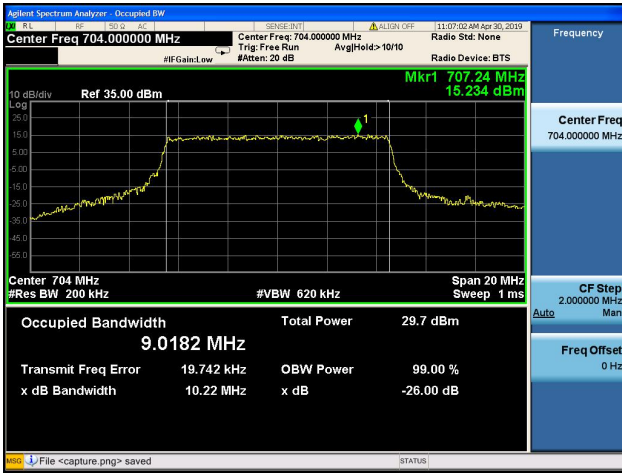
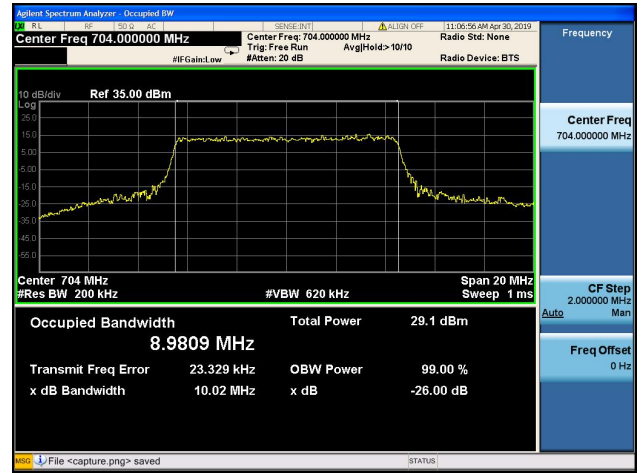




**10MHz/QPSK/Low CH**



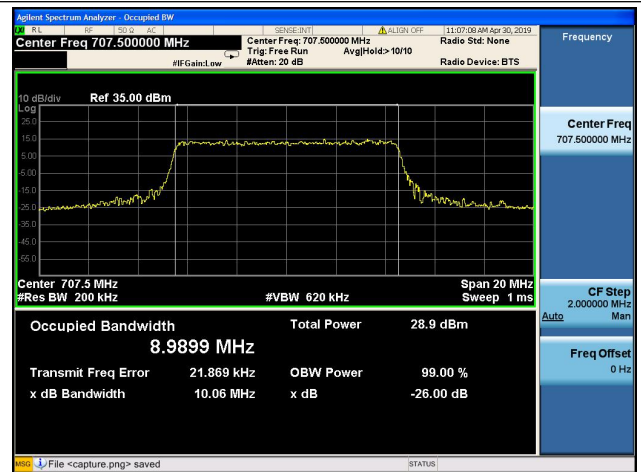
**10MHz/16QAM/Low CH**



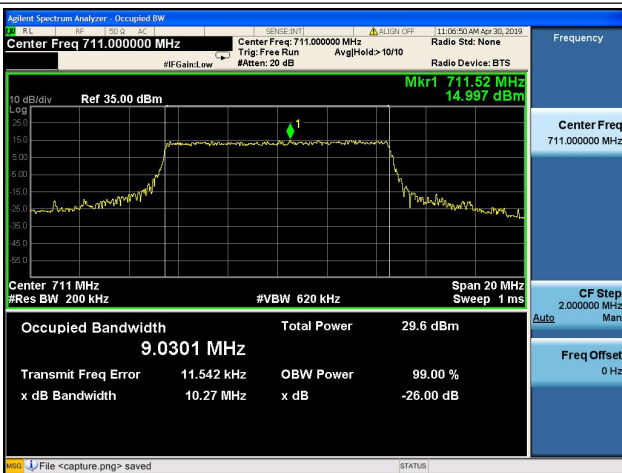
**10MHz/QPSK/Mid CH**



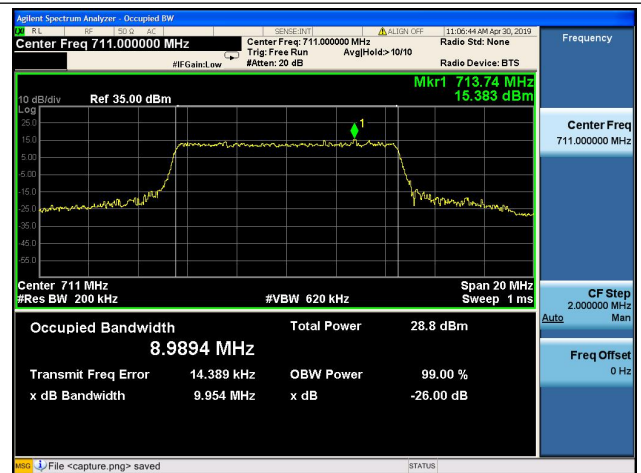
**10MHz/16QAM/Mid CH**



**10MHz/QPSK/High CH**

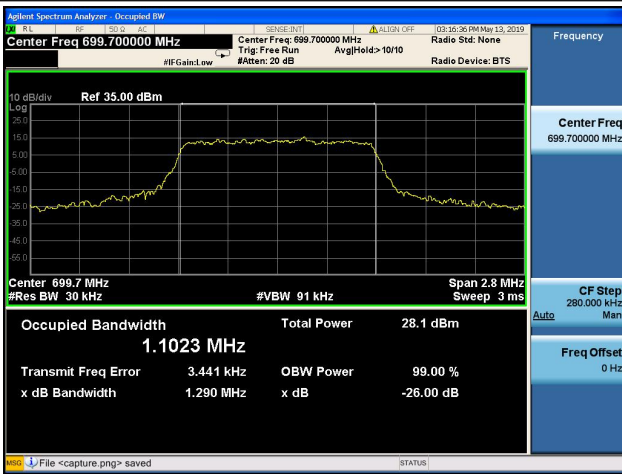


**10MHz/16QAM/High CH**

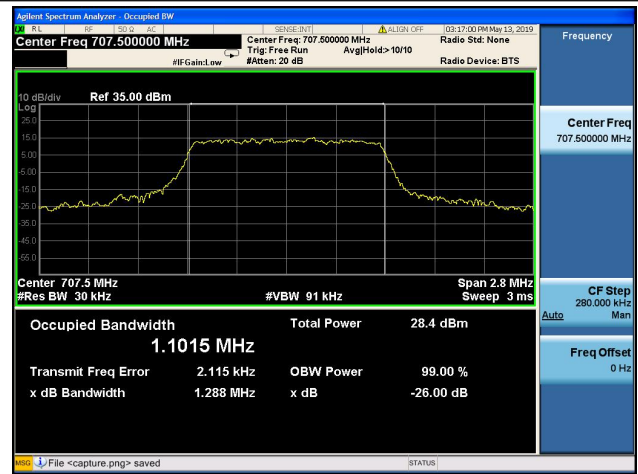




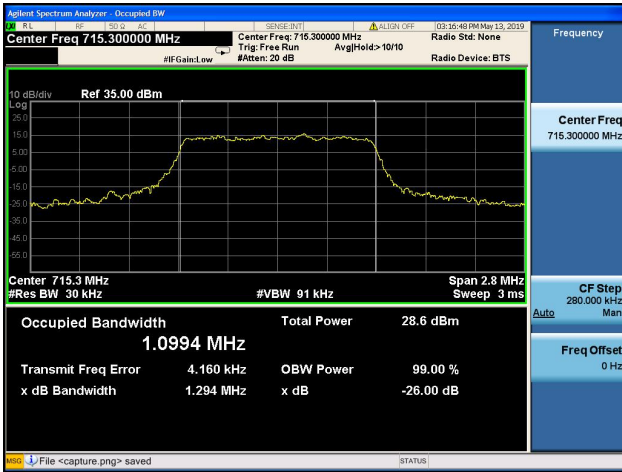
**1.4MHz/64QAM/Low CH**



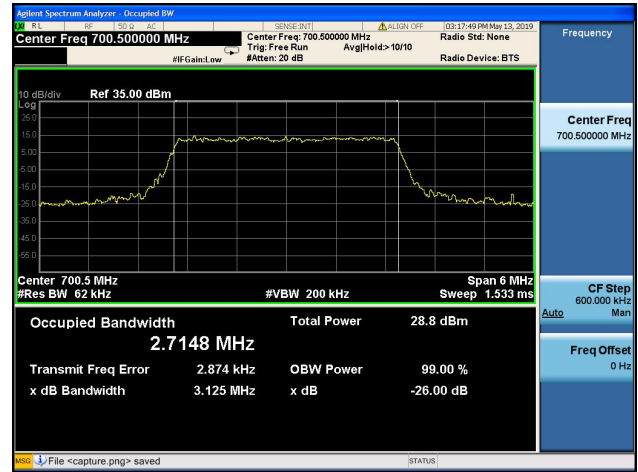
**1.4MHz/64QAM/Mid CH**



**1.4MHz/64QAM/High CH**



**3MHz/64QAM/Low CH**



**3MHz/64QAM/Mid CH**



**3MHz/64QAM/High CH**





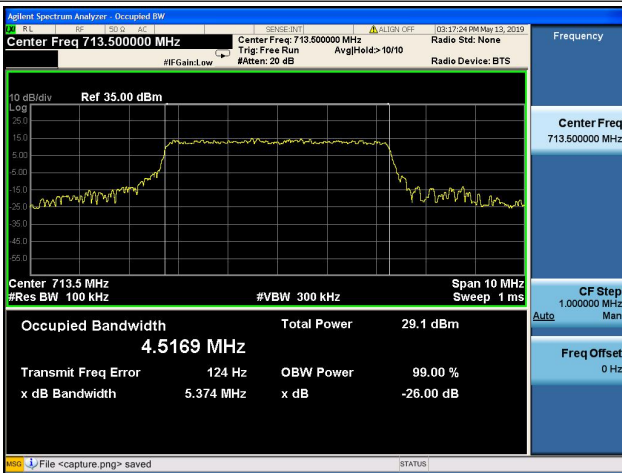
**5MHz/64QAM/Low CH**



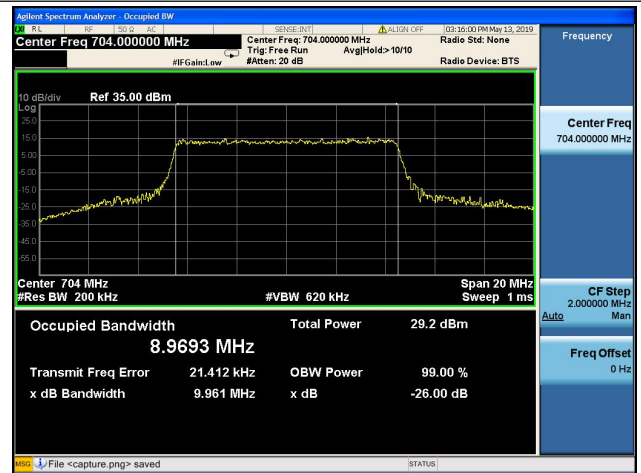
**5MHz/64QAM/Mid CH**



**5MHz/64QAM/High CH**



**10MHz/64QAM/Low CH**



**10MHz/64QAM/Mid CH**



**10MHz/64QAM/High CH**





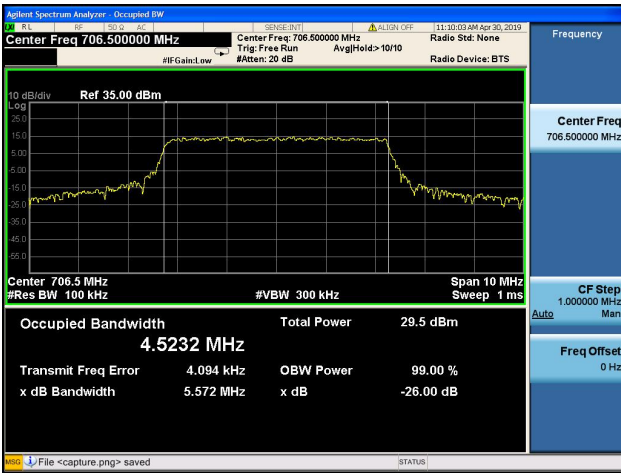
<b>LTE Band 17,BW: 5MHz</b>					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
23755	706.5	4.52	5.57	4.52	5.27
23790	710.0	4.52	5.33	4.52	5.29
23825	713.5	4.53	5.42	4.51	5.26
<b>LTE Band 17,BW: 10MHz</b>					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
23780	709.0	9.02	10.13	8.99	9.97
23790	710.0	9.01	10.13	8.97	9.94
23800	711.0	9.01	10.16	8.99	10.03

<b>LTE Band 17,BW: 5MHz</b>					
Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
23755	706.5	4.53	5.36		
23790	710.0	4.51	5.40		
23825	713.5	4.53	5.36		
<b>LTE Band 17,BW: 10MHz</b>					
Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
23780	709.0	8.97	10.27		
23790	710.0	8.99	9.98		
23800	711.0	8.99	10.09		

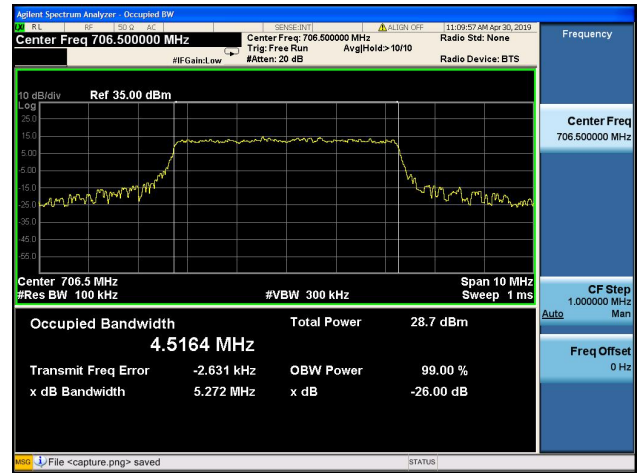


LTE Band 17 99%&26dB Bandwidth

5MHz/QPSK/Low CH



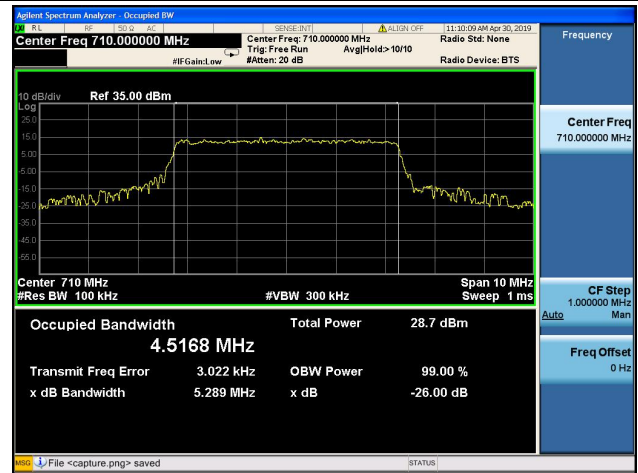
5MHz/16QAM/Low CH



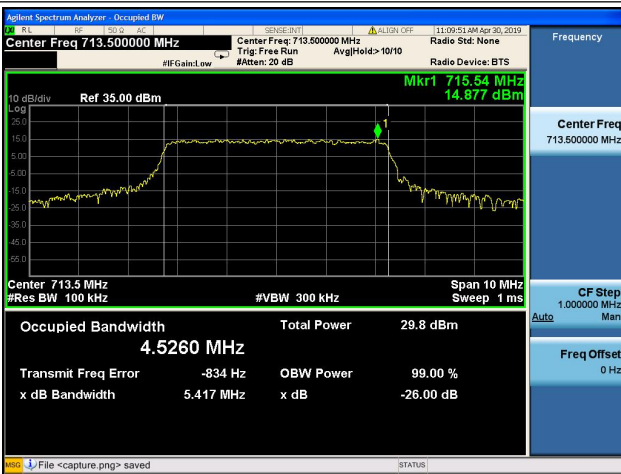
5MHz/QPSK/Mid CH



5MHz/16QAM/Mid CH



5MHz/QPSK/High CH

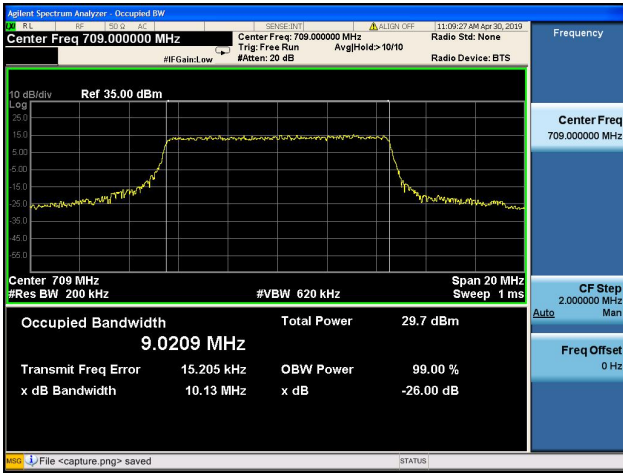


5MHz/16QAM/High CH

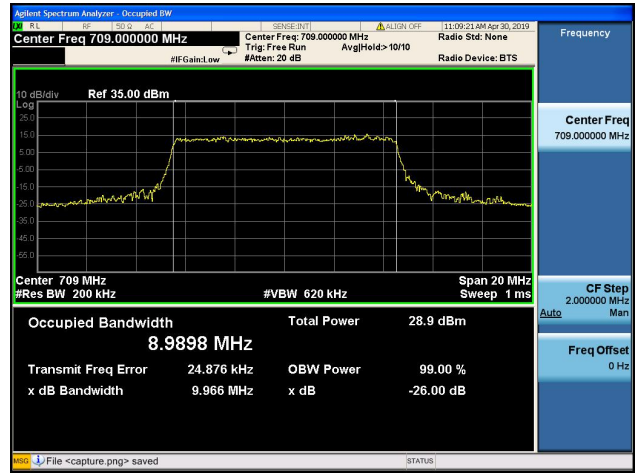




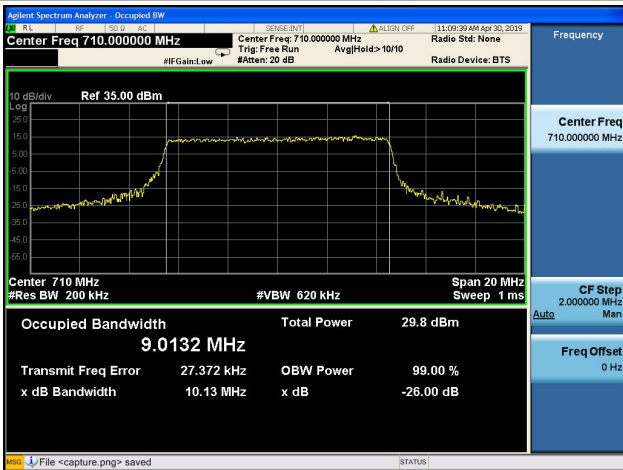
**10MHz/QPSK/Low CH**



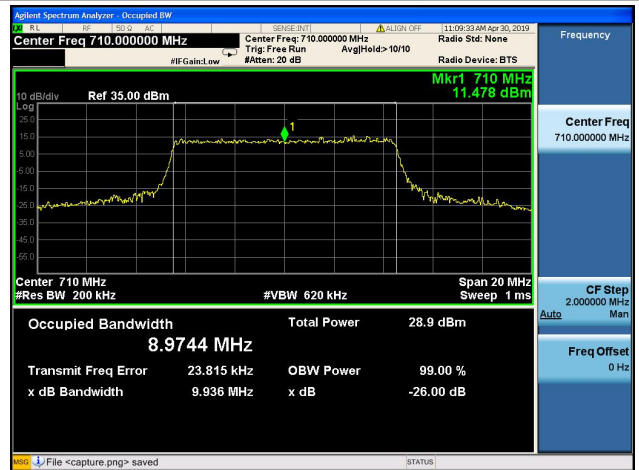
**10MHz/16QAM/Low CH**



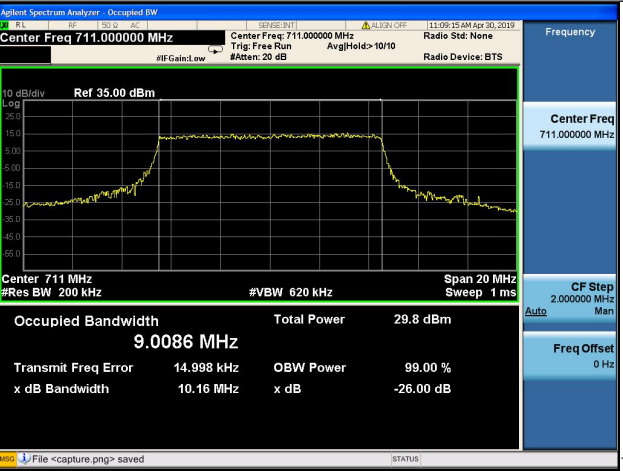
**10MHz/QPSK/Mid CH**



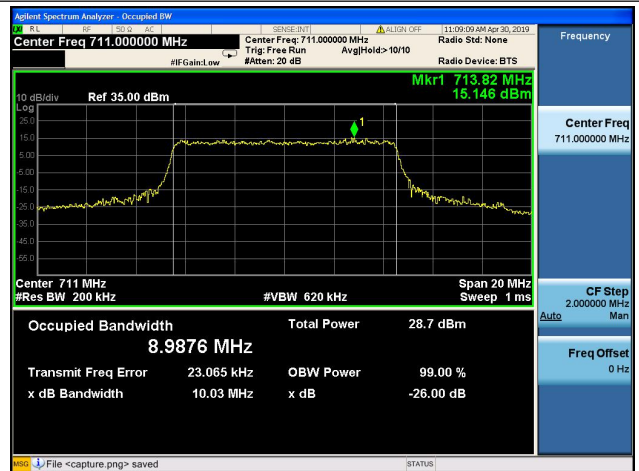
**10MHz/16QAM/Mid CH**



**10MHz/QPSK/High CH**

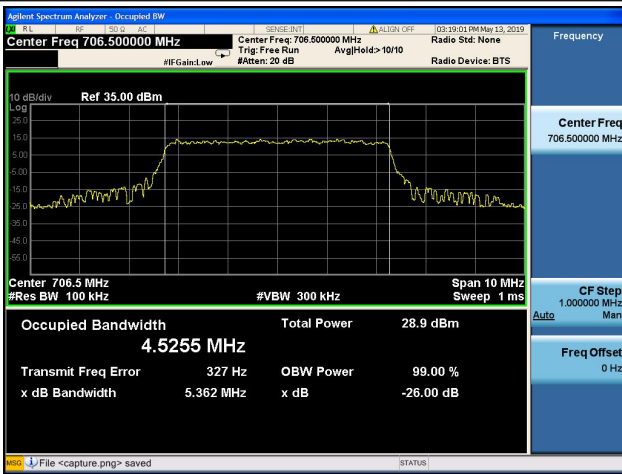


**10MHz/16QAM/High CH**

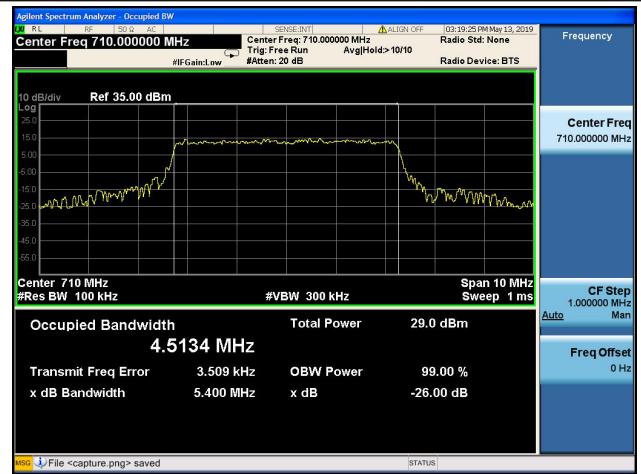




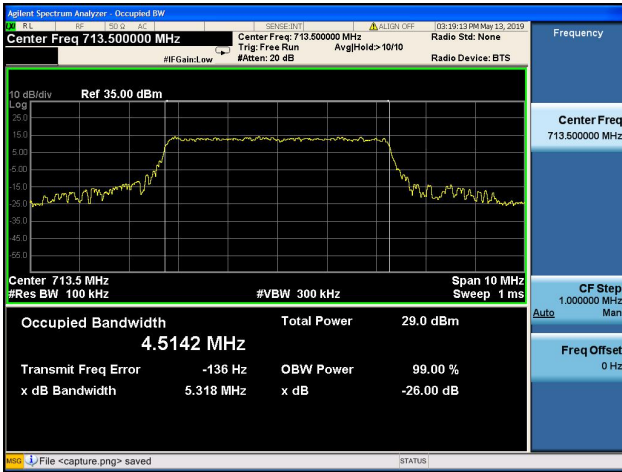
**5MHz/64QAM/Low CH**



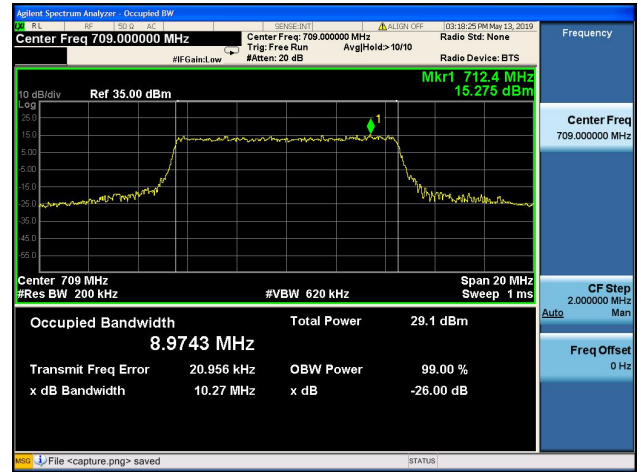
**5MHz/64QAM/Mid CH**



**5MHz/64QAM/High CH**



**10MHz/64QAM/Low CH**



**10MHz/64QAM/Mid CH**



**10MHz/64QAM/High CH**



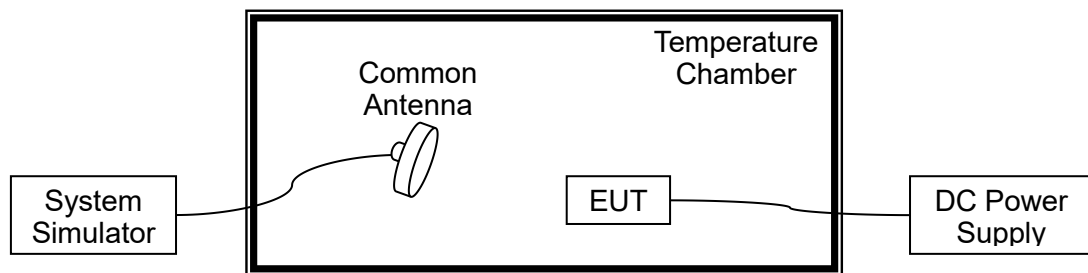
## 2.3. Frequency Stability

### 2.3.1. Requirement

According to FCC section 2.1055 & 27.54&24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 2.3.2. Test Description



The EUT which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

### 2.3.3. Test procedure

KDB 971168 D01v03 Section 9.0 and ANSI/TIA-603-E-2016.

### 2.3.4. Test Result

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.35VDC and 3.5VDC, which are specified by the applicant; the normal temperature here used is  $20^{\circ}\text{C}$ .





LTE Band 2, QPSK, Channel 18900, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage(%)	Power(VDC )	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
100	3.8	-20	32	0.017	PASS
100		-10	63	0.034	
100		0	-69	-0.037	
100		+10	62	0.033	
100		+20	-36	-0.019	
100		+30	-27	-0.014	
100		+40	53	0.028	
100		+50	65	0.035	
100		+55	42	0.022	
115		4.35	+20	26	
85	3.5	+20	-26	-0.014	

LTE Band 4, QPSK, Channel 20175, Frequency 1732.5MHz					
Limit =Within Authorized Band					
Voltage(%)	Power(VDC )	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
100	3.8	-20	34	0.020	PASS
100		-10	-32	-0.018	
100		0	-49	-0.028	
100		+10	-48	-0.028	
100		+20	-59	-0.034	
100		+30	82	0.047	
100		+40	57	0.033	
100		+50	76	0.044	
100		+55	31	0.018	
115		4.35	+20	56	
85	3.5	+20	-68	-0.039	



LTE Band 5, QPSK, Channel 20525, Frequency 836.5MHz Limit=±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	-20	25	0.030	PASS
100		-10	-19	-0.023	
100		0	-57	-0.068	
100		+10	-11	-0.013	
100		+20	-22	-0.026	
100		+30	31	0.037	
100		+40	76	0.091	
100		+50	43	0.051	
100		+55	69	0.082	
115	4.35	+20	74	0.088	
85	3.5	+20	-25	-0.030	

LTE Band 12, QPSK, Channel 23095, Frequency 707.5MHz Limit =Within Authorized Band					
Voltage(%)	Power(VDC )	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
100	3.8	-20	37	0.044	PASS
100		-10	-19	-0.023	
100		0	-57	-0.068	
100		+10	-35	-0.042	
100		+20	-22	-0.026	
100		+30	21	0.025	
100		+40	76	0.091	
100		+50	43	0.051	
100		+55	26	0.031	
115	4.35	+20	74	0.088	
85	3.5	+20	-56	-0.067	



LTE Band 17, QPSK, Channel 23790, Frequency 710MHz					
Limit =Within Authorized Band					
Voltage(%)	Power(VDC )	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
100	3.8	-20	24	0.034	PASS
100		-10	63	0.089	
100		0	-69	-0.097	
100		+10	62	0.087	
100		+20	-47	-0.066	
100		+30	-27	-0.038	
100		+40	18	0.025	
100		+50	42	0.059	
100		+55	34	0.048	
115		4.35	+20	26	
85	3.5	+20	-39	-0.055	

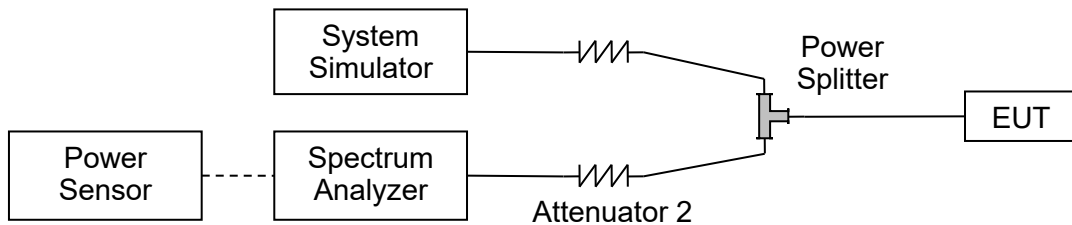
## 2.4. Peak to Average Ratio

### 2.4.1. Requirement

According to FCC section 24.232(d), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

### 2.4.2. Test Description

#### A. Test Set:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.4.3. Test procedure

KDB 971168 D01v03 Section 5.7 and ANSI/TIA-603-E-2016.

### 2.4.4. Test Result

Record the maximum PAPR level associated with a probability of 0.1%.



<b>LTE Band 2,BW: 1.4MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		QPSK	16QAM
18607	1850.7	5.72	6.58
18900	1880.0	5.71	6.48
19192	1909.2	4.64	5.57
<b>LTE Band 2,BW: 3MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		QPSK	16QAM
18615	1851.5	5.83	6.54
18900	1880.0	5.69	6.47
19184	1908.4	4.86	5.42
<b>LTE Band 2,BW: 5MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		QPSK	16QAM
18625	1852.5	5.76	6.40
18900	1880.0	5.68	6.30
19175	1907.5	5.27	5.84
<b>LTE Band 2,BW: 10MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		QPSK	16QAM
18650	1855.0	5.80	6.42
18900	1880.0	5.79	6.39
19150	1905.0	5.53	6.15
<b>LTE Band 2,BW: 15MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		QPSK	16QAM
18675	1857.5	5.83	6.34
18900	1880.0	5.70	6.35
19125	1902.5	5.38	6.12
<b>LTE Band 2,BW: 20MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		QPSK	16QAM
18700	1860.0	5.72	6.39
18900	1880.0	5.74	6.44
19100	1900.0	5.46	6.18

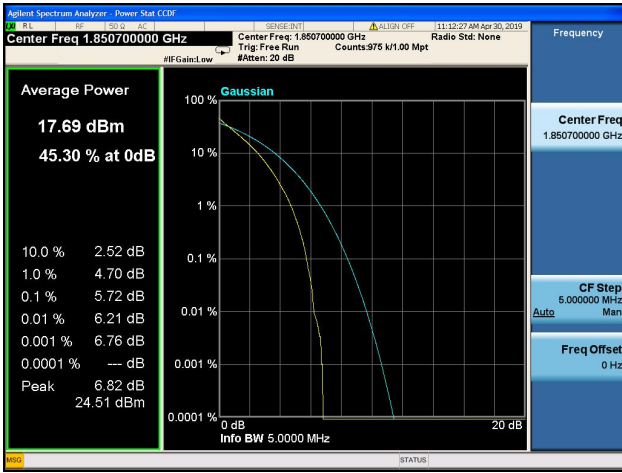


<b>LTE Band 2,BW: 1.4MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		64QAM	
18607	1850.7	6.66	
18900	1880.0	6.55	
19192	1909.2	6.29	
<b>LTE Band 2,BW: 3MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		64QAM	
18615	1851.5	6.68	
18900	1880.0	6.56	
19184	1908.4	6.25	
<b>LTE Band 2,BW: 5MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		64QAM	
18625	1852.5	6.44	
18900	1880.0	6.38	
19175	1907.5	6.17	
<b>LTE Band 2,BW: 10MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		64QAM	
18650	1855.0	6.52	
18900	1880.0	6.44	
19150	1905.0	6.12	
<b>LTE Band 2,BW: 15MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		64QAM	
18675	1857.5	6.56	
18900	1880.0	6.43	
19125	1902.5	6.21	
<b>LTE Band 2,BW: 20MHz</b>			
Channel	Frequency (MHz)	Peak to Average Ratio(dB)	
		64QAM	
18700	1860.0	9.07	
18900	1880.0	6.54	
19100	1900.0	6.37	

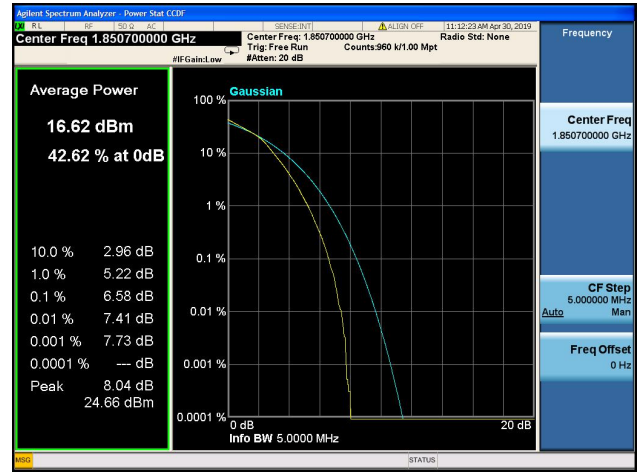


LTE Band 2 Peak to Average Ratio

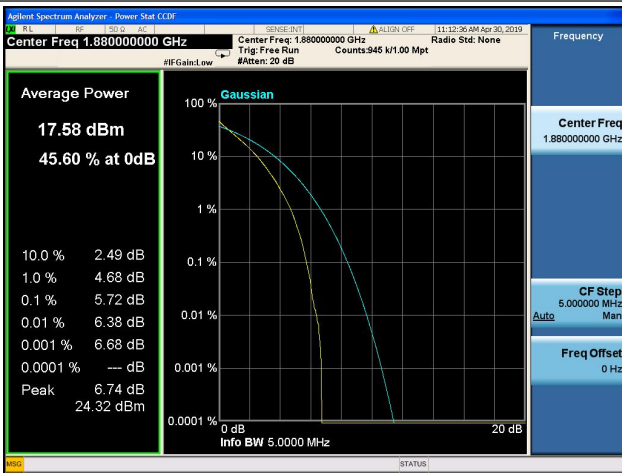
1.4MHz/QPSK/Low CH



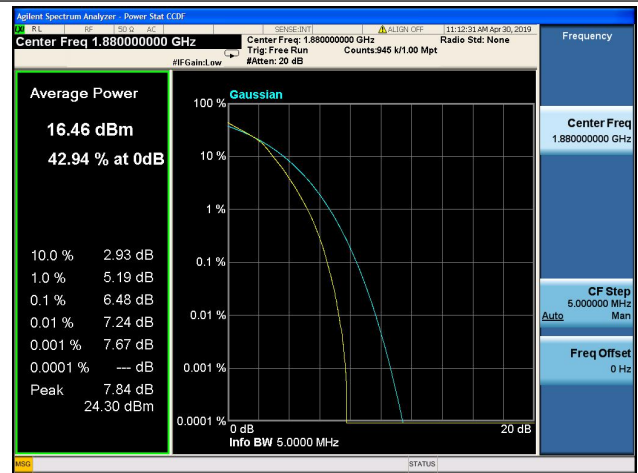
1.4MHz/16QAM/Low CH



1.4MHz/QPSK/Mid CH



1.4MHz/16QAM/Mid CH



1.4MHz/QPSK/High CH



1.4MHz/16QAM/High CH

