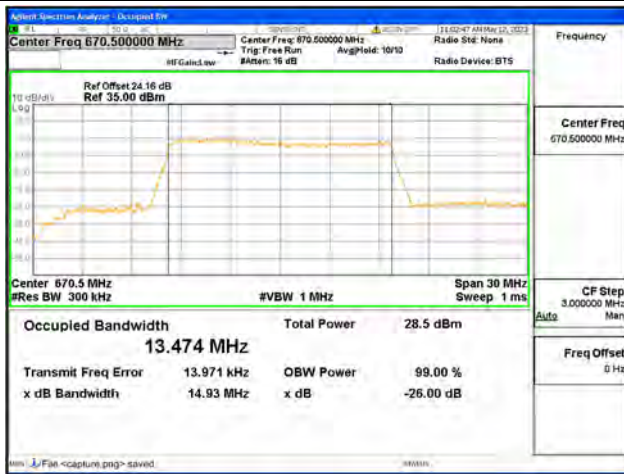




Band71 / 15MHz / QPSK/ Low CH



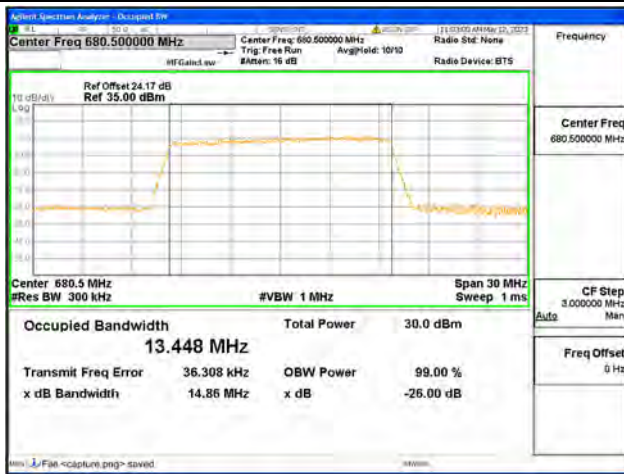
Band71 / 15MHz / 16QAM/ Low CH



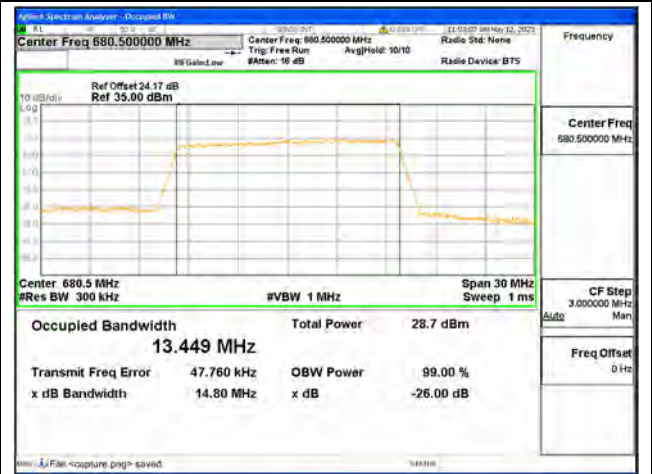
Band71 / 15MHz / 64QAM/ Low CH



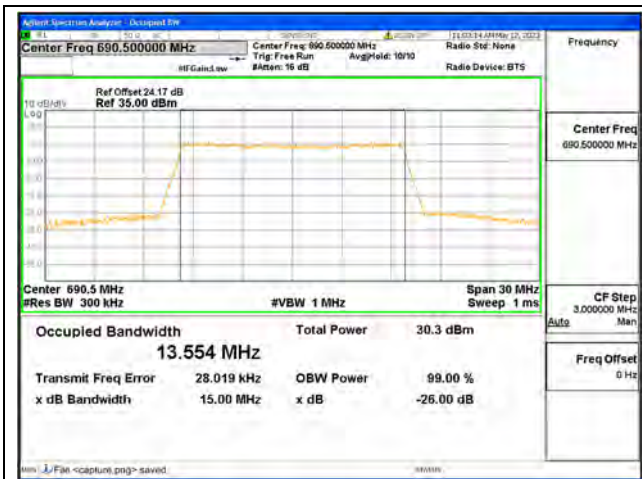
Band71 / 15MHz / QPSK/ Mid CH



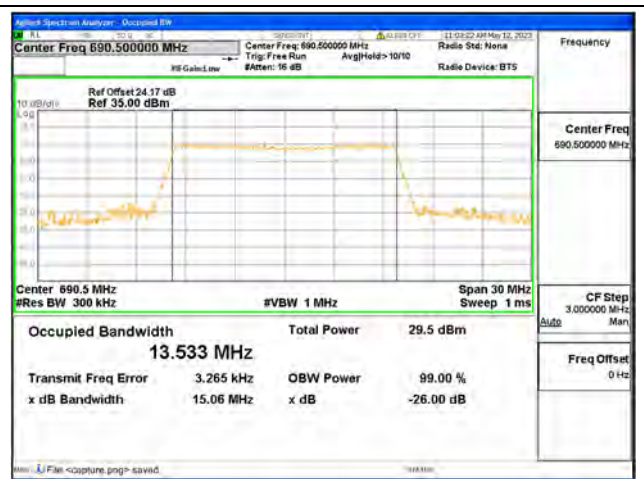
Band71 / 15MHz / 16QAM/ Mid CH



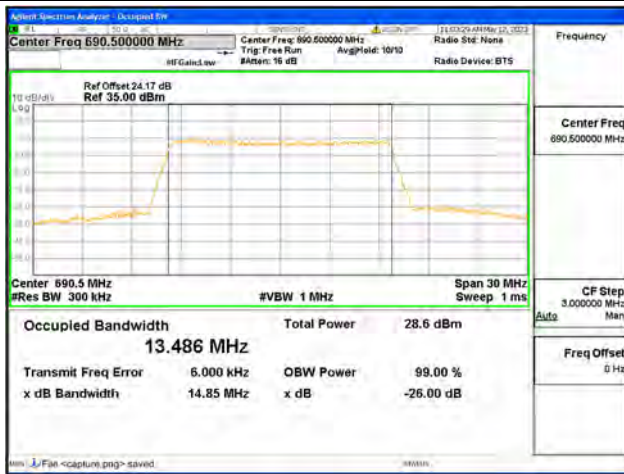
Band71 / 15MHz / 64QAM/ Mid CH



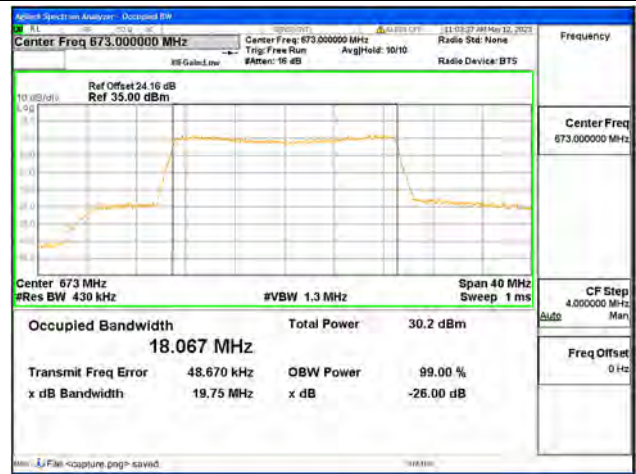
Band71 / 15MHz / QPSK / High CH



Band71 / 15MHz / 16QAM / High CH



Band71 / 15MHz / 64QAM / High CH



Band71 / 20MHz / QPSK / Low CH



Band71 / 20MHz / 16QAM / Low CH

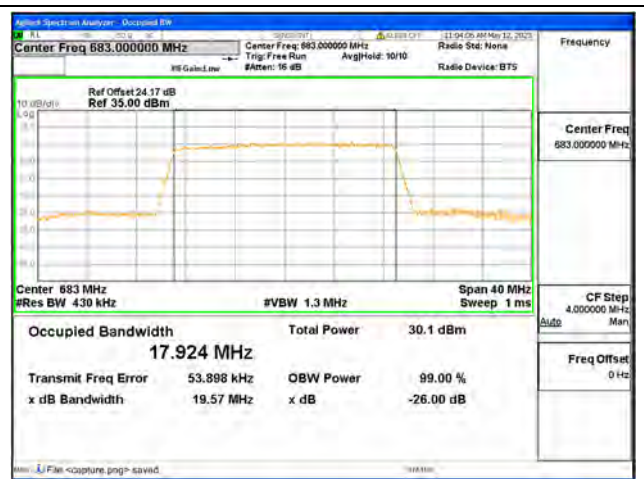


Band71 / 20MHz / 64QAM / Low CH

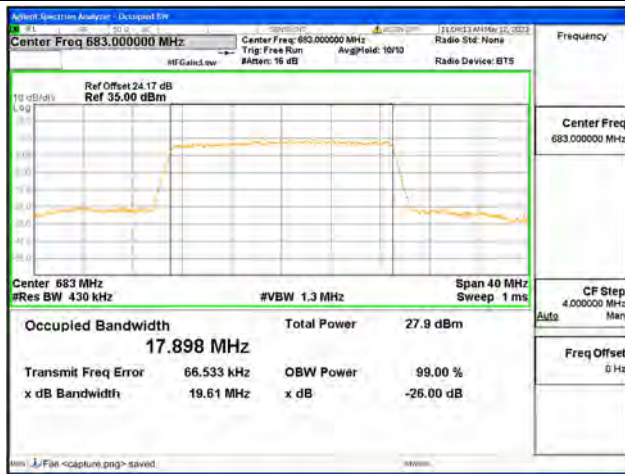




Band71 / 20MHz / QPSK/ Mid CH



Band71 / 20MHz / 16QAM/ Mid CH



Band71 / 20MHz / 64QAM/ Mid CH



Band71 / 20MHz / QPSK/ High CH



Band71 / 20MHz / 16QAM/ High CH



Band71 / 20MHz / 64QAM/ High CH

## 2.3. Frequency Stability

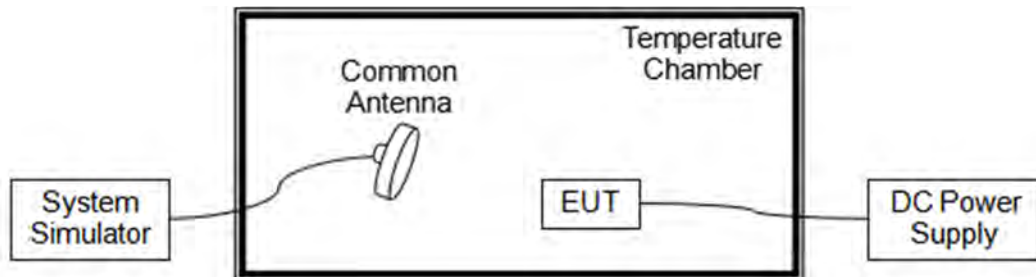
### 2.3.1. Requirement

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  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (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  $-10^{\circ}\text{C}$  to  $55^{\circ}\text{C}$ , 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 separately 3.85V, 4.40V and 3.55V, 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
Normal	3.85	+20(Ref)	15	0.008	PASS
Normal		-10	15	0.008	
Normal		0	-4	-0.002	
Normal		+10	14	0.007	
Normal		+20	22	<b>0.012</b>	
Normal		+30	17	0.009	
Normal		+40	1	0.001	
Normal		+50	14	0.007	
Normal		+55	-21	-0.011	
High	4.40	+20	-18	-0.010	
BATT.ENDPOINT	3.55	+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
Normal	3.85	+20(Ref)	19	0.011	PASS
Normal		-10	19	0.011	
Normal		0	13	0.008	
Normal		+10	16	0.009	
Normal		+20	-23	-0.013	
Normal		+30	-18	-0.010	
Normal		+40	21	<b>0.012</b>	
Normal		+50	20	0.012	
Normal		+55	4	0.002	
High	4.40	+20	13	0.008	
BATT.ENDPOINT	3.55	+20	19	0.011	



LTE Band 5, QPSK, Channel 20525, Frequency 836.5MHz					
Limit=±2.5ppm					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	14	0.017	PASS
Normal		-10	7	0.008	
Normal		0	20	<b>0.024</b>	
Normal		+10	16	0.019	
Normal		+20	-10	-0.012	
Normal		+30	18	0.022	
Normal		+40	17	0.020	
Normal		+50	-14	-0.017	
Normal		+55	13	0.016	
High	4.40	+20	0	0.000	
BATT.ENDPOINT	3.55	+20	17	0.020	

LTE Band 7, QPSK, Channel 21100, Frequency 2535MHz					
Limit= Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	17	0.007	PASS
Normal		-10	17	0.007	
Normal		0	-1	0.000	
Normal		+10	19	0.007	
Normal		+20	-1	0.000	
Normal		+30	13	0.005	
Normal		+40	15	0.006	
Normal		+50	20	<b>0.008</b>	
Normal		+55	-19	-0.007	
High	4.40	+20	-7	-0.003	
BATT.ENDPOINT	3.55	+20	17	0.007	



LTE Band 12, QPSK, Channel 23095, Frequency 707.5MHz Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	-5	-0.007	PASS
Normal		-10	17	0.024	
Normal		0	15	0.021	
Normal		+10	21	<b>0.030</b>	
Normal		+20	-14	-0.020	
Normal		+30	13	0.018	
Normal		+40	6	0.008	
Normal		+50	16	0.023	
Normal		+55	17	0.024	
High	4.40	+20	17	0.024	
BATT.ENDPOINT	3.55	+20	16	0.023	

LTE Band 17, QPSK, Channel 23790, Frequency 710MHz Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	16	0.023	PASS
Normal		-10	-14	-0.020	
Normal		0	-16	-0.023	
Normal		+10	23	<b>0.032</b>	
Normal		+20	-22	-0.031	
Normal		+30	-12	-0.017	
Normal		+40	16	0.023	
Normal		+50	-19	-0.027	
Normal		+55	18	0.025	
High	4.40	+20	15	0.021	
BATT.ENDPOINT	3.55	+20	-4	-0.006	



LTE Band 66, QPSK, Channel 132322, Frequency 1745MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	-21	-0.012	PASS
Normal		-10	-16	-0.009	
Normal		0	21	<b>0.012</b>	
Normal		+10	-11	-0.006	
Normal		+20	17	0.010	
Normal		+30	16	0.009	
Normal		+40	20	0.011	
Normal		+50	14	0.008	
Normal		+55	14	0.008	
High	4.40	+20	18	0.010	
BATT.ENDPOINT	3.55	+20	-17	-0.010	

LTE Band 71, QPSK, Channel 133322, Frequency 683.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	-8	-0.012	PASS
Normal		-10	14	0.020	
Normal		0	14	0.020	
Normal		+10	9	0.013	
Normal		+20	16	0.023	
Normal		+30	20	0.029	
Normal		+40	-13	-0.019	
Normal		+50	14	0.020	
Normal		+55	22	<b>0.032</b>	
High	4.40	+20	-6	-0.009	
BATT.ENDPOINT	3.55	+20	13	0.019	

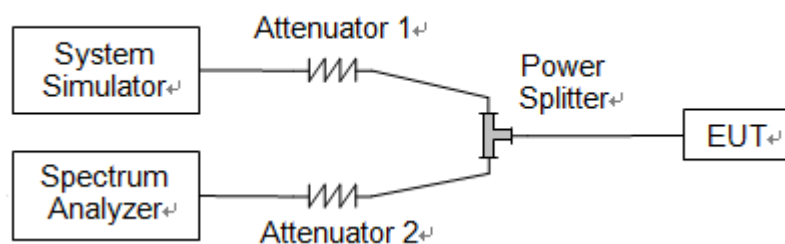


## 2.4. Peak to Average Ratio

### 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	4.83	<=13	PASS
	Low	16QAM	5.67	<=13	PASS
	Low	64QAM	6.49	<=13	PASS
	Mid	QPSK	5.18	<=13	PASS
	Mid	16QAM	6.02	<=13	PASS
	Mid	64QAM	6.48	<=13	PASS
	High	QPSK	5.03	<=13	PASS
	High	16QAM	5.90	<=13	PASS
	High	64QAM	6.49	<=13	PASS
3	Low	QPSK	4.94	<=13	PASS
	Low	16QAM	5.71	<=13	PASS
	Low	64QAM	6.43	<=13	PASS
	Mid	QPSK	5.21	<=13	PASS
	Mid	16QAM	6.01	<=13	PASS
	Mid	64QAM	6.41	<=13	PASS
	High	QPSK	5.17	<=13	PASS
	High	16QAM	5.97	<=13	PASS
	High	64QAM	6.46	<=13	PASS
5	Low	QPSK	5.22	<=13	PASS
	Low	16QAM	5.81	<=13	PASS
	Low	64QAM	6.49	<=13	PASS
	Mid	QPSK	5.35	<=13	PASS
	Mid	16QAM	5.93	<=13	PASS
	Mid	64QAM	6.44	<=13	PASS
	High	QPSK	5.37	<=13	PASS
	High	16QAM	5.94	<=13	PASS
	High	64QAM	6.48	<=13	PASS
10	Low	QPSK	5.45	<=13	PASS
	Low	16QAM	6.08	<=13	PASS
	Low	64QAM	6.52	<=13	PASS
	Mid	QPSK	5.48	<=13	PASS
	Mid	16QAM	6.06	<=13	PASS
	Mid	64QAM	6.44	<=13	PASS
	High	QPSK	5.49	<=13	PASS
	High	16QAM	6.15	<=13	PASS
	High	64QAM	6.50	<=13	PASS



15	Low	QPSK	5.39	<=13	PASS
	Low	16QAM	6.03	<=13	PASS
	Low	64QAM	6.61	<=13	PASS
	Mid	QPSK	5.30	<=13	PASS
	Mid	16QAM	5.91	<=13	PASS
	Mid	64QAM	6.45	<=13	PASS
	High	QPSK	5.32	<=13	PASS
	High	16QAM	5.97	<=13	PASS
	High	64QAM	6.53	<=13	PASS
20	Low	QPSK	5.54	<=13	PASS
	Low	16QAM	6.21	<=13	PASS
	Low	64QAM	6.60	<=13	PASS
	Mid	QPSK	5.41	<=13	PASS
	Mid	16QAM	6.10	<=13	PASS
	Mid	64QAM	6.53	<=13	PASS
	High	QPSK	5.37	<=13	PASS
	High	16QAM	6.07	<=13	PASS
	High	64QAM	6.49	<=13	PASS



LTE Band 4					
BW(MHz)	Channel Level	Modulation	PAR Radio(dB)	Limit(dB)	Verdict
1.4	Low	QPSK	5.86	<=13	PASS
	Low	16QAM	6.63	<=13	PASS
	Low	64QAM	6.90	<=13	PASS
	Mid	QPSK	5.69	<=13	PASS
	Mid	16QAM	6.49	<=13	PASS
	Mid	64QAM	6.78	<=13	PASS
	High	QPSK	5.68	<=13	PASS
	High	16QAM	6.49	<=13	PASS
	High	64QAM	6.72	<=13	PASS
3	Low	QPSK	5.79	<=13	PASS
	Low	16QAM	6.57	<=13	PASS
	Low	64QAM	6.73	<=13	PASS
	Mid	QPSK	5.66	<=13	PASS
	Mid	16QAM	6.44	<=13	PASS
	Mid	64QAM	6.68	<=13	PASS
	High	QPSK	5.63	<=13	PASS
	High	16QAM	6.40	<=13	PASS
	High	64QAM	6.67	<=13	PASS
5	Low	QPSK	5.71	<=13	PASS
	Low	16QAM	6.39	<=13	PASS
	Low	64QAM	6.71	<=13	PASS
	Mid	QPSK	5.65	<=13	PASS
	Mid	16QAM	6.29	<=13	PASS
	Mid	64QAM	6.66	<=13	PASS
	High	QPSK	5.64	<=13	PASS
	High	16QAM	6.32	<=13	PASS
	High	64QAM	6.67	<=13	PASS
10	Low	QPSK	5.83	<=13	PASS
	Low	16QAM	6.41	<=13	PASS
	Low	64QAM	6.68	<=13	PASS
	Mid	QPSK	5.71	<=13	PASS
	Mid	16QAM	6.36	<=13	PASS
	Mid	64QAM	6.67	<=13	PASS
	High	QPSK	5.79	<=13	PASS
	High	16QAM	6.38	<=13	PASS
	High	64QAM	6.66	<=13	PASS





15	Low	QPSK	5.70	<=13	PASS
	Low	16QAM	6.32	<=13	PASS
	Low	64QAM	6.67	<=13	PASS
	Mid	QPSK	5.65	<=13	PASS
	Mid	16QAM	6.31	<=13	PASS
	Mid	64QAM	6.68	<=13	PASS
	High	QPSK	5.73	<=13	PASS
	High	16QAM	6.33	<=13	PASS
	High	64QAM	6.78	<=13	PASS
20	Low	QPSK	5.69	<=13	PASS
	Low	16QAM	6.41	<=13	PASS
	Low	64QAM	6.70	<=13	PASS
	Mid	QPSK	5.68	<=13	PASS
	Mid	16QAM	6.38	<=13	PASS
	Mid	64QAM	6.69	<=13	PASS
	High	QPSK	5.78	<=13	PASS
	High	16QAM	6.41	<=13	PASS
	High	64QAM	6.72	<=13	PASS



LTE Band 66					
BW(MHz)	Channel Level	Modulation	PAR Radio(dB)	Limit(dB)	Verdict
1.4	Low	QPSK	5.85	<=13	PASS
	Low	16QAM	6.63	<=13	PASS
	Low	64QAM	6.85	<=13	PASS
	Mid	QPSK	5.82	<=13	PASS
	Mid	16QAM	6.57	<=13	PASS
	Mid	64QAM	6.83	<=13	PASS
	High	QPSK	5.55	<=13	PASS
	High	16QAM	6.31	<=13	PASS
	High	64QAM	6.70	<=13	PASS
3	Low	QPSK	5.81	<=13	PASS
	Low	16QAM	6.57	<=13	PASS
	Low	64QAM	6.77	<=13	PASS
	Mid	QPSK	5.70	<=13	PASS
	Mid	16QAM	6.50	<=13	PASS
	Mid	64QAM	6.77	<=13	PASS
	High	QPSK	5.48	<=13	PASS
	High	16QAM	6.21	<=13	PASS
	High	64QAM	6.63	<=13	PASS
5	Low	QPSK	5.74	<=13	PASS
	Low	16QAM	6.41	<=13	PASS
	Low	64QAM	6.70	<=13	PASS
	Mid	QPSK	5.70	<=13	PASS
	Mid	16QAM	6.36	<=13	PASS
	Mid	64QAM	6.66	<=13	PASS
	High	QPSK	5.47	<=13	PASS
	High	16QAM	6.15	<=13	PASS
	High	64QAM	6.64	<=13	PASS
10	Low	QPSK	5.78	<=13	PASS
	Low	16QAM	6.41	<=13	PASS
	Low	64QAM	6.72	<=13	PASS
	Mid	QPSK	5.80	<=13	PASS
	Mid	16QAM	6.39	<=13	PASS
	Mid	64QAM	6.67	<=13	PASS
	High	QPSK	5.53	<=13	PASS
	High	16QAM	6.14	<=13	PASS
	High	64QAM	6.58	<=13	PASS



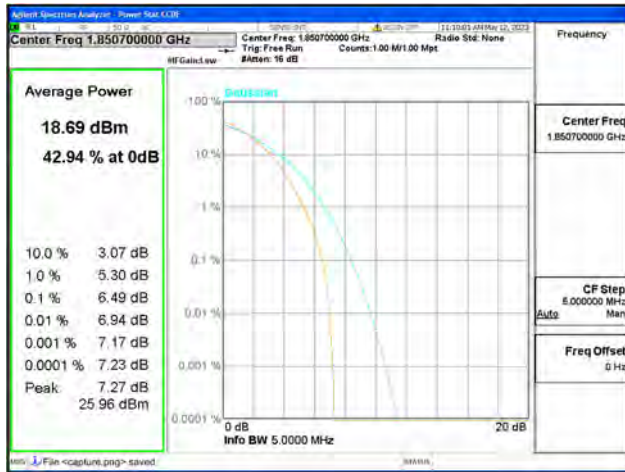
15	Low	QPSK	5.70	<=13	PASS
	Low	16QAM	6.32	<=13	PASS
	Low	64QAM	6.79	<=13	PASS
	Mid	QPSK	5.69	<=13	PASS
	Mid	16QAM	6.35	<=13	PASS
	Mid	64QAM	6.75	<=13	PASS
	High	QPSK	5.30	<=13	PASS
	High	16QAM	5.92	<=13	PASS
	High	64QAM	6.59	<=13	PASS
20	Low	QPSK	5.71	<=13	PASS
	Low	16QAM	6.38	<=13	PASS
	Low	64QAM	6.73	<=13	PASS
	Mid	QPSK	5.75	<=13	PASS
	Mid	16QAM	6.42	<=13	PASS
	Mid	64QAM	6.74	<=13	PASS
	High	QPSK	5.39	<=13	PASS
	High	16QAM	6.15	<=13	PASS
	High	64QAM	6.57	<=13	PASS



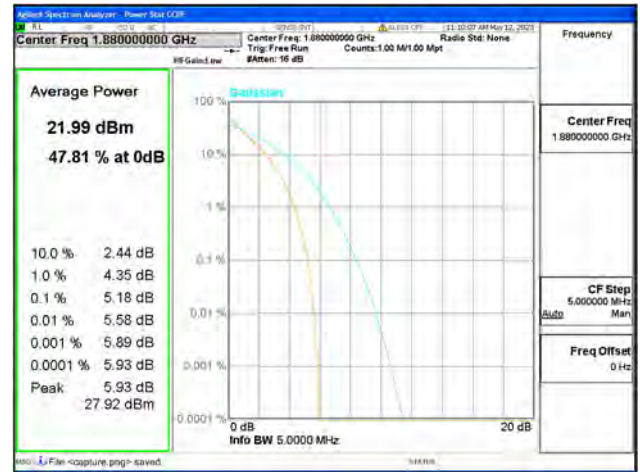
Band2 / 1.4MHz / Low CH / QPSK



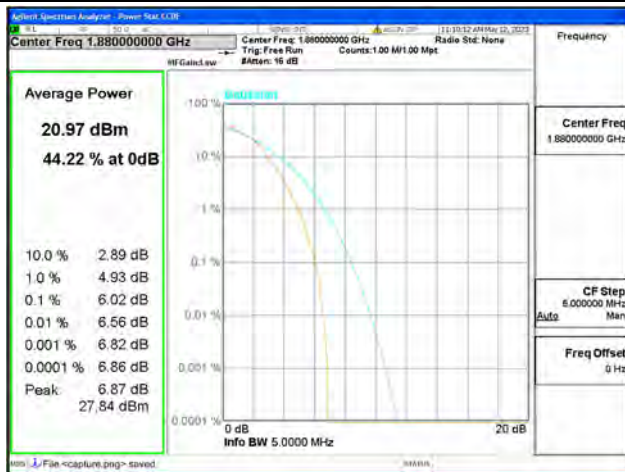
Band2 / 1.4MHz / Low CH / 16QAM



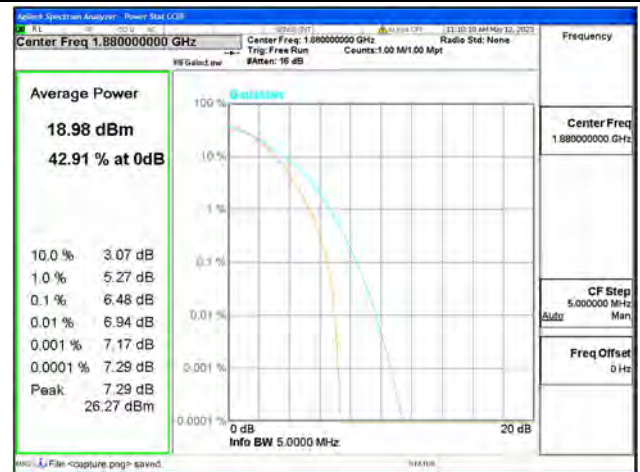
Band2 / 1.4MHz / Low CH / 64QAM



Band2 / 1.4MHz / Mid CH / QPSK



Band2 / 1.4MHz / Mid CH / 16QAM

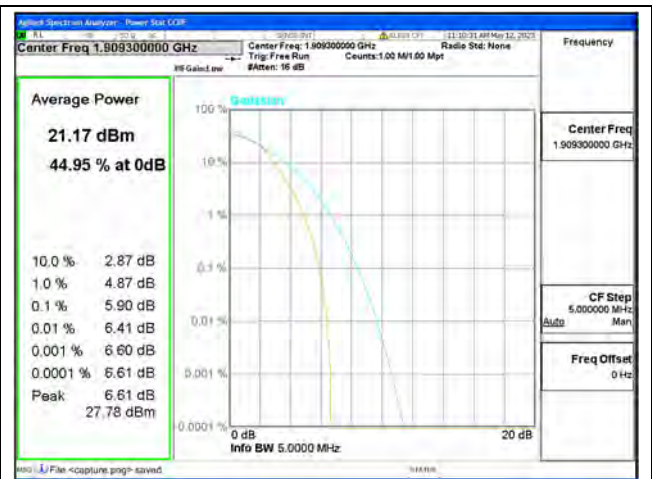


Band2 / 1.4MHz / Mid CH / 64QAM

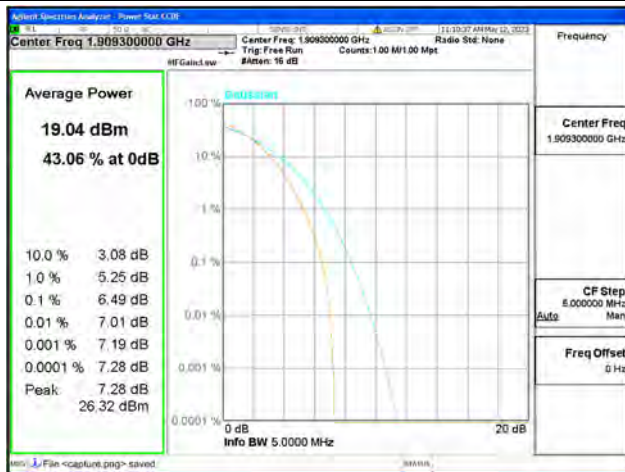




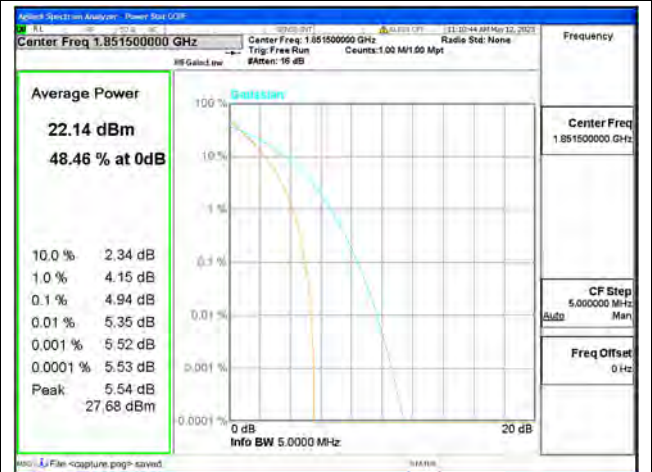
Band2 / 1.4MHz / High CH / QPSK



Band2 / 1.4MHz / High CH / 16QAM



Band2 / 1.4MHz / High CH / 64QAM



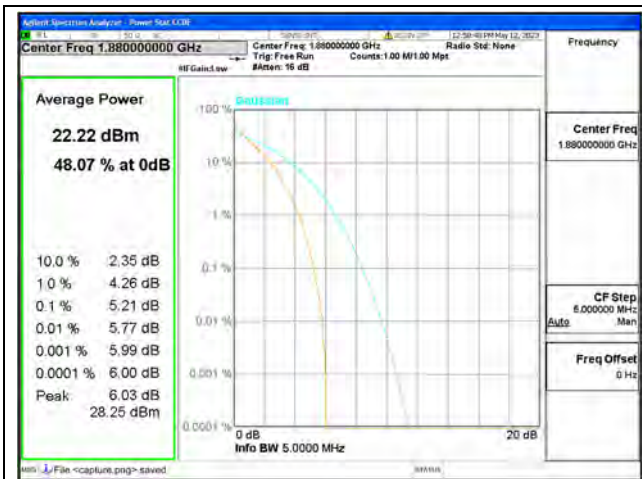
Band2 / 3MHz / Low CH / QPSK



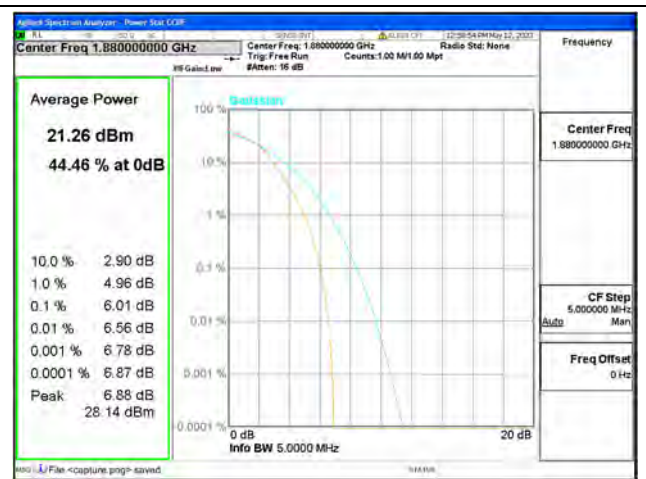
Band2 / 3MHz / Low CH / 16QAM



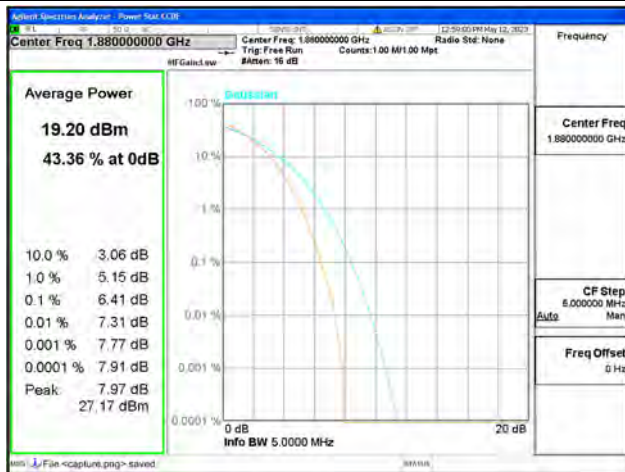
Band2 / 3MHz / Low CH / 64QAM



Band2 / 3MHz / Mid CH / QPSK



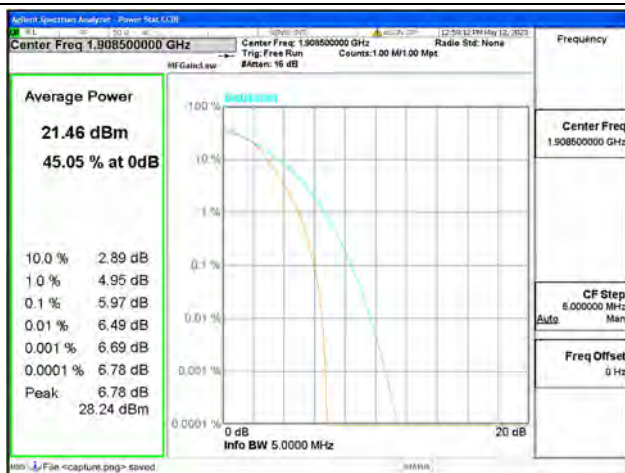
Band2 / 3MHz / Mid CH / 16QAM



Band2 / 3MHz / Mid CH / 64QAM



Band2 / 3MHz / High CH / QPSK



Band2 / 3MHz / High CH / 16QAM



Band2 / 3MHz / High CH / 64QAM

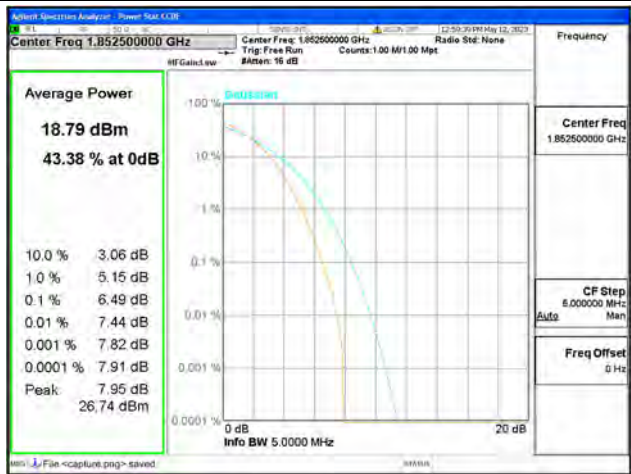




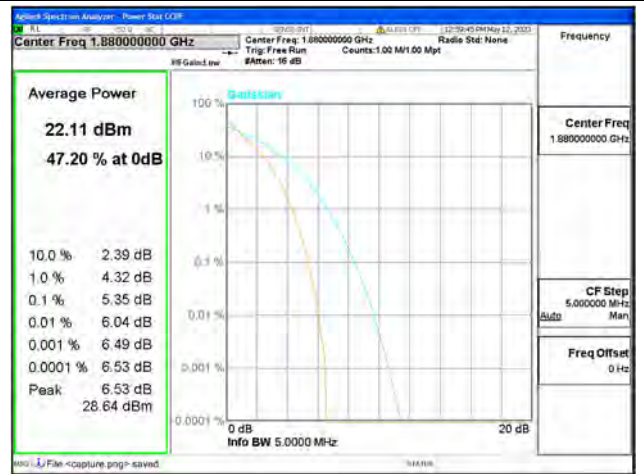
Band2 / 5MHz / Low CH / QPSK



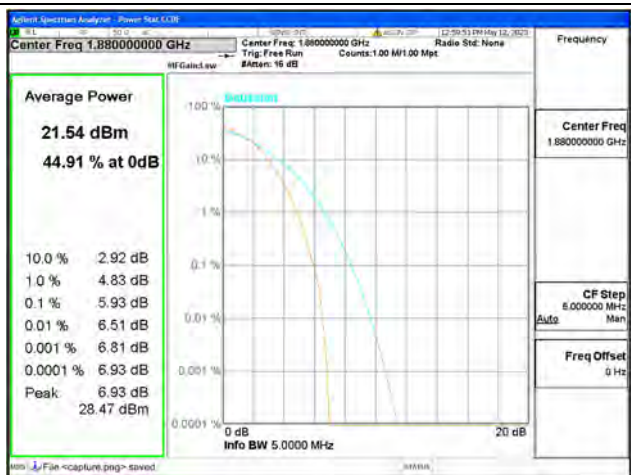
Band2 / 5MHz / Low CH / 16QAM



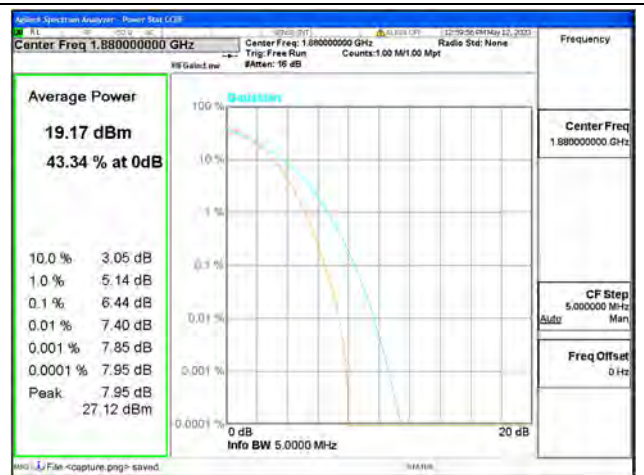
Band2 / 5MHz / Low CH / 64QAM



Band2 / 5MHz / Mid CH / QPSK



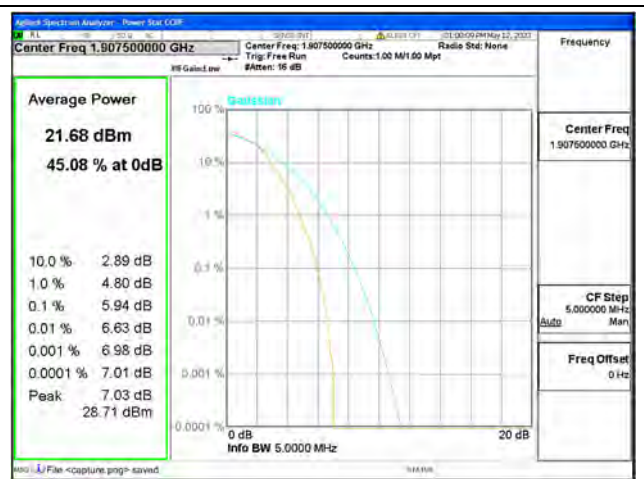
Band2 / 5MHz / Mid CH / 16QAM



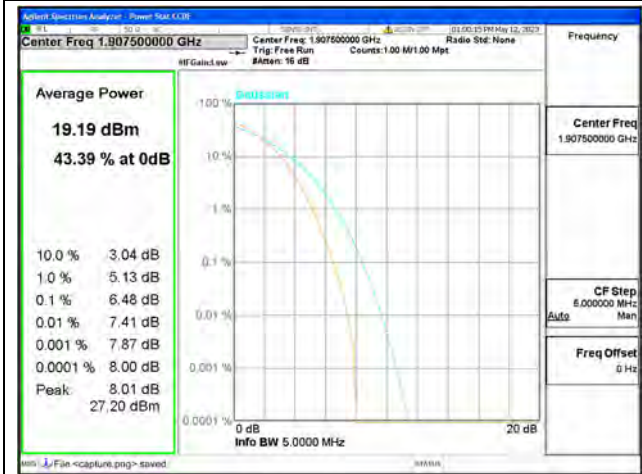
Band2 / 5MHz / Mid CH / 64QAM



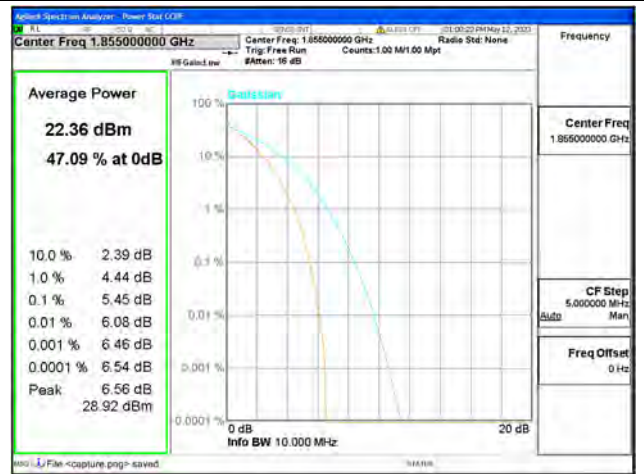
Band2 / 5MHz / High CH / QPSK



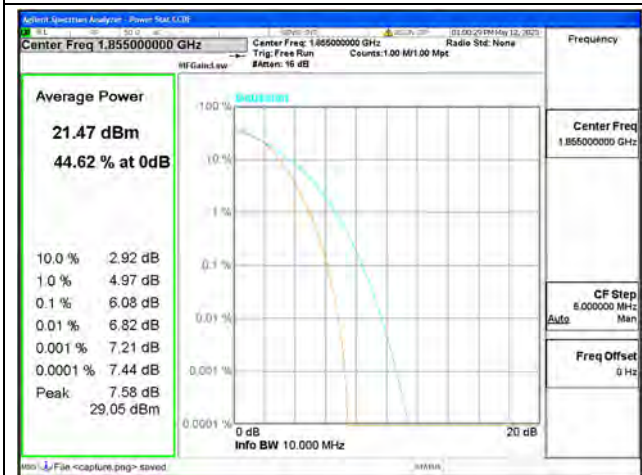
Band2 / 5MHz / High CH / 16QAM



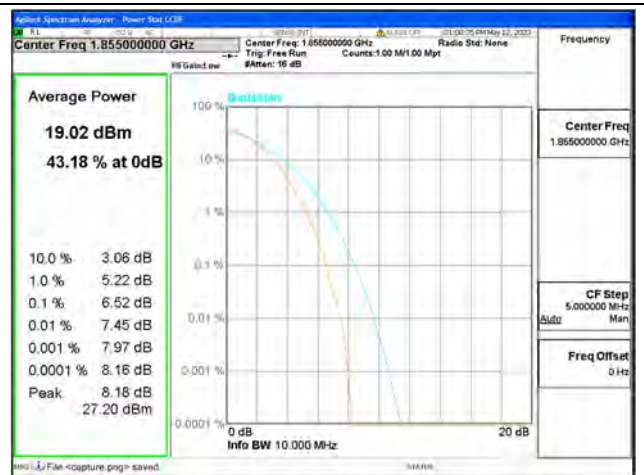
Band2 / 5MHz / High CH / 64QAM



Band2 / 10MHz / Low CH / QPSK



Band2 / 10MHz / Low CH / 16QAM



Band2 / 10MHz / Low CH / 64QAM





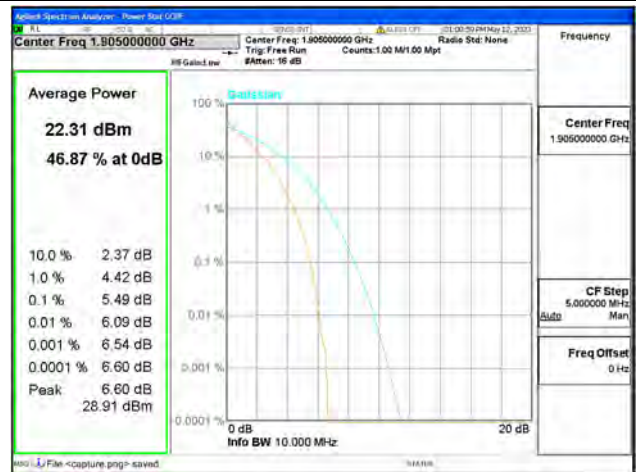
Band2 / 10MHz / Mid CH / QPSK



Band2 / 10MHz / Mid CH / 16QAM



Band2 / 10MHz / Mid CH / 64QAM



Band2 / 10MHz / High CH / QPSK



Band2 / 10MHz / High CH / 16QAM



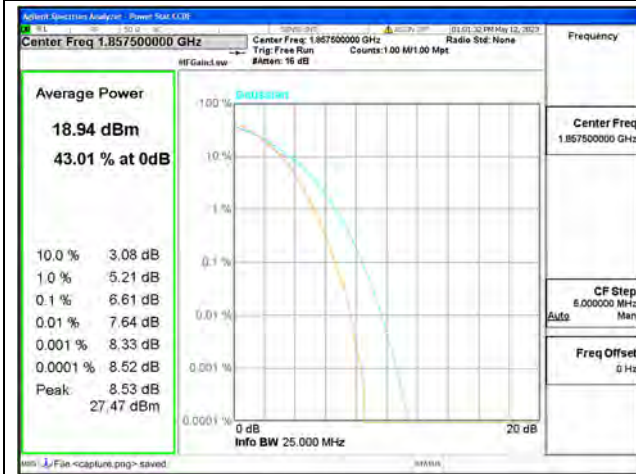
Band2 / 10MHz / High CH / 64QAM



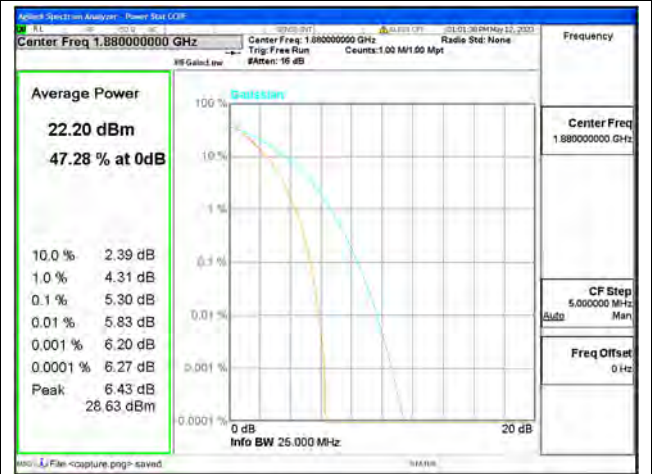
Band2 / 15MHz / Low CH / QPSK



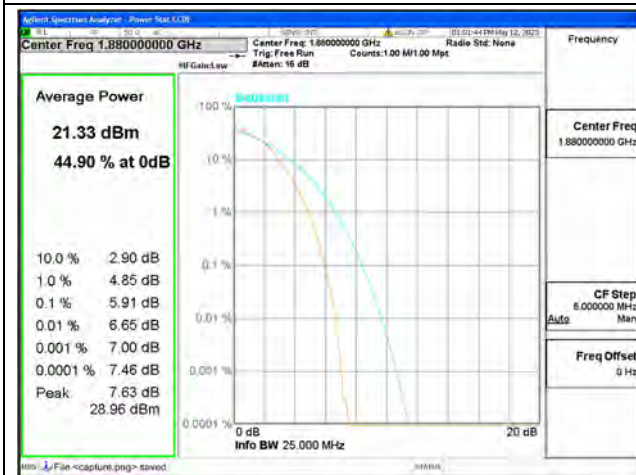
Band2 / 15MHz / Low CH / 16QAM



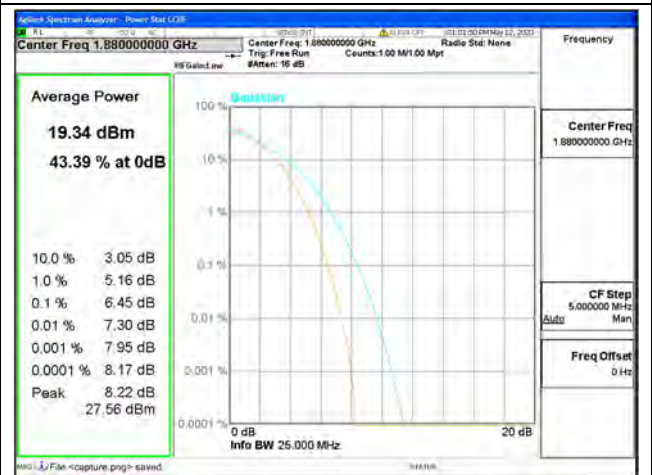
Band2 / 15MHz / Low CH / 64QAM



Band2 / 15MHz / Mid CH / QPSK



Band2 / 15MHz / Mid CH / 16QAM



Band2 / 15MHz / Mid CH / 64QAM

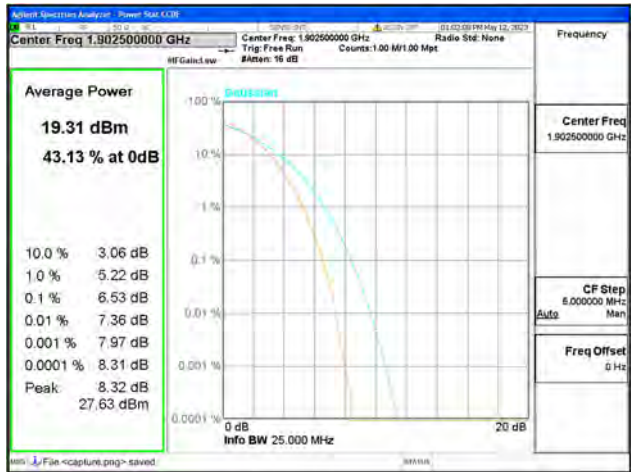




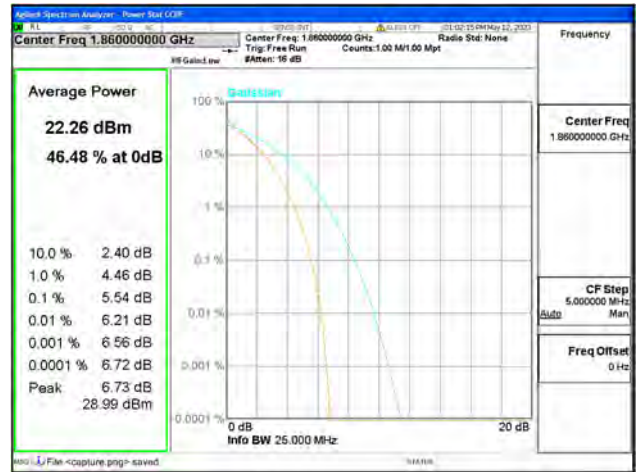
Band2 / 15MHz / High CH / QPSK



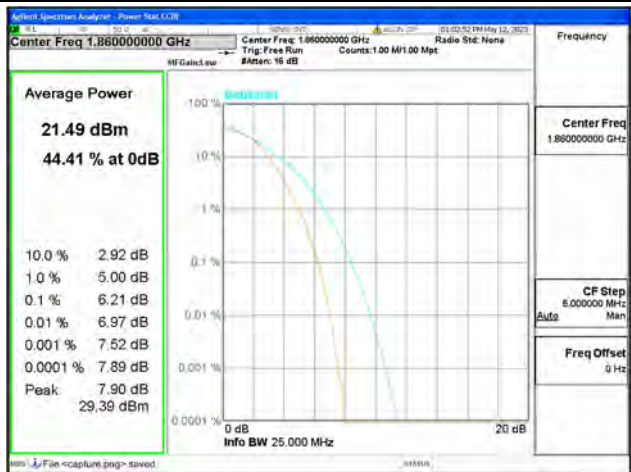
Band2 / 15MHz / High CH / 16QAM



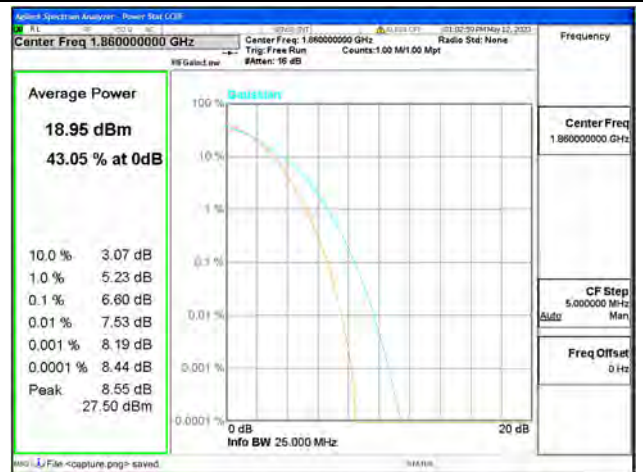
Band2 / 15MHz / High CH / 64QAM



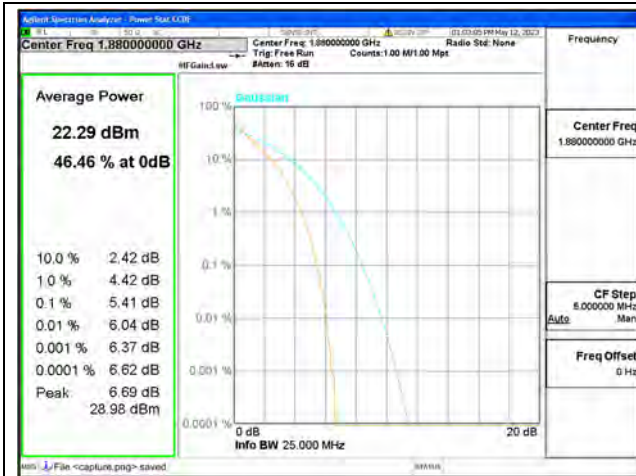
Band2 / 20MHz / Low CH / QPSK



Band2 / 20MHz / Low CH / 16QAM



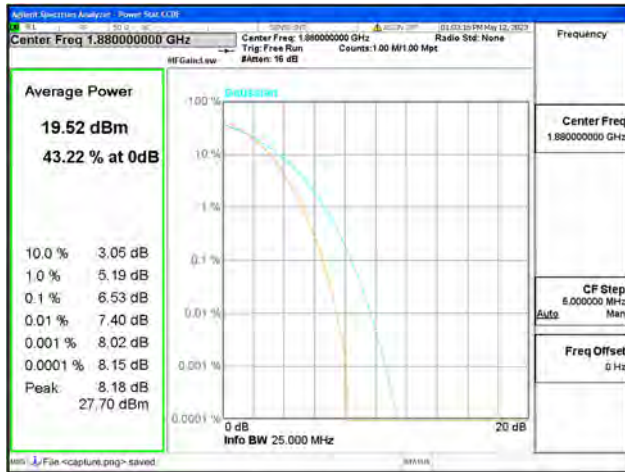
Band2 / 20MHz / Low CH / 64QAM



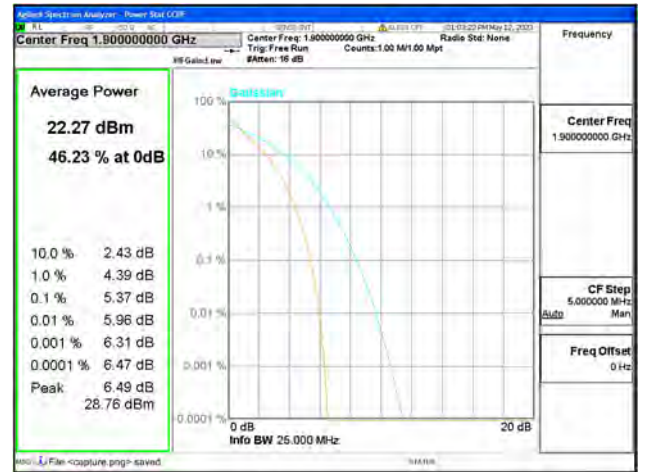
Band2 / 20MHz / Mid CH / QPSK



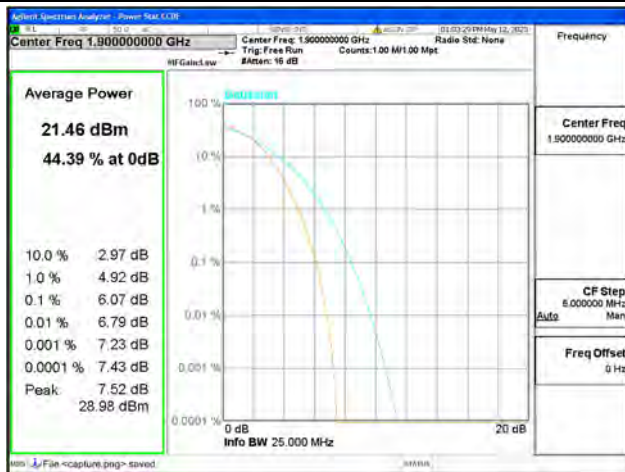
Band2 / 20MHz / Mid CH / 16QAM



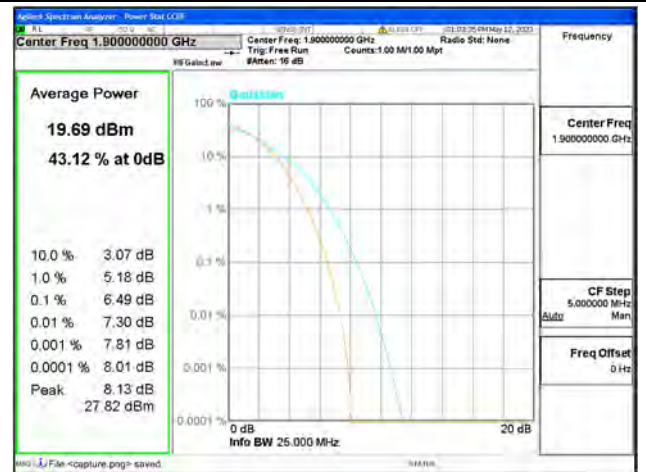
Band2 / 20MHz / Mid CH / 64QAM



Band2 / 20MHz / High CH / QPSK

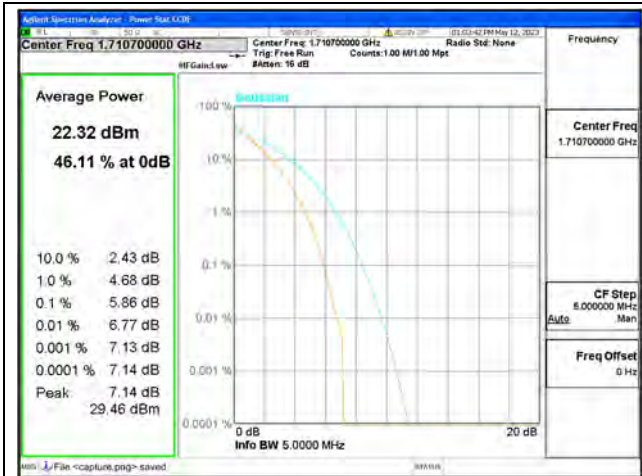


Band2 / 20MHz / High CH / 16QAM



Band2 / 20MHz / High CH / 64QAM





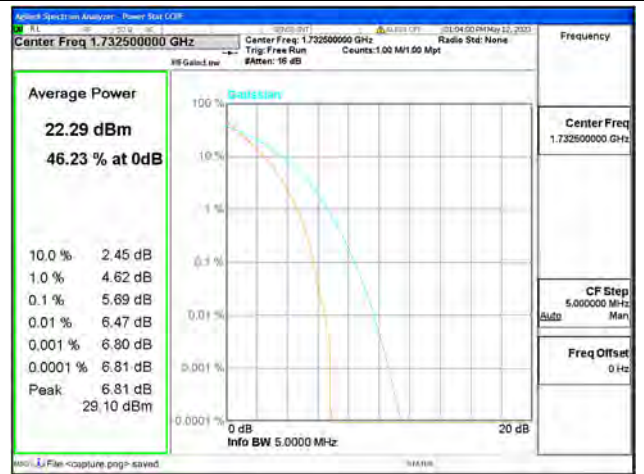
Band4 / 1.4MHz / Low CH / QPSK



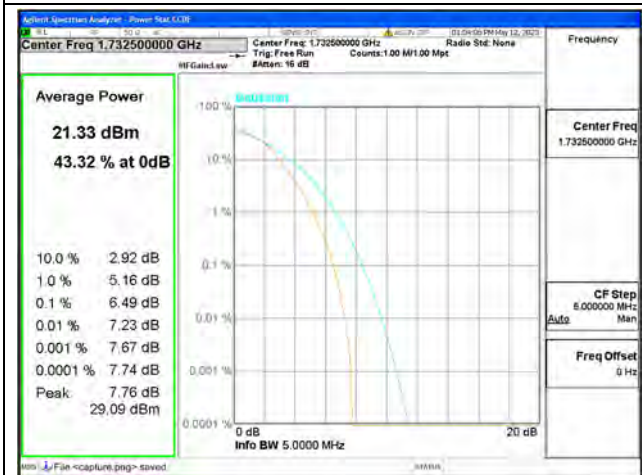
Band4 / 1.4MHz / Low CH / 16QAM



Band4 / 1.4MHz / Low CH / 64QAM



Band4 / 1.4MHz / Mid CH / QPSK



Band4 / 1.4MHz / Mid CH / 16QAM



Band4 / 1.4MHz / Mid CH / 64QAM

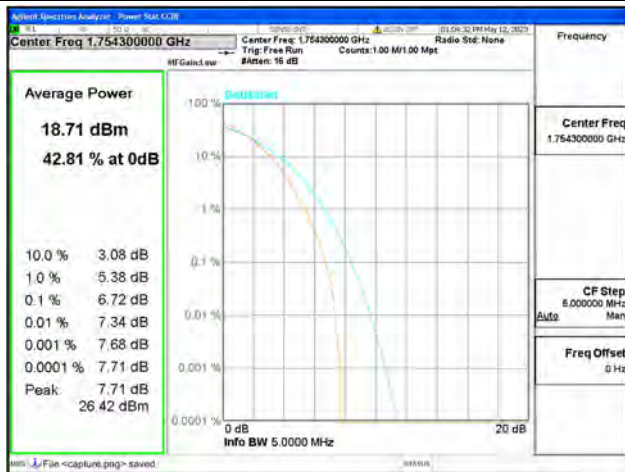




Band4 / 1.4MHz / High CH / QPSK



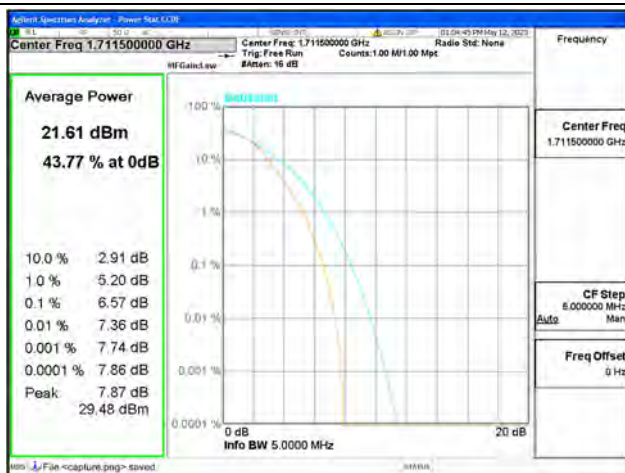
Band4 / 1.4MHz / High CH / 16QAM



Band4 / 1.4MHz / High CH / 64QAM



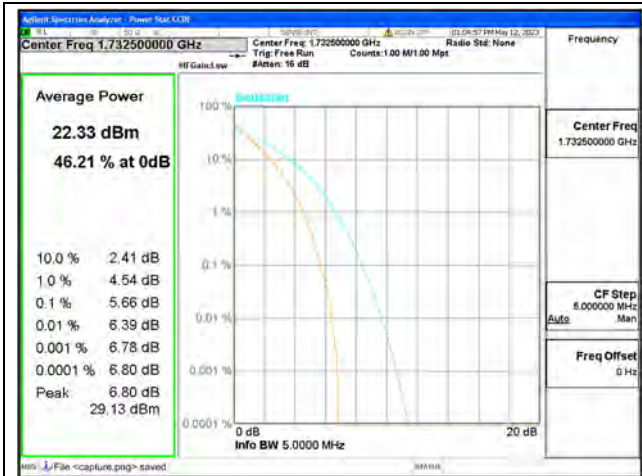
Band4 / 3MHz / Low CH / QPSK



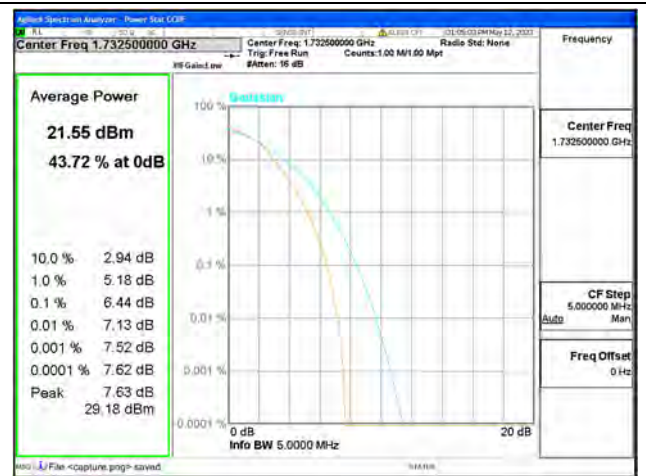
Band4 / 3MHz / Low CH / 16QAM



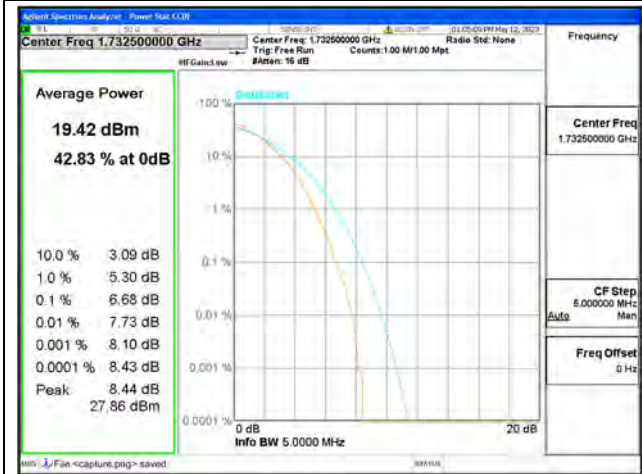
Band4 / 3MHz / Low CH / 64QAM



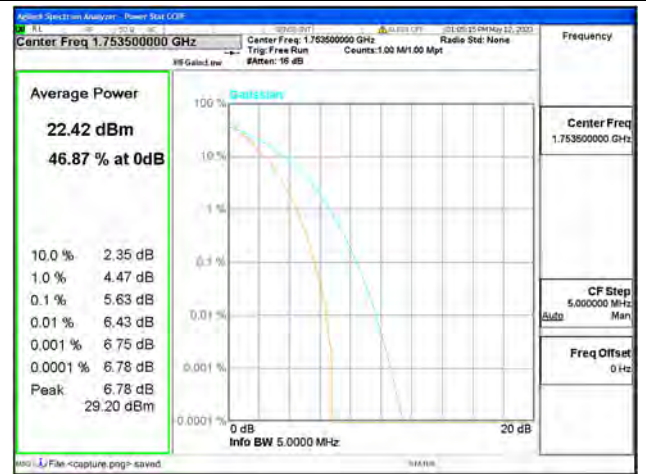
Band4 / 3MHz / Mid CH / QPSK



Band4 / 3MHz / Mid CH / 16QAM



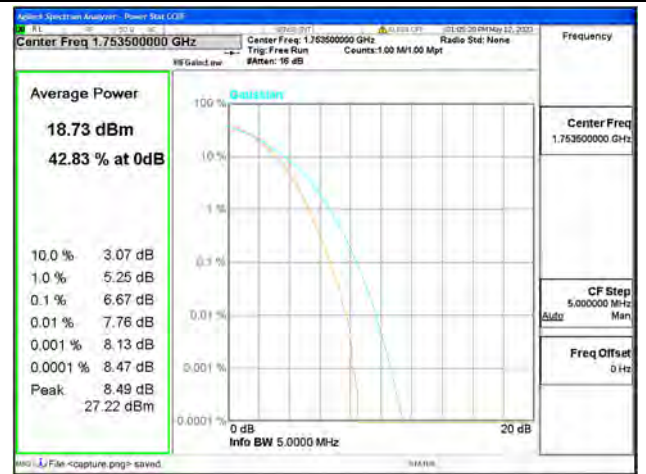
Band4 / 3MHz / Mid CH / 64QAM



Band4 / 3MHz / High CH / QPSK

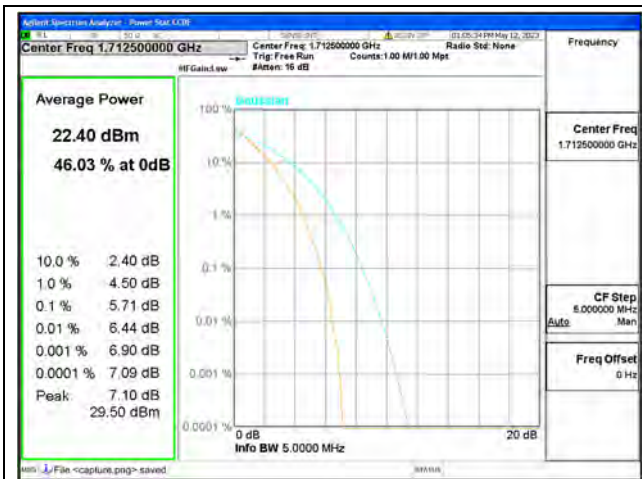


Band4 / 3MHz / High CH / 16QAM

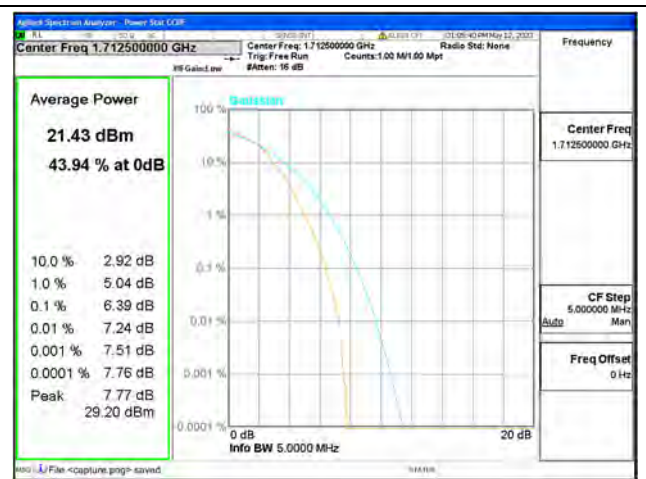


Band4 / 3MHz / High CH / 64QAM

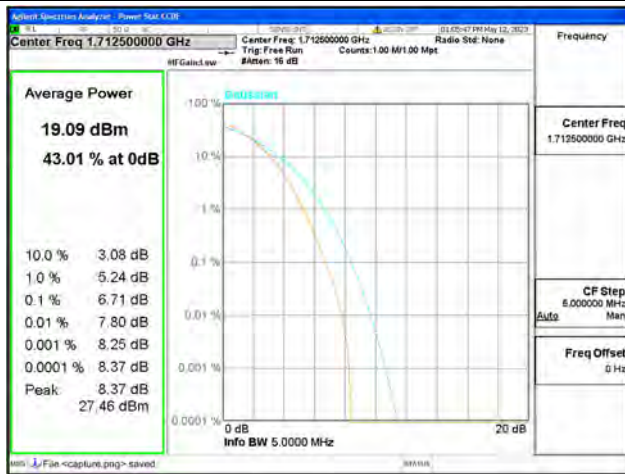




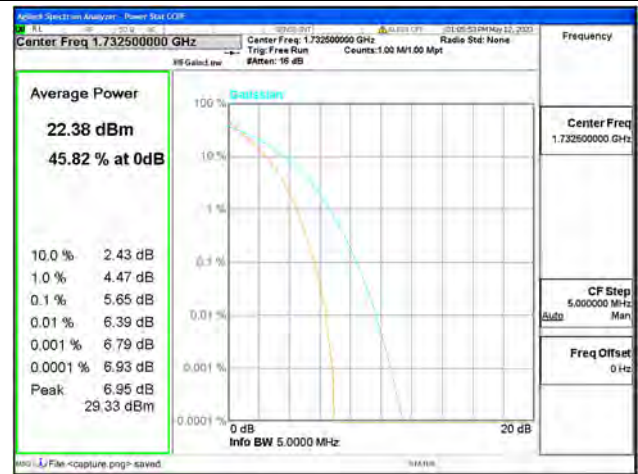
Band4 / 5MHz / Low CH / QPSK



Band4 / 5MHz / Low CH / 16QAM



Band4 / 5MHz / Low CH / 64QAM



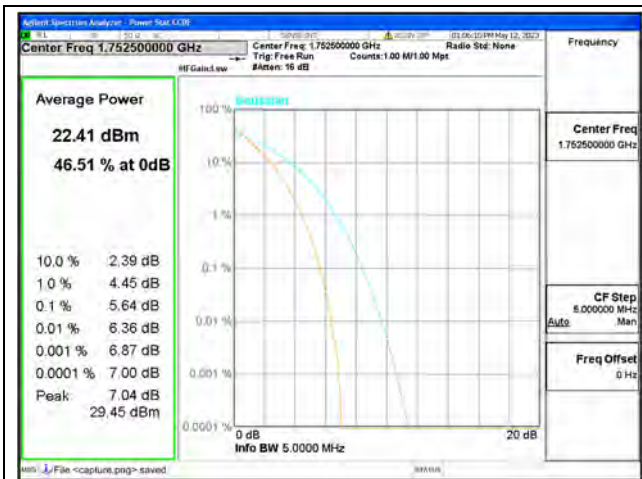
Band4 / 5MHz / Mid CH / QPSK



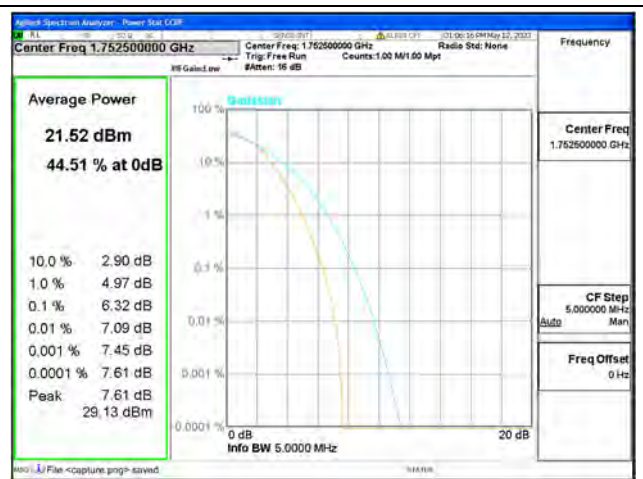
Band4 / 5MHz / Mid CH / 16QAM



Band4 / 5MHz / Mid CH / 64QAM



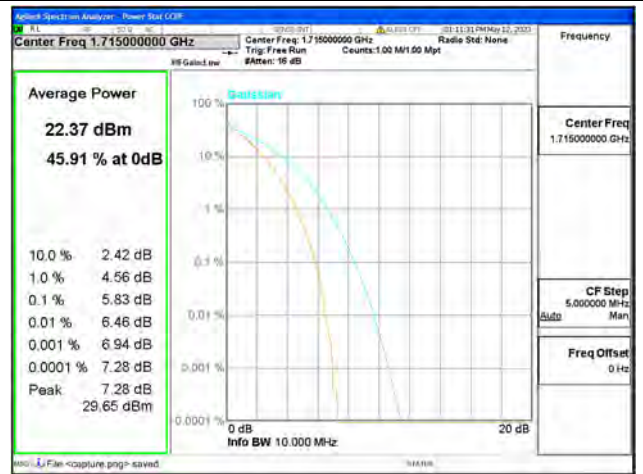
Band4 / 5MHz / High CH / QPSK



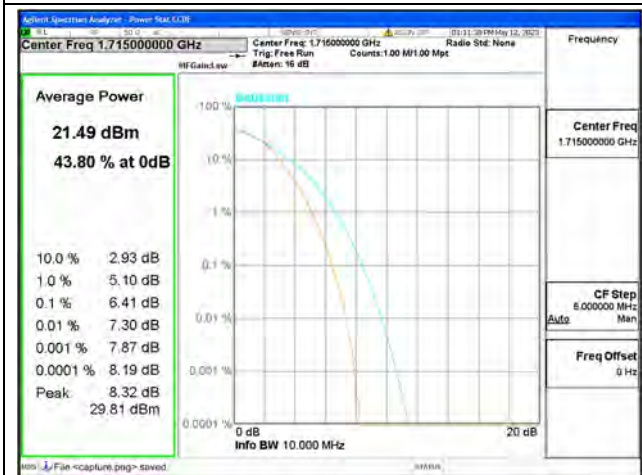
Band4 / 5MHz / High CH / 16QAM



Band4 / 5MHz / High CH / 64QAM



Band4 / 10MHz / Low CH / QPSK

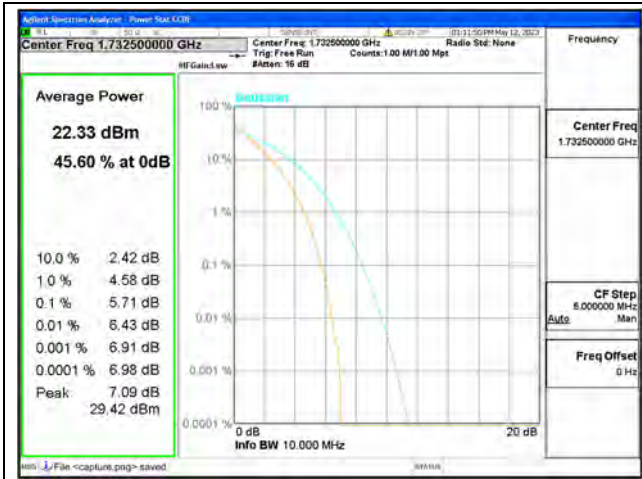


Band4 / 10MHz / Low CH / 16QAM



Band4 / 10MHz / Low CH / 64QAM

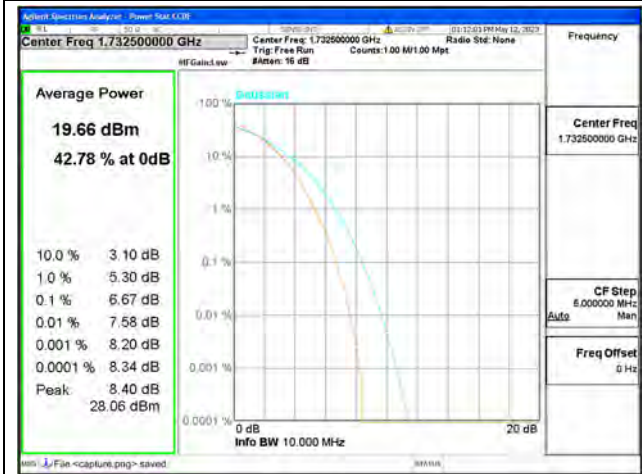




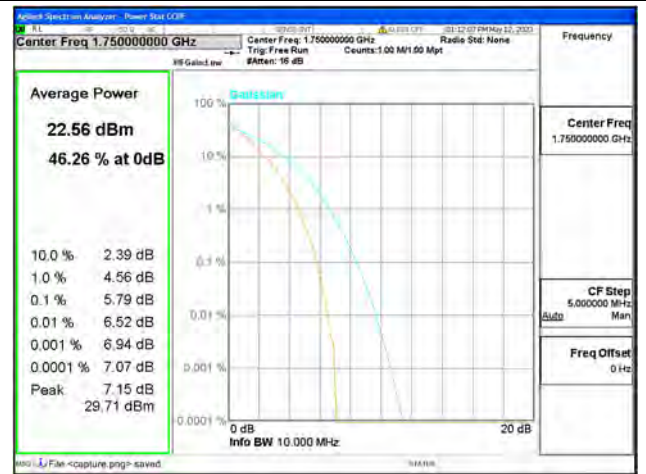
Band4 / 10MHz / Mid CH / QPSK



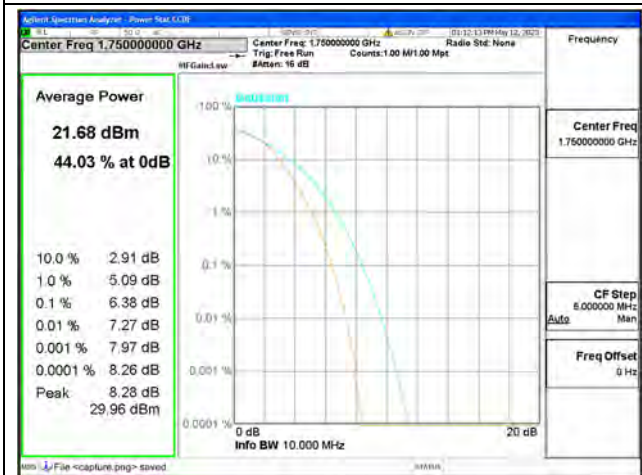
Band4 / 10MHz / Mid CH / 16QAM



Band4 / 10MHz / Mid CH / 64QAM



Band4 / 10MHz / High CH / QPSK

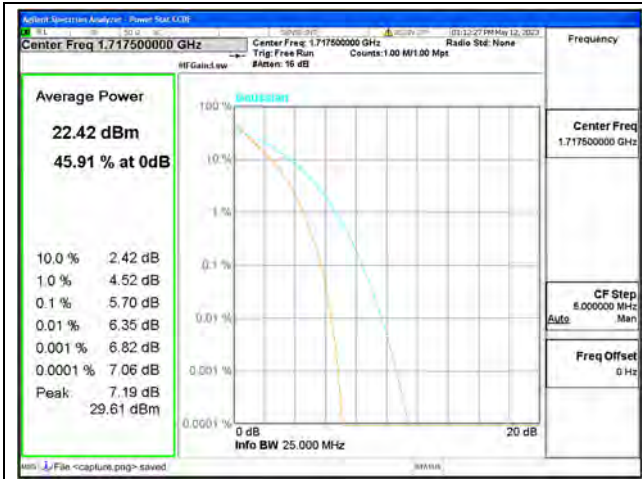


Band4 / 10MHz / High CH / 16QAM

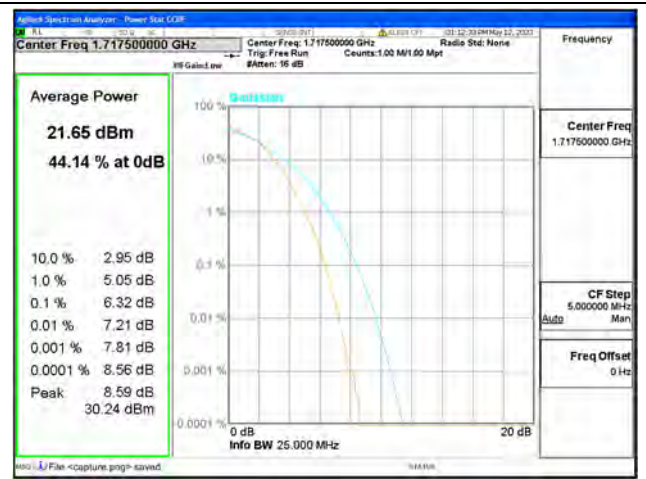


Band4 / 10MHz / High CH / 64QAM





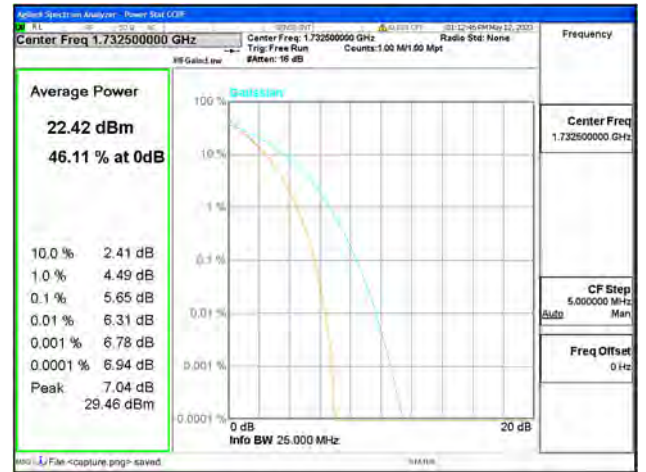
Band4 / 15MHz / Low CH / QPSK



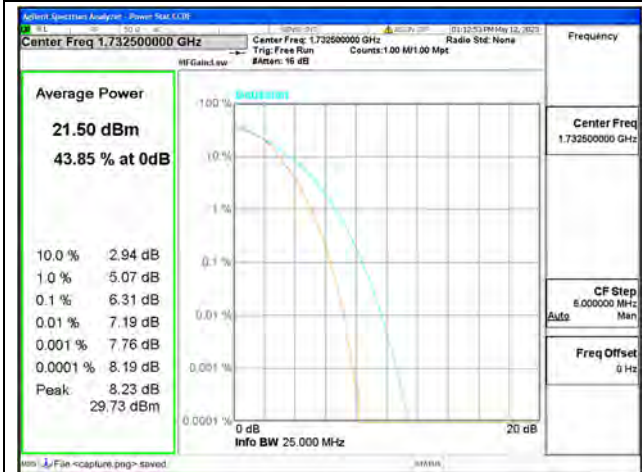
Band4 / 15MHz / Low CH / 16QAM



Band4 / 15MHz / Low CH / 64QAM



Band4 / 15MHz / Mid CH / QPSK



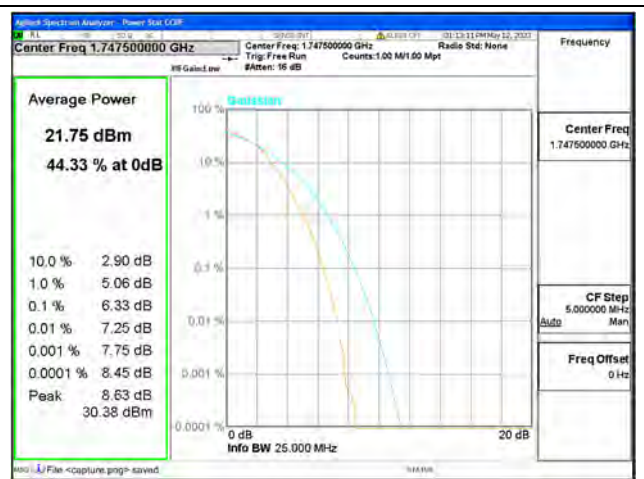
Band4 / 15MHz / Mid CH / 16QAM



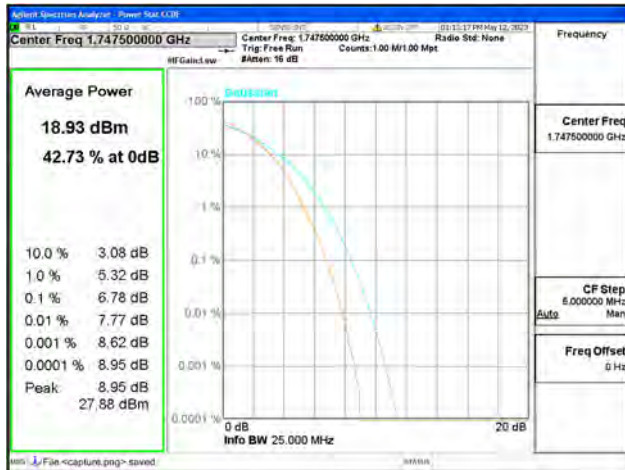
Band4 / 15MHz / Mid CH / 64QAM



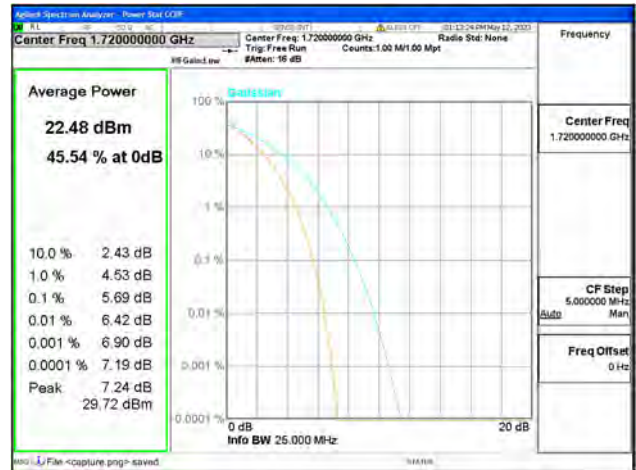
Band4 / 15MHz / High CH / QPSK



Band4 / 15MHz / High CH / 16QAM



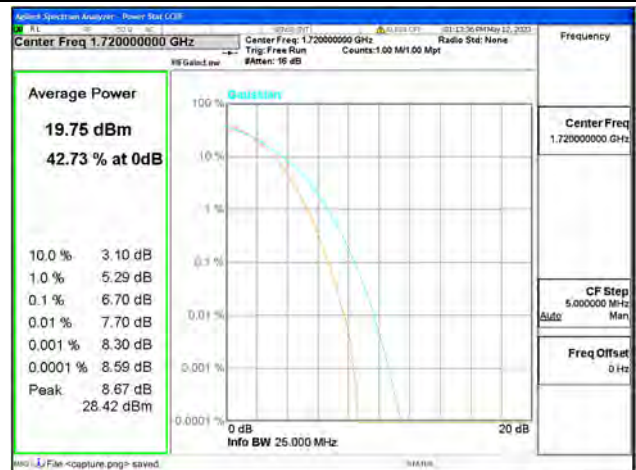
Band4 / 15MHz / High CH / 64QAM



Band4 / 20MHz / Low CH / QPSK

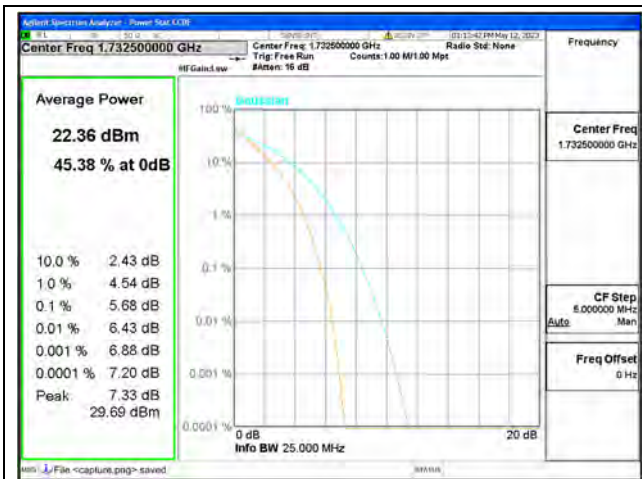


Band4 / 20MHz / Low CH / 16QAM

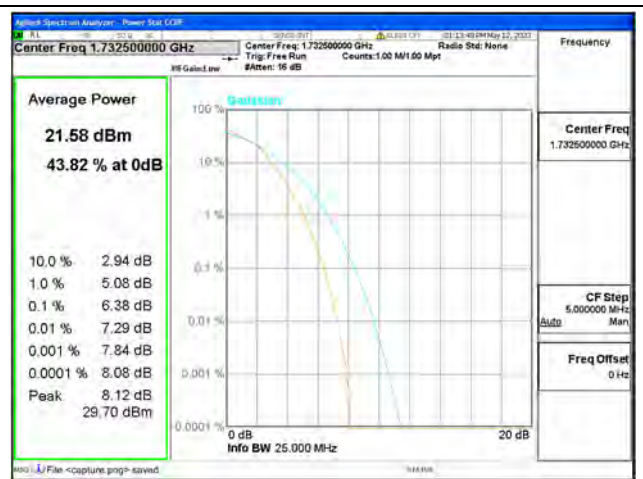


Band4 / 20MHz / Low CH / 64QAM





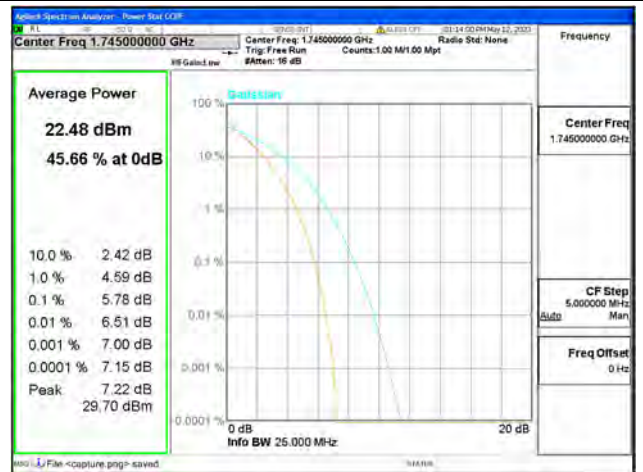
Band4 / 20MHz / Mid CH / QPSK



Band4 / 20MHz / Mid CH / 16QAM



Band4 / 20MHz / Mid CH / 64QAM



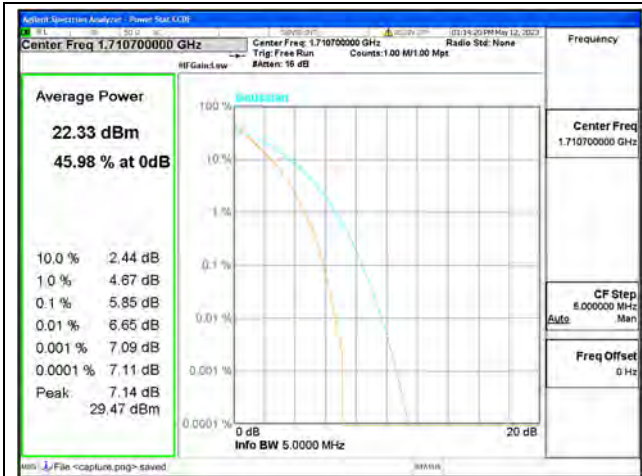
Band4 / 20MHz / High CH / QPSK



Band4 / 20MHz / High CH / 16QAM



Band4 / 20MHz / High CH / 64QAM



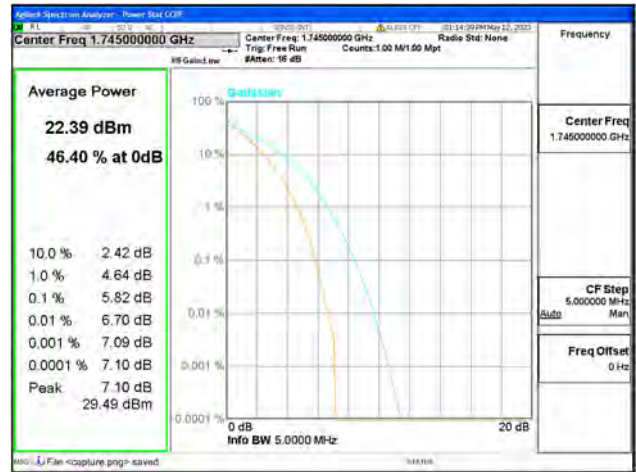
Band66 / 1.4MHz / Low CH / QPSK



Band66 / 1.4MHz / Low CH / 16QAM



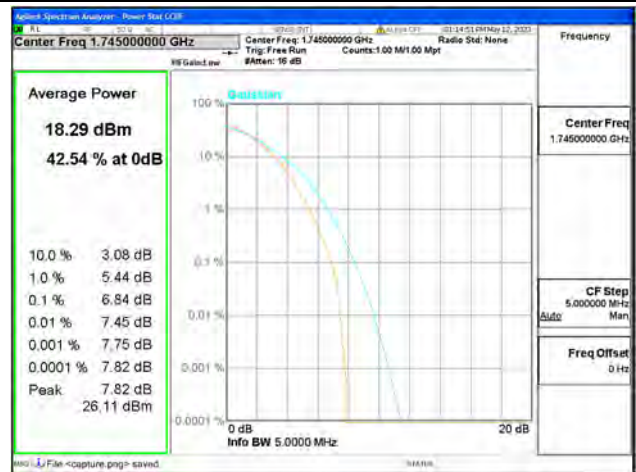
Band66 / 1.4MHz / Low CH / 64QAM



Band66 / 1.4MHz / Mid CH / QPSK



Band66 / 1.4MHz / Mid CH / 16QAM



Band66 / 1.4MHz / Mid CH / 64QAM

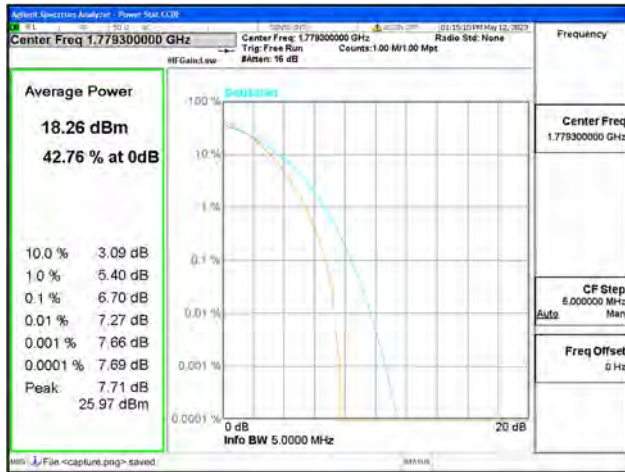




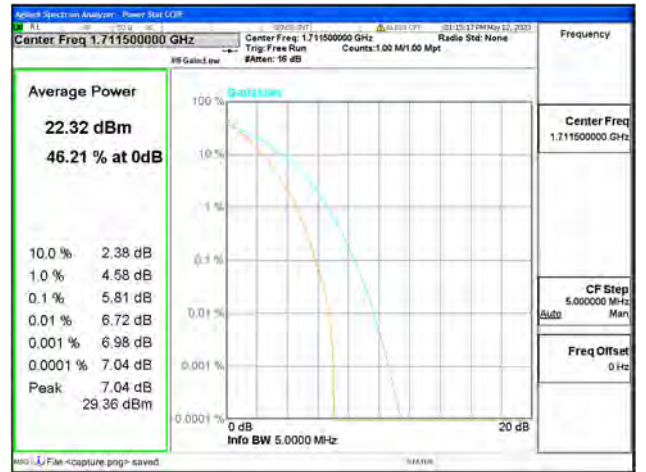
Band66 / 1.4MHz / High CH / QPSK



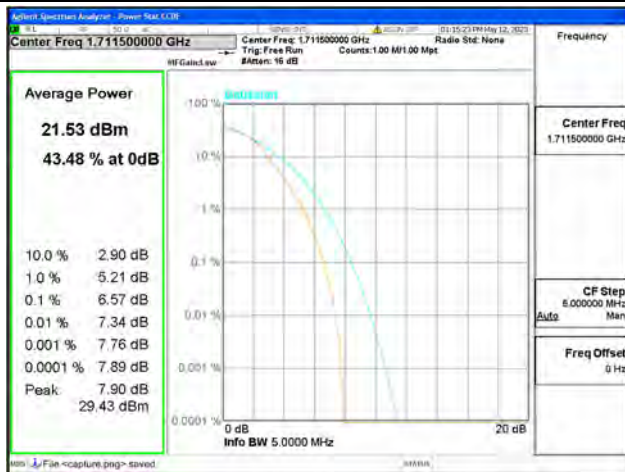
Band66 / 1.4MHz / High CH / 16QAM



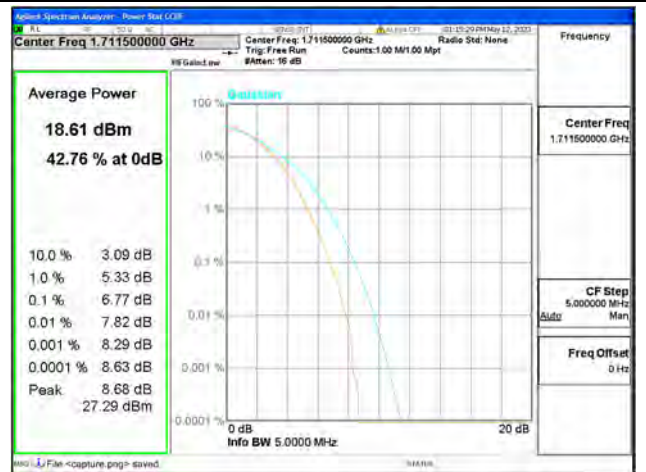
Band66 / 1.4MHz / High CH / 64QAM



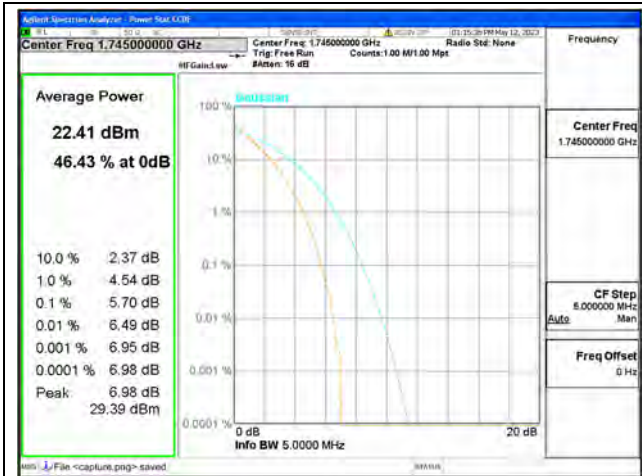
Band66 / 3MHz / Low CH / QPSK



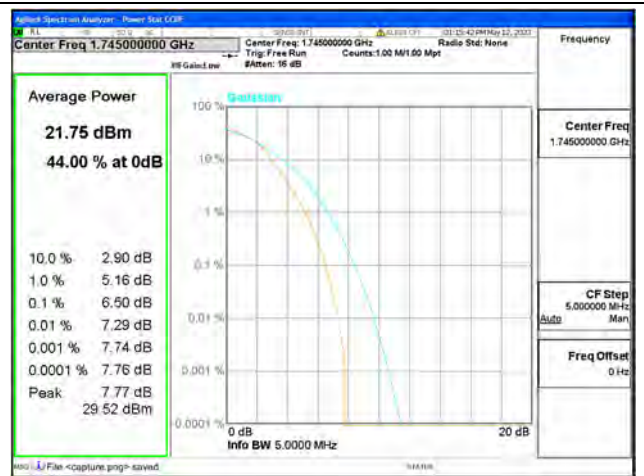
Band66 / 3MHz / Low CH / 16QAM



Band66 / 3MHz / Low CH / 64QAM



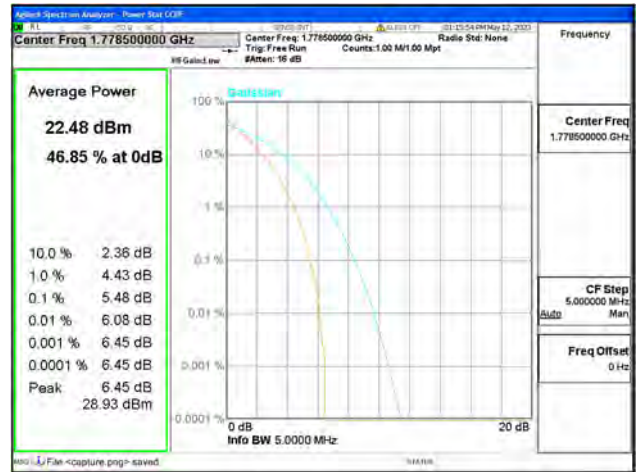
Band66 / 3MHz / Mid CH / QPSK



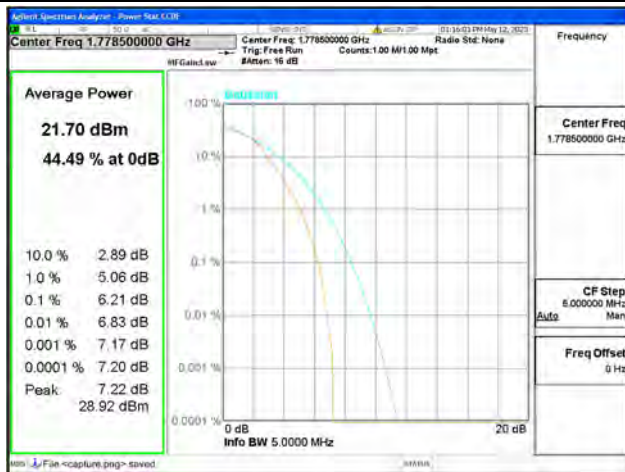
Band66 / 3MHz / Mid CH / 16QAM



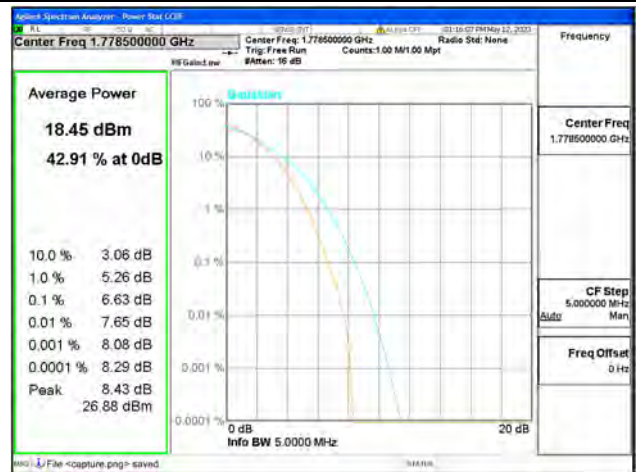
Band66 / 3MHz / Mid CH / 64QAM



Band66 / 3MHz / High CH / QPSK

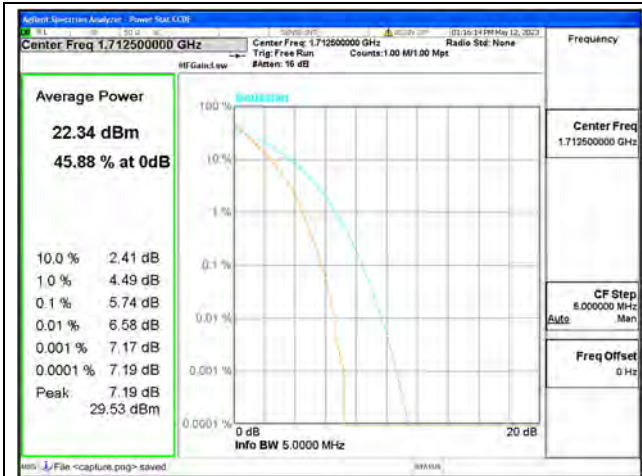


Band66 / 3MHz / High CH / 16QAM

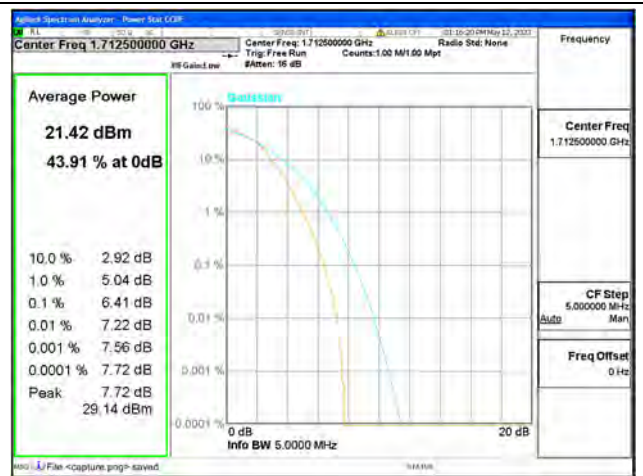


Band66 / 3MHz / High CH / 64QAM





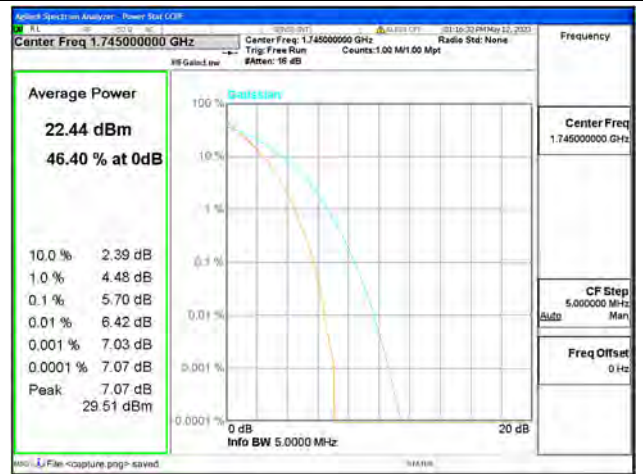
Band66 / 5MHz / Low CH / QPSK



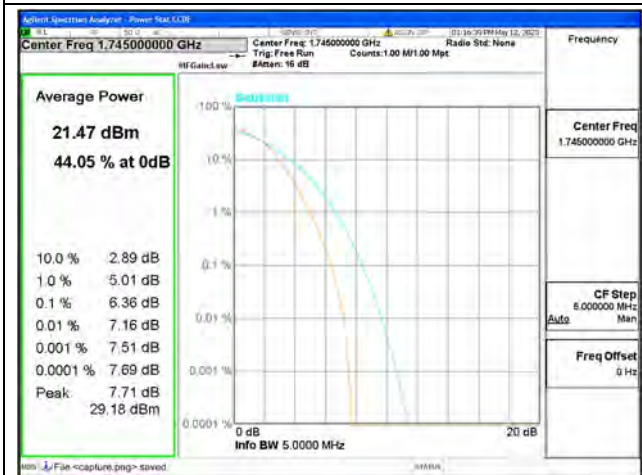
Band66 / 5MHz / Low CH / 16QAM



Band66 / 5MHz / Low CH / 64QAM



Band66 / 5MHz / Mid CH / QPSK



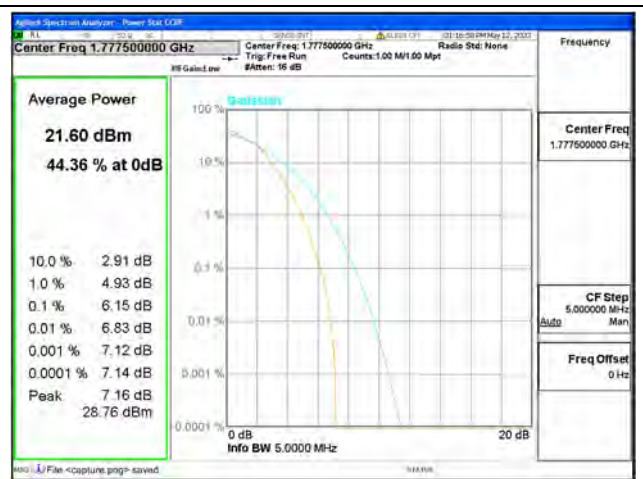
Band66 / 5MHz / Mid CH / 16QAM



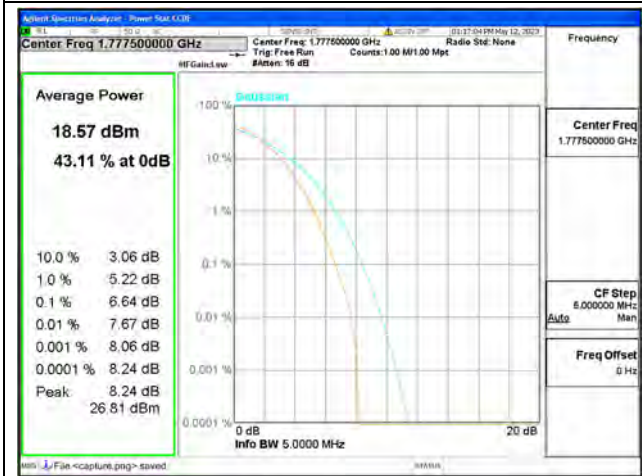
Band66 / 5MHz / Mid CH / 64QAM



Band66 / 5MHz / High CH / QPSK



Band66 / 5MHz / High CH / 16QAM



Band66 / 5MHz / High CH / 64QAM



Band66 / 10MHz / Low CH / QPSK



Band66 / 10MHz / Low CH / 16QAM



Band66 / 10MHz / Low CH / 64QAM

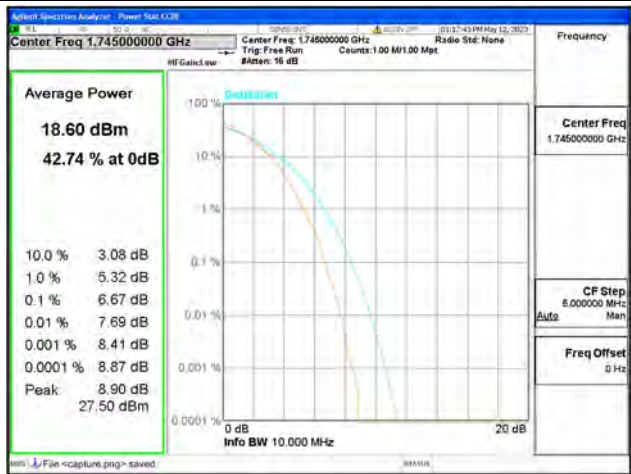




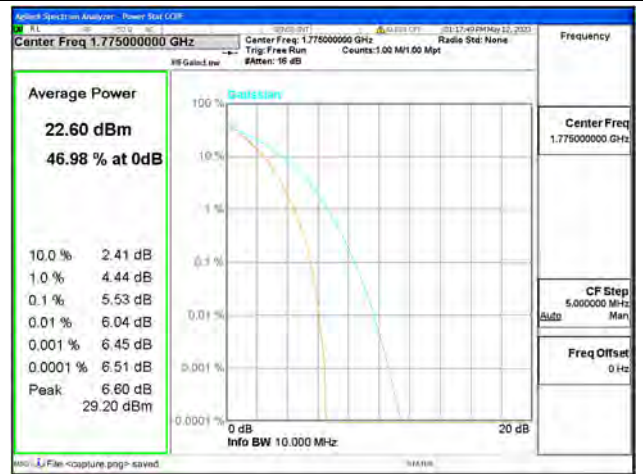
Band66 / 10MHz / Mid CH / QPSK



Band66 / 10MHz / Mid CH / 16QAM



Band66 / 10MHz / Mid CH / 64QAM



Band66 / 10MHz / High CH / QPSK



Band66 / 10MHz / High CH / 16QAM



Band66 / 10MHz / High CH / 64QAM



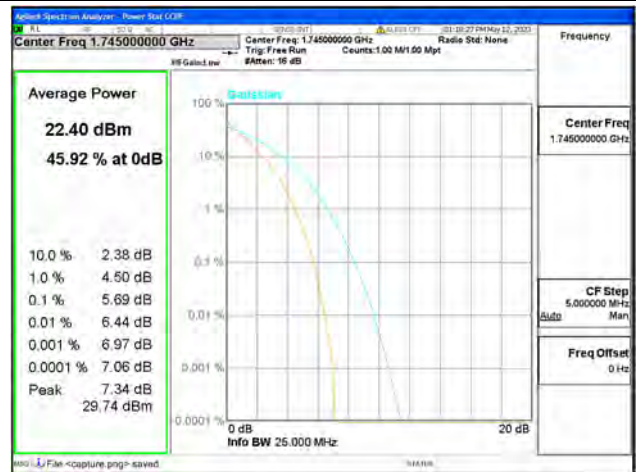
Band66 / 15MHz / Low CH / QPSK



Band66 / 15MHz / Low CH / 16QAM



Band66 / 15MHz / Low CH / 64QAM



Band66 / 15MHz / Mid CH / QPSK



Band66 / 15MHz / Mid CH / 16QAM



Band66 / 15MHz / Mid CH / 64QAM





Band66 / 15MHz / High CH / QPSK



Band66 / 15MHz / High CH / 16QAM



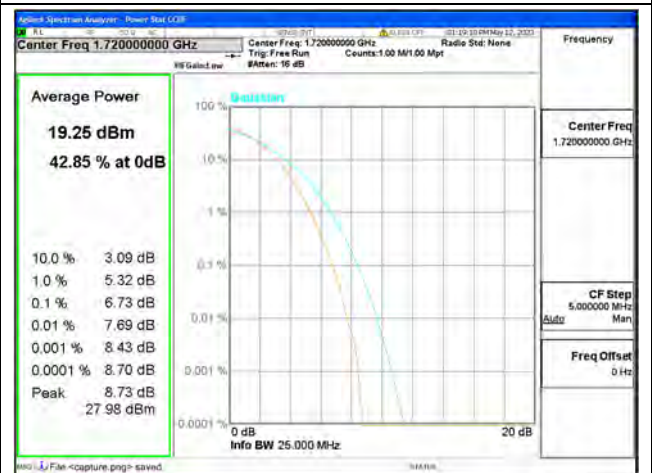
Band66 / 15MHz / High CH / 64QAM



Band66 / 20MHz / Low CH / QPSK

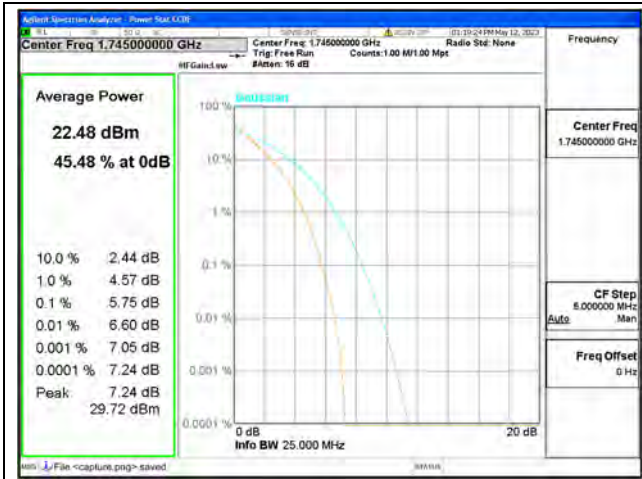


Band66 / 20MHz / Low CH / 16QAM



Band66 / 20MHz / Low CH / 64QAM

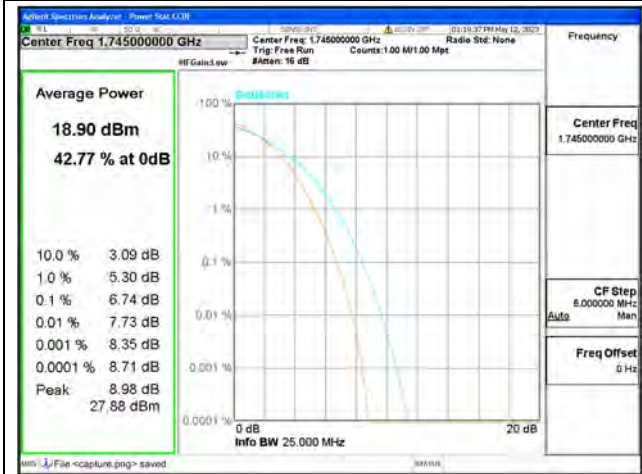




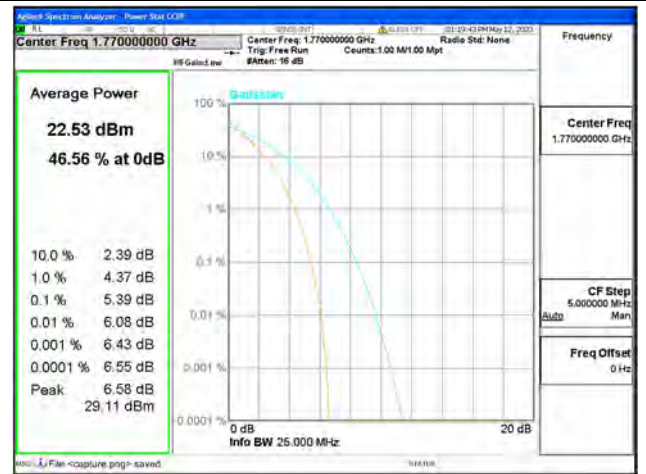
Band66 / 20MHz / Mid CH / QPSK



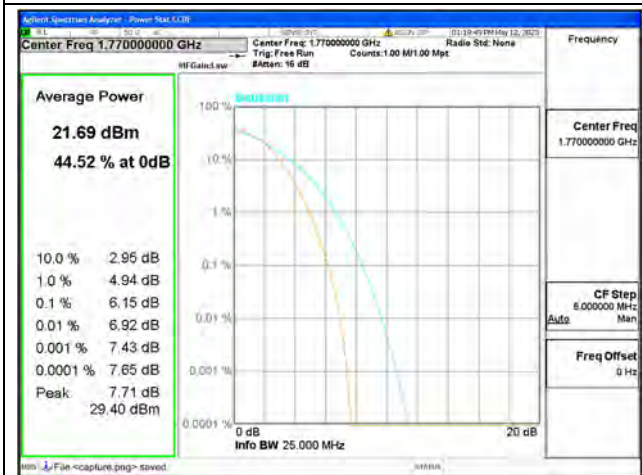
Band66 / 20MHz / Mid CH / 16QAM



Band66 / 20MHz / Mid CH / 64QAM



Band66 / 20MHz / High CH / QPSK



Band66 / 20MHz / High CH / 16QAM



Band66 / 20MHz / High CH / 64QAM

## 2.5. Conducted Spurious Emissions

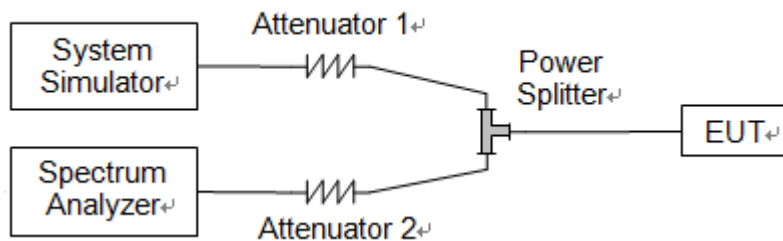
### 2.5.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

Additional requirement for LTE Band 7:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $55 + 10 \log(P)$  dB. This calculated to be -25dBm.

### 2.5.2. 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.

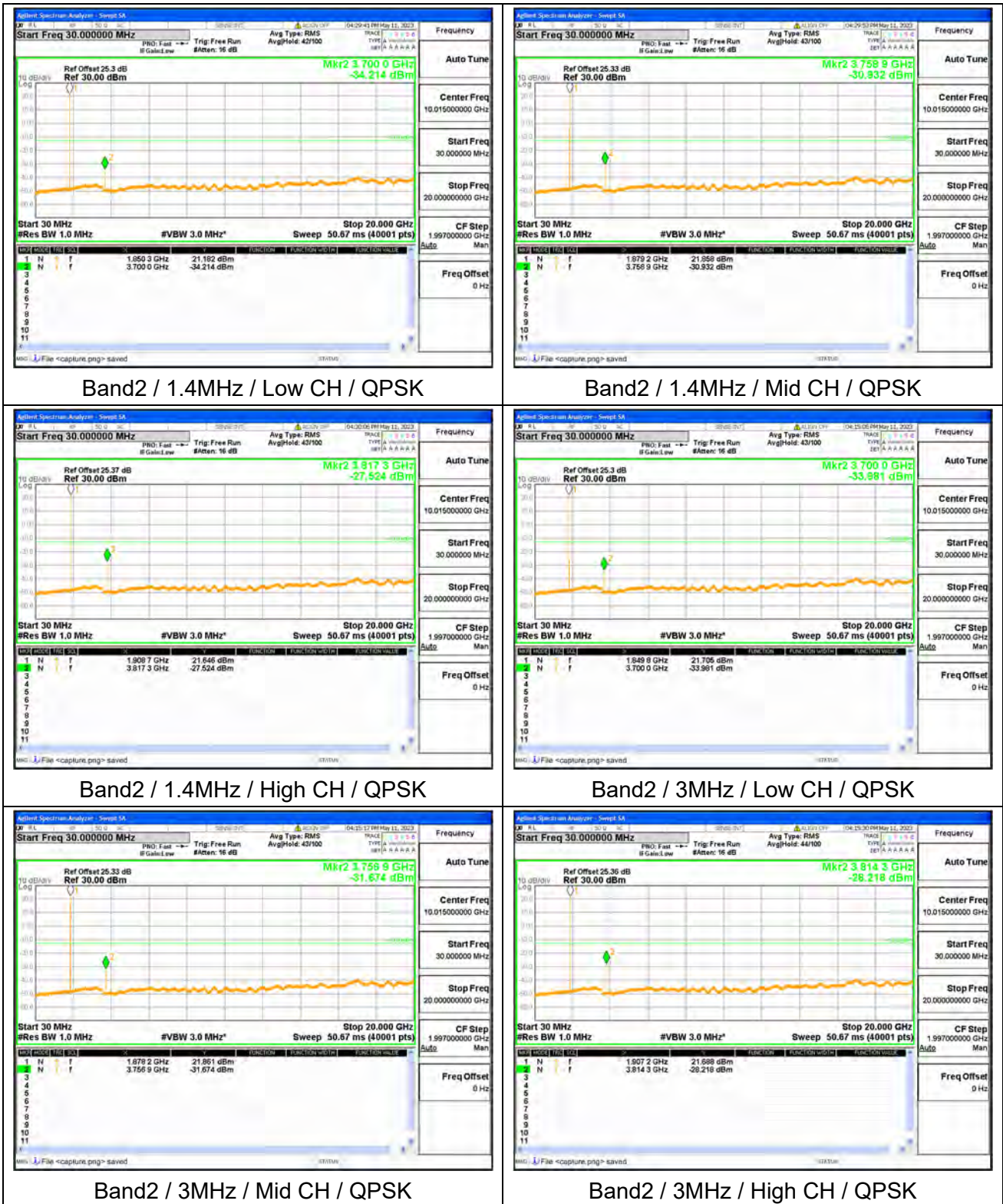
### 2.5.3. Test Procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.

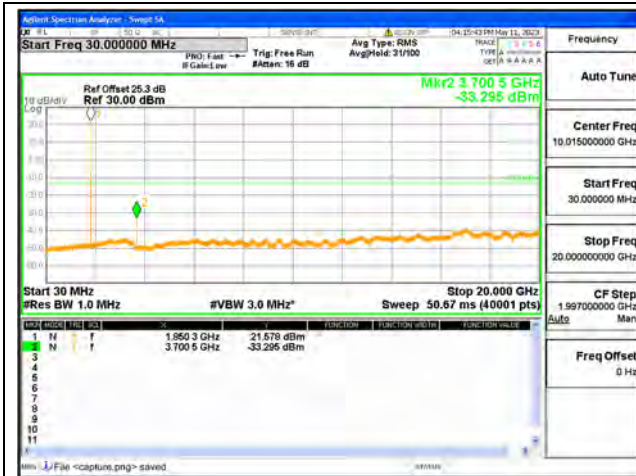




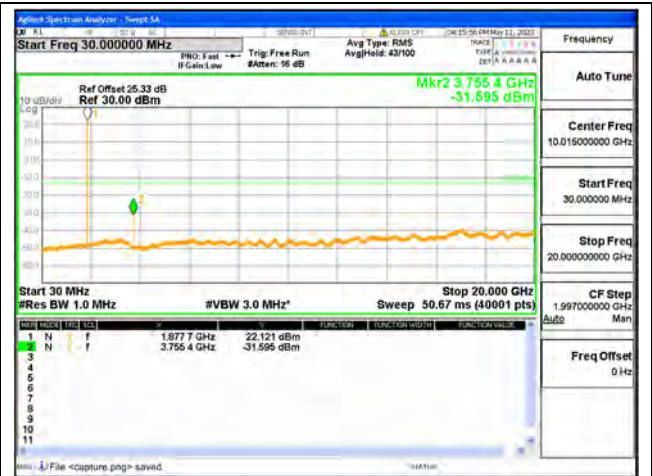
2.5.4. Test Result



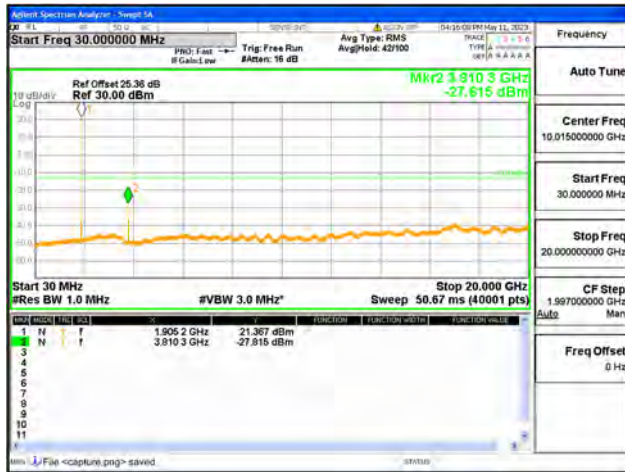




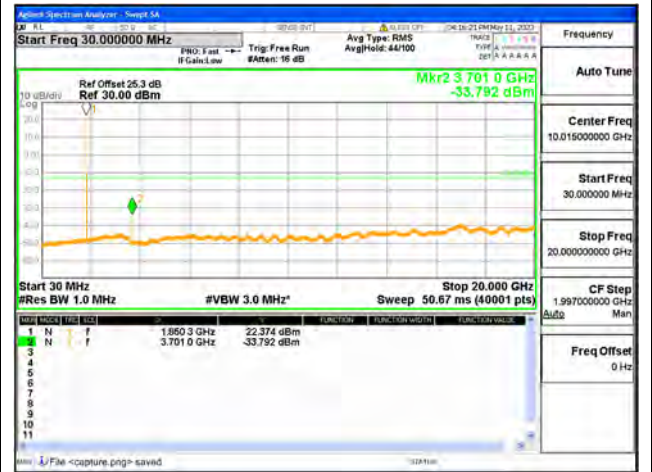
Band2 / 5MHz / Low CH / QPSK



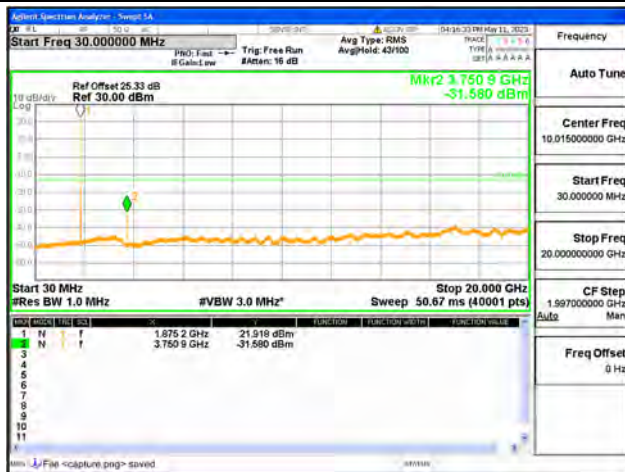
Band2 / 5MHz / Mid CH / QPSK



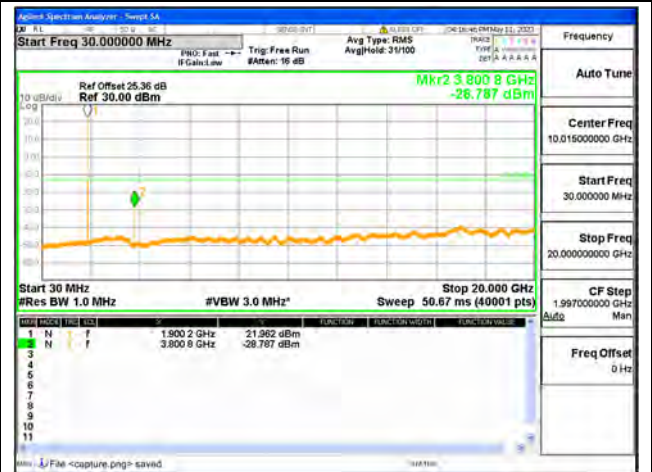
Band2 / 5MHz / High CH / QPSK



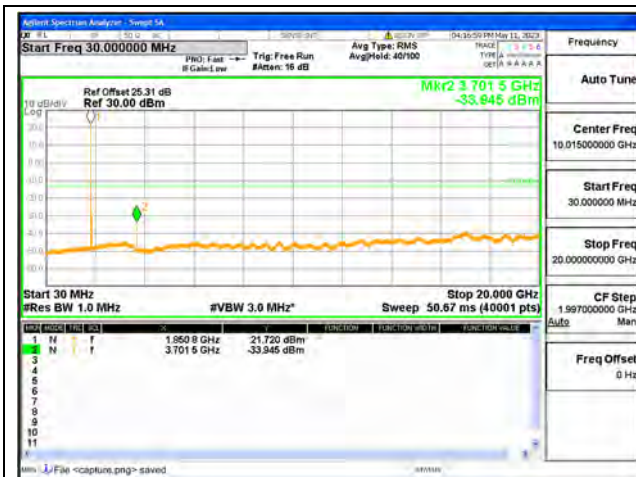
Band2 / 10MHz / Low CH / QPSK



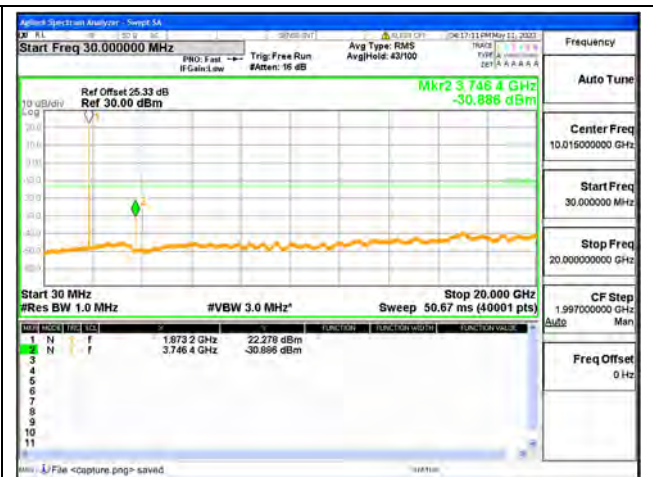
Band2 / 10MHz / Mid CH / QPSK



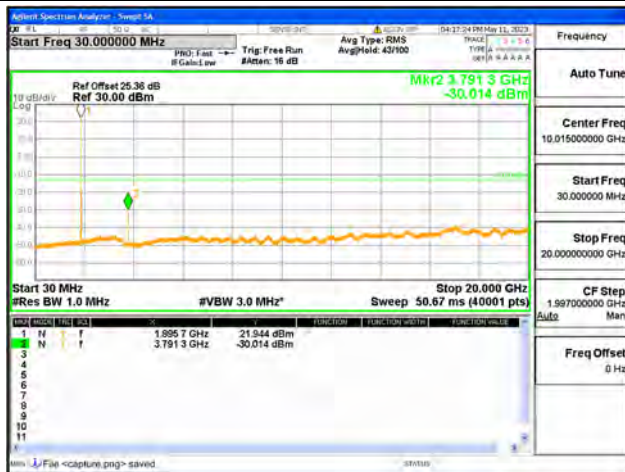
Band2 / 10MHz / High CH / QPSK



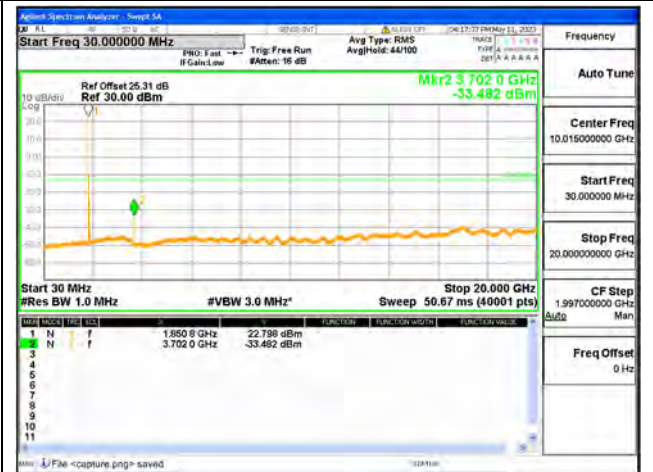
Band2 / 15MHz / Low CH / QPSK



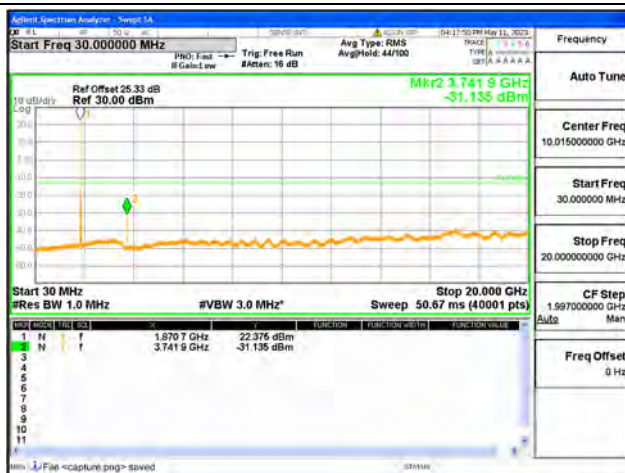
Band2 / 15MHz / Mid CH / QPSK



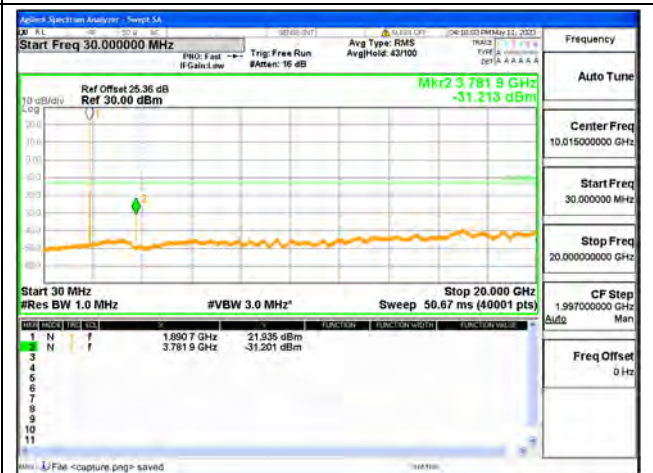
Band2 / 15MHz / High CH / QPSK



Band2 / 20MHz / Low CH / QPSK

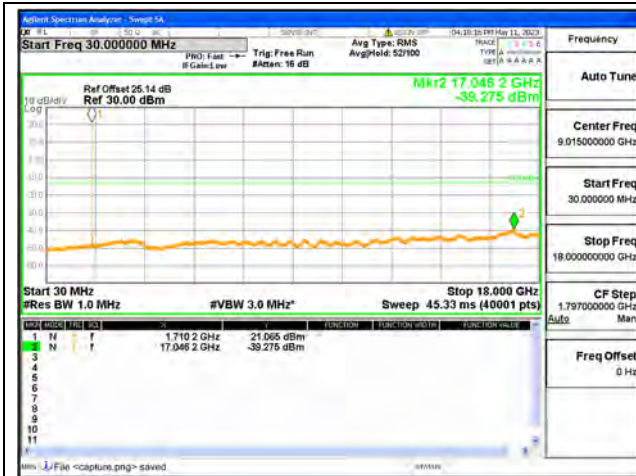


Band2 / 20MHz / Mid CH / QPSK

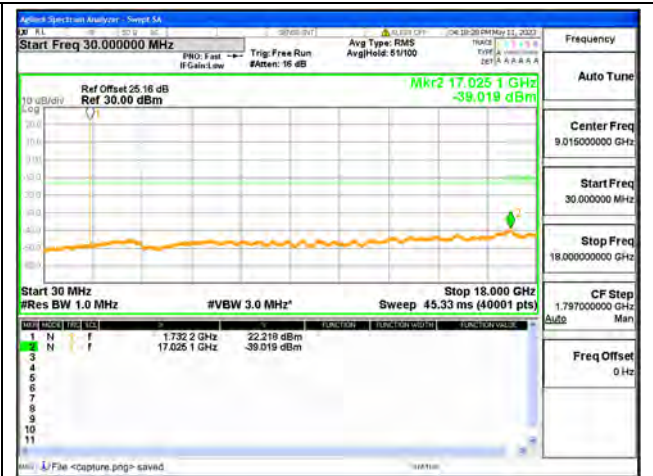


Band2 / 20MHz / High CH / QPSK

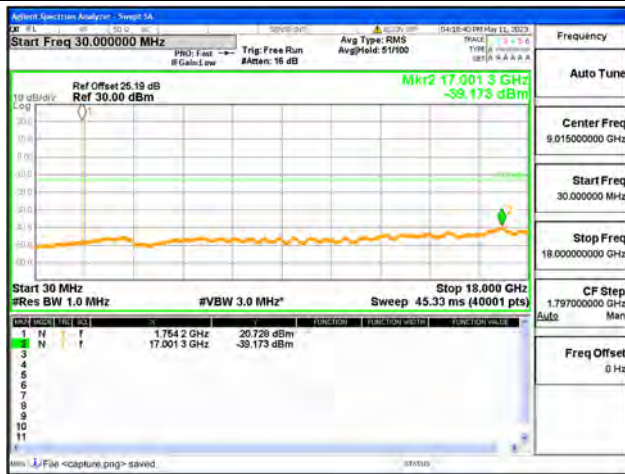




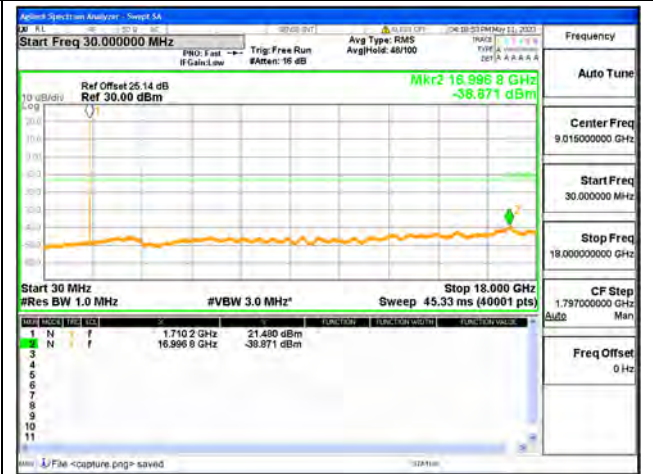
Band4 / 1.4MHz / Low CH / QPSK



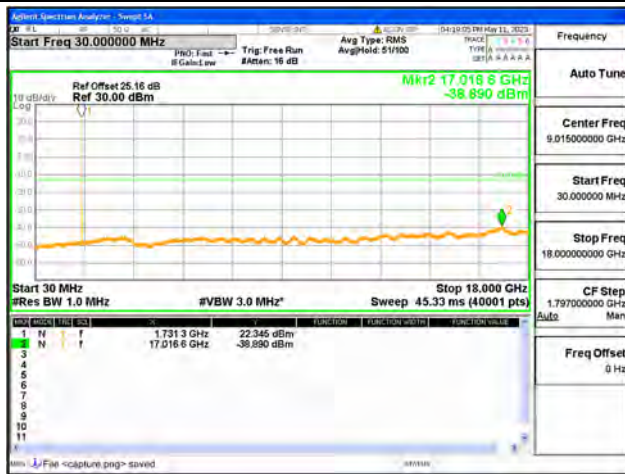
Band4 / 1.4MHz / Mid CH / QPSK



Band4 / 1.4MHz / High CH / QPSK



Band4 / 3MHz / Low CH / QPSK

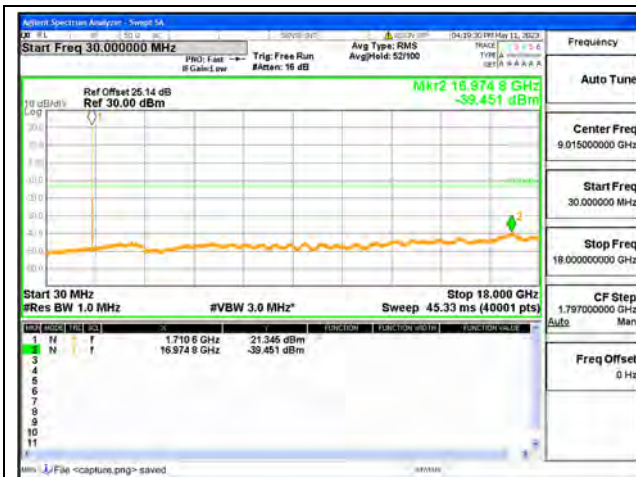


Band4 / 3MHz / Mid CH / QPSK



Band4 / 3MHz / High CH / QPSK

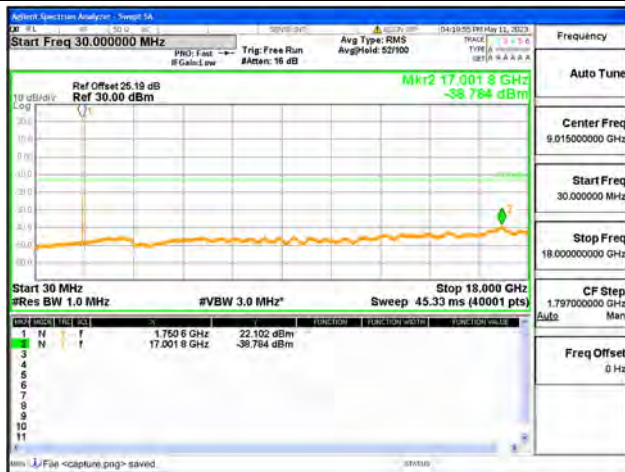




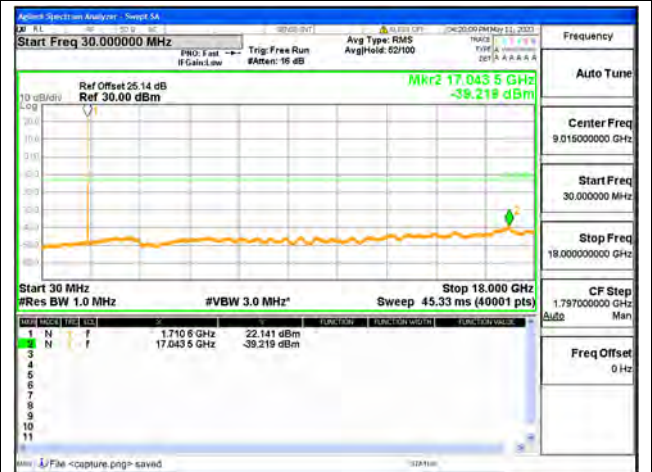
Band4 / 5MHz / Low CH / QPSK



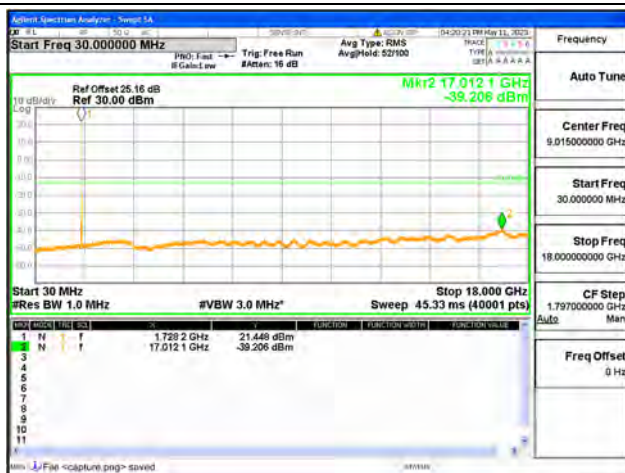
Band4 / 5MHz / Mid CH / QPSK



Band4 / 5MHz / High CH / QPSK



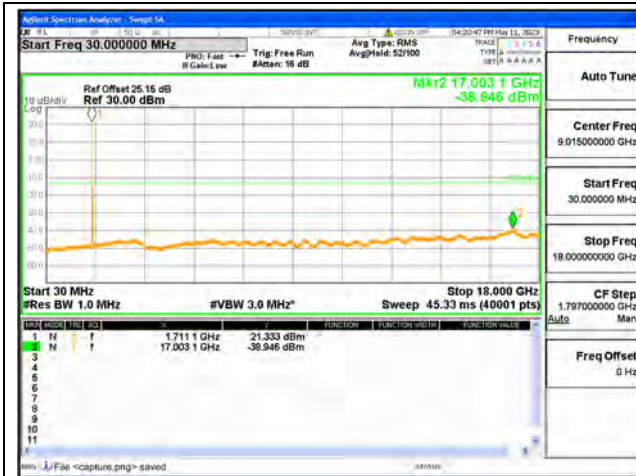
Band4 / 10MHz / Low CH / QPSK



Band4 / 10MHz / Mid CH / QPSK



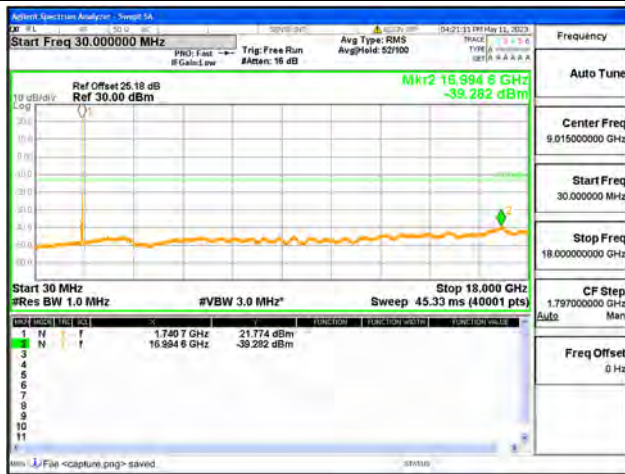
Band4 / 10MHz / High CH / QPSK



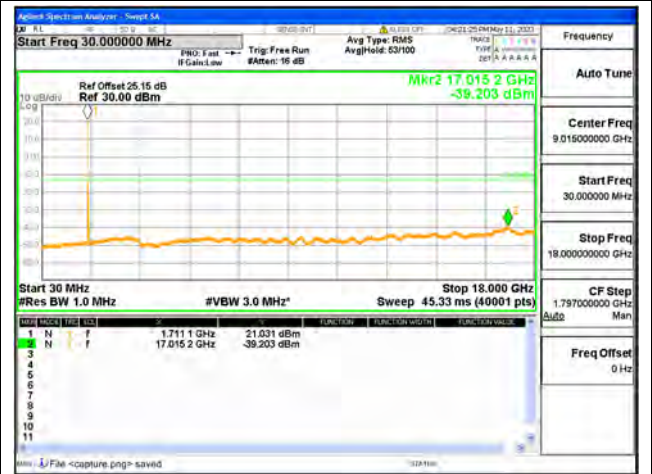
Band4 / 15MHz / Low CH / QPSK



Band4 / 15MHz / Mid CH / QPSK



Band4 / 15MHz / High CH / QPSK



Band4 / 20MHz / Low CH / QPSK

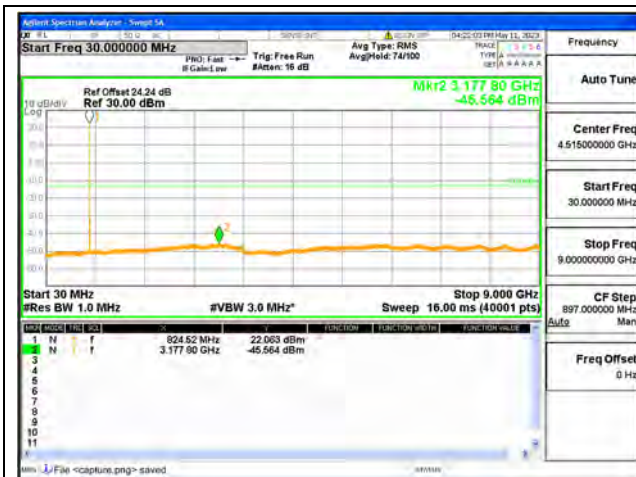


Band4 / 20MHz / Mid CH / QPSK

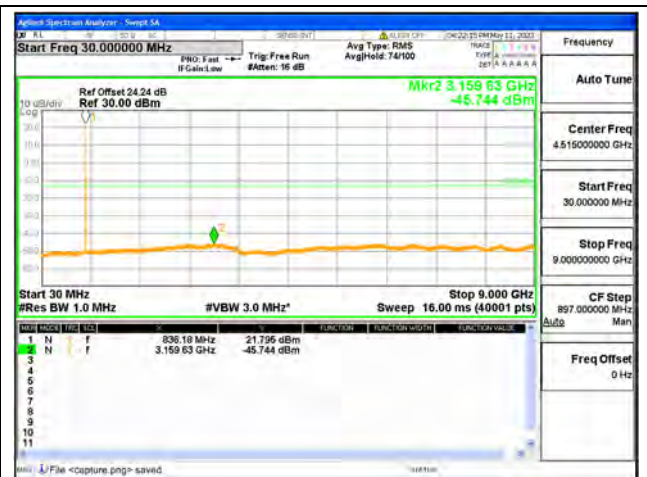


Band4 / 20MHz / High CH / QPSK

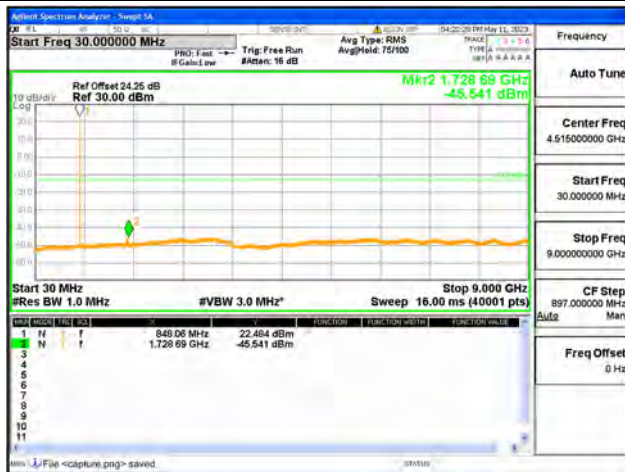




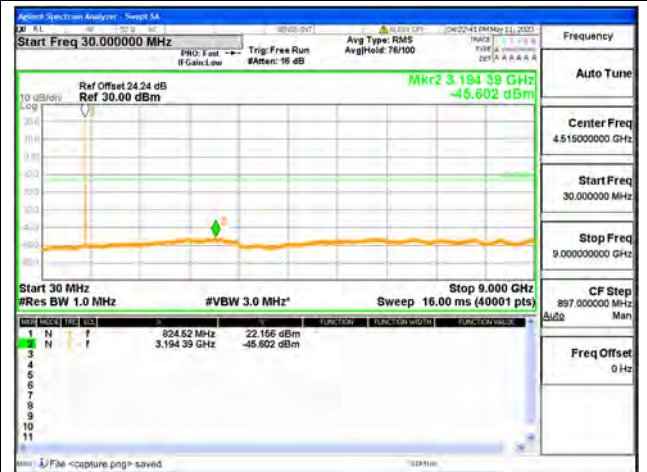
Band5 / 1.4MHz / Low CH / QPSK



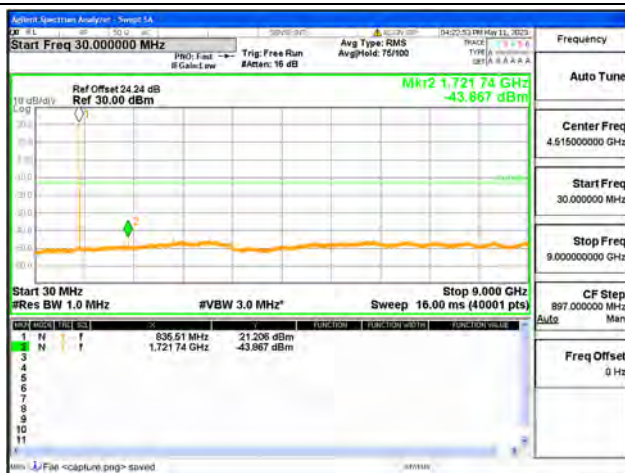
Band5 / 1.4MHz / Mid CH / QPSK



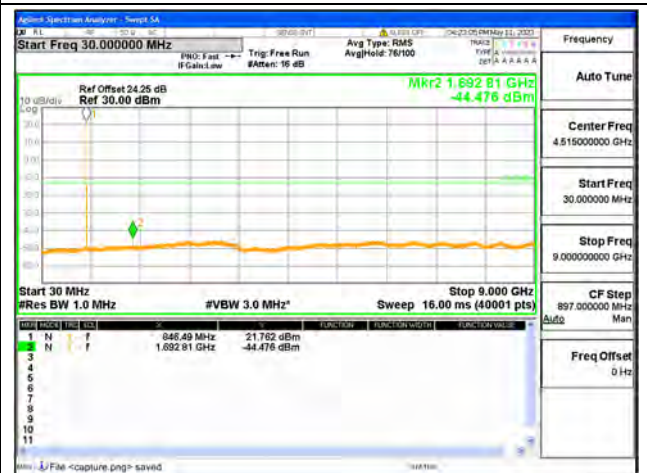
Band5 / 1.4MHz / High CH / QPSK



Band5 / 3MHz / Low CH / QPSK

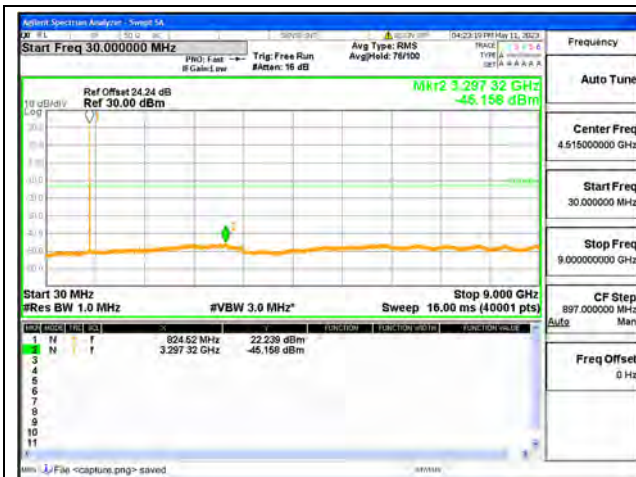


Band5 / 3MHz / Mid CH / QPSK

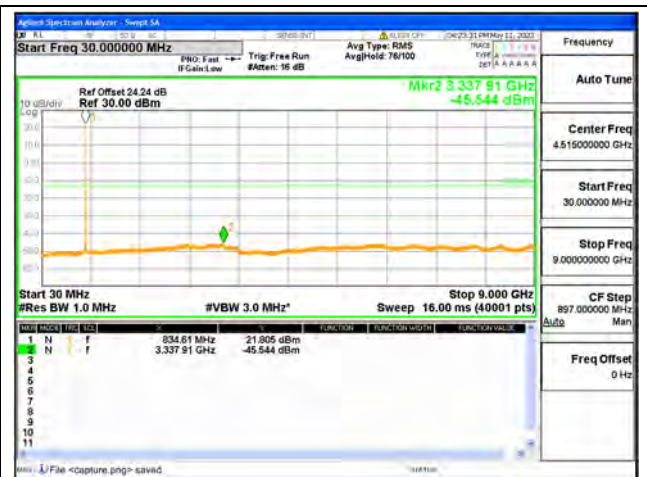


Band5 / 3MHz / High CH / QPSK

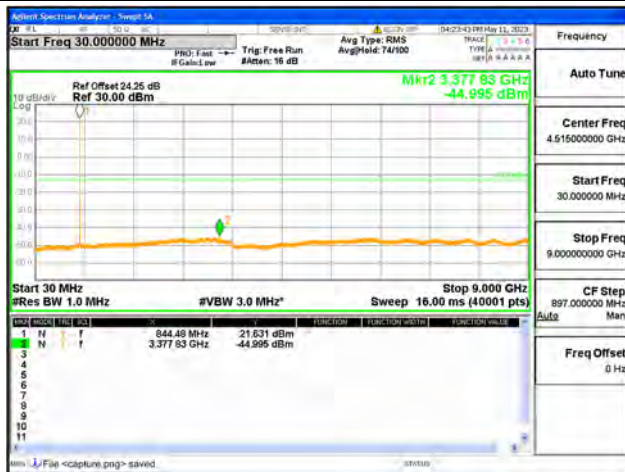




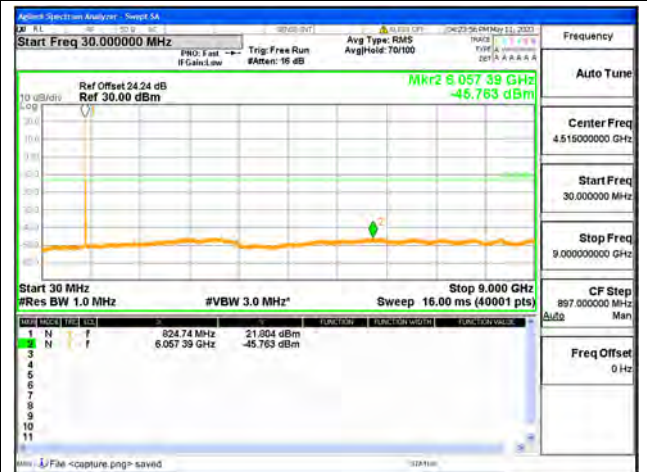
Band5 / 5MHz / Low CH / QPSK



Band5 / 5MHz / Mid CH / QPSK



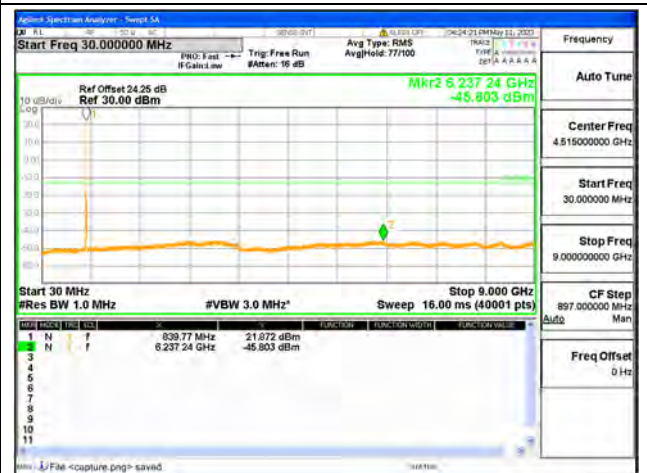
Band5 / 5MHz / High CH / QPSK



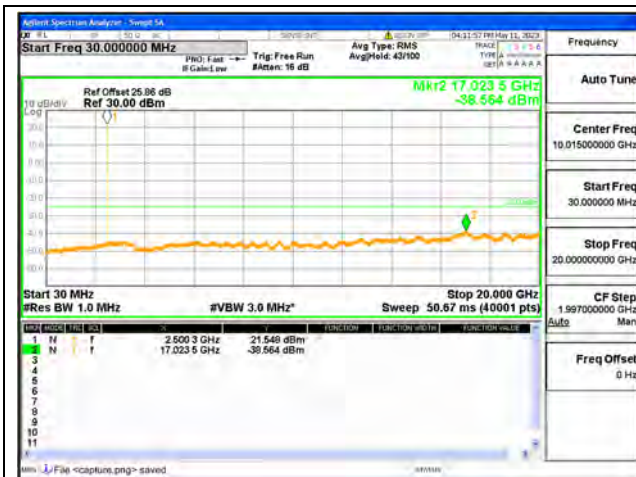
Band5 / 10MHz / Low CH / QPSK



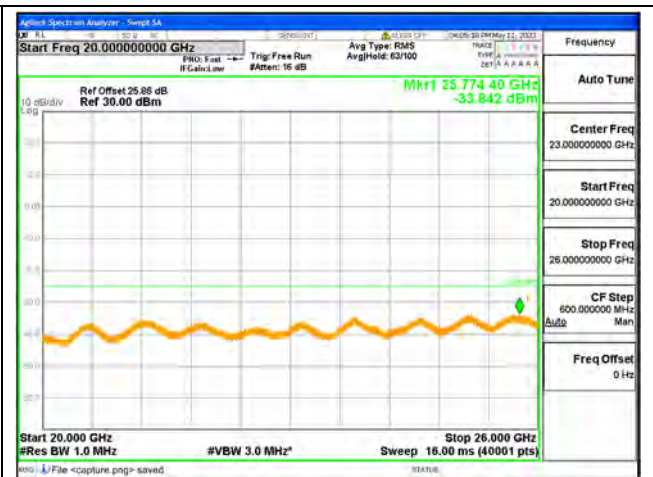
Band5 / 10MHz / Mid CH / QPSK



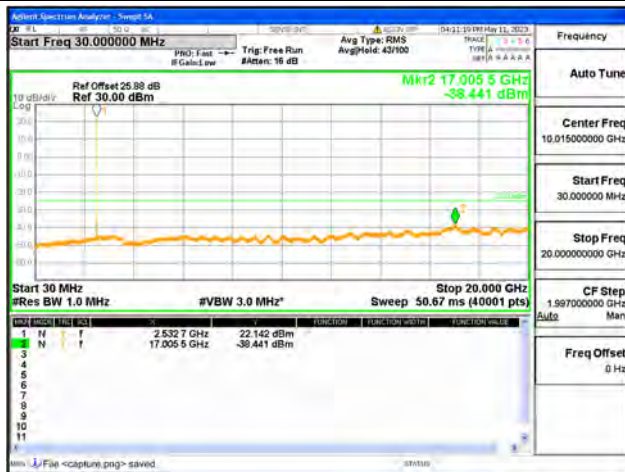
Band5 / 10MHz / High CH / QPSK



Band7-30M-20G / 5MHz / Low CH / QPSK



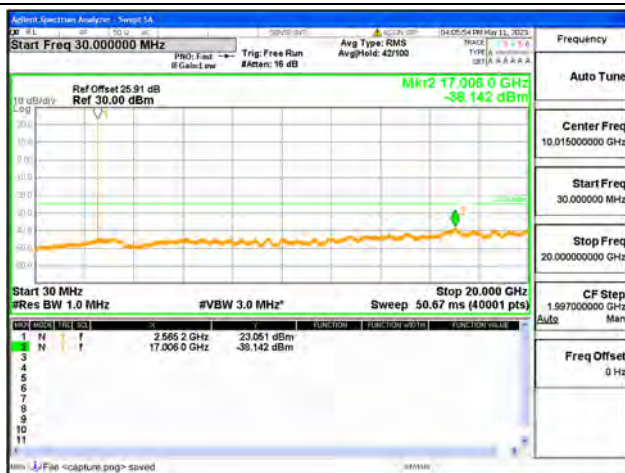
Band7-20G-26G / 5MHz / Low CH / QPSK



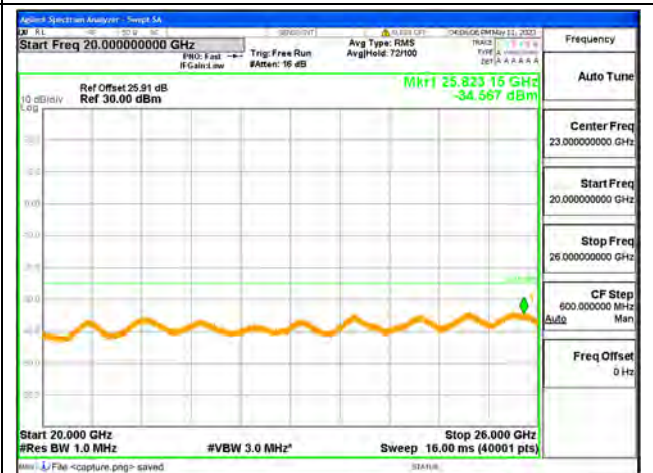
Band7-30M-20G / 5MHz / Mid CH / QPSK



Band7-20G-26G / 5MHz / Mid CH / QPSK

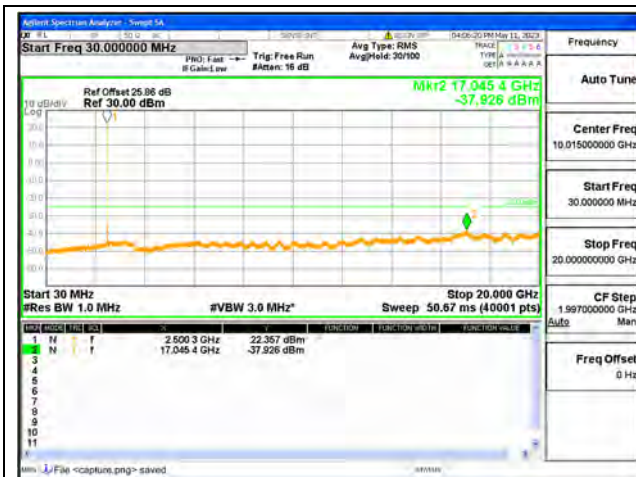


Band7-30M-20G / 5MHz / High CH / QPSK

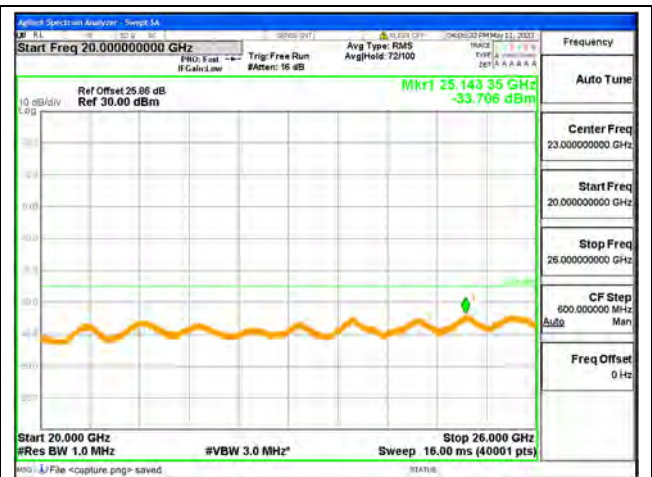


Band7-20G-26G / 5MHz / High CH / QPSK

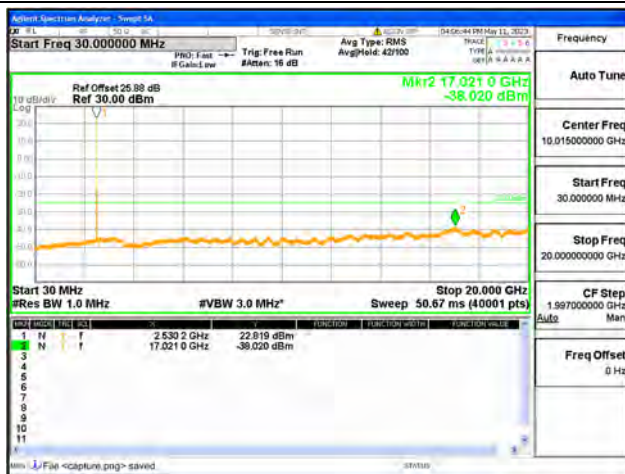




Band7-30M-20G / 10MHz / Low CH / QPSK



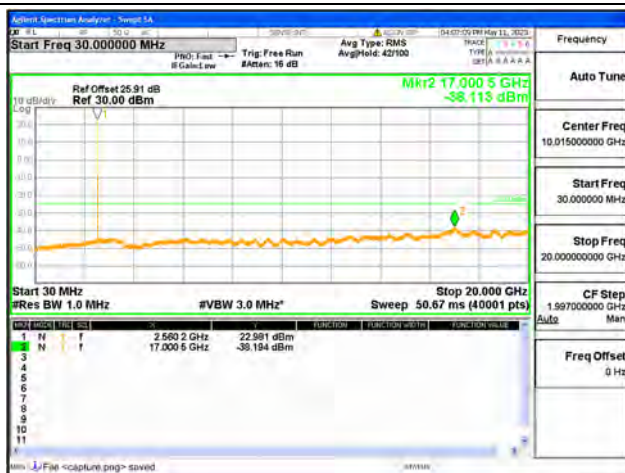
Band7-20G-26G / 10MHz / Low CH / QPSK



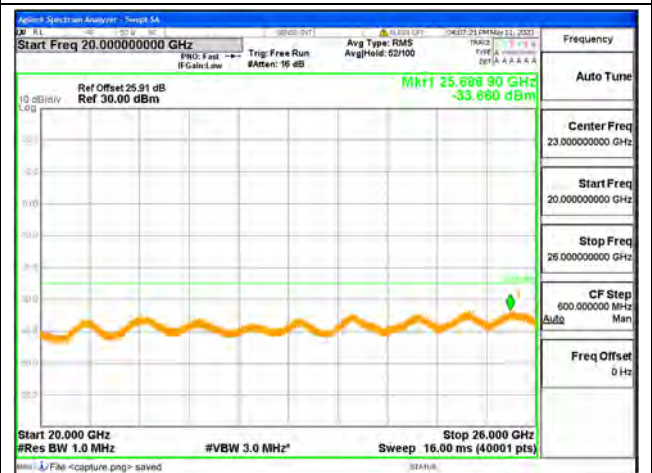
Band7-30M-20G / 10MHz / Mid CH / QPSK



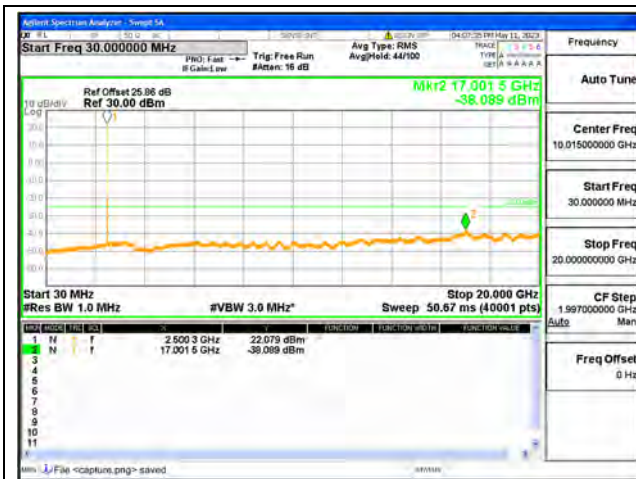
Band7-20G-26G / 10MHz / Mid CH / QPSK



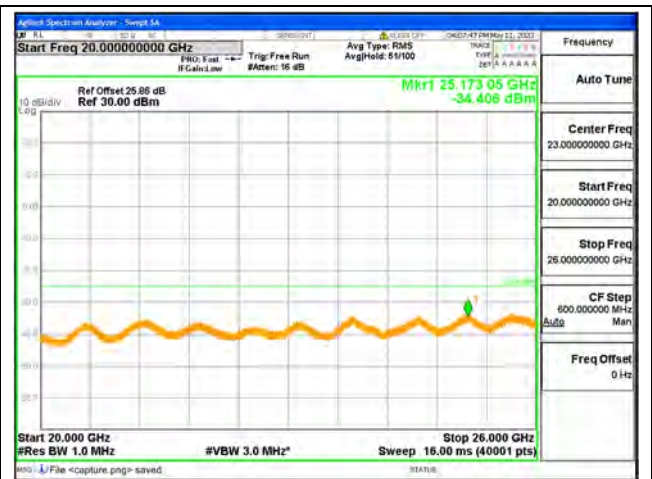
Band7-30M-20G / 10MHz / High CH / QPSK



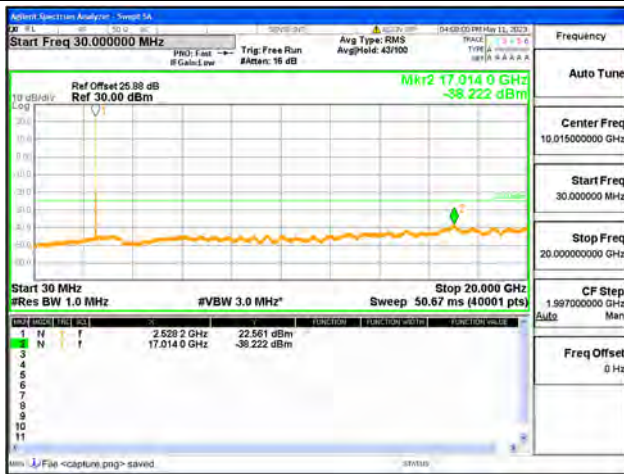
Band7-20G-26G / 10MHz / High CH / QPSK



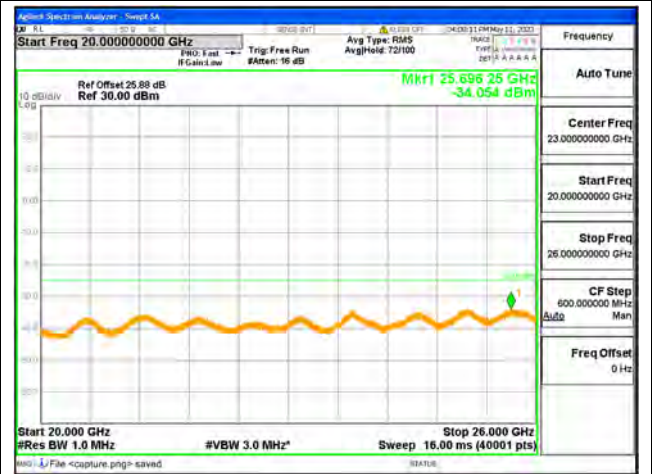
Band7-30M-20G / 15MHz / Low CH / QPSK



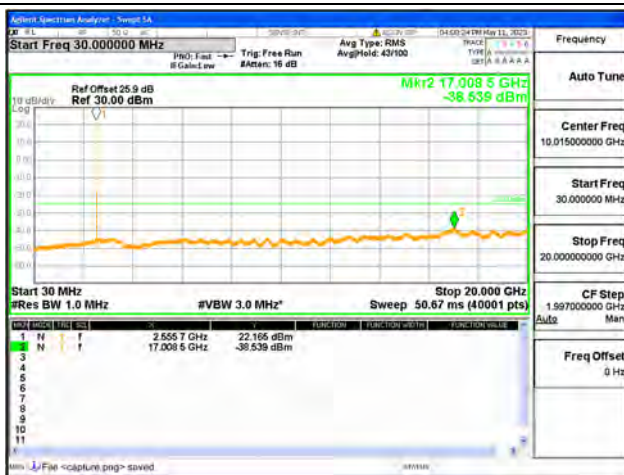
Band7-20G-26G / 15MHz / Low CH / QPSK



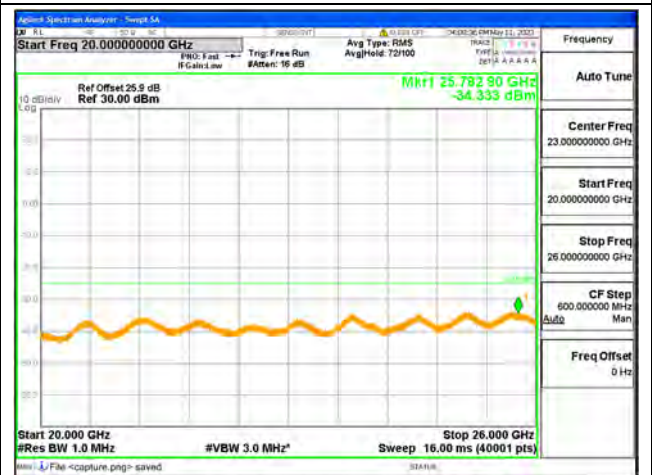
Band7-30M-20G / 15MHz / Mid CH / QPSK



Band7-20G-26G / 15MHz / Mid CH / QPSK

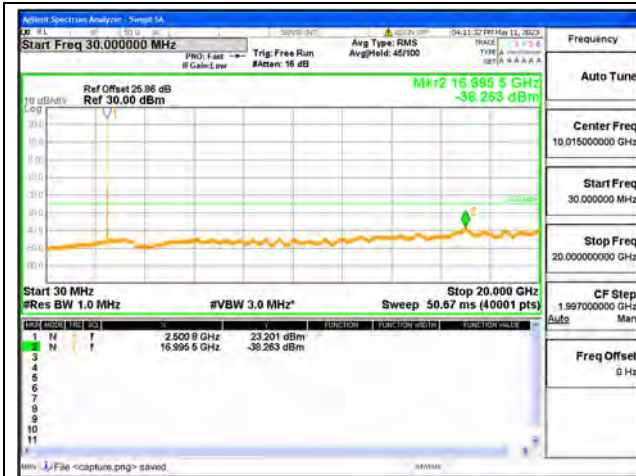


Band7-30M-20G / 15MHz / High CH / QPSK

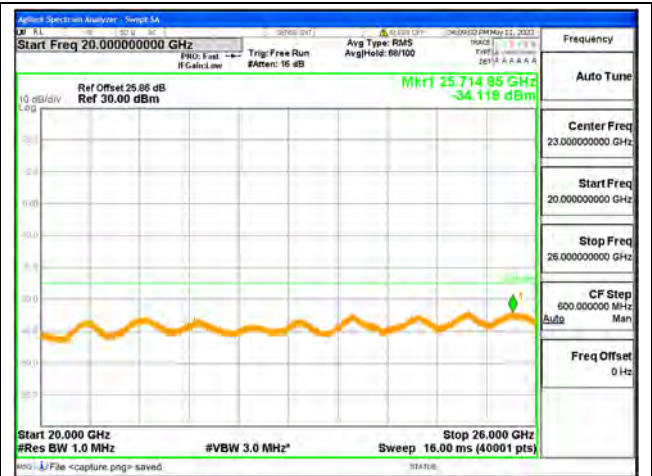


Band7-20G-26G / 15MHz / High CH / QPSK

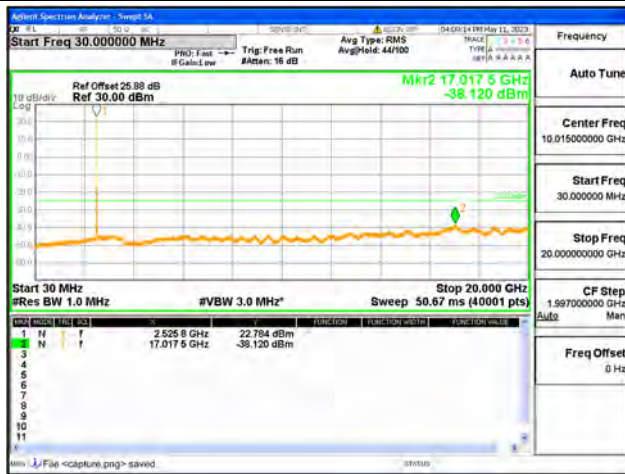




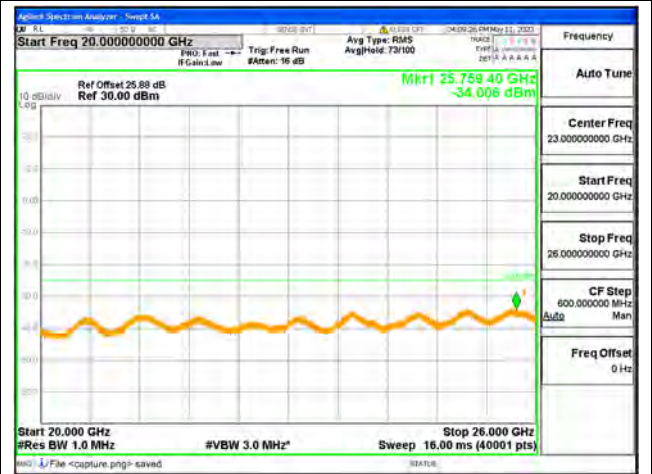
Band7-30M-20G / 20MHz / Low CH / QPSK



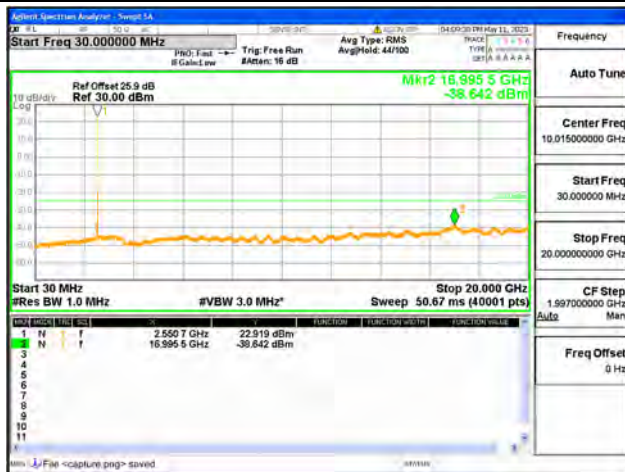
Band7-20G-26G / 20MHz / Low CH / QPSK



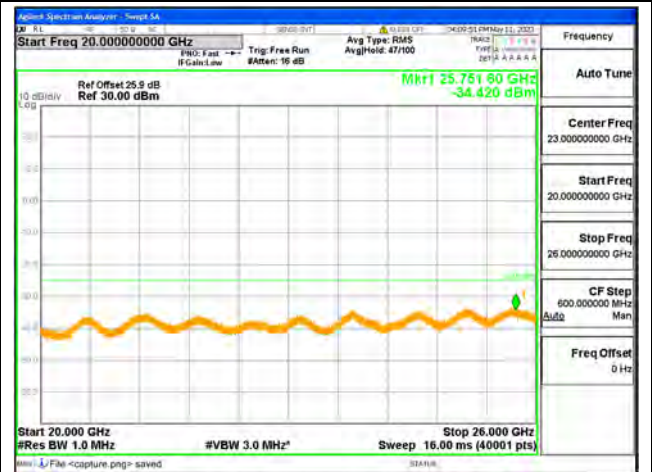
Band7-30M-20G / 20MHz / Mid CH / QPSK



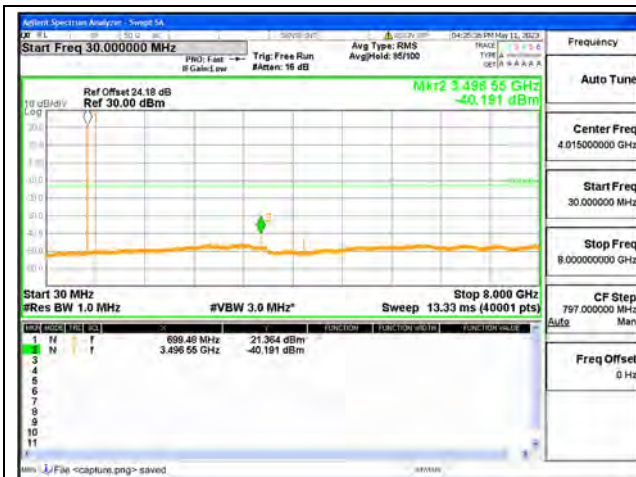
Band7-20G-26G / 20MHz / Mid CH / QPSK



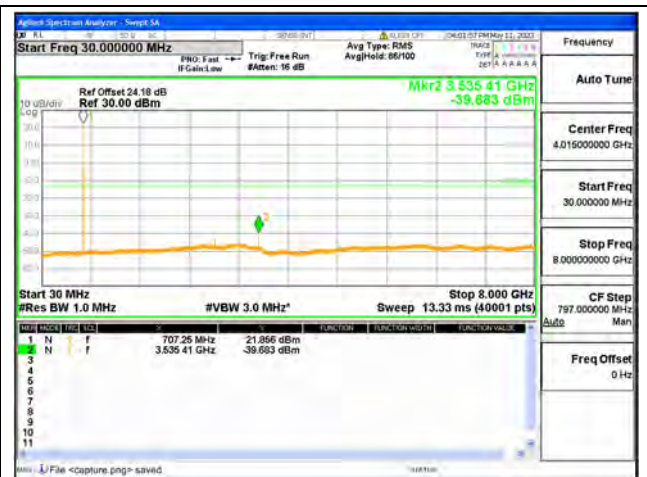
Band7-30M-20G / 20MHz / High CH / QPSK



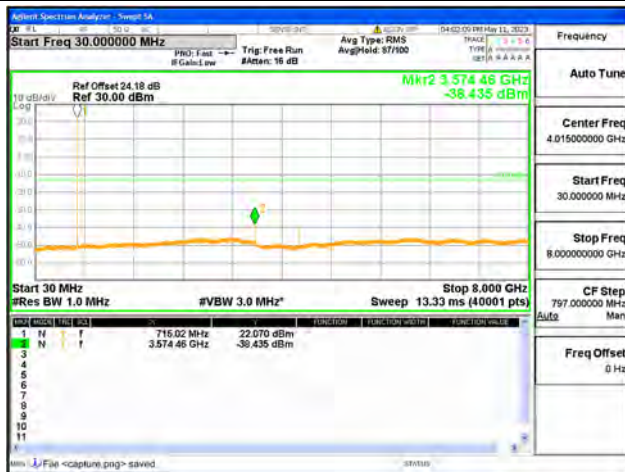
Band7-20G-26G / 20MHz / High CH / QPSK



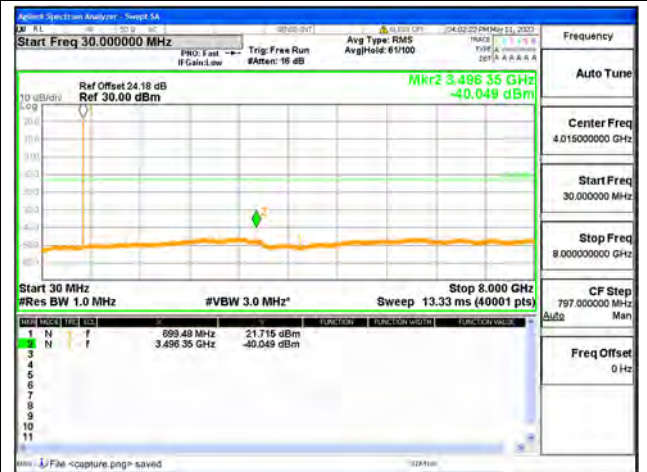
Band12 / 1.4MHz / Low CH / QPSK



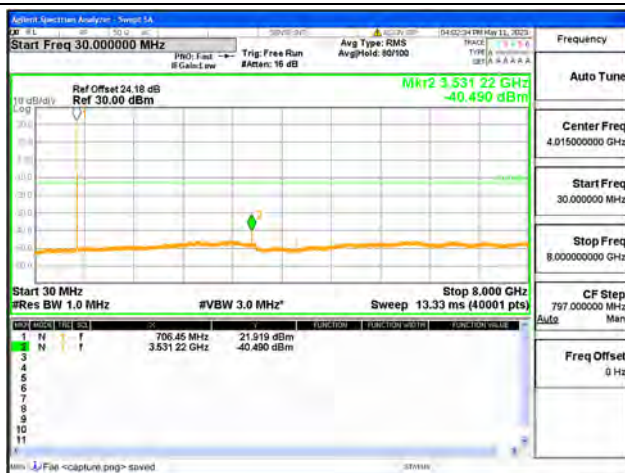
Band12 / 1.4MHz / Mid CH / QPSK



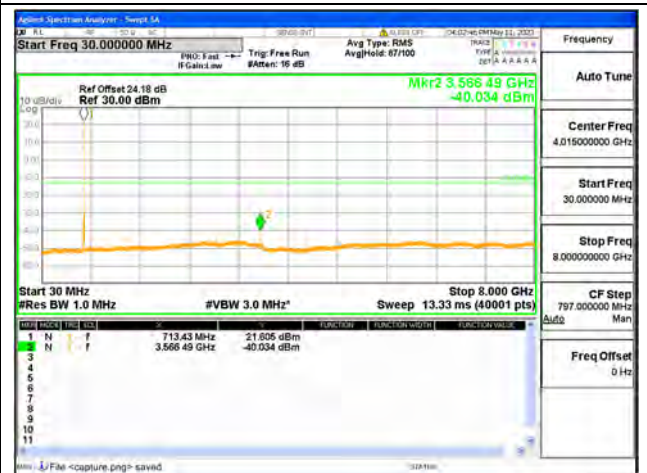
Band12 / 1.4MHz / High CH / QPSK



Band12 / 3MHz / Low CH / QPSK

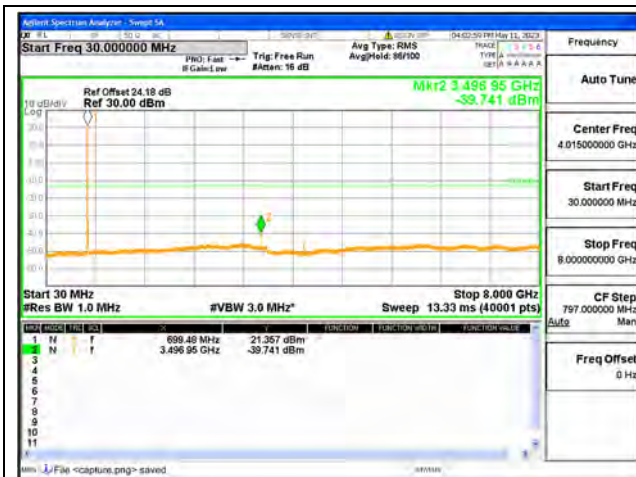


Band12 / 3MHz / Mid CH / QPSK

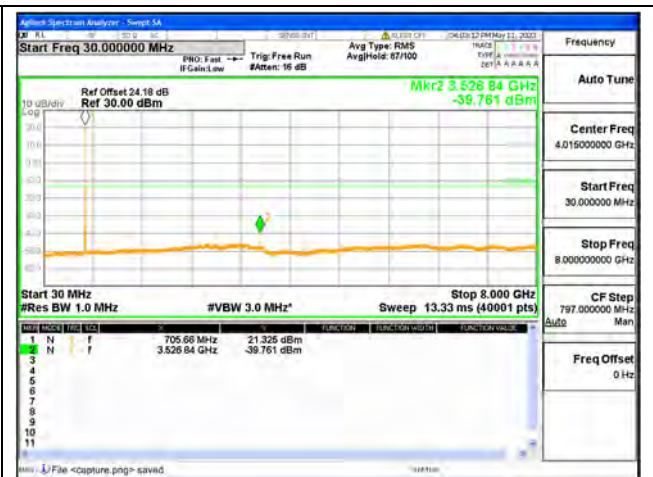


Band12 / 3MHz / High CH / QPSK

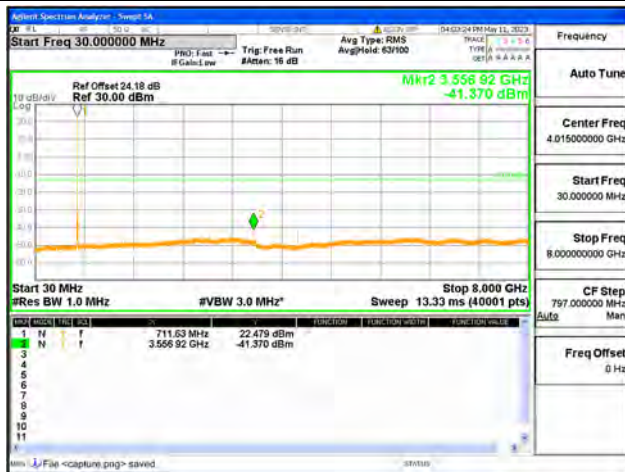




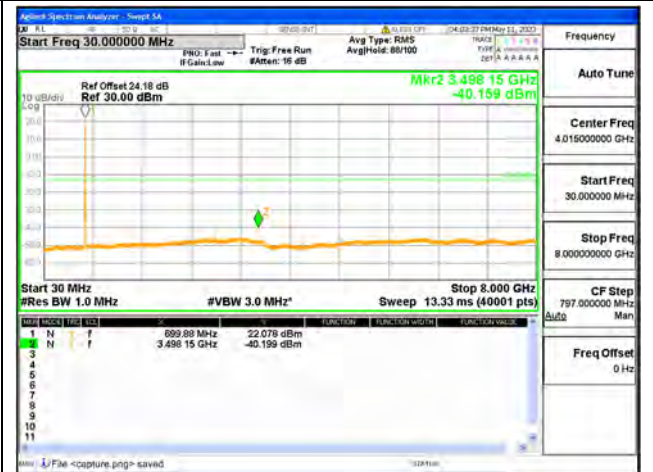
Band12 / 5MHz / Low CH / QPSK



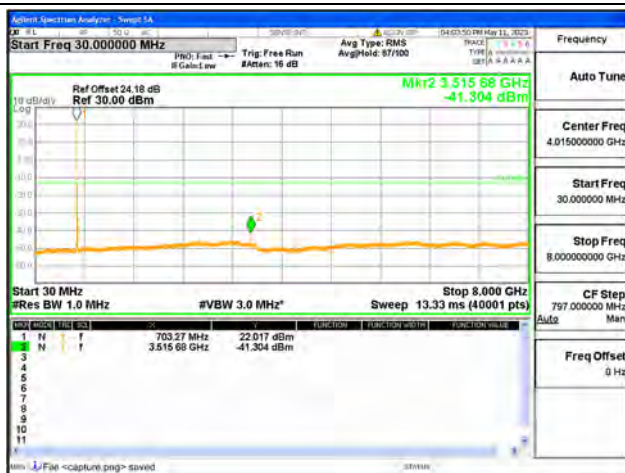
Band12 / 5MHz / Mid CH / QPSK



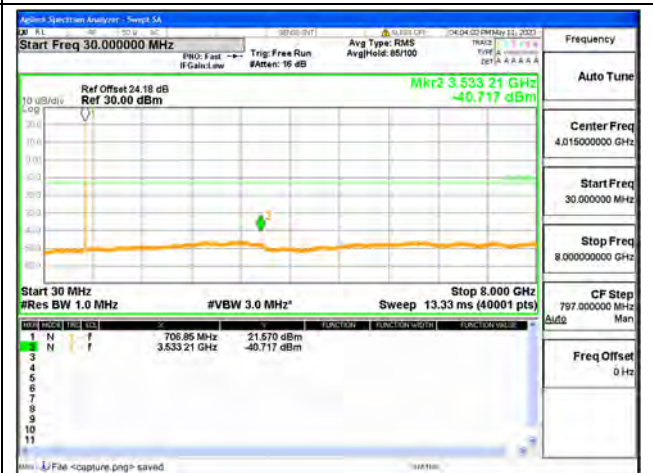
Band12 / 5MHz / High CH / QPSK



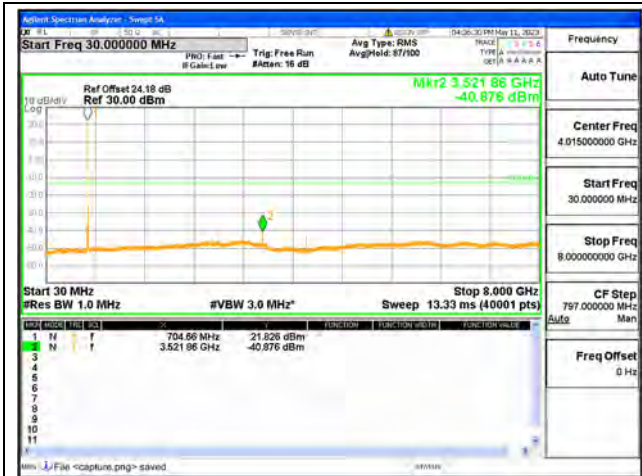
Band12 / 10MHz / Low CH / QPSK



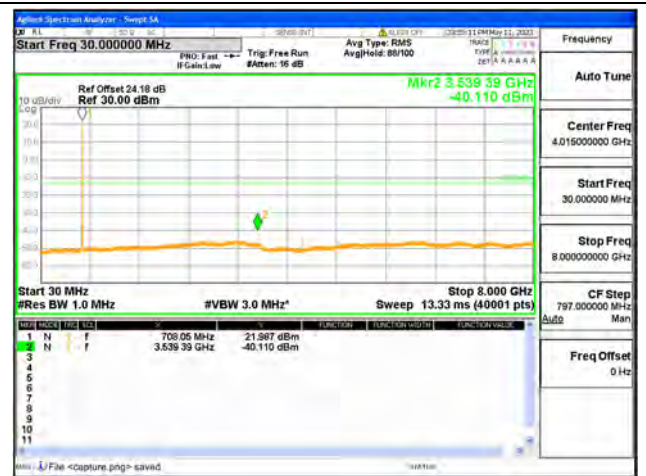
Band12 / 10MHz / Mid CH / QPSK



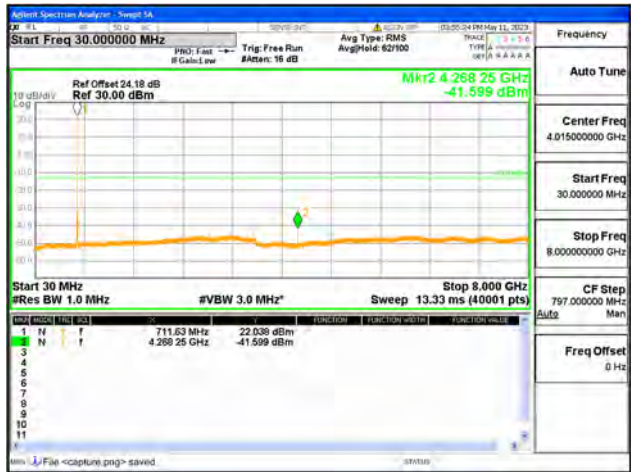
Band12 / 10MHz / High CH / QPSK



Band17 / 5MHz / Low CH / QPSK



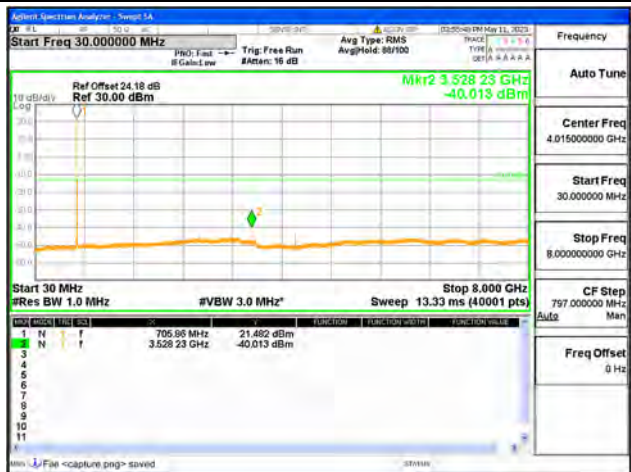
Band17 / 5MHz / Mid CH / QPSK



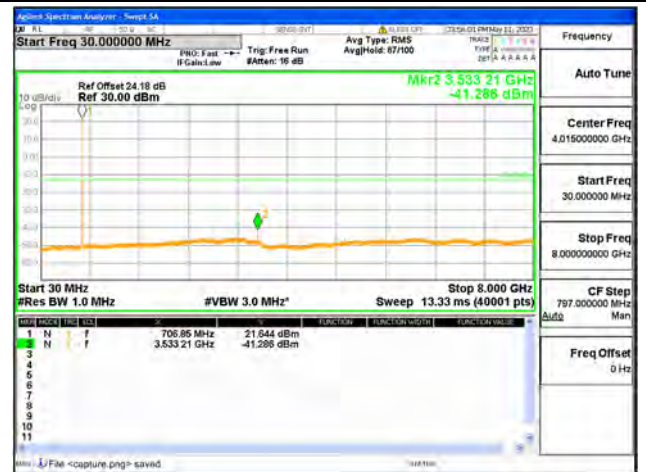
Band17 / 5MHz / High CH / QPSK



Band17 / 10MHz / Low CH / QPSK

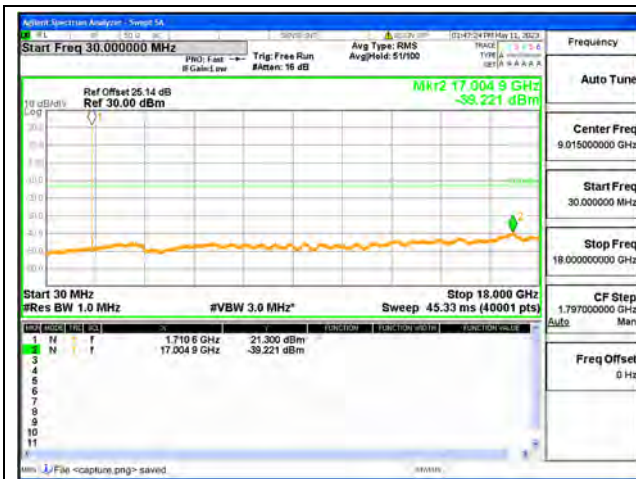


Band17 / 10MHz / Mid CH / QPSK

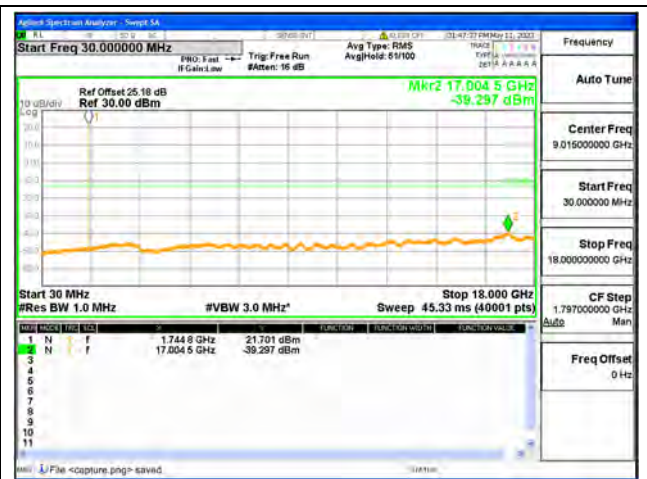


Band17 / 10MHz / High CH / QPSK

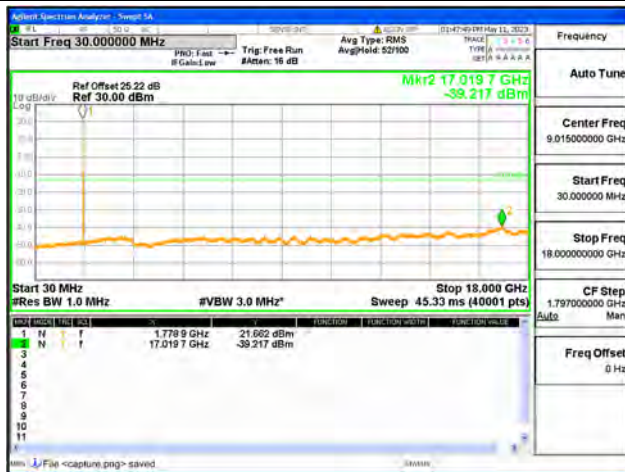




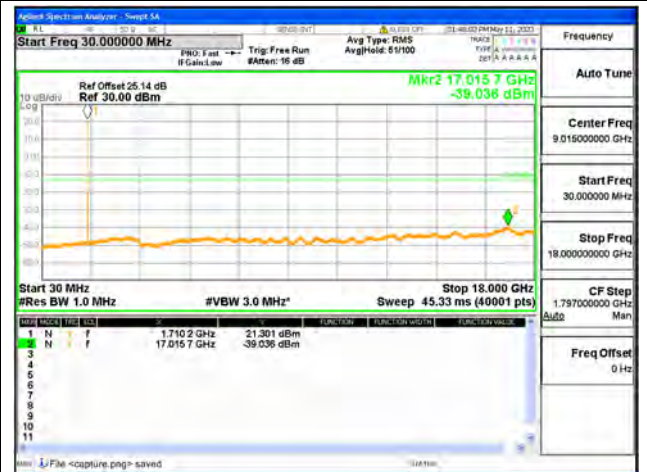
Band66 / 1.4MHz / Low CH / QPSK



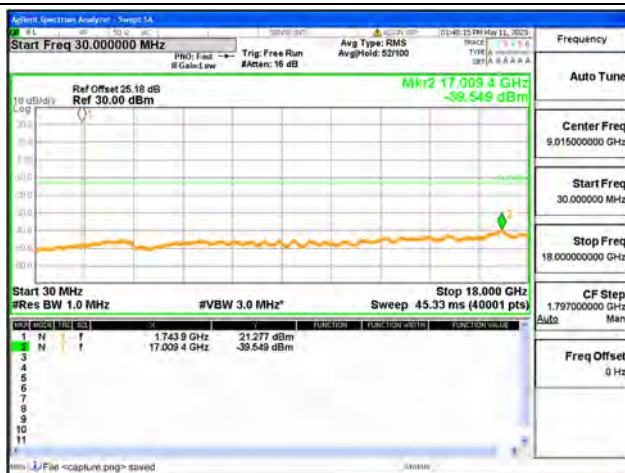
Band66 / 1.4MHz / Mid CH / QPSK



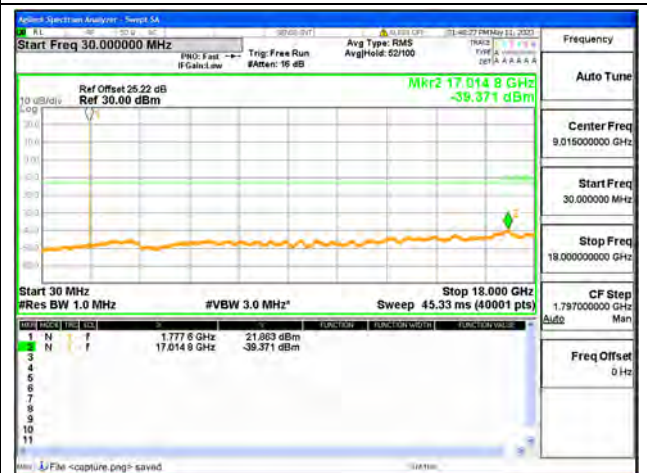
Band66 / 1.4MHz / High CH / QPSK



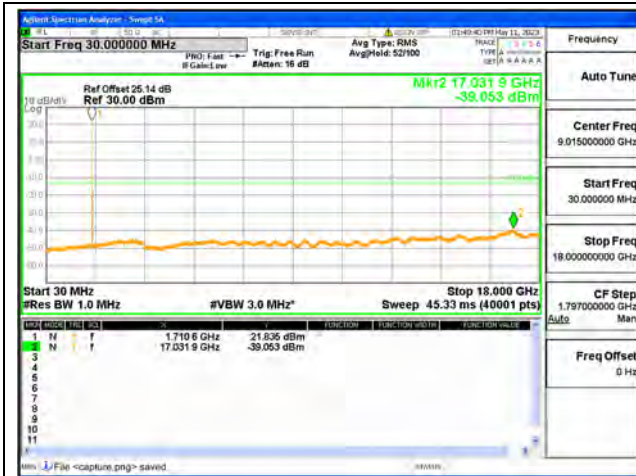
Band66 / 3MHz / Low CH / QPSK



Band66 / 3MHz / Mid CH / QPSK



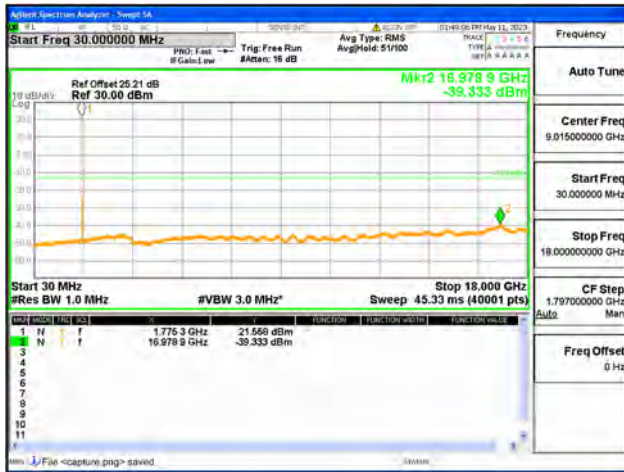
Band66 / 3MHz / High CH / QPSK



Band66 / 5MHz / Low CH / QPSK



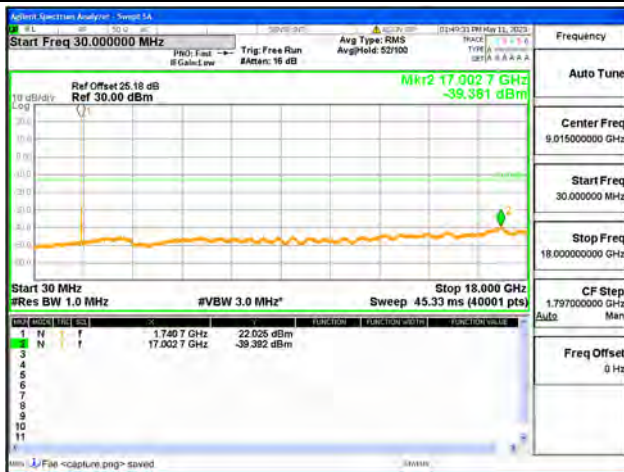
Band66 / 5MHz / Mid CH / QPSK



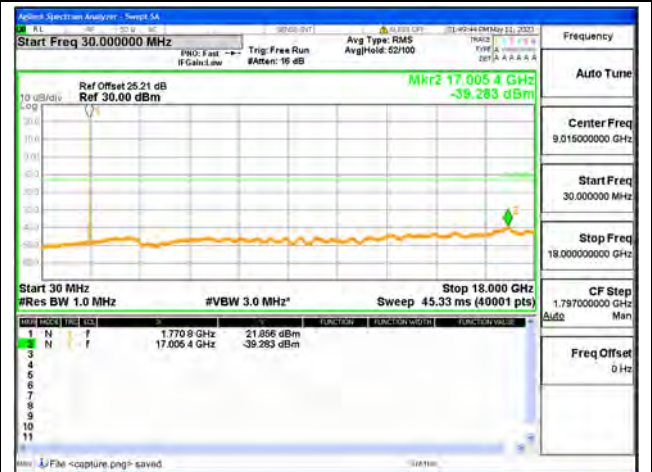
Band66 / 5MHz / High CH / QPSK



Band66 / 10MHz / Low CH / QPSK

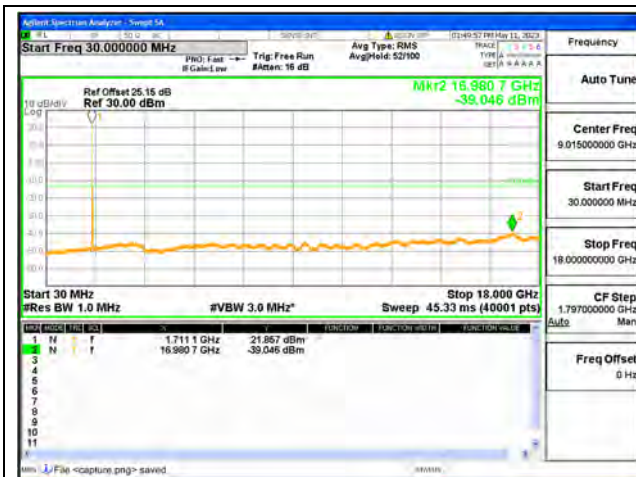


Band66 / 10MHz / Mid CH / QPSK

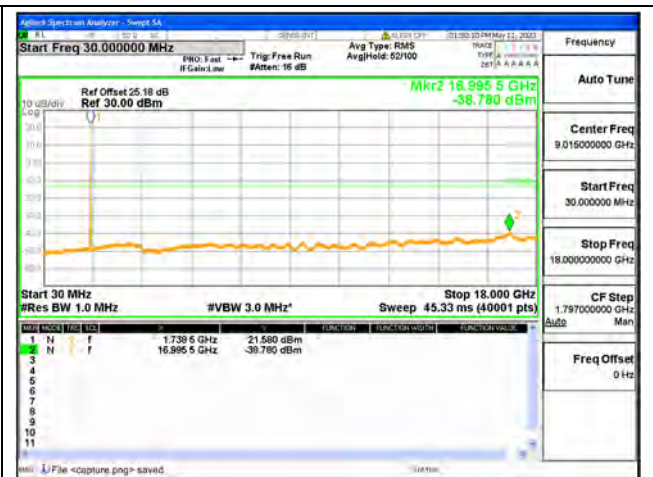


Band66 / 10MHz / High CH / QPSK

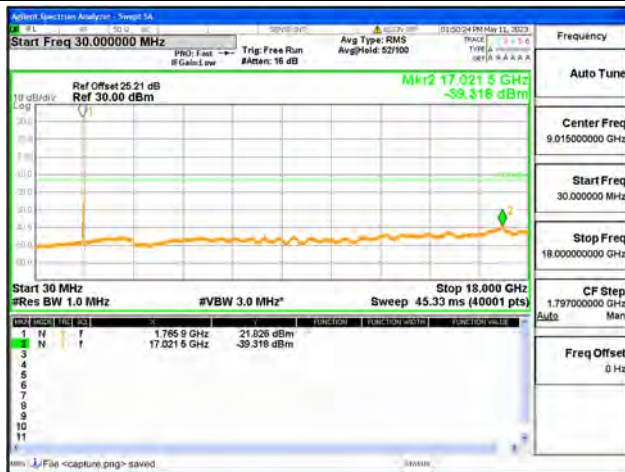




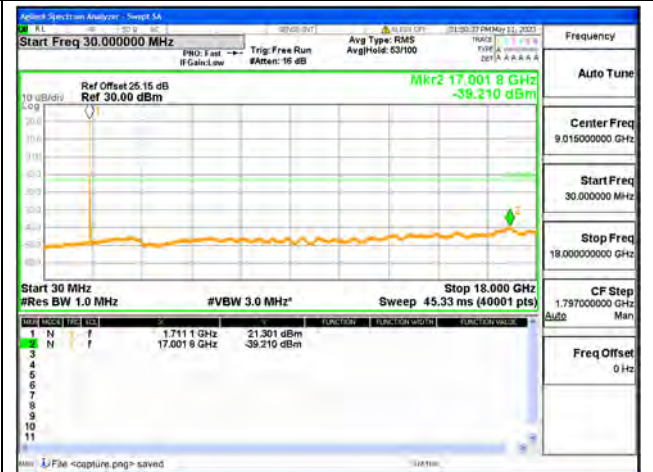
Band66 / 15MHz / Low CH / QPSK



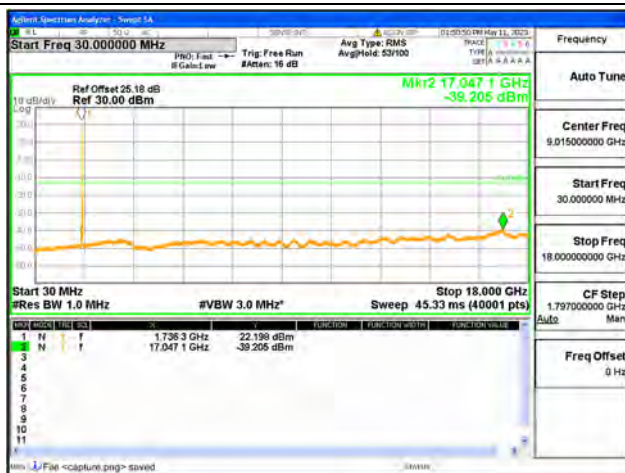
Band66 / 15MHz / Mid CH / QPSK



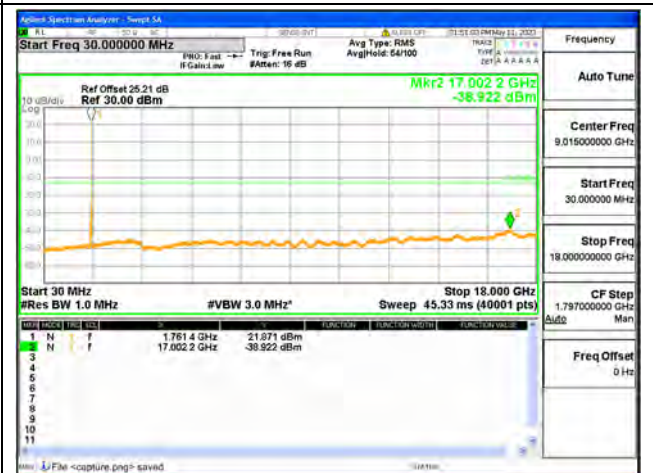
Band66 / 15MHz / High CH / QPSK



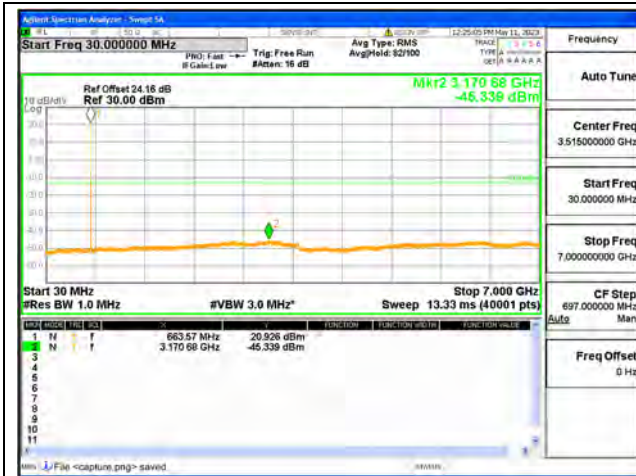
Band66 / 20MHz / Low CH / QPSK



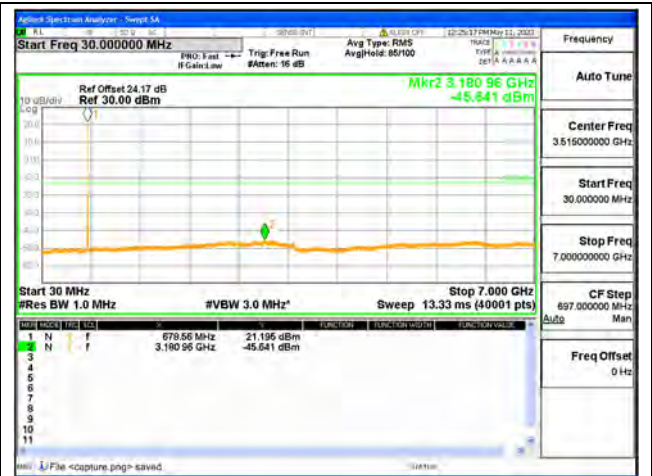
Band66 / 20MHz / Mid CH / QPSK



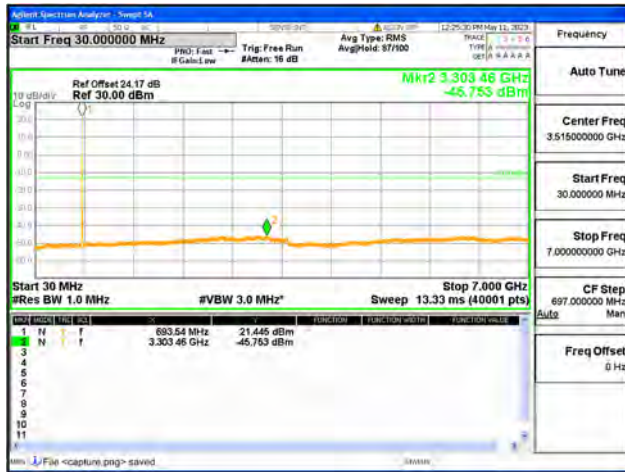
Band66 / 20MHz / High CH / QPSK



Band71 / 5MHz / Low CH / QPSK



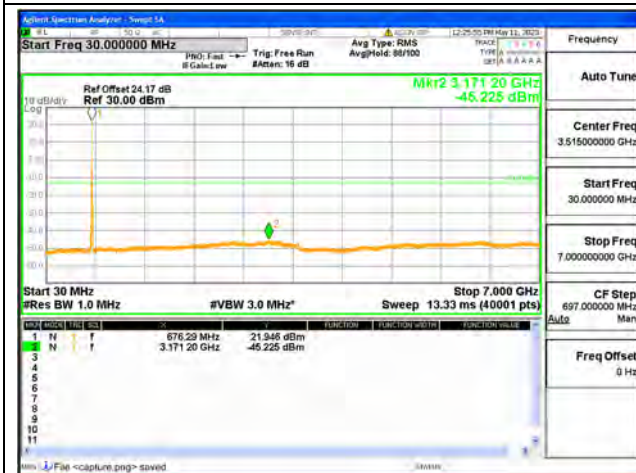
Band71 / 5MHz / Mid CH / QPSK



Band71 / 5MHz / High CH / QPSK



Band71 / 10MHz / Low CH / QPSK

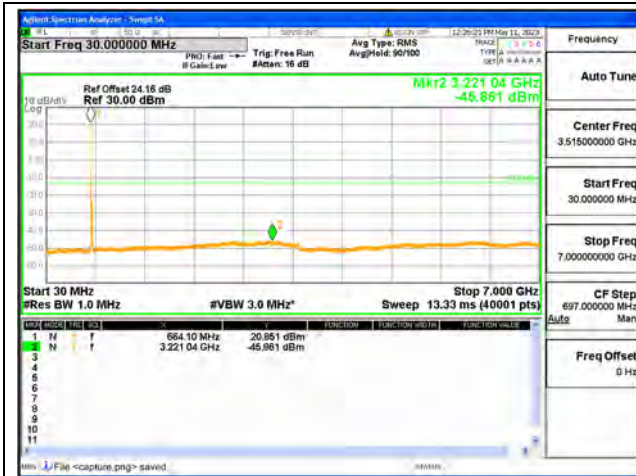


Band71 / 10MHz / Mid CH / QPSK

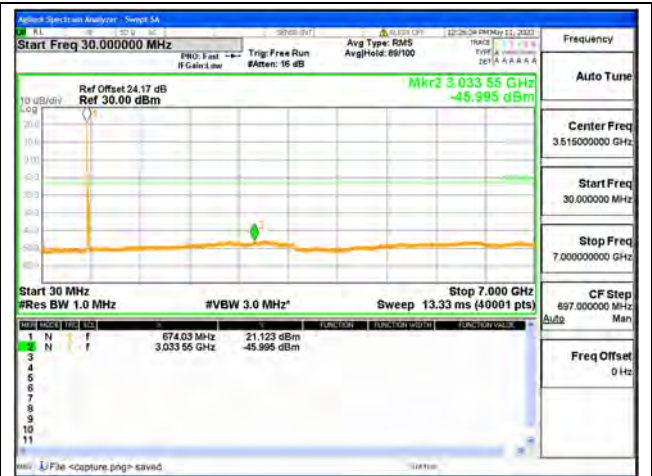


Band71 / 10MHz / High CH / QPSK

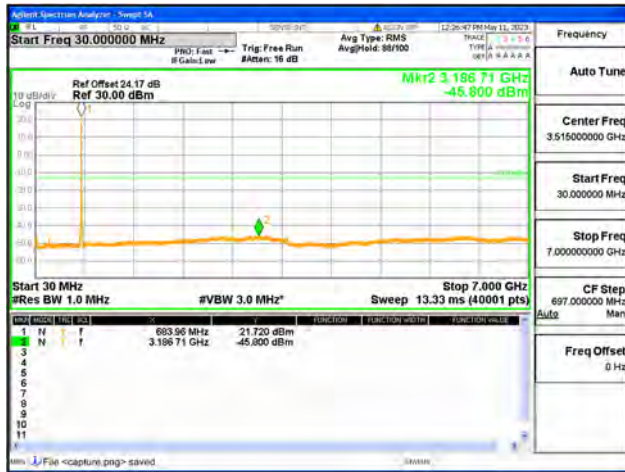




Band71 / 15MHz / Low CH / QPSK



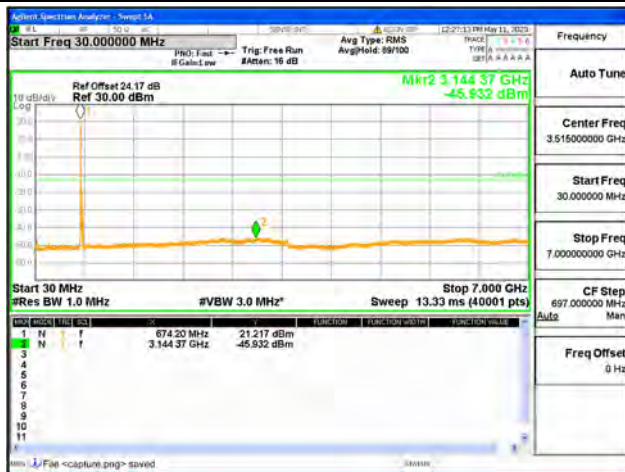
Band71 / 15MHz / Mid CH / QPSK



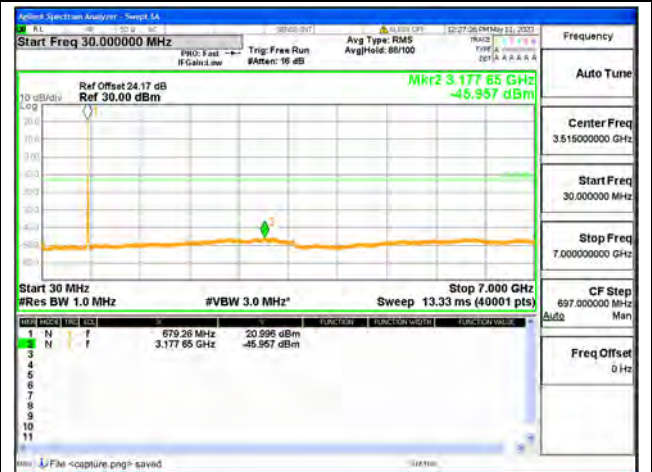
Band71 / 15MHz / High CH / QPSK



Band71 / 20MHz / Low CH / QPSK



Band71 / 20MHz / Mid CH / QPSK



Band71 / 20MHz / High CH / QPSK



## 2.6. Band Edge

### 2.6.1. Requirement

#### Band 2

According to FCC section 24.238(a), for operations in the 1850–1910MHz bands, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

#### Band 4, 66

According to FCC section 27.53(h), for operations in the 1710–1755MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

#### Band 5

According to FCC section 22.917(a), for operations in the 824–849MHz bands, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB in a 100kHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

#### Band 12, 17, 71

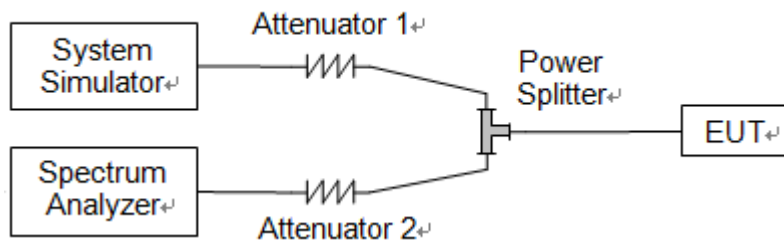
For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.



## Band 7

According to FCC section 27.53(m) (4), for mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

### 2.6.2. Description



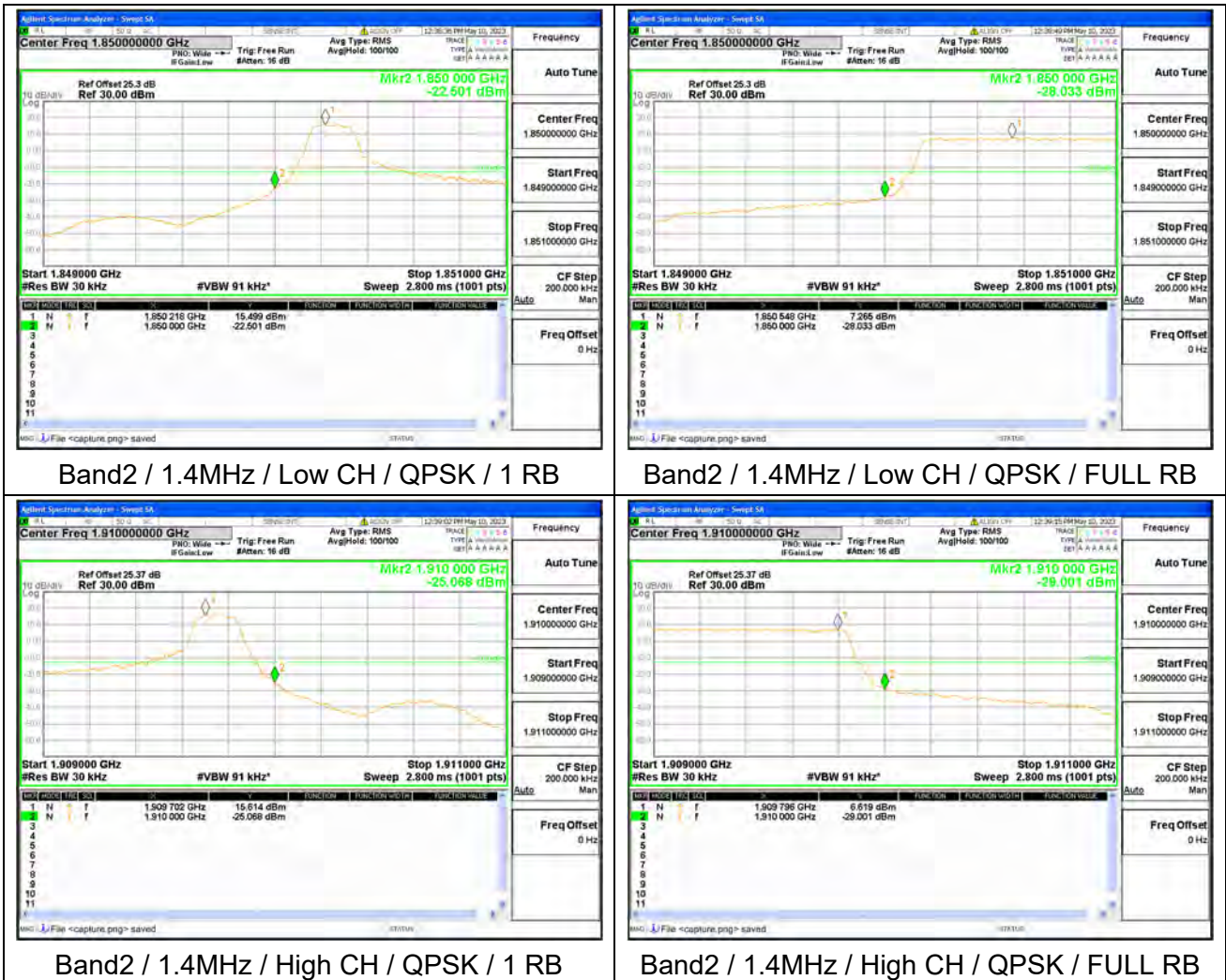
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.6.3. Test Procedure

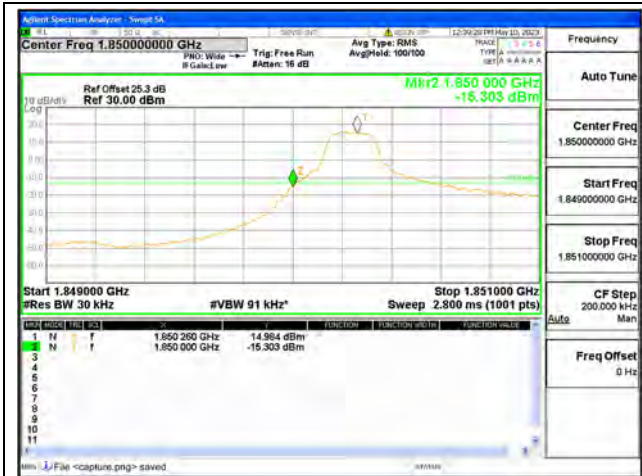
KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.



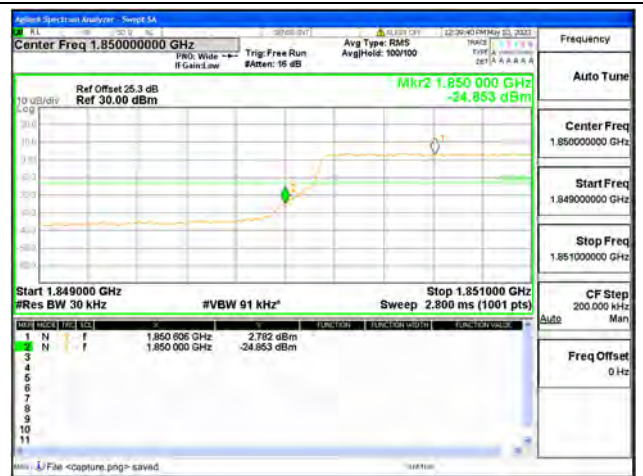
2.6.4. Test Result



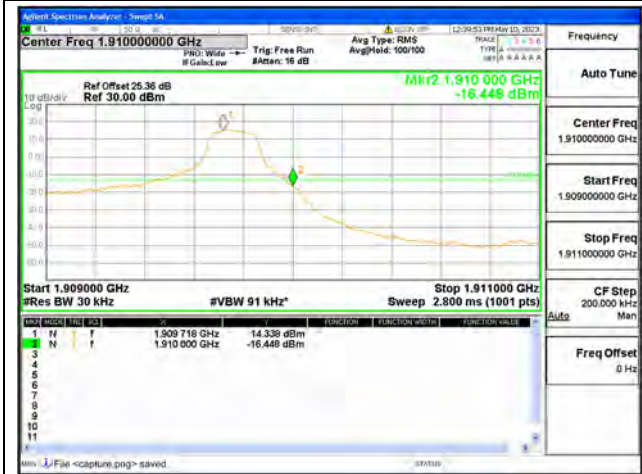




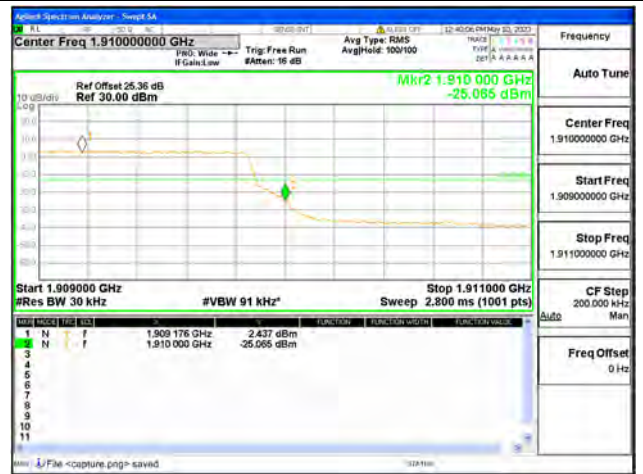
Band2 / 3MHz / Low CH / QPSK / 1 RB



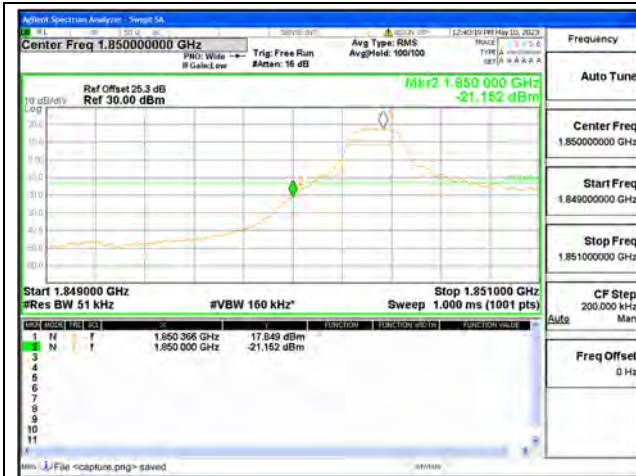
Band2 / 3MHz / Low CH / QPSK / FULL RB



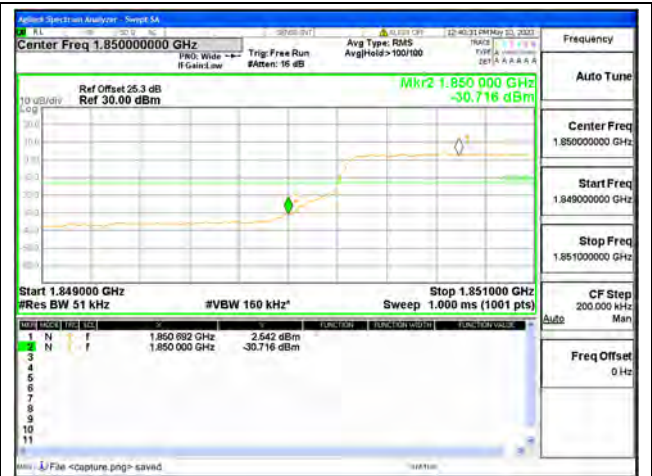
Band2 / 3MHz / High CH / QPSK / 1 RB



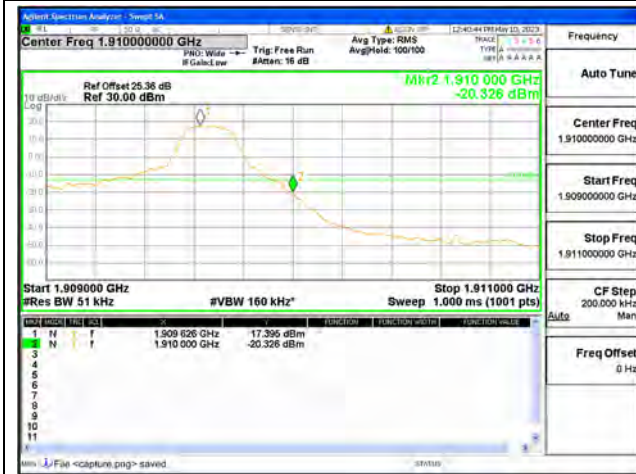
Band2 / 3MHz / High CH / QPSK / FULL RB



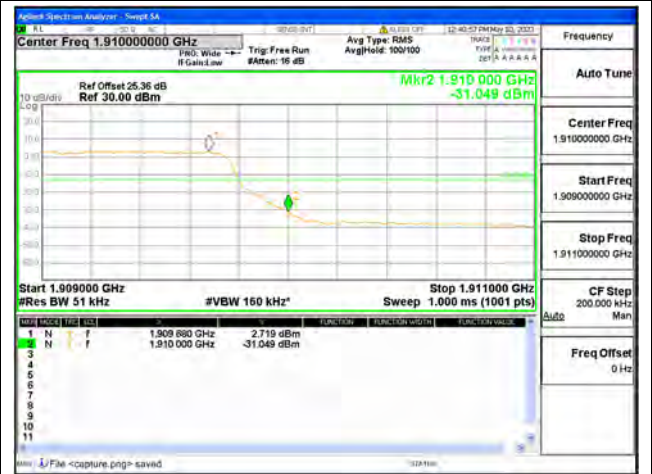
Band2 / 5MHz / Low CH / QPSK / 1 RB



Band2 / 5MHz / Low CH / QPSK / FULL RB

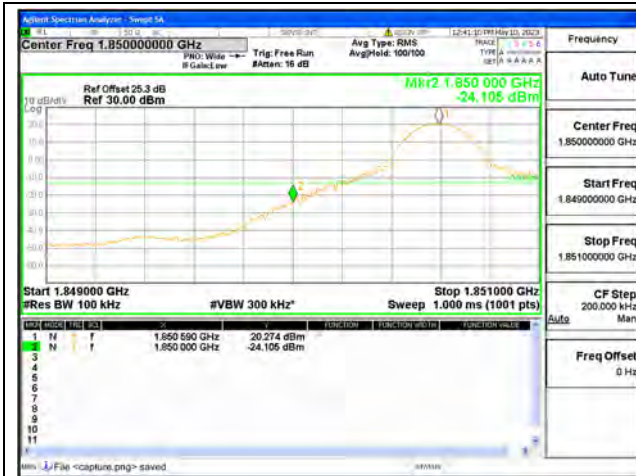


Band2 / 5MHz / High CH / QPSK / 1 RB

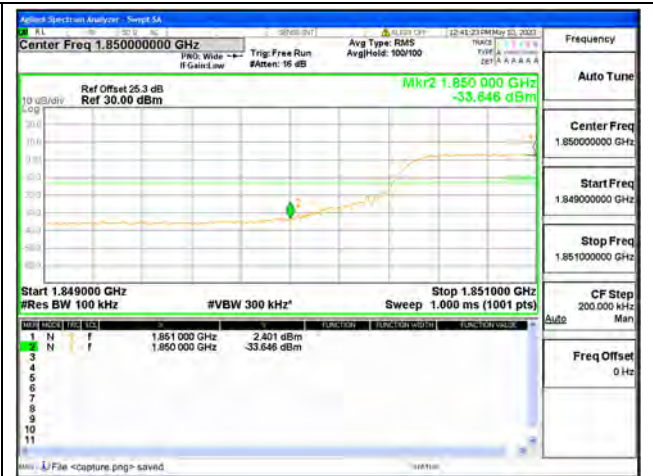


Band2 / 5MHz / High CH / QPSK / FULL RB





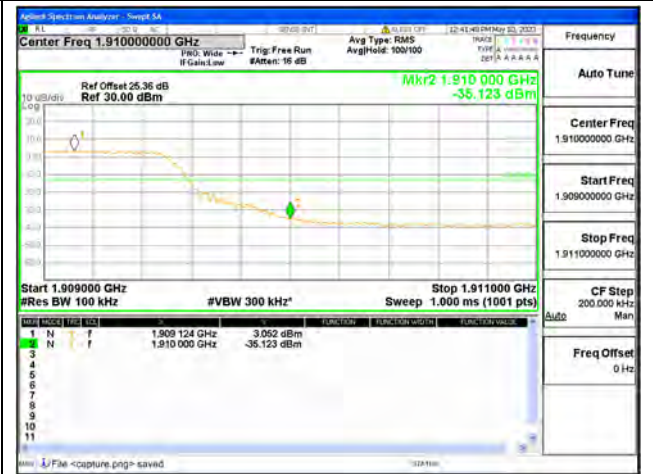
Band2 / 10MHz / Low CH / QPSK / 1 RB



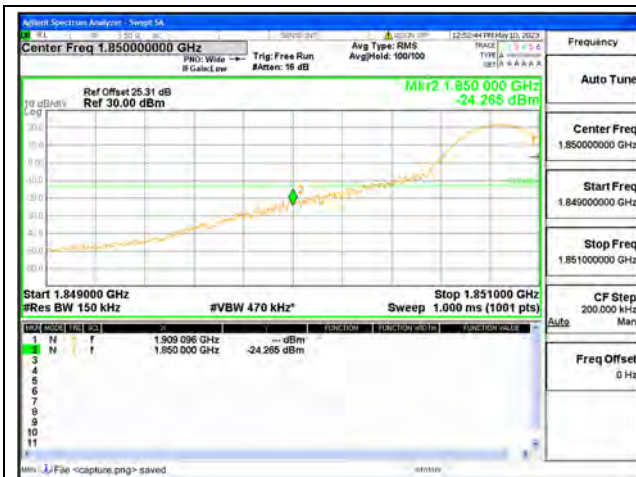
Band2 / 10MHz / Low CH / QPSK / FULL RB



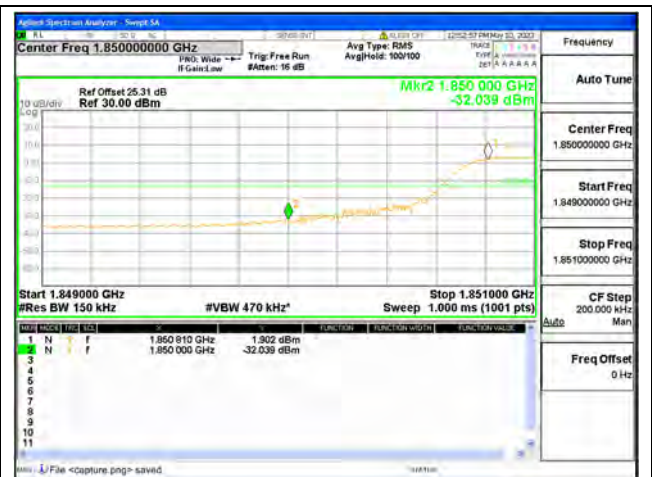
Band2 / 10MHz / High CH / QPSK / 1 RB



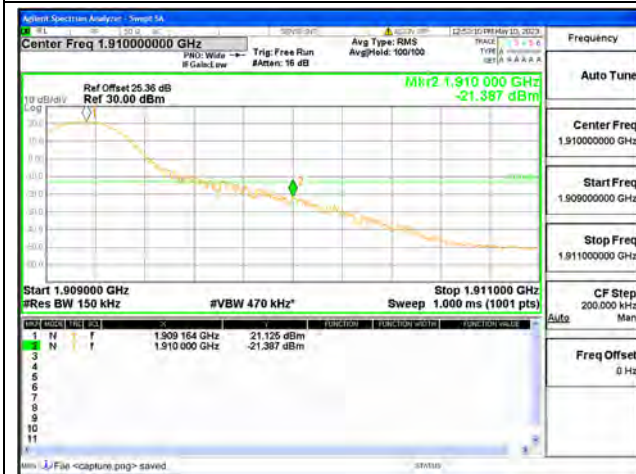
Band2 / 10MHz / High CH / QPSK / FULL RB



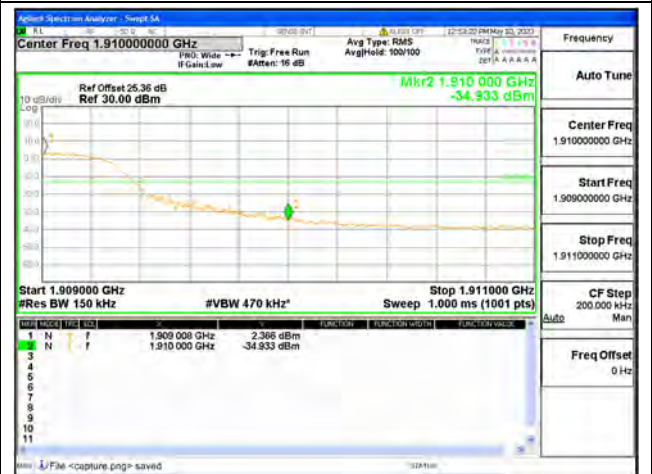
Band2 / 15MHz / Low CH / QPSK / 1 RB



Band2 / 15MHz / Low CH / QPSK / FULL RB

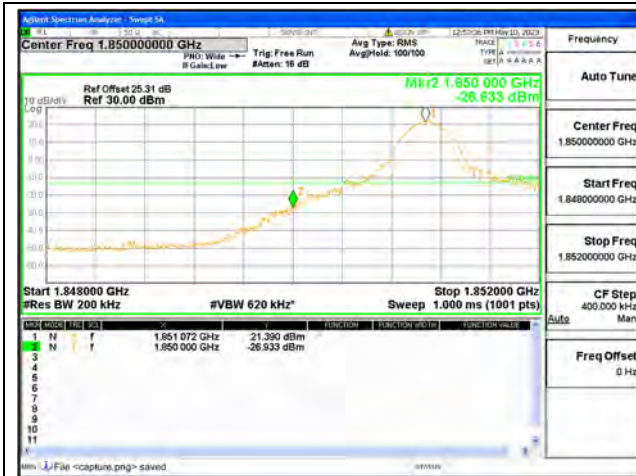


Band2 / 15MHz / High CH / QPSK / 1 RB

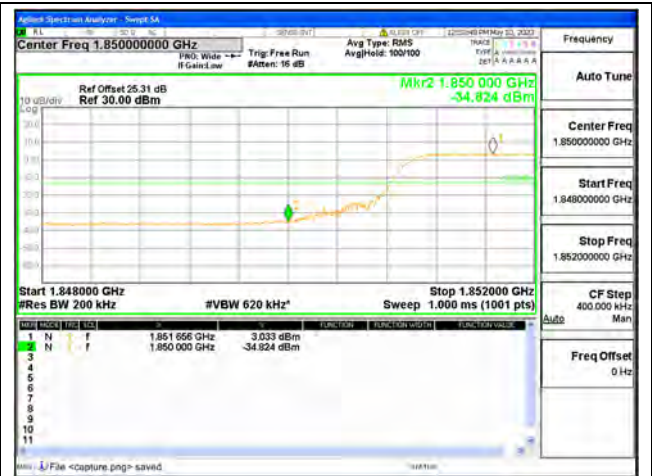


Band2 / 15MHz / High CH / QPSK / FULL RB

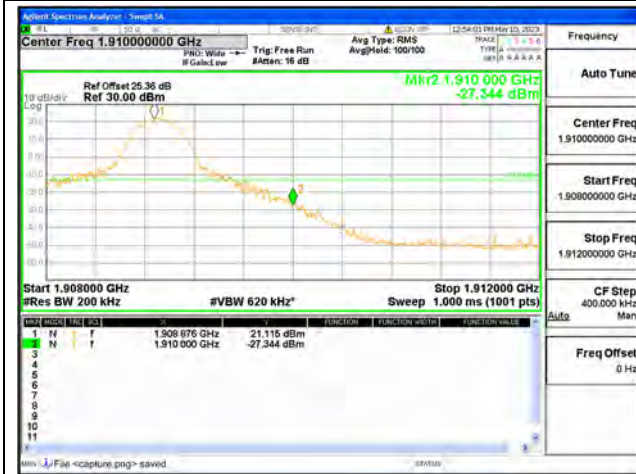




Band2 / 20MHz / Low CH / QPSK / 1 RB



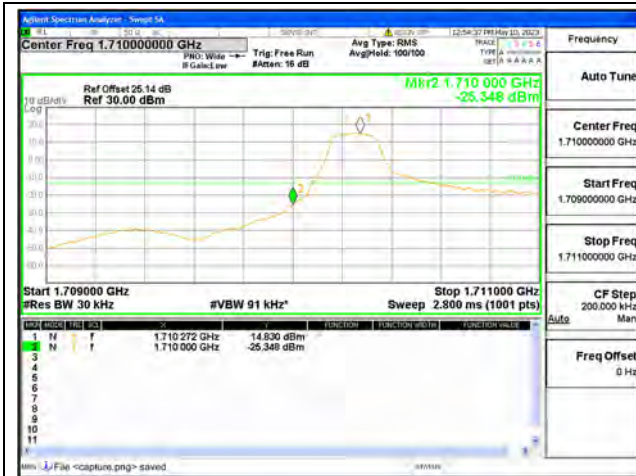
Band2 / 20MHz / Low CH / QPSK / FULL RB



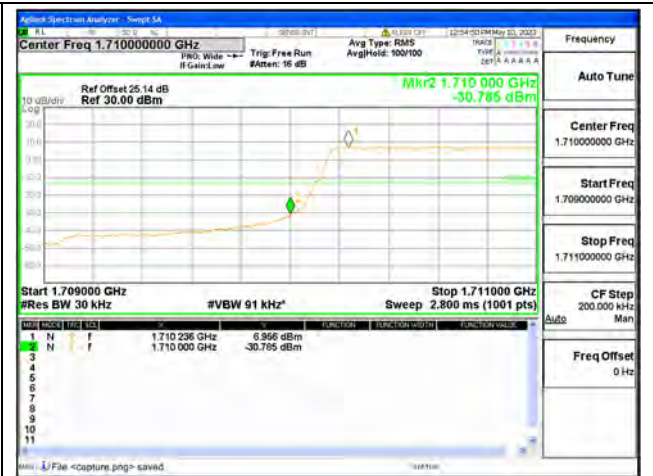
Band2 / 20MHz / High CH / QPSK / 1 RB



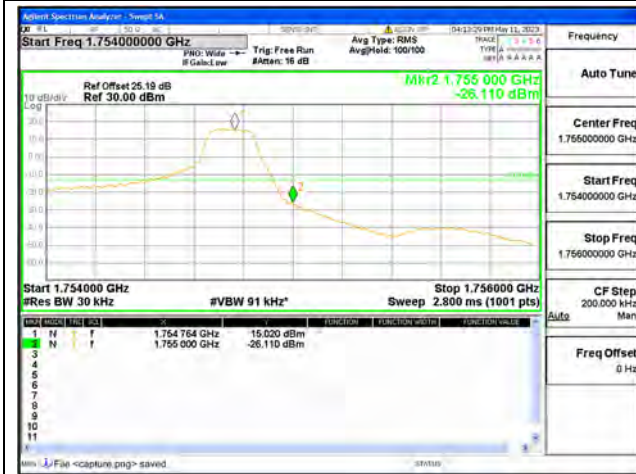
Band2 / 20MHz / High CH / QPSK / FULL RB



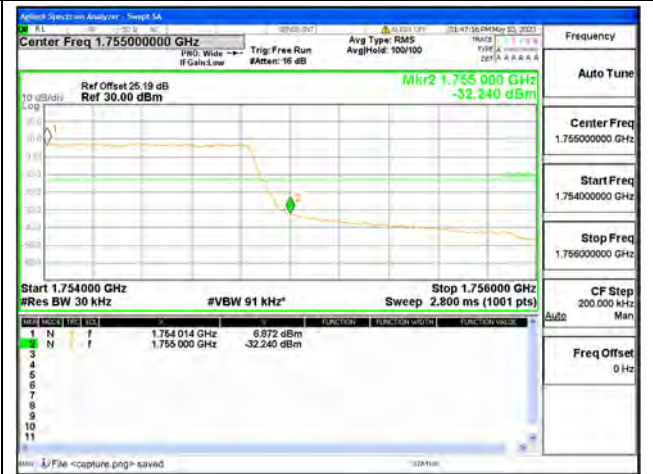
Band4 / 1.4MHz / Low CH / QPSK / 1 RB



Band4 / 1.4MHz / Low CH / QPSK / FULL RB



Band4 / 1.4MHz / High CH / QPSK / 1 RB



Band4 / 1.4MHz / High CH / QPSK / FULL RB