



## **4 RF Power Output**

### **4.1 Test Specification**

FCC Part 27, Subpart C (27.50)

### **4.2 Test Procedure**

(Temperature (22°C)/ Humidity (36%RH))

The E.U.T. antenna terminal was connected to the Spectrum Analyzer through an external attenuator (20.8 dB) and an appropriate coaxial cable. Special attention was taken to prevent Spectrum Analyzer RF input overload.

### **4.3 Test Limit**

The maximum EIRP of a main, booster or base station shall not exceed  $33 \text{ dBW} + 10\log(X/Y) \text{ dBW}$ , where X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition. The limit is calculated to be 62.2 dBm.

### **4.4 Test Results**

JUDGEMENT:                      Passed

See additional information in Table 1 to Table 6 and Figure 8 to Figure 151.



Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin		
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)		
16QAM	5	15	2498.5	32.67	12.5	45.17	62.2	-17.0		
		30		32.97		45.47	62.2	-16.7		
		15	2593.0	33.10		45.60	62.2	-16.6		
		30		33.16		45.66	62.2	-16.5		
		15	2687.5	32.39		44.89	62.2	-17.3		
		30		31.89		44.39	62.2	-17.8		
	10	15	2501.0	32.91		45.41	62.2	-16.8		
				30		33.04	45.54	62.2	-16.7	
				60		32.73	45.23	62.2	-17.0	
		30	2593.0	32.58		45.08	62.2	-17.1		
				30		32.50	45.00	62.2	-17.2	
				60		32.33	44.83	62.2	-17.4	
		60	2685.0	32.53		45.03	62.2	-17.2		
				30		32.25	44.75	62.2	-17.5	
				60		31.89	44.39	62.2	-17.8	
		15	15	2503.0		33.08	45.58	62.2	-16.6	
						30	32.90	45.40	62.2	-16.8
						60	32.91	45.41	62.2	-16.8
	30		2593.0	32.52		45.02	62.2	-17.2		
				30		32.44	44.94	62.2	-17.3	
				60		32.64	45.14	62.2	-17.1	
	60		2682.5	33.10		45.60	62.2	-16.6		
				30		33.15	45.65	62.2	-16.6	
				60		33.04	45.54	62.2	-16.7	
	20		15	2506.0		32.73	45.23	62.2	-17.0	
						30	33.10	45.60	62.2	-16.6
						60	32.89	45.39	62.2	-16.8
		30	2593.0	33.12		45.62	62.2	-16.6		
				30		33.09	45.59	62.2	-16.6	
				60		32.91	45.41	62.2	-16.8	
		60	2680.0	32.50		45.00	62.2	-17.2		
				30		32.42	44.92	62.2	-17.3	
				60		32.43	44.93	62.2	-17.3	

Table 1 RF Power Output 16QAM



Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
16QAM	40	15	2516.0	33.11	12.5	45.61	62.2	-16.6
		30		33.53		46.03	62.2	-16.2
		60		33.00		45.50	62.2	-16.7
		15	2593.0	32.29		44.79	62.2	-17.4
		30		33.21		45.71	62.2	-16.5
		60		33.28		45.78	62.2	-16.4
		15	2670.0	32.52		45.02	62.2	-17.2
		30		32.61		45.11	62.2	-17.1
		60		32.33		44.83	62.2	-17.4
	60	30	2526.0	32.99		45.49	62.2	-16.7
				32.92		45.42	62.2	-16.8
		30	2593.0	33.29		45.79	62.2	-16.4
				33.26		45.76	62.2	-16.4
		30	2660.0	33.06		45.56	62.2	-16.6
				33.18		45.68	62.2	-16.5

Table 2 RF Power Output 16QAM



Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin		
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)		
64QAM	5	15	2498.5	32.29	12.5	44.79	62.2	-17.4		
		30		32.77		45.27	62.2	-16.9		
		15	2593.0	33.16		45.66	62.2	-16.5		
		30		33.10		45.60	62.2	-16.6		
		15	2687.5	31.88		44.38	62.2	-17.8		
		30		31.84		44.34	62.2	-17.9		
	10	15	2501.0	31.82		44.32	62.2	-17.9		
				30		31.95	44.45	62.2	-17.8	
				60		32.10	44.60	62.2	-17.6	
		30	2593.0	32.77		45.27	62.2	-16.9		
				30		32.73	45.23	62.2	-17.0	
				60		33.09	45.59	62.2	-16.6	
		60	2685.0	33.29		45.79	62.2	-16.4		
				30		33.33	45.83	62.2	-16.4	
				60		32.42	44.92	62.2	-17.3	
		15	15	2503.5		32.75	45.25	62.2	-17.0	
						30	32.52	45.02	62.2	-17.2
						60	32.63	45.13	62.2	-17.1
	30		2593.0	33.34		45.84	62.2	-16.4		
				30		32.85	45.35	62.2	-16.9	
				60		32.96	45.46	62.2	-16.7	
	60		2682.5	32.07		44.57	62.2	-17.6		
				30		32.04	44.54	62.2	-17.7	
				60		32.08	44.58	62.2	-17.6	
	20		15	2506.0		32.55	45.05	62.2	-17.2	
						30	32.46	44.96	62.2	-17.2
						60	32.54	45.04	62.2	-17.2
		30	2593.0	33.00		45.50	62.2	-16.7		
				30		33.11	45.61	62.2	-16.6	
				60		33.15	45.65	62.2	-16.6	
		60	2680.0	32.02		44.52	62.2	-17.7		
				30		32.09	44.59	62.2	-17.6	
				60		32.06	44.56	62.2	-17.6	

Table 3 RF Power Output 64QAM



Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
64QAM	40	15	2516.0	32.54	12.5	45.04	62.2	-17.2
		30		32.83		45.33	62.2	-16.9
		60		32.71		45.21	62.2	-17.0
		15	2593.0	32.78		45.28	62.2	-16.9
		30		32.86		45.36	62.2	-16.8
		60		32.88		45.38	62.2	-16.8
		15	2670.0	32.06		44.56	62.2	-17.6
		30		32.12		44.62	62.2	-17.6
		60		32.11		44.61	62.2	-17.6
	60	30	2526.0	32.65		45.15	62.2	-17.1
				32.87		45.37	62.2	-16.8
		60	2593.0	32.83		45.33	62.2	-16.9
				32.99		45.49	62.2	-16.7
		30	2660.0	31.81		44.31	62.2	-17.9
				31.98		44.48	62.2	-17.7

Table 4 RF Power Output 64QAM



Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin	
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)	
256QAM	5	15	2498.5	32.73	12.5	45.23	62.2	-17.0	
		30		32.96		45.46	62.2	-16.7	
		15	2593.0	32.71		45.21	62.2	-17.0	
		30		32.74		45.24	62.2	-17.0	
		15	2687.5	32.47		44.97	62.2	-17.2	
		30		32.76		45.26	62.2	-16.9	
	10	15	2501.0	32.97		45.47	62.2	-16.7	
				30		32.96	45.46	62.2	-16.7
				60		33.06	45.56	62.2	-16.6
		30	2593.0	33.19		45.69	62.2	-16.5	
				33.09		45.59	62.2	-16.6	
				33.09		45.59	62.2	-16.6	
		60	2685.0	32.08		44.58	62.2	-17.6	
				32.05		44.55	62.2	-17.7	
				32.08		44.58	62.2	-17.6	
	15	15	2503.5	32.85		45.35	62.2	-16.9	
				33.00		45.50	62.2	-16.7	
				33.08		45.58	62.2	-16.6	
		30	2593.0	32.66		45.16	62.2	-17.0	
				32.55		45.05	62.2	-17.2	
				32.59		45.09	62.2	-17.1	
		60	2682.5	32.22		44.72	62.2	-17.5	
				32.18		44.68	62.2	-17.5	
				32.23		44.73	62.2	-17.5	
	20	15	2506.0	32.62		45.12	62.2	-17.1	
				31.74		44.24	62.2	-18.0	
				33.04		45.54	62.2	-16.7	
		30	2593.0	32.63		45.13	62.2	-17.1	
				32.82		45.32	62.2	-16.9	
				32.66		45.16	62.2	-17.0	
		60	2680.0	32.61		45.11	62.2	-17.1	
				32.83		45.33	62.2	-16.9	
				32.75		45.25	62.2	-17.0	

Table 5 RF Power Output 256QAM



Modulation	Bandwidth	Sub Carrier	Operation Frequency	Reading	Antenna Gain	EIRP	Limit	Margin
	(MHz)	(kHz)	(MHz)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
256QAM	40	15	2516.0	32.88	12.5	45.38	62.2	-16.8
		30		33.02		45.52	62.2	-16.7
		60		33.25		45.75	62.2	-16.5
		15	2593.0	32.31		44.81	62.2	-17.4
		30		32.22		44.72	62.2	-17.5
		60		32.38		44.88	62.2	-17.3
		15	2670.0	31.68		44.18	62.2	-18.0
		30		31.67		44.17	62.2	-18.0
		60		31.86		44.36	62.2	-17.8
	60	30	2526.0	32.95		45.45	62.2	-16.8
		60		32.86		45.36	62.2	-16.8
		30	2593.0	31.99		44.49	62.2	-17.7
		60		31.97		44.47	62.2	-17.7
		30	2660.0	33.17		45.67	62.2	-16.5
		60		33.08		45.58	62.2	-16.6

Table 6 RF Power Output 256QAM

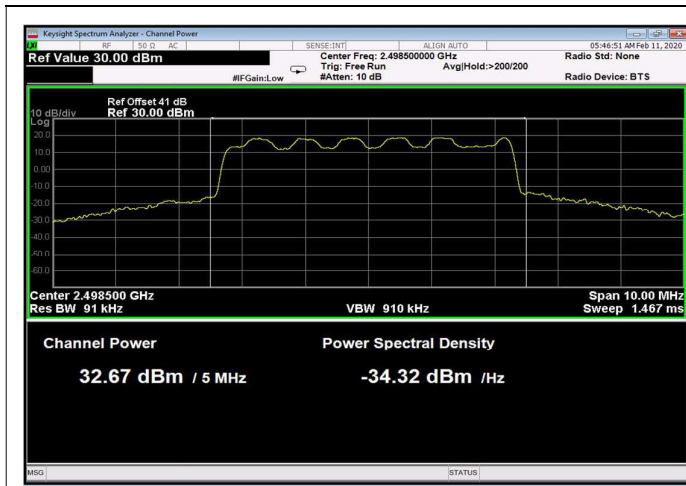


Figure 8: 16QAM 5MHz B.W.; 2498.5MHz, 15kHz

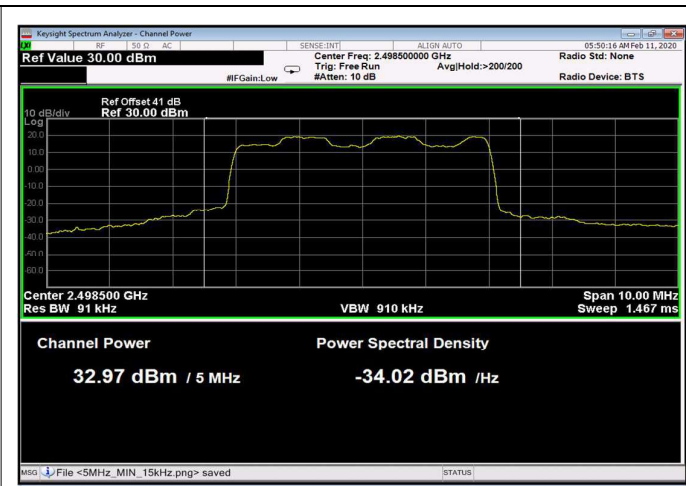


Figure 9: 16QAM 5MHz B.W.; 2498.5MHz, 30kHz

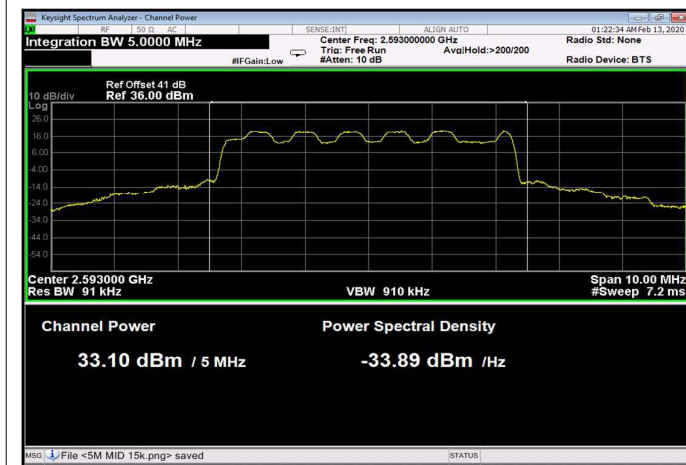


Figure 10: 16QAM 5MHz B.W.; 2593.0MHz, 15kHz

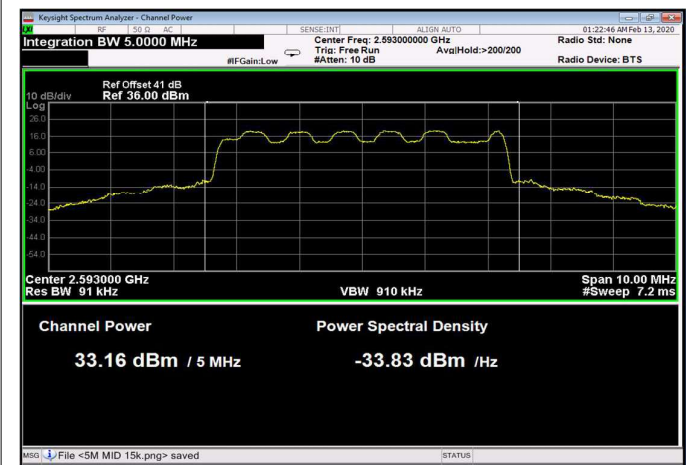


Figure 11: 16QAM 5MHz B.W.; 2593.0MHz, 30kHz

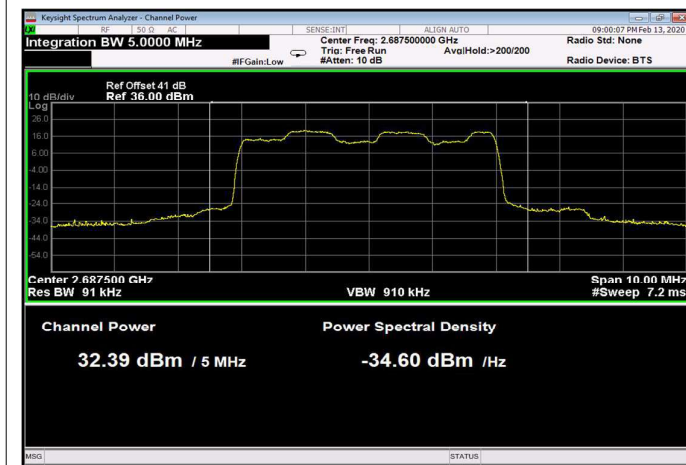


Figure 12: 16QAM 5MHz B.W.; 2687.5MHz, 15kHz

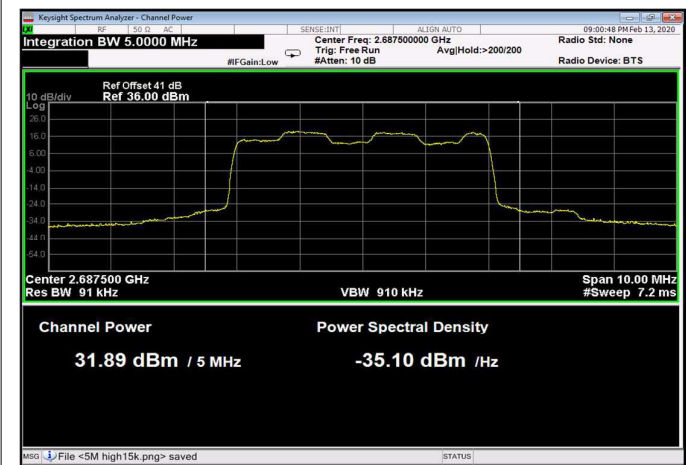


Figure 13: 16QAM 5MHz C.S.; 2687.5MHz, 30kHz



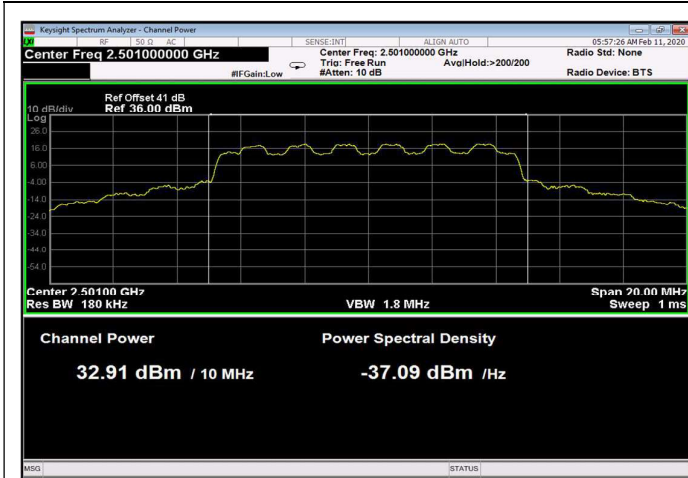


Figure 14: 16QAM 10MHz B.W.; 2501.0MHz, 15kHz

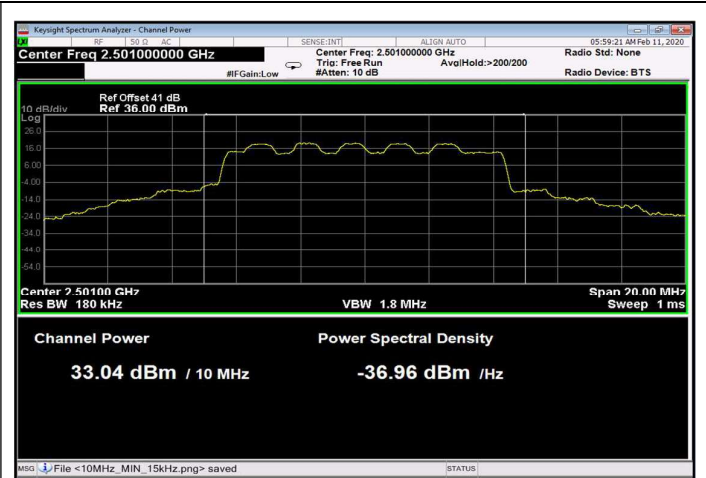


Figure 15: 16QAM 10MHz B.W.; 2501.0MHz, 30kHz

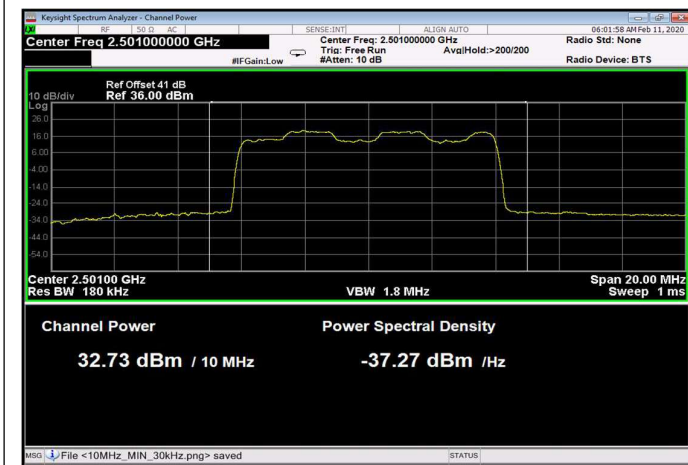


Figure 16: 16QAM 10MHz B.W.; 2501.0MHz, 60kHz

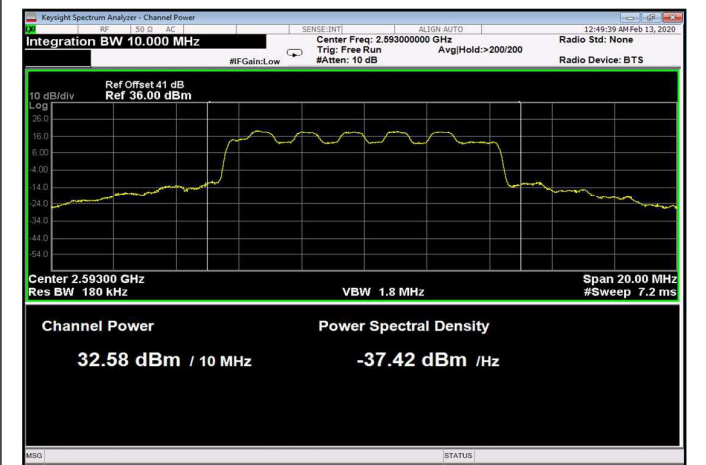


Figure 17: 16QAM 10MHz B.W.; 2593.0MHz, 15kHz

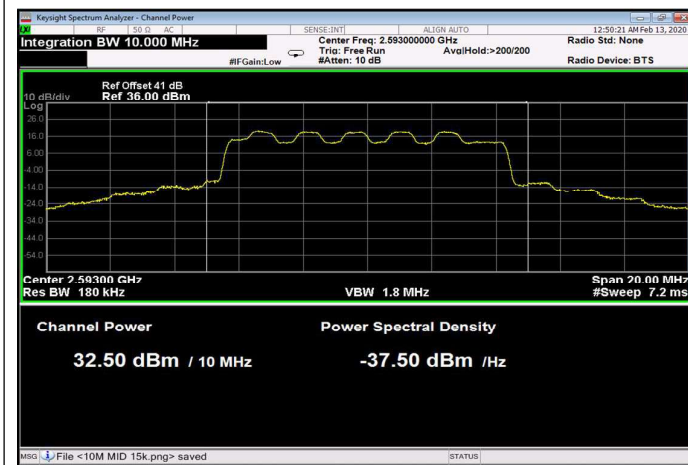


Figure 18: 16QAM 10MHz B.W.; 2593.0MHz, 30kHz

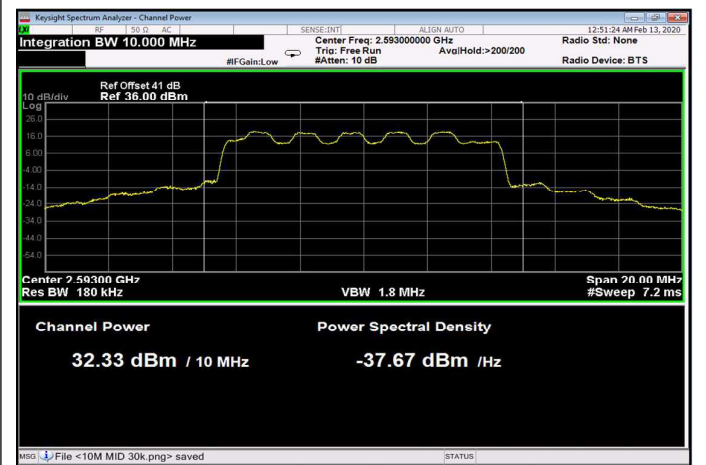


Figure 19: 16QAM 10MHz B.W.; 2593.0MHz, 60kHz

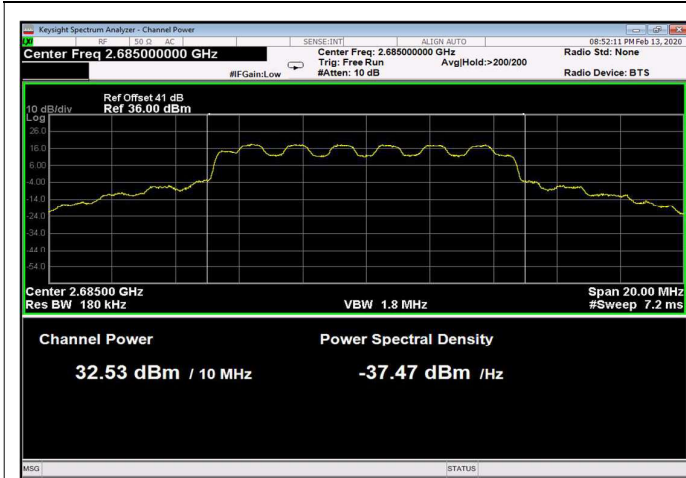


Figure 20: 16QAM 10MHz B.W.; 2685.0MHz, 15kHz

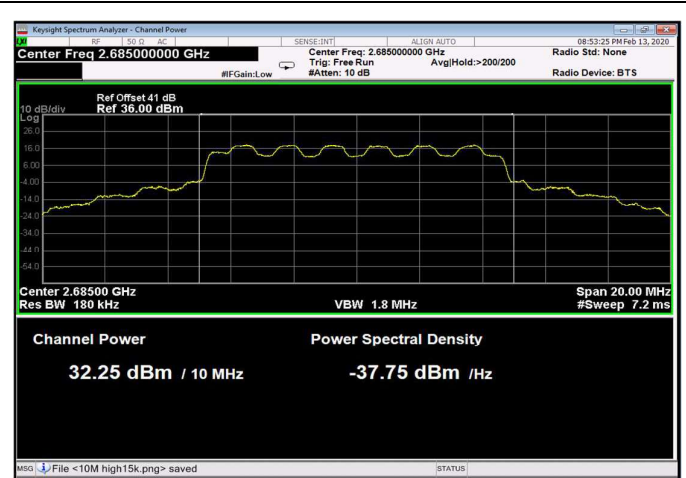


Figure 21: 16QAM 10MHz C.S; 2685.0MHz, 30kHz

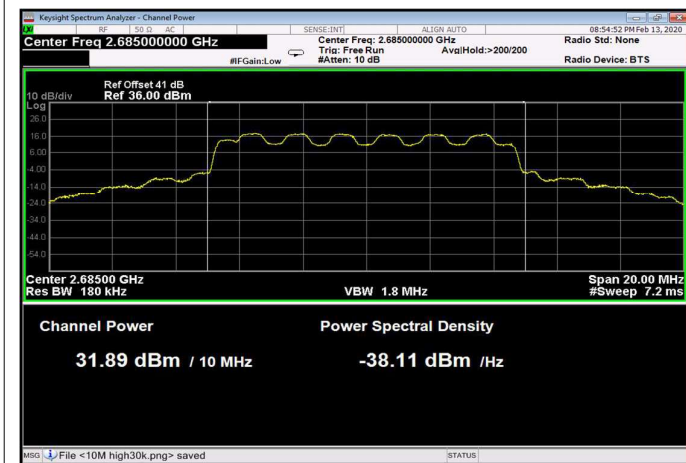


Figure 22: 16QAM 10MHz B.W.; 2685.0MHz, 60kHz

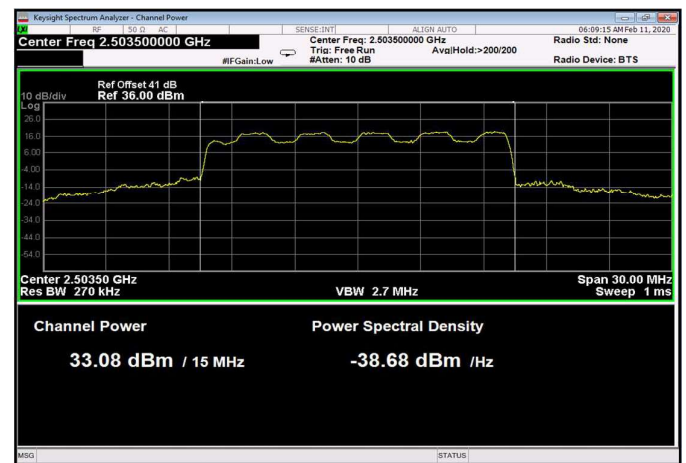


Figure 23: 16QAM 15MHz B.W.; 2503.5MHz, 15kHz

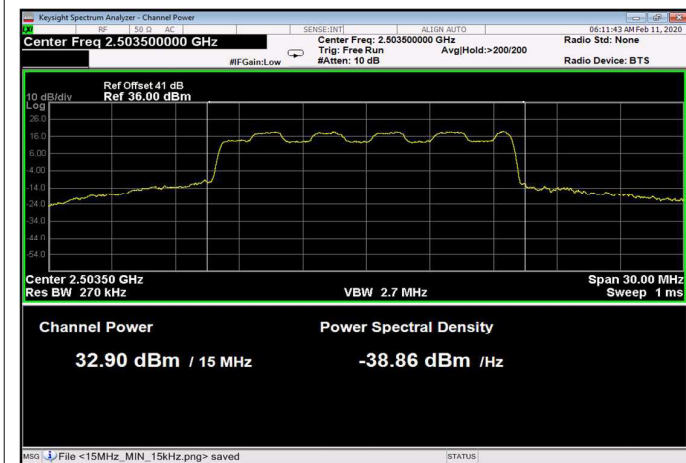


Figure 24: 16QAM 15MHz B.W.; 2503.5MHz, 30kHz

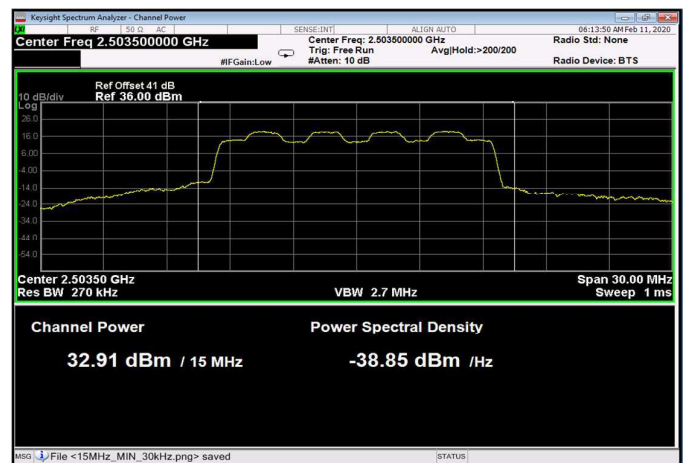


Figure 25: 16QAM 15MHz C.S; 2503.5MHz, 60kHz

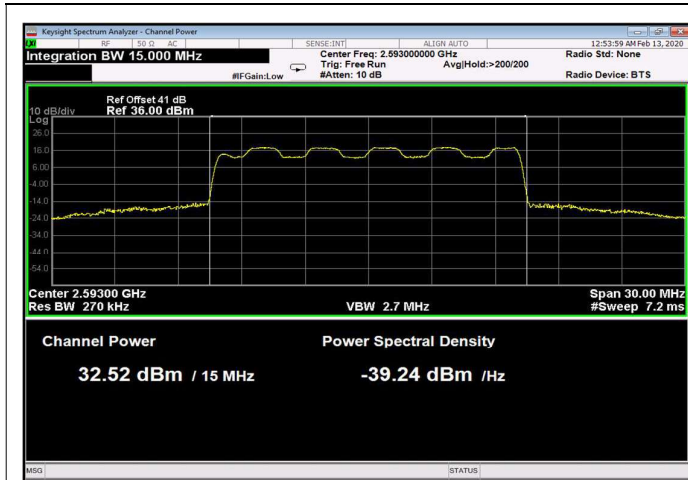


Figure 26: 16QAM 15MHz B.W.; 2593.0MHz, 15kHz

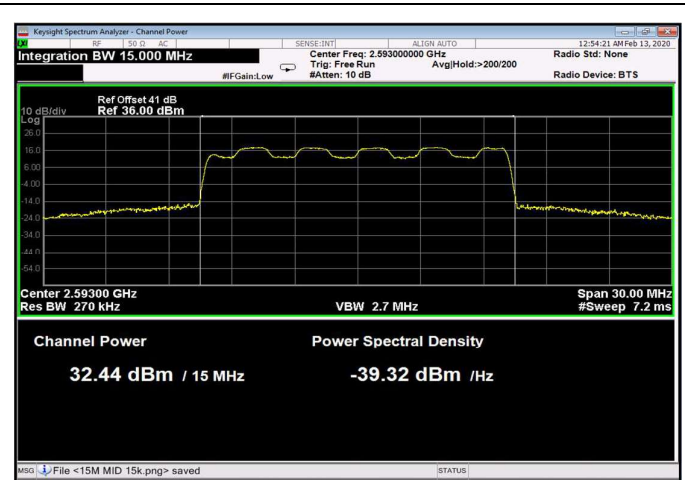


Figure 27: 16QAM 15MHz B.W.; 2593.0MHz, 30 kHz

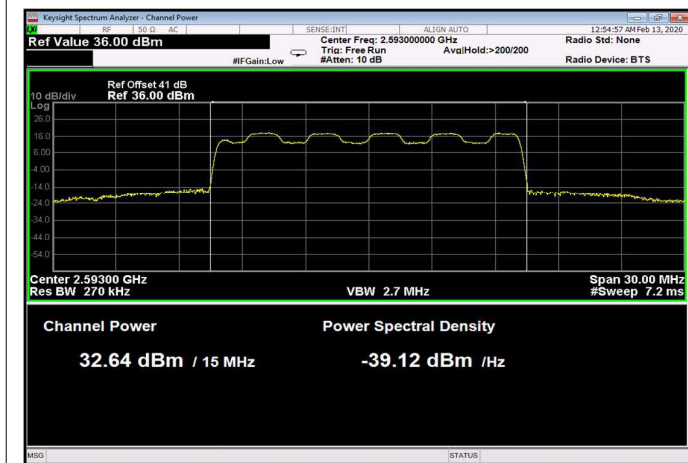


Figure 28: 16QAM 15MHz B.W.; 2593.0MHz, 60kHz

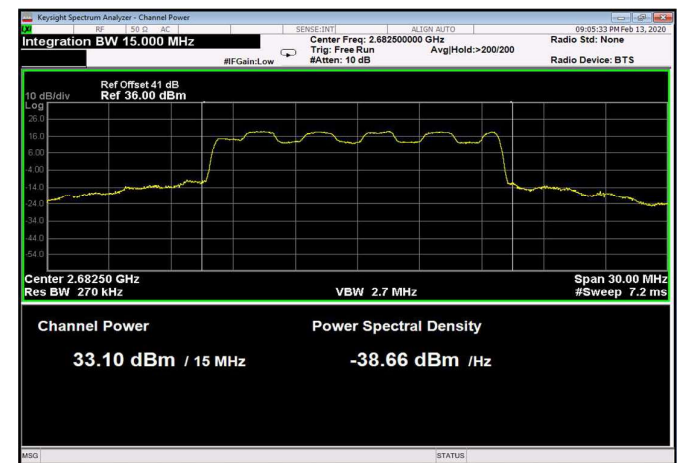


Figure 29: 16QAM 15MHz B.W.; 2682.5MHz, 15kHz

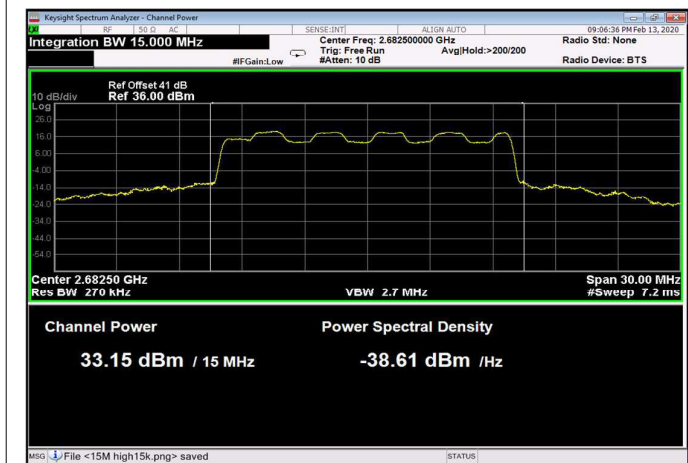


Figure 30: 16QAM 15MHz B.W.; 2682.5MHz, 30kHz

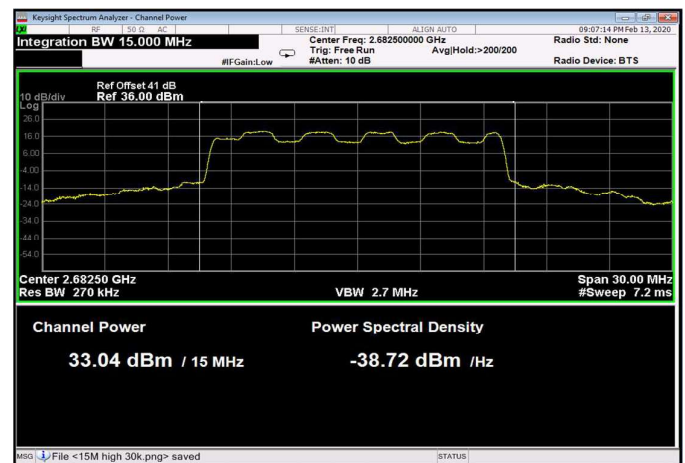


Figure 31: 16QAM 15MHz B.W.; 2682.5MHz, 60kHz

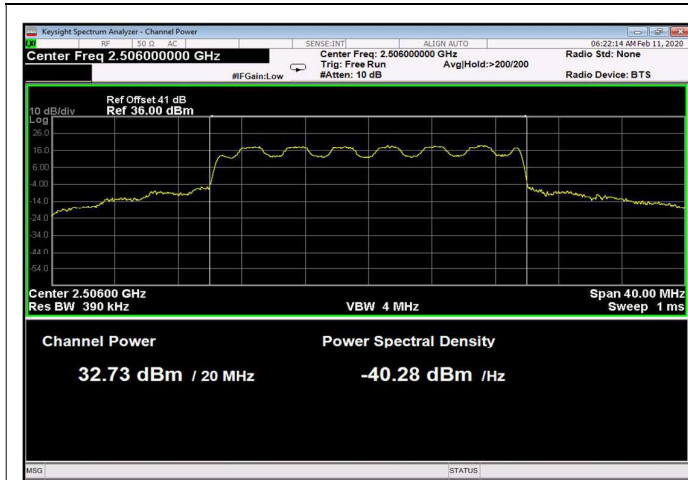


Figure 32: 16QAM 20MHz B.W.; 2506.0MHz, 15 kHz

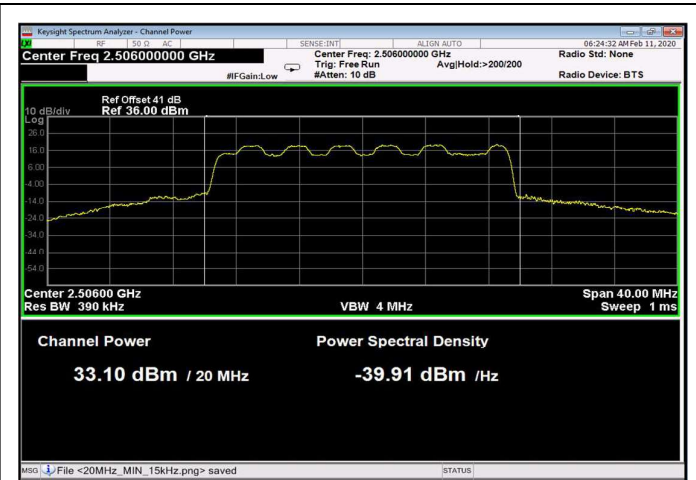


Figure 33: 16QAM 20MHz B.W.; 2506.0MHz, 30kHz

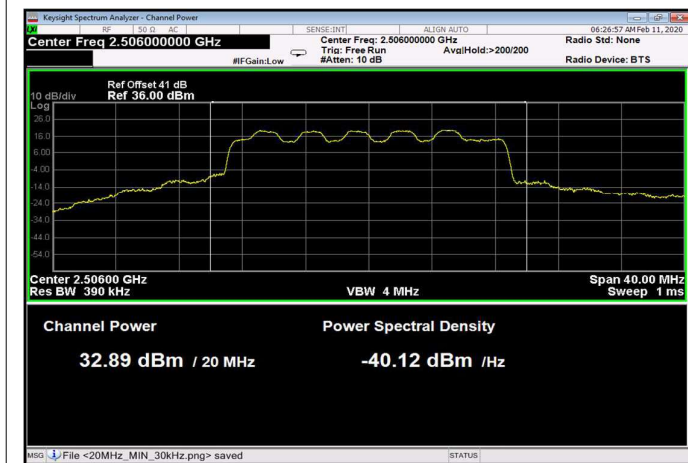


Figure 34: 16QAM 20MHz B.W.; 2506.0MHz, 60kHz

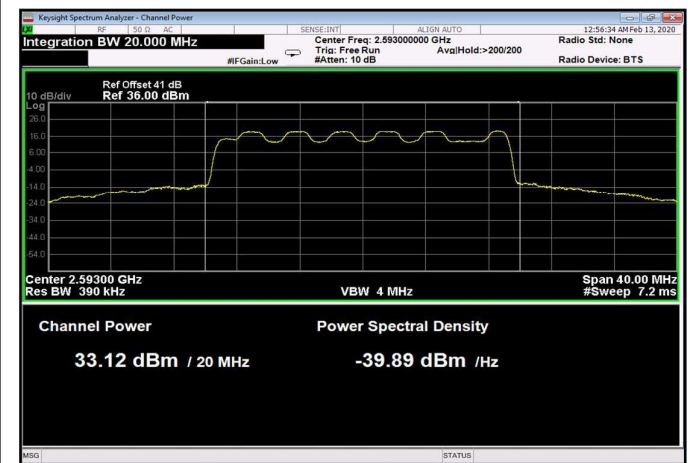


Figure 35: 16QAM 20MHz B.W.; 2593.0MHz, 15kHz

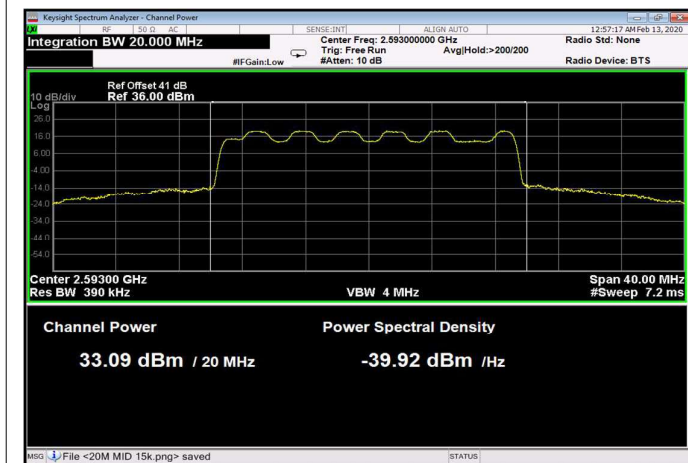


Figure 36: 16QAM 20MHz B.W.; 2593.0MHz, 30kHz

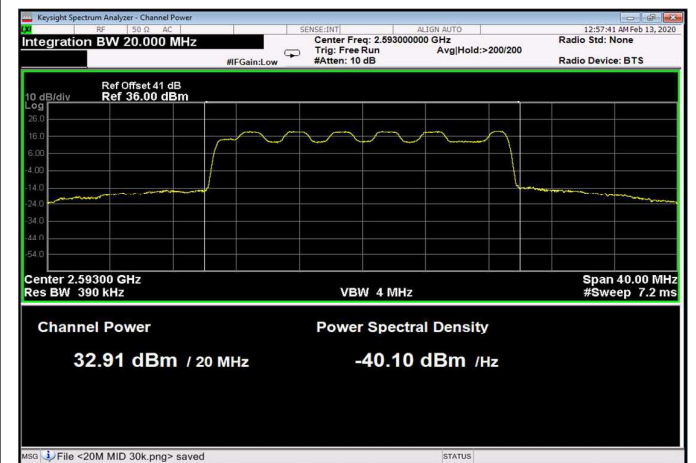


Figure 37: 16QAM 20MHz B.W.; 2593.0MHz, 60kHz



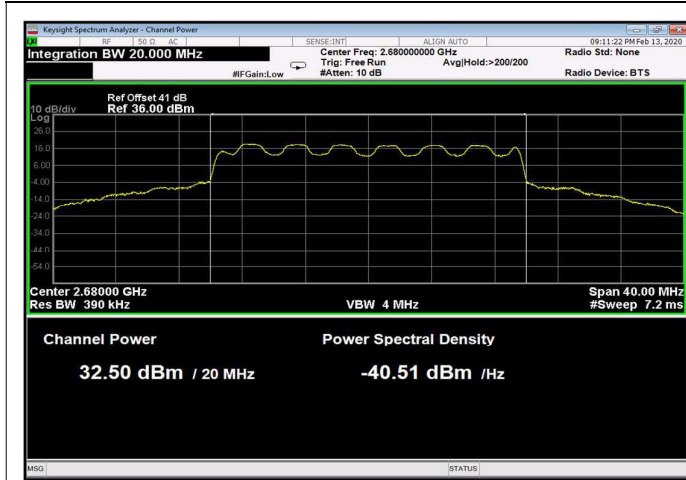


Figure 38: 16QAM 20MHz B.W.; 2680.0MHz, 15kHz

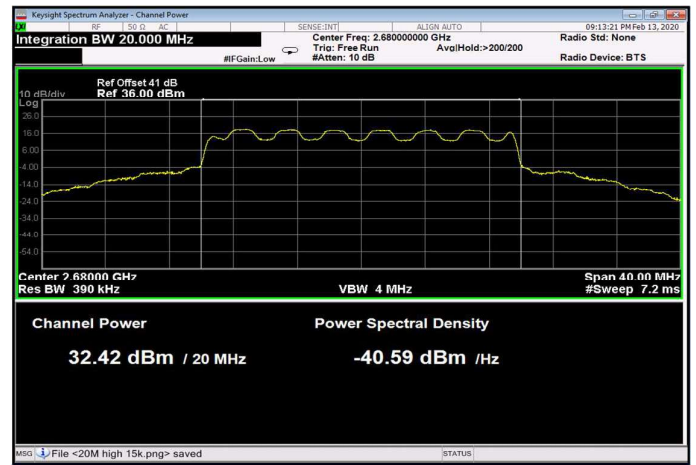


Figure 39: 16QAM 20MHz B.W.; 2680.0MHz, 30kHz

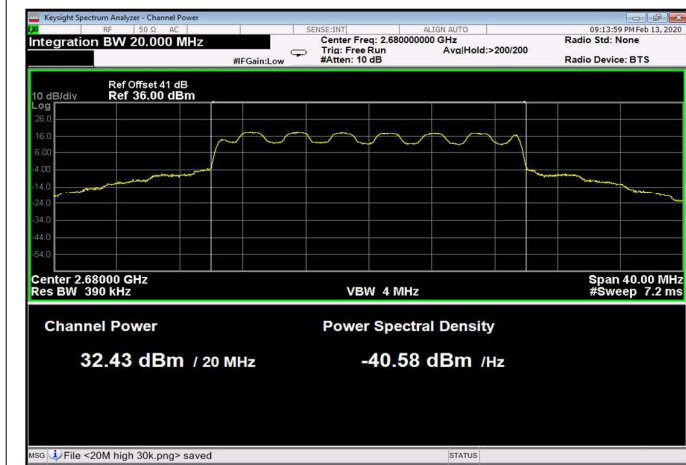


Figure 40: 16QAM 20MHz B.W.; 2680.0MHz, 60kHz

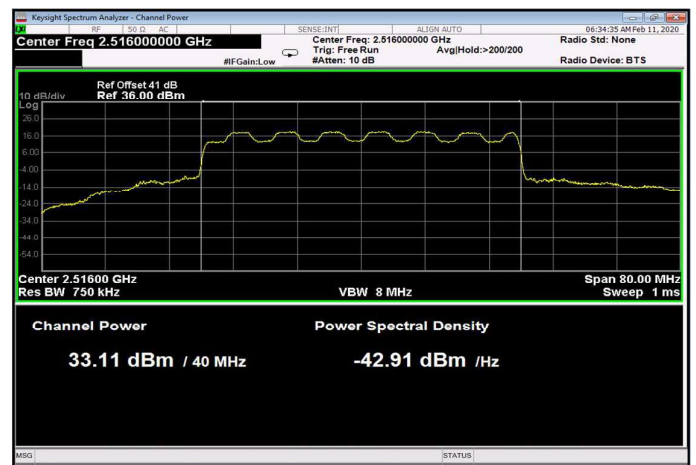


Figure 41: 16QAM 40MHz B.W.; 2516.0MHz, 15kHz

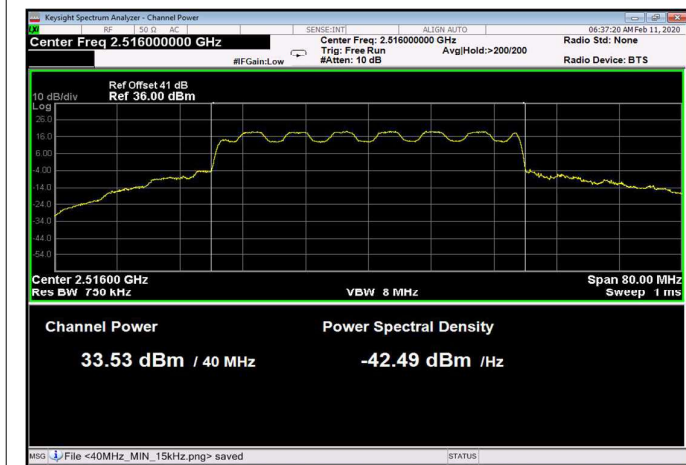


Figure 42: 16QAM 40MHz B.W.; 2516.0MHz, 30kHz

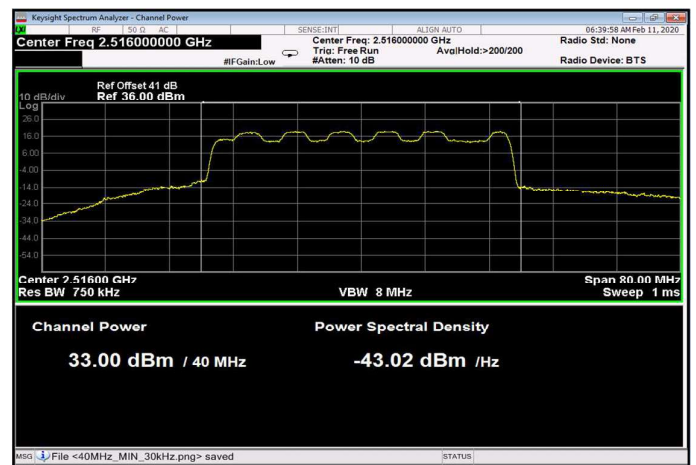


Figure 43: 16QAM 40MHz B.W.; 2516.0MHz, 60kHz