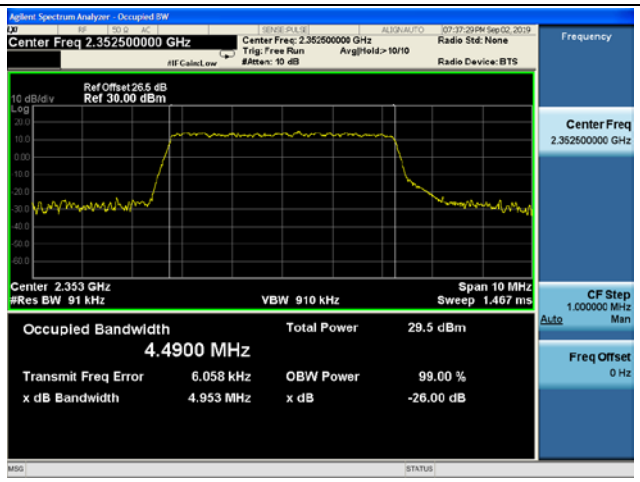
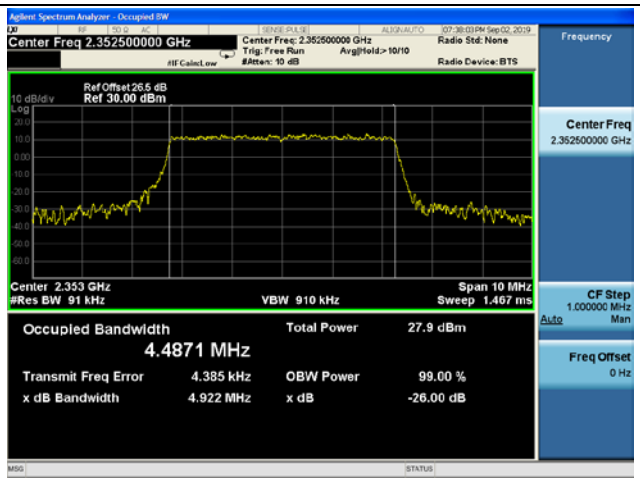
LTE Band 40(2350-2360MHz) 99% & 26dB Bandwidth

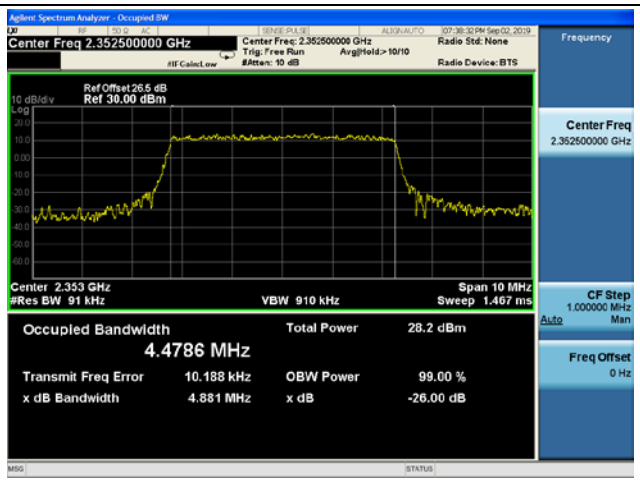
5MHz/QPSK / LCH



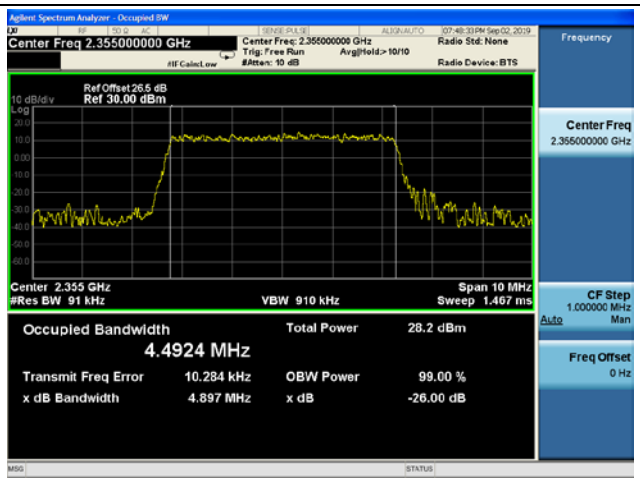
5MHz/16QAM / LCH



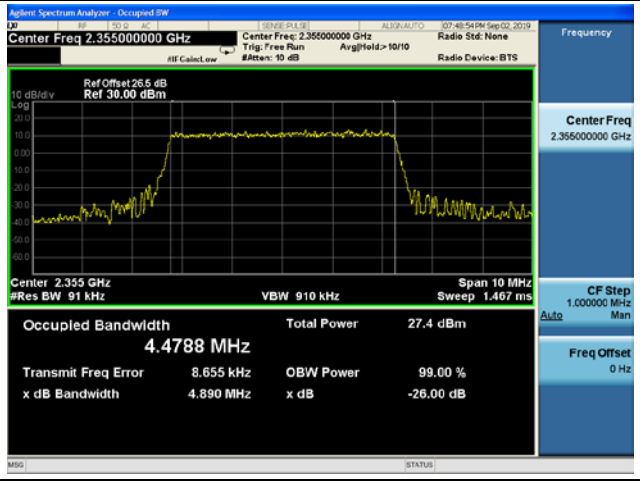
5MHz/ 64QAM / LCH



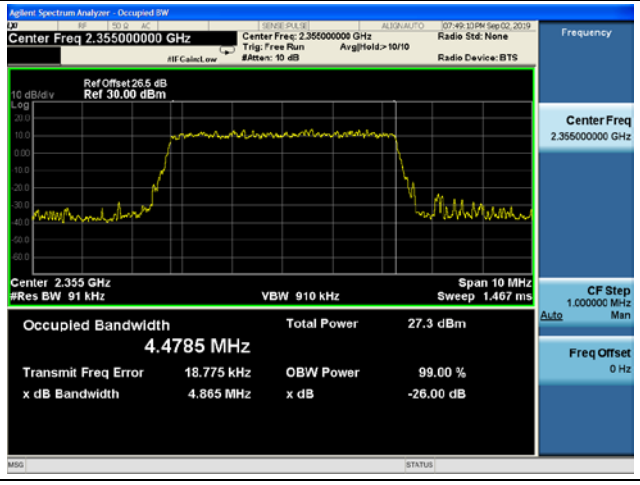
5MHz/QPSK / MCH

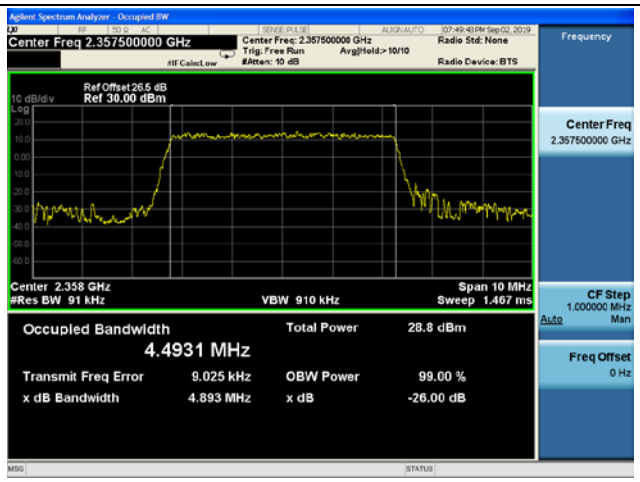
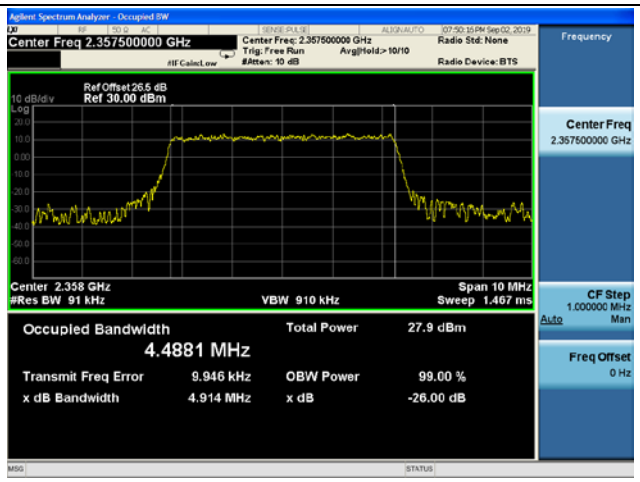
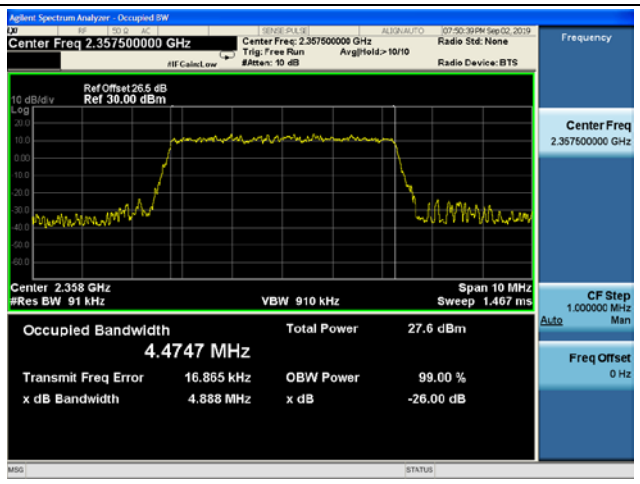


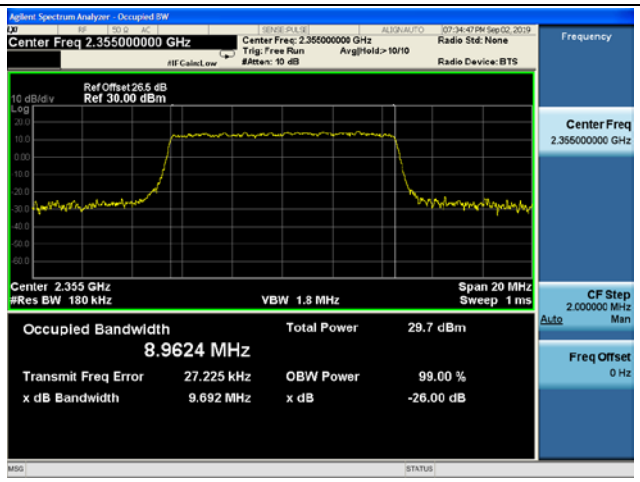
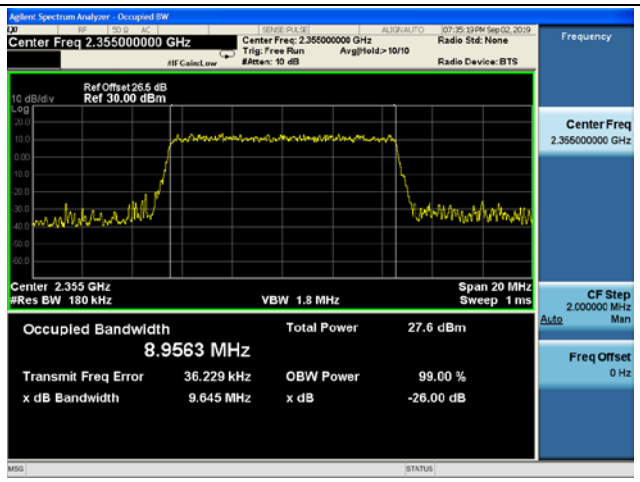
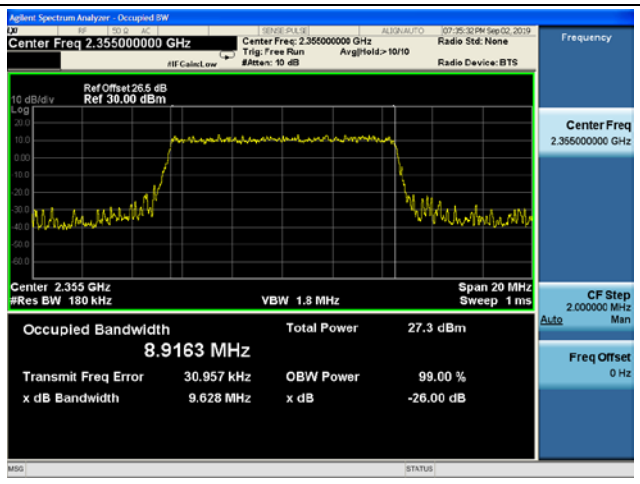
5MHz/ 16QAM / MCH



5MHz/ 64QAM / MCH

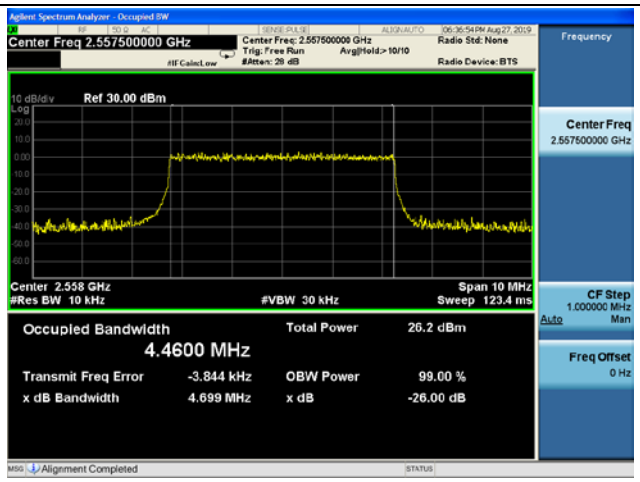


5MHz/ QPSK / HCH	5MHz/ 16QAM / HCH
	
5MHz/ 64QAM / HCH	
	

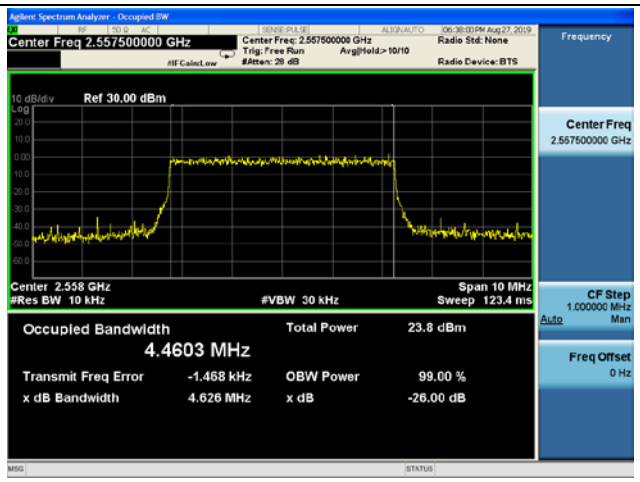
LTE Band 40(2350-2360MHz) 99% & 26dB Bandwidth	
10MHz/QPSK / MCH	**10MHz/ 16QAM / MCH**
	
10MHz/ 64QAM / MCH	
	

LTE Band 41 99% & 26dB Bandwidth

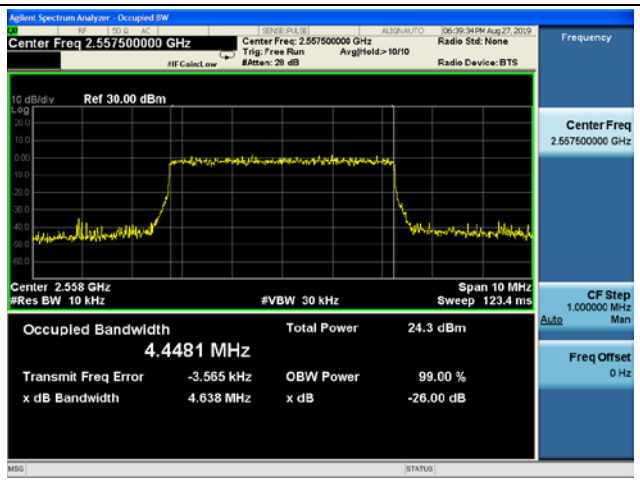
5MHz/QPSK / LCH



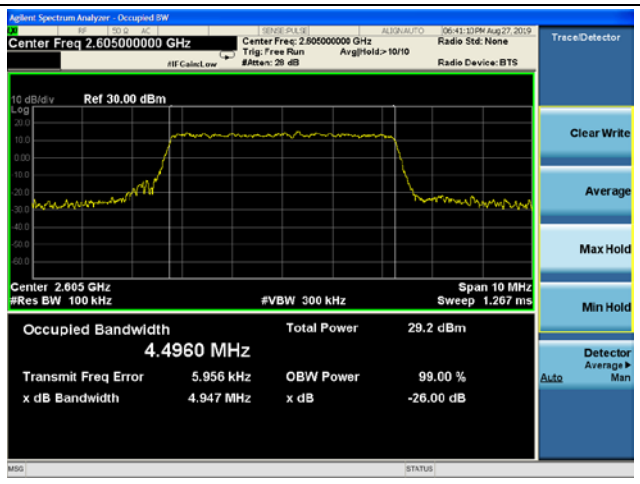
5MHz/16QAM / LCH



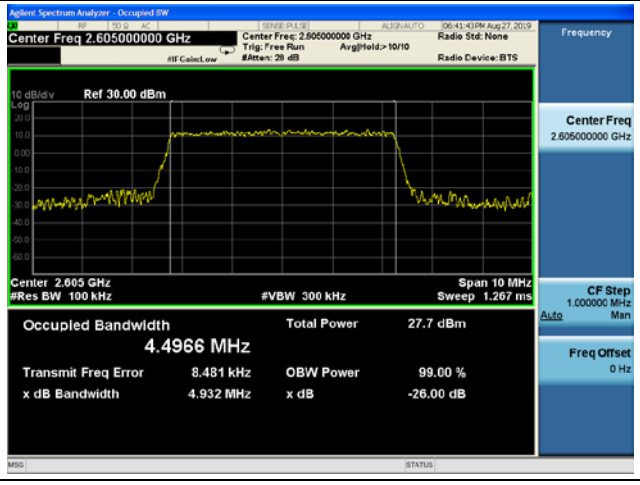
5MHz/ 64QAM / LCH



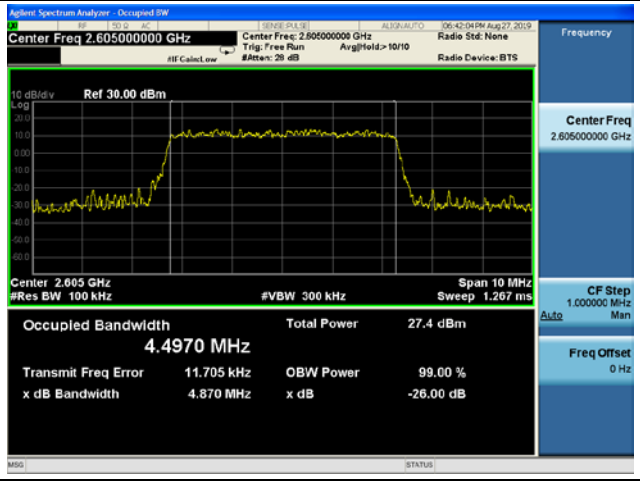
5MHz/QPSK / MCH

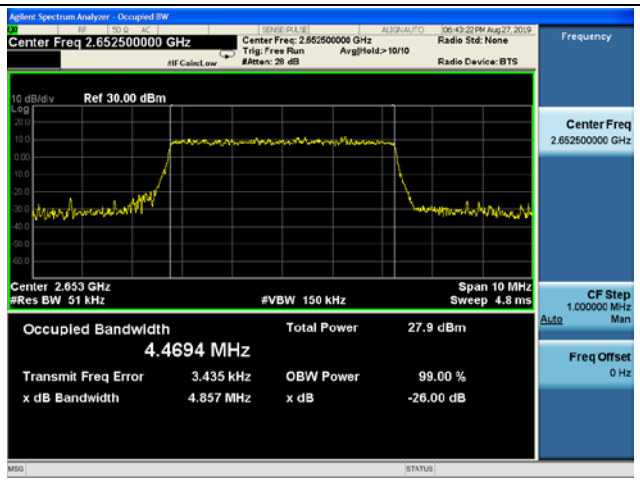
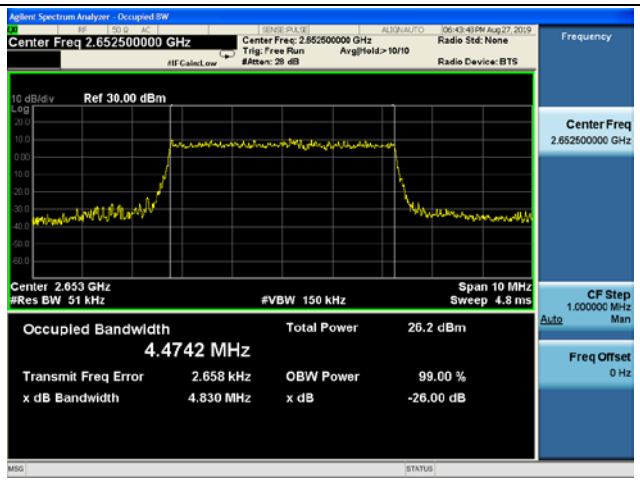
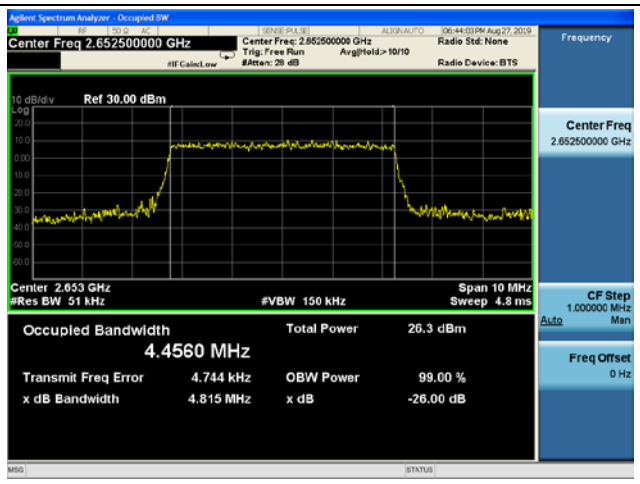


5MHz/ 16QAM / MCH



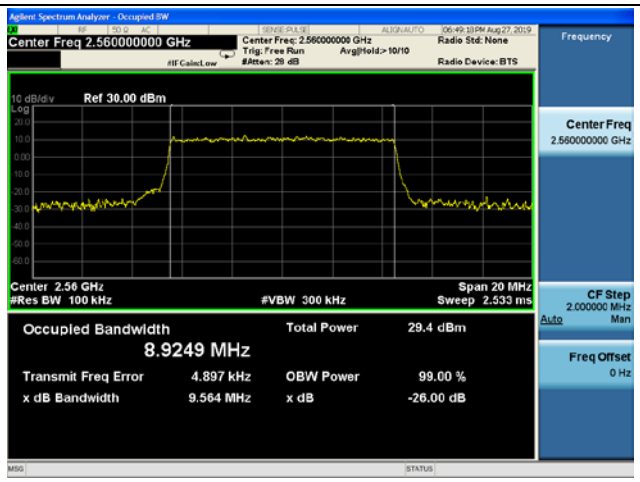
5MHz/ 64QAM / MCH



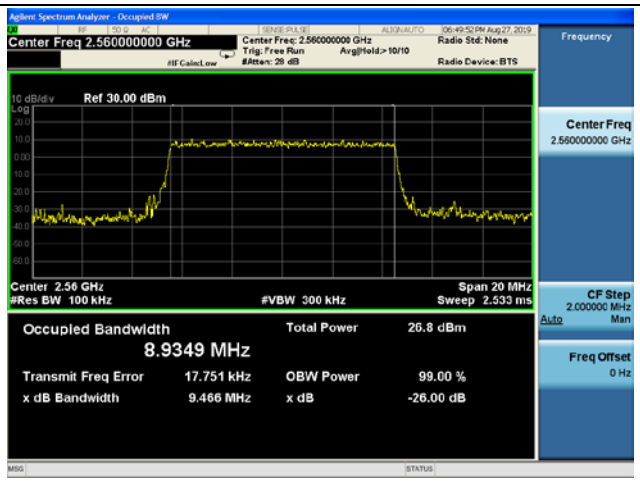
5MHz/ QPSK / HCH	5MHz/ 16QAM / HCH
	
5MHz/ 64QAM / HCH	
	

LTE Band 41 99% & 26dB Bandwidth

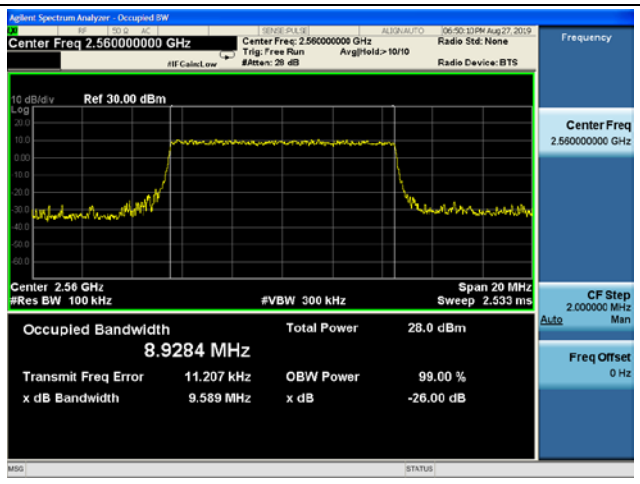
10MHz/QPSK / LCH



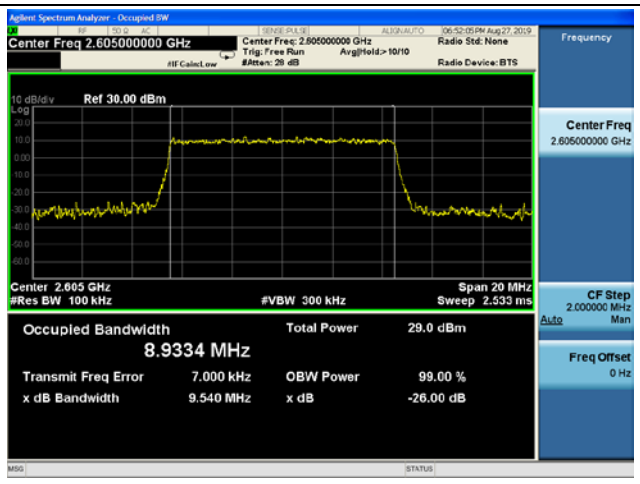
10MHz/16QAM / LCH



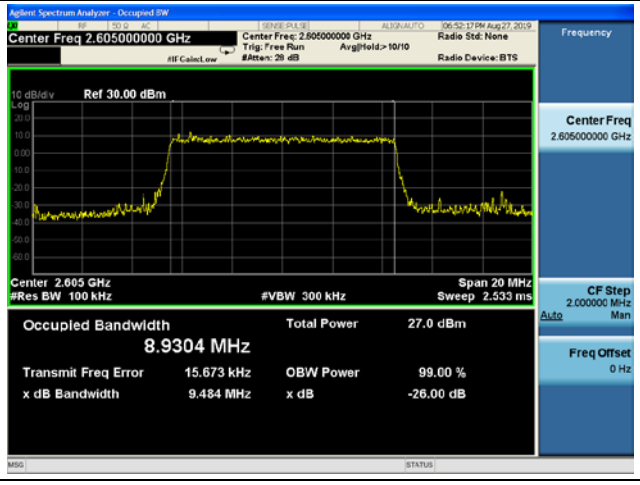
10MHz/ 64QAM / LCH



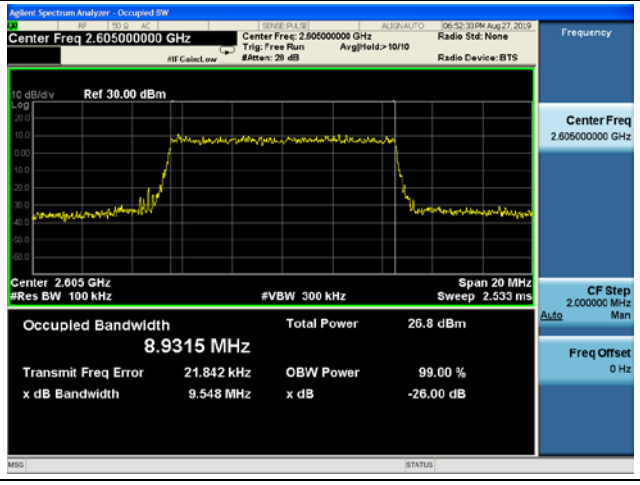
10MHz/QPSK / MCH

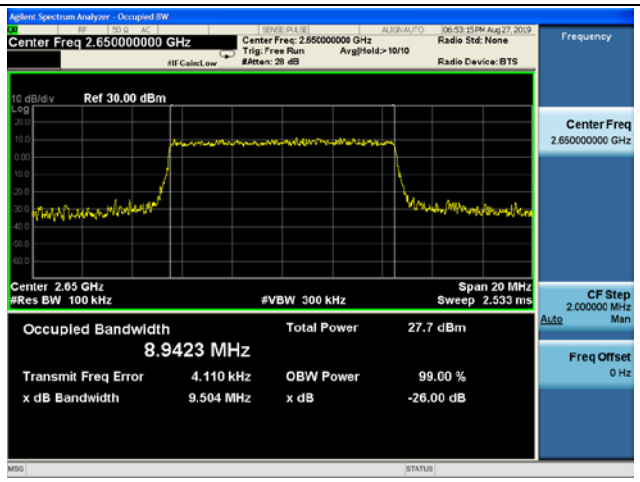
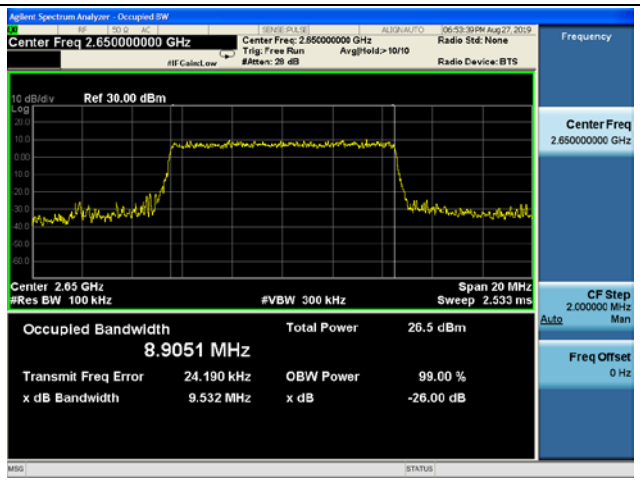


10MHz/ 16QAM / MCH



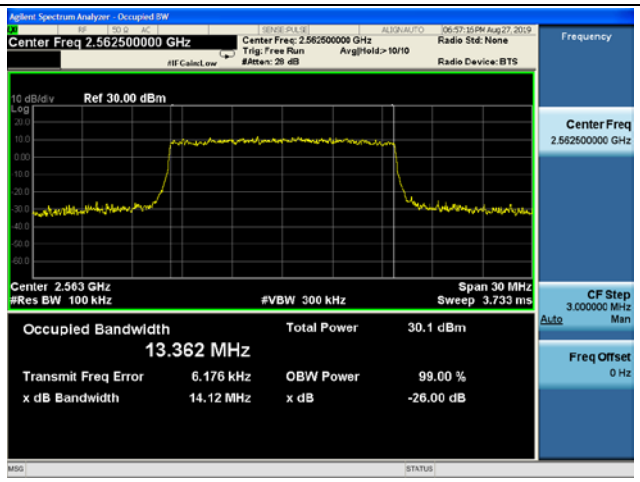
10MHz/ 64QAM / MCH



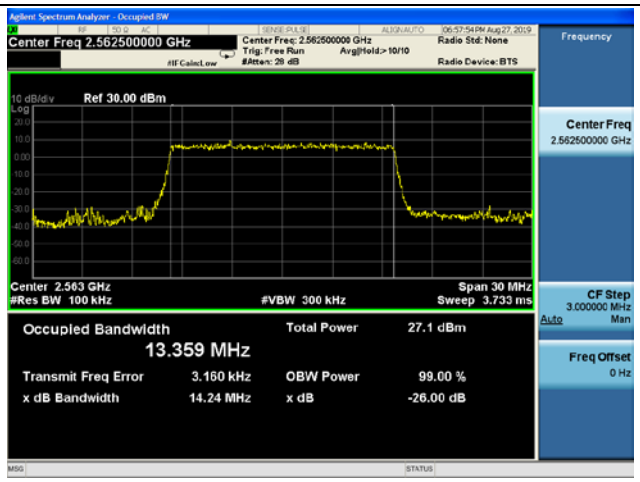
10MHz/ QPSK / HCH	10MHz/ 16QAM / HCH
	
10MHz/ 64QAM / HCH	
	

LTE Band 41 99% & 26dB Bandwidth

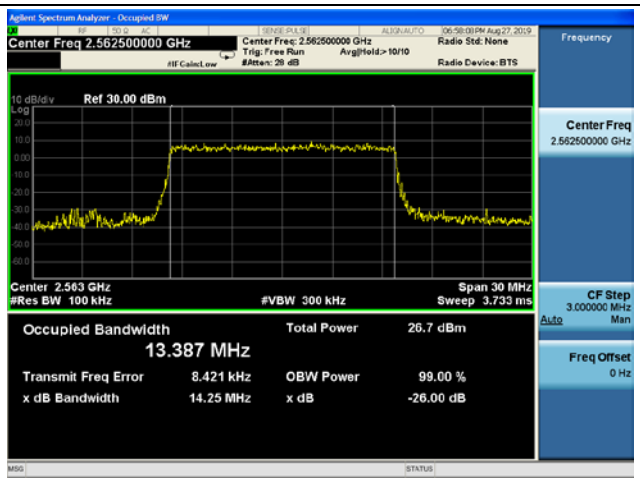
15MHz/QPSK / LCH



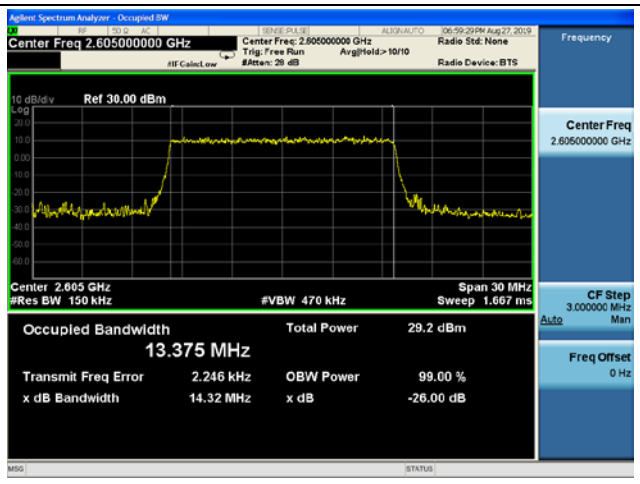
15MHz/16QAM / LCH



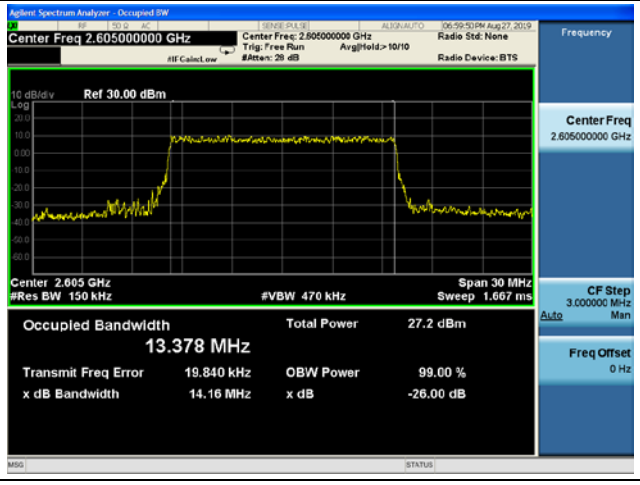
15MHz/ 64QAM / LCH



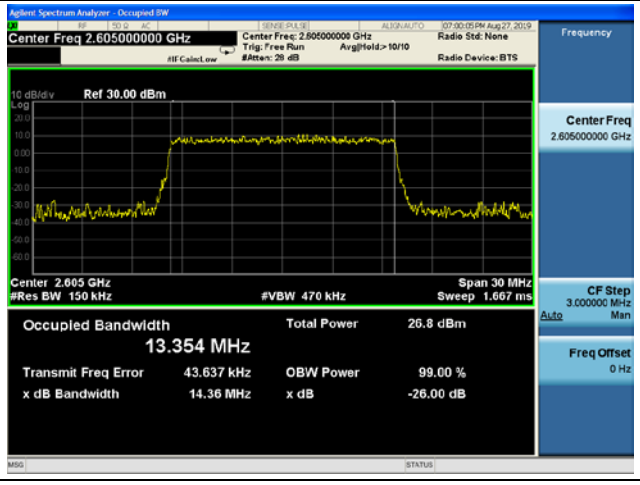
15MHz/QPSK / MCH

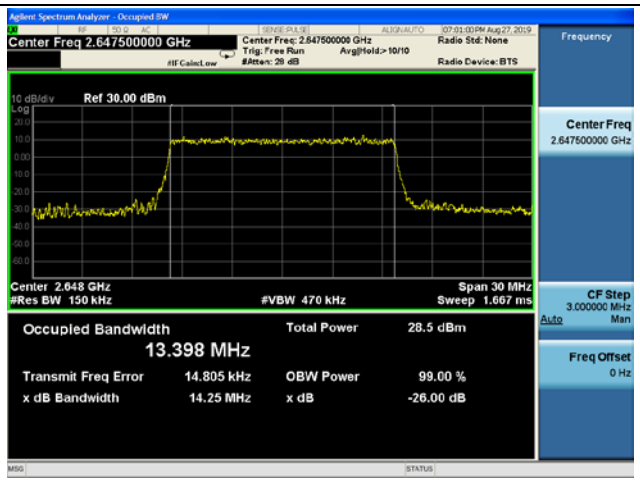
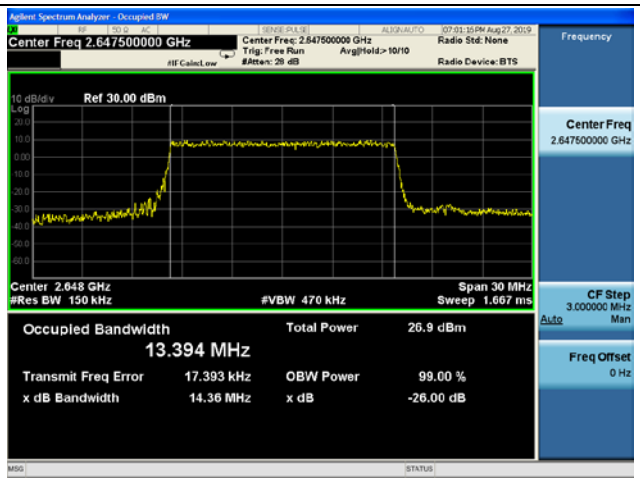
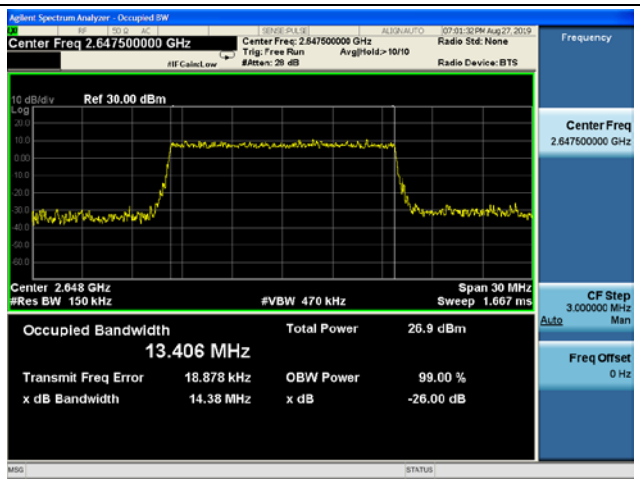


15MHz/ 16QAM / MCH



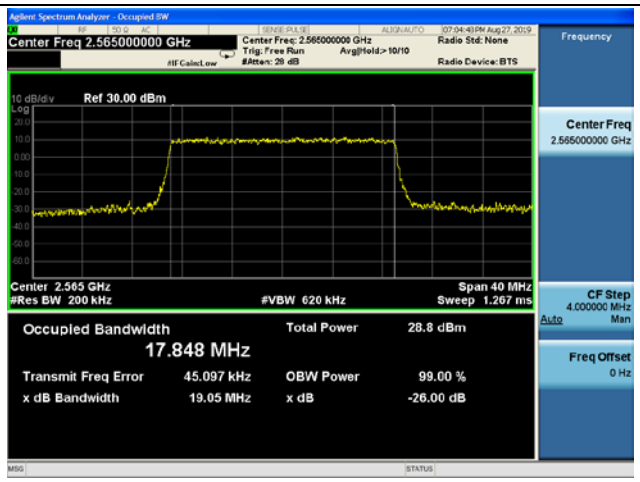
15MHz/ 64QAM / MCH



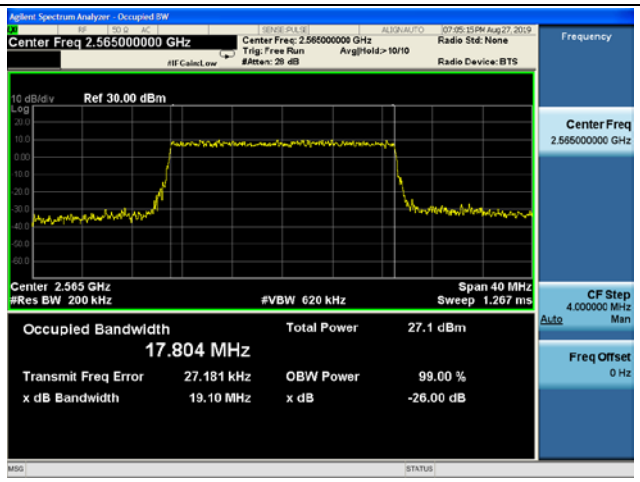
15MHz/ QPSK / HCH	15MHz/ 16QAM / HCH
	
15MHz/ 64QAM / HCH	
	

LTE Band 41 99% & 26dB Bandwidth

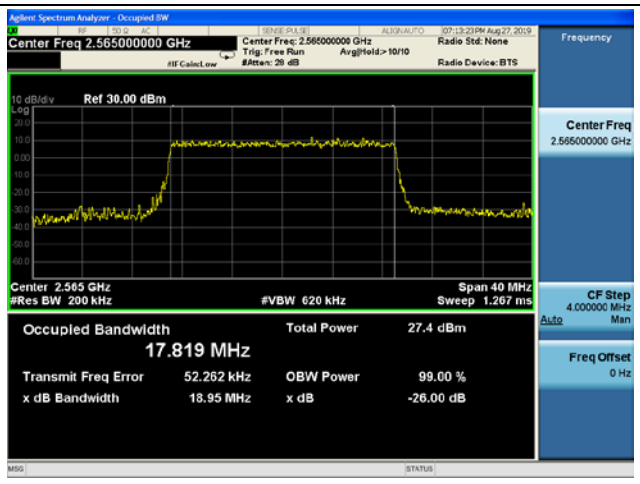
20MHz/QPSK / LCH



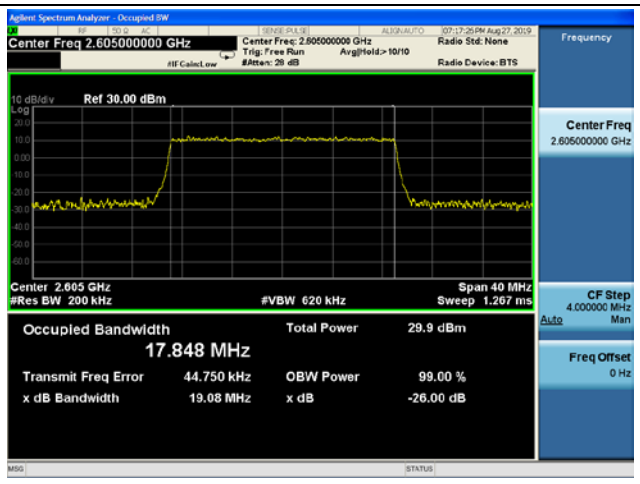
20MHz/16QAM / LCH



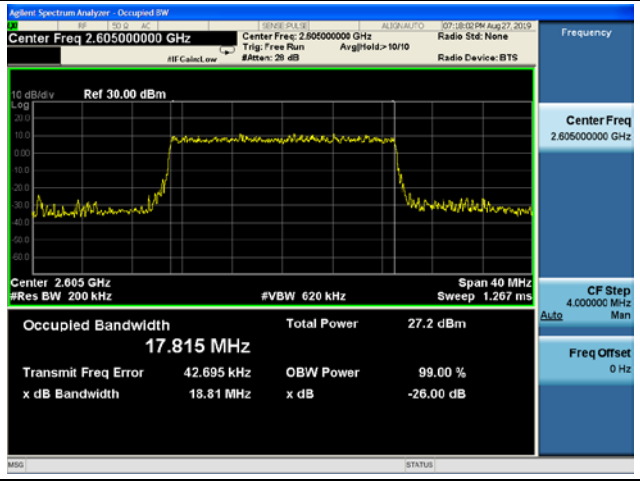
20MHz/ 64QAM / LCH



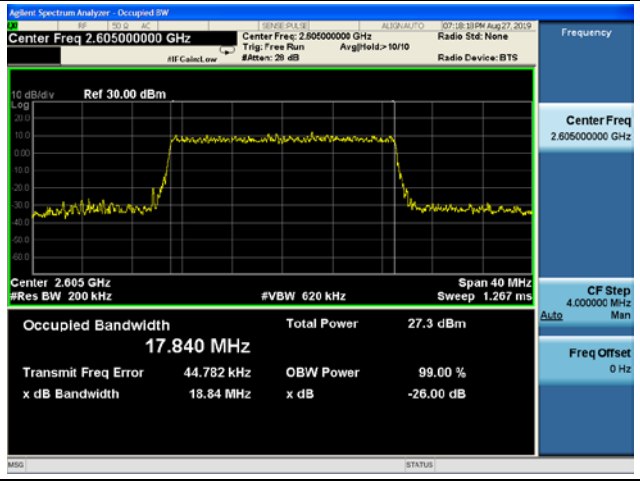
20MHz/QPSK / MCH

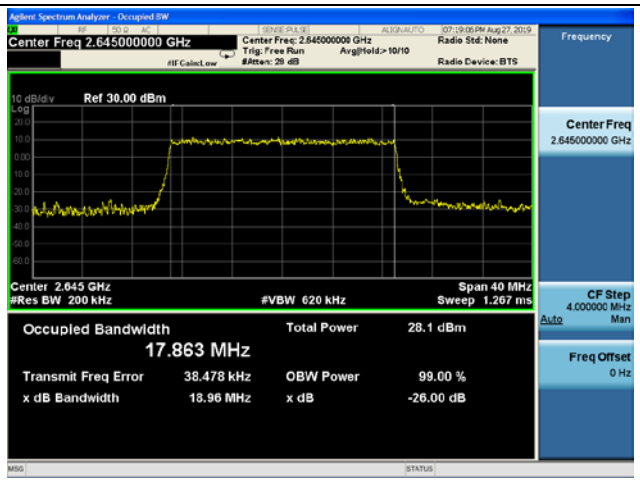
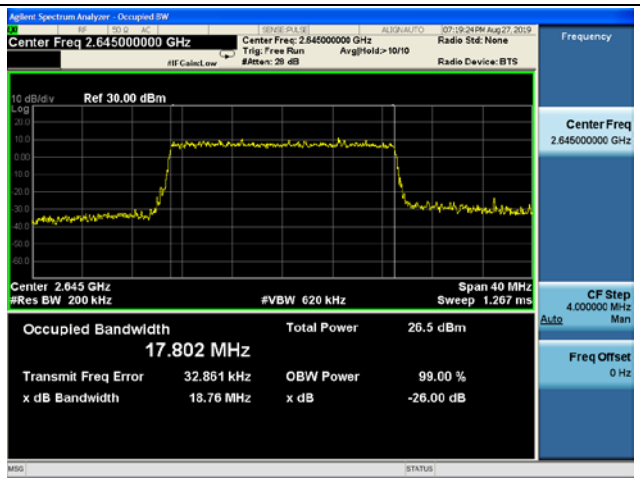
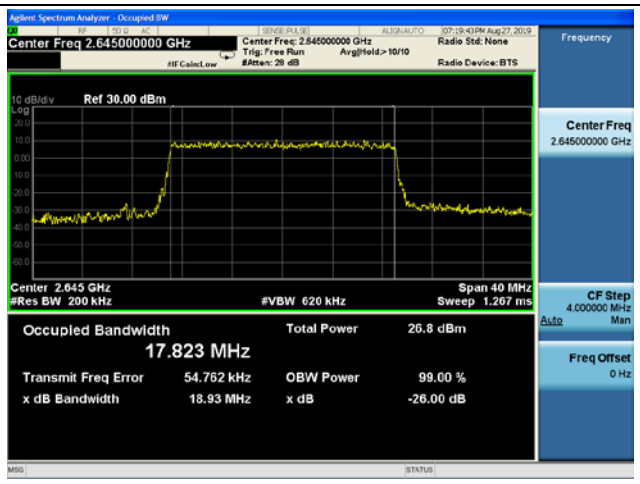


20MHz/ 16QAM / MCH



20MHz/ 64QAM / MCH



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

2.3. Frequency Stability

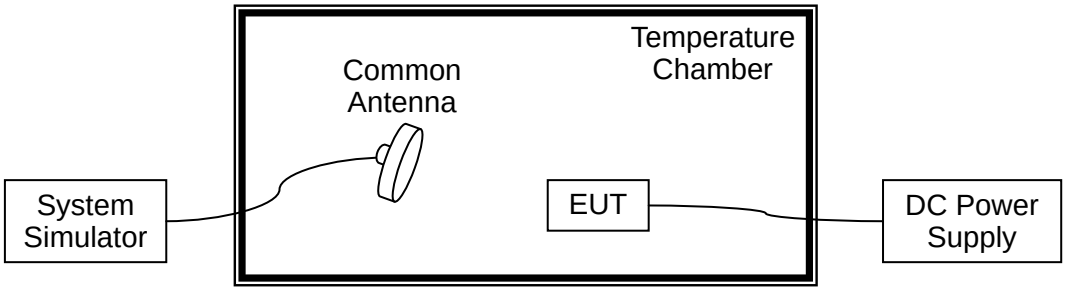
2.3.1. Requirement

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 +45°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 38, QPSK, Channel 38000, Frequency 2595MHz Limit =Within Authorized Band					
Voltage(%)	**Power(VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	78	0.030	PASS
100		-10	24	0.009	
100		0	-63	-0.024	
100		+10	-71	-0.027	
100		+20	-36	-0.014	
100		+30	71	0.027	
100		+40	85	0.033	
100		+45	26	0.010	
115	4.4	+20	93	0.036	
85	3.3	+20	24	0.009	

LTE Band 40(2305-2315MHz), QPSK, Channel 38750, Frequency 2310MHz Limit =Within Authorized Band					
Voltage(%)	**Power(VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	52	0.022	PASS
100		-10	-67	-0.028	
100		0	66	0.028	
100		+10	41	0.017	
100		+20	27	0.011	
100		+30	58	0.025	
100		+40	-56	-0.024	
100		+45	-79	-0.034	
115	4.4	+20	39	0.017	
85	3.3	+20	46	0.020	

LTE Band 40(2350-2360MHz), QPSK, Channel 39200, Frequency 2355MHz Limit =Within Authorized Band					
Voltage(%)	**Power(VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	33	0.014	PASS
100		-10	-61	-0.026	
100		0	64	0.028	
100		+10	55	0.024	
100		+20	29	0.013	
100		+30	55	0.024	
100		+40	-65	-0.028	
100		+45	-73	-0.032	
115	4.4	+20	53	0.023	
85	3.3	+20	55	0.024	

LTE Band 41, QPSK, Channel 40740, Frequency 2593MHz Limit =Within Authorized Band					
Voltage(%)	**Power(VDC)**	**Temp(°C)**	**Fre. Dev.(Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	41	0.016	PASS
100		-10	25	0.010	
100		0	67	0.026	
100		+10	-86	-0.033	
100		+20	-87	-0.034	
100		+30	-59	-0.023	
100		+40	73	0.028	
100		+45	16	0.006	
115	4.4	+20	42	0.016	
85	3.3	+20	85	0.033	

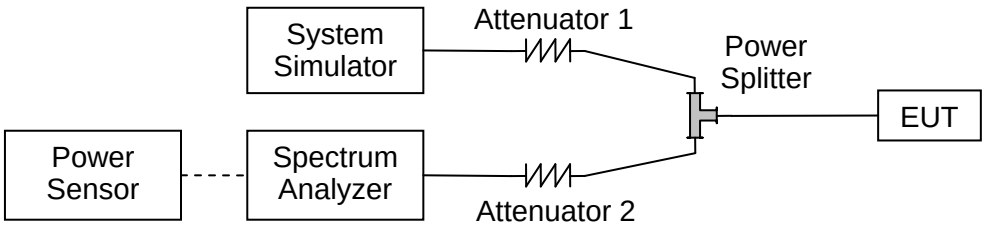
2.4. Peak to Average Radio

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 38						
BW (MHz)	Modulation	Low CH	Mid CH	High CH	Limit (dB)	Verdict
5	QPSK	9.01	9.33	9.03	<=13	PASS
	16QAM	10.05	9.45	9.12	<=13	PASS
	64QAM	9.62	9.22	9.22	<=13	PASS
10	QPSK	9.83	8.97	9.83	<=13	PASS
	16QAM	9.00	10.16	9.46	<=13	PASS
	64QAM	9.97	9.49	10.00	<=13	PASS
15	QPSK	10.13	8.47	8.53	<=13	PASS
	16QAM	9.64	9.13	10.24	<=13	PASS
	64QAM	9.40	9.94	8.54	<=13	PASS
20	QPSK	7.98	9.08	8.76	<=13	PASS
	16QAM	12.12	10.83	9.14	<=13	PASS
	64QAM	10.27	9.45	9.27	<=13	PASS

LTE Band 40(2305-2315MHz)						
BW (MHz)	Modulation	Low CH	Mid CH	High CH	Limit (dB)	Verdict
5	QPSK	9.00	9.30	8.88	<=13	PASS
	16QAM	9.30	9.02	9.04	<=13	PASS
	64QAM	9.67	9.25	9.18	<=13	PASS
10	QPSK	/	9.46	/	<=13	PASS
	16QAM	/	9.58	/	<=13	PASS
	64QAM	/	9.83	/	<=13	PASS

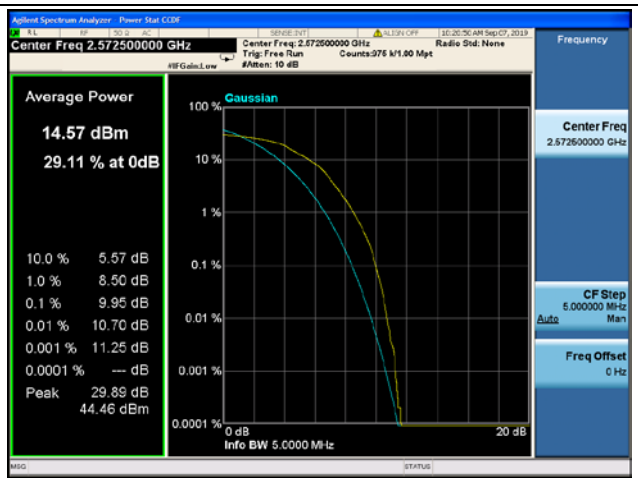
LTE Band 40(2350-2360MHz)						
BW (MHz)	Modulation	Low CH	Mid CH	High CH	Limit (dB)	Verdict
5	QPSK	8.76	8.87	8.61	<=13	PASS
	16QAM	9.54	9.04	8.85	<=13	PASS
	64QAM	9.71	9.46	9.14	<=13	PASS
10	QPSK	/	9.73	/	<=13	PASS
	16QAM	/	9.81	/	<=13	PASS
	64QAM	/	9.97	/	<=13	PASS

LTE Band 41						
BW (MHz)	**Modulation**	**Low CH**	**Mid CH**	**High CH**	**Limit (dB)**	**Verdict**
5	QPSK	8.76	9.15	8.71	<=13	PASS
	16QAM	8.47	9.05	9.04	<=13	PASS
	64QAM	8.82	9.27	9.16	<=13	PASS
10	QPSK	9.66	9.88	9.65	<=13	PASS
	16QAM	9.69	9.71	9.73	<=13	PASS
	64QAM	10.15	9.94	10.02	<=13	PASS
15	QPSK	10.29	10.16	10.18	<=13	PASS
	16QAM	10.46	10.30	10.29	<=13	PASS
	64QAM	10.59	10.45	10.48	<=13	PASS
20	QPSK	10.85	10.67	10.58	<=13	PASS
	16QAM	10.84	10.59	10.62	<=13	PASS
	64QAM	10.84	10.78	10.81	<=13	PASS

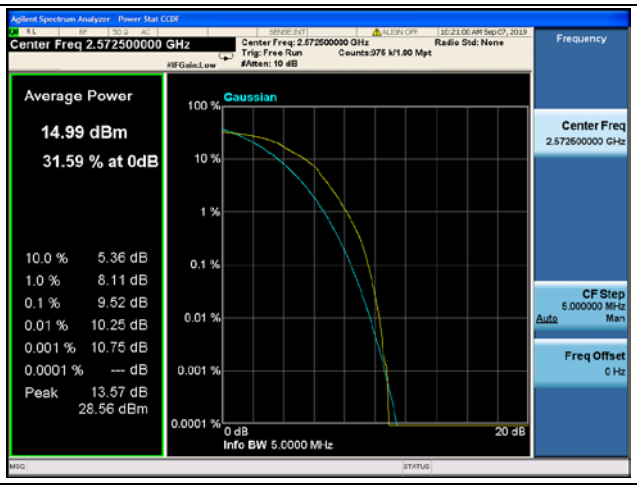
LTE Band 38 Peak-to-Average Radio

5MHz/QPSK / LCH

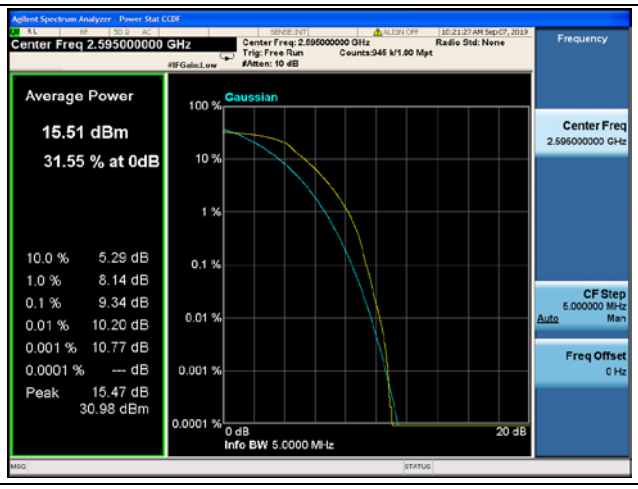
5MHz/16QAM / LCH



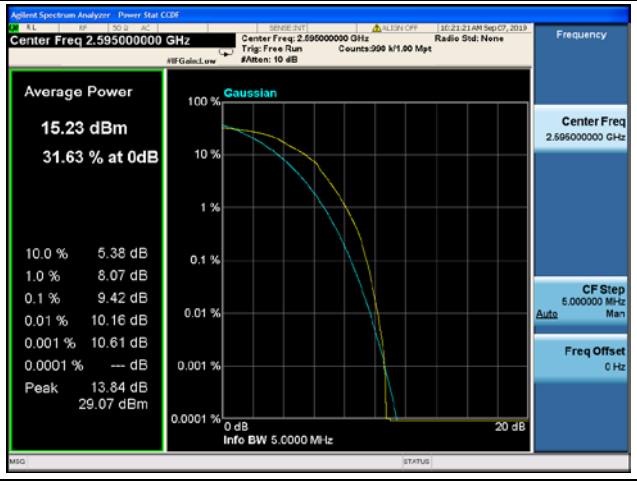
5MHz/ 64QAM / LCH



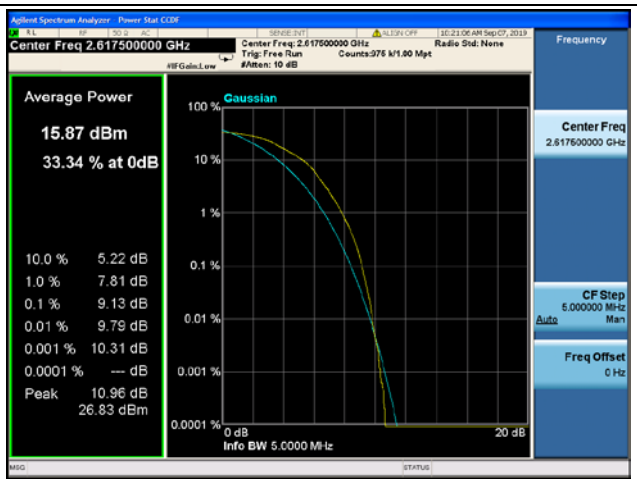
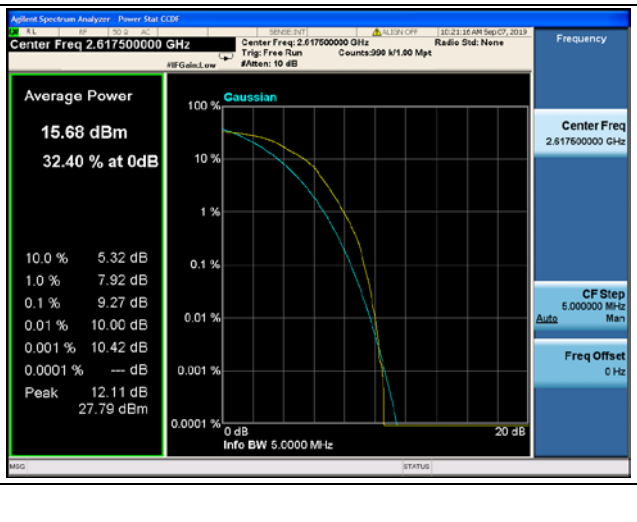
5MHz/ QPSK / MCH



5MHz/16QAM / MCH



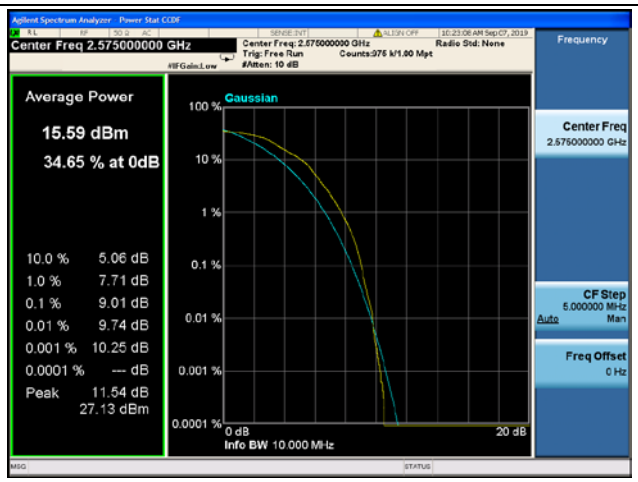
5MHz/ 64QAM / MCH

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

LTE Band 38 Peak-to-Average Radio

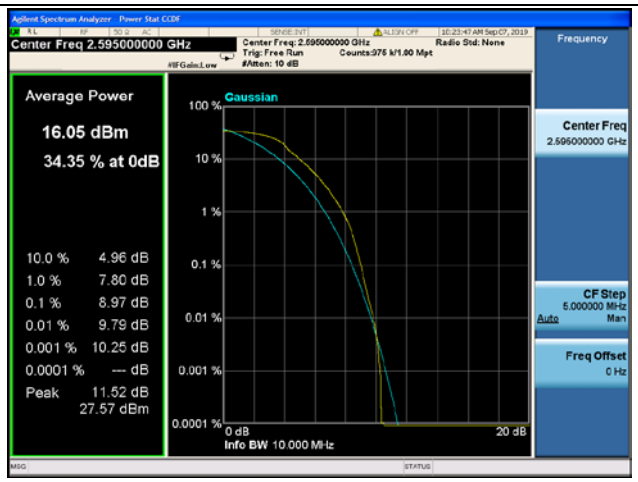
10MHz/QPSK / LCH

10MHz/16QAM / LCH

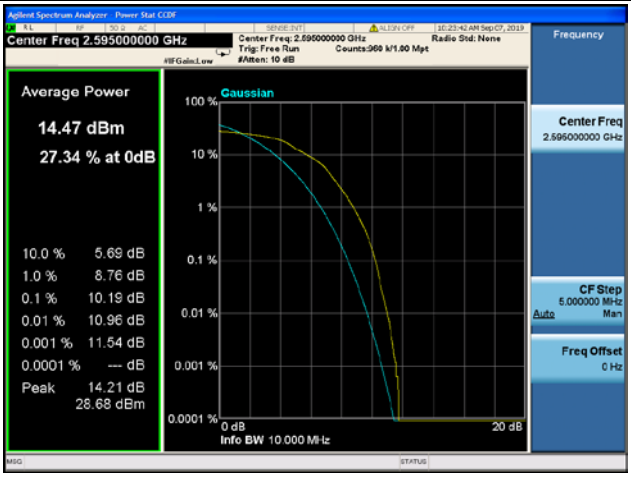


10MHz/ 64QAM / LCH

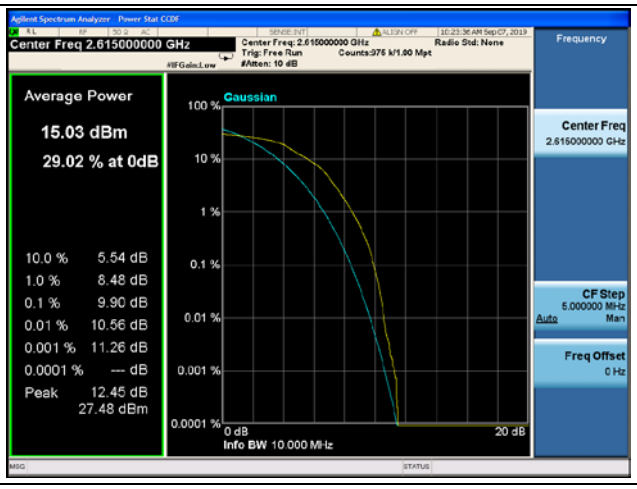
10MHz/ QPSK / MCH



10MHz/16QAM / MCH



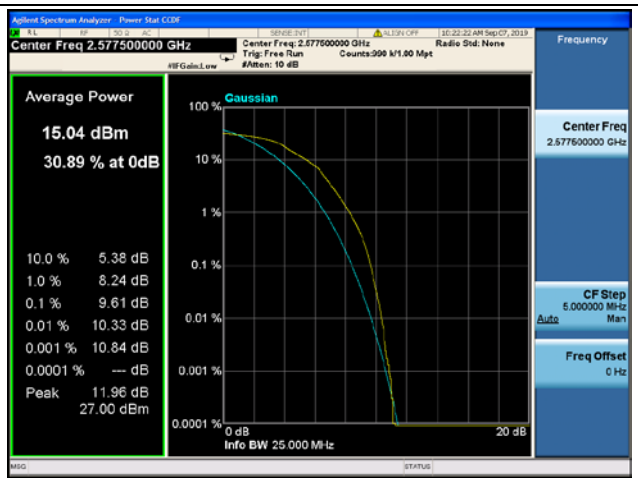
10MHz/ 64QAM / MCH

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

LTE Band 38 Peak-to-Average Radio

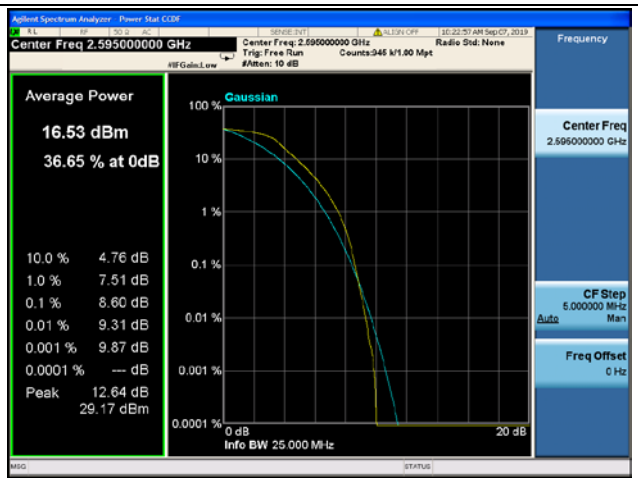
15MHz/QPSK / LCH

15MHz/16QAM / LCH

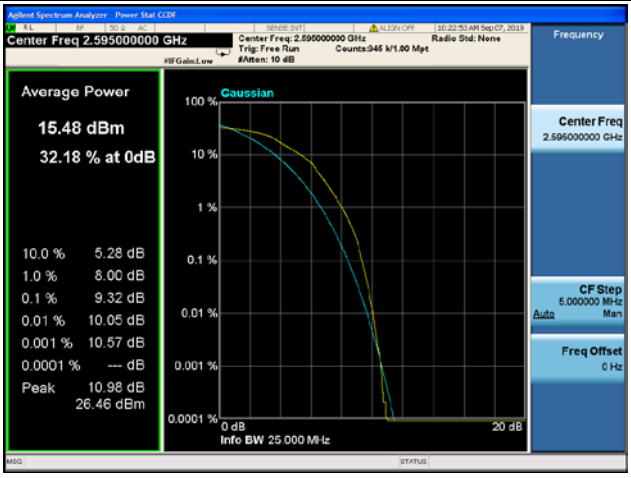


15MHz/ 64QAM / LCH

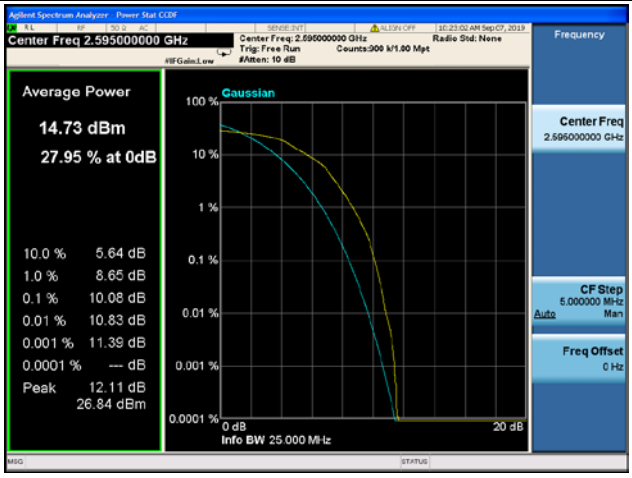
15MHz/ QPSK / MCH



15MHz/16QAM / MCH



15MHz/ 64QAM / MCH



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

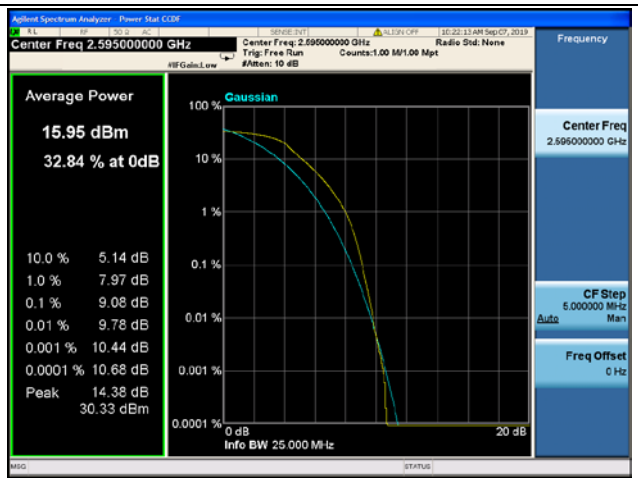
LTE Band 38 Peak-to-Average Radio

20MHz/QPSK / LCH

20MHz/16QAM / LCH

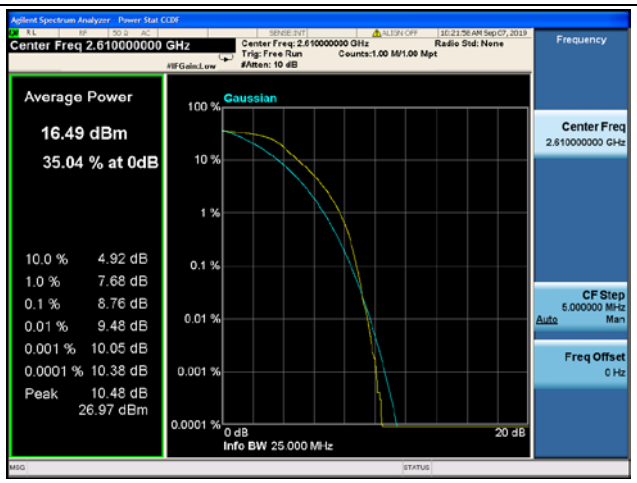
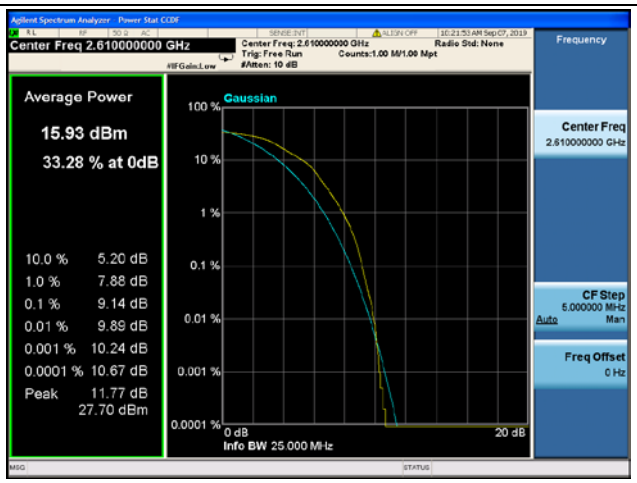
20MHz/ 64QAM / LCH

20MHz/ QPSK / MCH



20MHz/16QAM / MCH

20MHz/ 64QAM / MCH

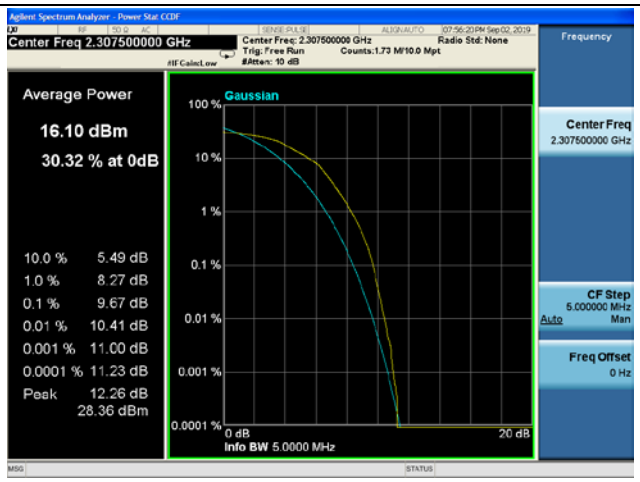
20MHz/ QPSK / HCH	20MHz/16QAM / HCH
	
20MHz/ 64QAM / HCH	
	

LTE Band 40(2305-2315MHz)Peak-to-Average Radio

5MHz/QPSK / LCH

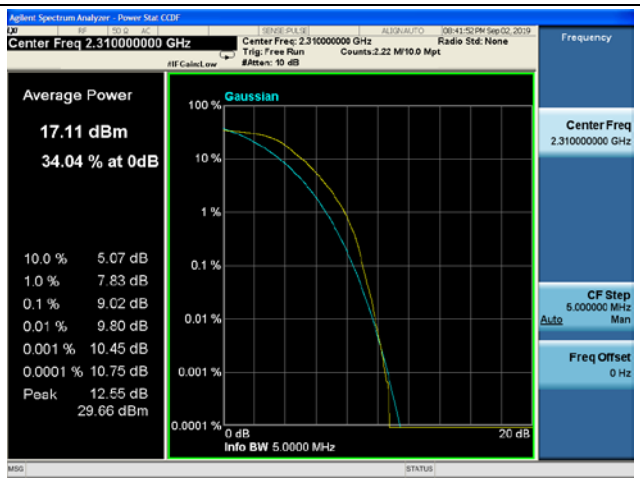
5MHz/16QAM / LCH

5MHz/ 64QAM / LCH



5MHz/ QPSK / MCH

5MHz/16QAM / MCH



5MHz/ 64QAM / MCH