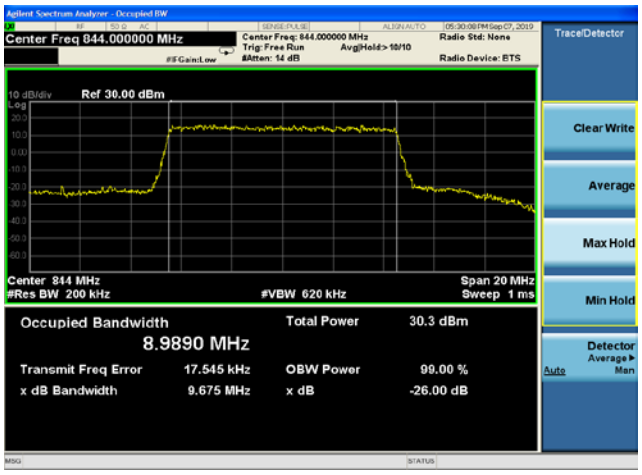
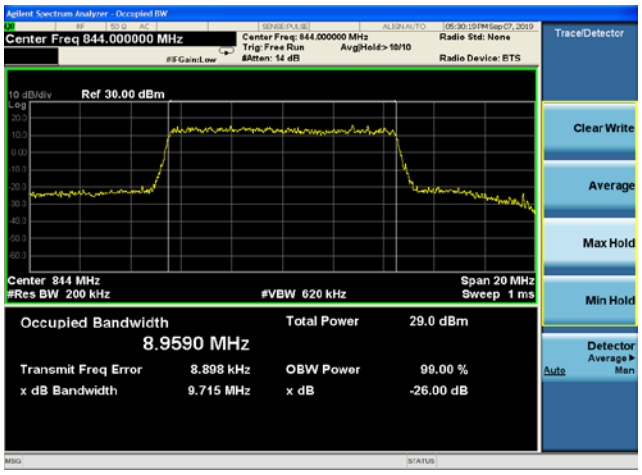
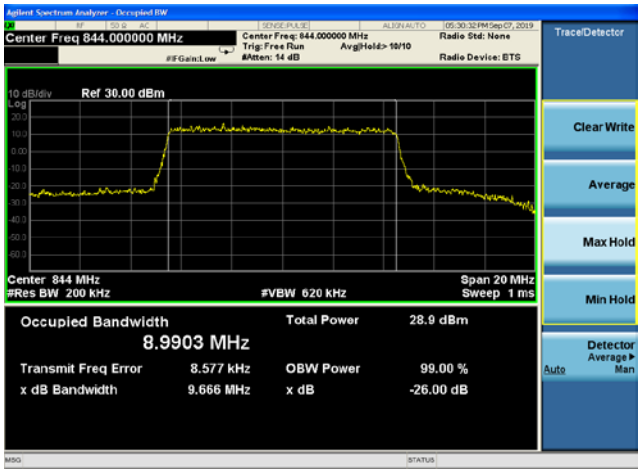
10MHz / QPSK / HCH	10MHz / 16QAM / HCH
	
10MHz / 64QAM / HCH	
	

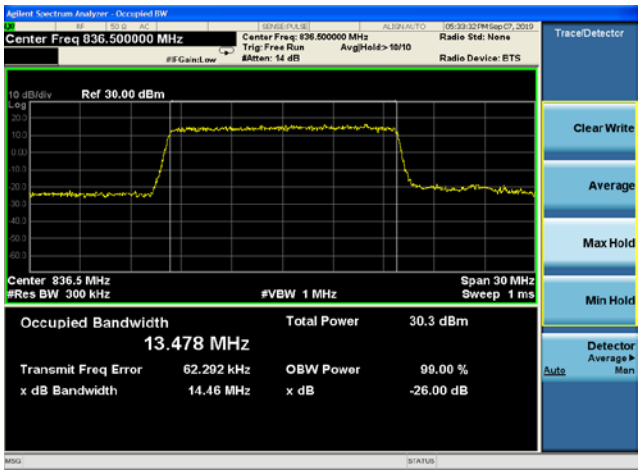
LTE Band 26 99% & 26dB Bandwidth

15MHz / QPSK / LCH

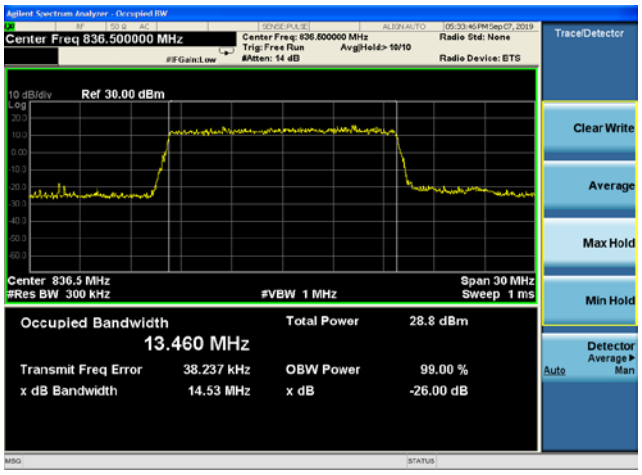
15MHz /16QAM / LCH

15MHz / 64QAM / LCH

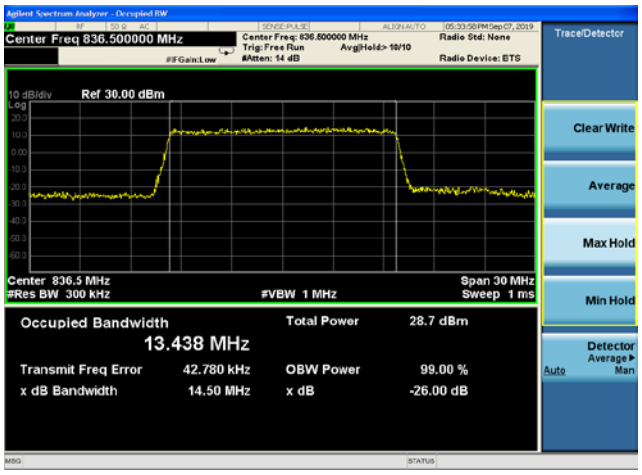
15MHz /QPSK / MCH

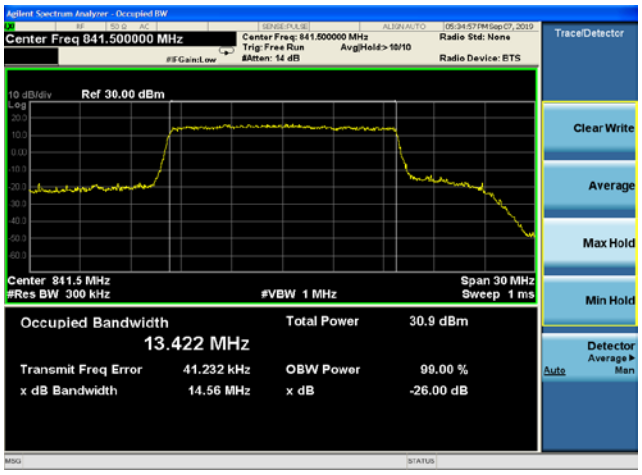
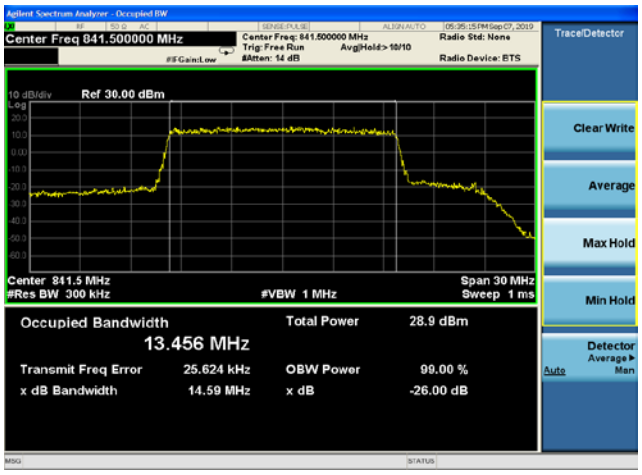
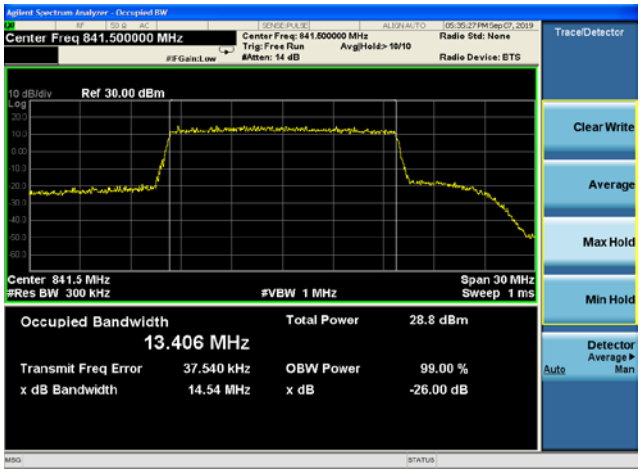


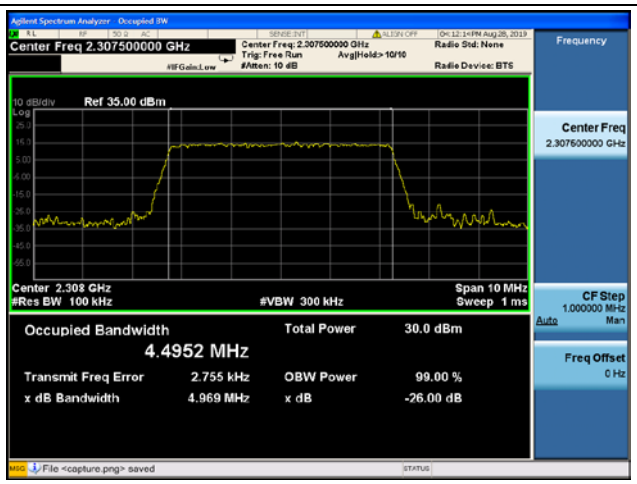
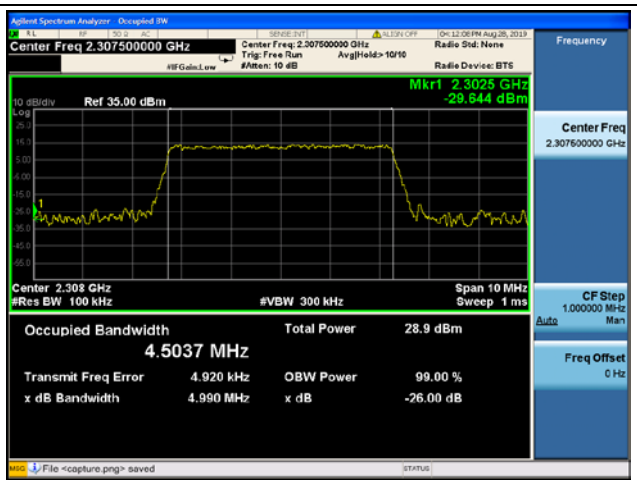
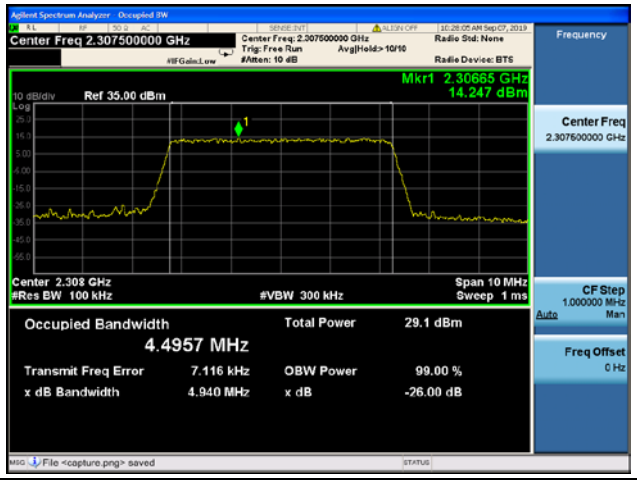
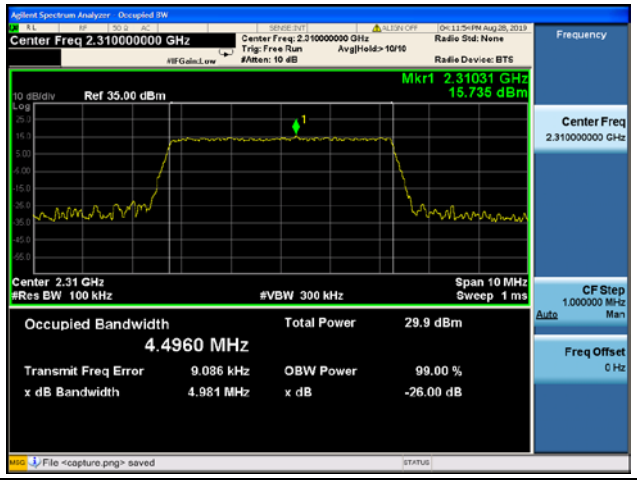
15MHz / 16QAM / MCH

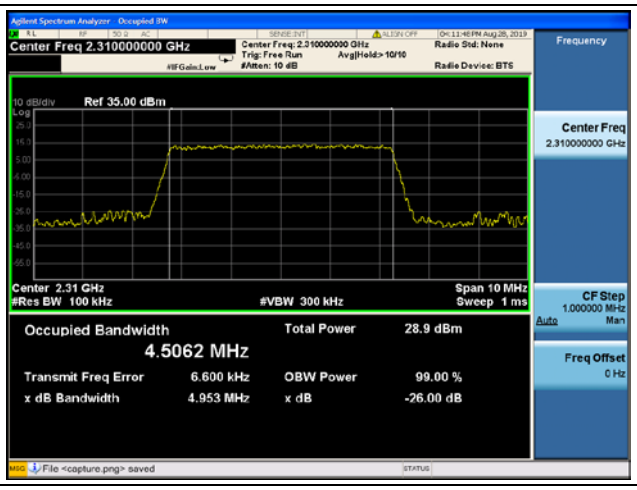


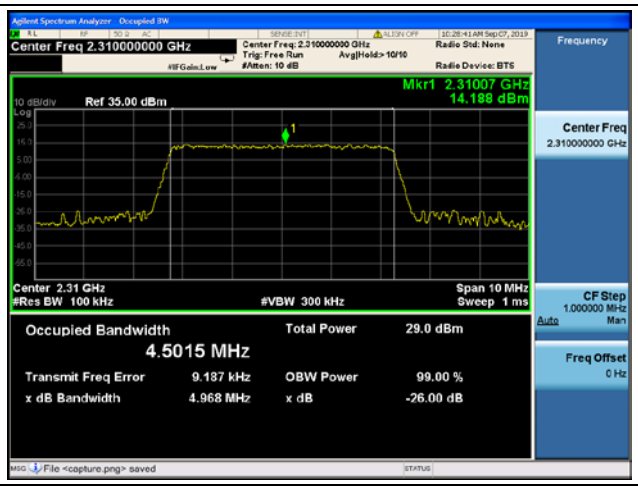
15MHz / 64QAM / MCH



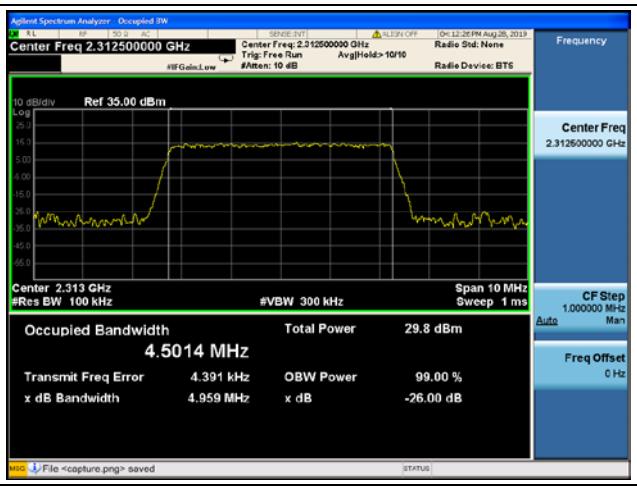
15MHz / QPSK / HCH	15MHz / 16QAM / HCH
	
15MHz / 64QAM / HCH	
	

LTE Band 30 99% & 26dB Bandwidth	
5MHz / QPSK / LCH	**5MHz /16QAM / LCH**
	
5MHz / 64QAM / LCH	**5MHz /QPSK / MCH**
	
5MHz / 16QAM / MCH	**5MHz / 64QAM / MCH**

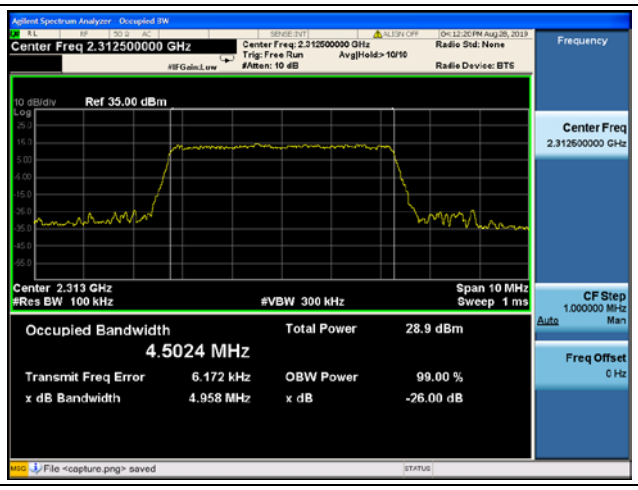




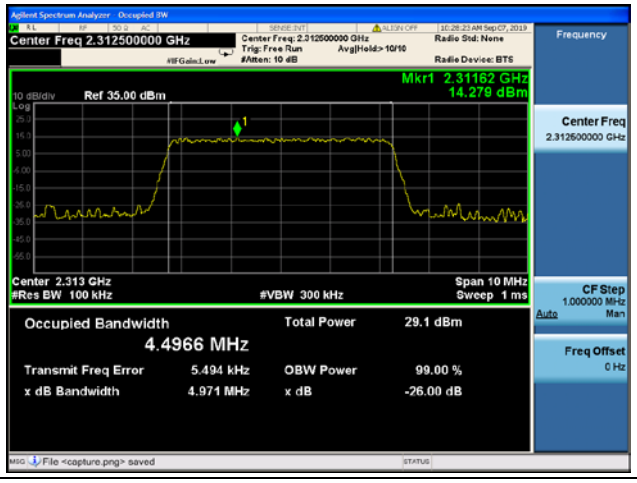
5MHz / QPSK / HCH

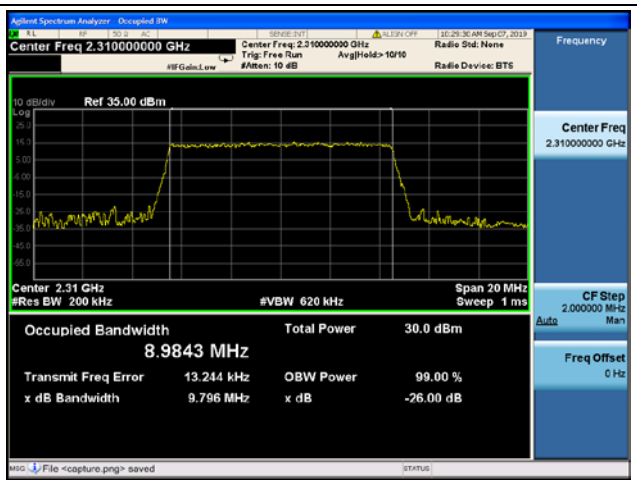
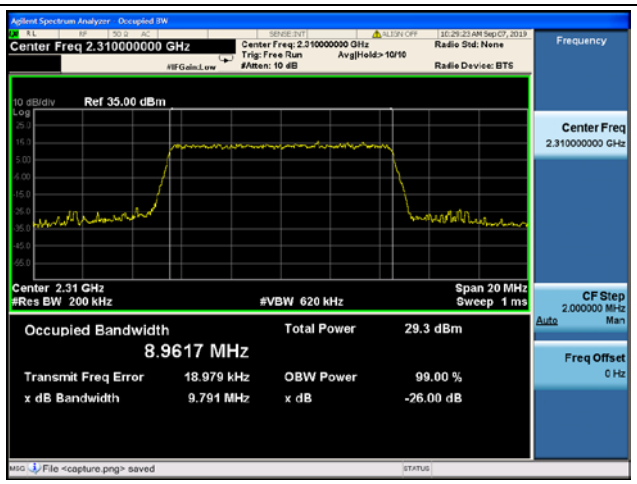
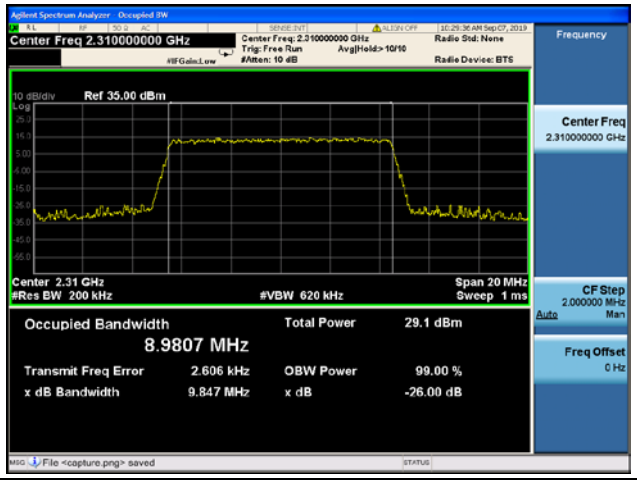


5MHz / 16QAM / HCH



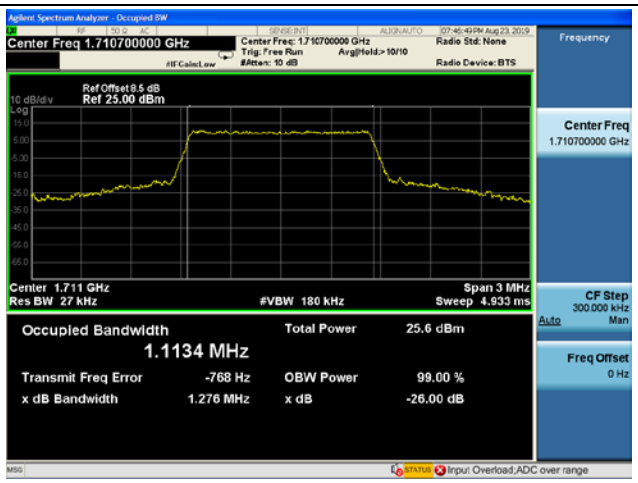
5MHz / 64QAM / HCH



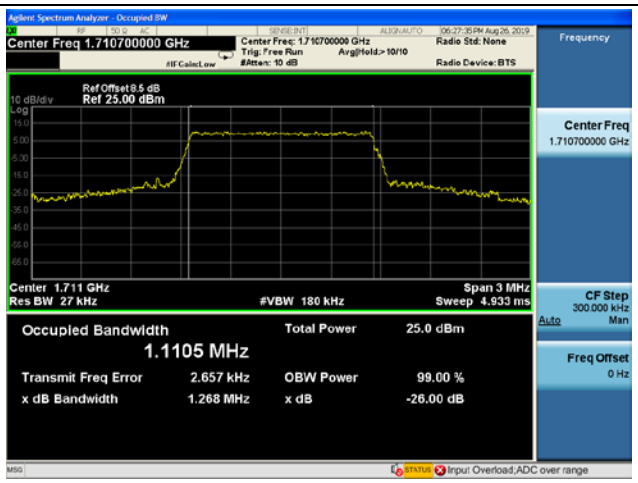
LTE Band 30 99% & 26dB Bandwidth	
10MHz /QPSK / MCH	**10MHz / 16QAM / MCH**
	
10MHz / 64QAM / MCH	
	

LTE Band 66 99% & 26dB Bandwidth

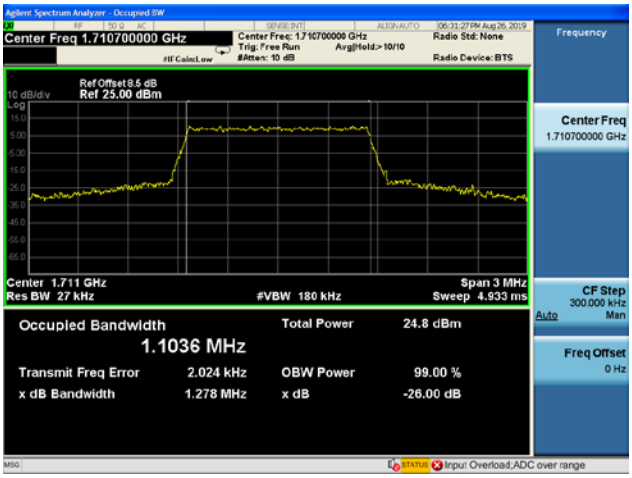
1.4MHz / QPSK / LCH



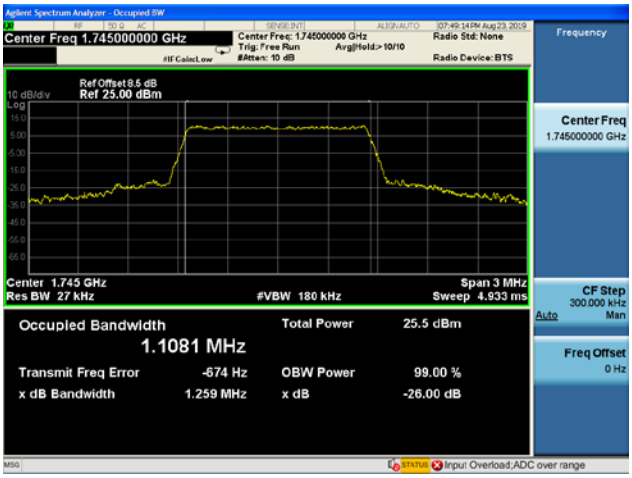
1.4MHz /16QAM / LCH



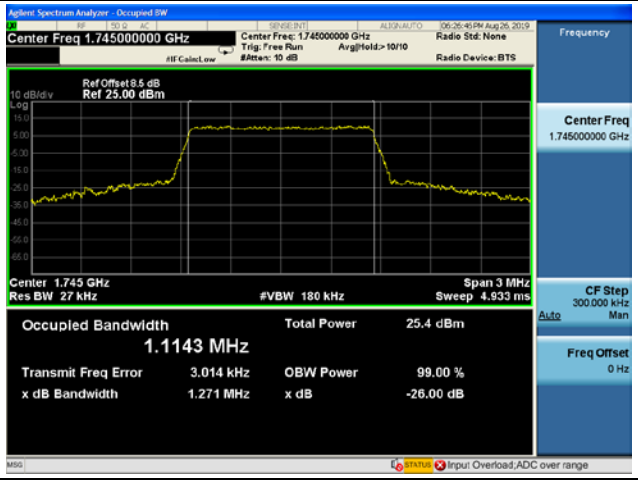
1.4MHz / 64QAM / LCH



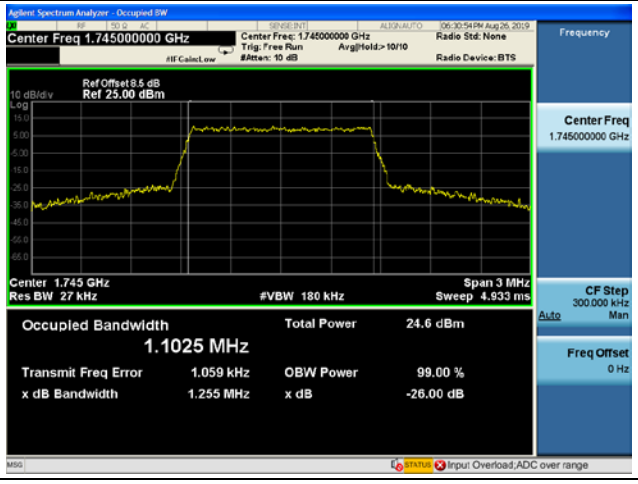
1.4MHz /QPSK / MCH

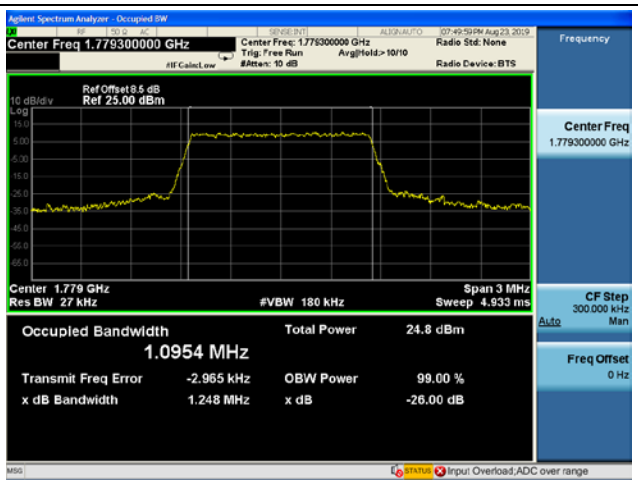
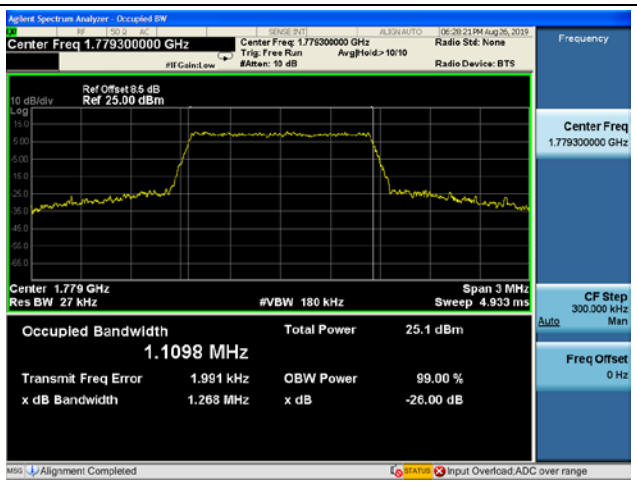
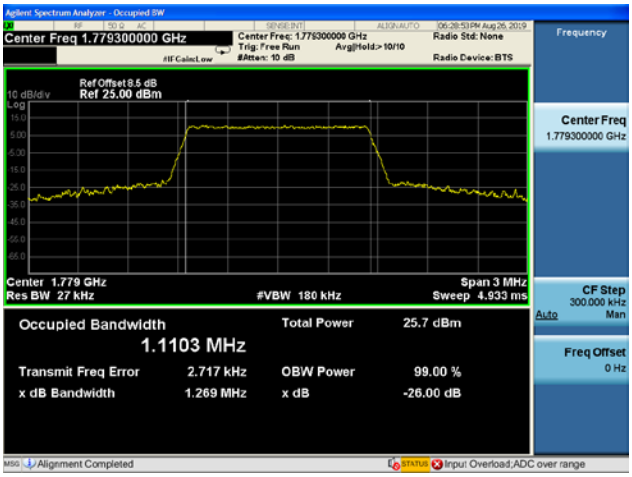


1.4MHz / 16QAM / MCH



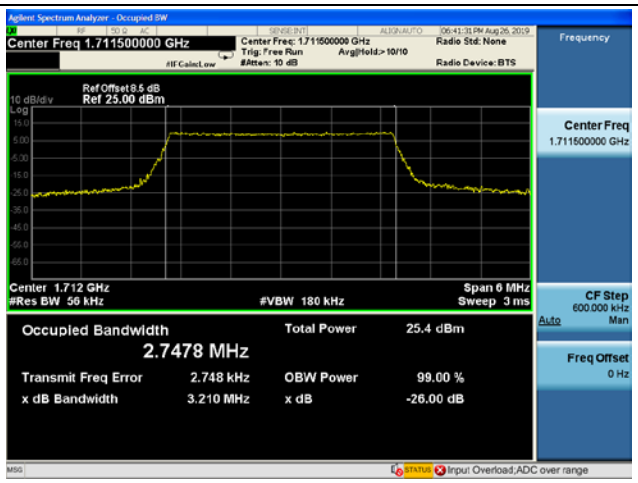
1.4MHz / 64QAM / MCH



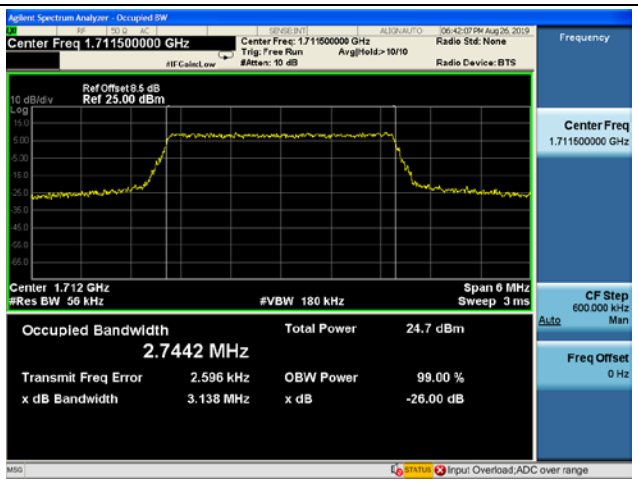
1.4MHz / QPSK / HCH	1.4MHz / 16QAM / HCH
	
1.4MHz / 64QAM / HCH	
	

LTE Band 66 99% & 26dB Bandwidth

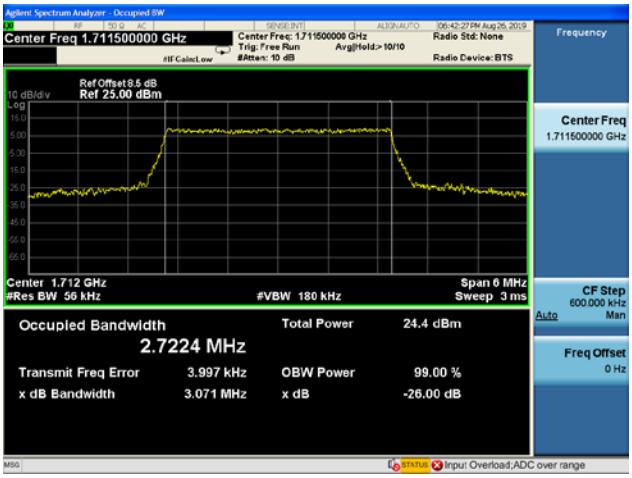
3MHz / QPSK / LCH



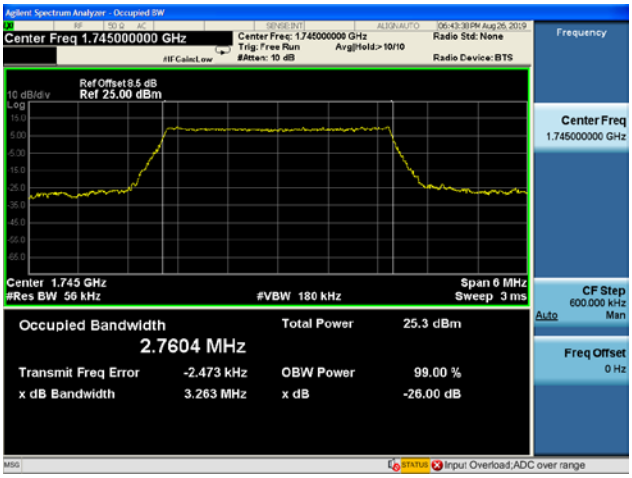
3MHz /16QAM / LCH



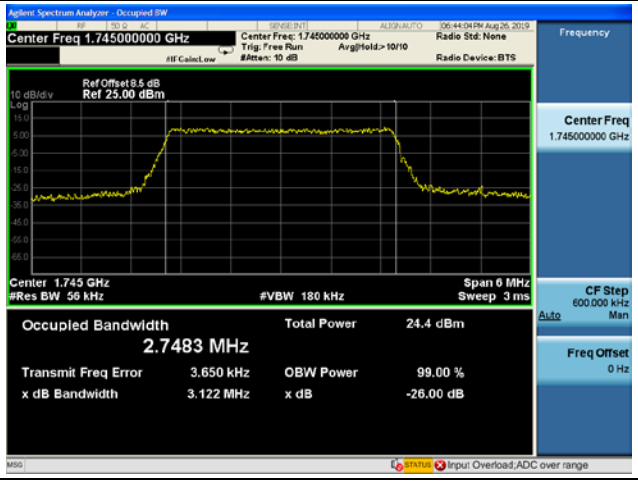
3MHz / 64QAM / LCH



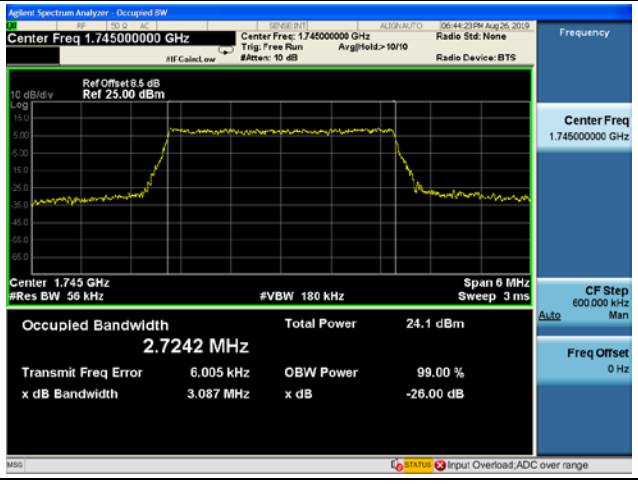
3MHz /QPSK / MCH

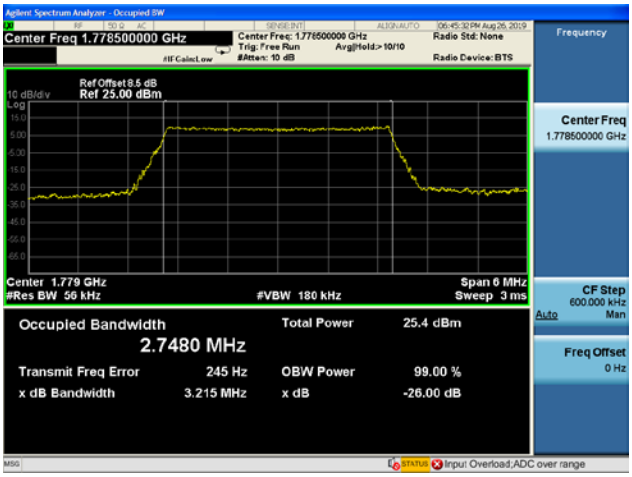
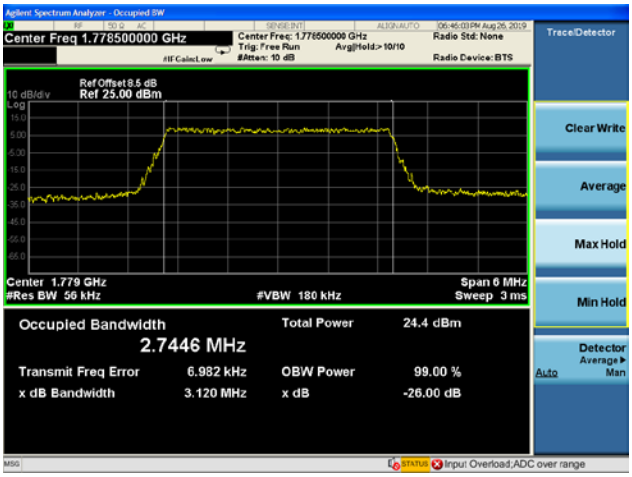
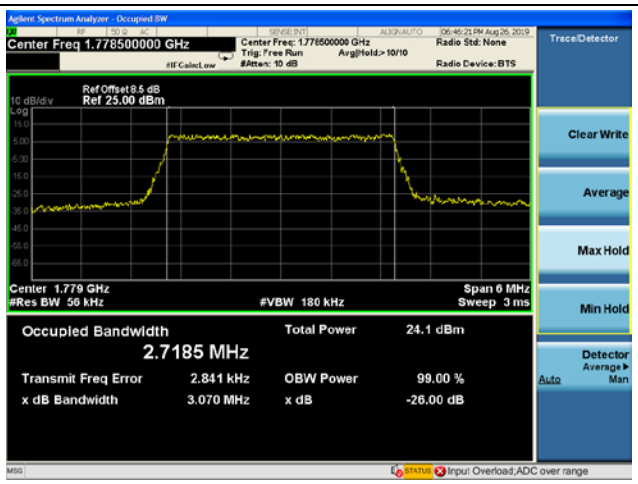


3MHz / 16QAM / MCH



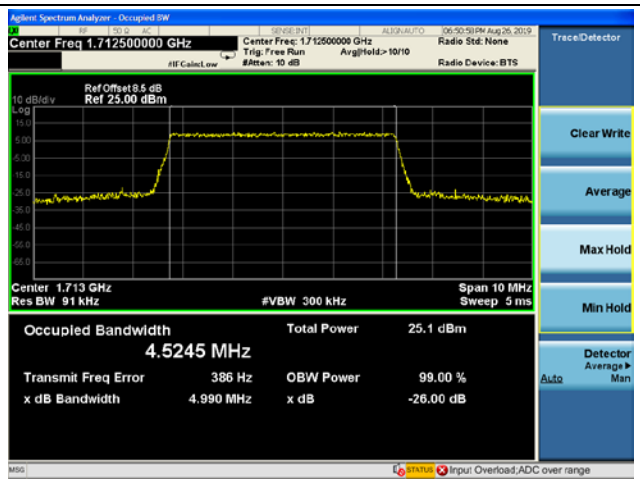
3MHz / 64QAM / MCH



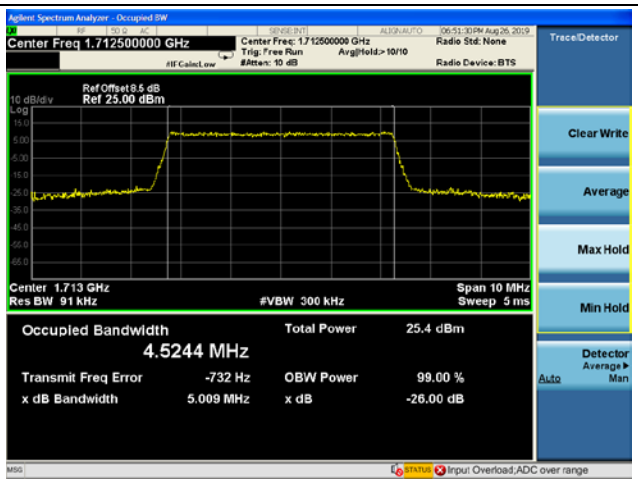
3MHz / QPSK / HCH	3MHz / 16QAM / HCH
	
3MHz / 64QAM / HCH	
	

LTE Band 66 99% & 26dB Bandwidth

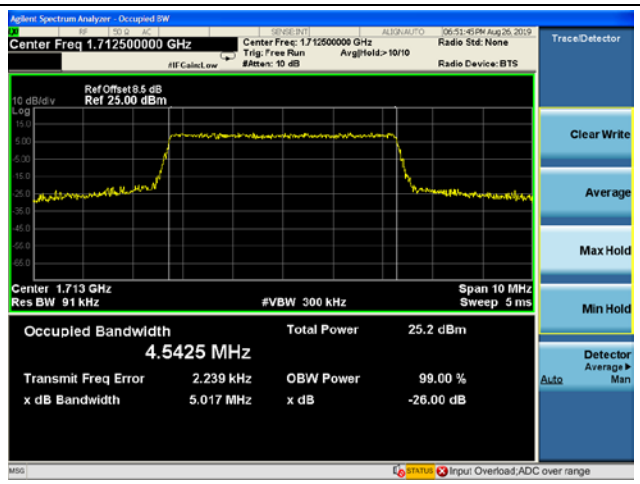
5MHz / QPSK / LCH



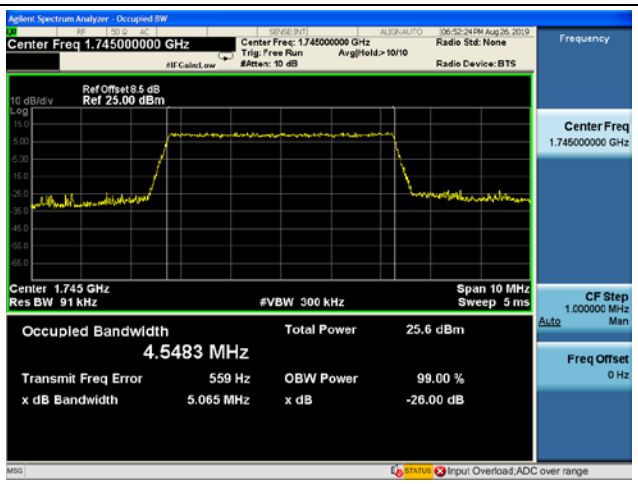
5MHz /16QAM / LCH



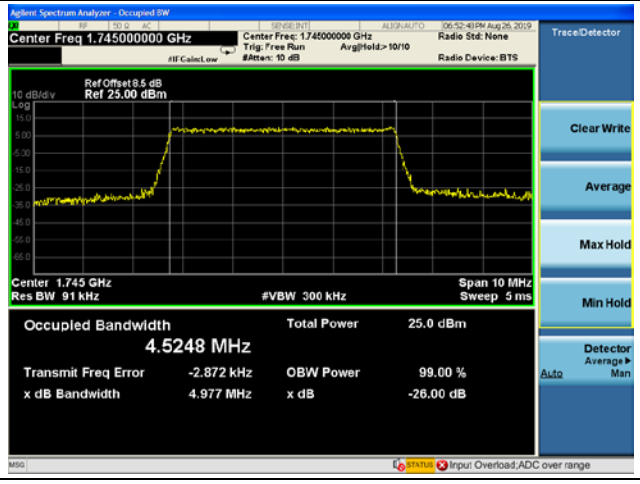
5MHz / 64QAM / LCH



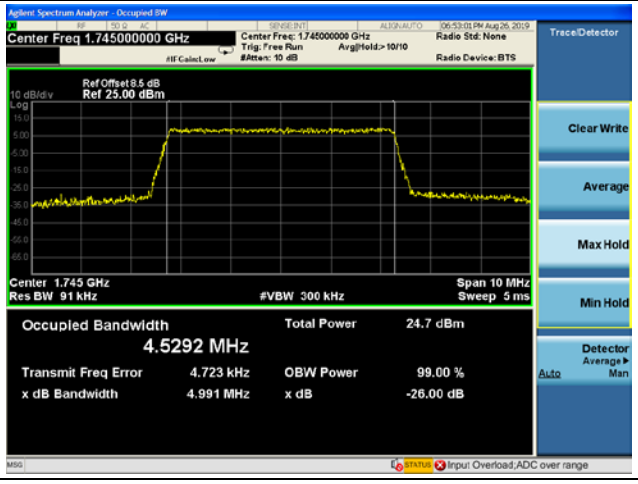
5MHz /QPSK / MCH

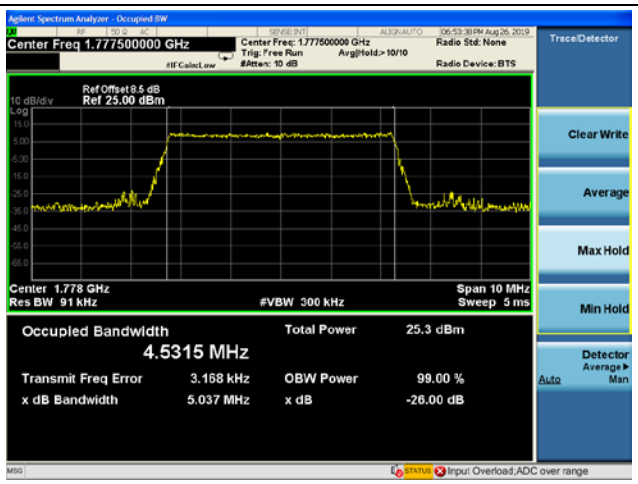
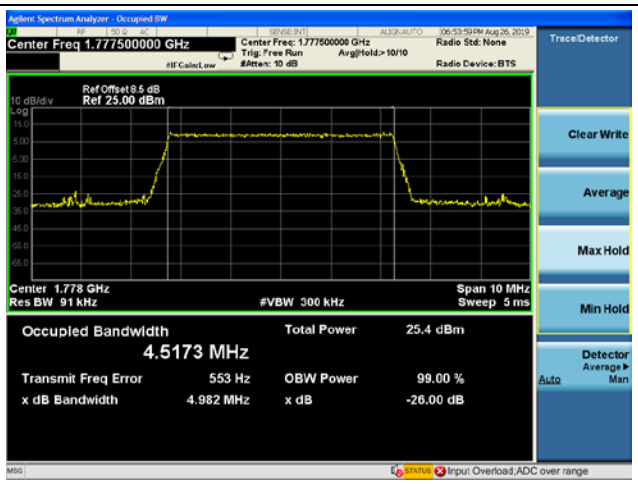
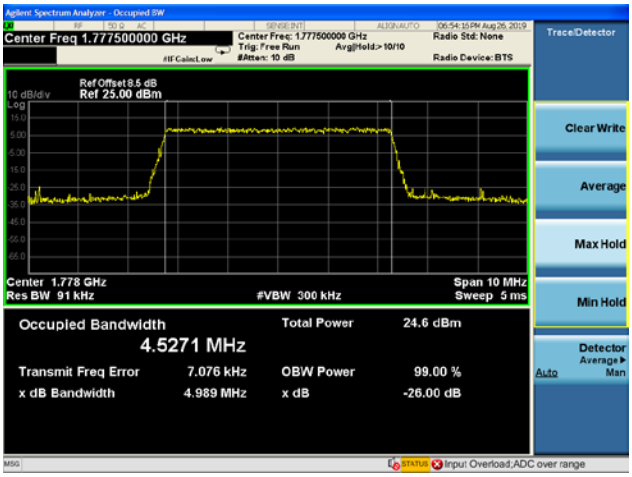


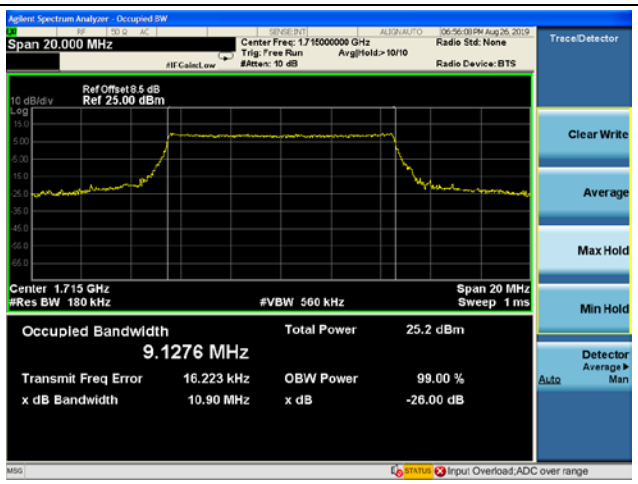
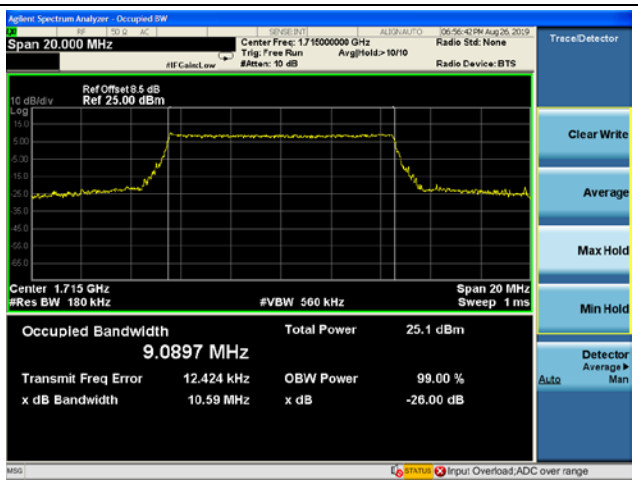
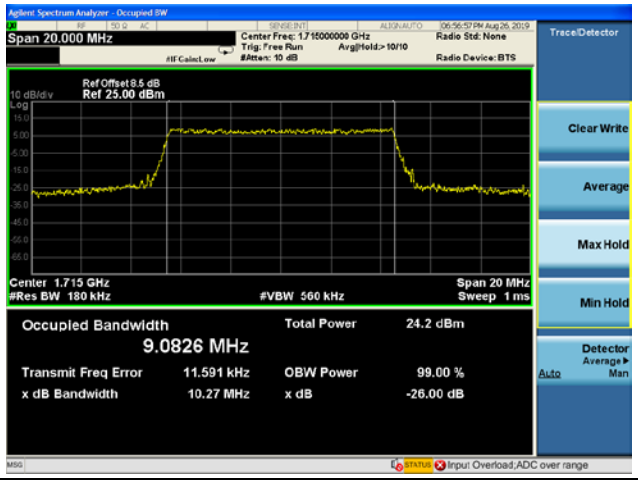
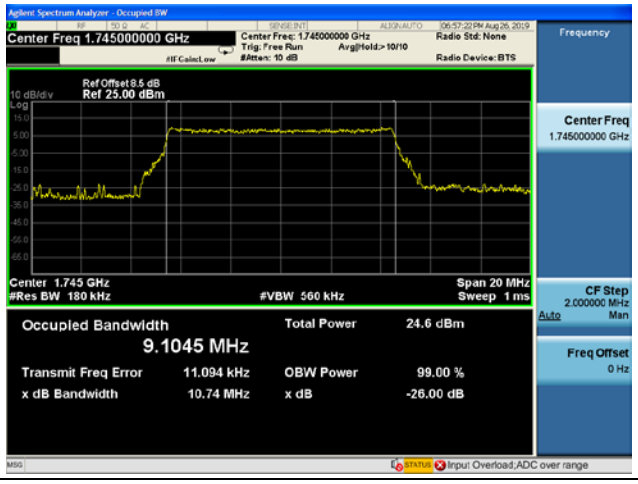
5MHz / 16QAM / MCH

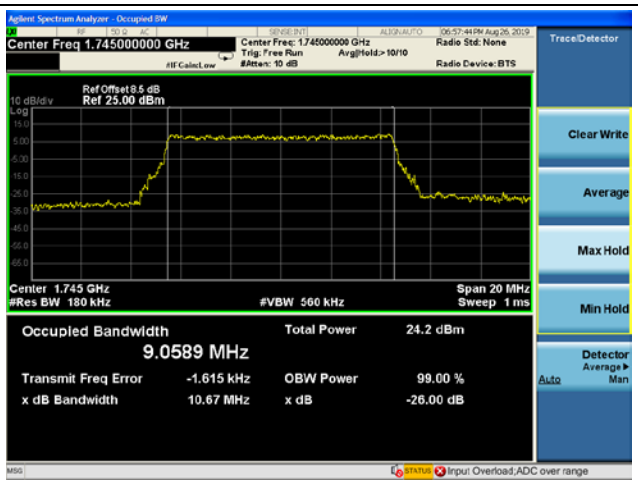


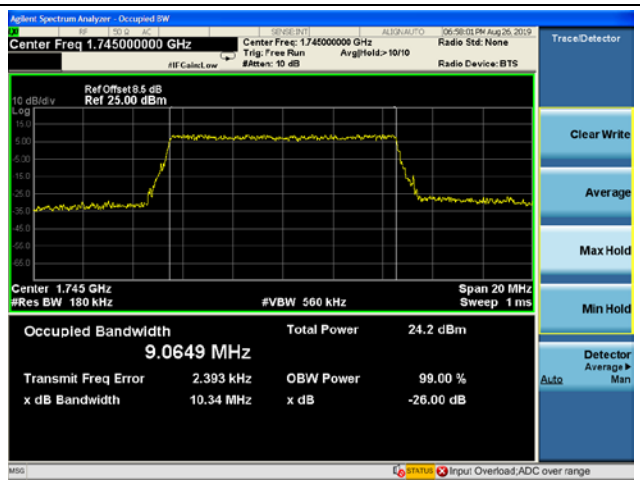
5MHz / 64QAM / MCH



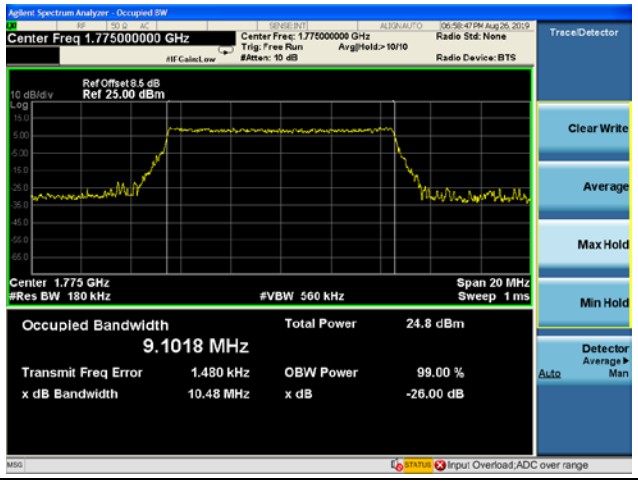
5MHz / QPSK / HCH	5MHz / 16QAM / HCH
	
5MHz / 64QAM / HCH	
	

LTE Band 66 99% & 26dB Bandwidth	
10MHz / QPSK / LCH	**10MHz /16QAM / LCH**
	
10MHz / 64QAM / LCH	**10MHz /QPSK / MCH**
	
10MHz / 16QAM / MCH	**10MHz / 64QAM / MCH**

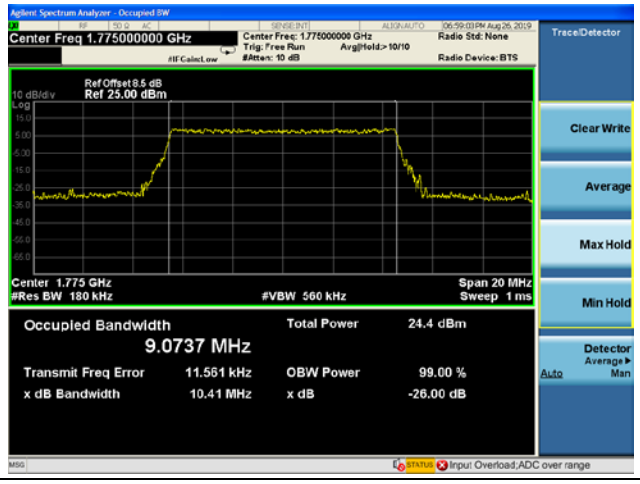




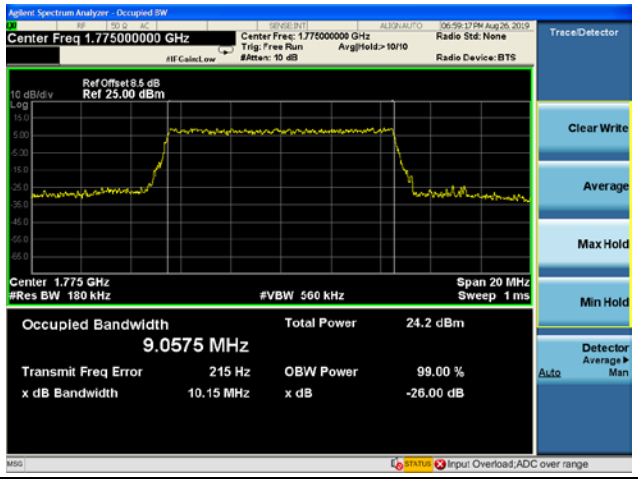
10MHz / QPSK / HCH



10MHz / 16QAM / HCH

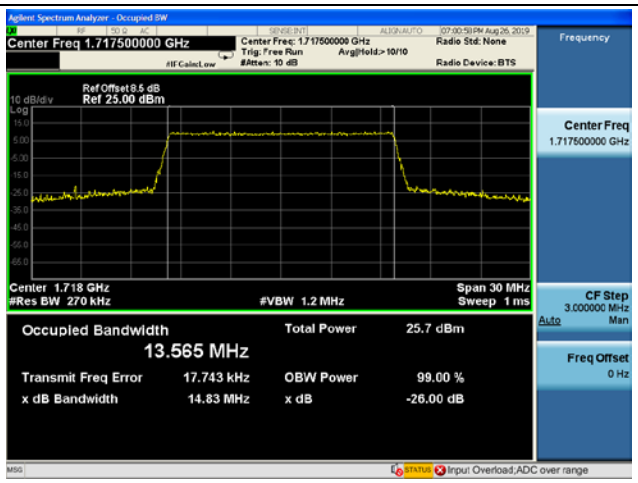


10MHz / 64QAM / HCH

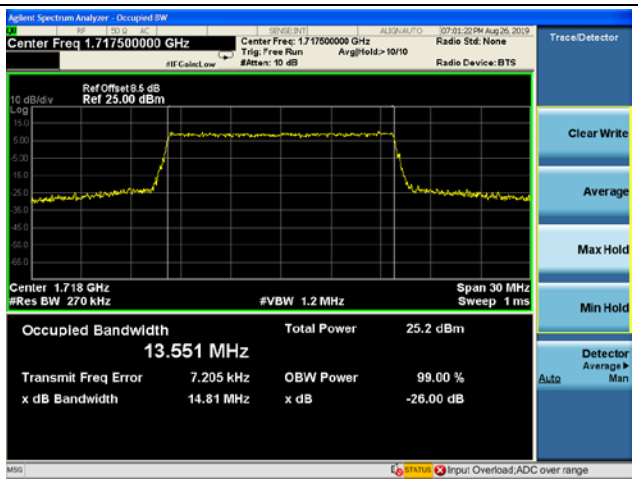


LTE Band 66 99% & 26dB Bandwidth

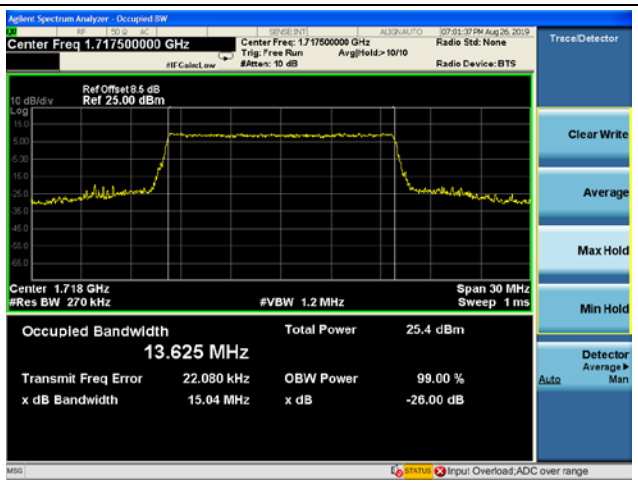
15MHz / QPSK / LCH



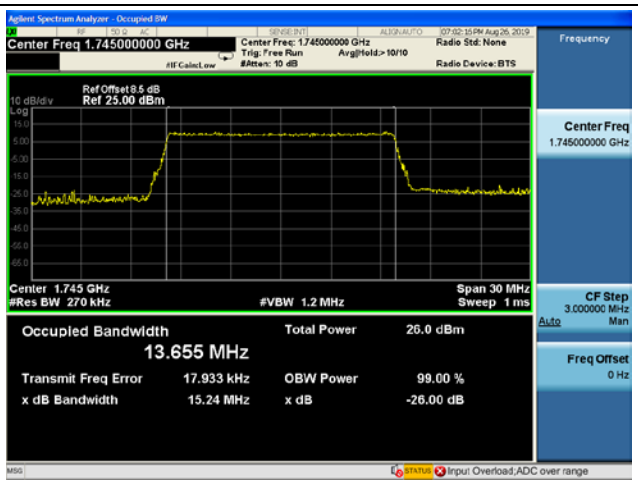
15MHz /16QAM / LCH



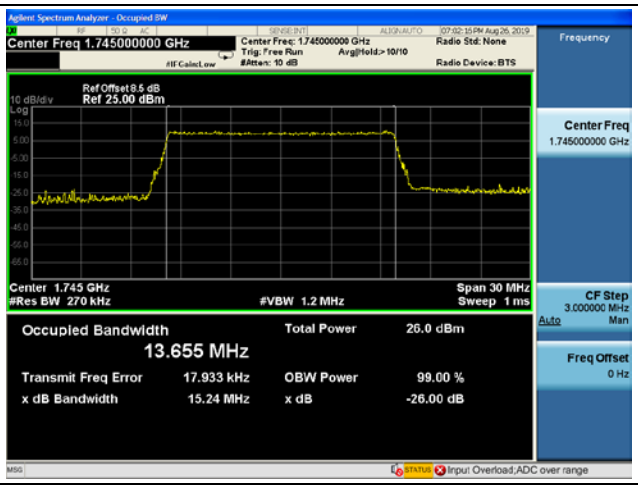
15MHz / 64QAM / LCH



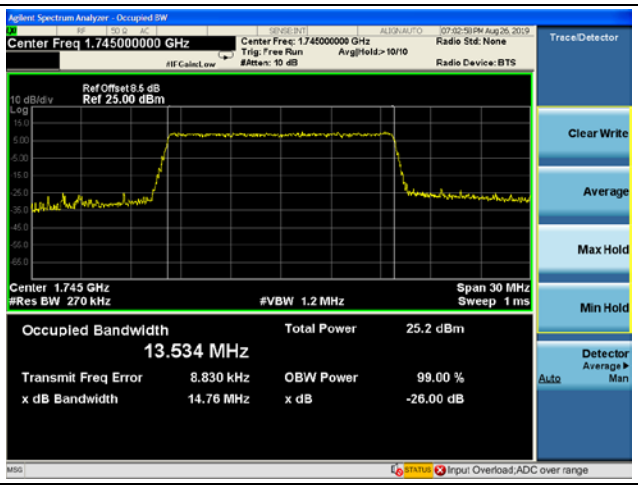
15MHz /QPSK / MCH

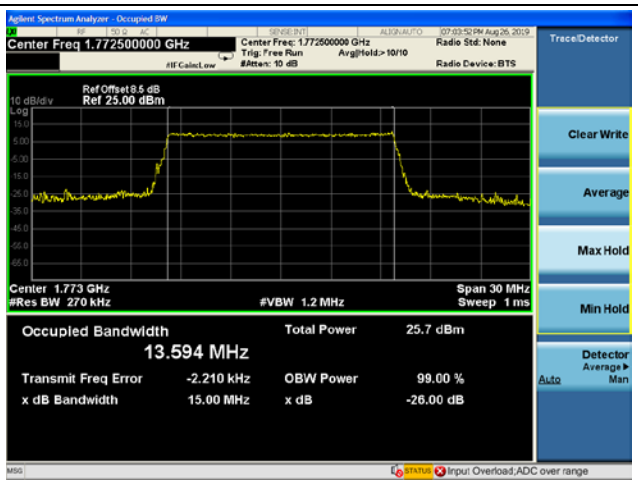
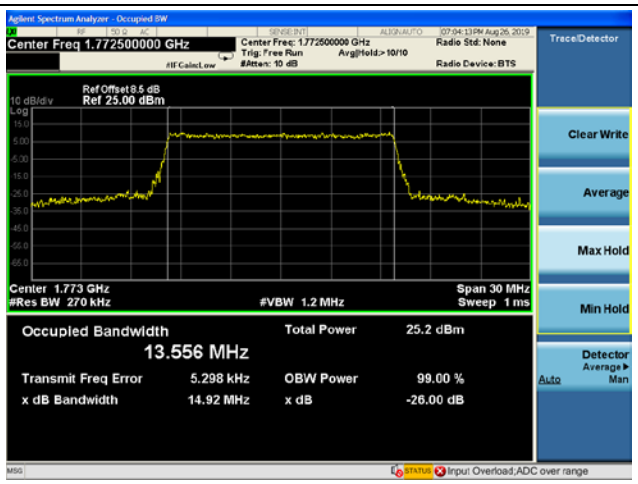
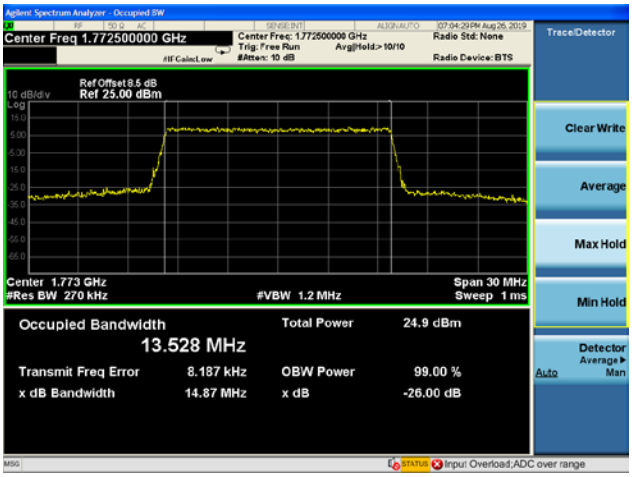


15MHz / 16QAM / MCH



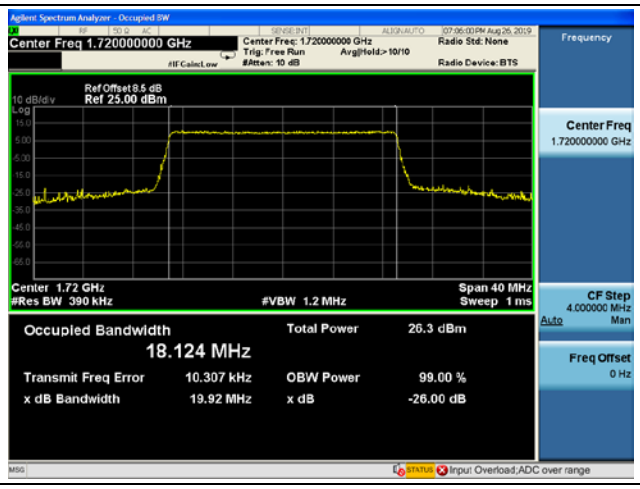
15MHz / 64QAM / MCH



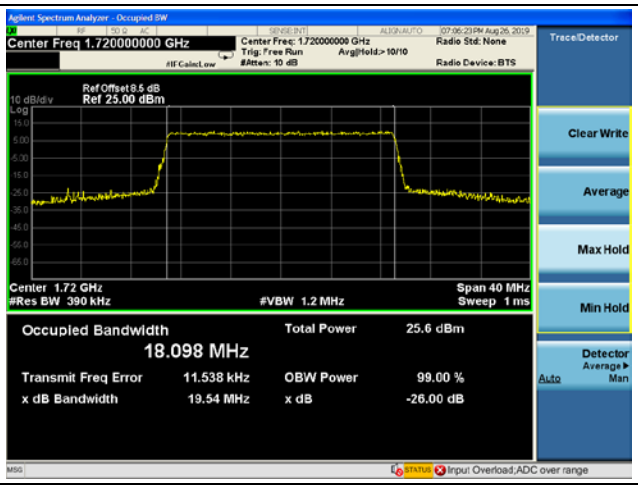
15MHz / QPSK / HCH	15MHz / 16QAM / HCH
	
15MHz / 64QAM / HCH	
	

LTE Band 66 99% & 26dB Bandwidth

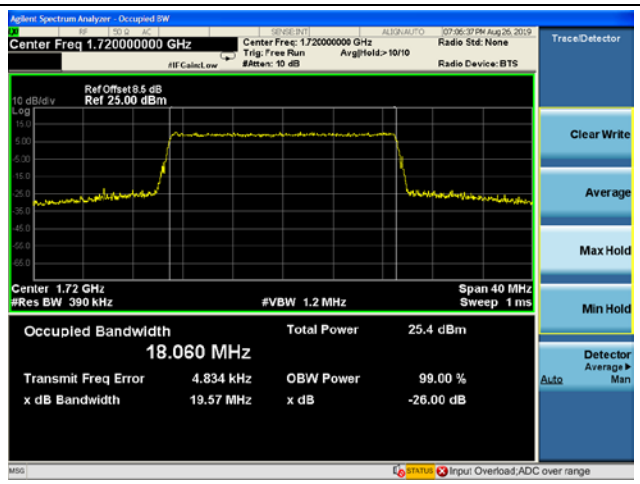
20MHz / QPSK / LCH



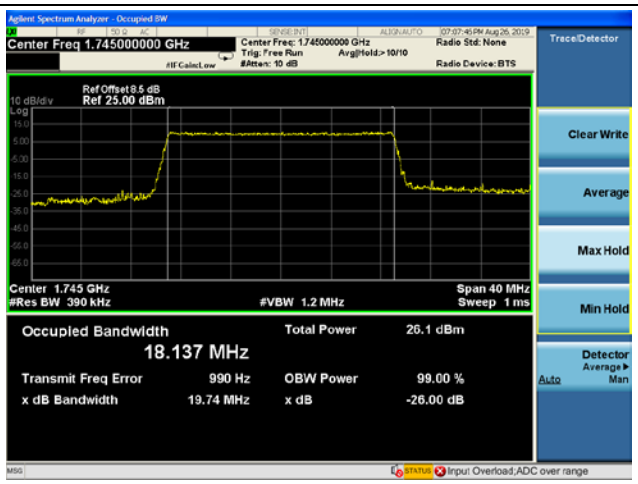
20MHz /16QAM / LCH



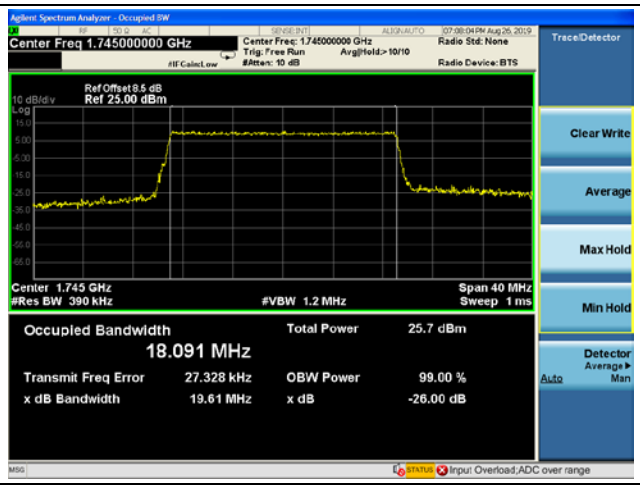
20MHz / 64QAM / LCH



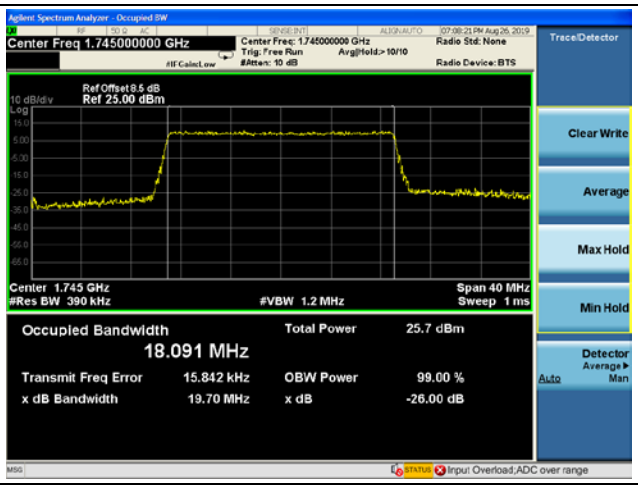
20MHz /QPSK / MCH

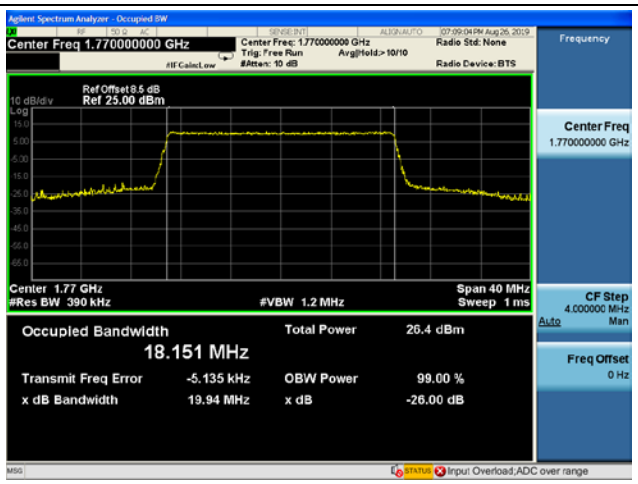
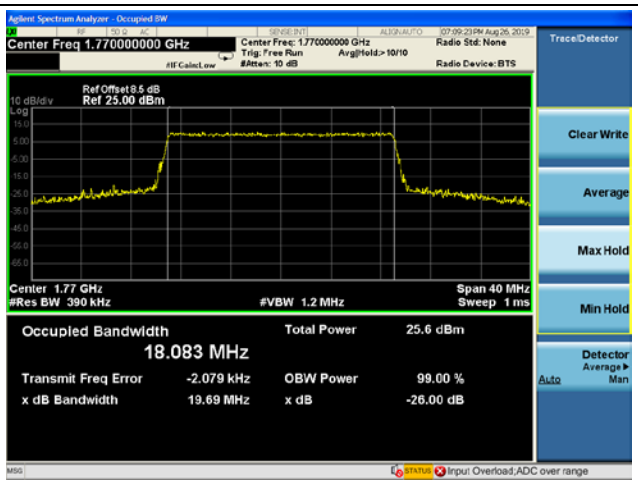
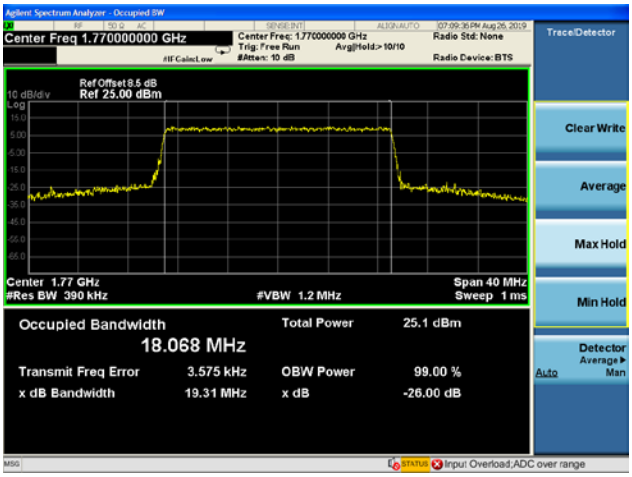


20MHz / 16QAM / MCH



20MHz / 64QAM / MCH



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

2.3. Frequency Stability

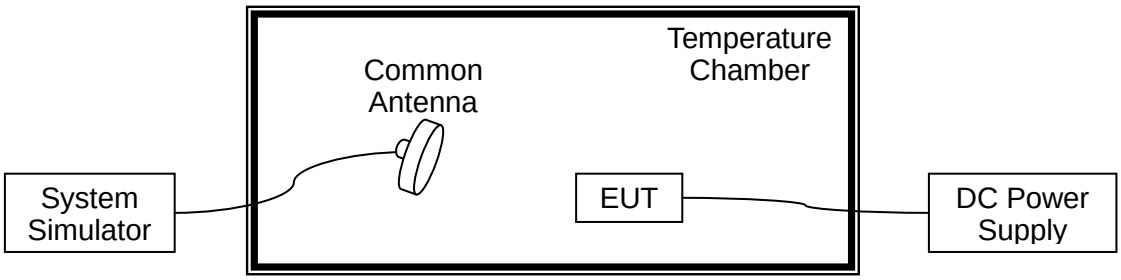
2.3.1. Requirement

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 -30°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 19, QPSK, Channel 24075, Frequency 837.5MHz Limit=±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.82	+20(Ref)	+30	-49	PASS
100		-10	0	-27	
100		0	+10	-54	
100		+10	+20	-17	
100		+20	+30	-49	
100		+30	+40	-65	
100		+40	+50	41	
100		+45	+20	84	
115	4.40	+20	+20	72	
85	3.30	+20	-30	-58	

LTE Band 25, QPSK, Channel 26365, Frequency 1882.5MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.82	+20(Ref)	-86	-0.046	PASS
100		-10	31	0.016	
100		0	-47	-0.025	
100		+10	-33	-0.018	
100		+20	-86	-0.046	
100		+30	64	0.034	
100		+40	26	0.014	
100		+50	83	0.044	
115	4.40	+20	23	0.012	
85	3.30	+20	45	0.024	

LTE Band 26, QPSK, Channel 26915, Frequency 836.5MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.82	+20(Ref)	-46	-0.055	PASS
100		-10	74	0.089	
100		0	-32	-0.038	
100		+10	-15	-0.018	
100		+20	-36	-0.043	
100		+30	-28	-0.034	
100		+40	-36	-0.043	
100		+45	65	0.078	
115	4.40	+20	13	0.016	
85	3.30	+20	53	0.064	

LTE Band 30, QPSK, Channel 27710, Frequency 2310MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.82	+20(Ref)	46	0.020	PASS
100		-10	31	0.013	
100		0	-15	-0.006	
100		+10	-33	-0.014	
100		+20	-47	-0.020	
100		+30	24	0.010	
100		+40	26	0.011	
100		+45	54	0.023	
115	4.40	+20	23	0.010	
85	3.30	+20	14	0.006	

LTE Band 66, QPSK, Channel 132322, Frequency 1745MHz Limit =1745 MHz*1ppm=1745Hz					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.82	+20(Ref)	25	0.014	PASS
100		-10	83	0.047	
100		0	-86	-0.049	
100		+10	-25	-0.014	
100		+20	-76	-0.043	
100		+30	47	0.027	
100		+40	93	0.053	
100		+45	15	0.009	
115	4.40	+20	26	0.015	
85	3.30	+20	37	0.021	

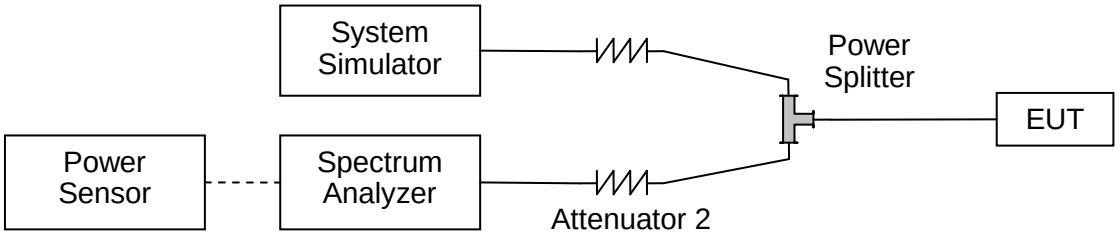
2.4. Peak to Average Radio

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 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 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 19						
BW (MHz)	Modulation	LCH	MCH	HCH	Limit (dB)	Verdict
5	QPSK	5.27	5.33	5.26	⩽13	PASS
	16QAM	6.02	5.98	5.93		PASS
	64QAM	6.01	5.97	5.93		PASS
10	QPSK	5.36	5.29	5.24		PASS
	16QAM	6.04	5.97	5.92		PASS
	64QAM	6.07	6.03	5.95		PASS
15	QPSK	/	5.11	/		PASS
	16QAM	/	5.92	/		PASS
	64QAM	/	5.93	/		PASS

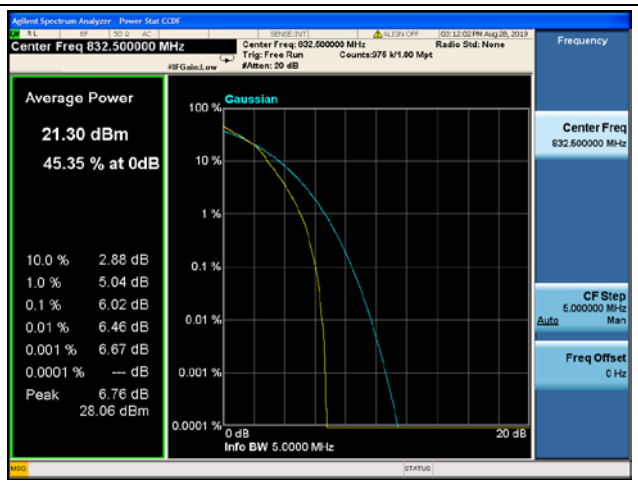
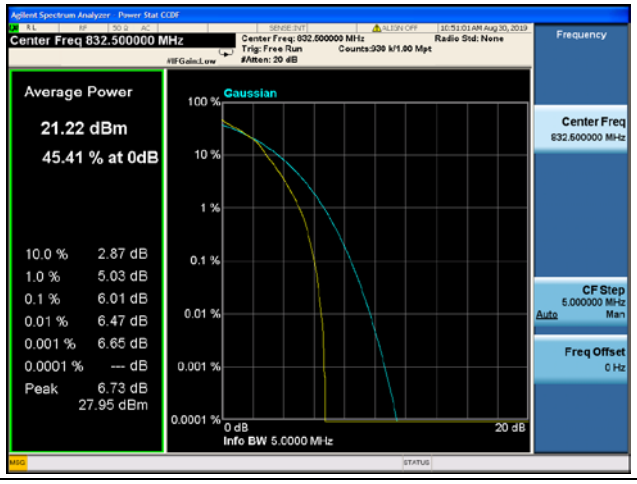
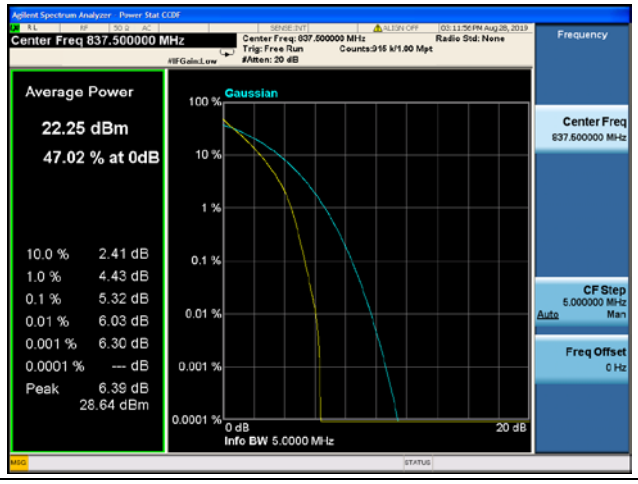
LTE Band 25						
BW (MHz)	Modulation	LCH	MCH	HCH	Limit (dB)	Verdict
1.4	QPSK	5.55	5.53	5.47	⩽13	PASS
	16QAM	6.00	5.94	5.98		PASS
	64QAM	6.04	6.0	5.96		PASS
3	QPSK	5.32	5.18	5.19		PASS
	16QAM	6.01	5.93	5.94		PASS
	64QAM	6.01	5.93	5.96		PASS
5	QPSK	5.38	5.32	5.25		PASS
	16QAM	5.94	5.91	5.94		PASS
	64QAM	5.98	5.88	5.95		PASS
10	QPSK	5.44	5.41	5.28		PASS
	16QAM	6.04	5.96	5.92		PASS
	64QAM	6.05	5.95	5.95		PASS
15	QPSK	5.40	5.29	5.30		PASS
	16QAM	6.06	5.94	5.93		PASS
	64QAM	6.07	5.94	5.93		PASS
20	QPSK	5.36	5.22	5.33		PASS

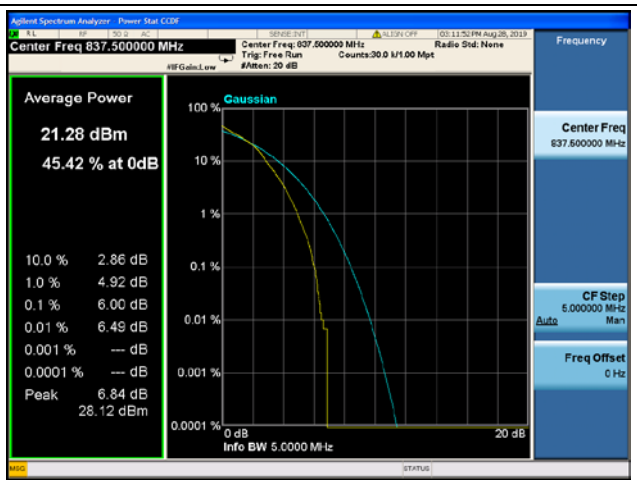
	16QAM	6.10	5.95	6.02		PASS
	64QAM	6.11	5.94	6.02		PASS

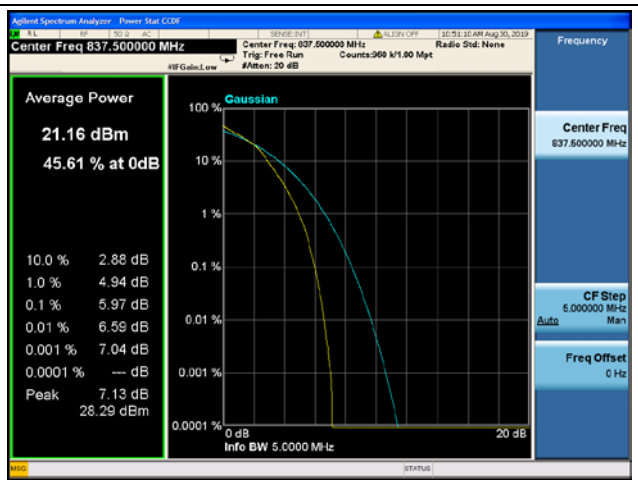
LTE Band 26						
BW (MHz)	**Modulation**	**LCH**	**MCH**	**HCH**	**Limit (dB)**	**Verdict**
1.4	QPSK	5.55	5.46	5.46	≤13	PASS
	16QAM	5.63	5.53	5.52		PASS
	64QAM	6.53	5.74	6.55		PASS
3	QPSK	5.25	5.24	5.25		PASS
	16QAM	6.05	5.34	5.39		PASS
	64QAM	6.15	5.58	5.65		PASS
5	QPSK	5.36	5.29	5.35		PASS
	16QAM	5.41	5.35	5.47		PASS
	64QAM	5.63	5.58	5.73		PASS
10	QPSK	5.92	6.02	5.88		PASS
	16QAM	5.99	6.09	6.02		PASS
	64QAM	7.04	6.25	6.34		PASS
15	QPSK	6.60	6.80	6.59		PASS
	16QAM	6.64	6.88	6.70		PASS
	64QAM	6.83	7.10	6.96		PASS

LTE Band 30						
BW (MHz)	**Modulation**	**LCH**	**MCH**	**HCH**	**Limit (dB)**	**Verdict**
5	QPSK	5.37	5.52	5.33	≤13	PASS
	16QAM	5.98	5.98	6.0		PASS
	64QAM	6.0	5.97	5.97		PASS
10	QPSK	/	5.21	/		PASS
	16QAM	/	6.0	/		PASS
	64QAM	/	5.99	/		PASS

LTE Band 66						
BW (MHz)	**Modulation**	**LCH**	**MCH**	**HCH**	**Limit (dB)**	**Verdict**
1.4	QPSK	5.52	5.41	5.61	⩽13	PASS
	16QAM	5.69	5.52	6.12		PASS
	64QAM	6.29	6.38	6.38		PASS
3	QPSK	5.24	5.22	5.33		PASS
	16QAM	5.43	5.35	5.48		PASS
	64QAM	6.51	6.20	6.44		PASS
5	QPSK	5.41	5.29	5.43		PASS
	16QAM	5.49	5.37	6.07		PASS
	64QAM	6.34	6.17	6.58		PASS
10	QPSK	6.09	6.00	5.95		PASS
	16QAM	6.08	6.13	6.11		PASS
	64QAM	7.06	6.45	6.46		PASS
15	QPSK	6.71	6.83	6.77		PASS
	16QAM	7.15	6.90	6.83		PASS
	64QAM	7.24	7.10	7.31		PASS
20	QPSK	7.29	7.39	7.17		PASS
	16QAM	7.31	7.47	7.33		PASS
	64QAM	7.74	7.70	7.65		PASS

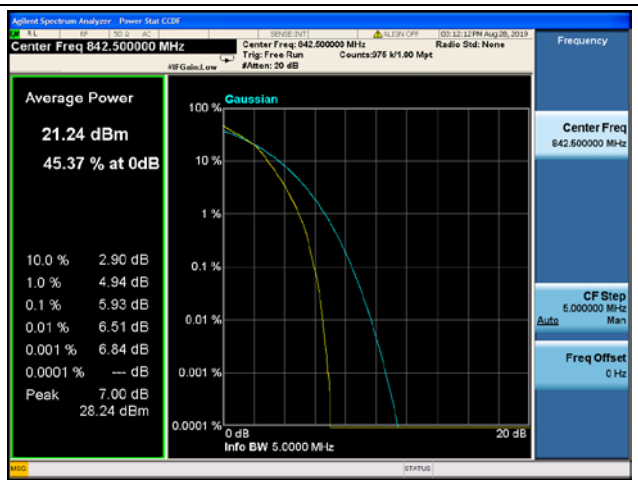
LTE Band 19 Peak-to-Average Radio	
5MHz / QPSK / LCH	**5MHz / 16QAM / LCH**
	
5MHz / 64QAM / LCH	**5MHz / QPSK / MCH**
	
5MHz / 16QAM / MCH	**5MHz / 64QAM / MCH**



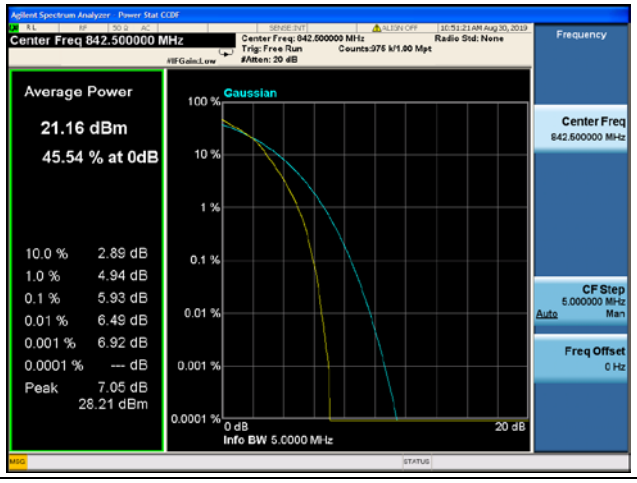


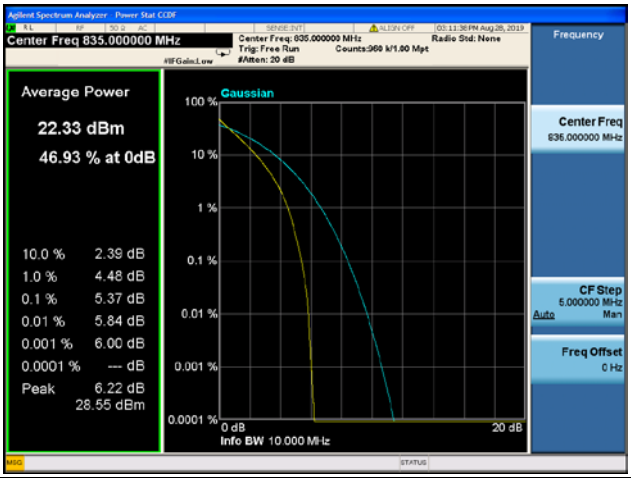
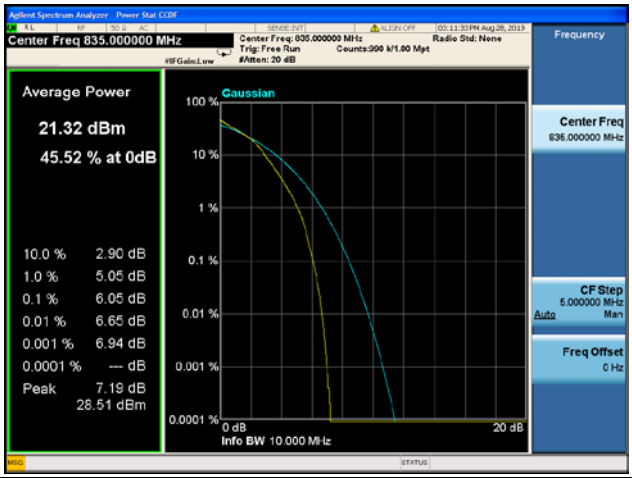
5MHz / QPSK / HCH

5MHz / 16QAM / HCH



5MHz / 64QAM / HCH



LTE Band 19 Peak-to-Average Radio	
10MHz / QPSK / LCH	**10MHz / 16QAM / LCH**
	
10MHz / 64QAM / LCH	**10MHz / QPSK / MCH**