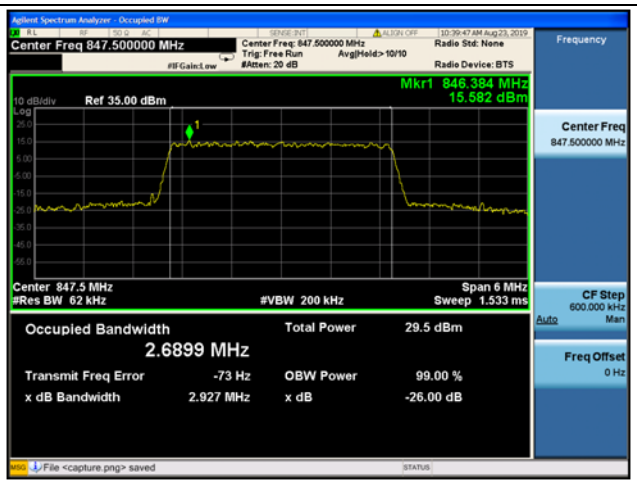
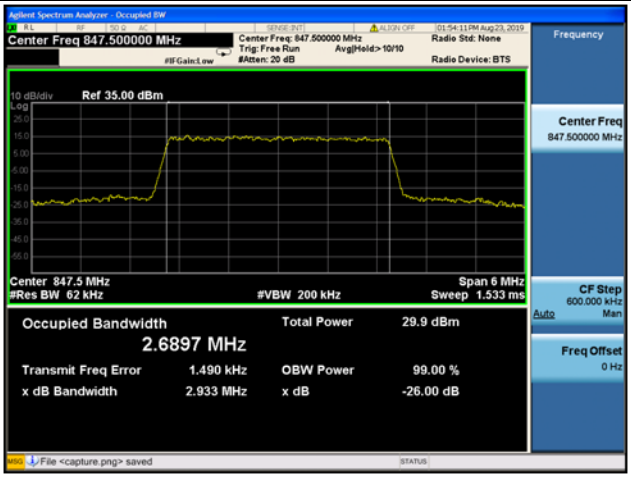
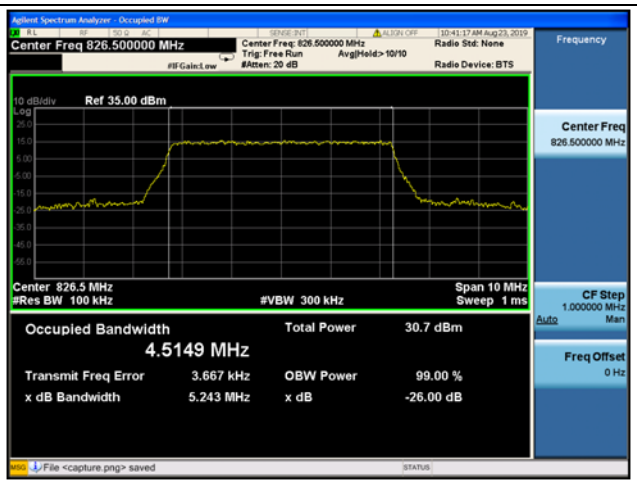
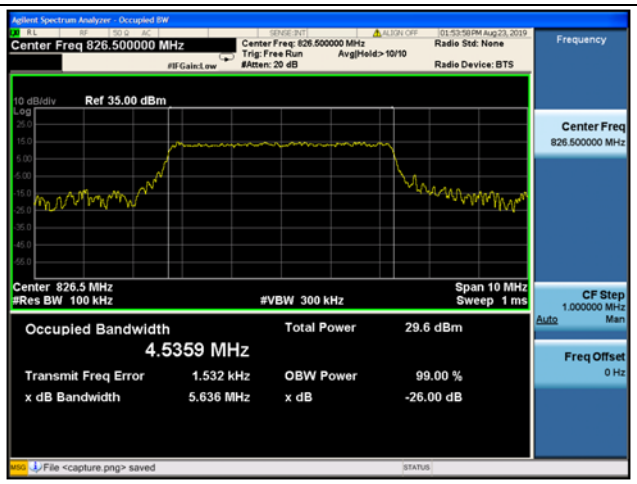
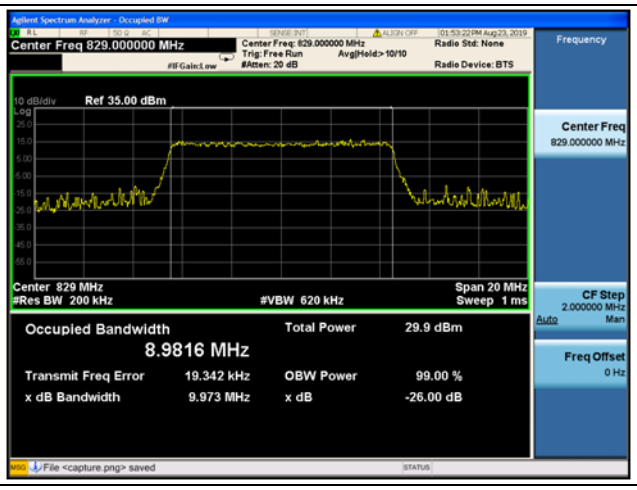
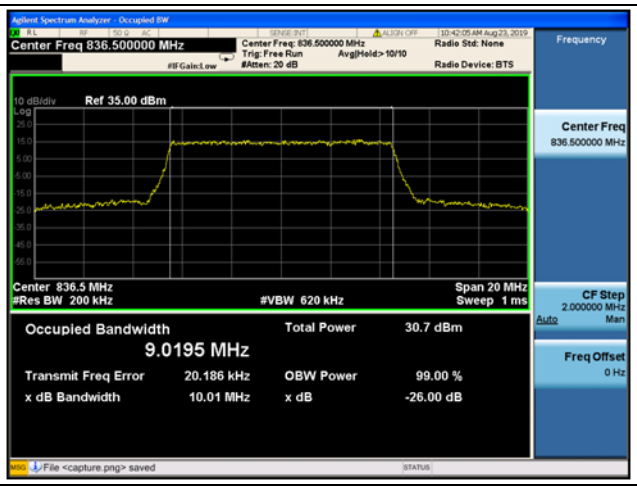
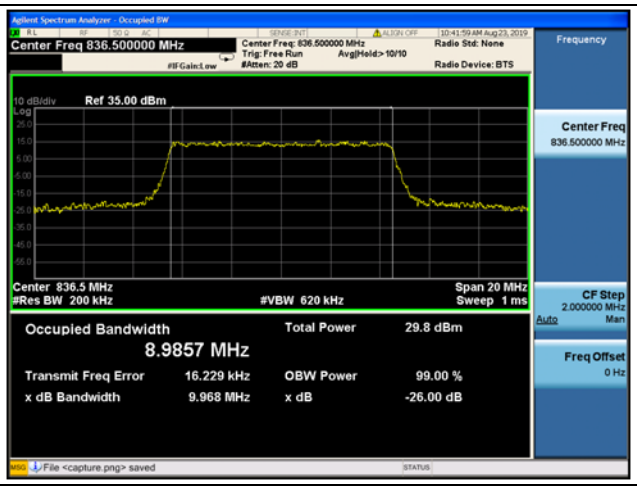
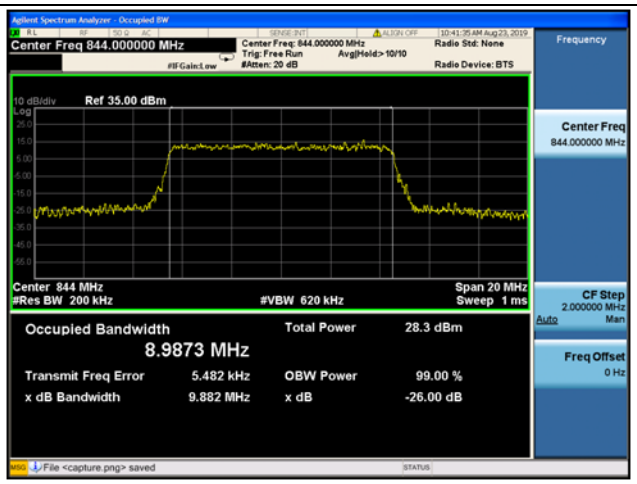
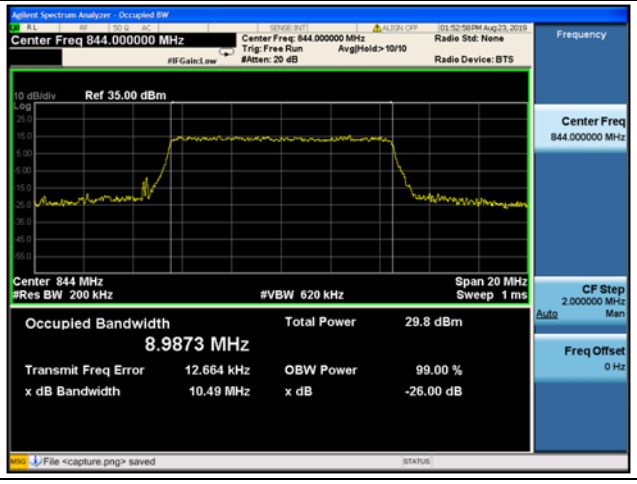
3MHz/ QPSK / HCH	3MHz/ 16QAM/ HCH
	
3MHz/ 64QAM/ HCH	
	

LTE Band 5 99%&26dB Bandwidth	
5MHz/QPSK / LCH	**5MHz/16QAM / LCH**
	
5MHz/ 64QAM / LCH	**5MHz/QPSK / MCH**
	
5MHz/ 16QAM / MCH	**5MHz/ 64QAM/ MCH**
	

5MHz/ QPSK / HCH	5MHz/ 16QAM/ HCH
	
5MHz/ 64QAM/ HCH	
	

LTE Band 5 99%&26dB Bandwidth	
10MHz/QPSK / LCH	**10MHz/16QAM / LCH**
	
10MHz/ 64QAM / LCH	**10MHz/QPSK / MCH**
	
10MHz/ 16QAM / MCH	**10MHz/ 64QAM/ MCH**
	

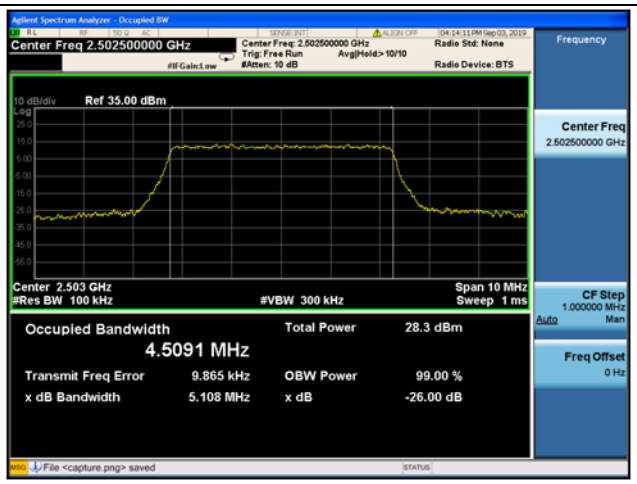
10MHz/ QPSK / HCH	10MHz/ 16QAM/ HCH
	
10MHz/ 64QAM/ HCH	
	

LTE Band 799% & 26dB Bandwidth

5MHz/QPSK / LCH

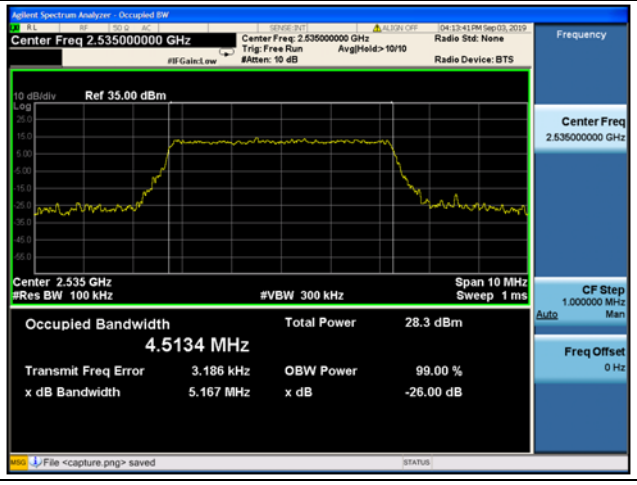
5MHz/16QAM / LCH

5MHz/ 64QAM / LCH

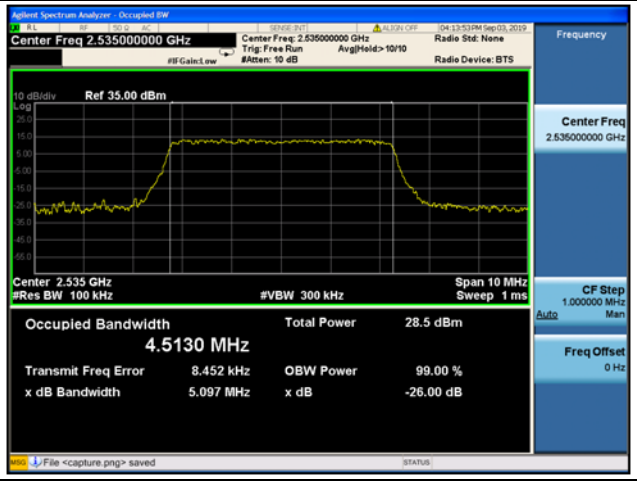


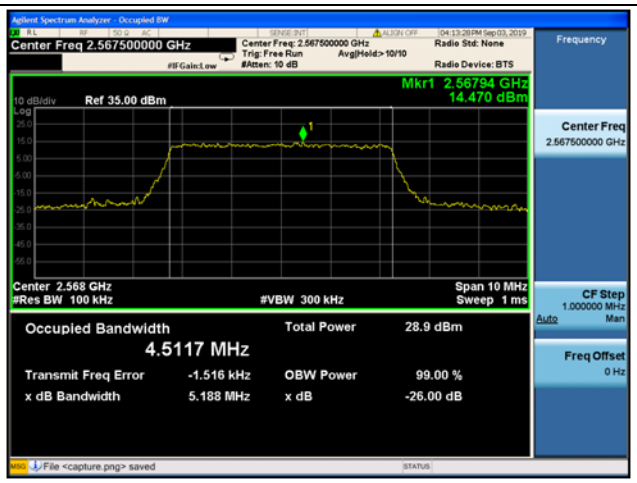
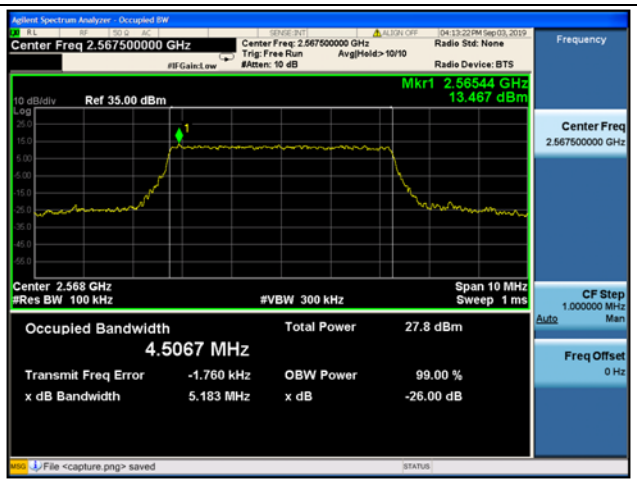
5MHz/QPSK / MCH

5MHz/ 16QAM / MCH



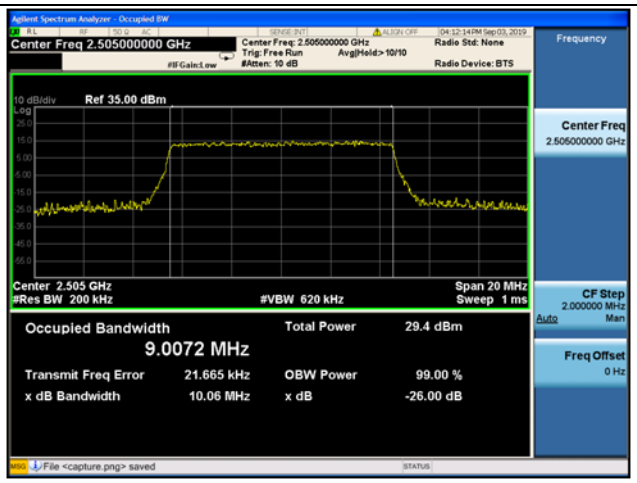
5MHz/ 64QAM / MCH



5MHz/ QPSK / HCH	5MHz/ 16QAM / HCH
	
5MHz/ 64QAM / HCH	
	

LTE Band 7 99% & 26dB Bandwidth

10MHz/QPSK / LCH

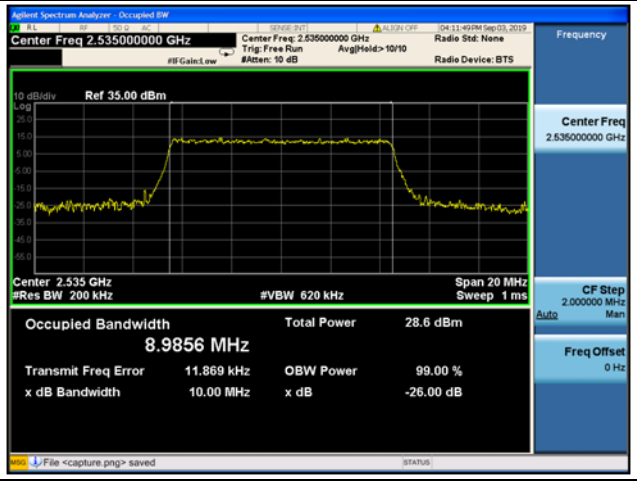


10MHz/16QAM / LCH

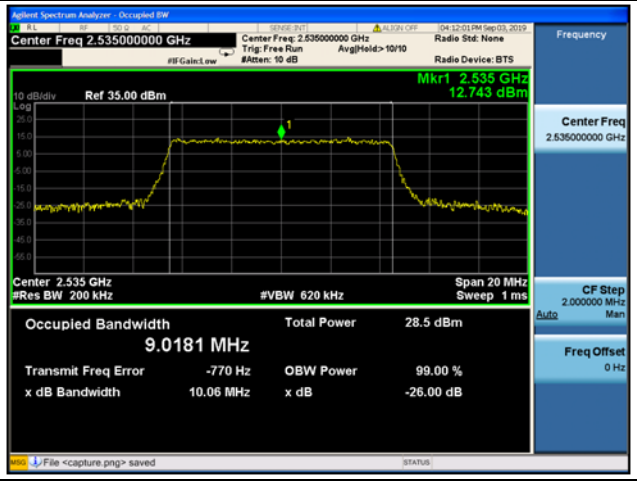
10MHz/ 64QAM / LCH

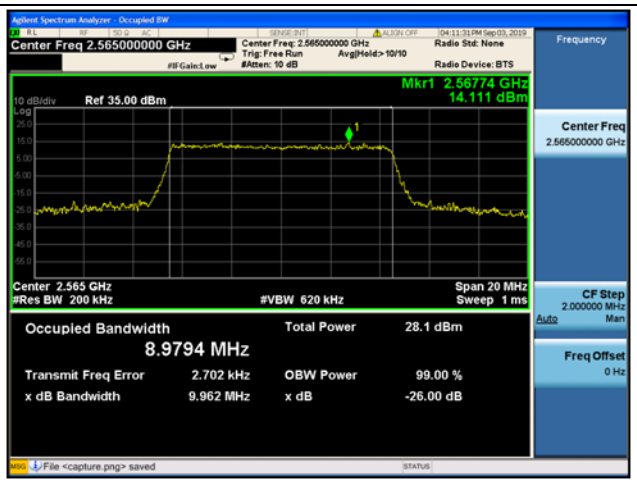
10MHz/QPSK / MCH

10MHz/ 16QAM / MCH



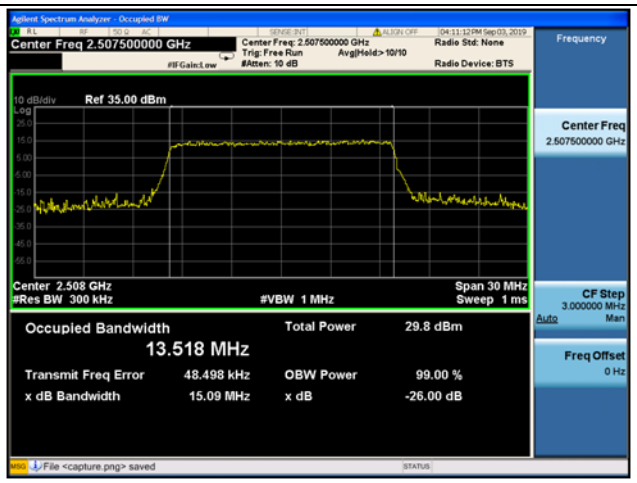
10MHz/ 64QAM / MCH



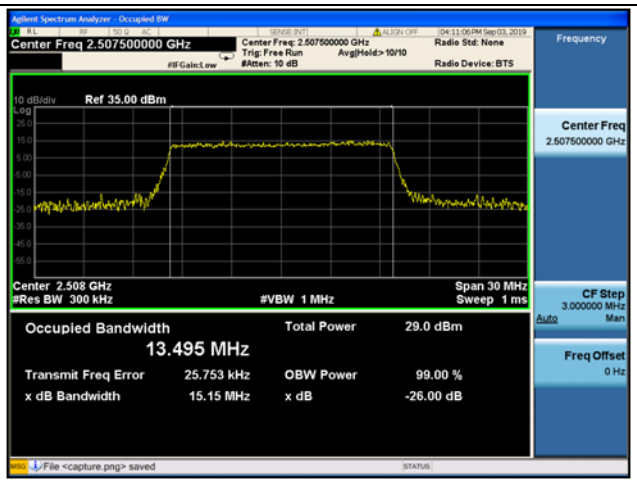
10MHz/ QPSK / HCH	10MHz/ 16QAM / HCH
	
10MHz/ 64QAM / HCH	
	

LTE Band 7 99% & 26dB Bandwidth

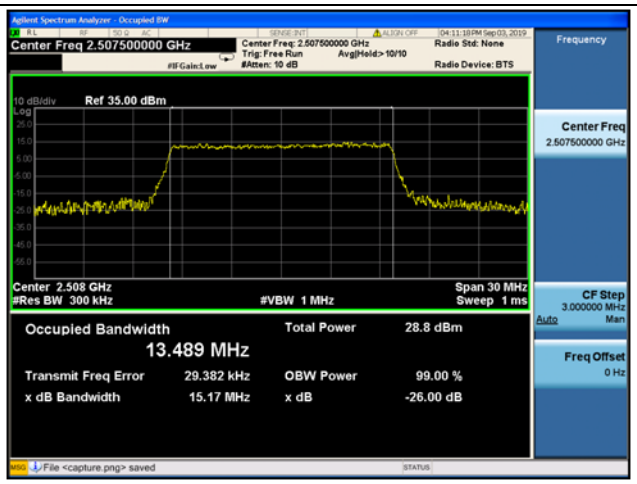
15MHz/QPSK / LCH



15MHz/16QAM / LCH

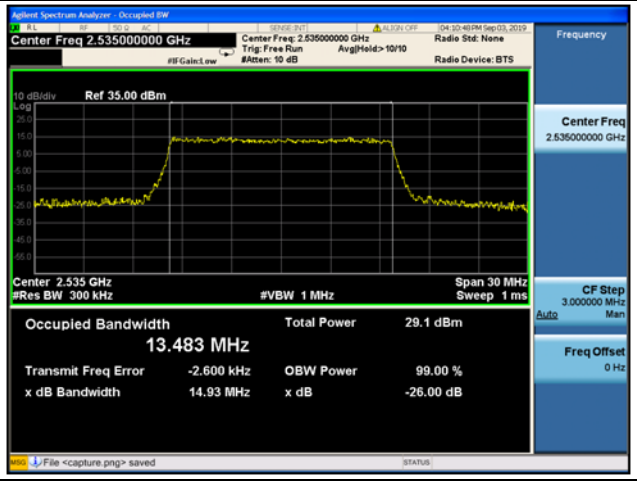


15MHz/ 64QAM / LCH

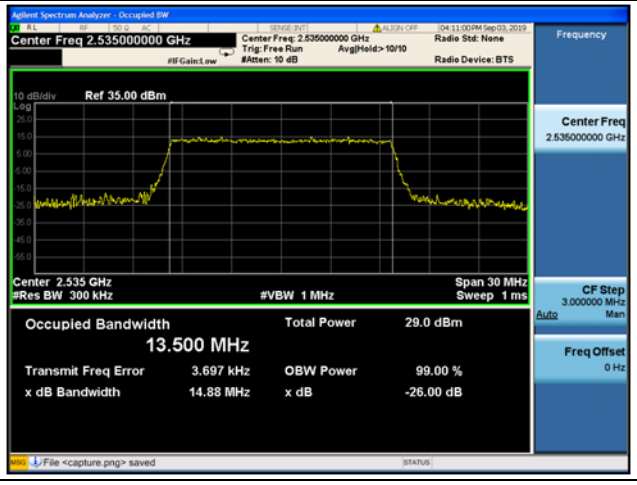


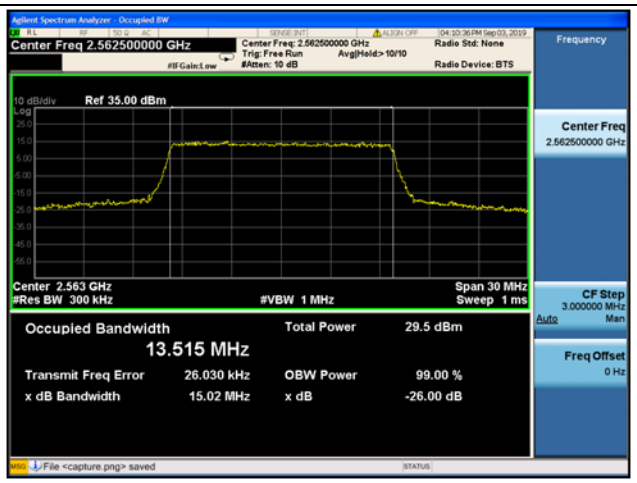
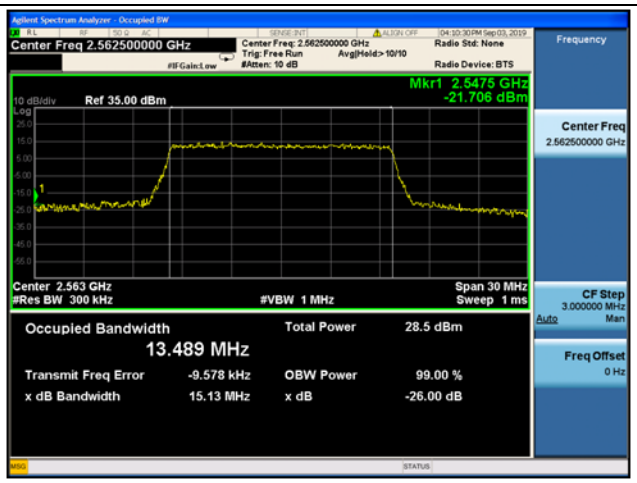
15MHz/QPSK / MCH

15MHz/ 16QAM / MCH



15MHz/ 64QAM / MCH

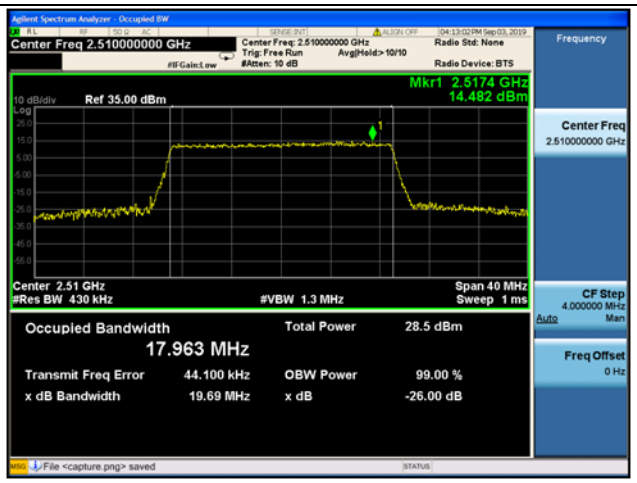


15MHz/ QPSK / HCH	15MHz/ 16QAM / HCH
	
15MHz/ 64QAM / HCH	
	

LTE Band 7 99% & 26dB Bandwidth

20MHz/QPSK / LCH

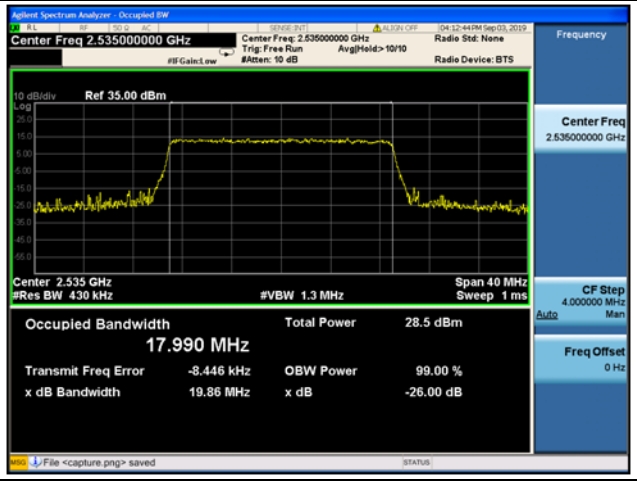
20MHz/16QAM / LCH



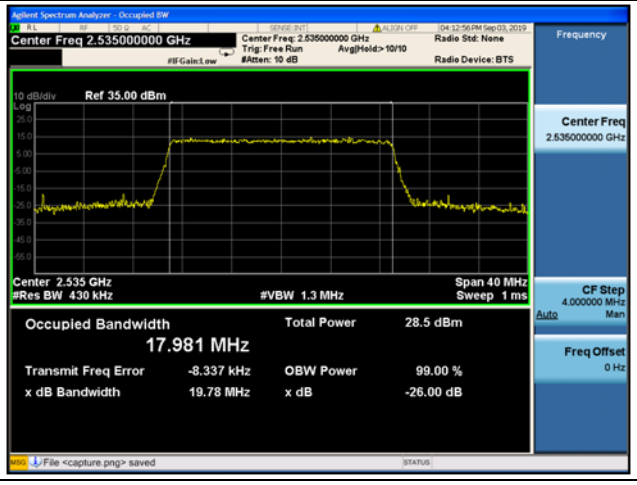
20MHz/ 64QAM / LCH

20MHz/QPSK / MCH

20MHz/ 16QAM / MCH



20MHz/ 64QAM / MCH



20MHz/ QPSK / HCH	20MHz/ 16QAM / HCH
	
20MHz/ 64QAM / HCH	
	

2.3. Frequency Stability

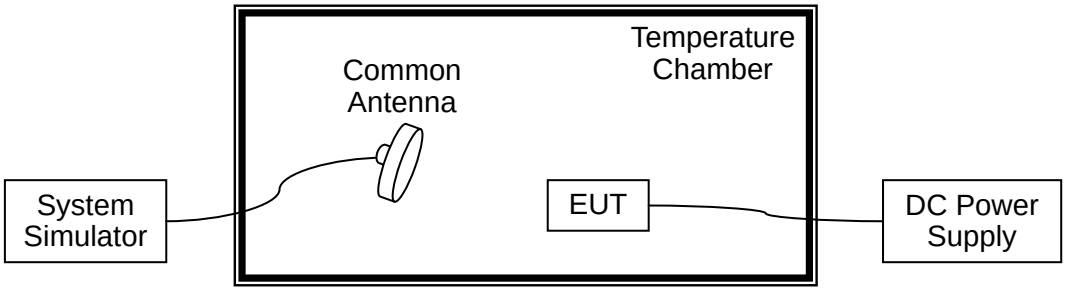
2.3.1. Requirement

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 -10°C to +50°C at intervals of not more than 10°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°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	3.7	+20(Rel)	15	0.008	PASS
100		-10	16	0.009	
100		0	-85	-0.045	
100		+10	-37	-0.020	
100		+20	-15	-0.008	
100		+30	86	0.046	
100		+40	83	0.044	
100		+50	25	0.013	
115	4.2	+20	15	0.008	
85	3.0	+20	95	0.051	

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	3.7	+20(Rel)	15	0.009	PASS
100		-10	25	0.014	
100		0	-85	-0.049	
100		+10	-85	-0.049	
100		+20	-15	-0.009	
100		+30	86	0.050	
100		+40	52	0.030	
100		+50	25	0.014	
115	4.2	+20	15	0.009	
85	3.0	+20	32	0.018	

LTE Band 5, QPSK, Channel 20525, Frequency 836.5MHz Limit=±2.5ppm					
Voltage (%)	**Power**	**Temp (°C)**	**Fre. Dev.**	**Deviation**	**Result**

	(VDC)		(Hz)	(ppm)	
100	3.7	+20(Rel)	-6	-0.007	PASS
100		-10	-74	-0.088	
100		0	-58	-0.069	
100		+10	54	0.065	
100		+20	15	0.018	
100		+30	26	0.031	
100		+40	25	0.030	
100		+50	87	0.104	
115	4.2	+20	-36	-0.043	
85	3.0	+20	31	0.037	

LTE Band 7, QPSK, Channel 21100, Frequency 2535MHz Limit =Within Authorized Band					
Voltage(%)	**Power(VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	3.7	+20(Rel)	16	0.006	PASS
100		-10	64	0.025	
100		0	-85	-0.034	
100		+10	-75	-0.030	
100		+20	-26	-0.010	
100		+30	15	0.006	
100		+40	83	0.033	
100		+50	52	0.021	
115	4.2	+20	14	0.006	
85	3.0	+20	43	0.017	

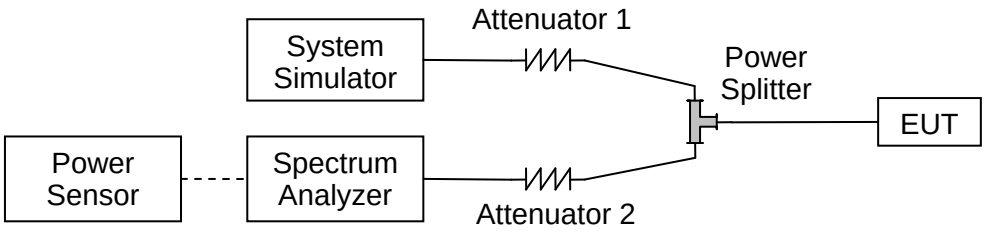
2.4. Peak to Average Radio

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 EUTis 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 50Ohm; 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%.

LTE Band 2						
BW (MHz)	**Modulation**	**Low CH**	**Mid CH**	**High CH**	**Limit (dB)**	**Verdict**
1.4	QPSK	5.12	5.38	4.73	<=13	PASS
	16QAM	5.99	6.14	5.54	<=13	PASS
	64QAM	6.0	6.22	5.45	<=13	PASS
3	QPSK	5.42	5.42	5.28	<=13	PASS
	16QAM	6.25	6.25	5.97	<=13	PASS
	64QAM	6.06	6.27	5.65	<=13	PASS
5	QPSK	5.51	5.63	5.28	<=13	PASS
	16QAM	6.15	6.32	5.97	<=13	PASS
	64QAM	6.17	6.31	5.97	<=13	PASS
10	QPSK	5.49	5.64	5.42	<=13	PASS
	16QAM	6.15	6.3	6.09	<=13	PASS
	64QAM	6.12	6.3	6.09	<=13	PASS
15	QPSK	5.37	5.53	5.28	<=13	PASS
	16QAM	6.06	6.21	6.0	<=13	PASS
	64QAM	6.11	6.25	5.99	<=13	PASS
20	QPSK	5.46	5.53	5.4	<=13	PASS
	16QAM	6.22	6.28	6.14	<=13	PASS
	64QAM	6.19	6.27	6.05	<=13	PASS

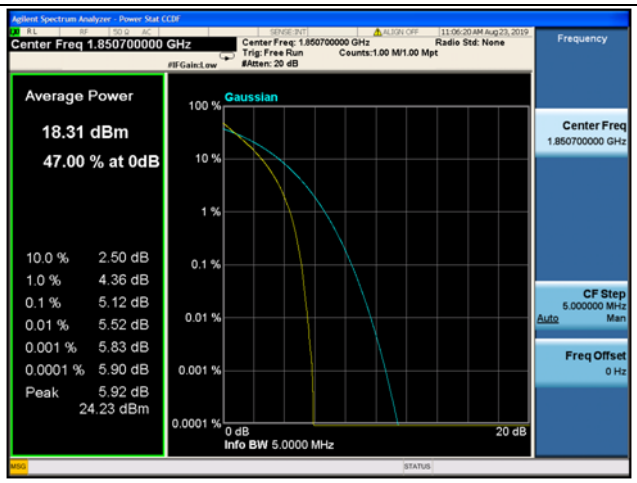
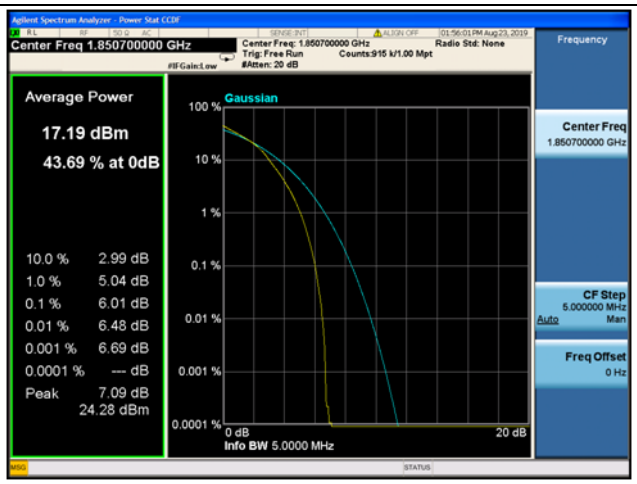
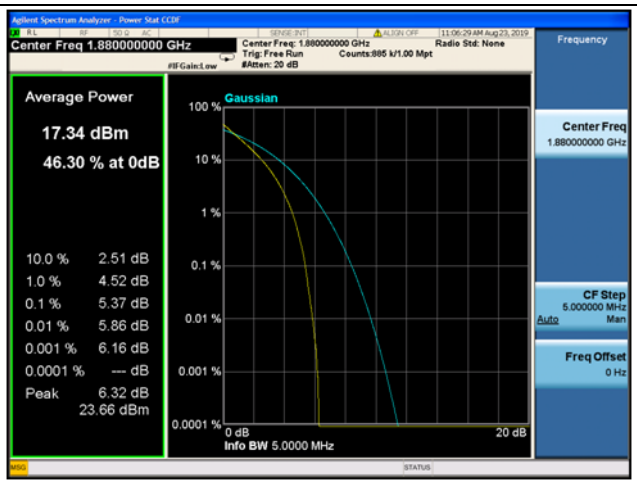
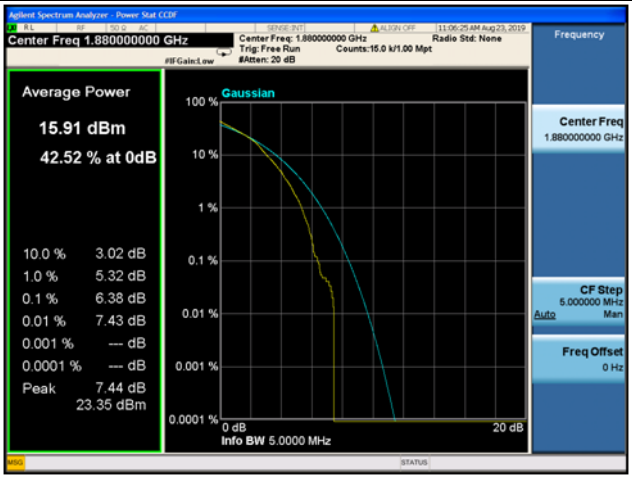
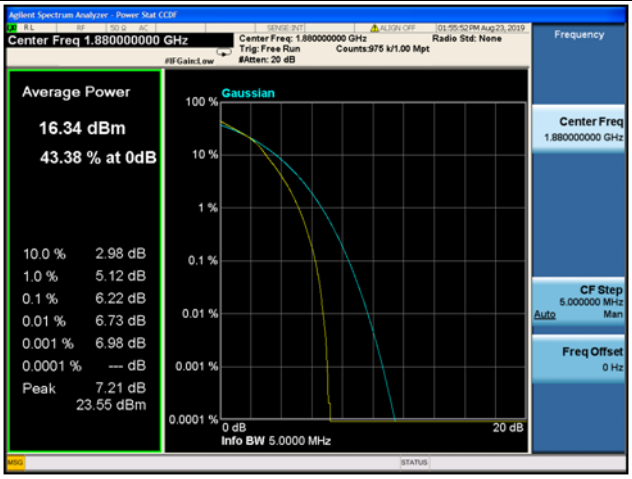
LTE Band 4						
BW (MHz)	**Modulation**	**Low CH**	**Mid CH**	**High CH**	**Limit (dB)**	**Verdict**
1.4	QPSK	4.99	5.23	4.66	<=13	PASS
	16QAM	5.75	5.96	5.5	<=13	PASS
	64QAM	5.75	5.96	5.46	<=13	PASS
3	QPSK	5.04	5.25	4.76	<=13	PASS
	16QAM	5.86	6.07	5.61	<=13	PASS
	64QAM	5.86	6.08	5.66	<=13	PASS
5	QPSK	5.27	5.47	5.17	<=13	PASS
	16QAM	5.98	6.11	5.85	<=13	PASS
	64QAM	5.95	6.08	5.91	<=13	PASS
10	QPSK	5.35	5.44	5.28	<=13	PASS
	16QAM	6.00	6.13	5.98	<=13	PASS

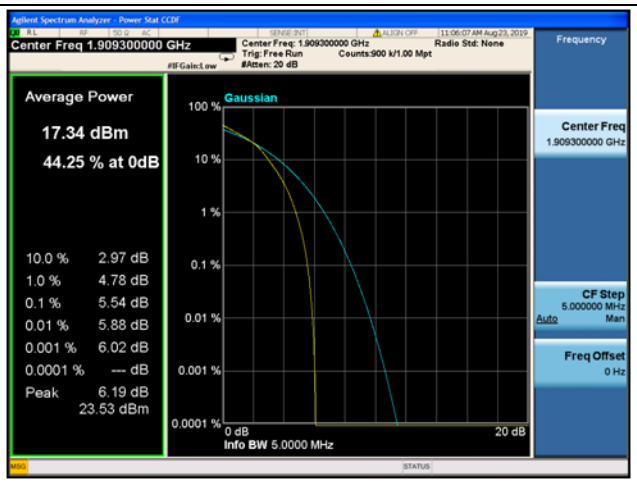
	64QAM	6.01	6.16	5.96	<=13	PASS
15	QPSK	5.90	5.29	5.17	<=13	PASS
	16QAM	5.82	6.01	5.87	<=13	PASS
	64QAM	5.88	6.02	5.89	<=13	PASS
20	QPSK	5.28	5.41	5.31	<=13	PASS
	16QAM	6.04	6.11	6.05	<=13	PASS
	64QAM	6.04	6.12	6.06	<=13	PASS

LTE Band 5						
BW (MHz)	**Modulation**	**Low CH**	**Mid CH**	**High CH**	**Limit (dB)**	**Verdict**
1.4	QPSK	4.91	4.90	4.89	<=13	PASS
	16QAM	5.68	5.69	5.67	<=13	PASS
	64QAM	5.89	5.91	5.93	<=13	PASS
3	QPSK	4.98	4.94	4.98	<=13	PASS
	16QAM	5.79	5.79	5.80	<=13	PASS
	64QAM	5.77	5.78	5.80	<=13	PASS
5	QPSK	5.23	5.23	5.28	<=13	PASS
	16QAM	5.92	5.94	5.95	<=13	PASS
	64QAM	6.02	5.93	5.95	<=13	PASS
10	QPSK	5.24	5.34	5.43	<=13	PASS
	16QAM	5.96	5.97	6.04	<=13	PASS
	64QAM	5.99	6.05	6.07	<=13	PASS

LTE Band 7						
BW (MHz)	**Modulation**	**Low CH**	**Mid CH**	**High CH**	**Limit (dB)**	**Verdict**
5	QPSK	5.39	5.40	5.12	<=13	PASS
	16QAM	6.06	6.11	5.82	<=13	PASS
	64QAM	6.05	6.01	5.73	<=13	PASS
10	QPSK	5.56	5.27	5.32	<=13	PASS
	16QAM	6.16	6.16	6.06	<=13	PASS
	64QAM	6.01	6.05	6.10	<=13	PASS
15	QPSK	5.32	5.4	5.11	<=13	PASS

	16QAM	6.06	6.03	5.93	<=13	PASS
	64QAM	6.10	6.08	6.01	<=13	PASS
20	QPSK	5.42	5.36	5.22	<=13	PASS
	16QAM	6.25	6.14	6.07	<=13	PASS
	64QAM	6.17	6.14	5.98	<=13	PASS

LTE Band 2 Peak-to-Average Radio	
1.4MHz/QPSK / LCH	**1.4MHz/16QAM / LCH**
	
1.4MHz/ 64QAM / LCH	**1.4MHz/ QPSK / MCH**
	
1.4MHz/16QAM / MCH	**1.4MHz/ 64QAM / MCH**
	

1.4MHz/ QPSK / HCH	1.4MHz/16QAM / HCH
	
1.4MHz/ 64QAM / HCH