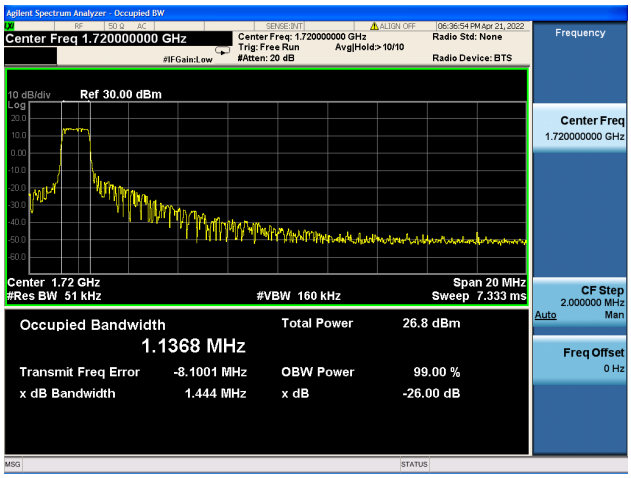
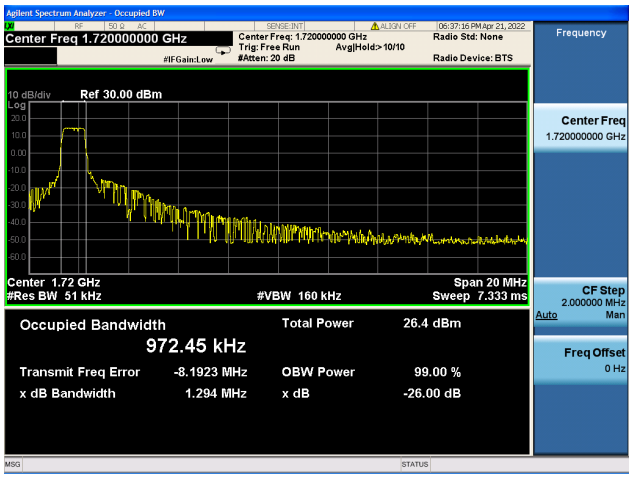
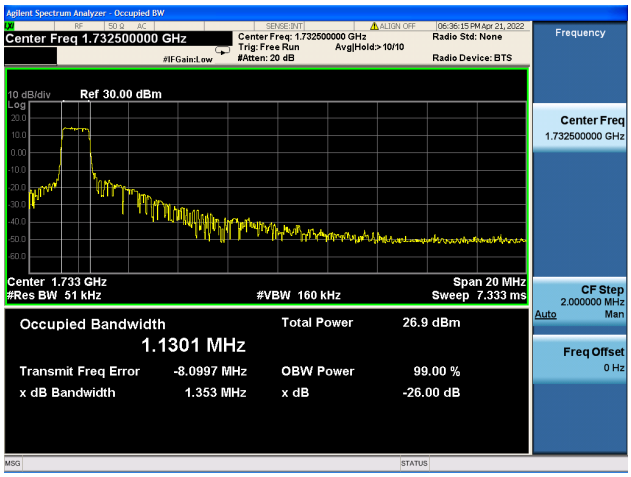
Band 4 / 20MHz / Low CH / QPSK



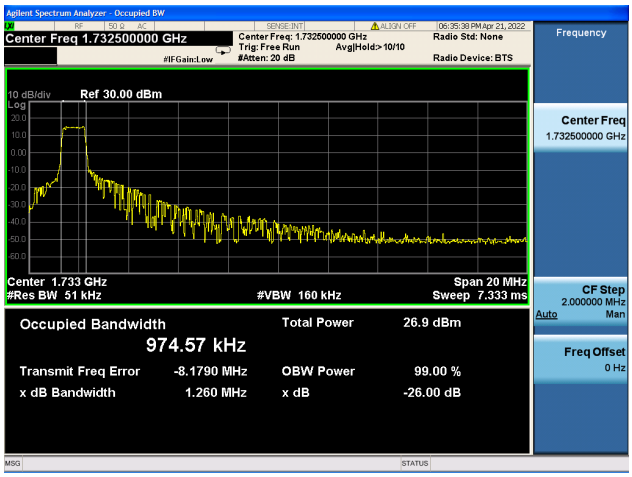
Band 4 / 20MHz / Low CH / 16QAM



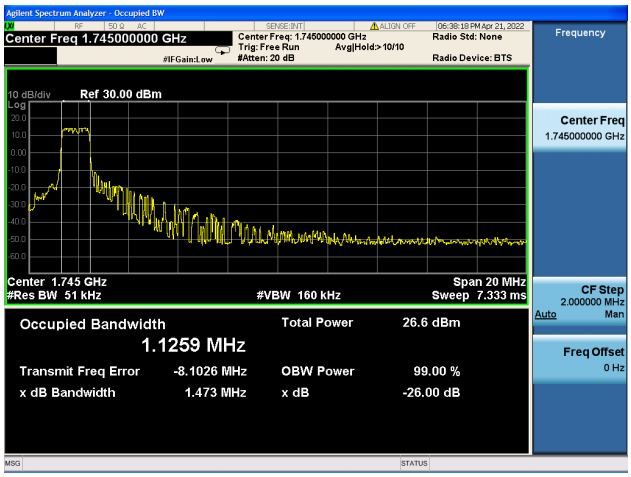
Band 4 / 20MHz / Mid CH / QPSK



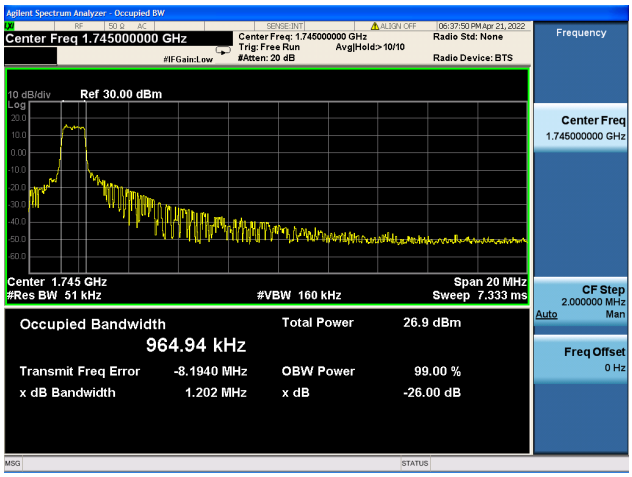
Band 4 / 20MHz / Mid CH / 16QAM



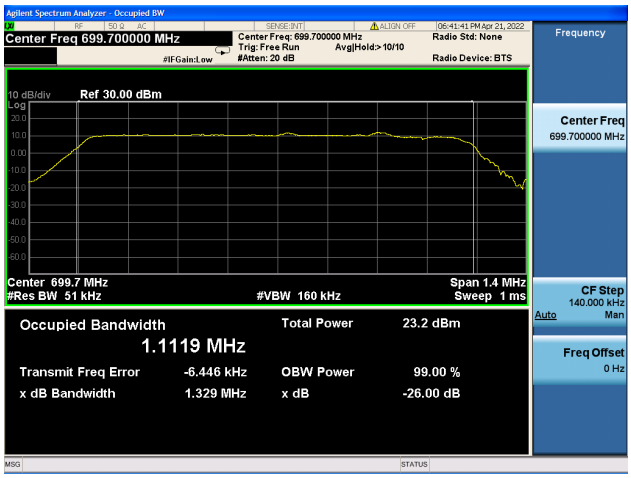
Band 4 / 20MHz / High CH / QPSK



Band 4 / 20MHz / High CH / 16QAM

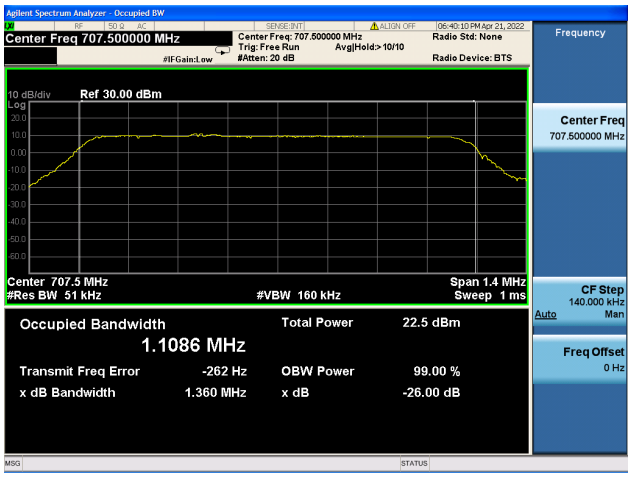


Band 12 / 1.4MHz / Low CH / QPSK

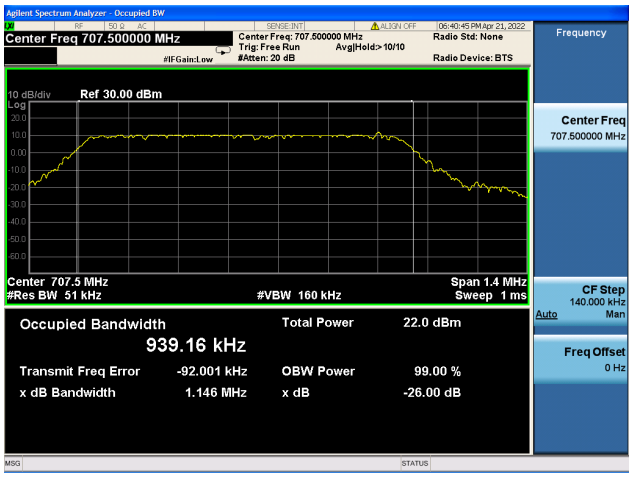


Band 12 / 1.4MHz / Low CH / 16QAM

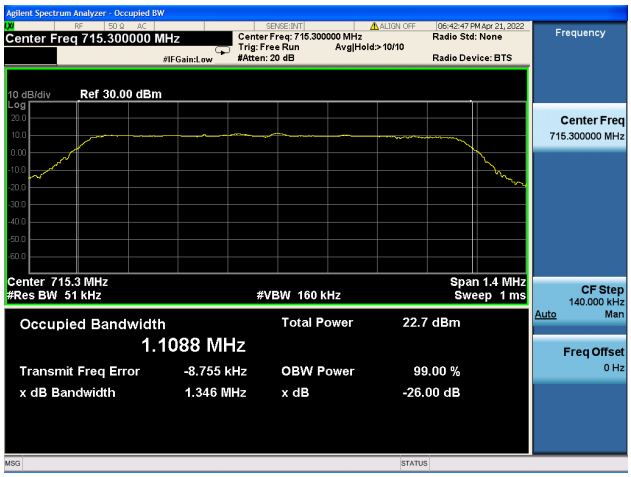
Band 12 / 1.4MHz / Mid CH / QPSK



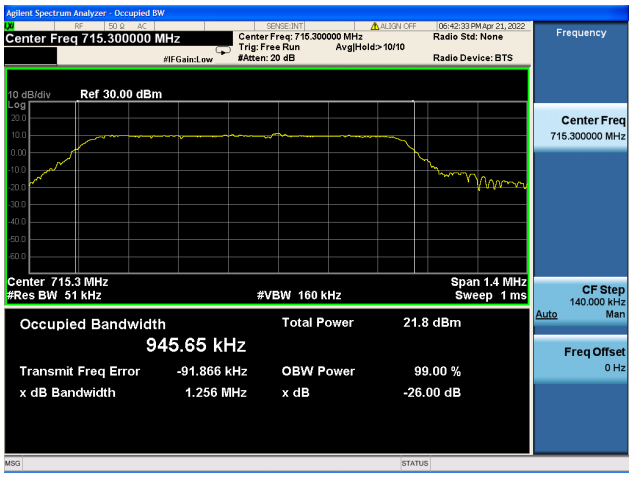
Band 12 / 1.4MHz / Mid CH / 16QAM



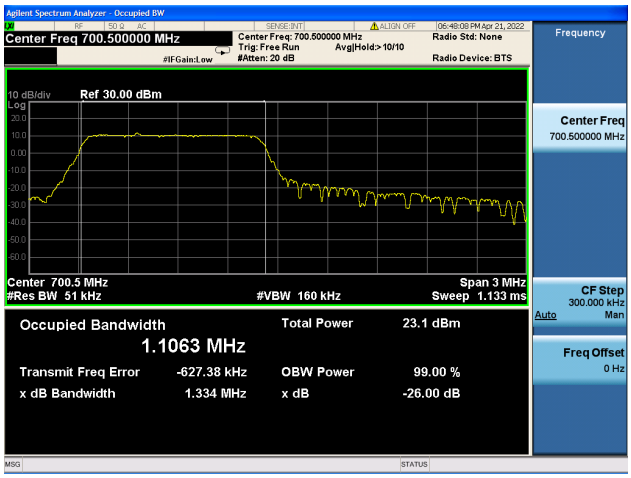
Band 12 / 1.4MHz / High CH / QPSK



Band 12 / 1.4MHz / High CH / 16QAM

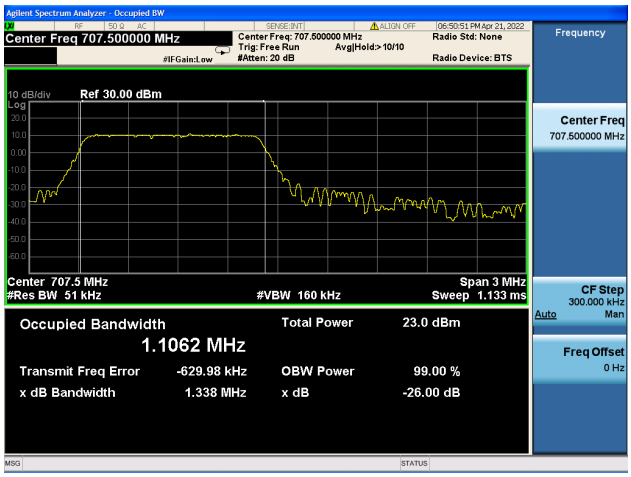


Band 12 / 3MHz / Low CH / QPSK

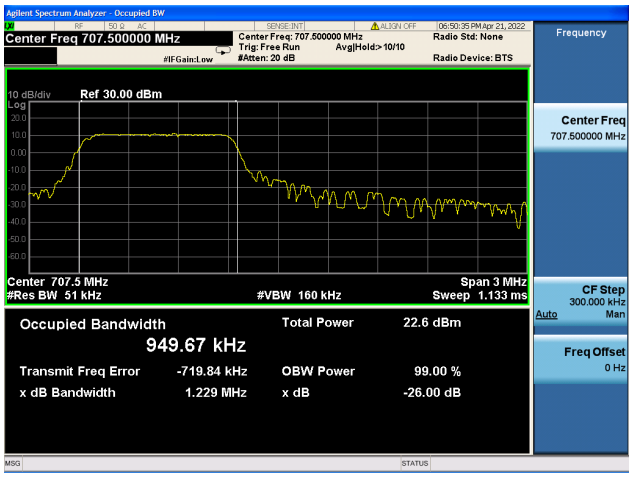


Band 12 / 3MHz / Low CH / 16QAM

Band 12 / 3MHz / Mid CH / QPSK



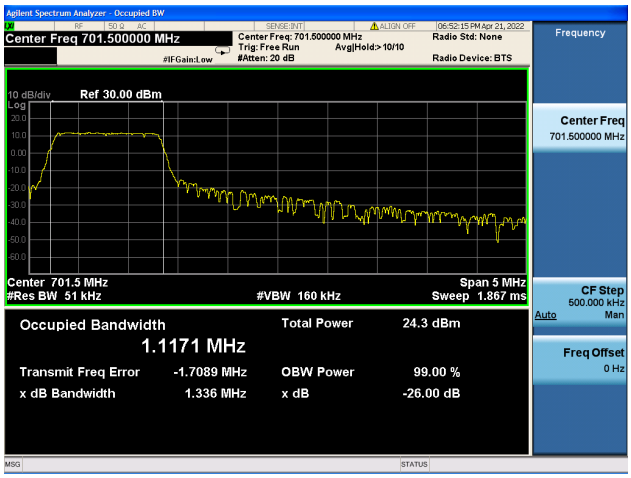
Band 12 / 3MHz / Mid CH / 16QAM



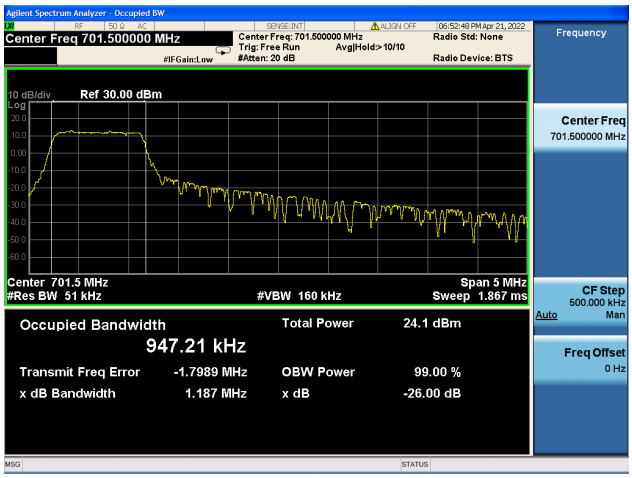
Band 12 / 3MHz / High CH / QPSK

Band 12 / 3MHz / High CH / 16QAM

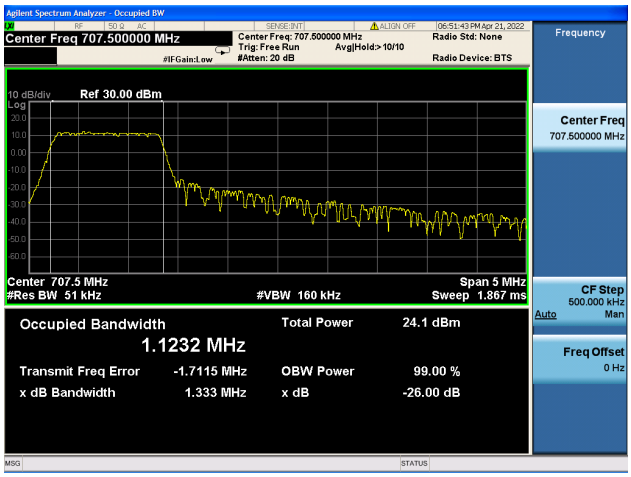
Band 12 / 5MHz / Low CH / QPSK



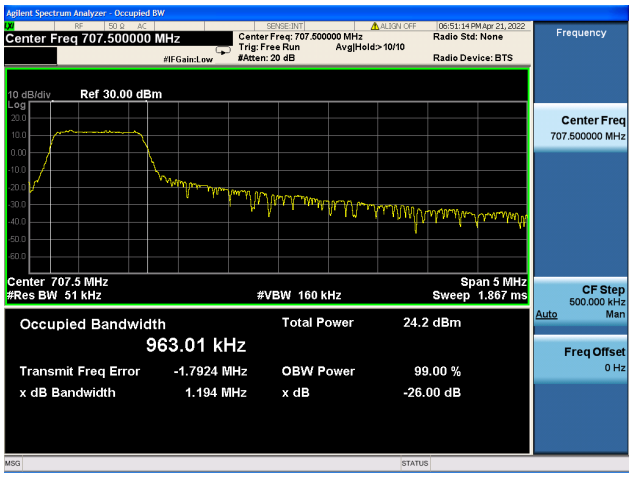
Band 12 / 5MHz / Low CH / 16QAM



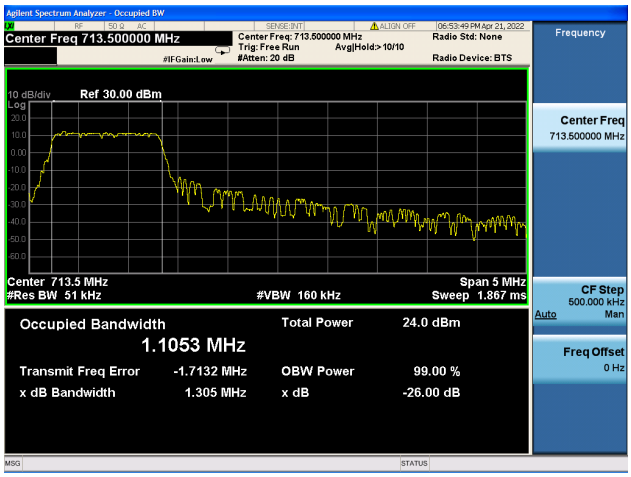
Band 12 / 5MHz / Mid CH / QPSK



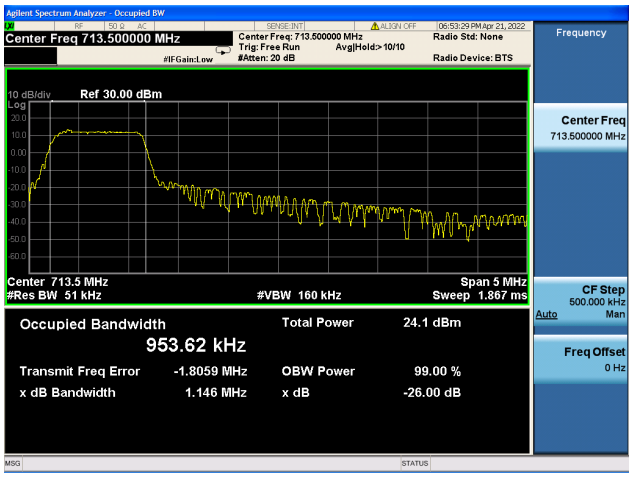
Band 12 / 5MHz / Mid CH / 16QAM



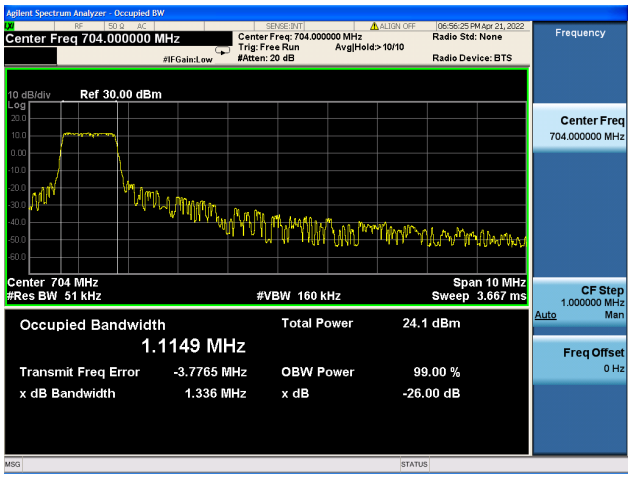
Band 12 / 5MHz / High CH / QPSK



Band 12 / 5MHz / High CH / 16QAM

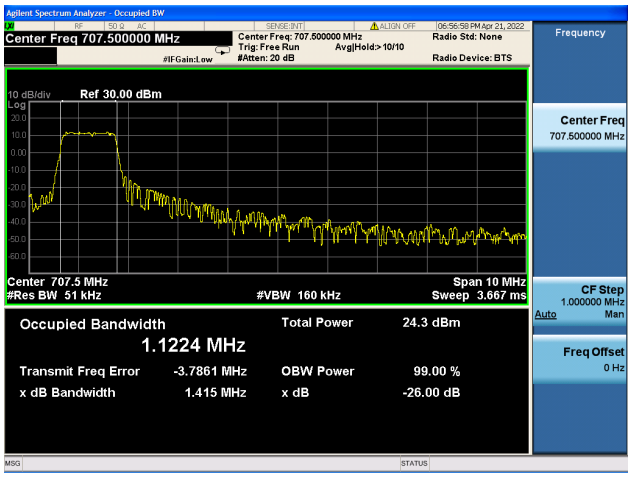


Band 12 / 10MHz / Low CH / QPSK



Band 12 / 10MHz / Low CH / 16QAM

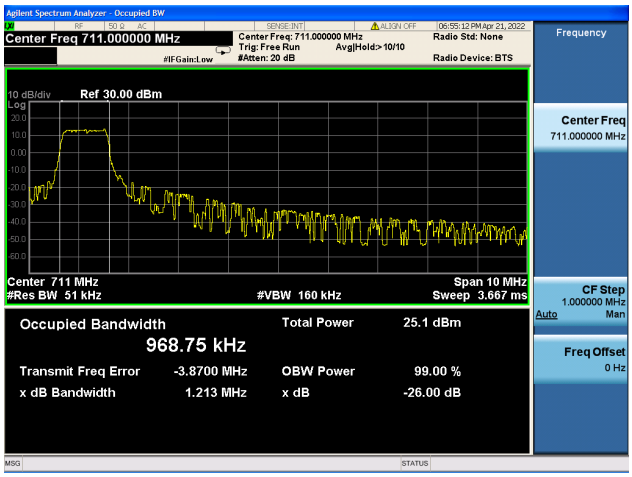
Band 12 / 10MHz / Mid CH / QPSK



Band 12 / 10MHz / Mid CH / 16QAM

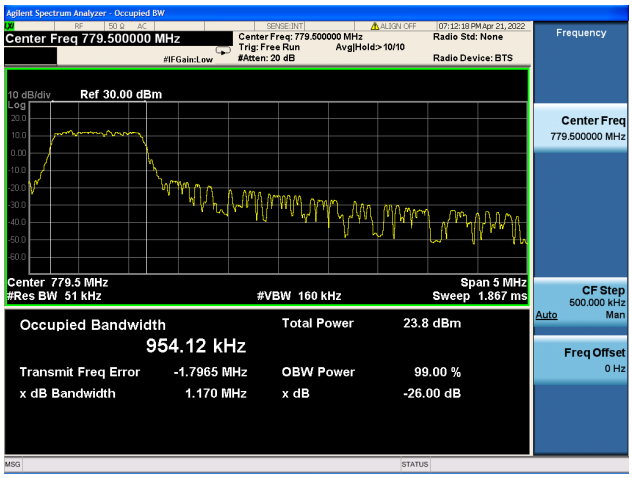
Band 12 / 10MHz / High CH / QPSK

Band 12 / 10MHz / High CH / 16QAM



Band 13 / 5MHz / Low CH / QPSK

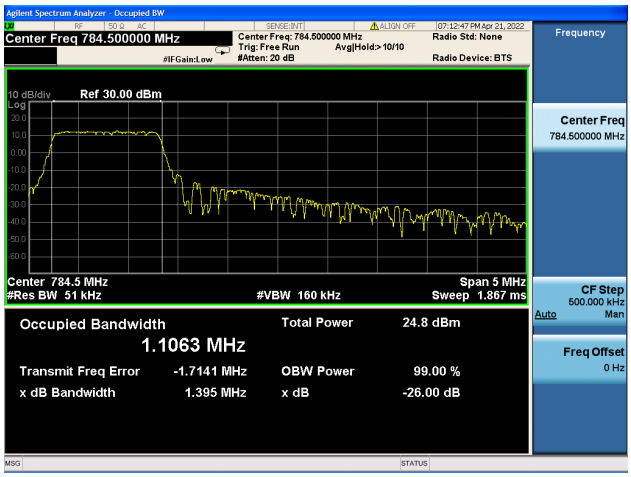
Band 13 / 5MHz / Low CH / 16QAM



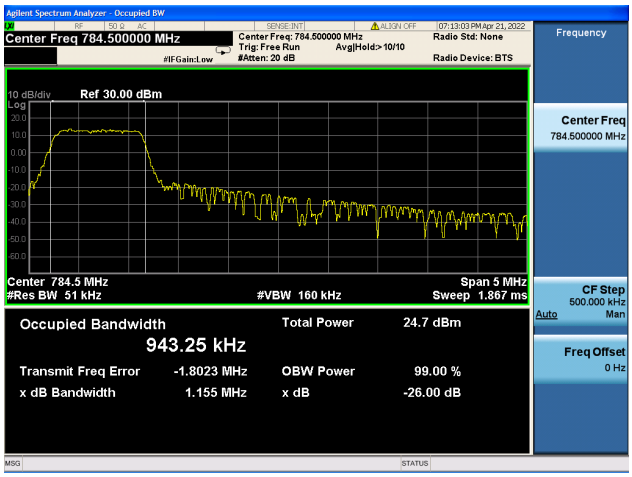
Band 13 / 5MHz / Mid CH / QPSK

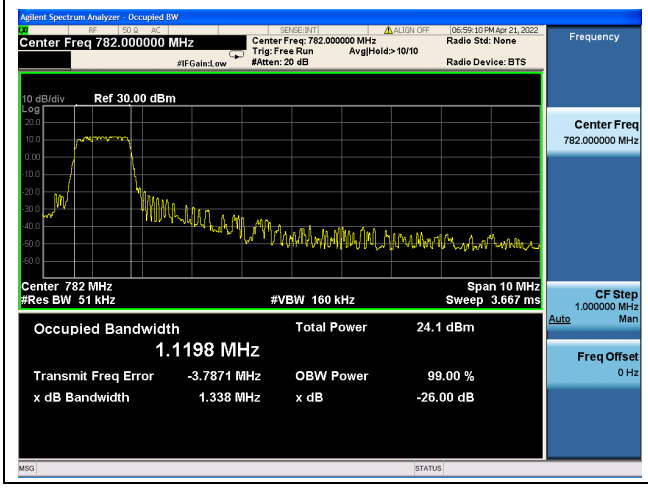
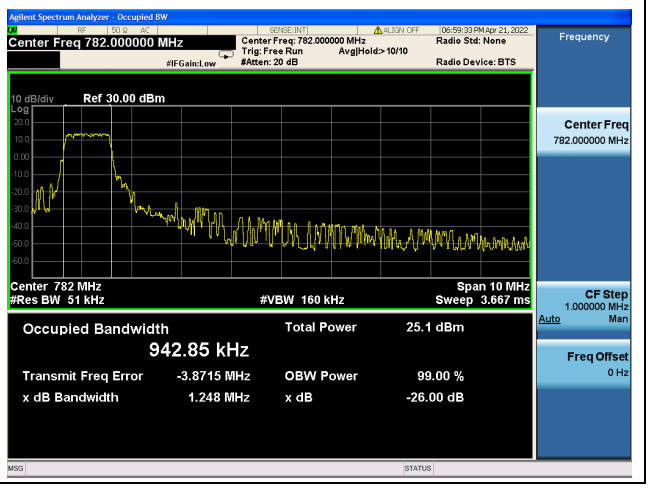
Band 13 / 5MHz / Mid CH / 16QAM

Band 13 / 5MHz / High CH / QPSK



Band 13 / 5MHz / High CH / 16QAM



Band 13 / 10MHz / Mid CH / QPSK	Band 13 / 10MHz / Mid CH / 16QAM
	

2.3. Frequency Stability

2.3.1. Requirement

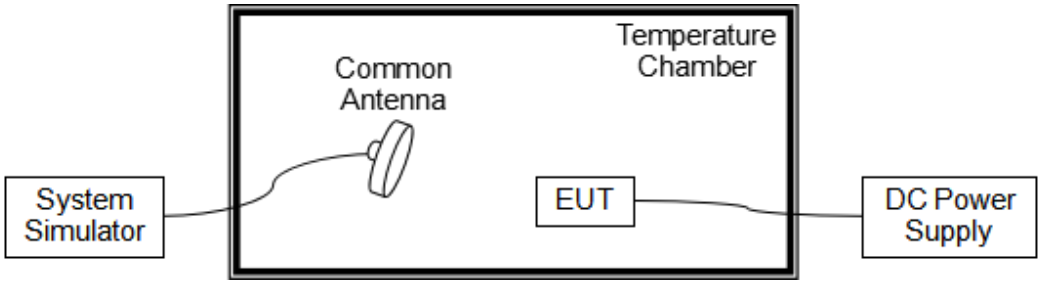
According to FCC section 2.1055, 24.235, 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(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.

Note: The operating temperature of EUT is from -10°C to 40°C, which are specified by the applicant.

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 separately12.00V, 16.00V and 9.00V, 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	12	+20(Ref)	19	0.010	PASS
100		-10	15	0.008	
100		0	6	0.003	
100		+10	20	**0.011**	
100		+20	18	0.010	
100		+30	12	0.006	
100		+40	15	0.008	
115	16	+20	15	0.008	
85	9	+20	13	0.007	

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	12	+20(Ref)	15	0.009	PASS
100		-10	13	0.008	
100		0	21	**0.012**	
100		+10	-17	-0.010	
100		+20	-1	-0.001	
100		+30	13	0.008	
100		+40	18	0.010	
115	16	+20	20	0.012	
85	9	+20	14	0.008	

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	12	+20(Ref)	19	0.027	PASS
100		-10	22	**0.031**	
100		0	22	**0.031**	
100		+10	-15	-0.021	
100		+20	19	0.027	
100		+30	18	0.025	
100		+40	-10	-0.014	
115	16	+20	20	0.028	
85	9	+20	19	0.027	

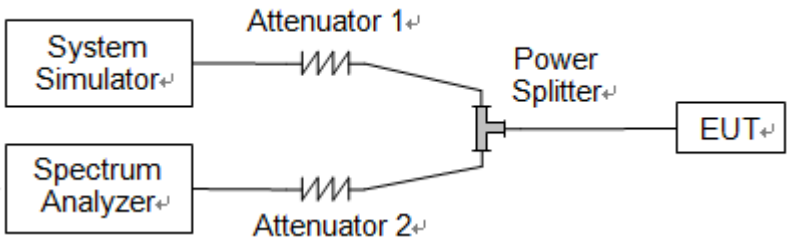
LTE Band 13, QPSK, Channel 23230, Frequency 782.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	12	+20(Ref)	4	0.005	PASS
100		-10	19	0.024	
100		0	-13	-0.017	
100		+10	0	0.000	
100		+20	17	0.022	
100		+30	14	0.018	
100		+40	16	0.020	
115	16	+20	20	**0.026**	
85	9	+20	19	0.024	

2.4. Peak to Average Radio

2.4.1. Requirement

According to FCC section 24.232(d) and 27.50(d), the peak to average ratio (PAR) of the transmission may not exceed 13dB.

2.4.2. Test Description



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.

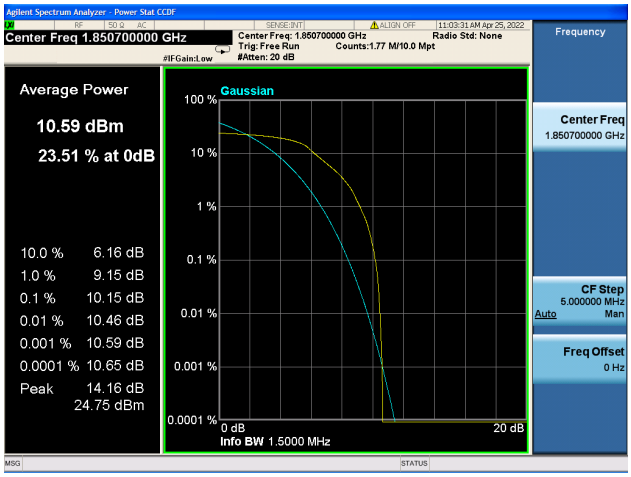
2.4.4. Test Result

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

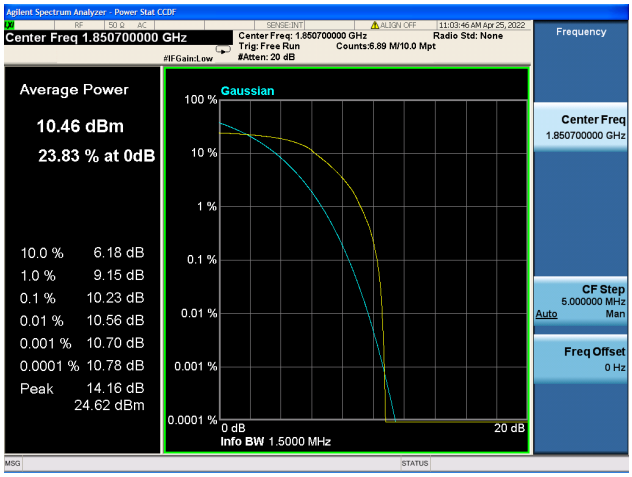
LTE Band 2					
BW(MHz)	**Channel Level**	**Modulation**	**PAR Radio(dB)**	**Limit(dB)**	**Verdict**
1.4	Low	QPSK	10.15	<=13	PASS
	Low	16QAM	10.23	<=13	PASS
	Mid	QPSK	10.40	<=13	PASS
	Mid	16QAM	10.25	<=13	PASS
	High	QPSK	9.35	<=13	PASS
	High	16QAM	10.27	<=13	PASS
3	Low	QPSK	9.59	<=13	PASS
	Low	16QAM	10.01	<=13	PASS
	Mid	QPSK	9.99	<=13	PASS
	Mid	16QAM	10.01	<=13	PASS
	High	QPSK	9.35	<=13	PASS
	High	16QAM	10.05	<=13	PASS
5	Low	QPSK	9.36	<=13	PASS
	Low	16QAM	9.73	<=13	PASS
	Mid	QPSK	9.23	<=13	PASS
	Mid	16QAM	9.79	<=13	PASS
	High	QPSK	9.40	<=13	PASS
	High	16QAM	10.21	<=13	PASS
10	Low	QPSK	9.29	<=13	PASS
	Low	16QAM	9.69	<=13	PASS
	Mid	QPSK	9.24	<=13	PASS
	Mid	16QAM	9.30	<=13	PASS
	High	QPSK	9.19	<=13	PASS
	High	16QAM	10.41	<=13	PASS
15	Low	QPSK	9.19	<=13	PASS
	Low	16QAM	9.27	<=13	PASS
	Mid	QPSK	9.05	<=13	PASS
	Mid	16QAM	9.10	<=13	PASS
	High	QPSK	9.50	<=13	PASS
	High	16QAM	10.10	<=13	PASS
20	Low	QPSK	8.94	<=13	PASS
	Low	16QAM	9.70	<=13	PASS
	Mid	QPSK	9.38	<=13	PASS
	Mid	16QAM	9.76	<=13	PASS
	High	QPSK	9.25	<=13	PASS
	High	16QAM	9.90	<=13	PASS

LTE Band 4					
BW(MHz)	**Channel Level**	**Modulation**	**PAR Radio(dB)**	**Limit(dB)**	**Verdict**
1.4	Low	QPSK	9.67	<=13	PASS
	Low	16QAM	9.93	<=13	PASS
	Mid	QPSK	9.45	<=13	PASS
	Mid	16QAM	10.51	<=13	PASS
	High	QPSK	9.20	<=13	PASS
	High	16QAM	10.08	<=13	PASS
3	Low	QPSK	9.59	<=13	PASS
	Low	16QAM	10.10	<=13	PASS
	Mid	QPSK	9.60	<=13	PASS
	Mid	16QAM	9.90	<=13	PASS
	High	QPSK	9.64	<=13	PASS
	High	16QAM	10.02	<=13	PASS
5	Low	QPSK	9.13	<=13	PASS
	Low	16QAM	9.67	<=13	PASS
	Mid	QPSK	9.00	<=13	PASS
	Mid	16QAM	9.49	<=13	PASS
	High	QPSK	8.53	<=13	PASS
	High	16QAM	9.31	<=13	PASS
10	Low	QPSK	9.14	<=13	PASS
	Low	16QAM	9.65	<=13	PASS
	Mid	QPSK	8.57	<=13	PASS
	Mid	16QAM	8.78	<=13	PASS
	High	QPSK	8.90	<=13	PASS
	High	16QAM	9.17	<=13	PASS
15	Low	QPSK	9.04	<=13	PASS
	Low	16QAM	9.63	<=13	PASS
	Mid	QPSK	8.76	<=13	PASS
	Mid	16QAM	8.92	<=13	PASS
	High	QPSK	8.89	<=13	PASS
	High	16QAM	9.49	<=13	PASS
20	Low	QPSK	9.37	<=13	PASS
	Low	16QAM	9.75	<=13	PASS
	Mid	QPSK	8.87	<=13	PASS
	Mid	16QAM	9.21	<=13	PASS
	High	QPSK	8.90	<=13	PASS
	High	16QAM	9.25	<=13	PASS

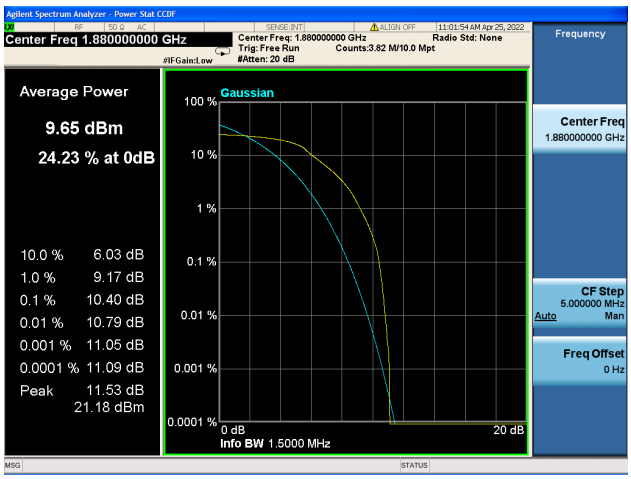
Band 2 / 1.4MHz / Low CH / QPSK



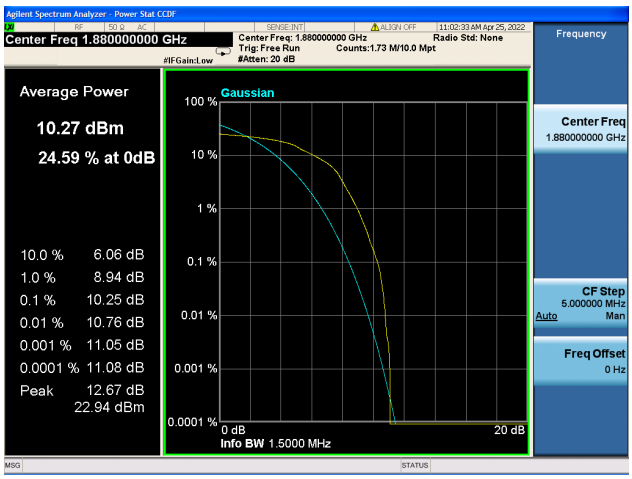
Band 2 / 1.4MHz / Low CH / 16QAM



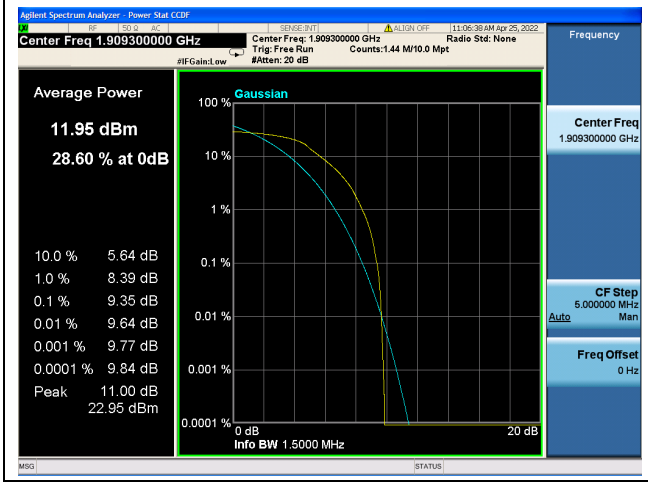
Band 2 / 1.4MHz / Mid CH / QPSK



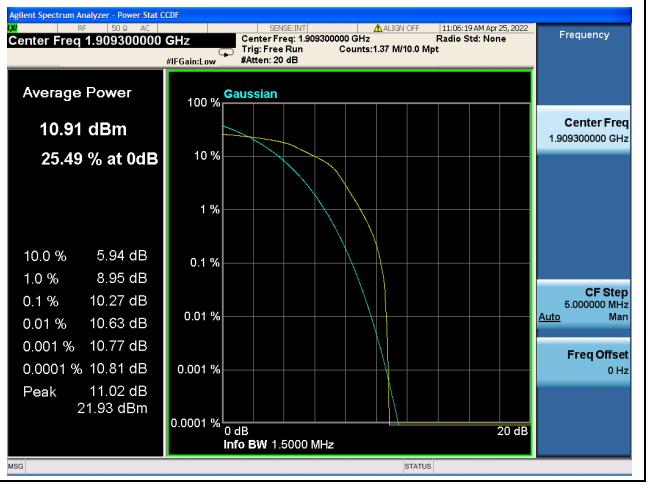
Band 2 / 1.4MHz / Mid CH / 16QAM



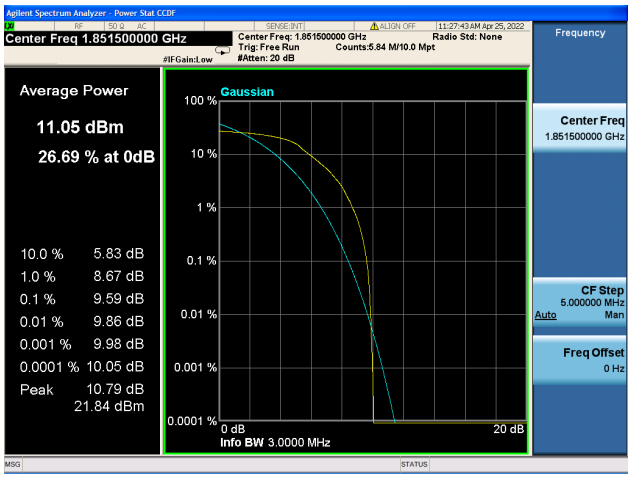
Band 2 / 1.4MHz / High CH / QPSK



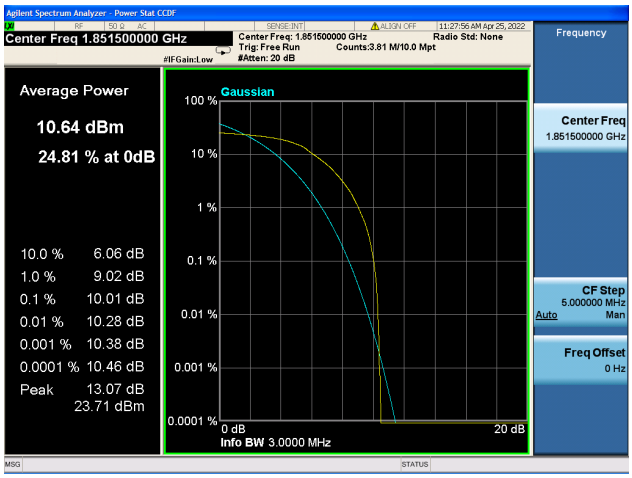
Band 2 / 1.4MHz / High CH / 16QAM



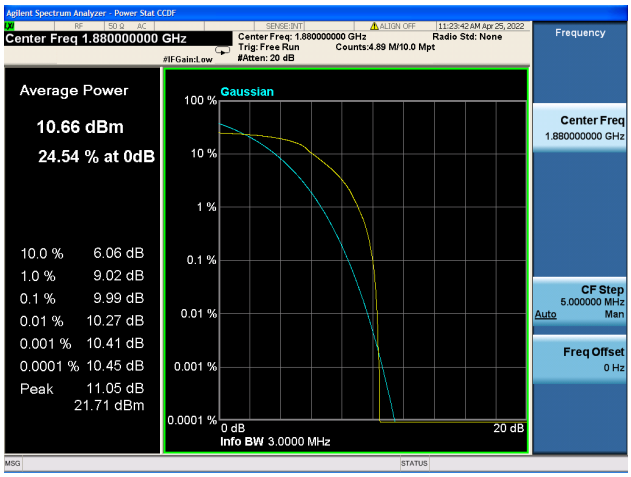
Band 2 / 3MHz / Low CH / QPSK



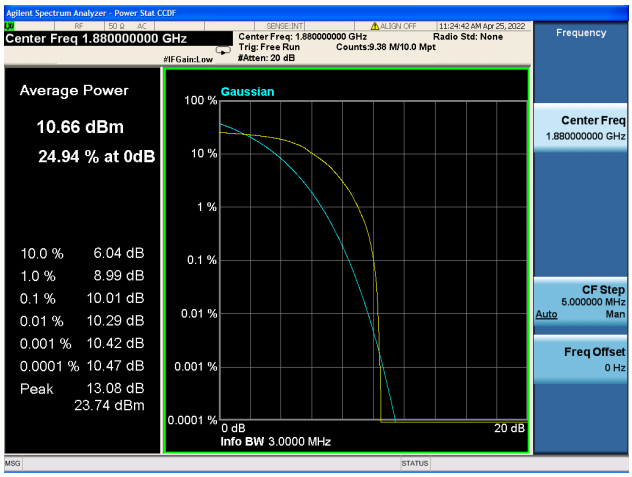
Band 2 / 3MHz / Low CH / 16QAM



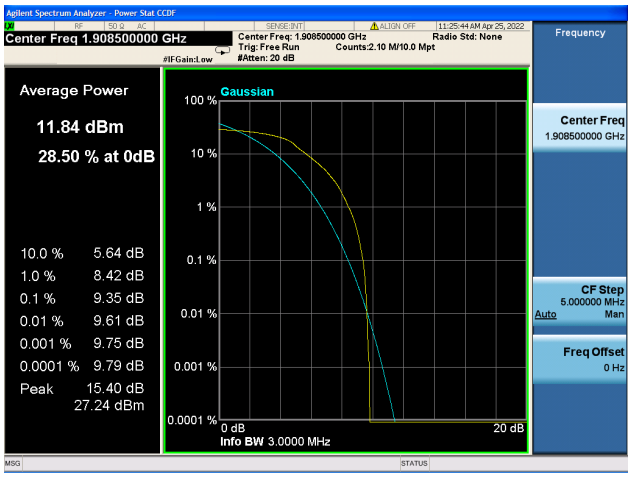
Band 2 / 3MHz / Mid CH / QPSK



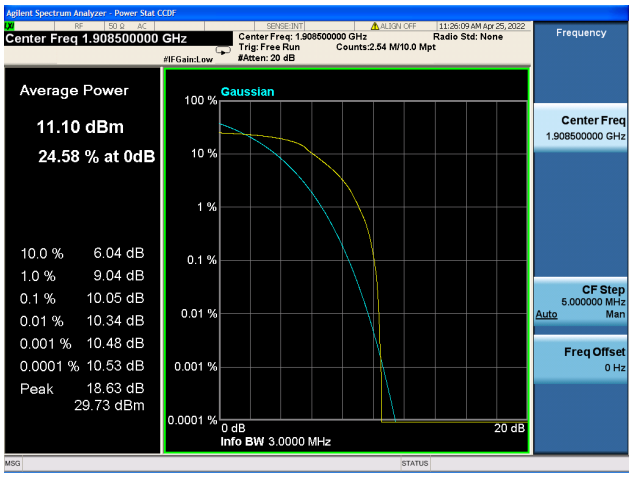
Band 2 / 3MHz / Mid CH / 16QAM



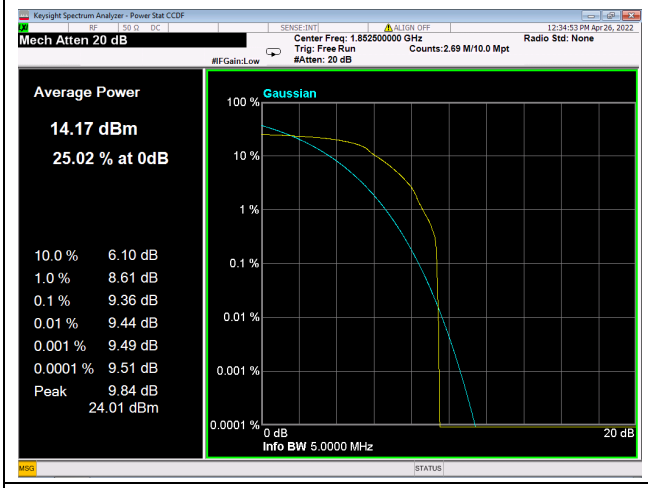
Band 2 / 3MHz / High CH / QPSK



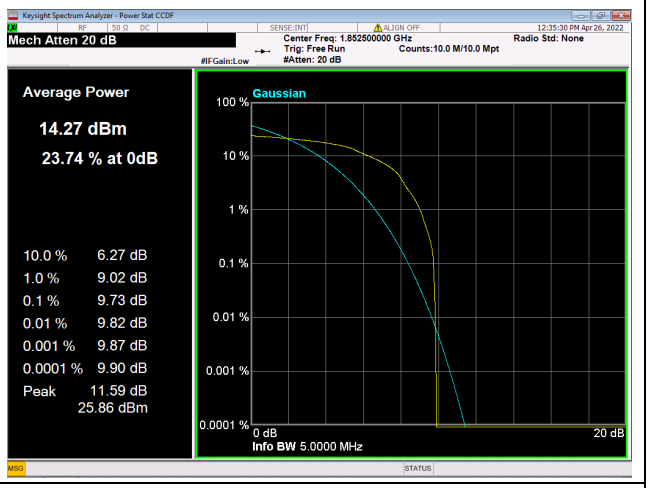
Band 2 / 3MHz / High CH / 16QAM



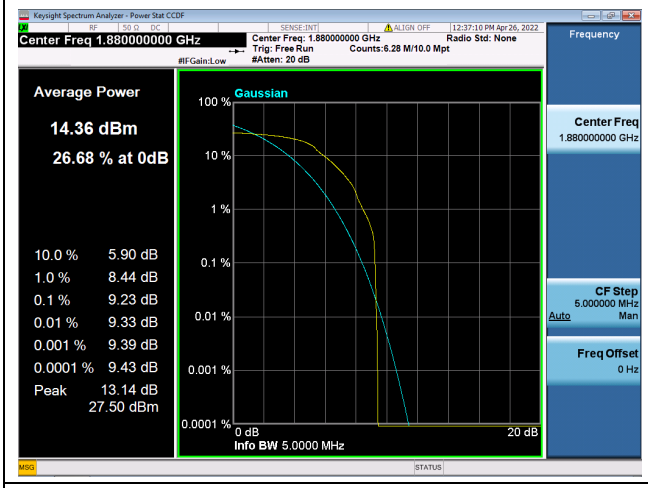
Band 2 / 5MHz / Low CH / QPSK



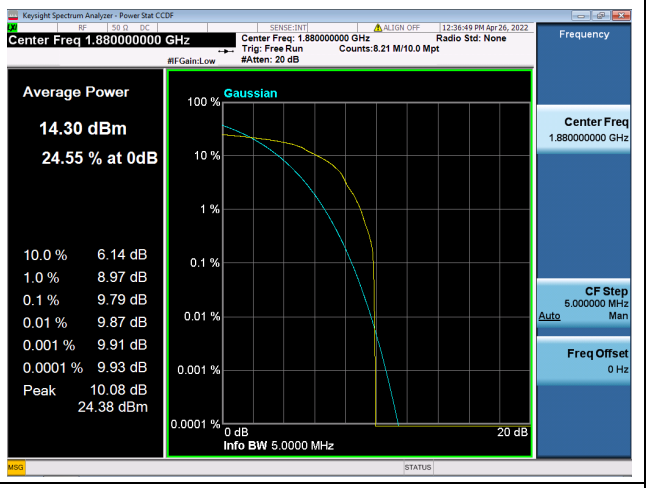
Band 2 / 5MHz / Low CH / 16QAM



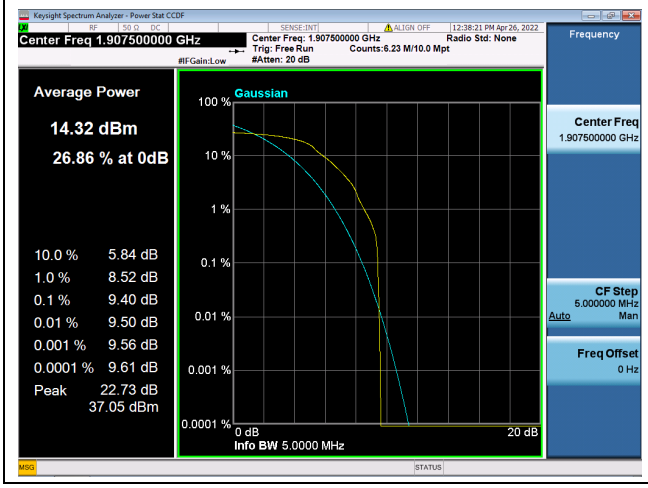
Band 2 / 5MHz / Mid CH / QPSK



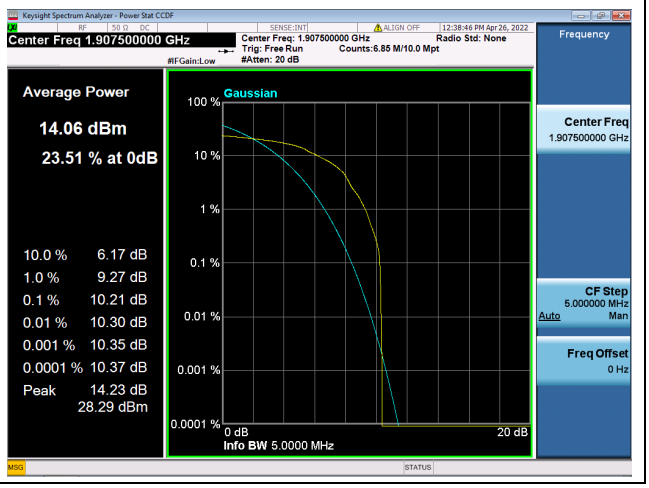
Band 2 / 5MHz / Mid CH / 16QAM



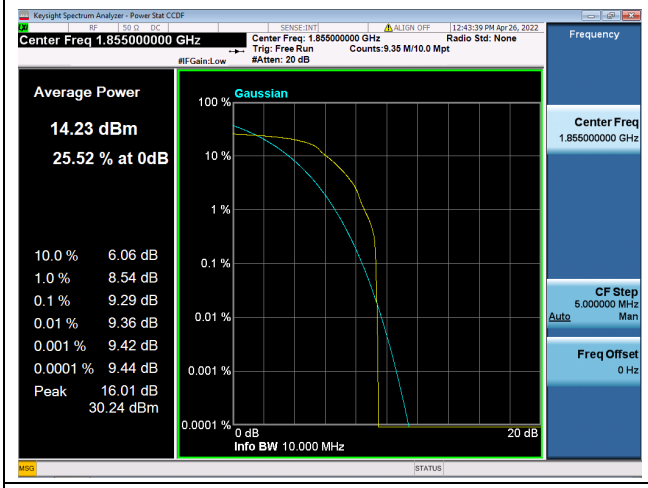
Band 2 / 5MHz / High CH / QPSK



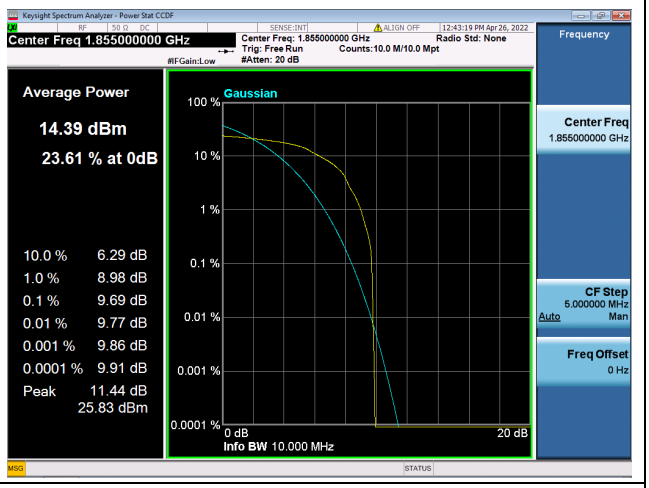
Band 2 / 5MHz / High CH / 16QAM



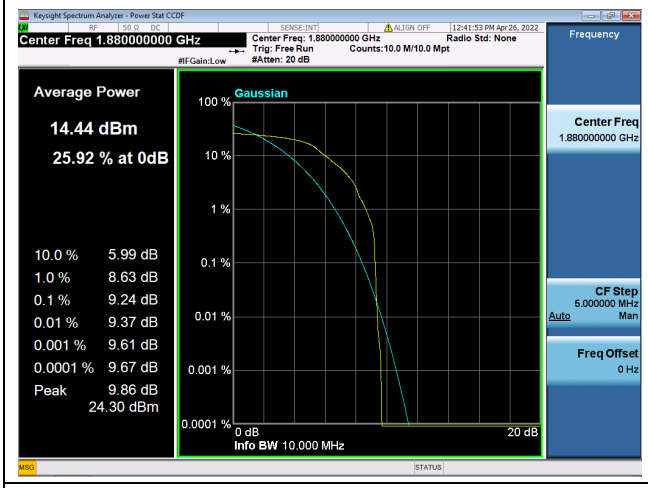
Band 2 / 10MHz / Low CH / QPSK



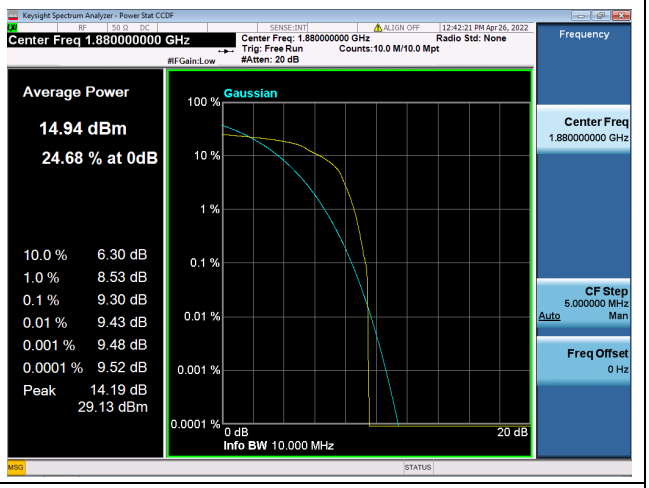
Band 2 / 10MHz / Low CH / 16QAM



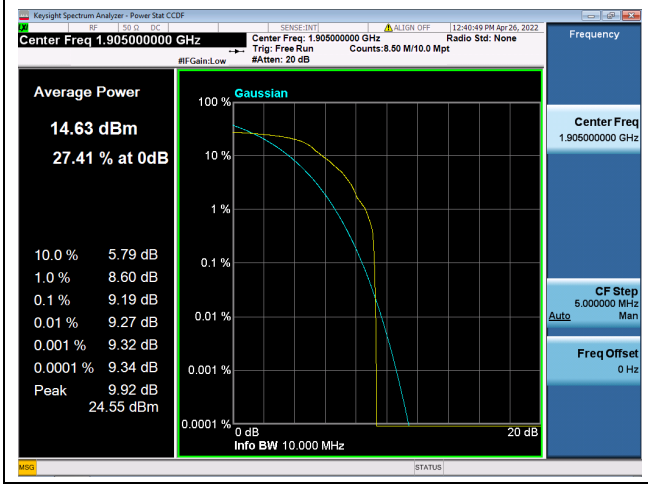
Band 2 / 10MHz / Mid CH / QPSK



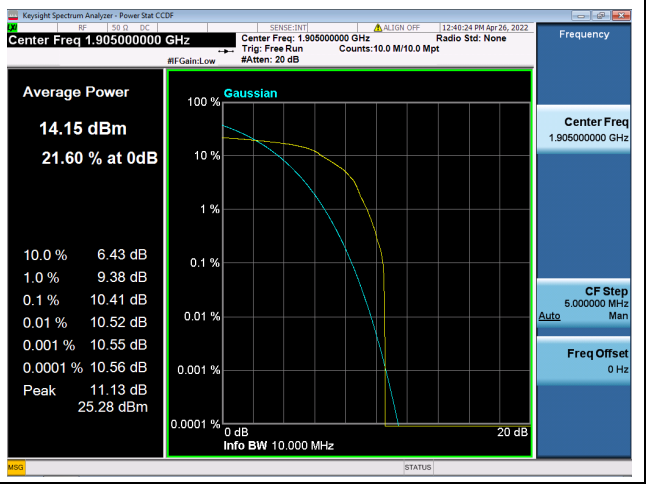
Band 2 / 10MHz / Mid CH / 16QAM



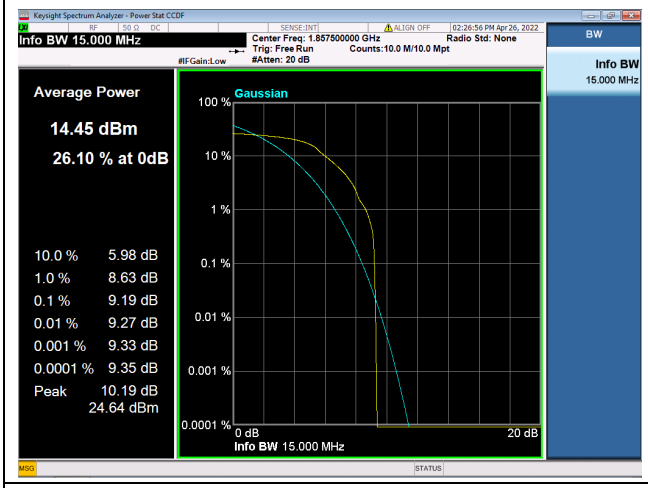
Band 2 / 10MHz / High CH / QPSK



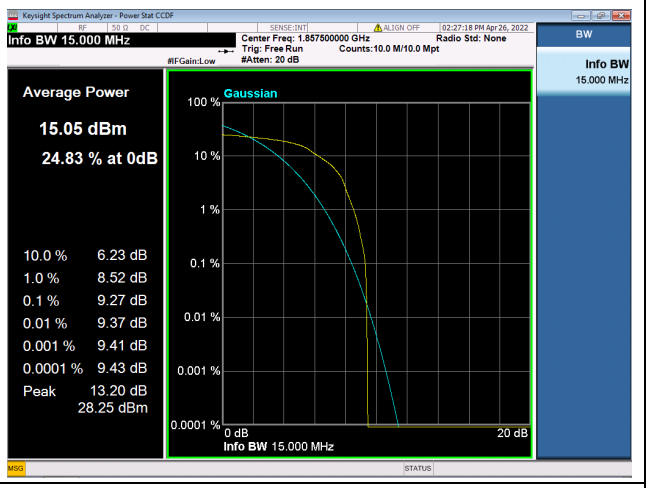
Band 2 / 10MHz / High CH / 16QAM



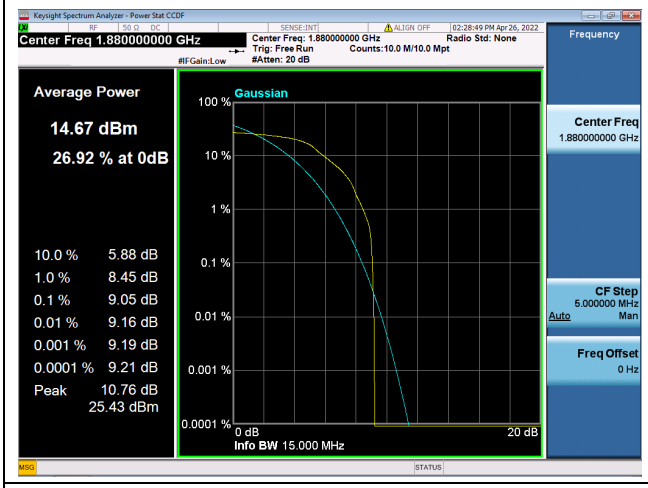
Band 2 / 15MHz / Low CH / QPSK



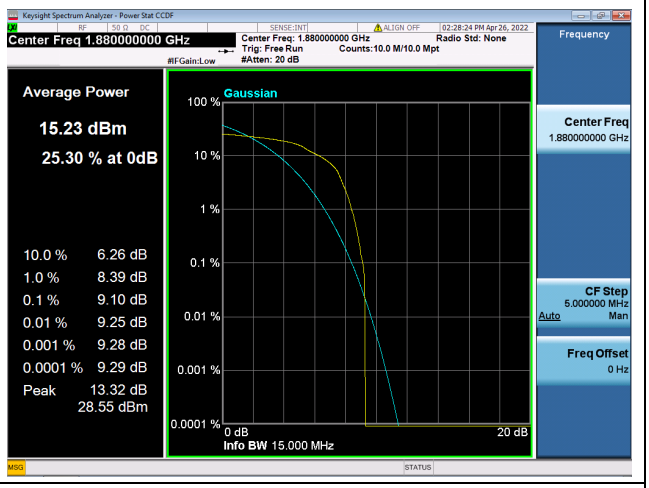
Band 2 / 15MHz / Low CH / 16QAM



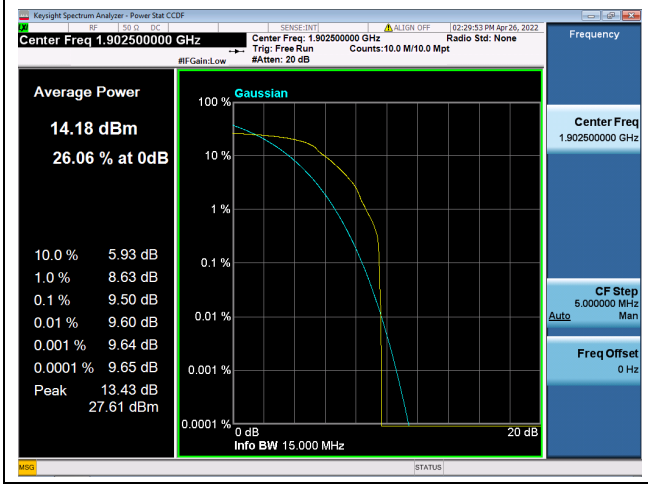
Band 2 / 15MHz / Mid CH / QPSK



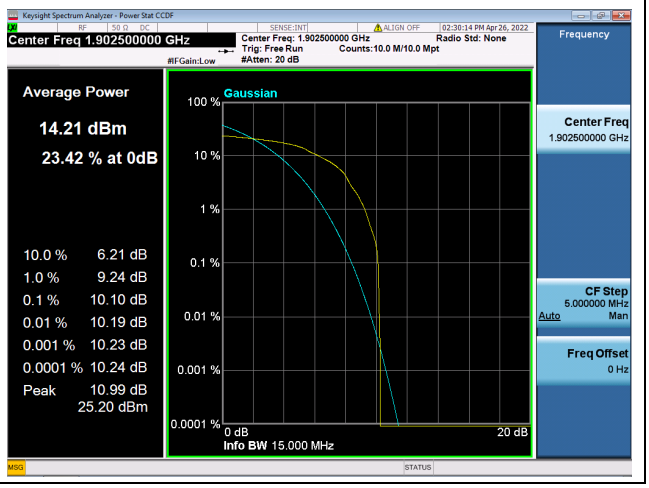
Band 2 / 15MHz / Mid CH / 16QAM



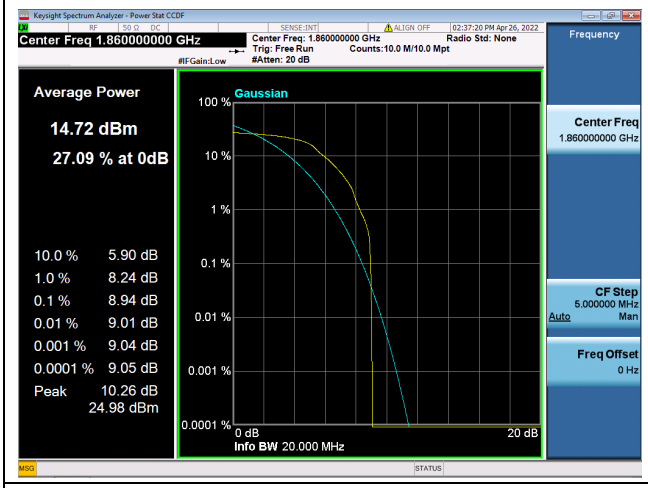
Band 2 / 15MHz / High CH / QPSK



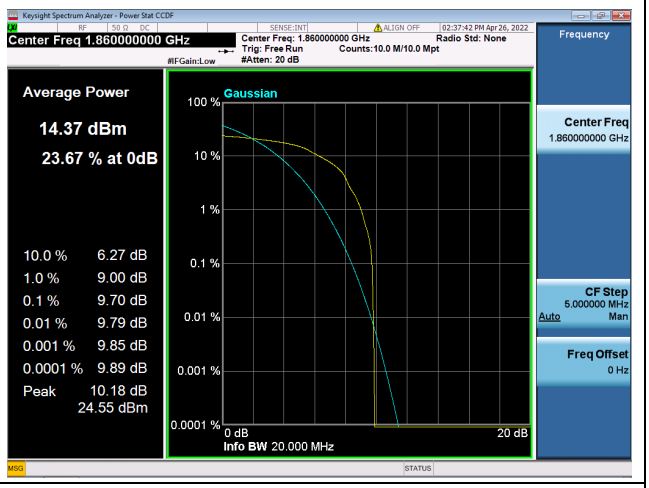
Band 2 / 15MHz / High CH / 16QAM



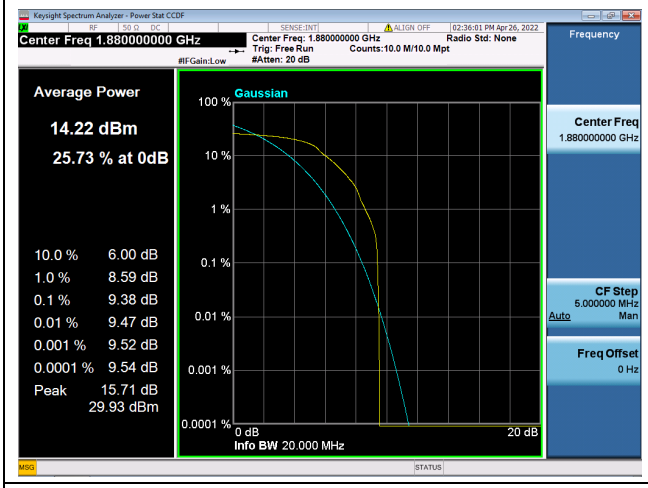
Band 2 / 20MHz / Low CH / QPSK



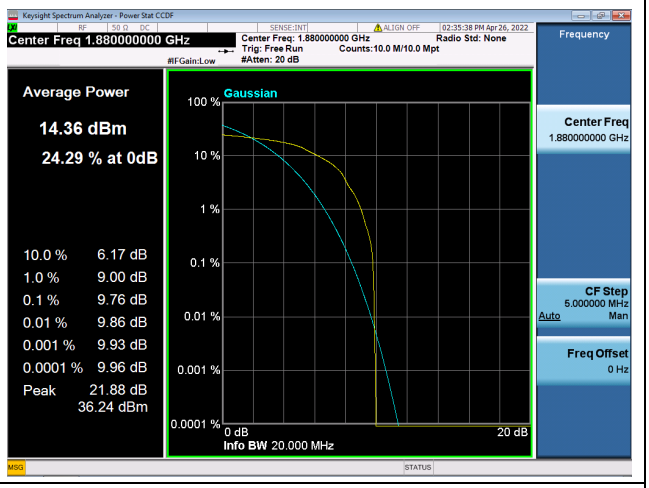
Band 2 / 20MHz / Low CH / 16QAM



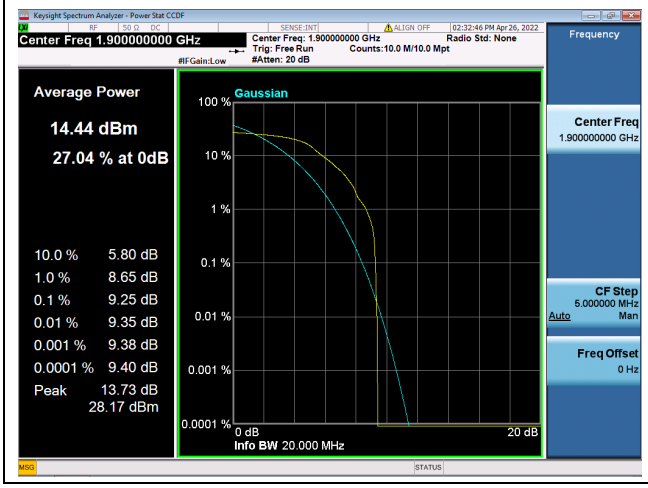
Band 2 / 20MHz / Mid CH / QPSK



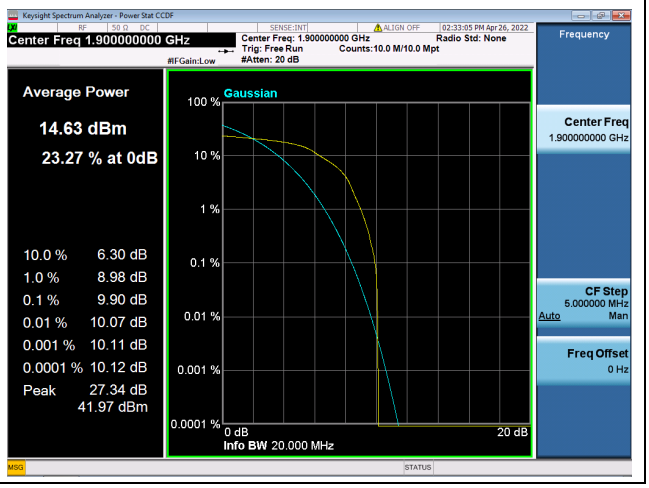
Band 2 / 20MHz / Mid CH / 16QAM



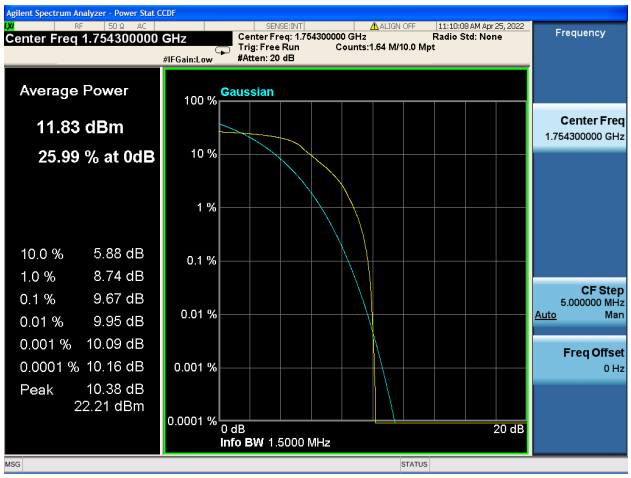
Band 2 / 20MHz / High CH / QPSK



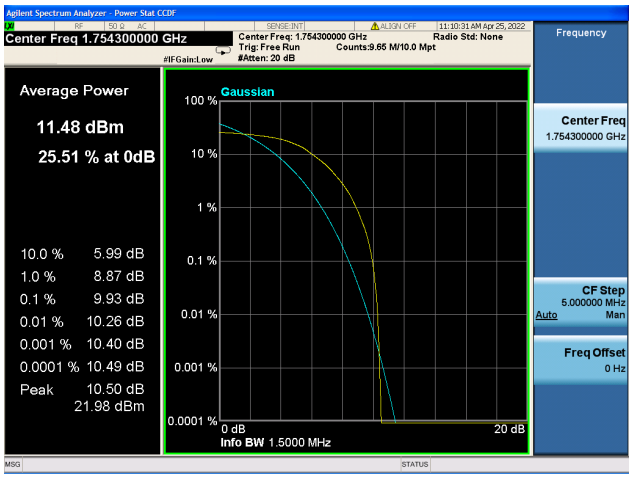
Band 2 / 20MHz / High CH / 16QAM



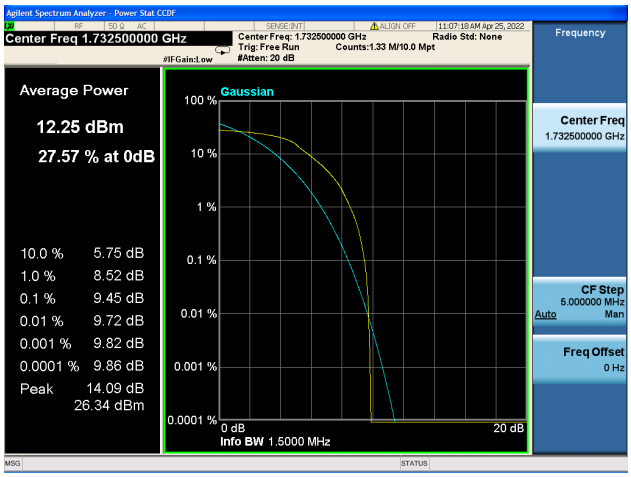
Band 4 / 1.4MHz / Low CH / QPSK



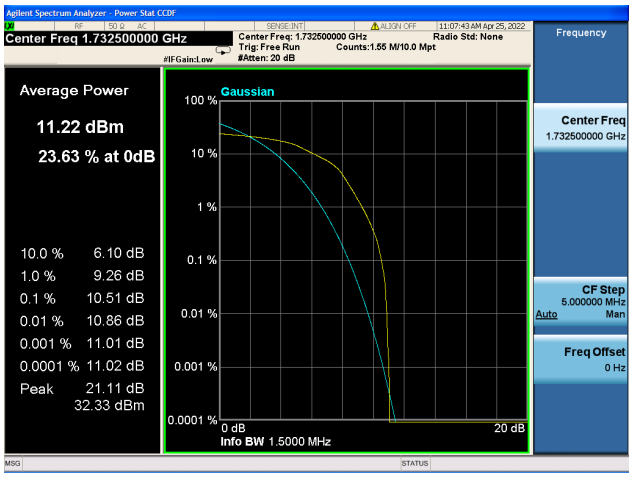
Band 4 / 1.4MHz / Low CH / 16QAM



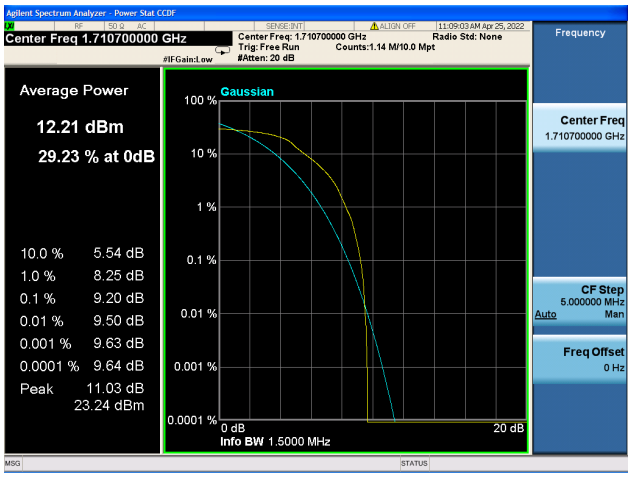
Band 4 / 1.4MHz / Mid CH / QPSK



Band 4 / 1.4MHz / Mid CH / 16QAM



Band 4 / 1.4MHz / High CH / QPSK



Band 4 / 1.4MHz / High CH / 16QAM