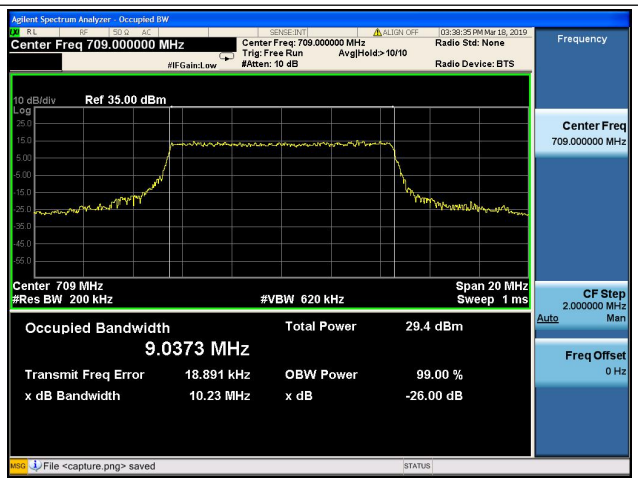
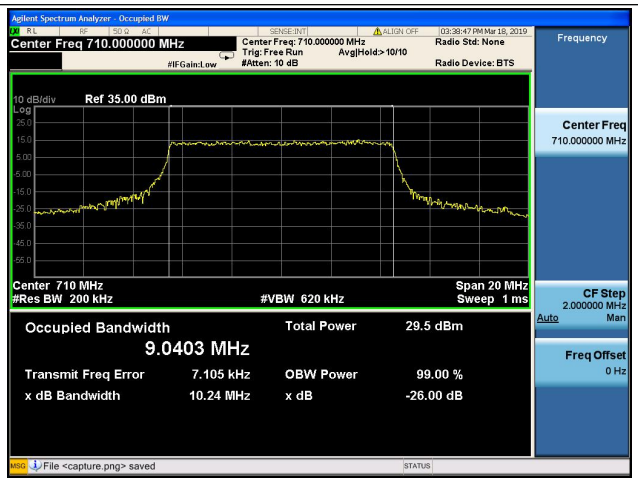
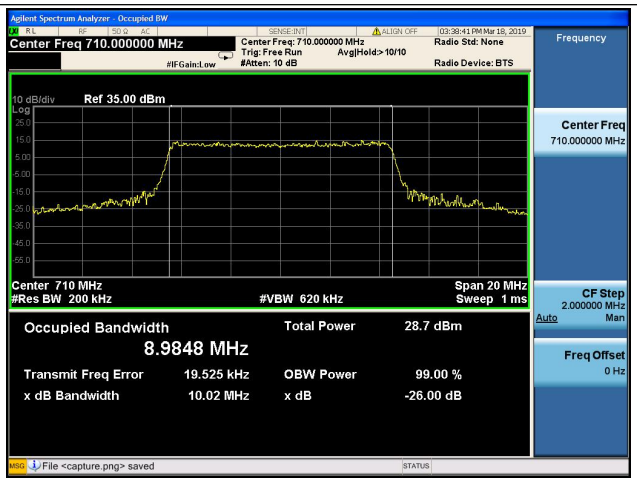
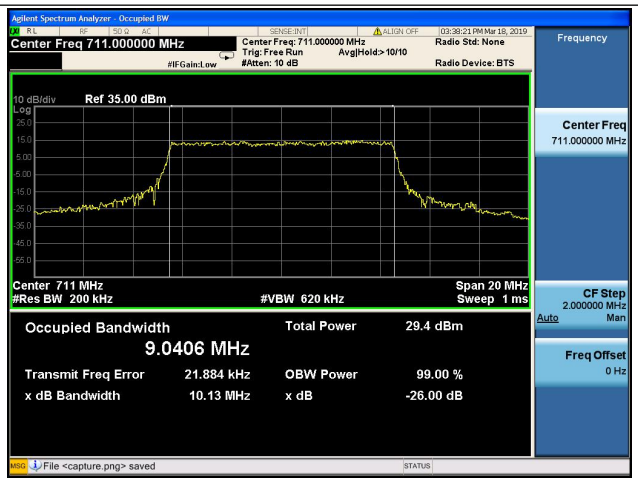
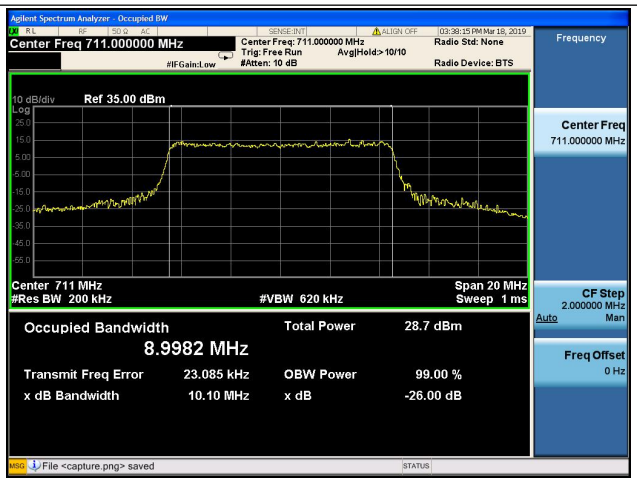
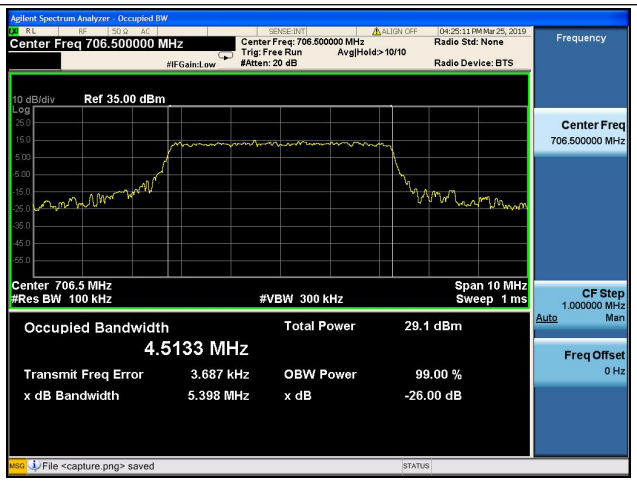
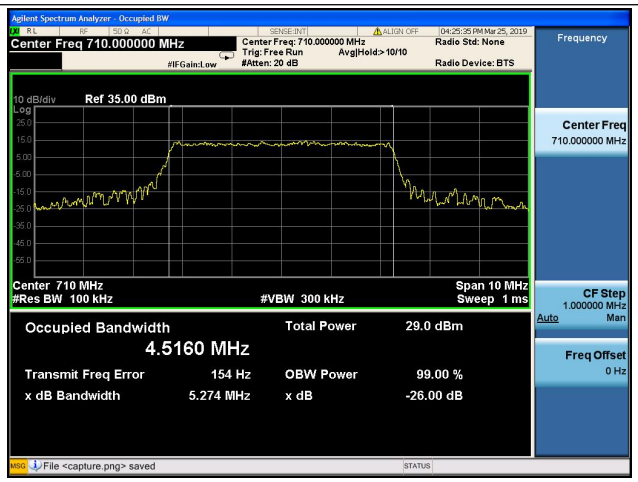
10MHz/QPSK/Low CH	10MHz/16QAM/Low CH
	
10MHz/QPSK/Mid CH	**10MHz/16QAM/Mid CH**
	
10MHz/QPSK/High CH	**10MHz/16QAM/High CH**
	

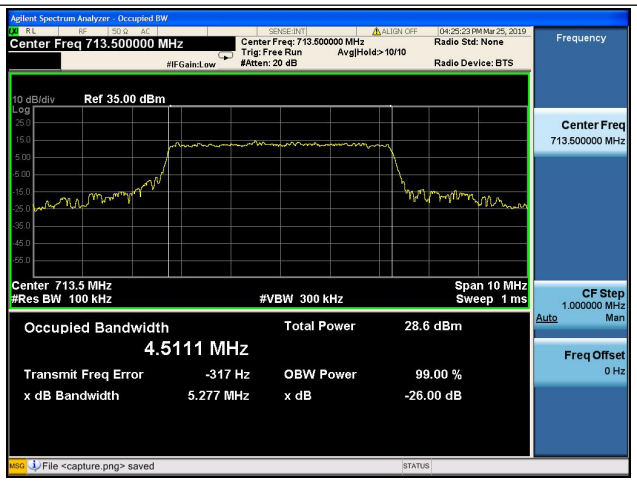
5MHz/64QAM/Low CH



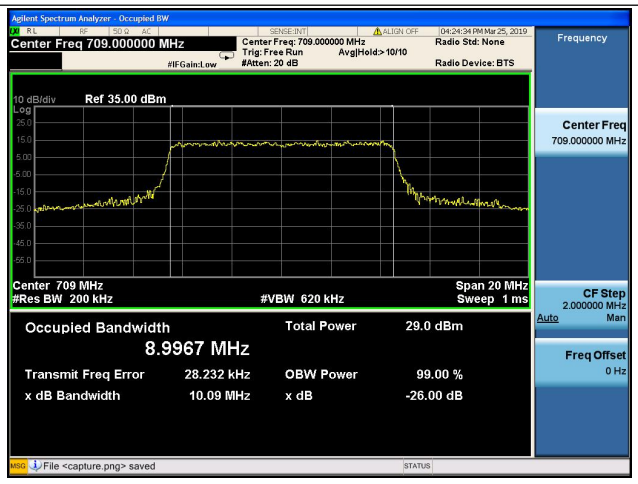
5MHz/64QAM/Mid CH



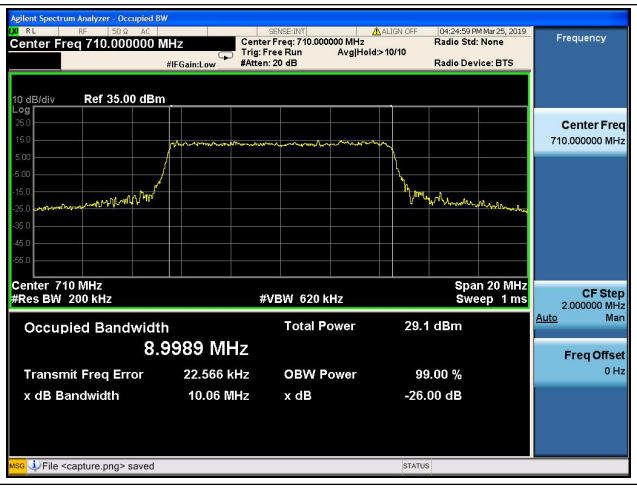
5MHz/64QAM/High CH



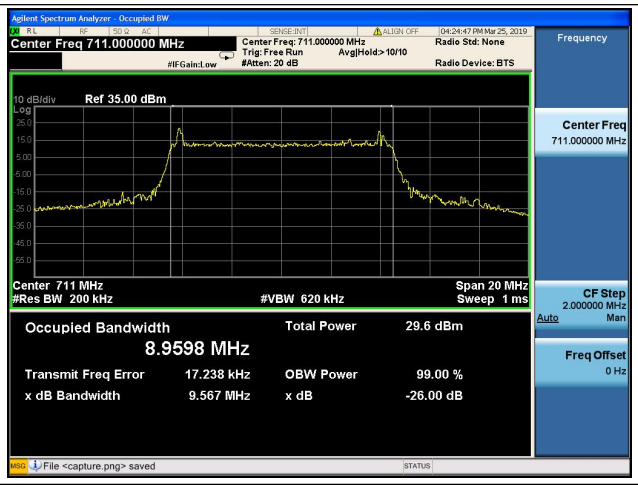
10MHz/64QAM/Low CH



10MHz/64QAM/Mid CH



10MHz/64QAM/High CH



2.3. Frequency Stability

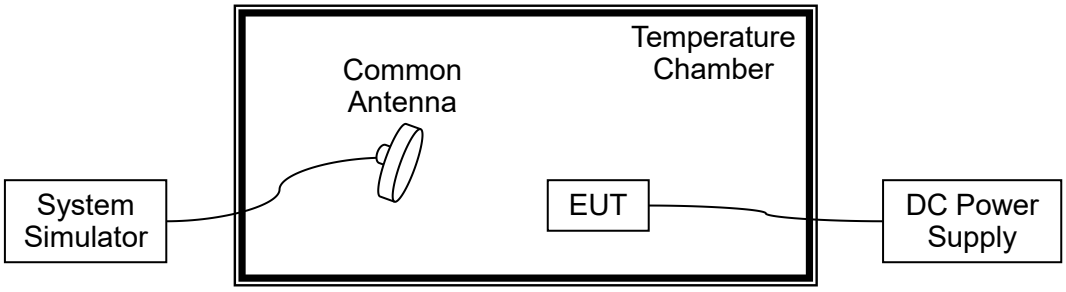
2.3.1. Requirement

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°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	3.8	-30	12	0.006	PASS
100		-20	46	0.024	
100		-10	-17	-0.009	
100		0	67	0.036	
100		+10	-27	-0.014	
100		+20	-57	-0.030	
100		+30	31	0.016	
100		+40	93	0.049	
100		+50	54	0.029	
115	4.35	+20	25	0.013	
85	3.5	+20	-37	-0.020	

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	-30	31	0.018	PASS
100		-20	24	0.014	
100		-10	-22	-0.013	
100		0	93	0.054	
100		+10	-27	-0.016	
100		+20	-57	-0.033	
100		+30	25	0.014	
100		+40	93	0.054	
100		+50	63	0.036	
115	4.35	+20	25	0.014	
85	3.5	+20	-24	-0.014	

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	-30	42	0.050	PASS
100		-20	-77	-0.092	
100		-10	-43	-0.051	
100		0	-69	-0.082	
100		+10	-73	-0.087	
100		+20	42	0.050	
100		+30	74	0.088	
100		+40	43	0.051	
100		+50	15	0.018	
115	4.35	+20	21	0.025	
85	3.5	+20	-59	-0.071	

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	-30	43	0.024	PASS
100		-20	26	0.015	
100		-10	-66	-0.037	
100		0	45	0.025	
100		+10	-27	-0.015	
100		+20	-27	-0.015	
100		+30	25	0.014	
100		+40	56	0.032	
100		+50	17	0.010	
115	4.35	+20	37	0.021	
85	3.5	+20	-25	-0.014	

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	-30	34	0.048	PASS
100		-20	-44	-0.062	
100		-10	-22	-0.031	
100		0	-11	-0.015	
100		+10	-69	-0.097	
100		+20	42	0.059	
100		+30	76	0.107	
100		+40	16	0.023	
100		+50	53	0.075	
115	4.35	+20	62	0.087	
85	3.5	+20	-14	-0.020	

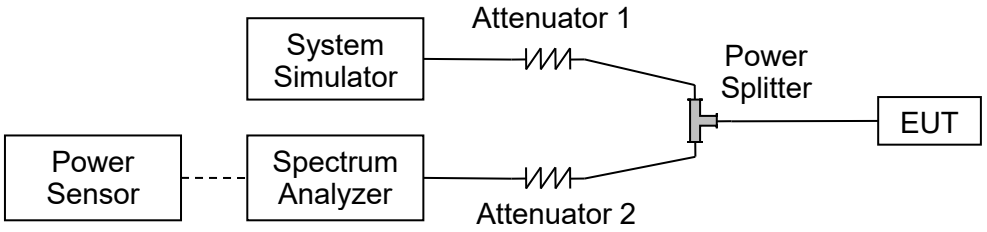
2.4. Peak to Average Radio

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 2, BW: 1.4MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18607	1850.7	5.42	6.19
18900	1880.0	5.43	6.04
19192	1909.2	5.28	6.17
LTE Band 2, BW: 3MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18615	1851.5	5.61	6.34
18900	1880.0	5.45	6.05
19184	1908.4	4.78	5.49
LTE Band 2, BW: 5MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18625	1852.5	5.66	6.28
18900	1880.0	5.5	6.03
19175	1907.5	5.44	5.88
LTE Band 2, BW: 10MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18650	1855.0	5.81	6.44
18900	1880.0	5.45	6.14
19150	1905.0	5.62	6.23
LTE Band 2, BW: 15MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18675	1857.5	5.76	6.42
18900	1880.0	5.49	6.04
19125	1902.5	5.5	6.15
LTE Band 2, BW: 20MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		QPSK	16QAM
18700	1860.0	5.77	6.21
18900	1880.0	5.57	6.19
19100	1900.0	5.57	6.21

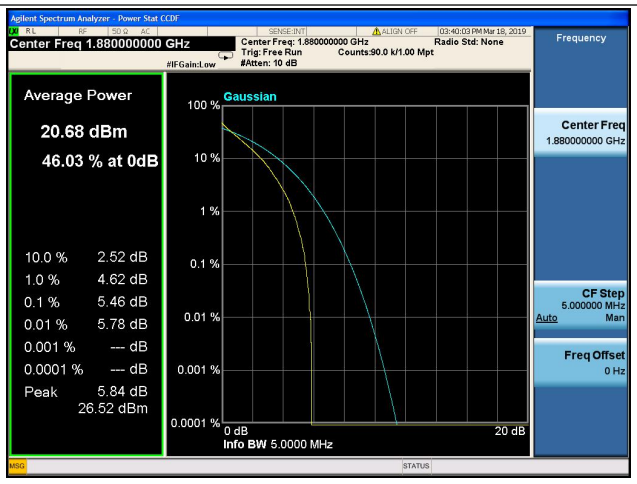
LTE Band 2, BW: 1.4MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		64QAM	
18607	1850.7	6.05	
18900	1880.0	5.89	
19192	1909.2	5.89	
LTE Band 2, BW: 3MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		64QAM	
18615	1851.5	6.16	
18900	1880.0	5.92	
19184	1908.4	5.84	
LTE Band 2, BW: 5MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		64QAM	
18625	1852.5	6.21	
18900	1880.0	5.35	
19175	1907.5	5.87	
LTE Band 2, BW: 10MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		64QAM	
18650	1855.0	6.4	
18900	1880.0	6.04	
19150	1905.0	6.09	
LTE Band 2, BW: 15MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		64QAM	
18675	1857.5	6.37	
18900	1880.0	5.86	
19125	1902.5	6.09	
LTE Band 2, BW: 20MHz			
Channel	Frequency (MHz)	Peak to Average Radio(dB)	
		64QAM	
18700	1860.0	6.24	
18900	1880.0	6.09	
19100	1900.0	6.13	

LTE Band 2 Peak to Average Radio

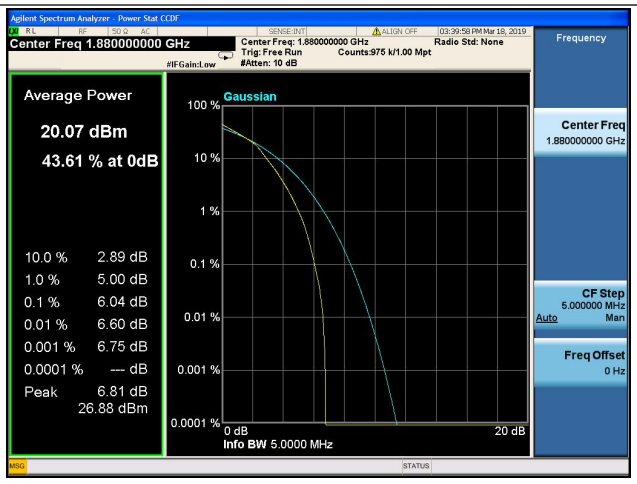
1.4MHz/QPSK/Low CH

1.4MHz/16QAM/Low CH

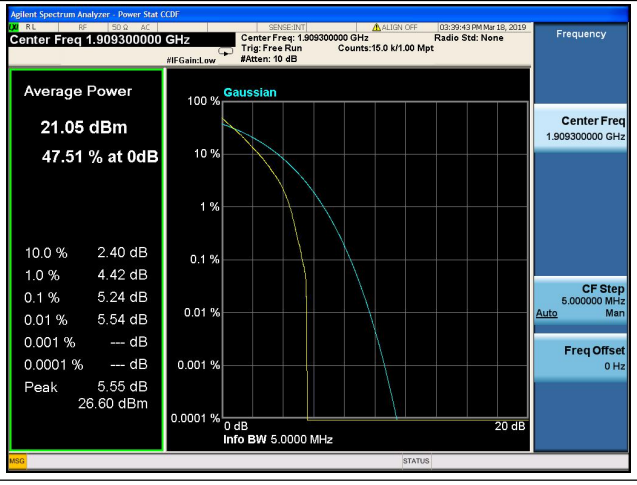
1.4MHz/QPSK/Mid CH



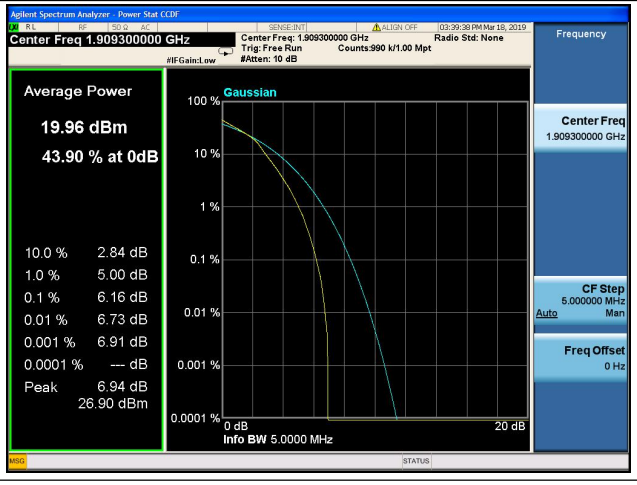
1.4MHz/16QAM/Mid CH



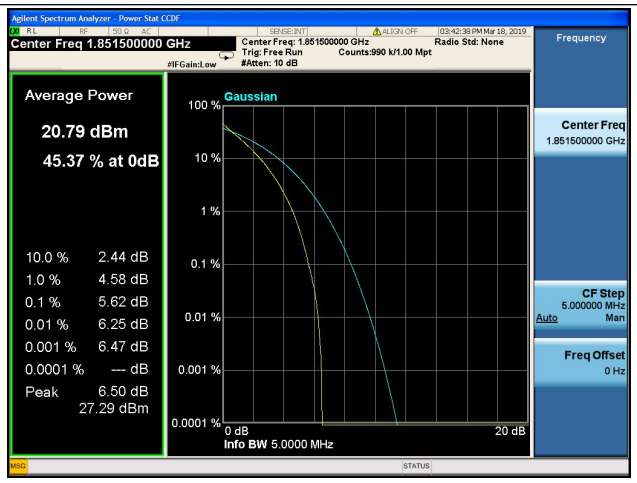
1.4MHz/QPSK/High CH



1.4MHz/16QAM/High CH

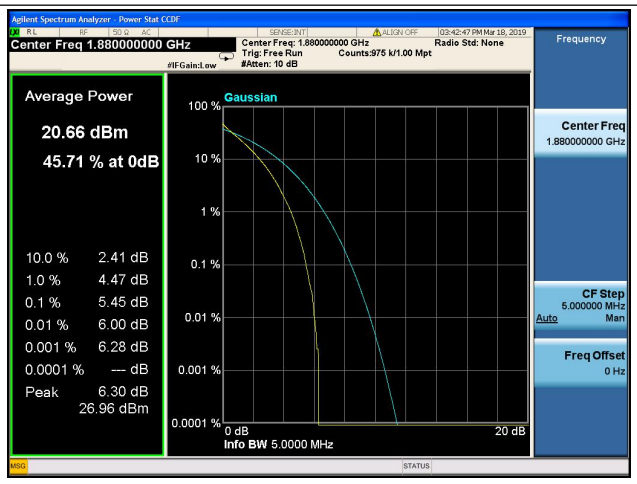


3MHz/QPSK/Low CH

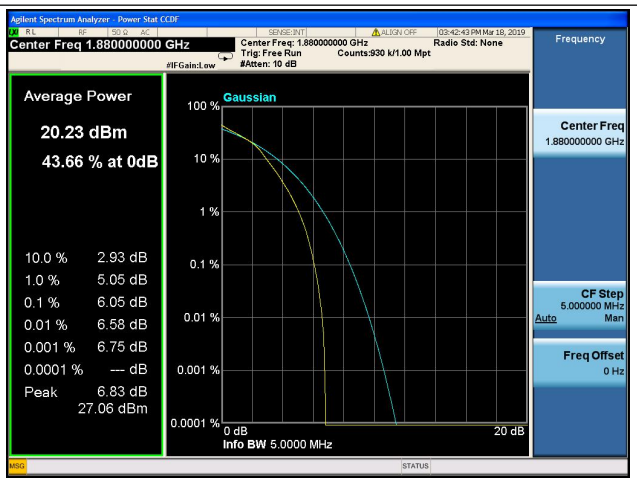


3MHz/16QAM/Low CH

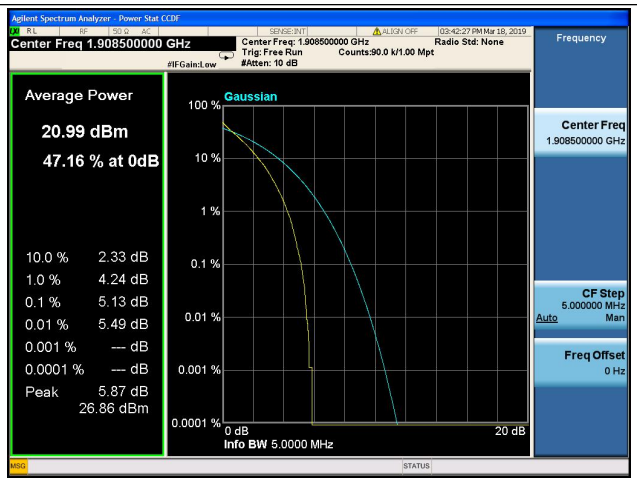
3MHz/QPSK/Mid CH



3MHz/16QAM/Mid CH

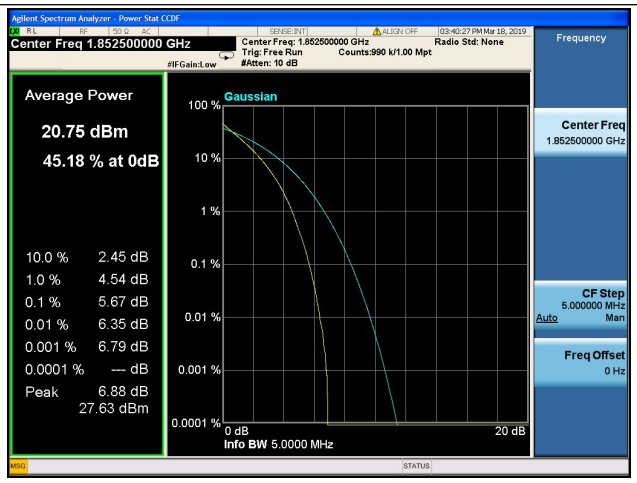


3MHz/QPSK/High CH



3MHz/16QAM/High CH

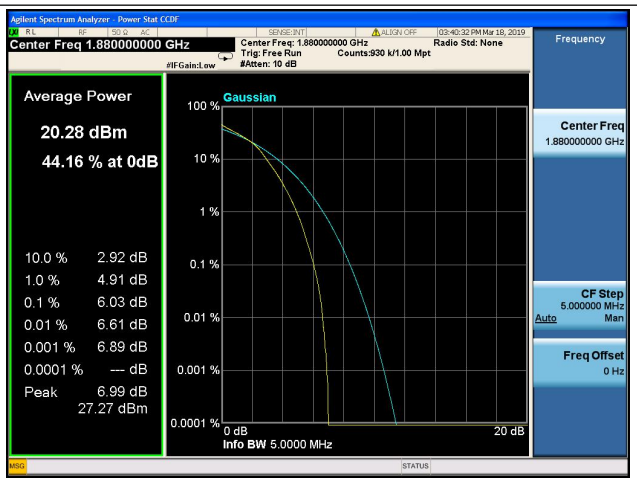
5MHz/QPSK/Low CH



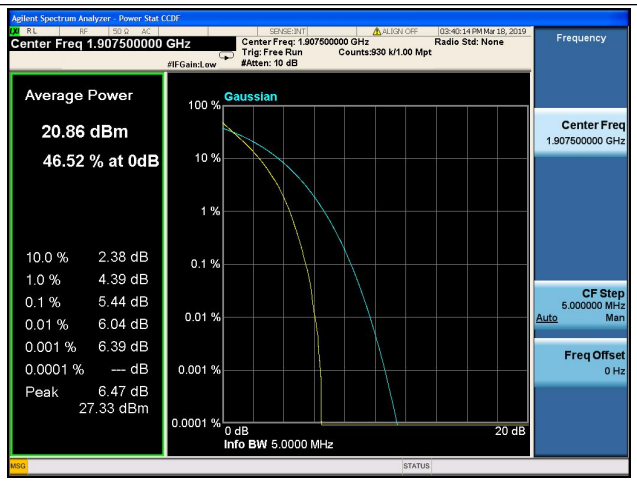
5MHz/16QAM/Low CH

5MHz/QPSK/Mid CH

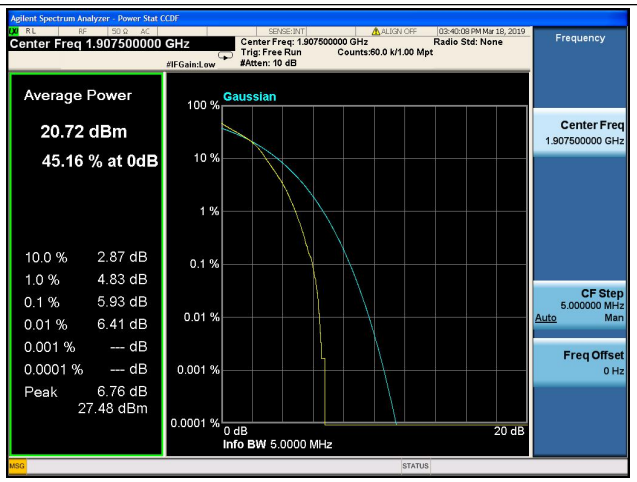
5MHz/16QAM/Mid CH



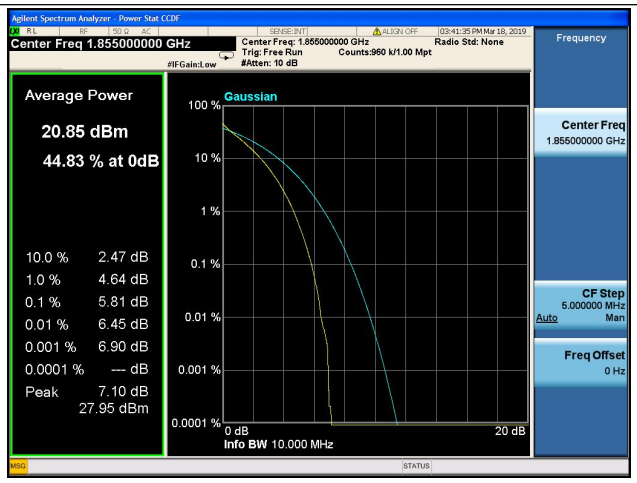
5MHz/QPSK/High CH



5MHz/16QAM/High CH

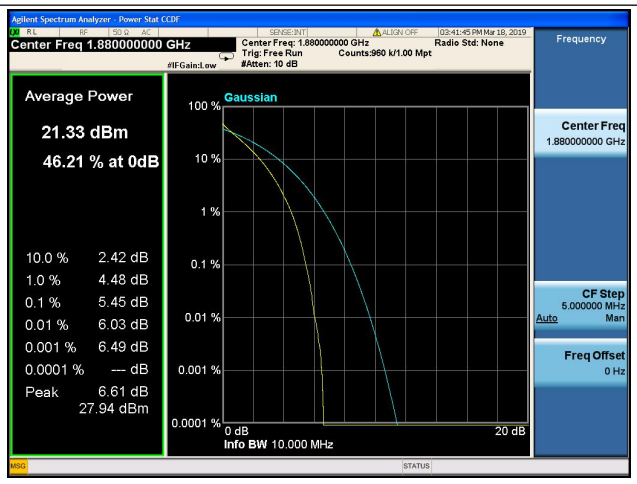


10MHz/QPSK/Low CH

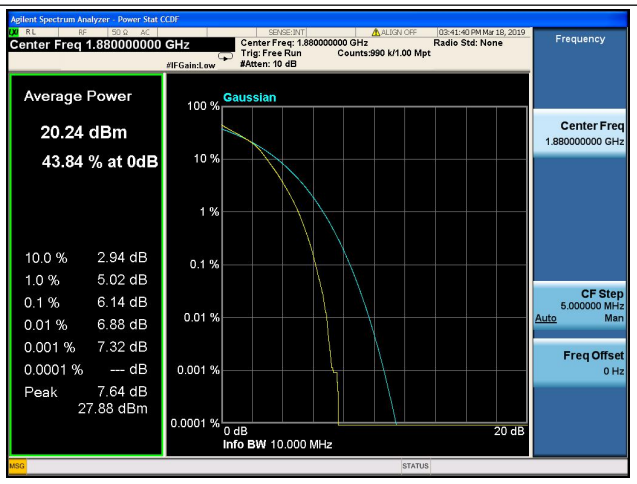


10MHz/16QAM/Low CH

10MHz/QPSK/Mid CH

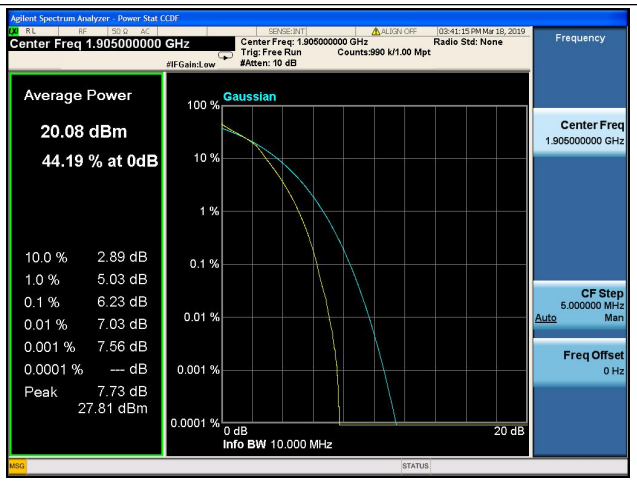


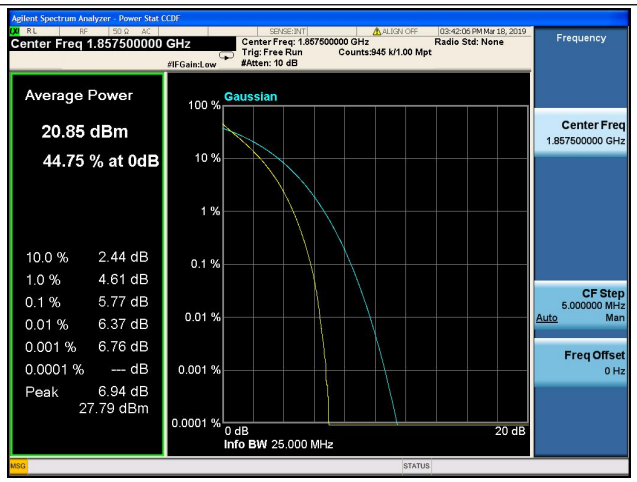
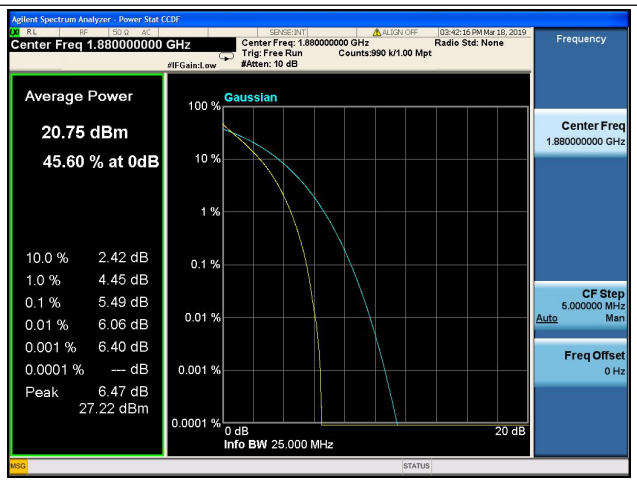
10MHz/16QAM/Mid CH



10MHz/QPSK/High CH

10MHz/16QAM/High CH



15MHz/QPSK/Low CH	15MHz/16QAM/Low CH
	
15MHz/QPSK/Mid CH	**15MHz/16QAM/Mid CH**
	
15MHz/QPSK/High CH	**15MHz/16QAM/High CH**