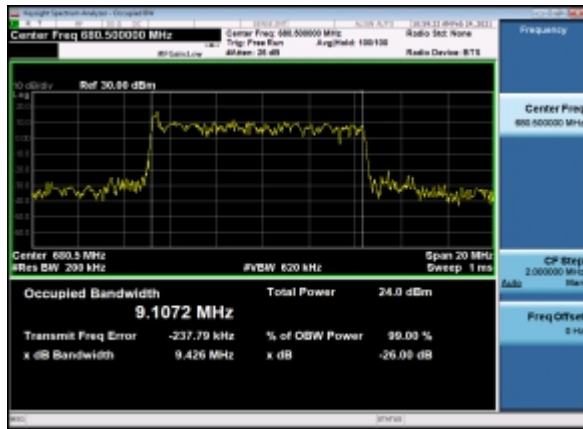
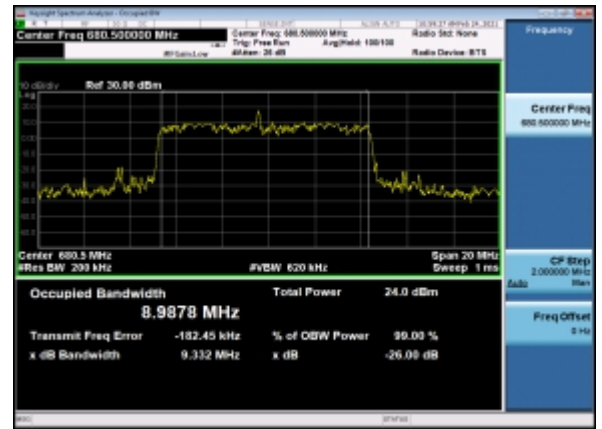


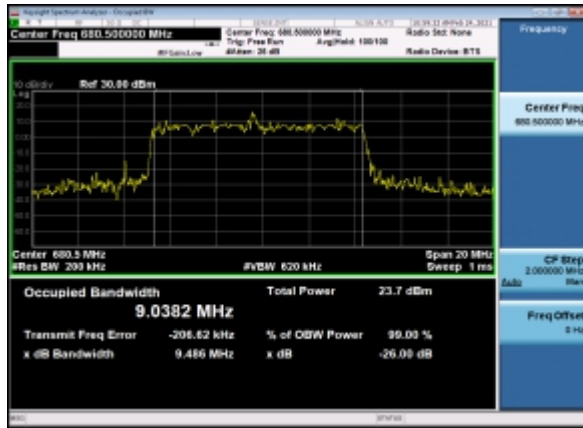
B7\_N71(10M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_Mid\_CH



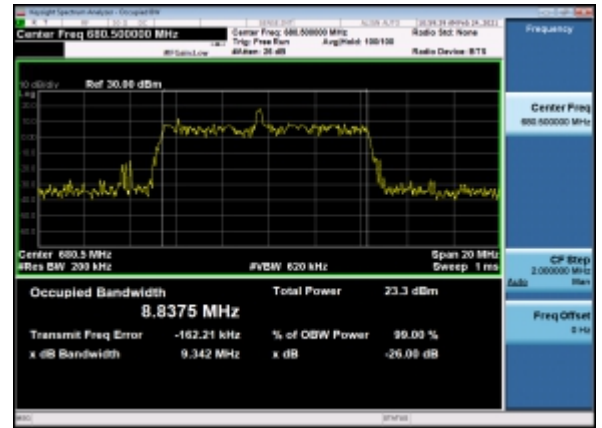
B7\_N71(10M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



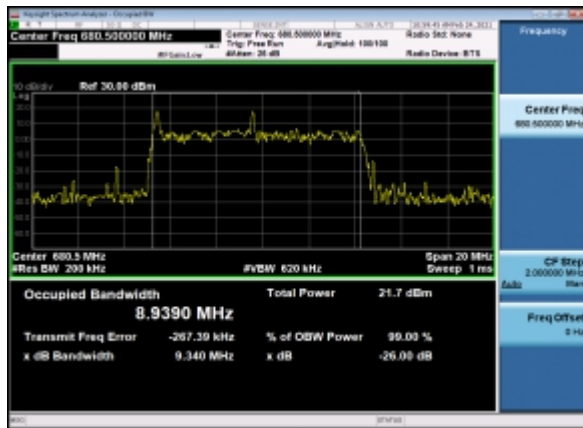
B7\_N71(10M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_Mid\_CH



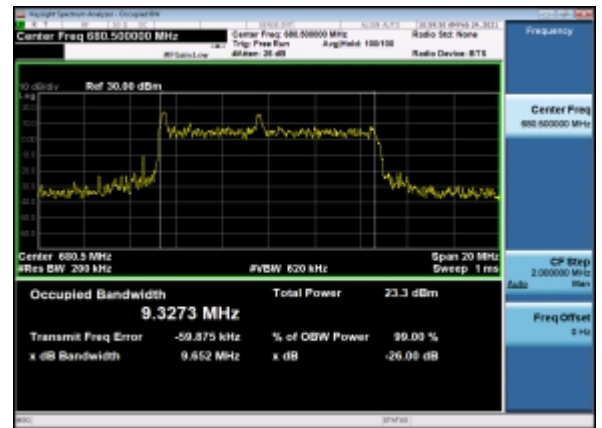
B7\_N71(10M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_Mid\_CH



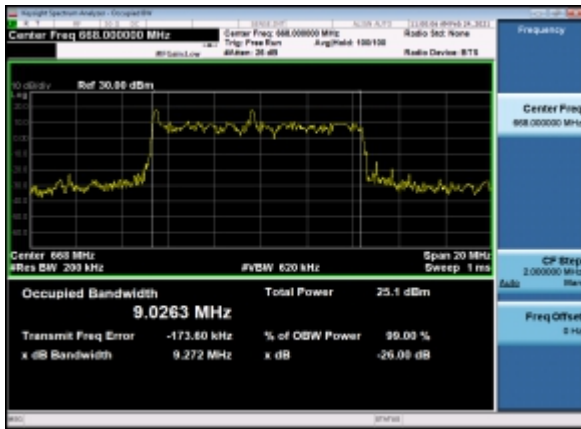
B7\_N71(10M)\_DFT-s-OFDM\_256\_QAM\_Outer\_Full\_Mid\_CH



B7\_N71(10M)\_CP-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



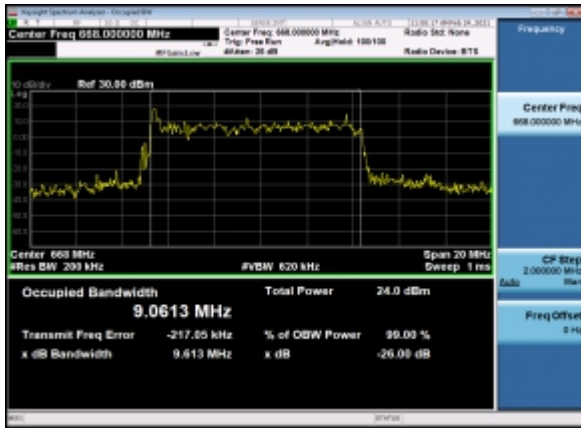
B7\_N71(10M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_Low\_CH



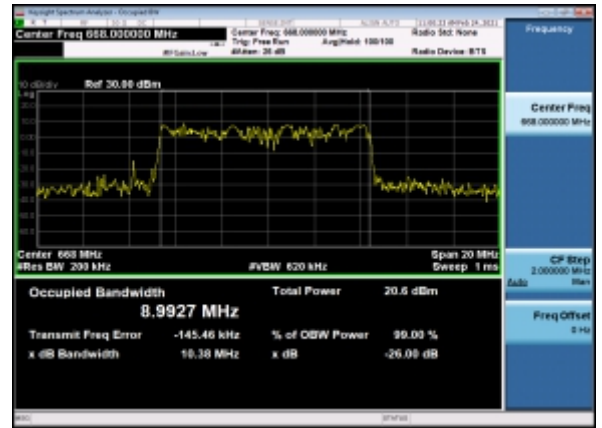
B7\_N71(10M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Low\_CH



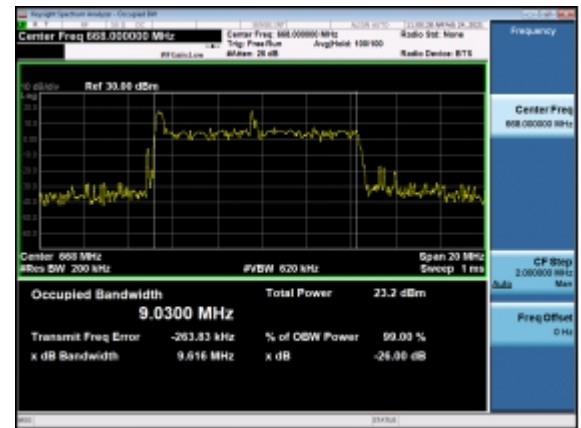
B7\_N71(10M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_Low\_CH



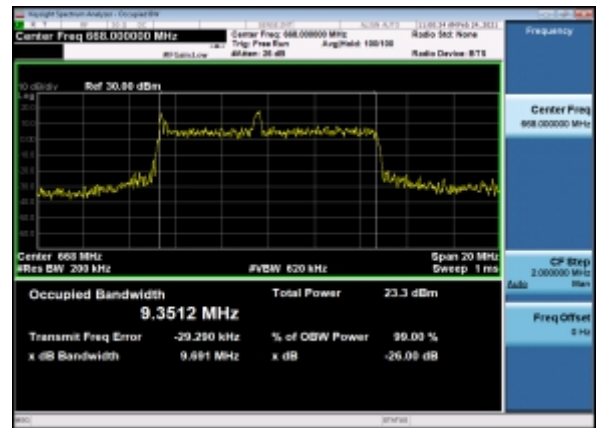
B7\_N71(10M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_Low\_CH



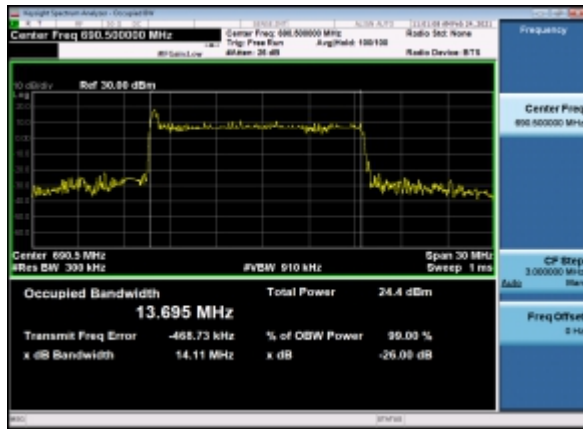
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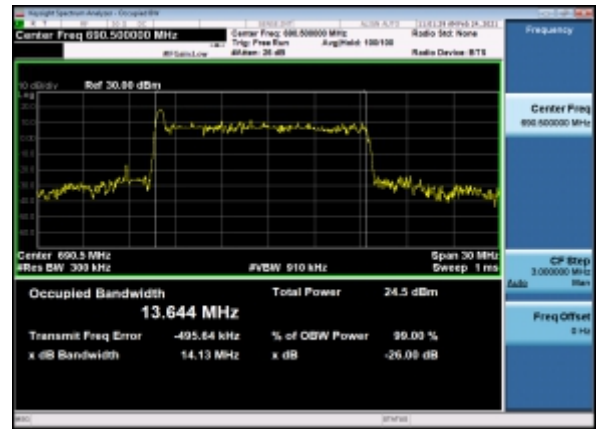
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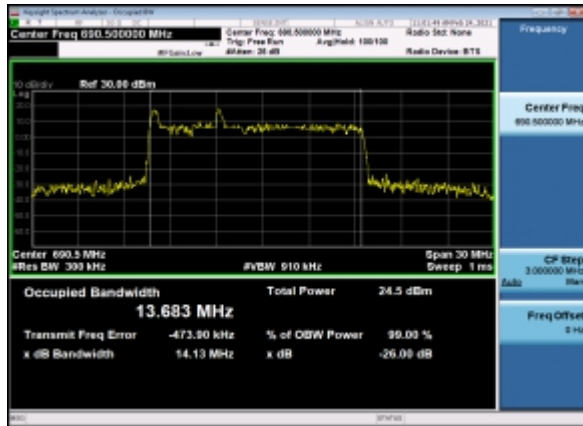
B7\_N71(15M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_High\_CH



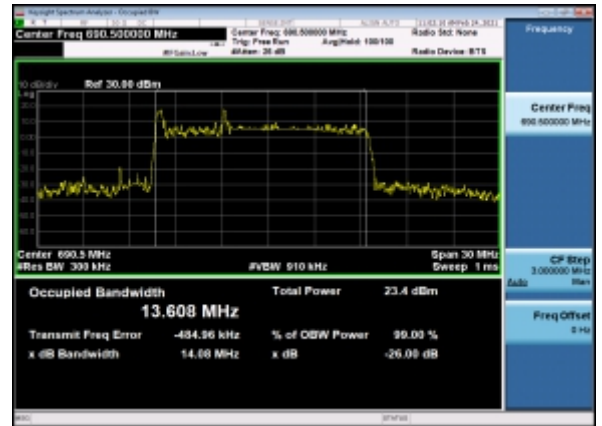
B7\_N71(15M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_High\_CH



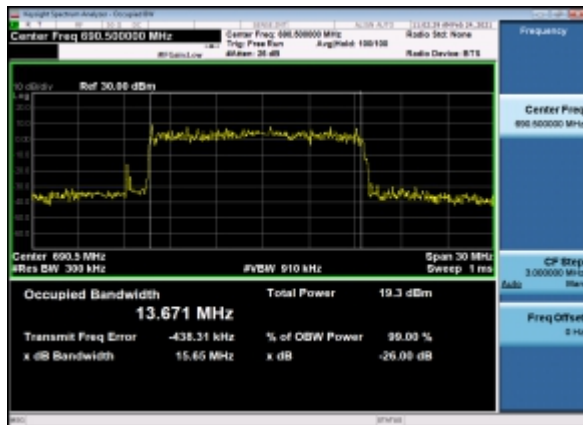
B7\_N71(15M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_High\_CH



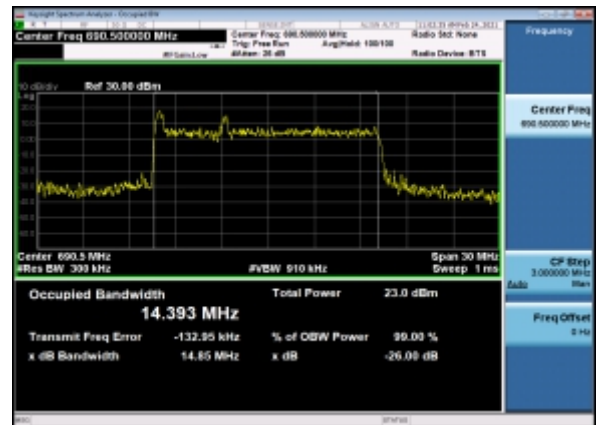
B7\_N71(15M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_High\_CH



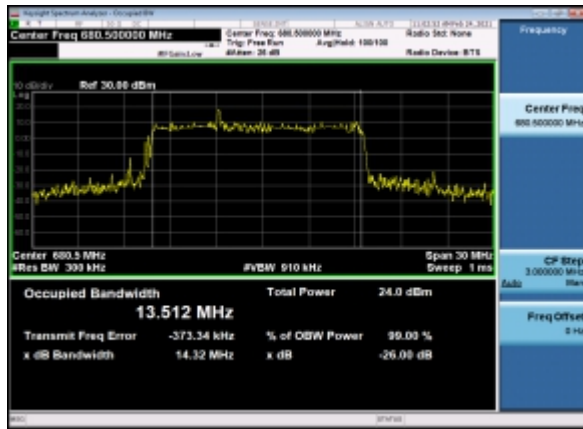
B7\_N71(15M)\_DFT-s-OFDM\_256\_QAM\_Outer\_Full\_High\_CH



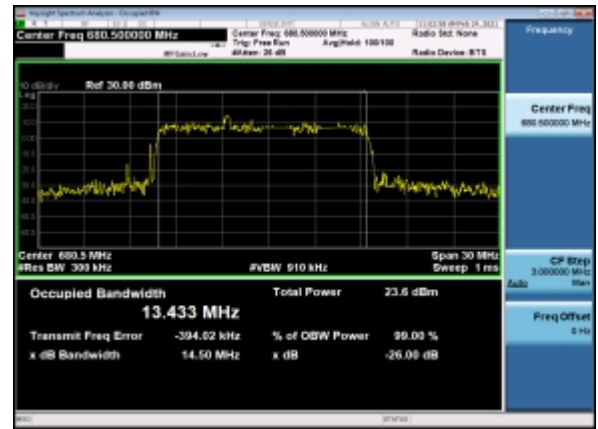
B7\_N71(15M)\_CP-OFDM\_QPSK\_Outer\_Full\_High\_CH



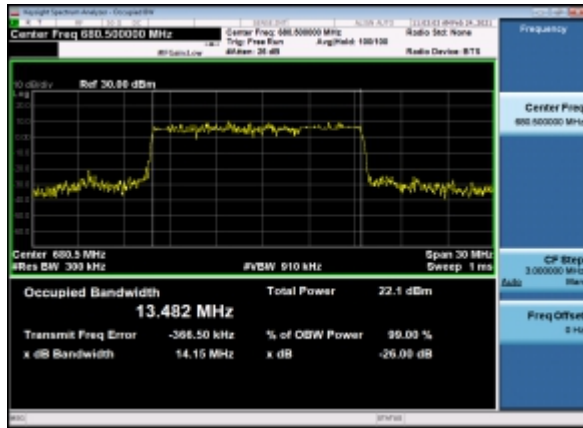
B7\_N71(15M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_Mid\_CH



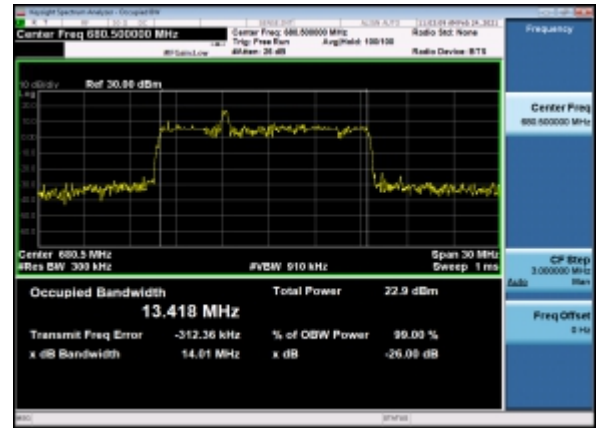
B7\_N71(15M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



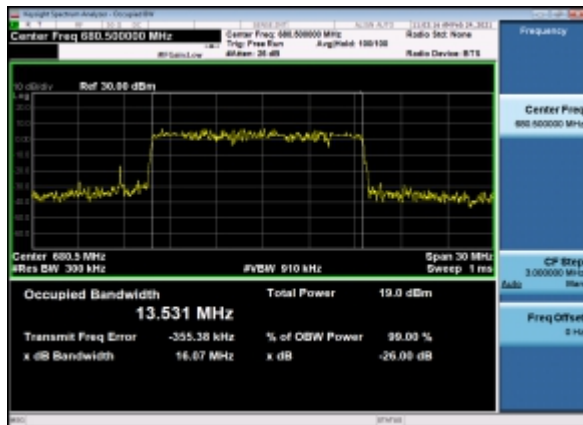
B7\_N71(15M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_Mid\_CH



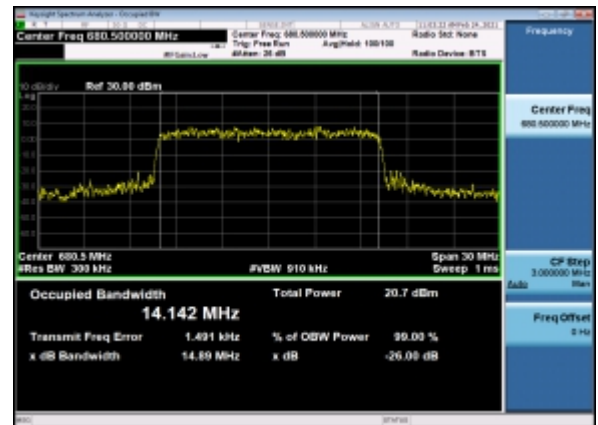
B7\_N71(15M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_Mid\_CH



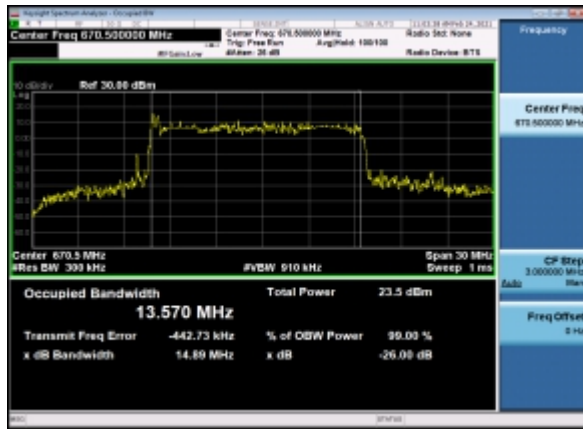
B7\_N71(15M)\_DFT-s-OFDM\_256\_QAM\_Outer\_Full\_Mid\_CH



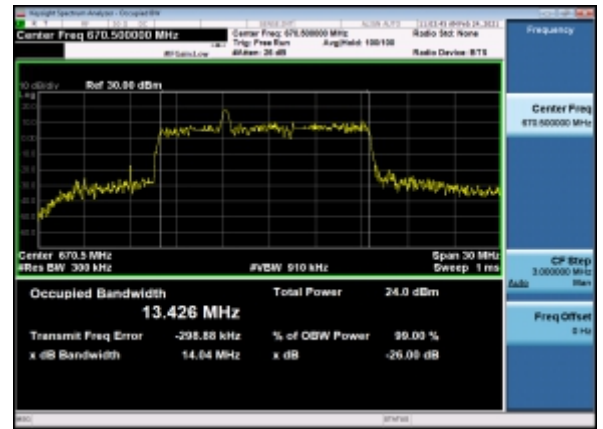
B7\_N71(15M)\_CP-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



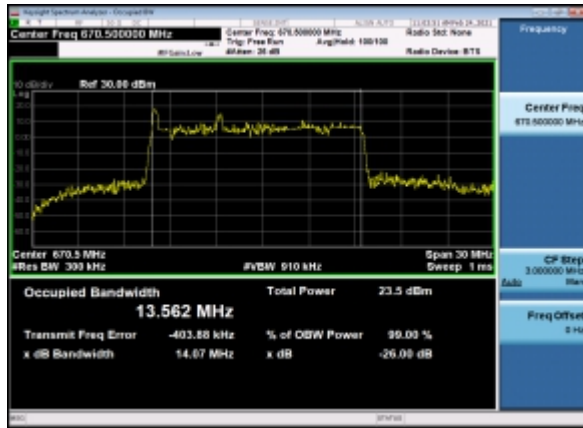
B7\_N71(15M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_Low\_CH



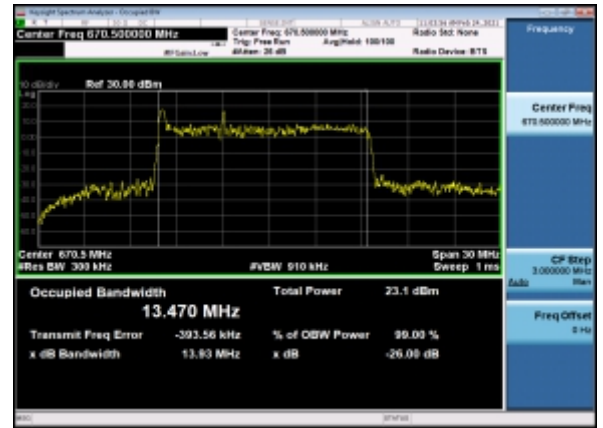
B7\_N71(15M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Low\_CH



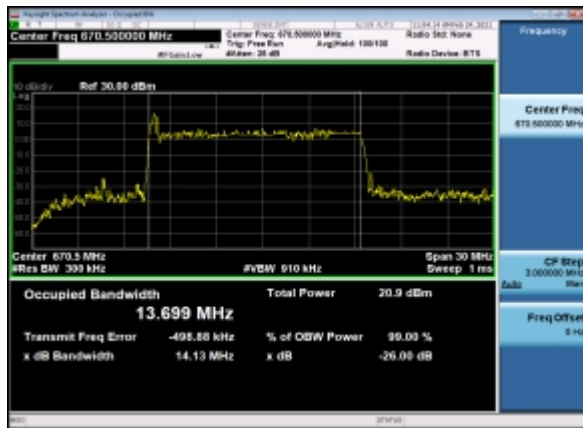
B7\_N71(15M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_Low\_CH



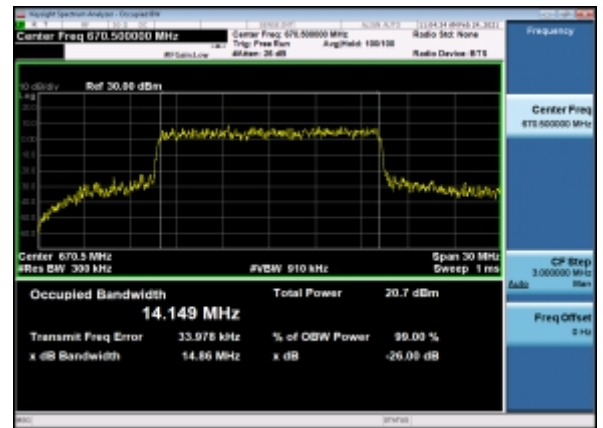
B7\_N71(15M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_Low\_CH



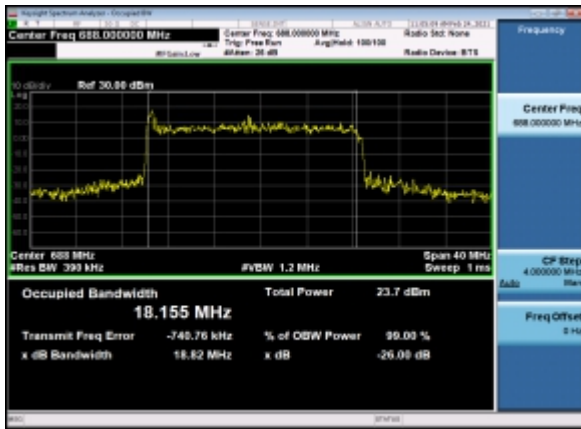
B7\_N71(15M)\_DFT-s-OFDM\_256\_QAM\_Outer\_Full\_Low\_CH



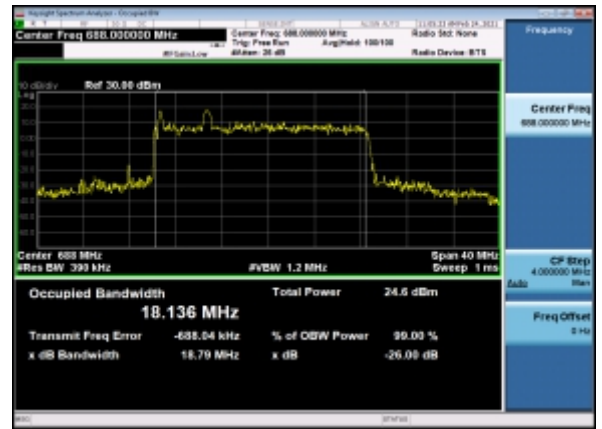
B7\_N71(15M)\_CP-OFDM\_QPSK\_Outer\_Full\_Low\_CH



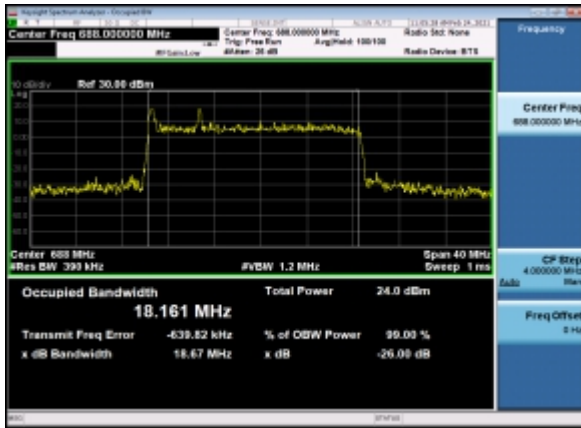
B7\_N71(20M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_High\_CH



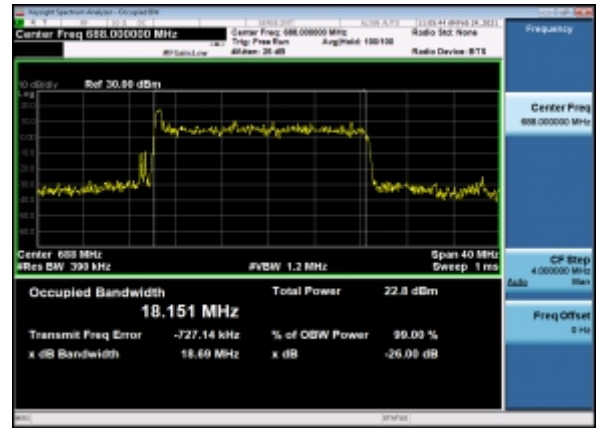
B7\_N71(20M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_High\_CH



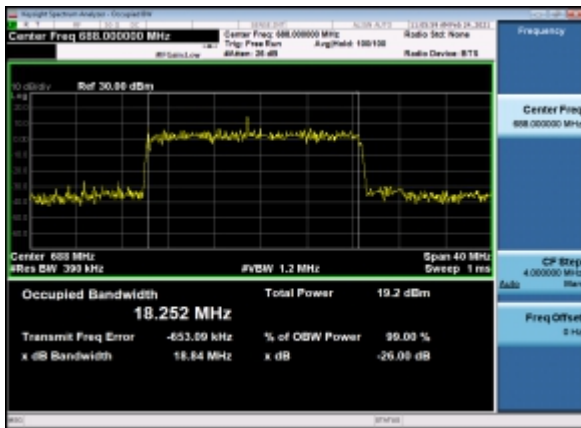
B7\_N71(20M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_High\_CH



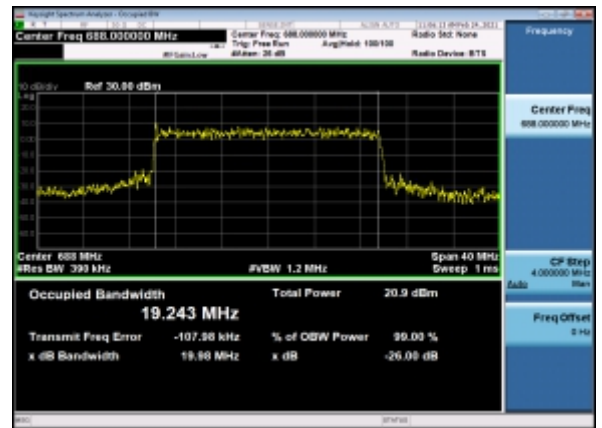
B7\_N71(20M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_High\_CH



B7\_N71(20M)\_DFT-s-OFDM\_256\_QAM\_Outer\_Full\_High\_CH



B7\_N71(20M)\_CP-OFDM\_QPSK\_Outer\_Full\_High\_CH



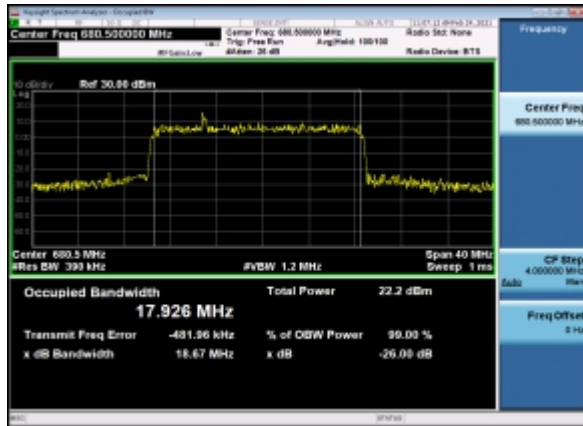
B7\_N71(20M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_Mid\_CH



B7\_N71(20M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



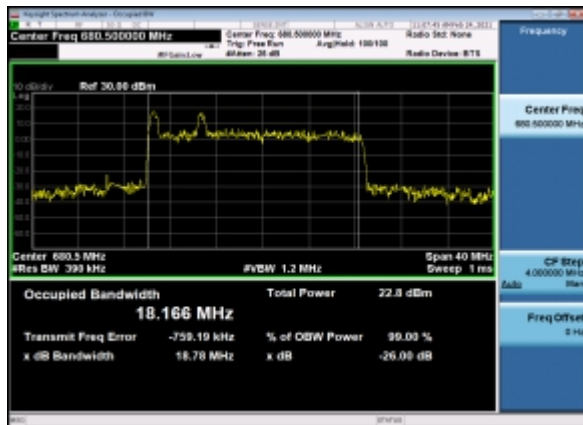
B7\_N71(20M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_Mid\_CH



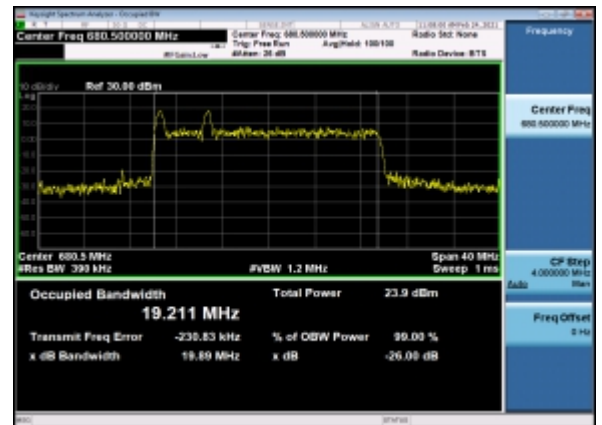
B7\_N71(20M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_Mid\_CH



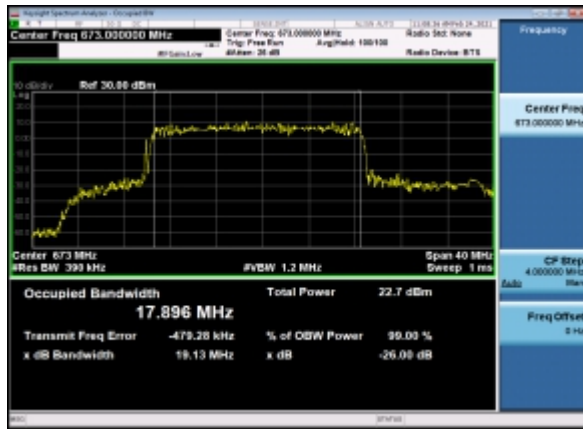
B7\_N71(20M)\_DFT-s-OFDM\_256\_QAM\_Outer\_Full\_Mid\_CH



B7\_N71(20M)\_CP-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



B7\_N71(20M)\_DFT-s-OFDM\_PI\_2-BPSK\_Outer\_Full\_Low\_CH



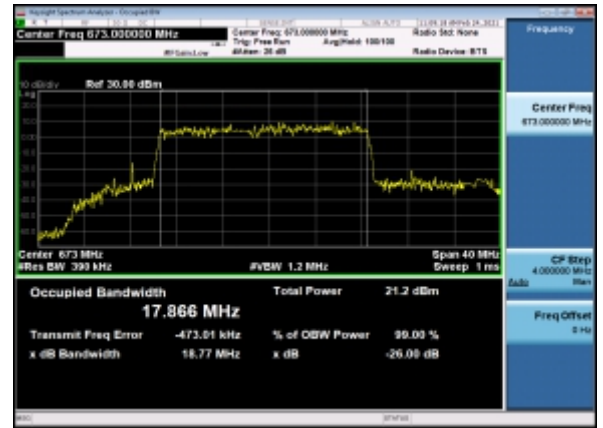
B7\_N71(20M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Low\_CH



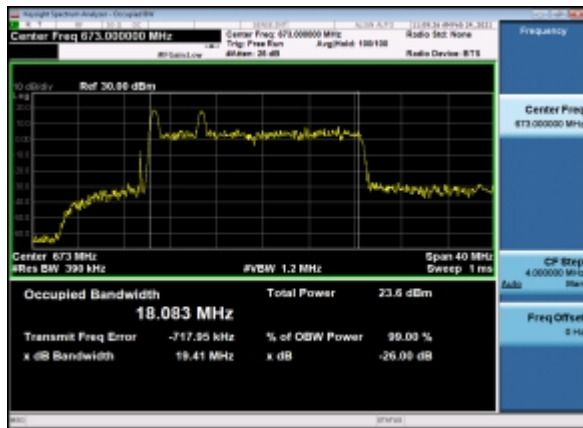
B7\_N71(20M)\_DFT-s-OFDM\_16\_QAM\_Outer\_Full\_Low\_CH



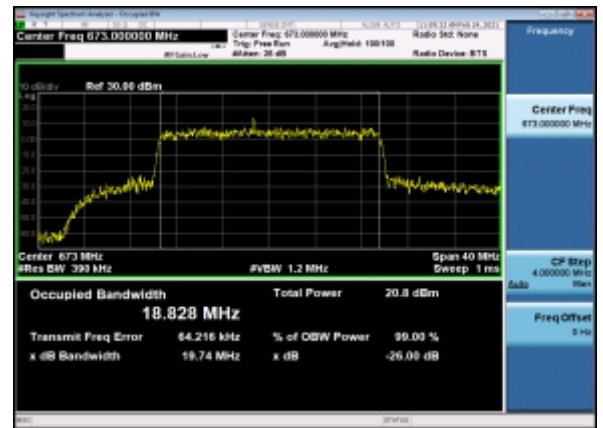
B7\_N71(20M)\_DFT-s-OFDM\_64\_QAM\_Outer\_Full\_Low\_CH



B7\_N71(20M)\_DFT-s-OFDM\_256\_QAM\_Outer\_Full\_Low\_CH



B7\_N71(20M)\_CP-OFDM\_QPSK\_Outer\_Full\_Low\_CH





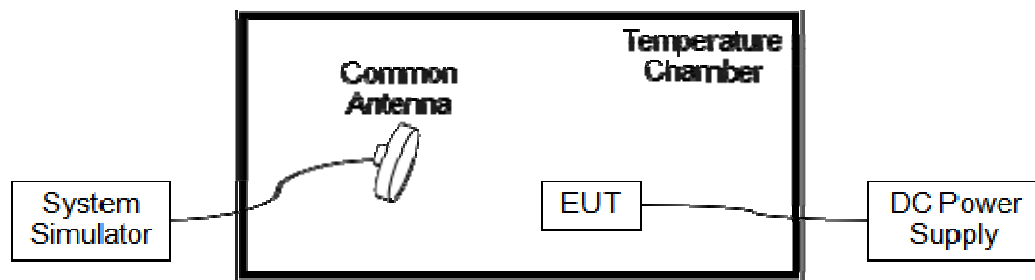
## 2.3. Frequency Stability

### 2.3.1. Requirement

According to FCC section 2.1055 & 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  $-20^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$  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.

### 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 3.85VDC, 4.2VDC and 3.6VDC, which are specified by the applicant; the normal temperature here used is  $20^{\circ}\text{C}$ .



NR n66, QPSK, Channel 349000, SCS 15kHz, Frequency 1649.6MHz					
Limit = $\pm$ 2.5ppm					
Voltage(%)	Power(VDC)	Temp( $^{\circ}$ C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
100	48	+20 (Ref)	15	0.016	PASS
100		-20	24	-0.002	
100		-10	-21	0.013	
100		0	6	0.004	
100		+10	4	0.003	
100		+20	28	-0.003	
100		+30	46	-0.002	
100		+40	37	0.023	
100		+50	58	0.009	
100		+55	22	0.014	
115	57	+20	36	0.006	
85	44	+20	18	0.011	

NR n71, QPSK, Channel 136100, SCS 15kHz, Frequency 680.5MHz					
Limit = $\pm$ 1ppm					
Voltage(%)	Power(VDC)	Temp( $^{\circ}$ C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
100	48	+20 (Ref)	29	0.039	PASS
100		0	31	-0.004	
100		-20	15	0.032	
100		-10	-25	0.010	
100		+10	-13	0.007	
100		+20	28	-0.007	
100		+30	64	-0.005	
100		+40	28	0.055	
100		+50	31	0.022	
100		+55	21	0.033	
115	57	+20	16	0.016	
85	44	+20	25	0.027	

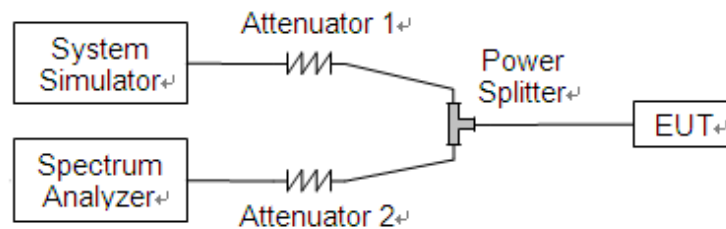
## 2.4. Peak to Average Ratio

### 2.4.1. Requirement

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

### 2.4.2. Test Description

#### Test Set:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; 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

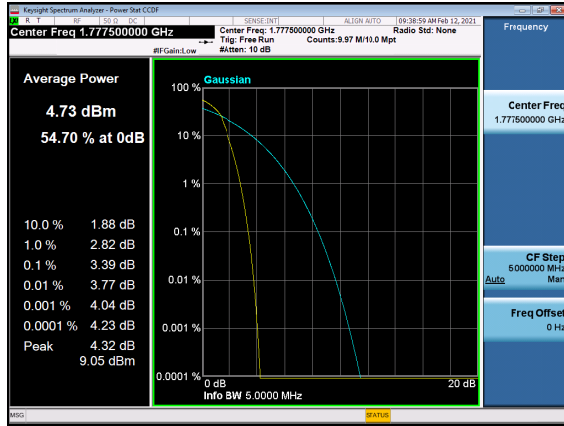
Record the maximum PAPR level associated with a probability of 0.1%.



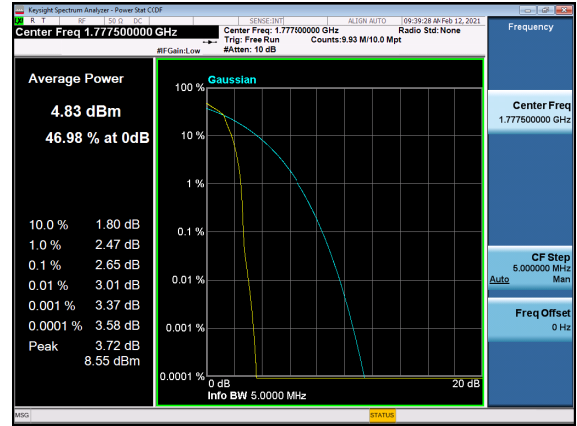
NR B2_N66					
BW(MHz)	Channel Level	Modulation	Peak to Average Radio(dB)	Limit (dB)	Verdict
5	High	QPSK	3.39	<=13	PASS
5	High	BPSK	2.65	<=13	PASS
5	Mid	QPSK	3.40	<=13	PASS
5	Mid	BPSK	2.66	<=13	PASS
5	Low	QPSK	3.39	<=13	PASS
5	Low	BPSK	2.66	<=13	PASS
10	High	QPSK	3.57	<=13	PASS
10	High	BPSK	2.58	<=13	PASS
10	Mid	QPSK	3.57	<=13	PASS
10	Mid	BPSK	2.60	<=13	PASS
10	Low	QPSK	3.56	<=13	PASS
10	Low	BPSK	2.60	<=13	PASS
15	High	QPSK	3.39	<=13	PASS
15	High	BPSK	2.87	<=13	PASS
15	Mid	QPSK	3.38	<=13	PASS
15	Mid	BPSK	2.87	<=13	PASS
15	Low	QPSK	3.37	<=13	PASS
15	Low	BPSK	2.90	<=13	PASS
20	High	QPSK	3.63	<=13	PASS
20	High	BPSK	3.07	<=13	PASS
20	Mid	QPSK	3.62	<=13	PASS
20	Mid	BPSK	3.08	<=13	PASS
20	Low	QPSK	3.63	<=13	PASS
20	Low	BPSK	3.06	<=13	PASS



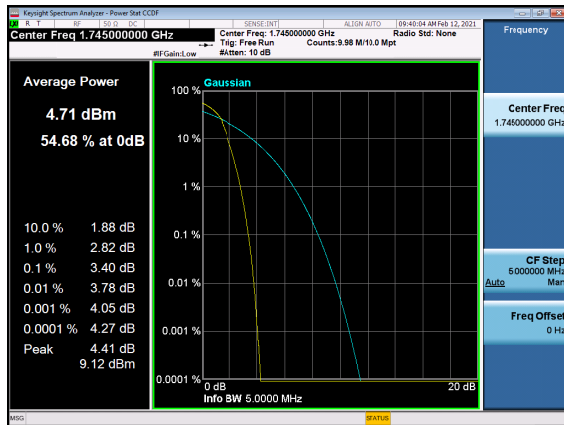
B2\_N66(5M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_High\_CH



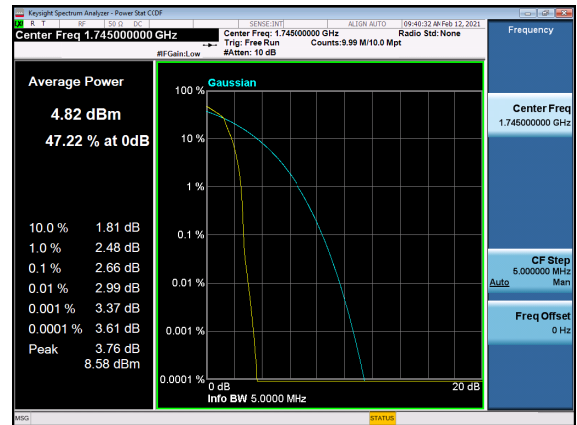
B2\_N66(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1R\_B\_Left\_High\_CH



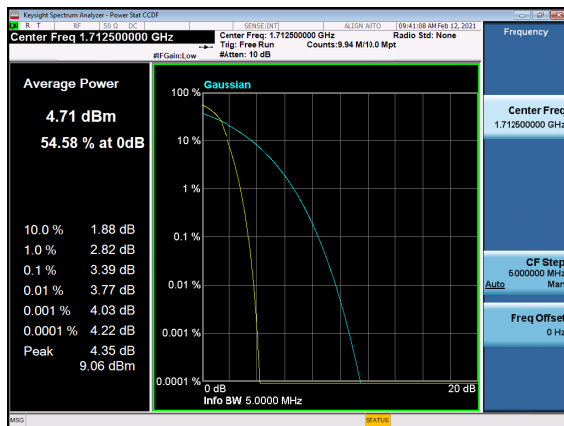
B2\_N66(5M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



B2\_N66(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1R\_B\_Left\_Mid\_CH



B2\_N66(5M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Low\_CH

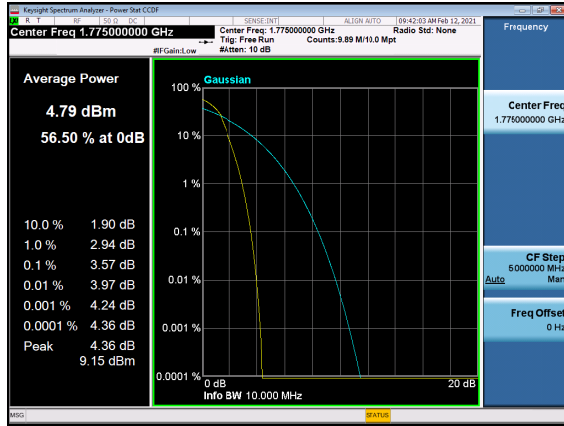


B2\_N66(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1R\_B\_Left\_Low\_CH

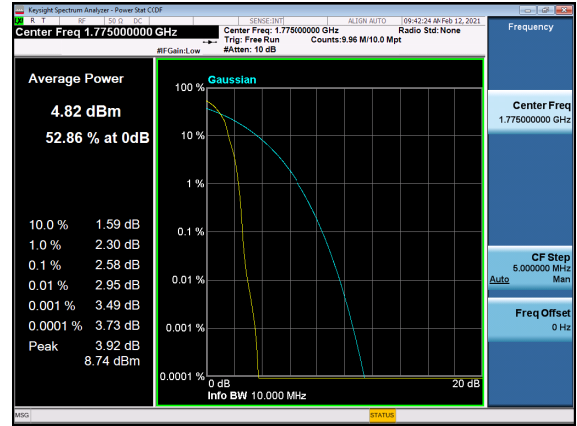




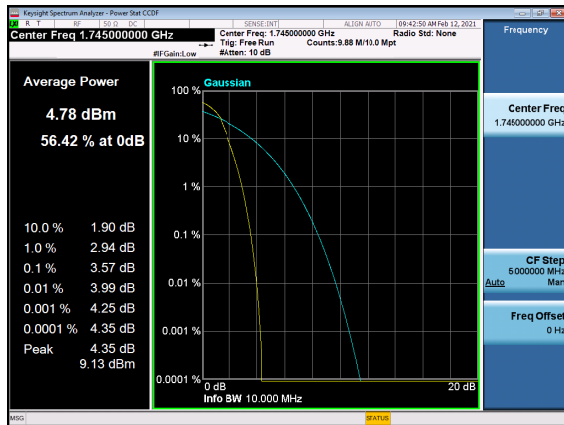
B2\_N66(10M)\_DFT-s-OFDM\_QPSK\_Outer\_Full  
High\_CH



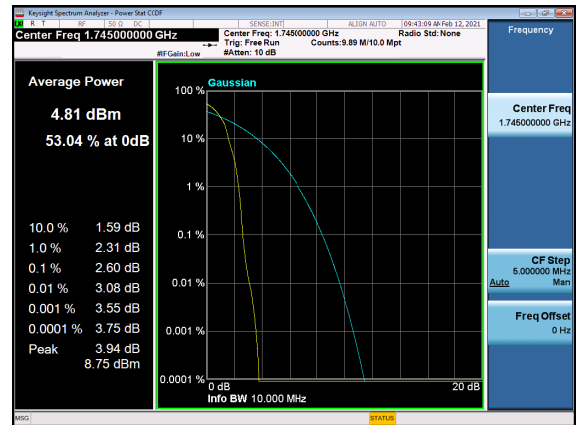
B2\_N66(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1  
RB\_Left\_High\_CH



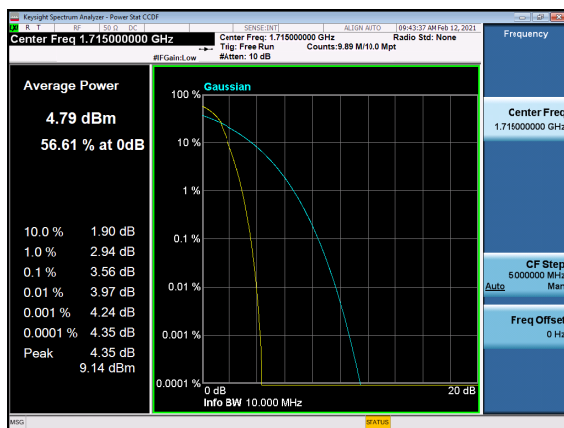
B2\_N66(10M)\_DFT-s-OFDM\_QPSK\_Outer\_Full  
Mid\_CH



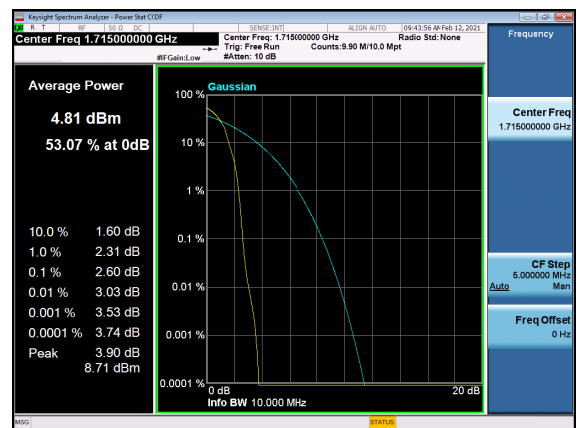
B2\_N66(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1  
RB\_Left\_Mid\_CH



B2\_N66(10M)\_DFT-s-OFDM\_QPSK\_Outer\_Full  
Low\_CH

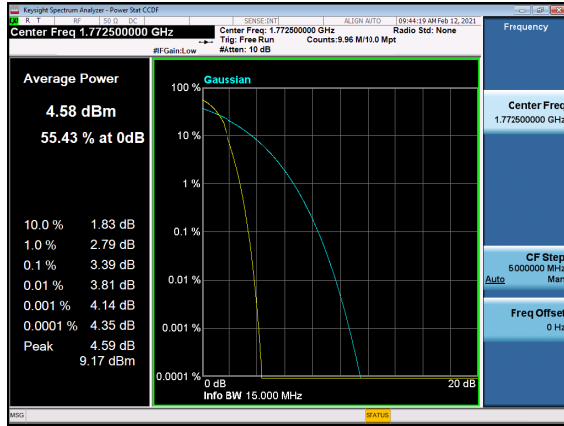


B2\_N66(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1  
RB\_Left\_Low\_CH

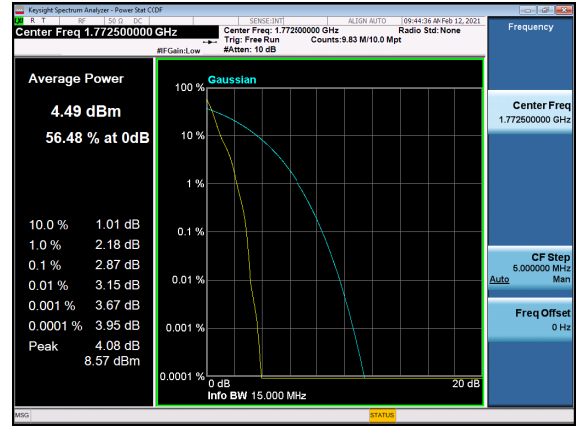




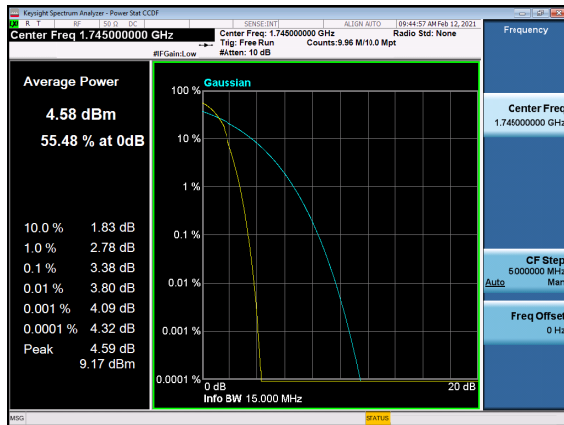
B2\_N66(15M)\_DFT-s-OFDM\_QPSK\_Outer\_Full  
High\_CH



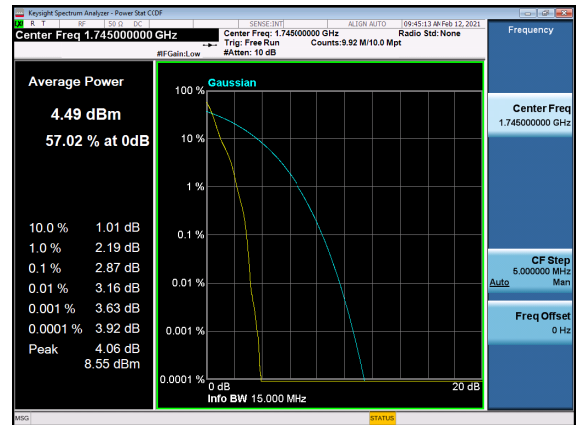
B2\_N66(15M)\_DFT-s-OFDM\_BPSK\_Edge\_1  
RB\_Left\_High\_CH



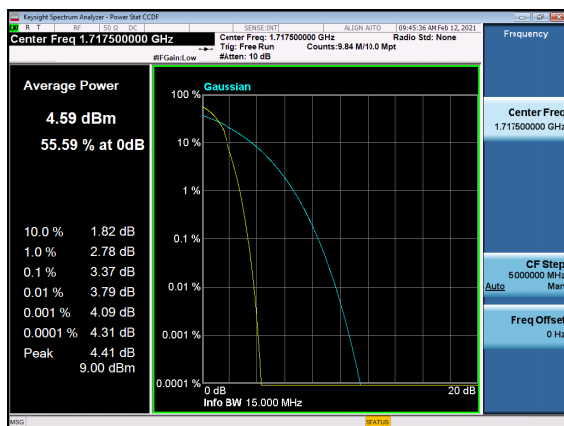
B5\_N66(15M)\_DFT-s-OFDM\_QPSK\_Outer\_Full  
Mid\_CH



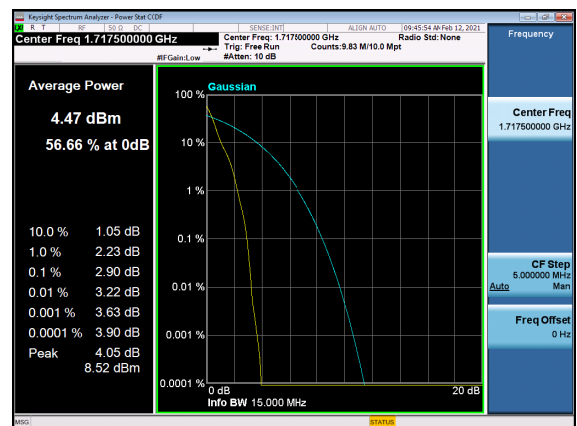
B5\_N66(15M)\_DFT-s-OFDM\_BPSK\_Edge\_1  
RB\_Left\_Mid\_CH



B5\_N66(15M)\_DFT-s-OFDM\_QPSK\_Outer\_Full  
Low\_CH

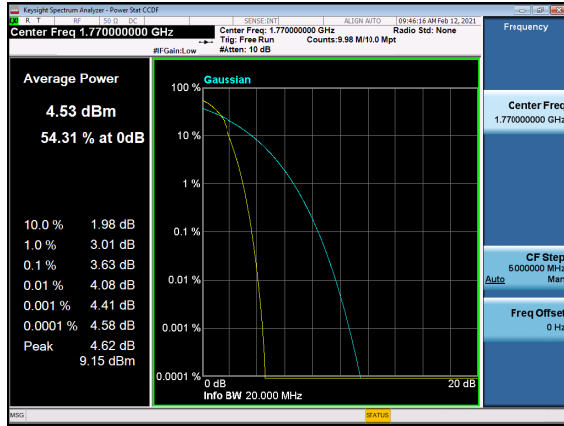


B5\_N66(15M)\_DFT-s-OFDM\_BPSK\_Edge\_1  
RB\_Left\_Low\_CH

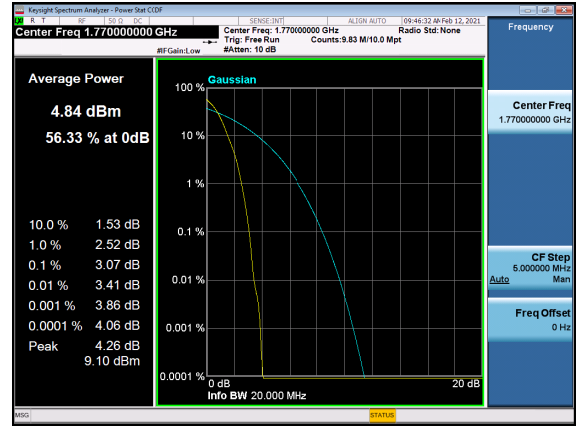




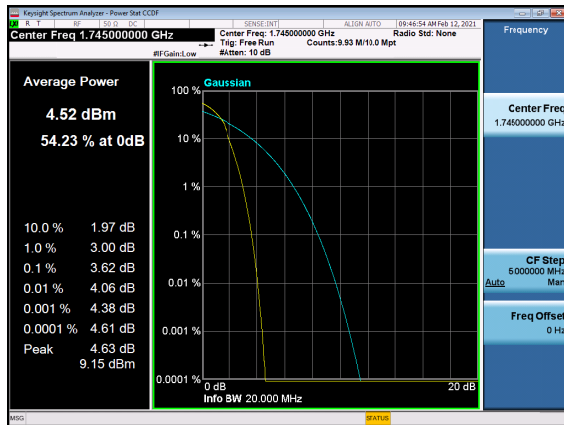
B5\_N66(20M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_High\_CH



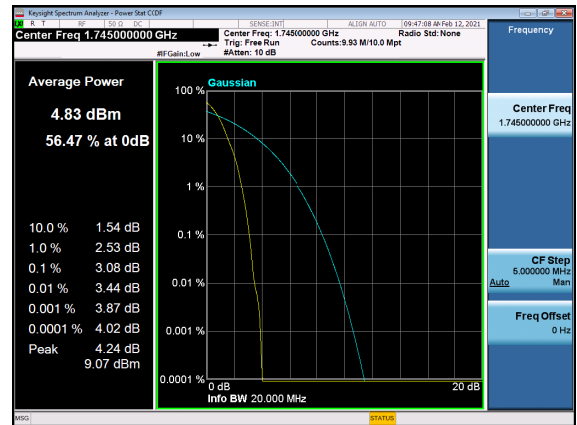
B5\_N66(20M)\_DFT-s-OFDM\_BPSK\_Edge\_1\_RB\_Left\_High\_CH



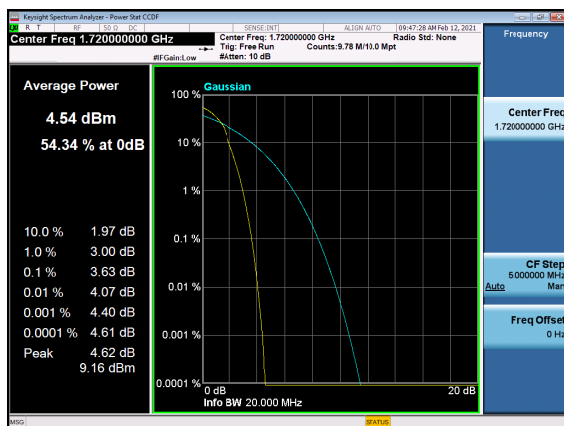
B5\_N66(20M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Mid\_CH



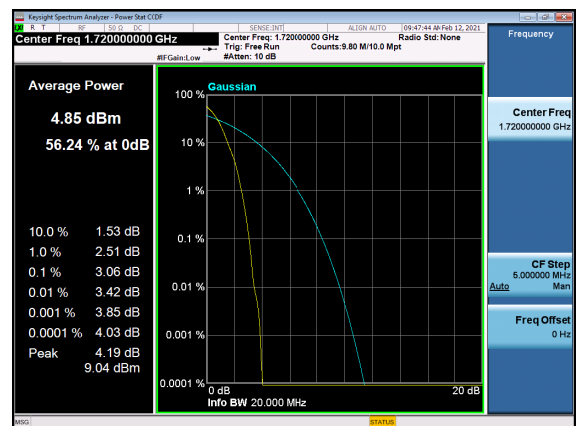
B5\_N66(20M)\_DFT-s-OFDM\_BPSK\_Edge\_1\_RB\_Left\_Mid\_CH



B5\_N66(20M)\_DFT-s-OFDM\_QPSK\_Outer\_Full\_Low\_CH



B5\_N66(20M)\_DFT-s-OFDM\_BPSK\_Edge\_1\_RB\_Left\_Low\_CH





## 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.

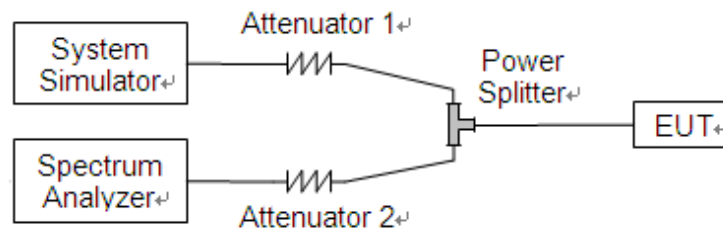
Additional requirement for LTE Band 7/38/41:

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.

Additional requirement for LTE Band 30/40:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $70 + 10 \log(P)$  dB. This calculated to be -40dBm.

### 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 50 Ohm; 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.



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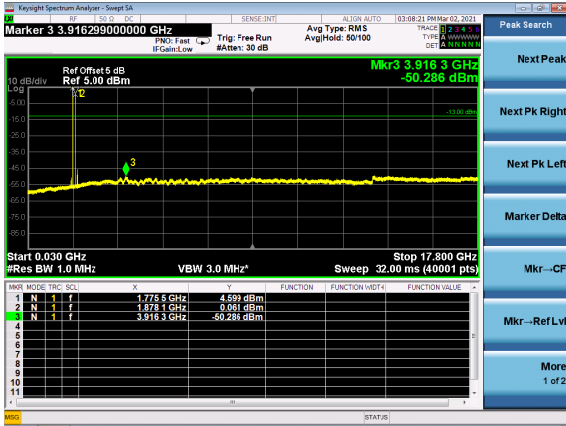
### 2.5.3. Test procedure

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

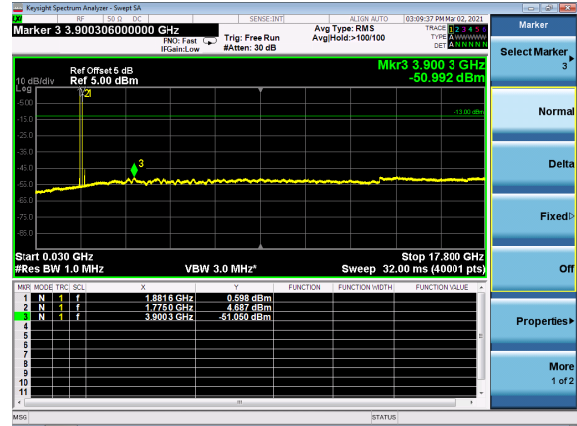
### 2.5.4. Test Result



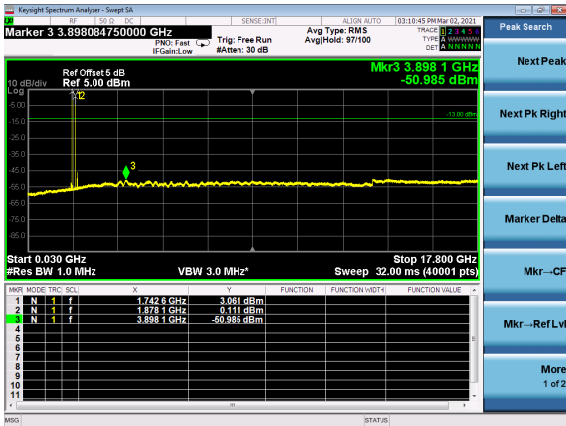
B2\_N66(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1RB  
\_Left\_High\_CH



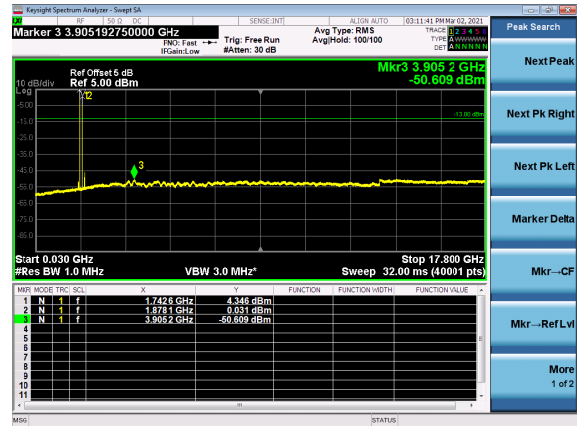
B2\_N66(5M)\_DFT-s-OFDM\_QPSK\_Edge\_1RB  
\_Left\_High\_CH



B2\_N66(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1RB  
\_Left\_Mid\_CH



B2\_N66(5M)\_DFT-s-OFDM\_QPSK\_Edge\_1RB  
\_Left\_Mid\_CH



B2\_N66(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1RB  
\_Left\_Low\_CH

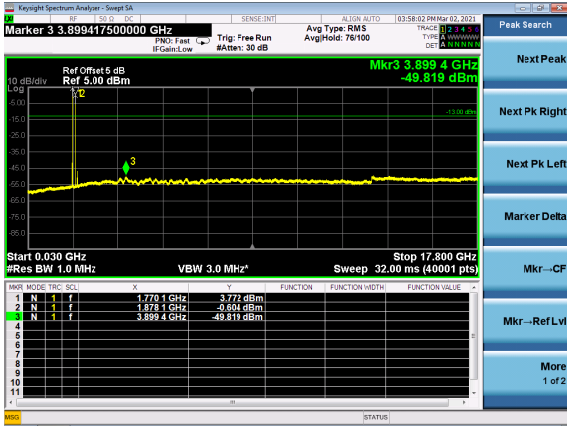


B2\_N66(5M)\_DFT-s-OFDM\_QPSK\_Edge\_1RB  
\_Left\_Low\_CH

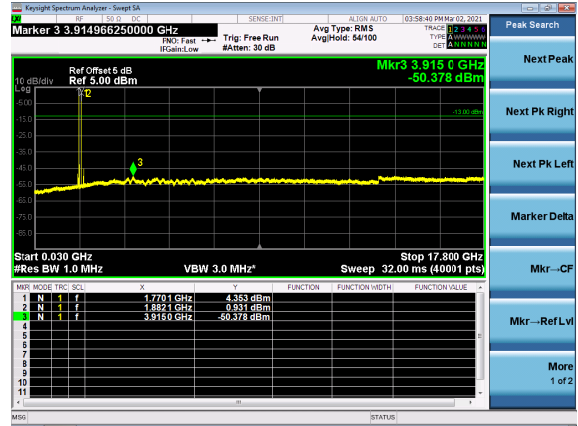




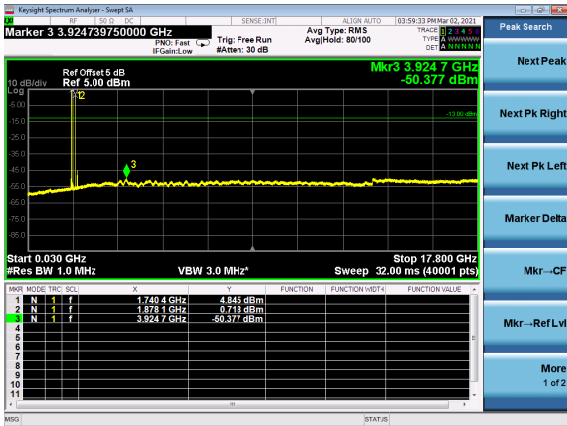
B2\_N66(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_High\_CH



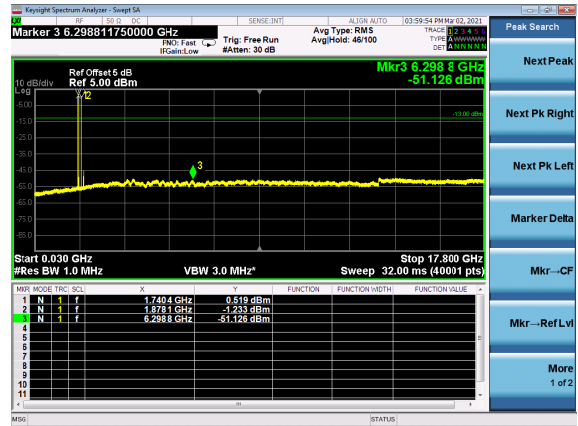
B2\_N66(10M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_High\_CH



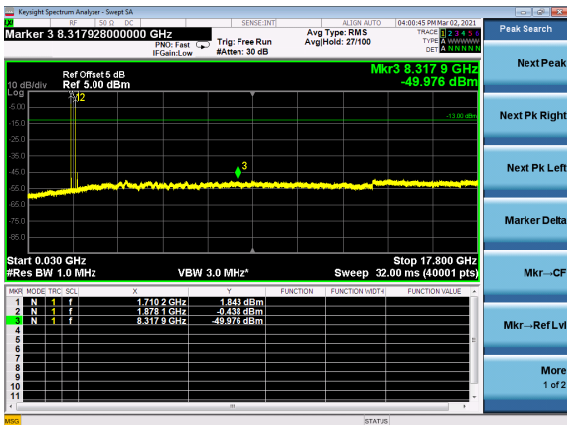
B2\_N66(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Mid\_CH



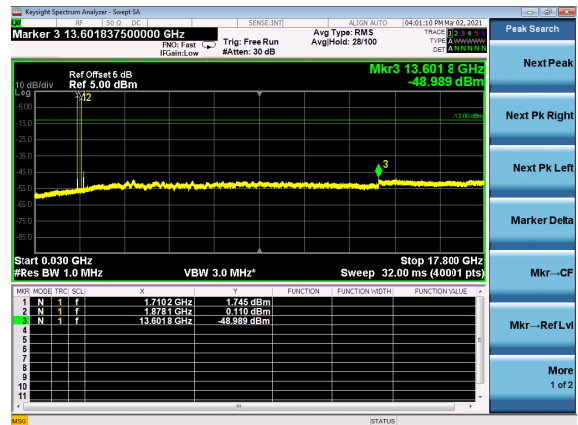
B2\_N66(10M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Mid\_CH



B2\_N66(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Low\_CH

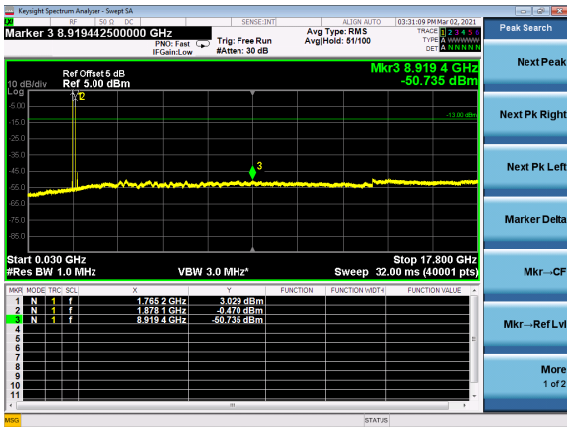


B2\_N66(10M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Low\_CH

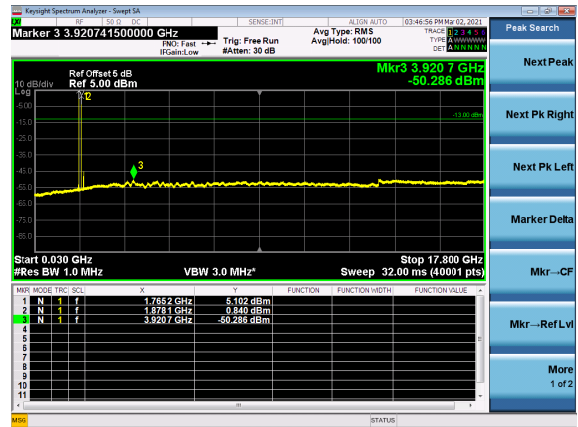




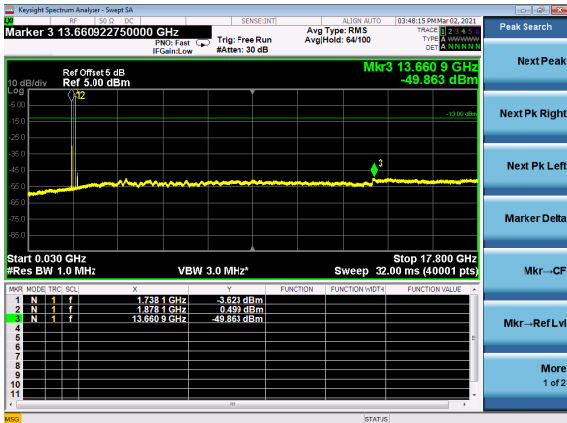
B2\_N66(15M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_High\_CH



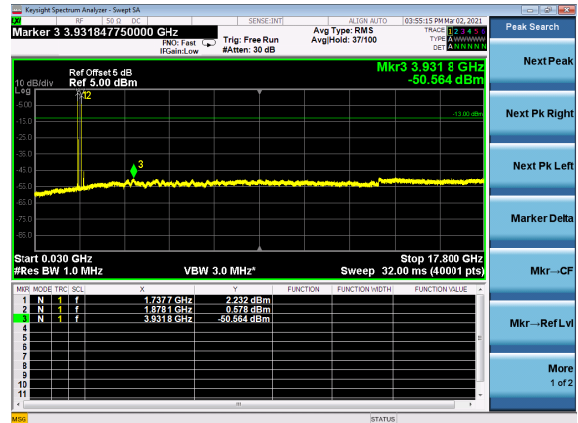
B2\_N66(15M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_High\_CH



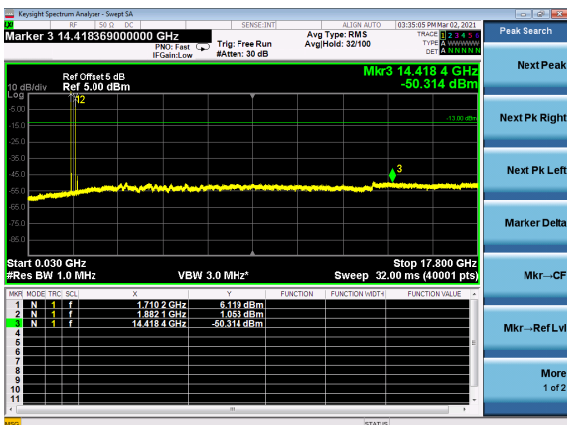
B2\_N66(15M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Mid\_CH



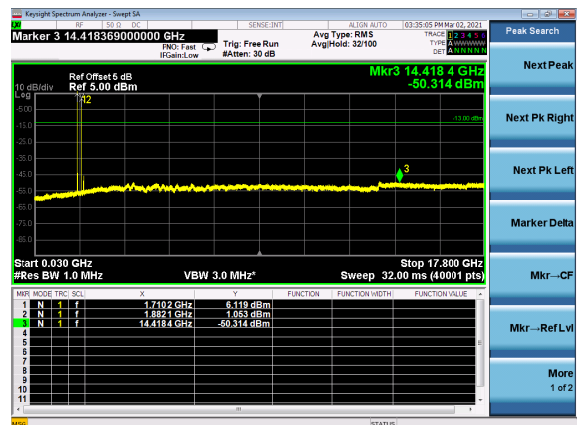
B2\_N66(15M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Mid\_CH



B2\_N66(15M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Low\_CH

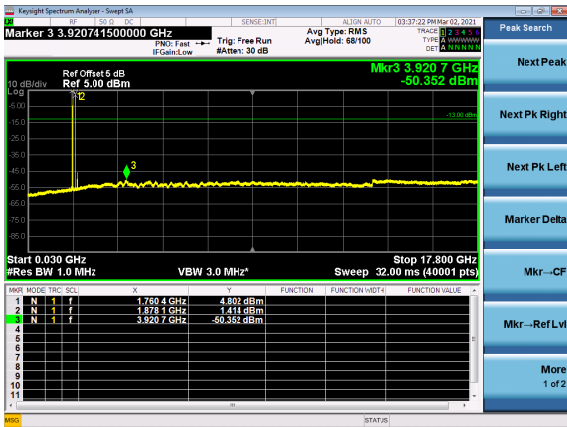


B2\_N66(15M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Low\_CH

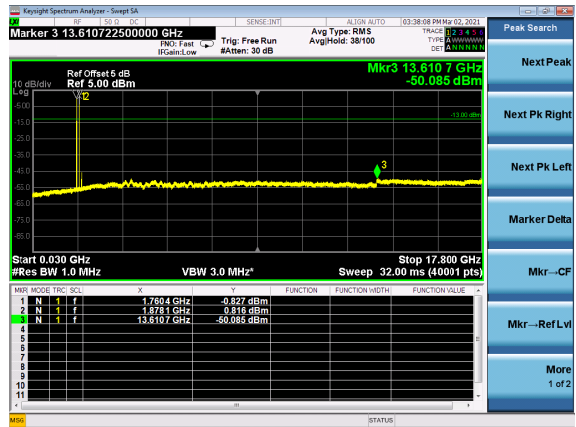




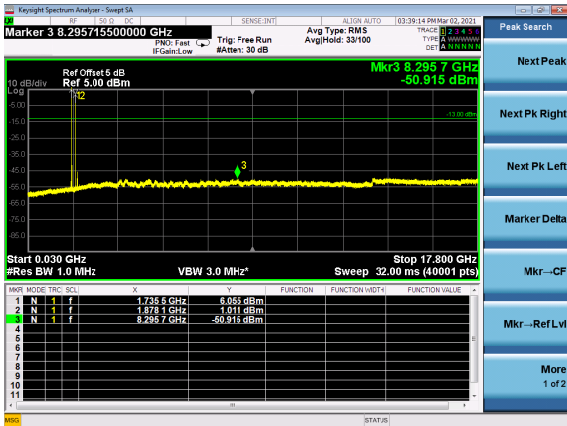
B2\_N66(20M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_High\_CH



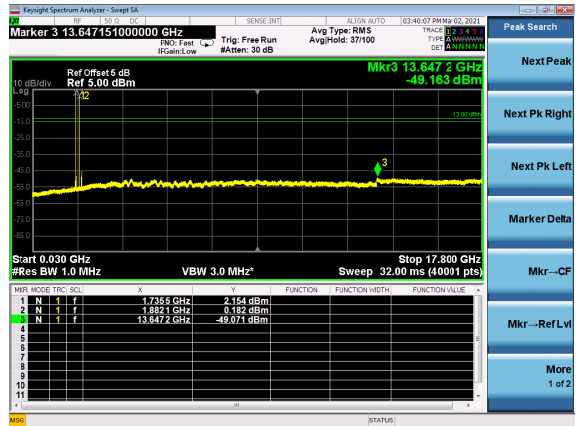
B2\_N66(20M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_High\_CH



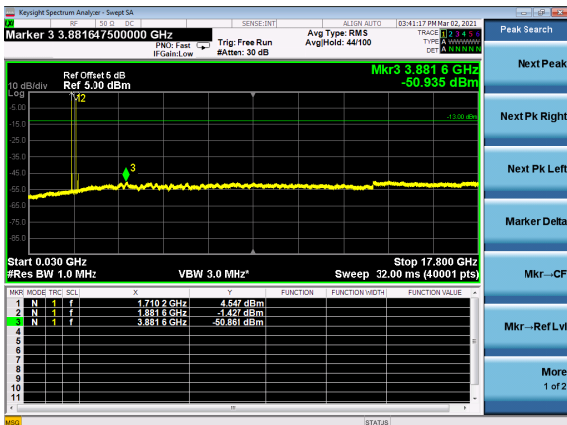
B2\_N66(20M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Mid\_CH



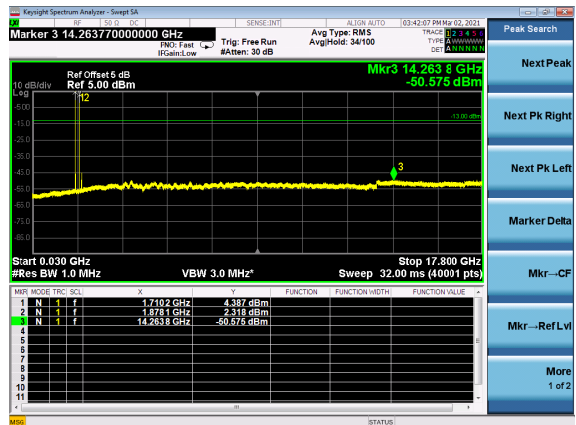
B2\_N66(20M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Mid\_CH



B2\_N66(20M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Low\_CH

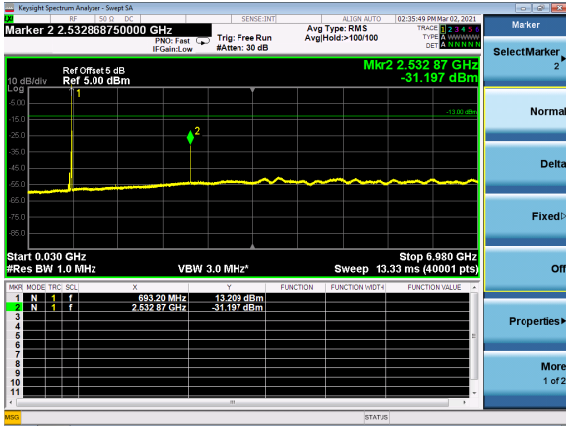


B2\_N66(20M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Low\_CH

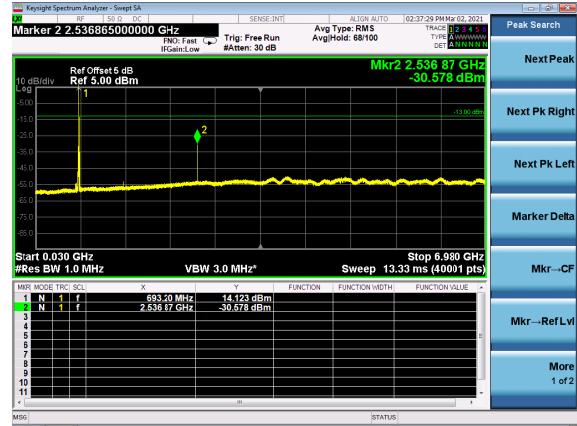




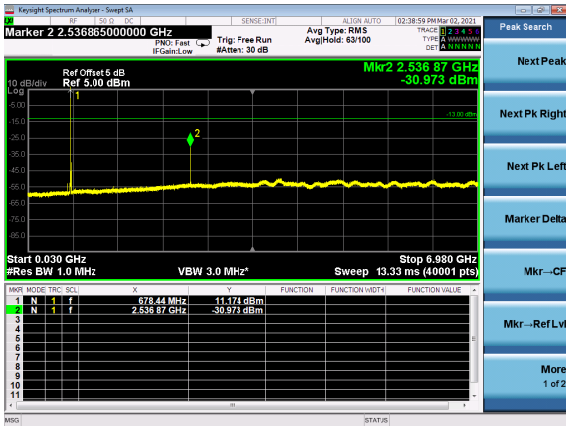
B7\_N71(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1RB  
\_Left\_High\_CH



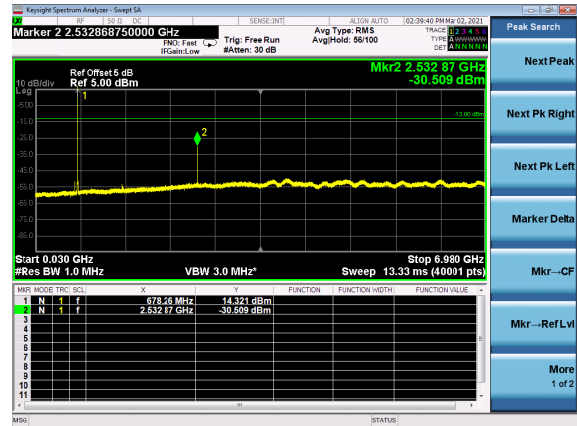
B7\_N71(5M)\_DFT-s-OFDM\_QPSK\_Edge\_1RB  
\_Left\_High\_CH



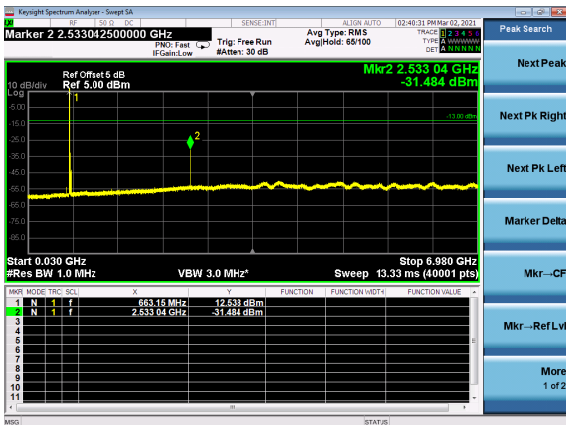
B7\_N71(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1RB  
\_Left\_Mid\_CH



B7\_N71(5M)\_DFT-s-OFDM\_QPSK\_Edge\_1RB  
\_Left\_Mid\_CH



B7\_N71(5M)\_DFT-s-OFDM\_BPSK\_Edge\_1RB  
\_Left\_Low\_CH

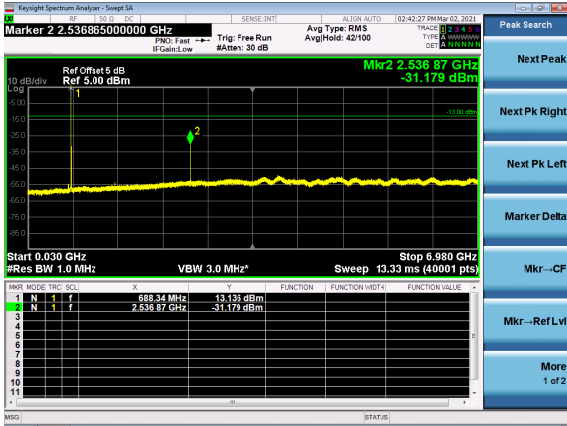


B7\_N71(5M)\_DFT-s-OFDM\_QPSK\_Edge\_1RB  
\_Left\_Low\_CH

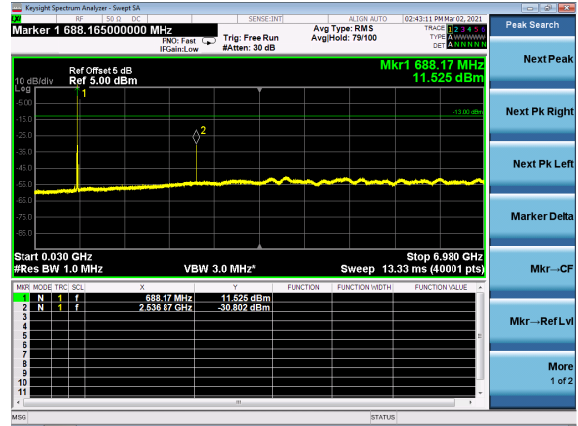




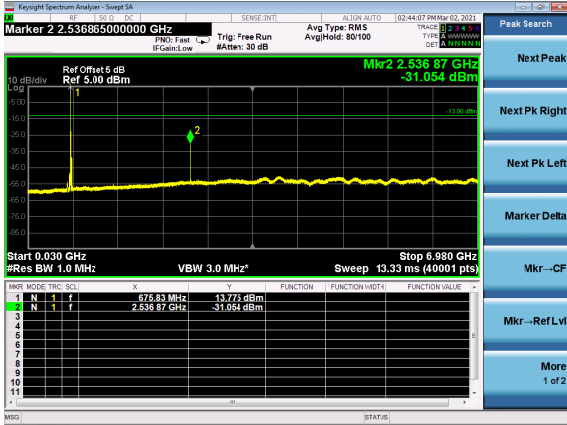
B7\_N71(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_High\_CH



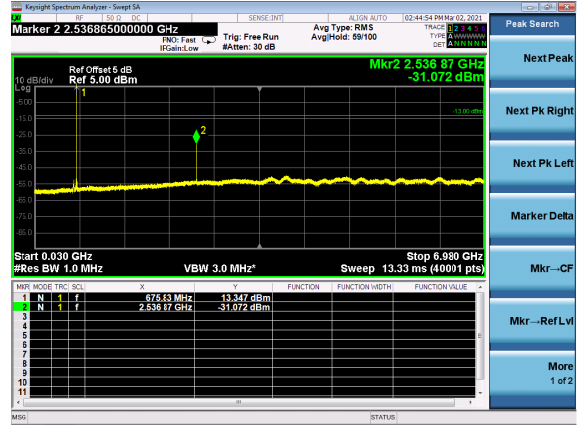
B7\_N71(10M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_High\_CH



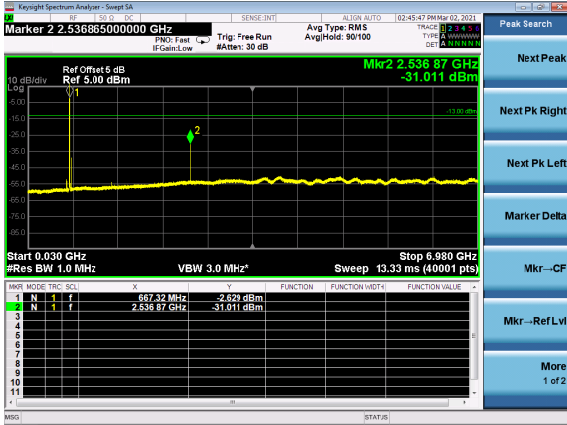
B7\_N71(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Mid\_CH



B7\_N71(10M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Mid\_CH



B7\_N71(10M)\_DFT-s-OFDM\_BPSK\_Edge\_1R  
B\_Left\_Low\_CH



B7\_N71(10M)\_DFT-s-OFDM\_QPSK\_Edge\_1R  
B\_Left\_Low\_CH

