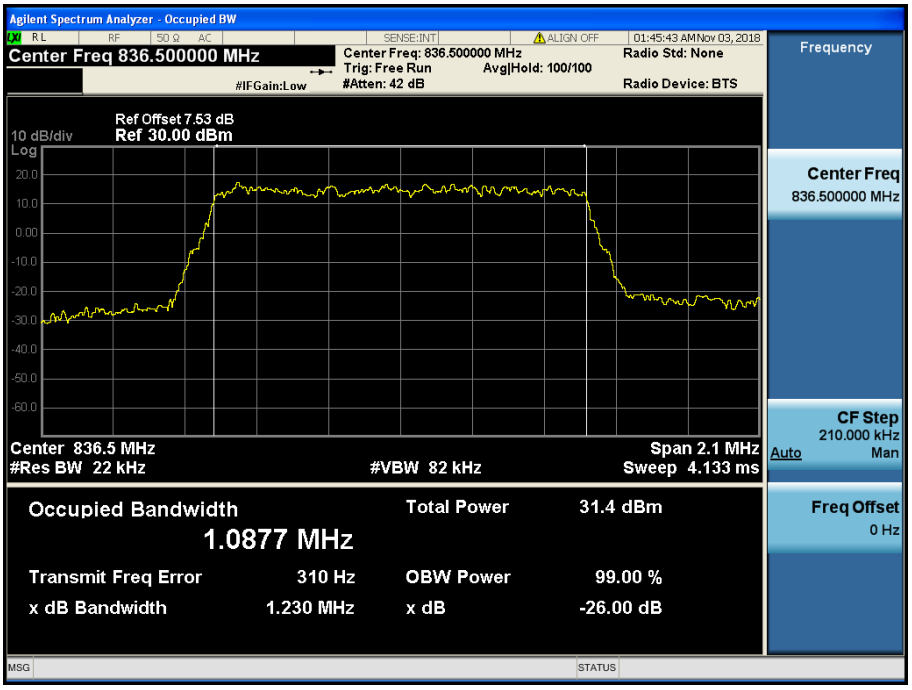
LTE Band 5 / 3 MHz / QPSK - RB Size 15



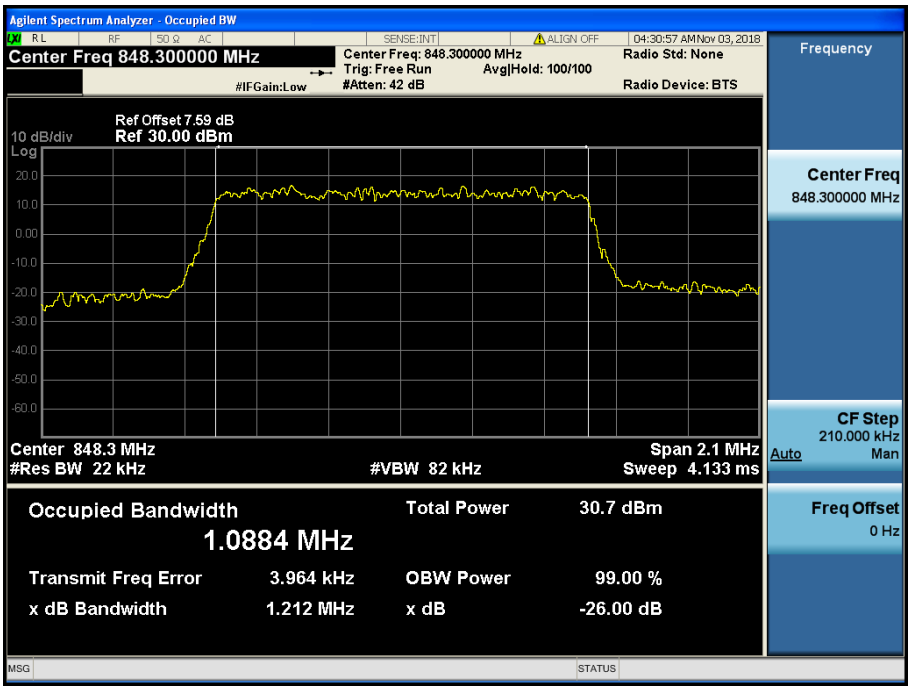
LTE Band 5 / 3 MHz / 16QAM - RB Size 15



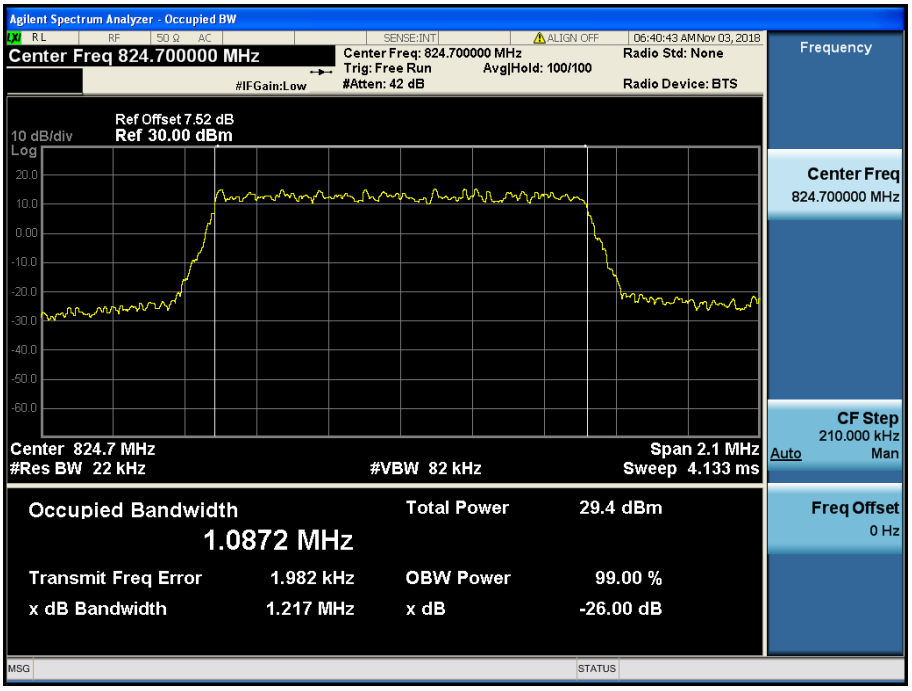
LTE Band 5 / 3 MHz / 64QAM - RB Size 15



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

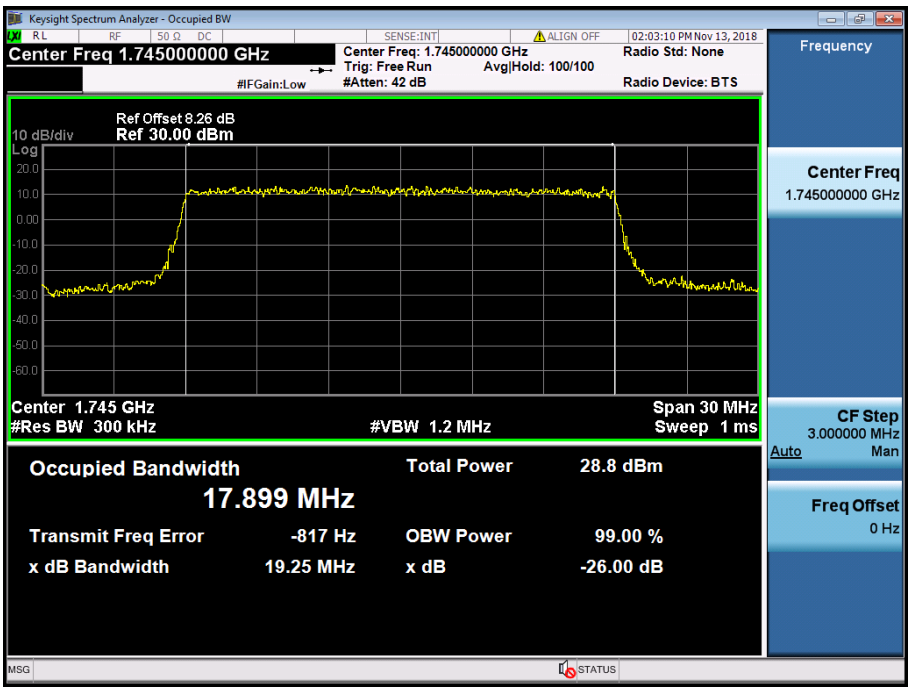


LTE Band 5 / 1.4 MHz / 16QAM - RB Size 6

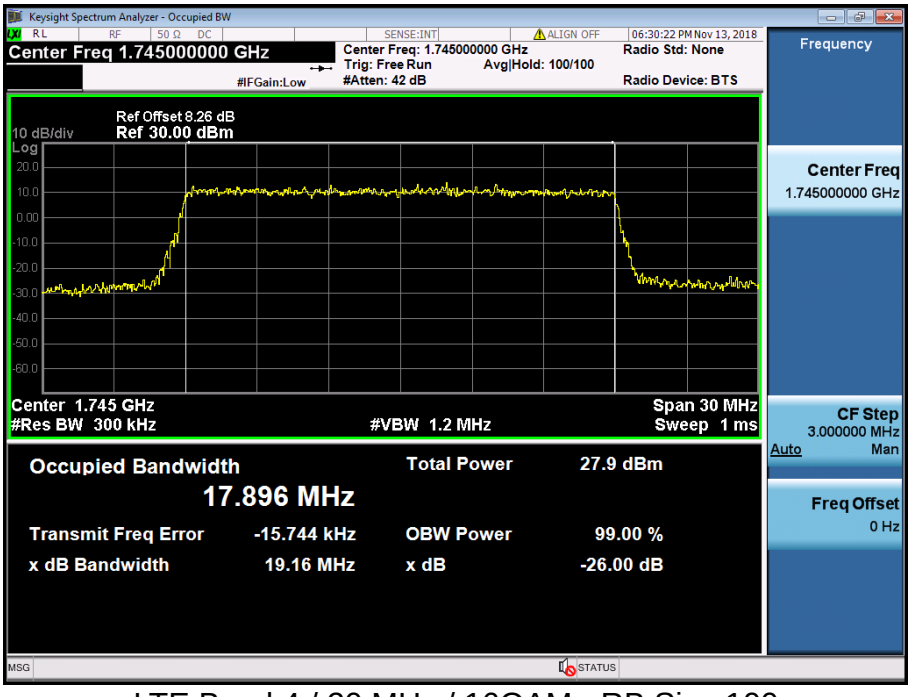


LTE Band 5 / 1.4 MHz / 64QAM - RB Size 6

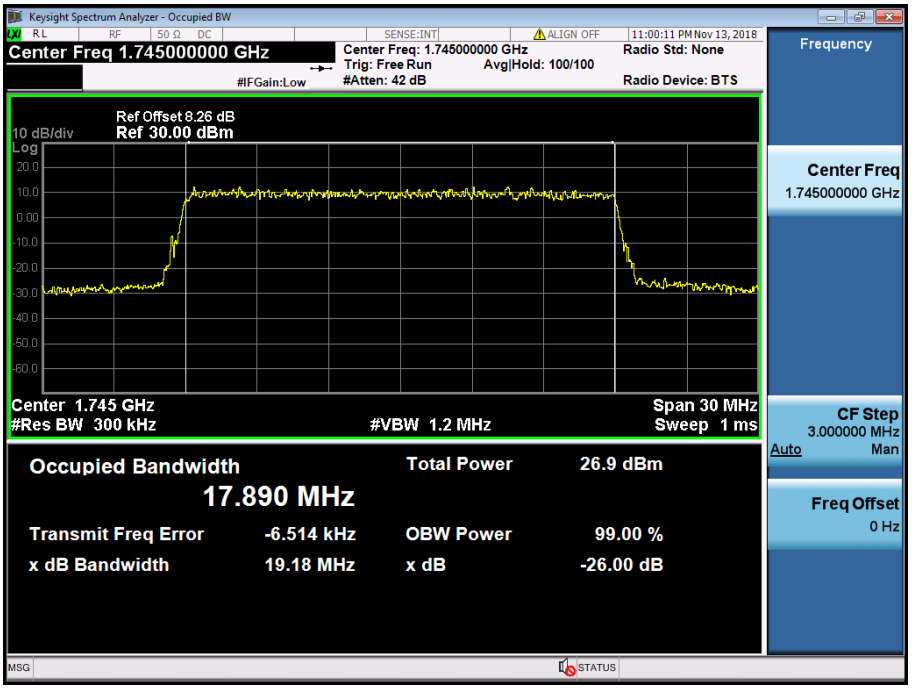
8.1.5 LTE Band 4



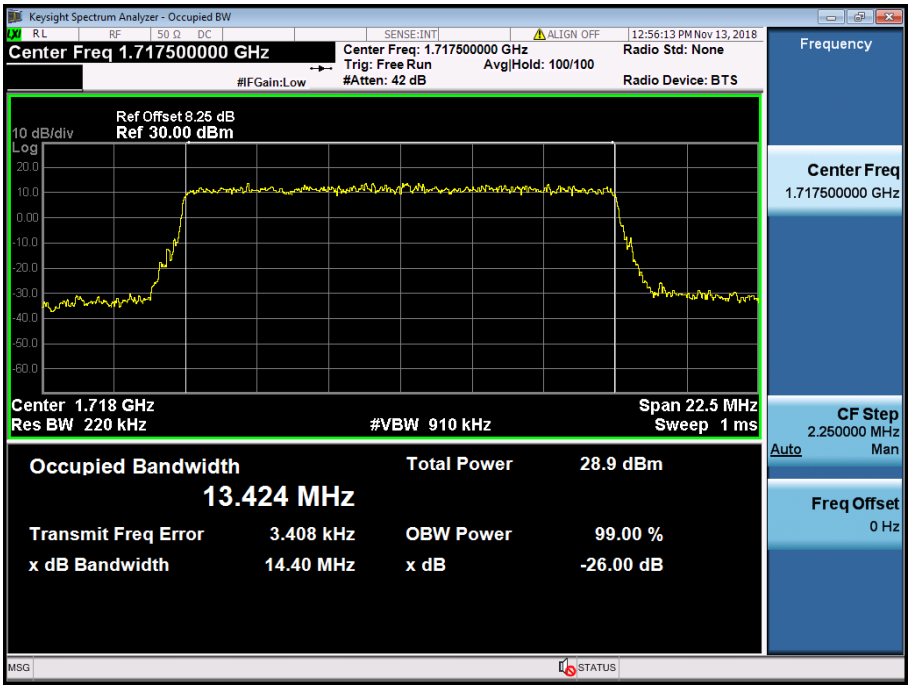
LTE Band 4 / 20 MHz / QPSK - RB Size 100



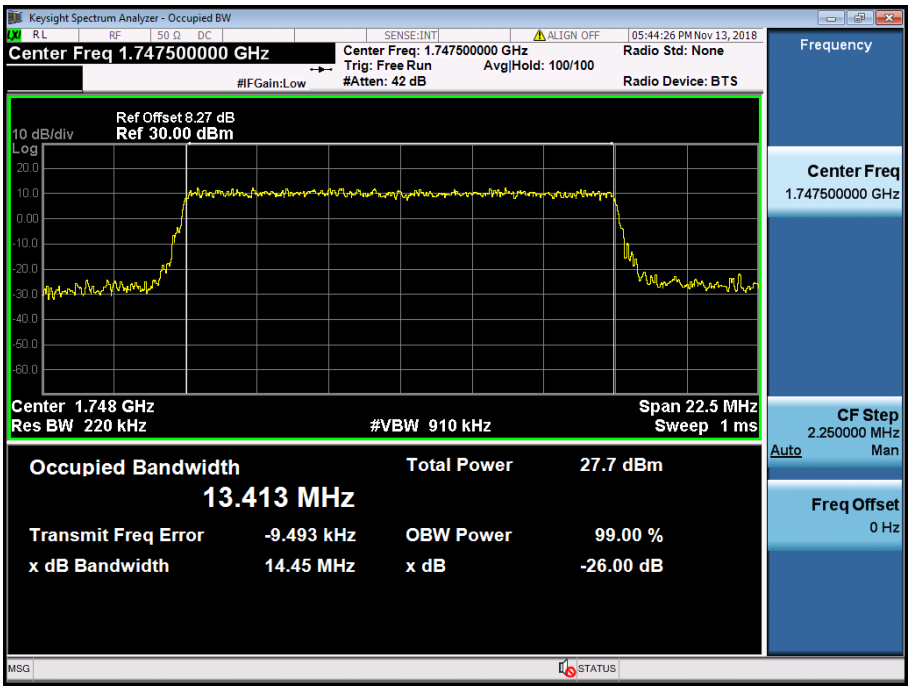
LTE Band 4 / 20 MHz / 16QAM - RB Size 100



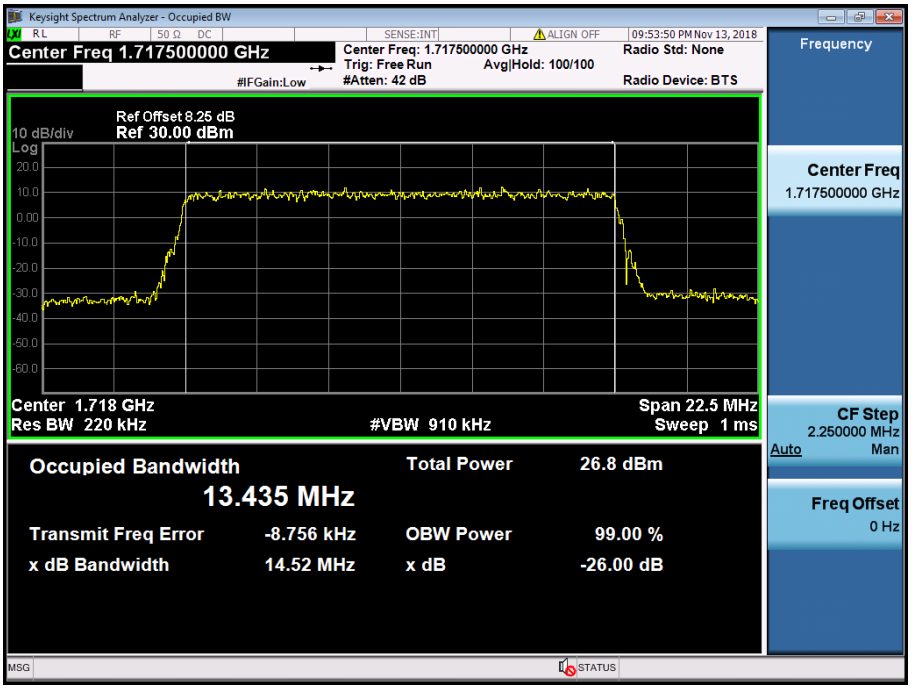
LTE Band 4 / 20 MHz / 64QAM - RB Size 100



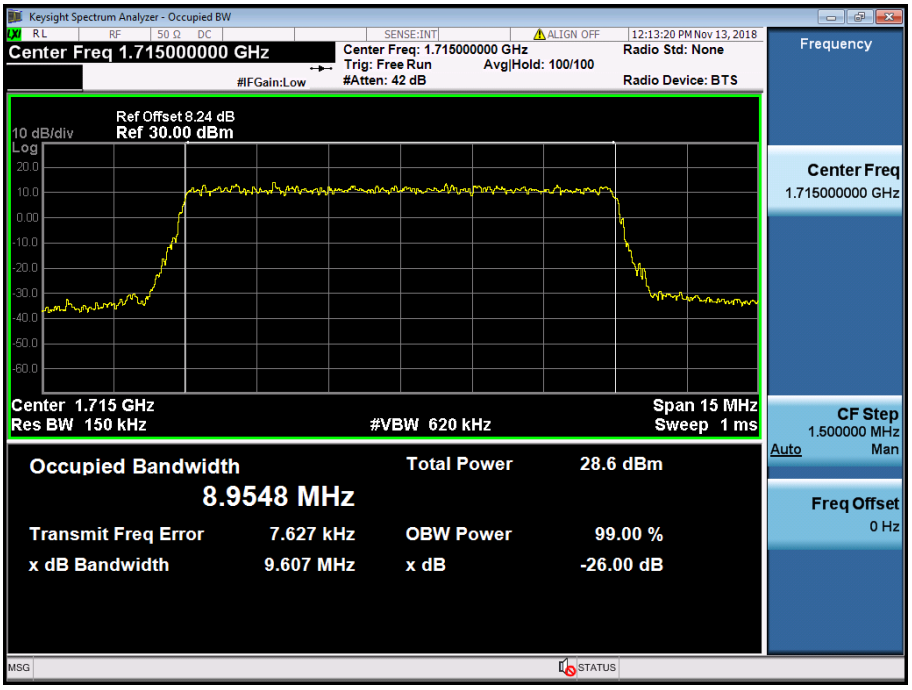
LTE Band 4 / 15 MHz / QPSK - RB Size 75



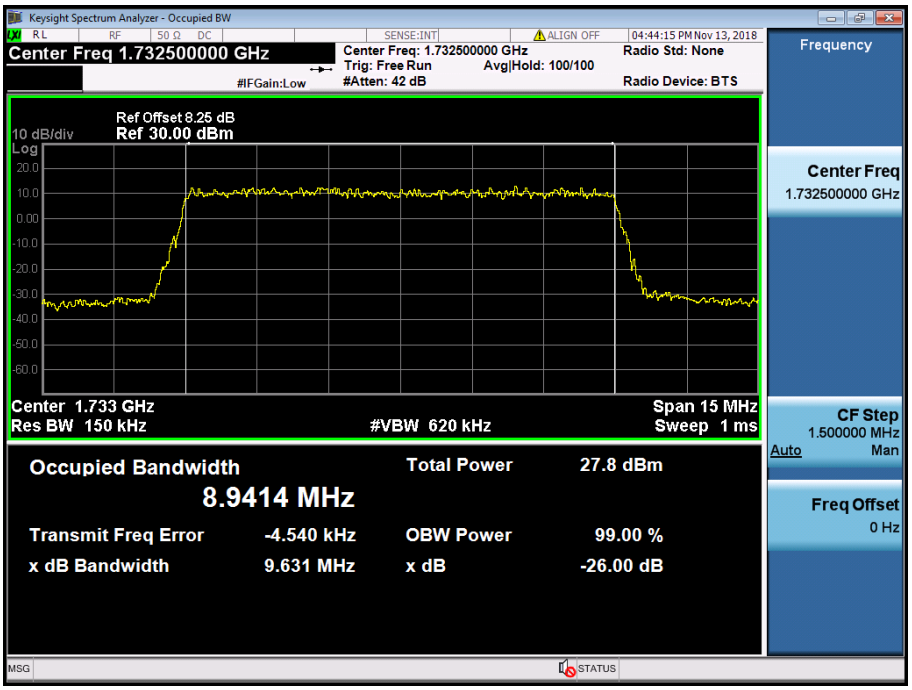
LTE Band 4 / 15 MHz / 16QAM - RB Size 75



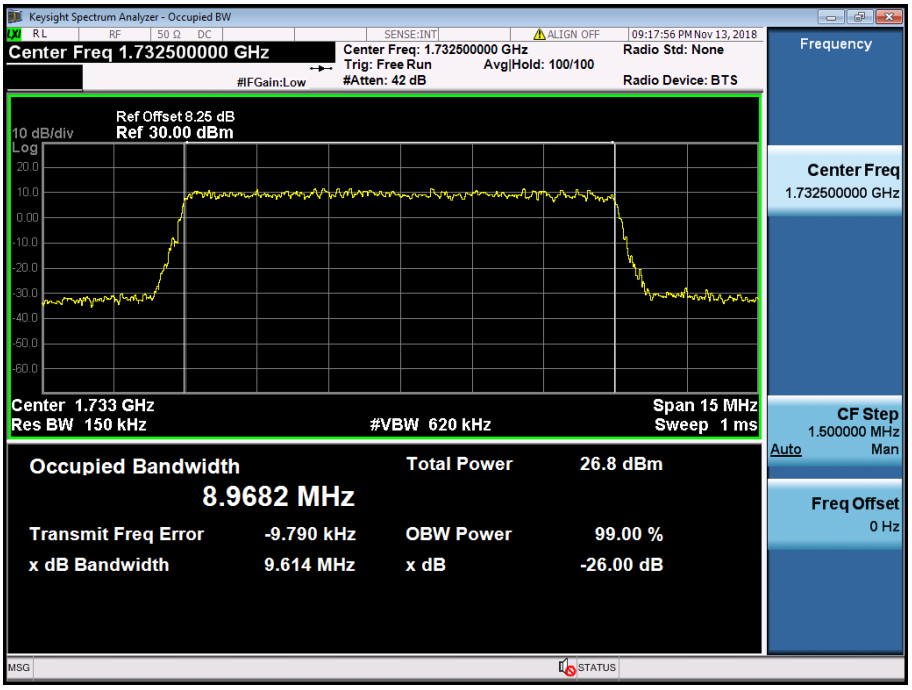
LTE Band 4 / 15 MHz / 64QAM - RB Size 75



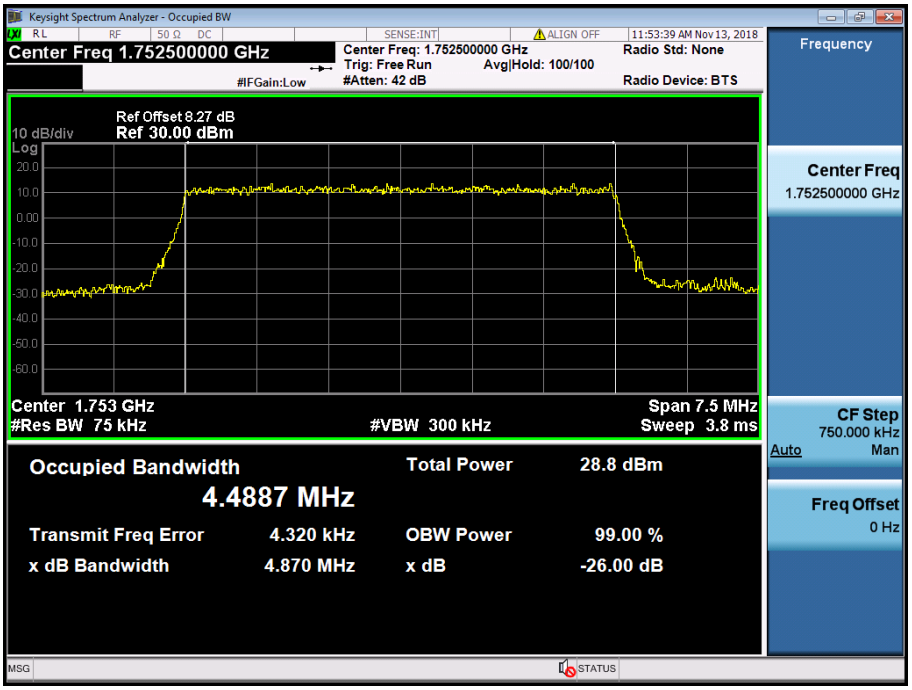
LTE Band 4 / 10 MHz / QPSK - RB Size 50



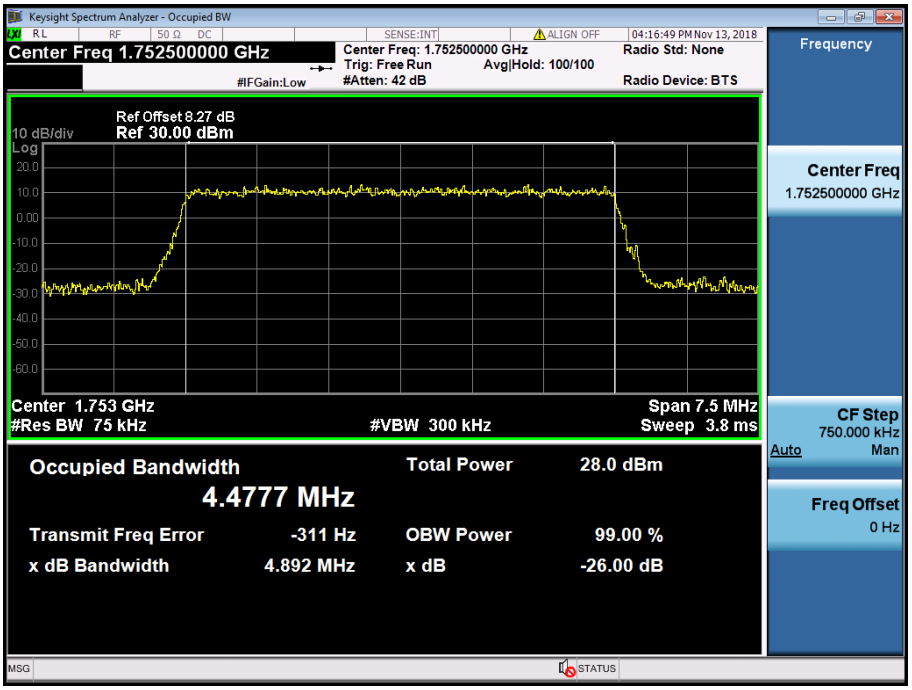
LTE Band 4 / 10 MHz / 16QAM - RB Size 50



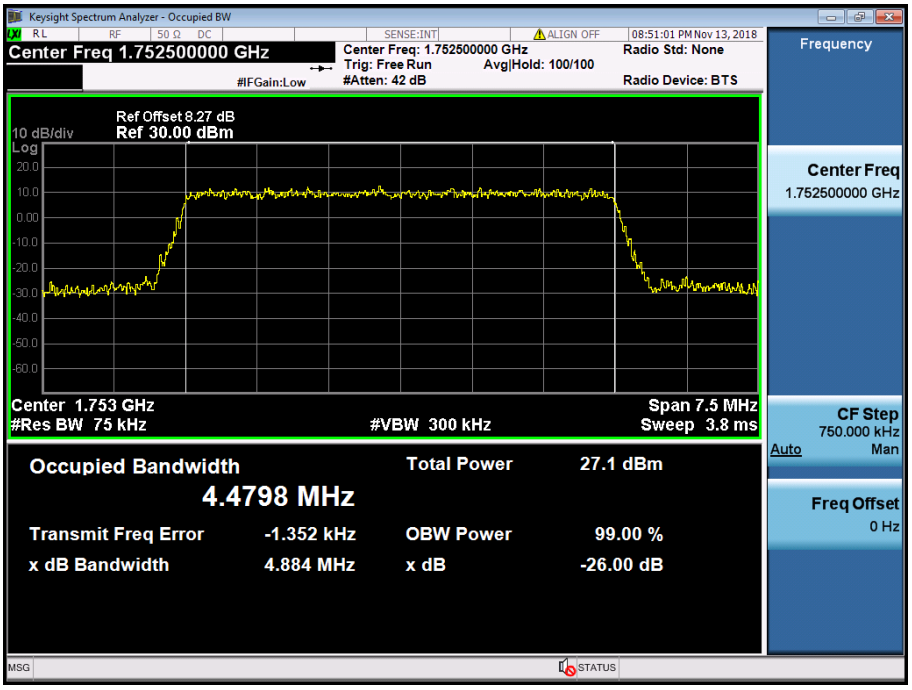
LTE Band 4 / 10 MHz / 64QAM - RB Size 50



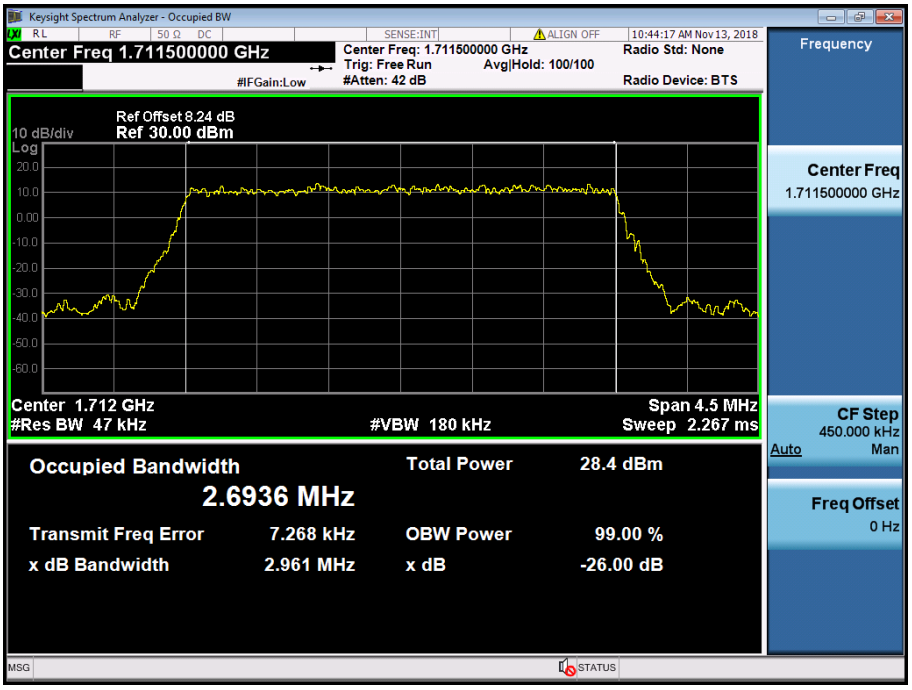
LTE Band 4 / 5 MHz / QPSK - RB Size 25



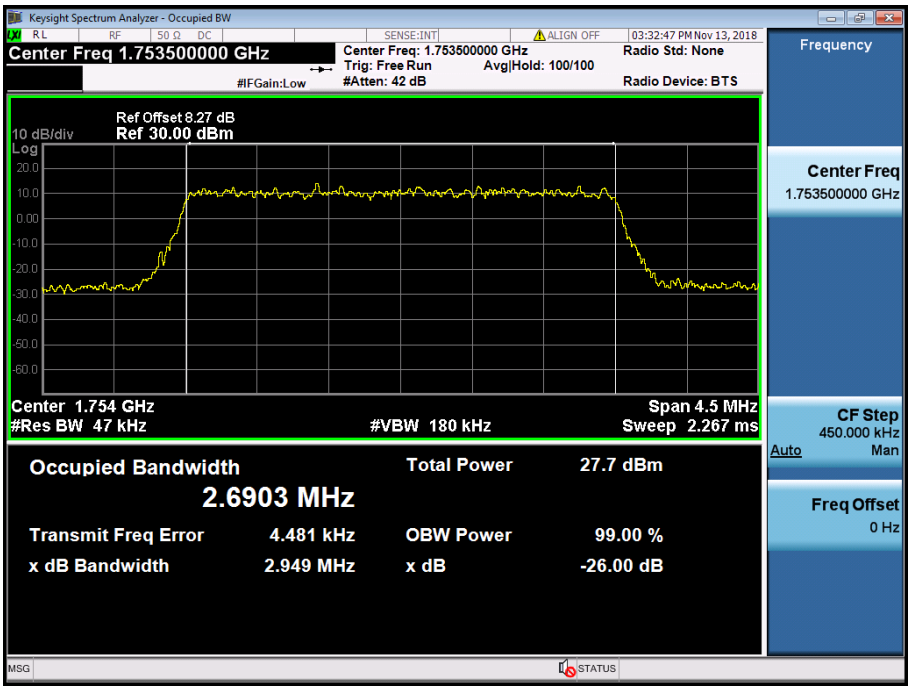
LTE Band 4 / 5 MHz / 16QAM - RB Size 25



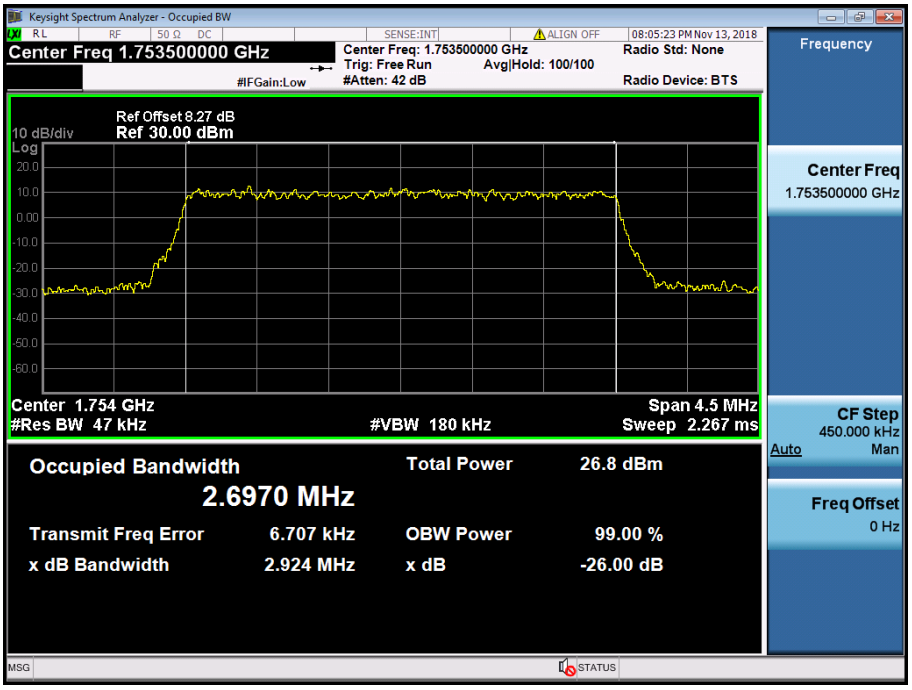
LTE Band 4 / 5 MHz / 64QAM - RB Size 25



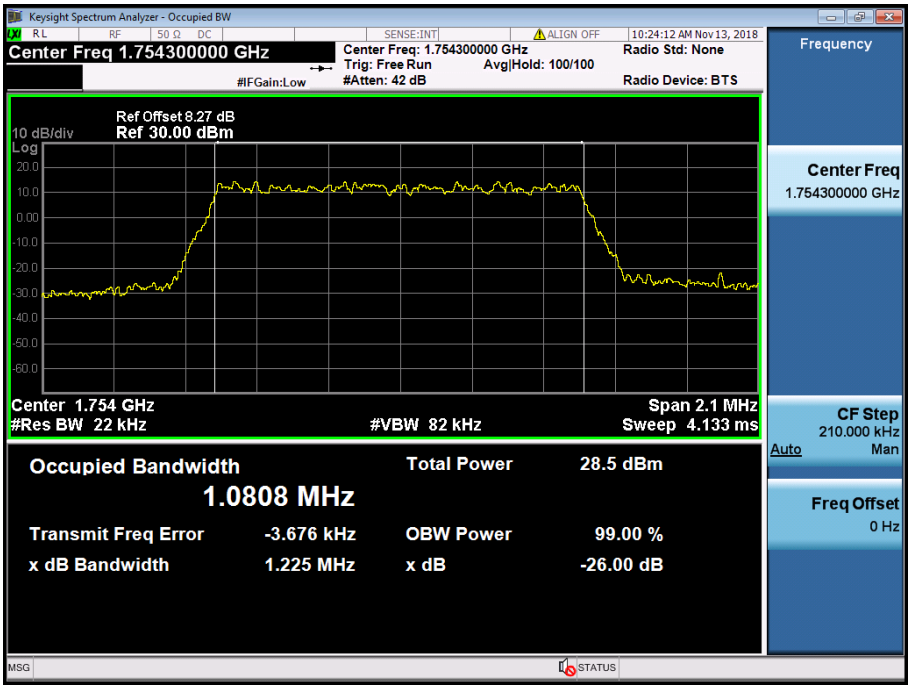
LTE Band 4 / 3 MHz / QPSK - RB Size 15



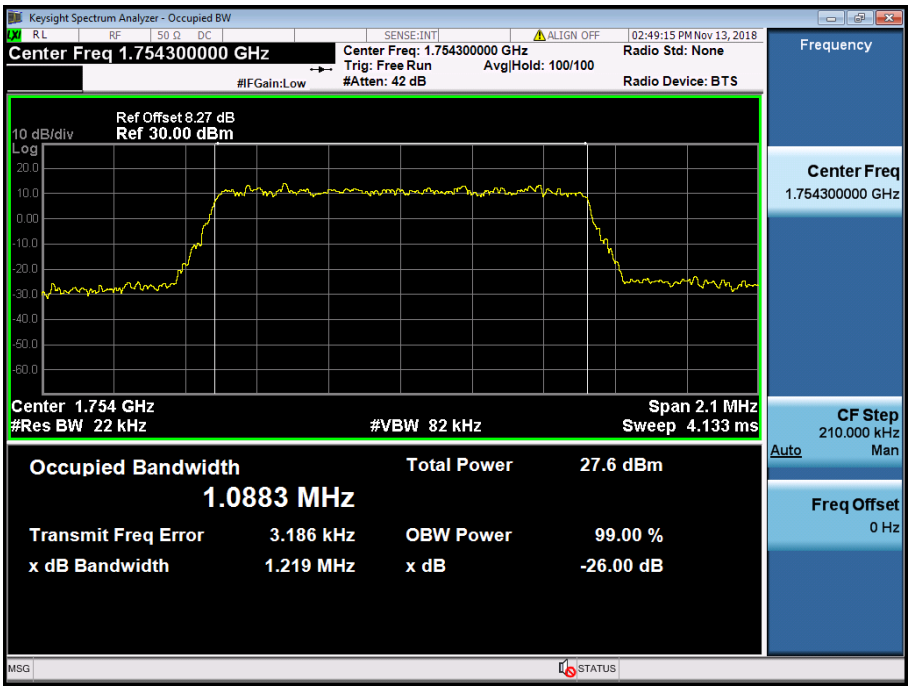
LTE Band 4 / 3 MHz / 16QAM - RB Size 15



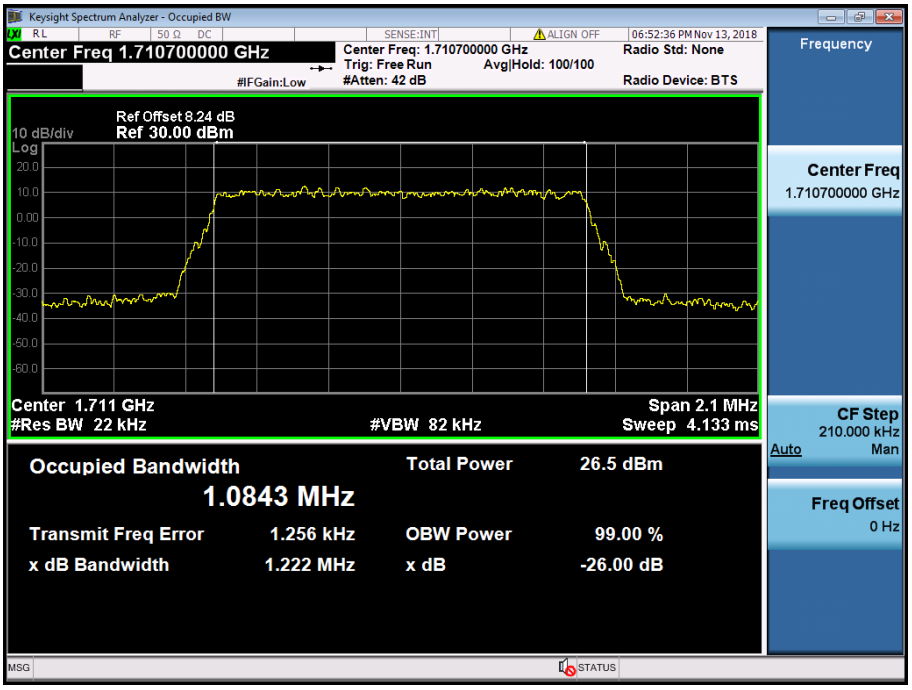
LTE Band 4 / 3 MHz / 64QAM - RB Size 15



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

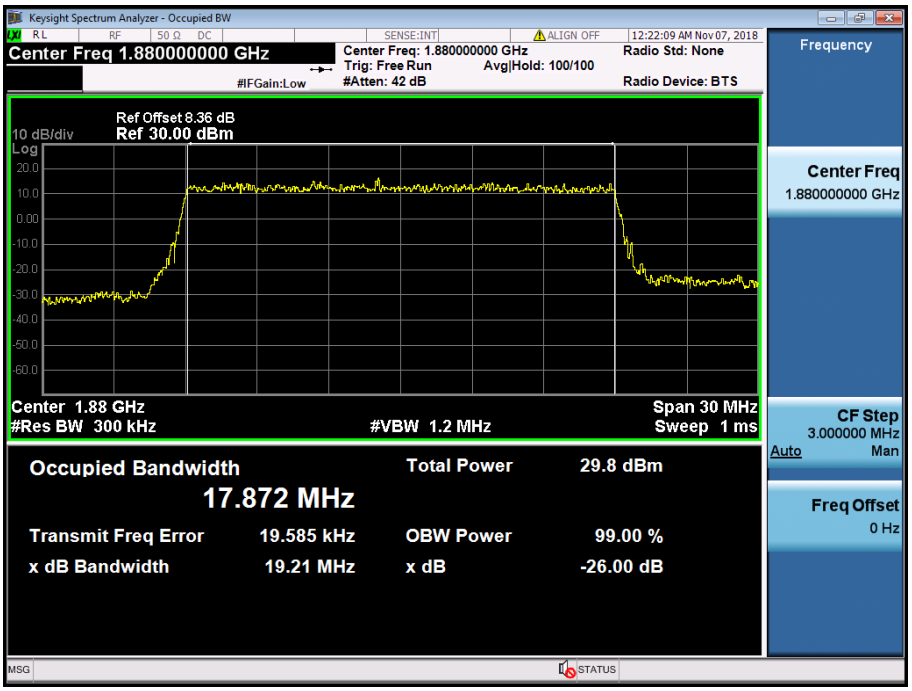


LTE Band 4 / 1.4 MHz / 16QAM - RB Size 6

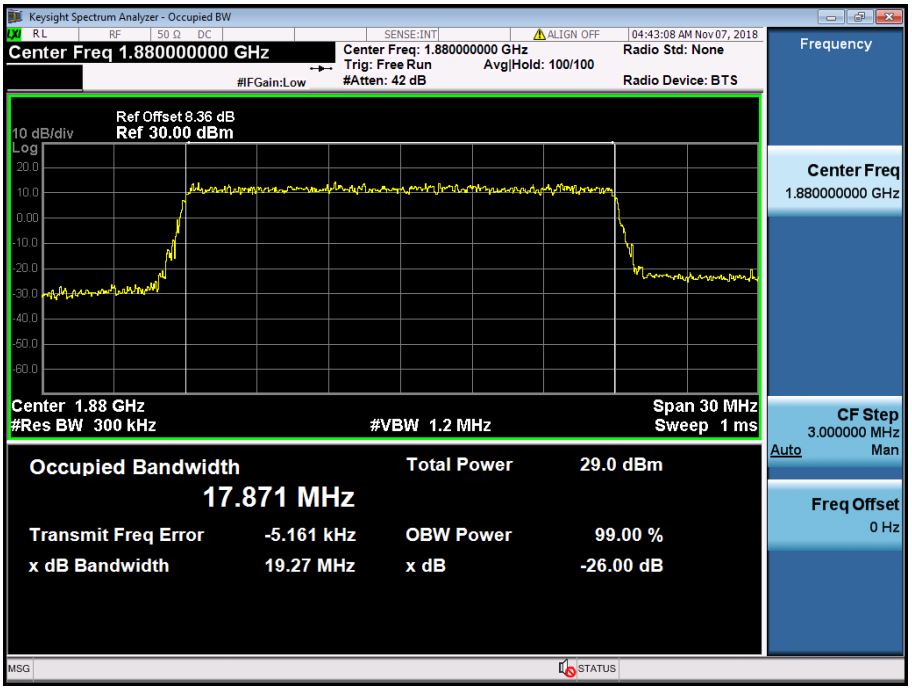


LTE Band 4 / 1.4 MHz / 64QAM - RB Size 6

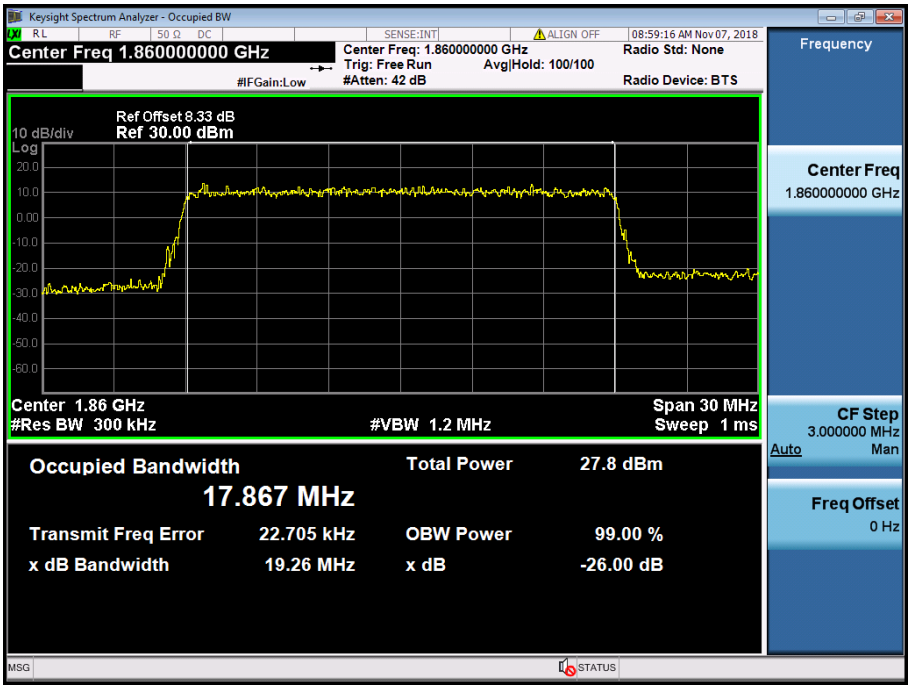
8.1.6 LTE Band 2



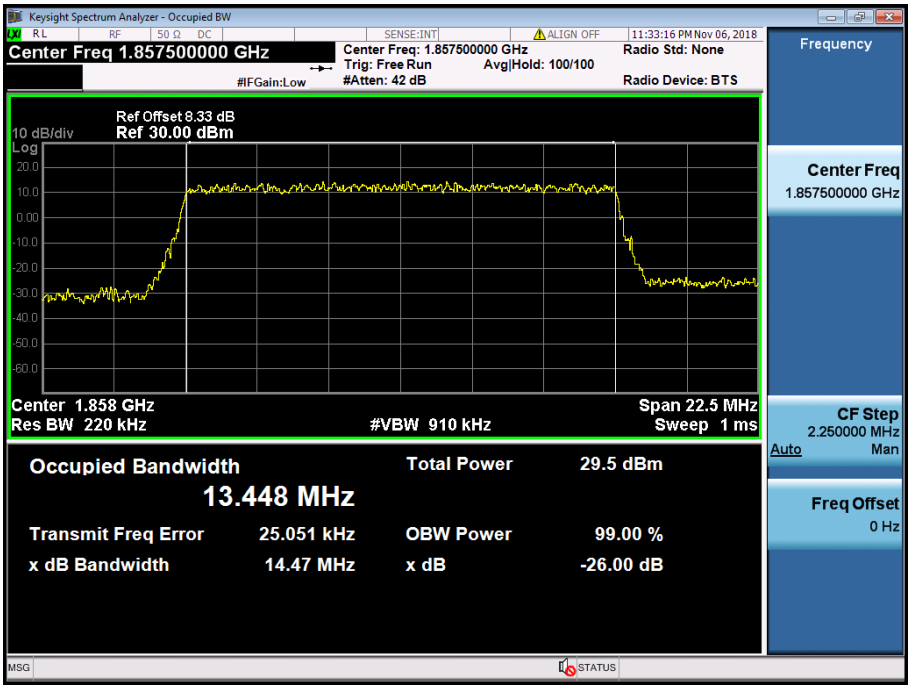
LTE Band 2 / 20 MHz / QPSK - RB Size 100



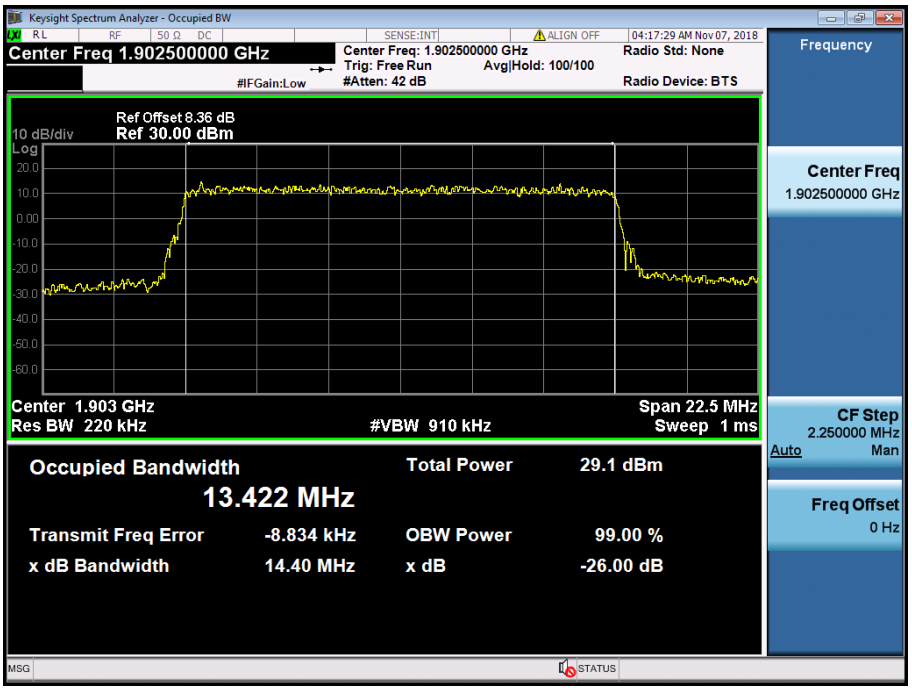
LTE Band 2 / 20 MHz / 16QAM - RB Size 100



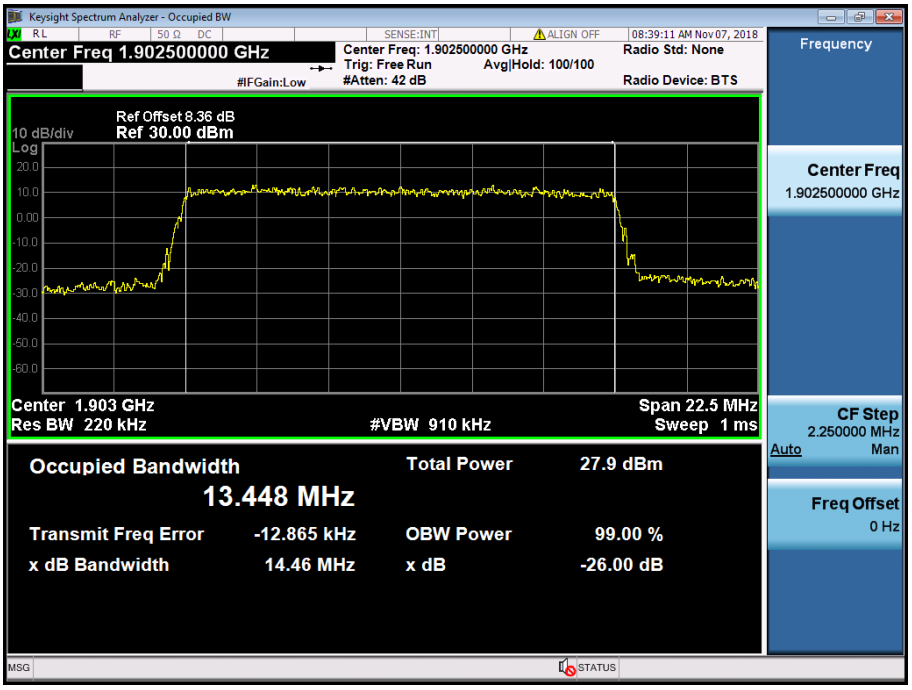
LTE Band 2 / 20 MHz / 64QAM - RB Size 100



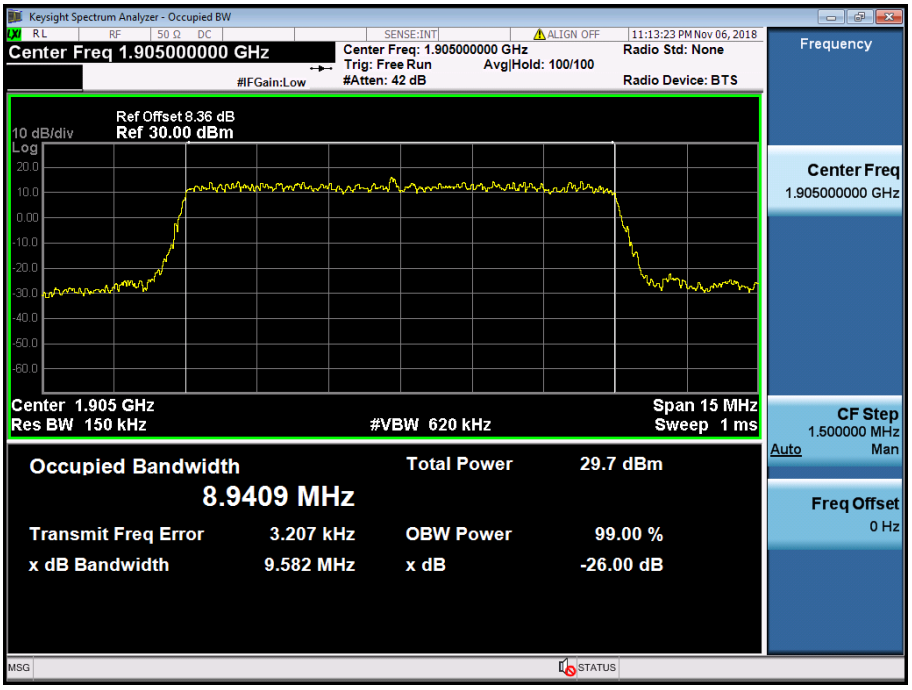
LTE Band 2 / 15 MHz / QPSK - RB Size 75



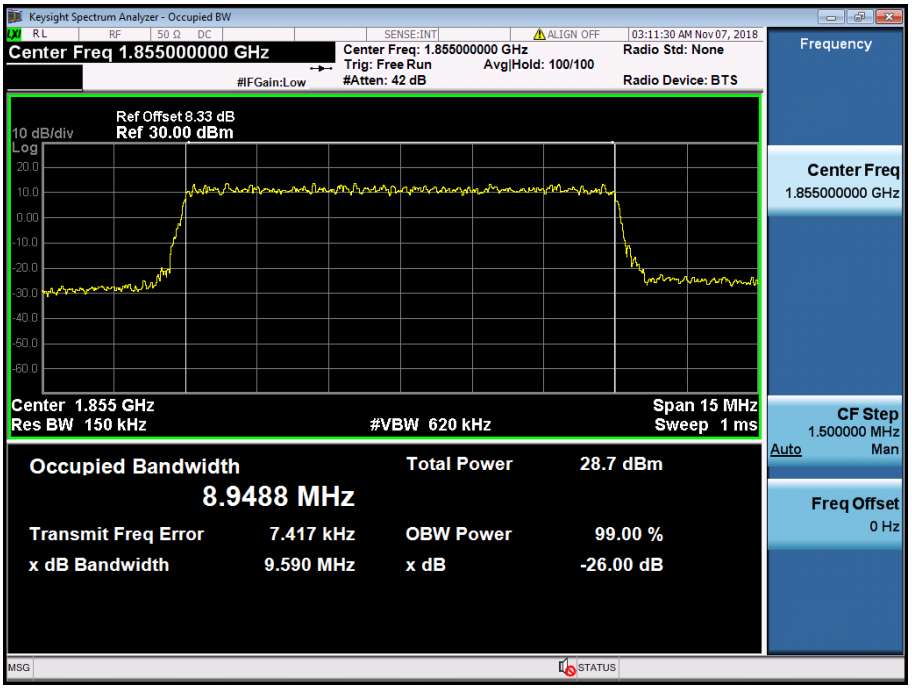
LTE Band 2 / 15 MHz / 16QAM - RB Size 75



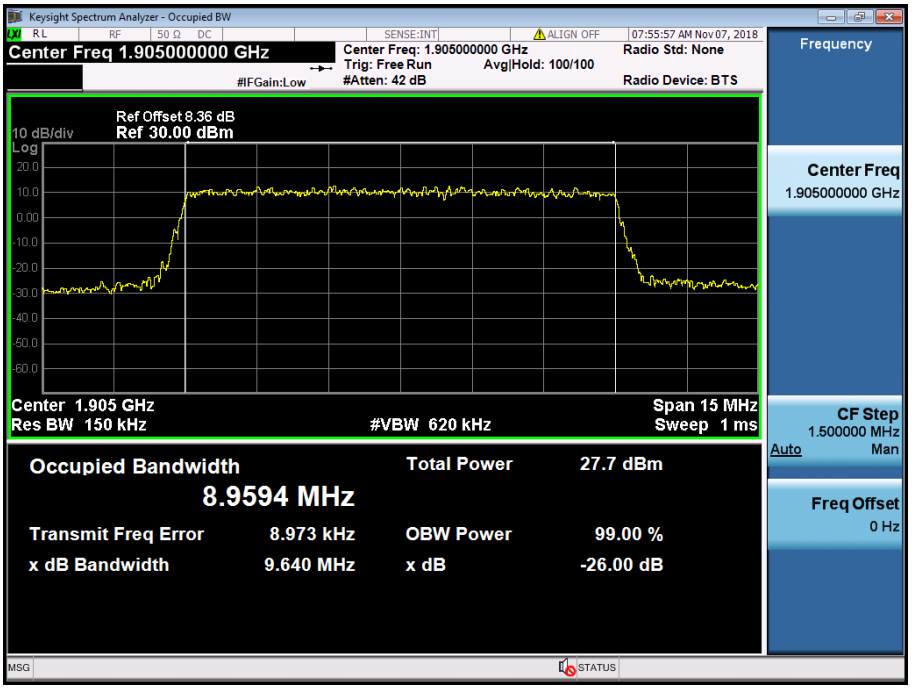
LTE Band 2 / 15 MHz / 64QAM - RB Size 75



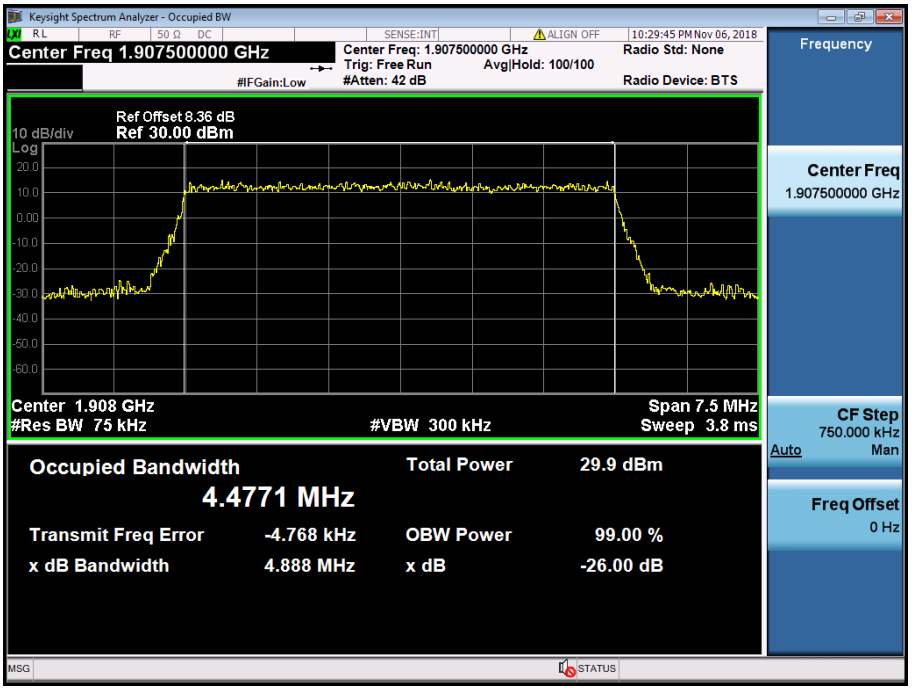
LTE Band 2 / 10 MHz / QPSK - RB Size 50



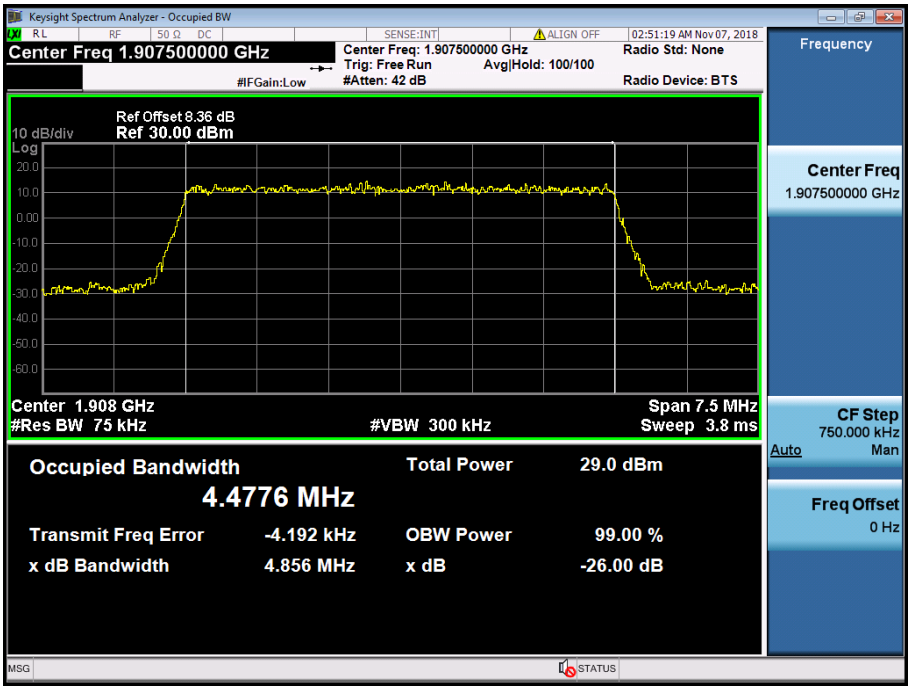
LTE Band 2 / 10 MHz / 16QAM - RB Size 50



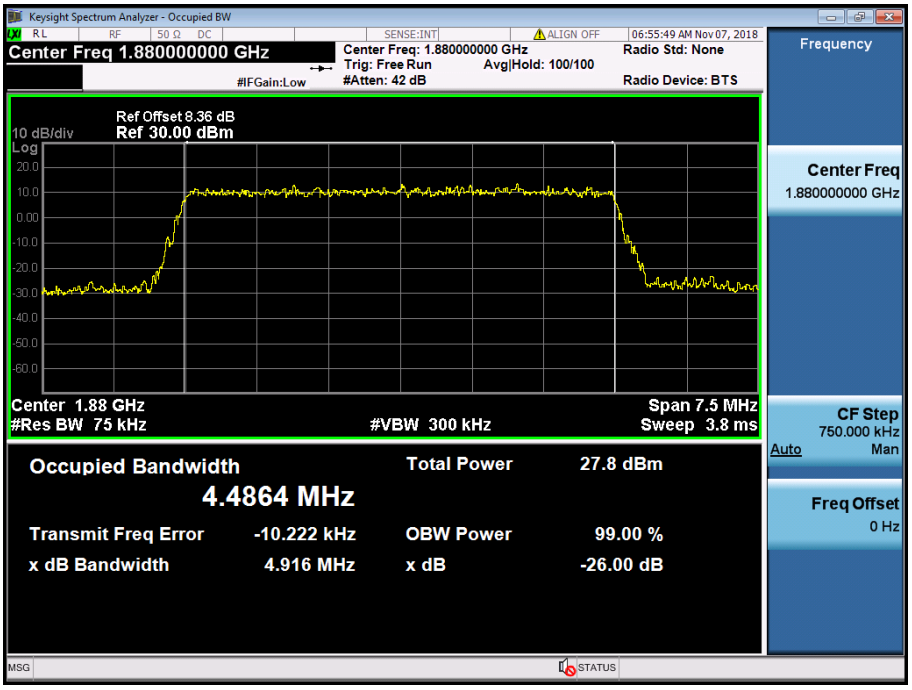
LTE Band 2 / 10 MHz / 64QAM - RB Size 50



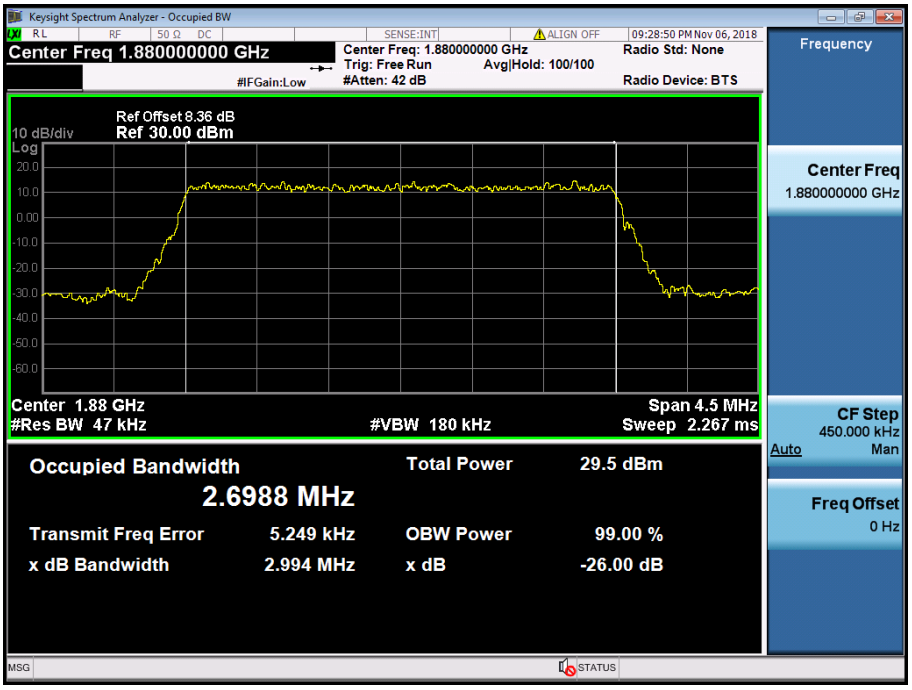
LTE Band 2 / 5 MHz / QPSK - RB Size 25



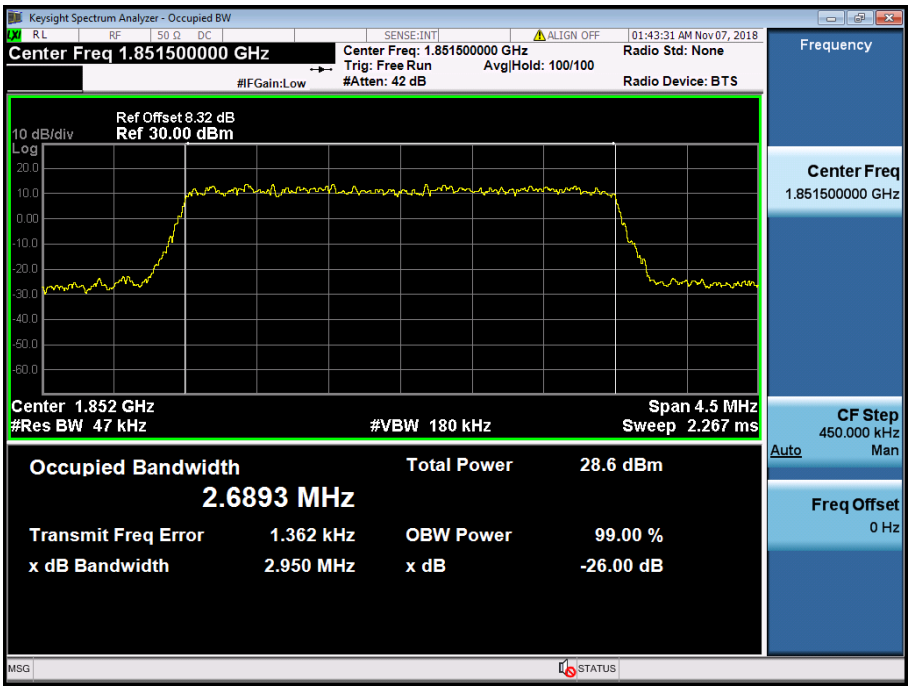
LTE Band 2 / 5 MHz / 16QAM - RB Size 25



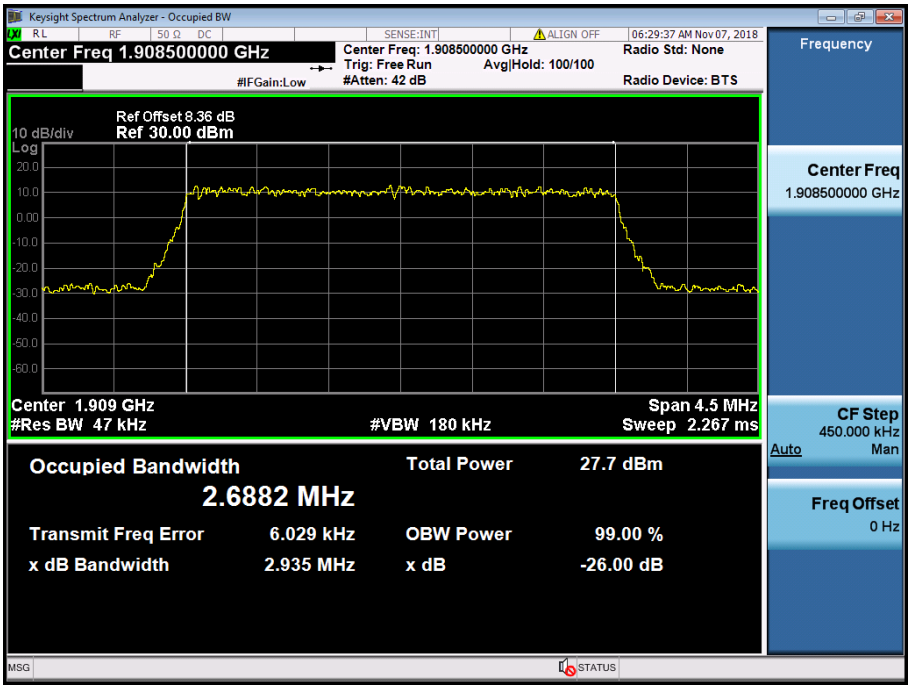
LTE Band 2 / 5 MHz / 64QAM - RB Size 25



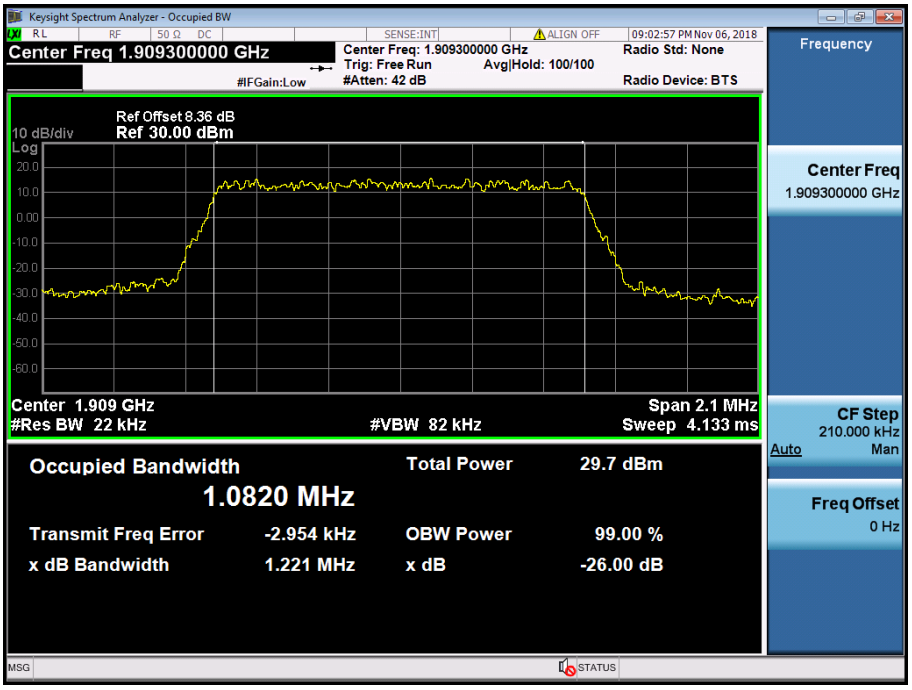
LTE Band 2 / 3 MHz / QPSK - RB Size 15



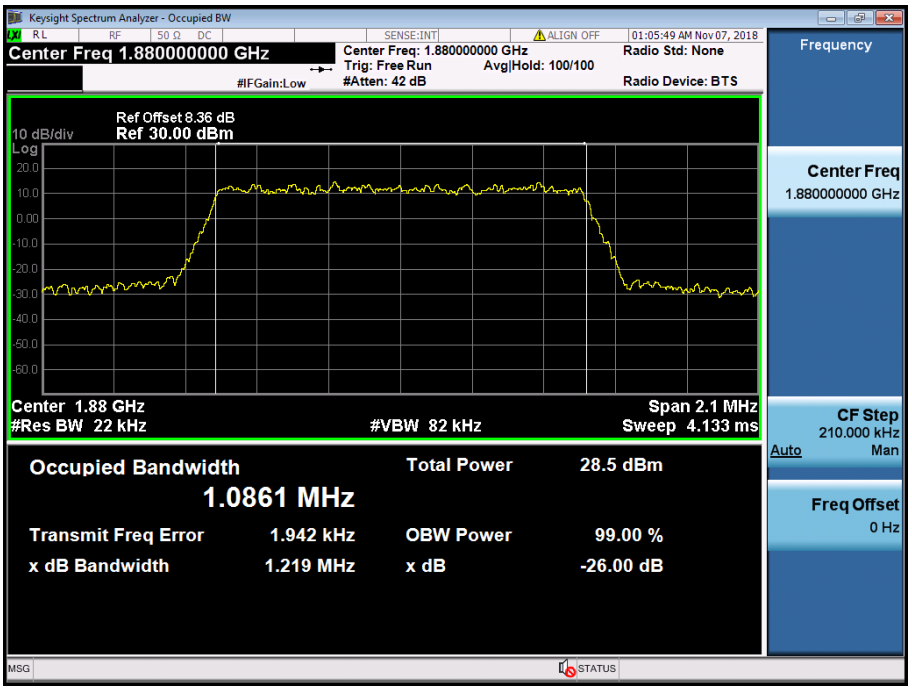
LTE Band 2 / 3 MHz / 16QAM - RB Size 15



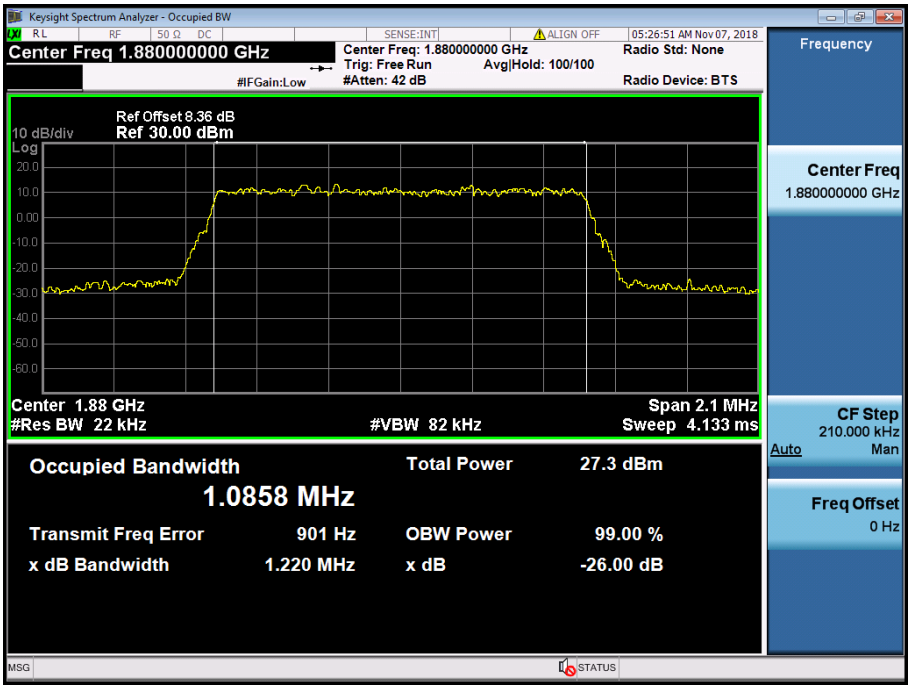
LTE Band 2 / 3 MHz / 64QAM - RB Size 15



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

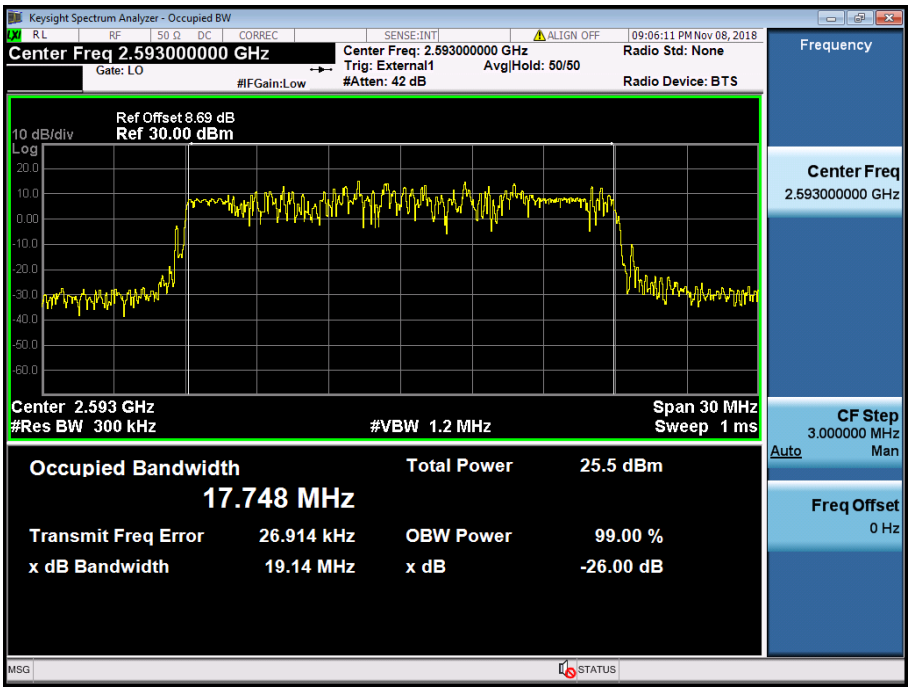


LTE Band 2 / 1.4 MHz / 16QAM - RB Size 6

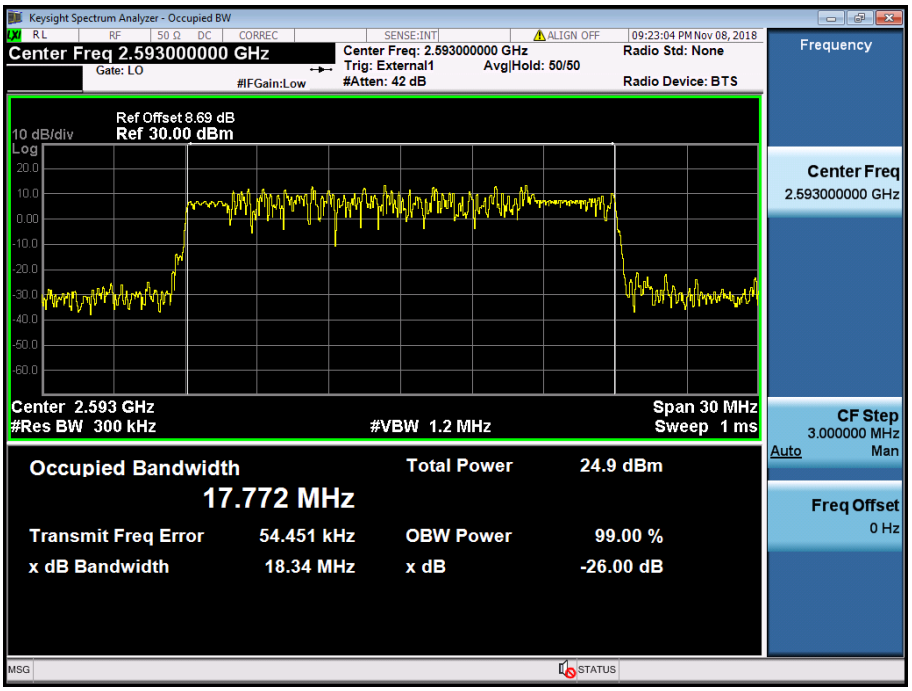


LTE Band 2 / 1.4 MHz / 64QAM - RB Size 6

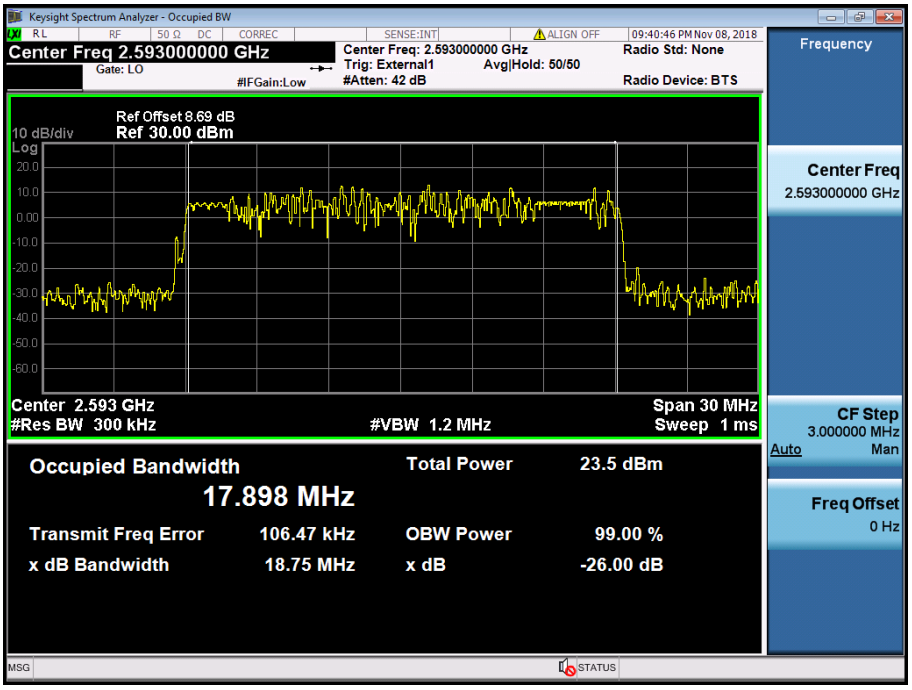
8.1.7 LTE Band 41



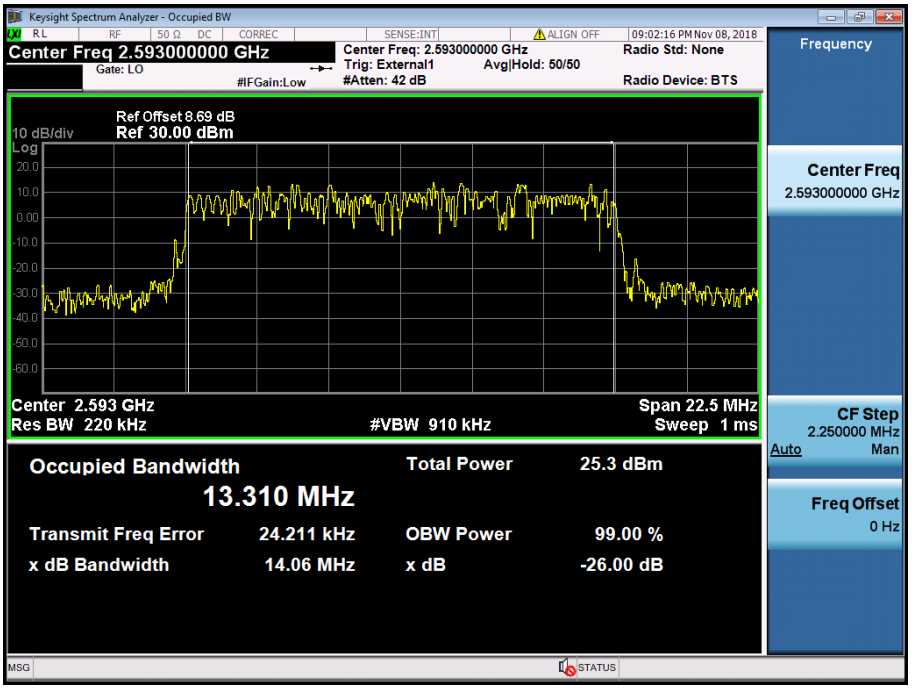
LTE Band 41 / 20 MHz / QPSK - RB Size 100



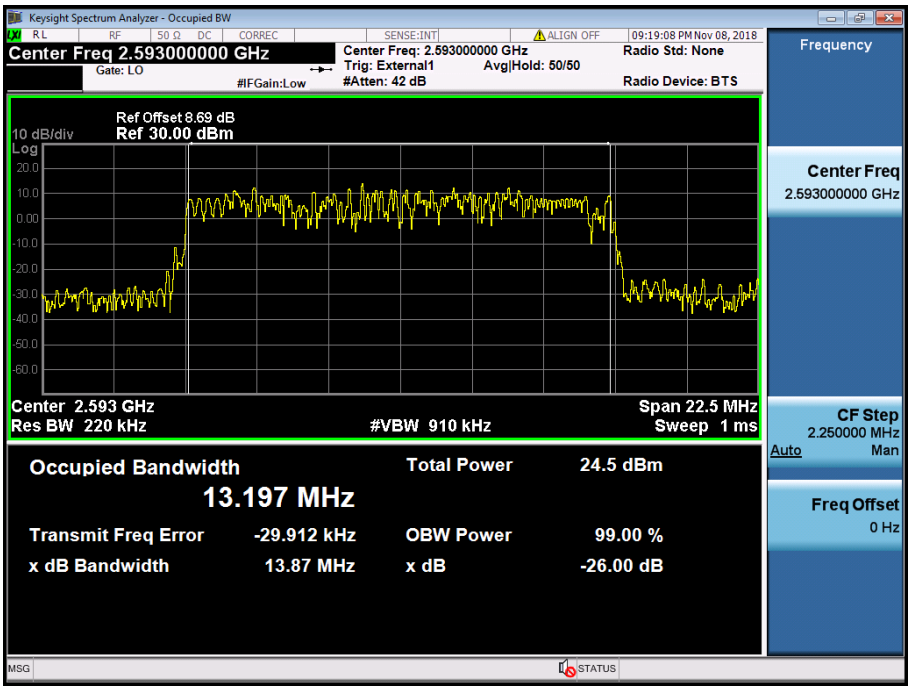
LTE Band 41 / 20 MHz / 16QAM - RB Size 100



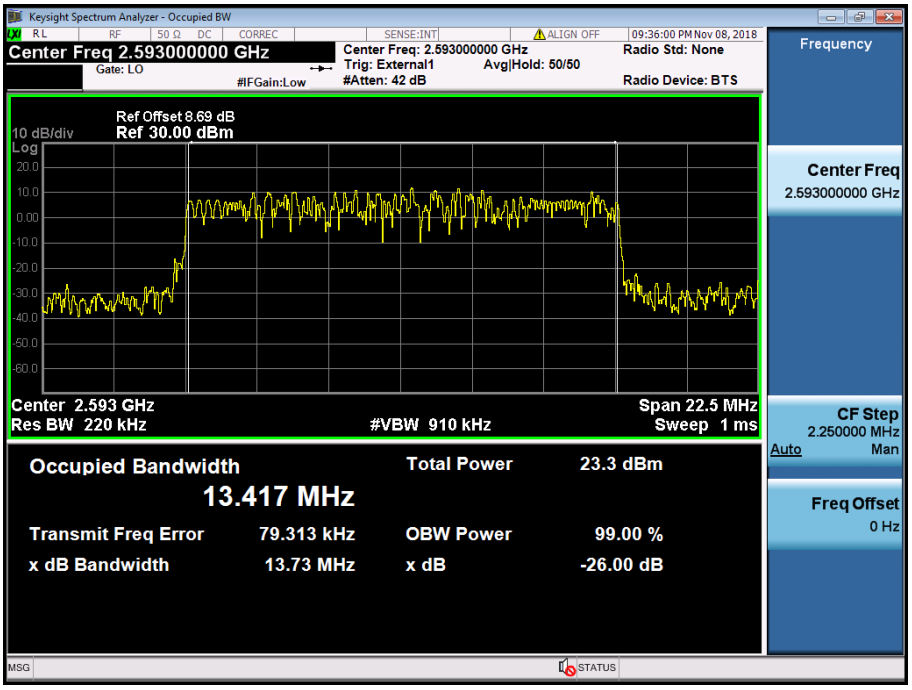
LTE Band 41 / 20 MHz / 64QAM - RB Size 100



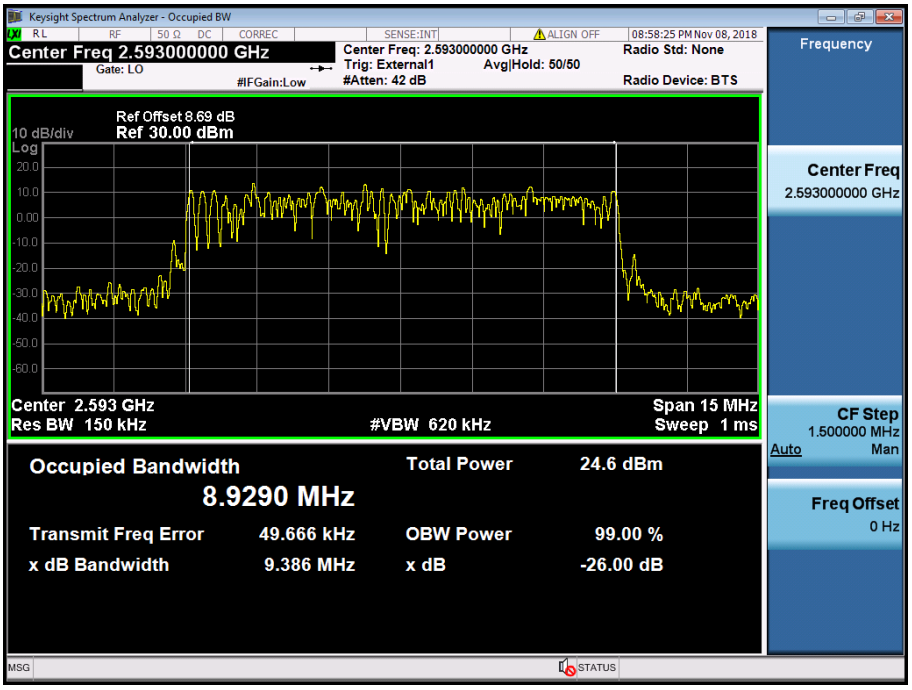
LTE Band 41 / 15 MHz / QPSK - RB Size 75



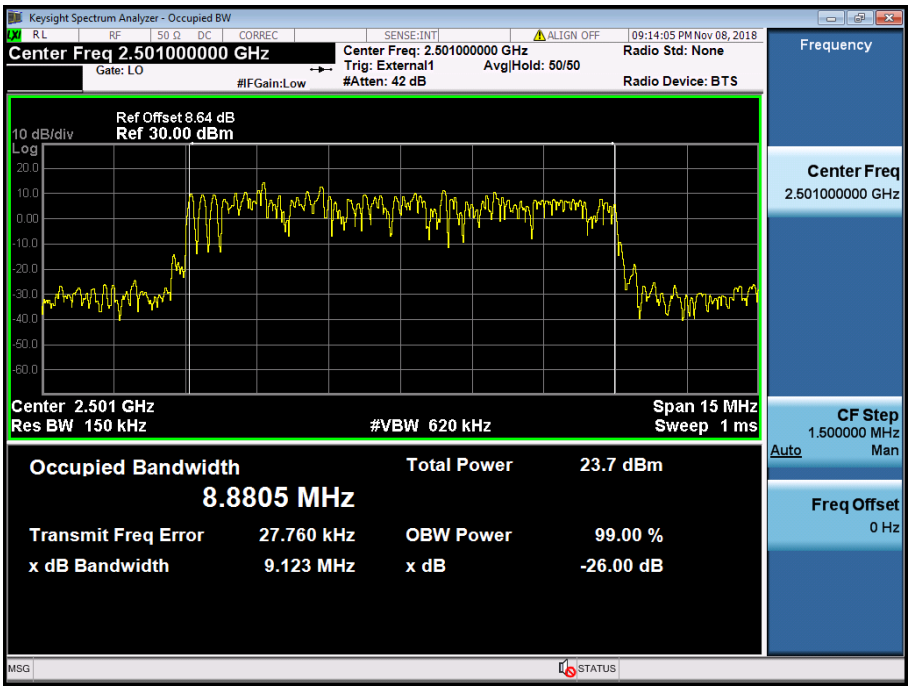
LTE Band 41 / 15 MHz / 16QAM - RB Size 75



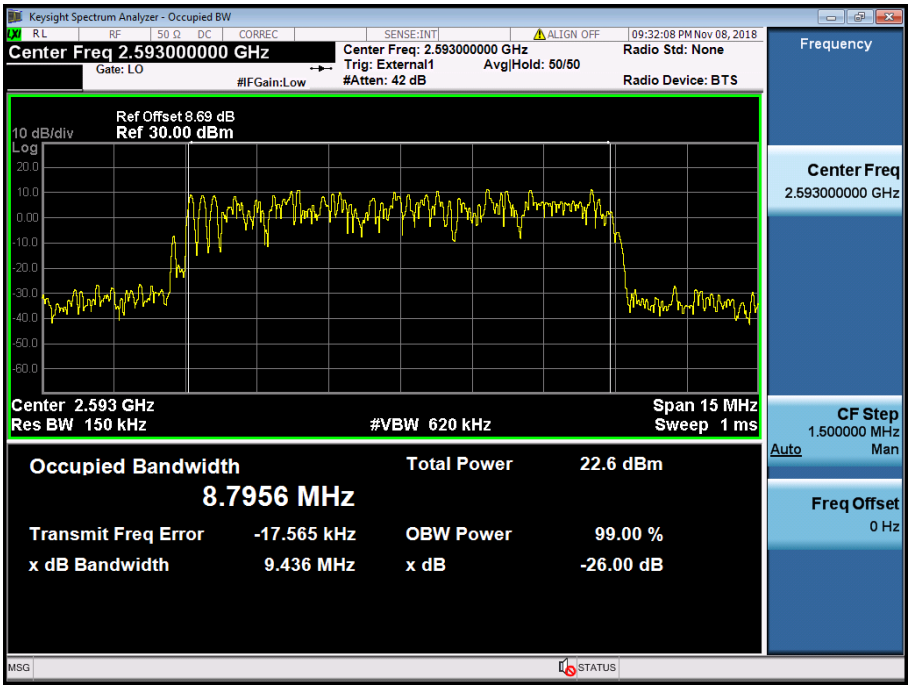
LTE Band 41 / 15 MHz / 64QAM - RB Size 75



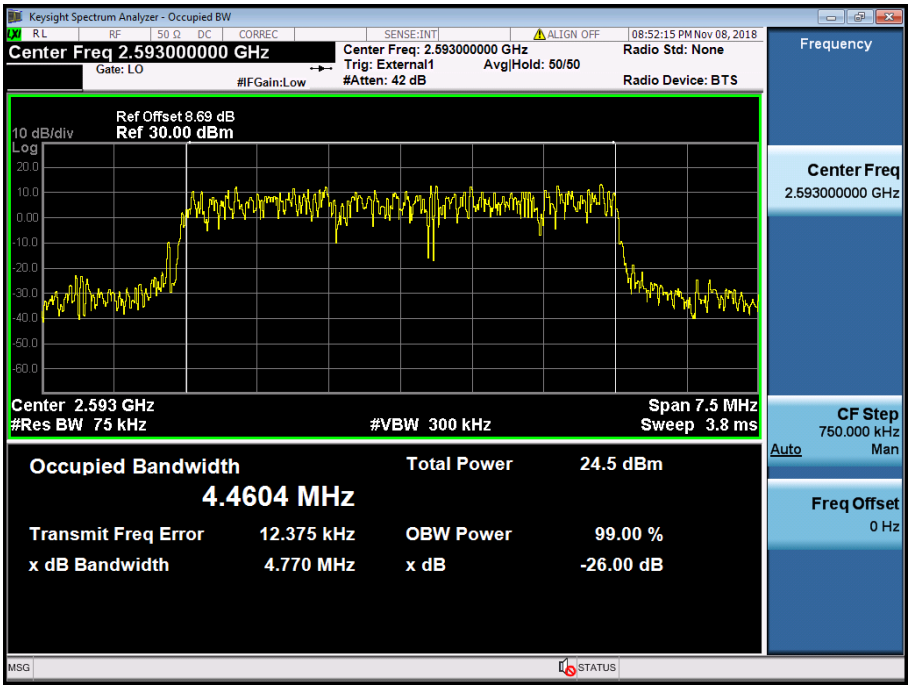
LTE Band 41 / 10 MHz / QPSK - RB Size 50



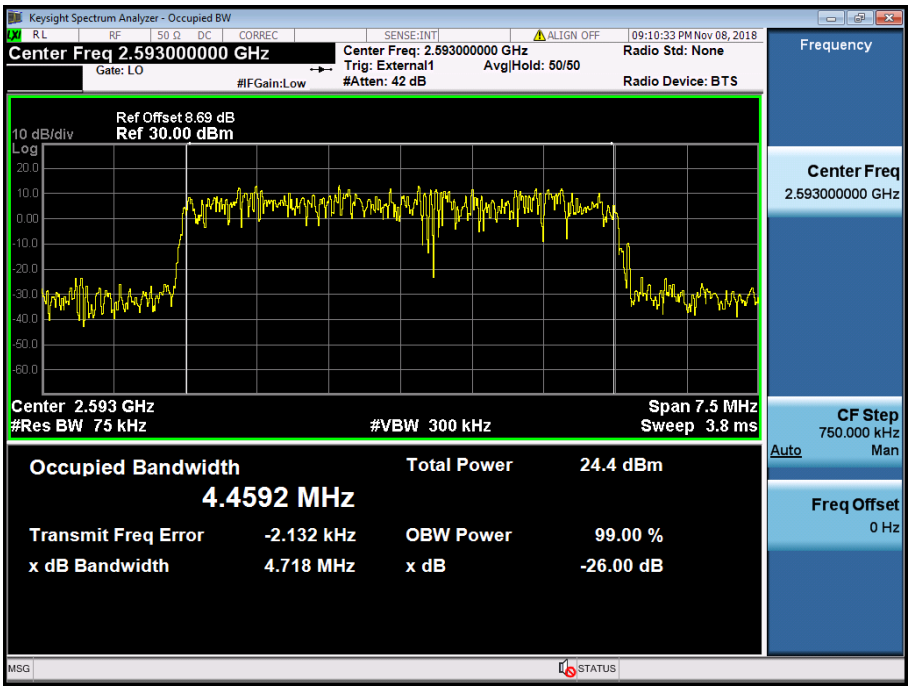
LTE Band 41 / 10 MHz / 16QAM - RB Size 50



LTE Band 41 / 10 MHz / 64QAM - RB Size 50



LTE Band 41 / 5 MHz / QPSK - RB Size 25



LTE Band 41 / 5 MHz / 16QAM - RB Size 25