

Appendix I

Test Results of LTE Band 41

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1. Test Conditions

Item	Environment	Test Channel	RB size	Modulation	BW (MHz)	Test by
Conducted Output Power	<input checked="" type="checkbox"/> N.T / N.V.	<input checked="" type="checkbox"/> Low <input checked="" type="checkbox"/> Mid <input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> Half <input checked="" type="checkbox"/> Full	<input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM	<input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 10 <input checked="" type="checkbox"/> 15 <input checked="" type="checkbox"/> 20	Sean
EIRP/ERP	<input checked="" type="checkbox"/> N.T / N.V.	<input checked="" type="checkbox"/> Low <input checked="" type="checkbox"/> Mid <input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> Half <input checked="" type="checkbox"/> Full	<input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM	<input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 10 <input checked="" type="checkbox"/> 15 <input checked="" type="checkbox"/> 20	Sean
Peak-to-Average Ratio	<input checked="" type="checkbox"/> N.T / N.V.	<input checked="" type="checkbox"/> Low <input checked="" type="checkbox"/> Mid <input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> Half <input checked="" type="checkbox"/> Full	<input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM	<input checked="" type="checkbox"/> 20	Sean
Occupied Bandwidth	<input checked="" type="checkbox"/> N.T / N.V.	<input checked="" type="checkbox"/> Low <input checked="" type="checkbox"/> Mid <input checked="" type="checkbox"/> High	<input type="checkbox"/> 1 <input type="checkbox"/> Half <input checked="" type="checkbox"/> Full	<input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM	<input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 10 <input checked="" type="checkbox"/> 15 <input checked="" type="checkbox"/> 20	Sean
Conducted Band Edge	<input checked="" type="checkbox"/> N.T / N.V.	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Mid <input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> Half <input checked="" type="checkbox"/> Full	<input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM	<input checked="" type="checkbox"/> 5 <input checked="" type="checkbox"/> 10 <input checked="" type="checkbox"/> 15 <input checked="" type="checkbox"/> 20	Sean
Spurious Emission at Antenna Terminal	<input checked="" type="checkbox"/> N.T / N.V.	<input checked="" type="checkbox"/> Low <input checked="" type="checkbox"/> Mid <input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> Half <input type="checkbox"/> Full	<input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM	<input checked="" type="checkbox"/> 20	Sean
Field Strength of Spurious Radiation	<input checked="" type="checkbox"/> N.T / N.V.	<input checked="" type="checkbox"/> Low <input checked="" type="checkbox"/> Mid <input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> worst case			Sean
Frequency Stability	<input checked="" type="checkbox"/> N.T / N.V. <input checked="" type="checkbox"/> L.T / L.V. <input checked="" type="checkbox"/> L.T / H.V. <input checked="" type="checkbox"/> H.T / L.V. <input checked="" type="checkbox"/> H.T / H.V.	<input type="checkbox"/> Low <input checked="" type="checkbox"/> Mid <input type="checkbox"/> High	<input type="checkbox"/> 1 <input type="checkbox"/> Half <input checked="" type="checkbox"/> Full	<input checked="" type="checkbox"/> QPSK <input type="checkbox"/> 16QAM	<input checked="" type="checkbox"/> 20	Sean

NOTE: All settings for RB allocation, modulation mode, channel, channel bandwidth and environment required by the standard are considered and tested; only the worst case and normal test plots are shown on the report.

2. Conducted Output Power and EIRP

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result
			Size	Offset					
5.0	QPSK	Low	1	0	21.60	1.7	23.30	33.00	Pass
				12	21.74	1.7	23.44		Pass
				24	21.60	1.7	23.30		Pass
			12	0	20.66	1.7	22.36		Pass
				7	20.70	1.7	22.40		Pass
				13	20.79	1.7	22.49		Pass
		25	0	20.73	1.7	22.43	Pass		
		Mid	1	0	22.05	1.7	23.75		Pass
				12	22.09	1.7	23.79		Pass
				24	22.12	1.7	23.82		Pass
			12	0	21.09	1.7	22.79		Pass
				7	21.05	1.7	22.75		Pass
				13	21.02	1.7	22.72		Pass
		25	0	20.95	1.7	22.65	Pass		
		High	1	0	22.31	1.7	24.01		Pass
				12	22.33	1.7	24.03		Pass
				24	22.37	1.7	24.07		Pass
			12	0	21.46	1.7	23.16		Pass
	7			21.43	1.7	23.13	Pass		
	13			21.46	1.7	23.16	Pass		
	25	0	21.37	1.7	23.07	Pass			
	16QAM	Low	1	0	20.63	1.7	22.33	33.00	Pass
				12	20.62	1.7	22.32		Pass
				24	20.59	1.7	22.29		Pass
			12	0	19.81	1.7	21.51		Pass
				7	19.77	1.7	21.47		Pass
				13	19.72	1.7	21.42		Pass
		25	0	19.76	1.7	21.46	Pass		
		Mid	1	0	21.23	1.7	22.93		Pass
				12	21.46	1.7	23.16		Pass
				24	21.49	1.7	23.19		Pass
			12	0	19.92	1.7	21.62		Pass
				7	19.98	1.7	21.68		Pass
				13	20.06	1.7	21.76		Pass
		25	0	20.04	1.7	21.74	Pass		
		High	1	0	20.78	1.7	22.48		Pass
12				21.05	1.7	22.75	Pass		
24				21.08	1.7	22.78	Pass		
12			0	20.43	1.7	22.13	Pass		
	7		20.38	1.7	22.08	Pass			
	13		20.35	1.7	22.05	Pass			
25	0	20.54	1.7	22.24	Pass				

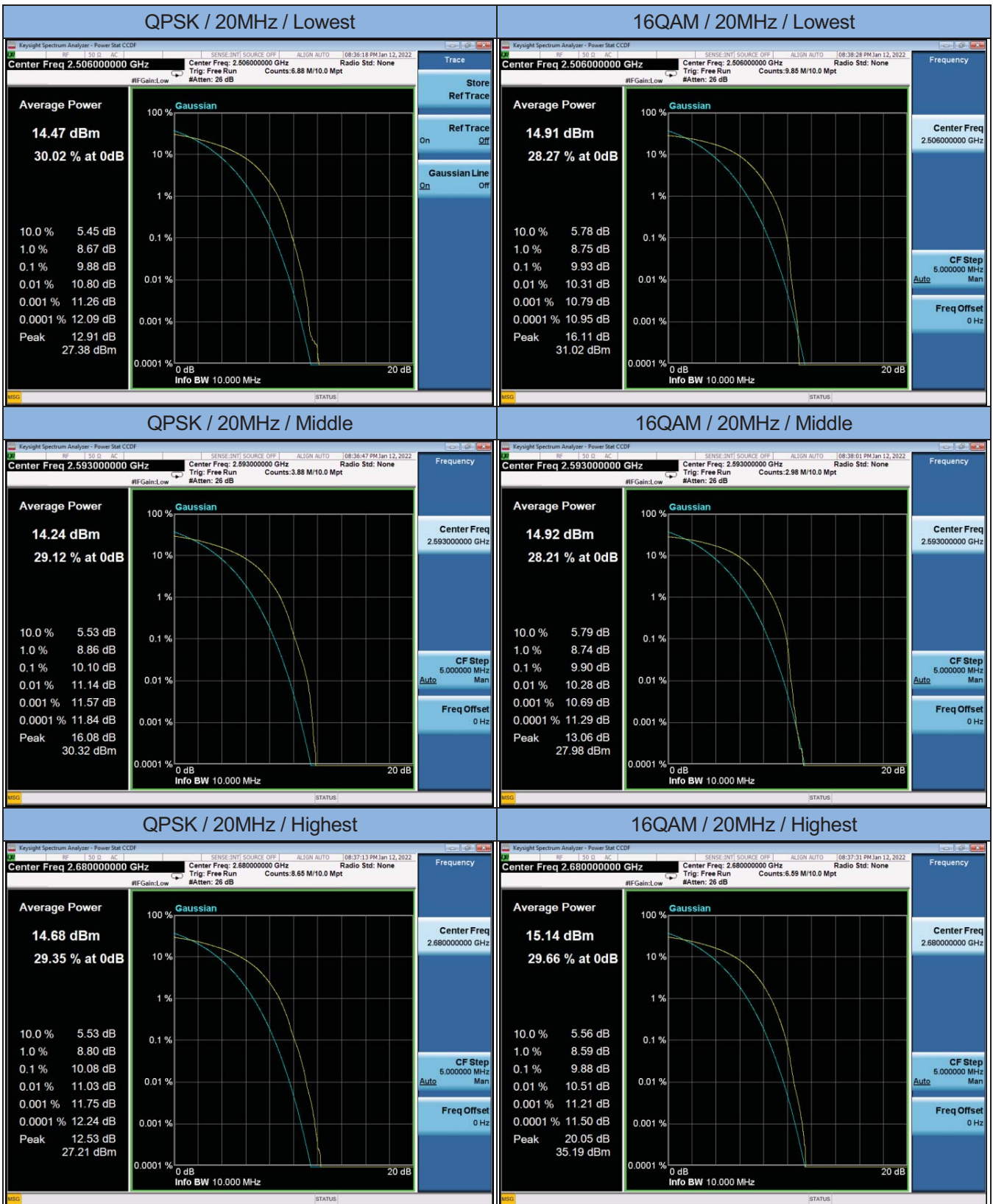
BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result		
			Size	Offset							
10	QPSK	Low	1	0	21.80	1.7	23.50	33.00	Pass		
				25	21.78	1.7	23.48		Pass		
				49	21.81	1.7	23.51		Pass		
			25	0	20.73	1.7	22.43		Pass		
				12	20.74	1.7	22.44		Pass		
				25	20.76	1.7	22.46		Pass		
		50	0	20.81	1.7	22.51	Pass				
		Mid	1	0	22.33	1.7	24.03		Pass		
				25	22.18	1.7	23.88		Pass		
				49	22.18	1.7	23.88		Pass		
			25	0	21.14	1.7	22.84		Pass		
				12	21.12	1.7	22.82		Pass		
				25	21.10	1.7	22.80		Pass		
		50	0	21.13	1.7	22.83	Pass				
		High	1	0	22.77	1.7	24.47		Pass		
				25	22.83	1.7	24.53		Pass		
				49	22.74	1.7	24.44		Pass		
			25	0	21.45	1.7	23.15		Pass		
				12	21.39	1.7	23.09		Pass		
				25	21.34	1.7	23.04		Pass		
		50	0	21.59	1.7	23.29	Pass				
		16QAM	Low	1	0	20.69	1.7		22.39	33.00	Pass
					25	20.70	1.7		22.40		Pass
					49	20.74	1.7		22.44		Pass
	25			0	19.99	1.7	21.69	Pass			
				12	19.86	1.7	21.56	Pass			
				25	19.76	1.7	21.46	Pass			
	50		0	19.67	1.7	21.37	Pass				
	Mid		1	0	21.36	1.7	23.06	Pass			
				25	21.14	1.7	22.84	Pass			
				49	21.04	1.7	22.74	Pass			
			25	0	20.32	1.7	22.02	Pass			
				12	20.33	1.7	22.03	Pass			
				25	20.31	1.7	22.01	Pass			
	50		0	20.35	1.7	22.05	Pass				
	High		1	0	22.03	1.7	23.73	Pass			
				25	22.11	1.7	23.81	Pass			
				49	21.73	1.7	23.43	Pass			
			25	0	20.67	1.7	22.37	Pass			
				12	20.65	1.7	22.35	Pass			
				25	20.64	1.7	22.34	Pass			
	50		0	20.87	1.7	22.57	Pass				

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result			
			Size	Offset								
15	QPSK	Low	1	0	21.34	1.7	23.04	33.00	Pass			
				37	21.73	1.7	23.43		Pass			
				74	21.81	1.7	23.51		Pass			
			36	0	21.31	1.7	23.01		Pass			
				20	21.49	1.7	23.19		Pass			
				39	20.66	1.7	22.36		Pass			
			75	0	20.68	1.7	22.38		Pass			
			Mid	1	0	22.36	1.7		24.06	Pass		
					37	22.06	1.7		23.76	Pass		
		74			21.94	1.7	23.64		Pass			
		36		0	20.91	1.7	22.61		Pass			
				20	21.09	1.7	22.79		Pass			
				39	21.21	1.7	22.91		Pass			
		75		0	20.85	1.7	22.55		Pass			
		High		1	0	22.69	1.7		24.39	Pass		
					37	22.68	1.7		24.38	Pass		
			74		22.56	1.7	24.26		Pass			
			36	0	21.41	1.7	23.11		Pass			
				20	21.40	1.7	23.10		Pass			
				39	21.33	1.7	23.03		Pass			
			75	0	21.24	1.7	22.94		Pass			
			16QAM	Low	1	0	21.31		1.7	23.01	33.00	Pass
						37	21.35		1.7	23.05		Pass
		74				21.47	1.7		23.17	Pass		
	36	0			19.96	1.7	21.66	Pass				
		20			19.89	1.7	21.59	Pass				
		39			19.77	1.7	21.47	Pass				
	75	0			19.80	1.7	21.50	Pass				
	Mid	1			0	21.72	1.7	23.42	Pass			
					37	21.56	1.7	23.26	Pass			
				74	21.56	1.7	23.26	Pass				
		36		0	20.51	1.7	22.21	Pass				
				20	20.46	1.7	22.16	Pass				
				39	20.25	1.7	21.95	Pass				
		75		0	20.72	1.7	22.42	Pass				
		High		1	0	21.95	1.7	23.65	Pass			
					37	21.97	1.7	23.67	Pass			
	74				22.31	1.7	24.01	Pass				
	36			0	20.80	1.7	22.50	Pass				
				20	20.95	1.7	22.65	Pass				
				39	21.00	1.7	22.70	Pass				
	75			0	20.99	1.7	22.69	Pass				

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result		
			Size	Offset							
20	QPSK	Low	1	0	21.29	1.7	22.99	33.00	Pass		
				49	21.44	1.7	23.14		Pass		
				99	21.60	1.7	23.30		Pass		
			50	0	20.95	1.7	22.65		Pass		
				24	20.77	1.7	22.47		Pass		
				50	20.66	1.7	22.36		Pass		
		100	0	20.83	1.7	22.53	Pass				
		Mid	1	0	21.89	1.7	23.59		Pass		
				49	22.11	1.7	23.81		Pass		
				99	21.87	1.7	23.57		Pass		
			50	0	20.75	1.7	22.45		Pass		
				24	20.83	1.7	22.53		Pass		
				50	20.91	1.7	22.61		Pass		
		100	0	20.67	1.7	22.37	Pass				
		High	1	0	22.26	1.7	23.96		Pass		
				49	22.08	1.7	23.78		Pass		
				99	22.16	1.7	23.86		Pass		
			50	0	20.78	1.7	22.48		Pass		
				24	20.86	1.7	22.56		Pass		
				50	20.93	1.7	22.63		Pass		
		100	0	20.69	1.7	22.39	Pass				
		16QAM	Low	1	0	21.14	1.7		22.84	33.00	Pass
					49	21.07	1.7		22.77		Pass
					99	21.34	1.7		23.04		Pass
	50			0	20.60	1.7	22.30	Pass			
				24	20.11	1.7	21.81	Pass			
				50	19.99	1.7	21.69	Pass			
	100		0	19.88	1.7	21.58	Pass				
	Mid		1	0	21.33	1.7	23.03	Pass			
				49	21.63	1.7	23.33	Pass			
				99	21.46	1.7	23.16	Pass			
			50	0	20.35	1.7	22.05	Pass			
				24	20.42	1.7	22.12	Pass			
				50	20.54	1.7	22.24	Pass			
	100		0	20.63	1.7	22.33	Pass				
	High		1	0	21.36	1.7	23.06	Pass			
				49	21.50	1.7	23.20	Pass			
				99	21.11	1.7	22.81	Pass			
			50	0	20.60	1.7	22.30	Pass			
				24	20.60	1.7	22.30	Pass			
				50	20.61	1.7	22.31	Pass			
	100		0	20.62	1.7	22.32	Pass				

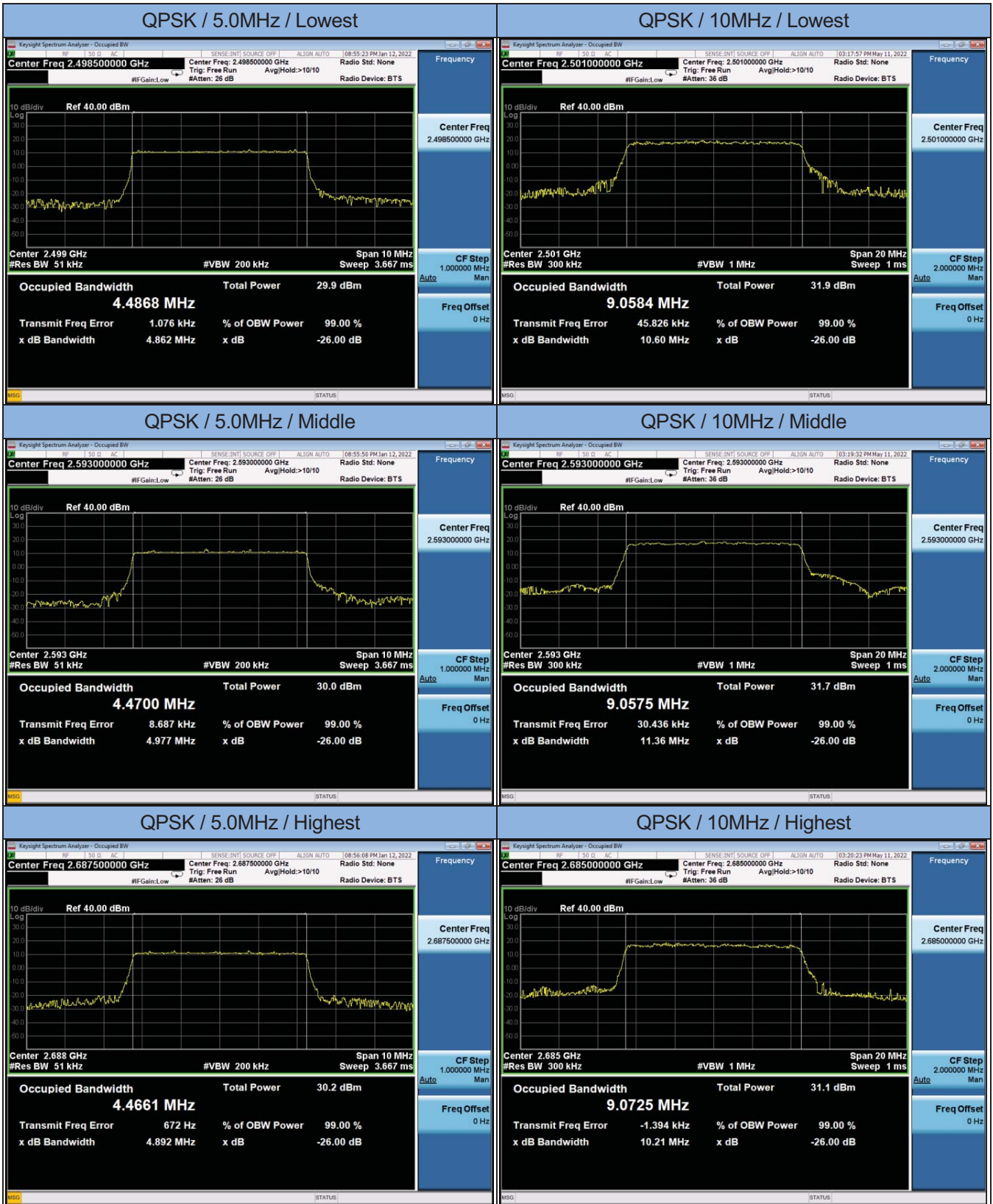
3. Peak-to-Average Ratio

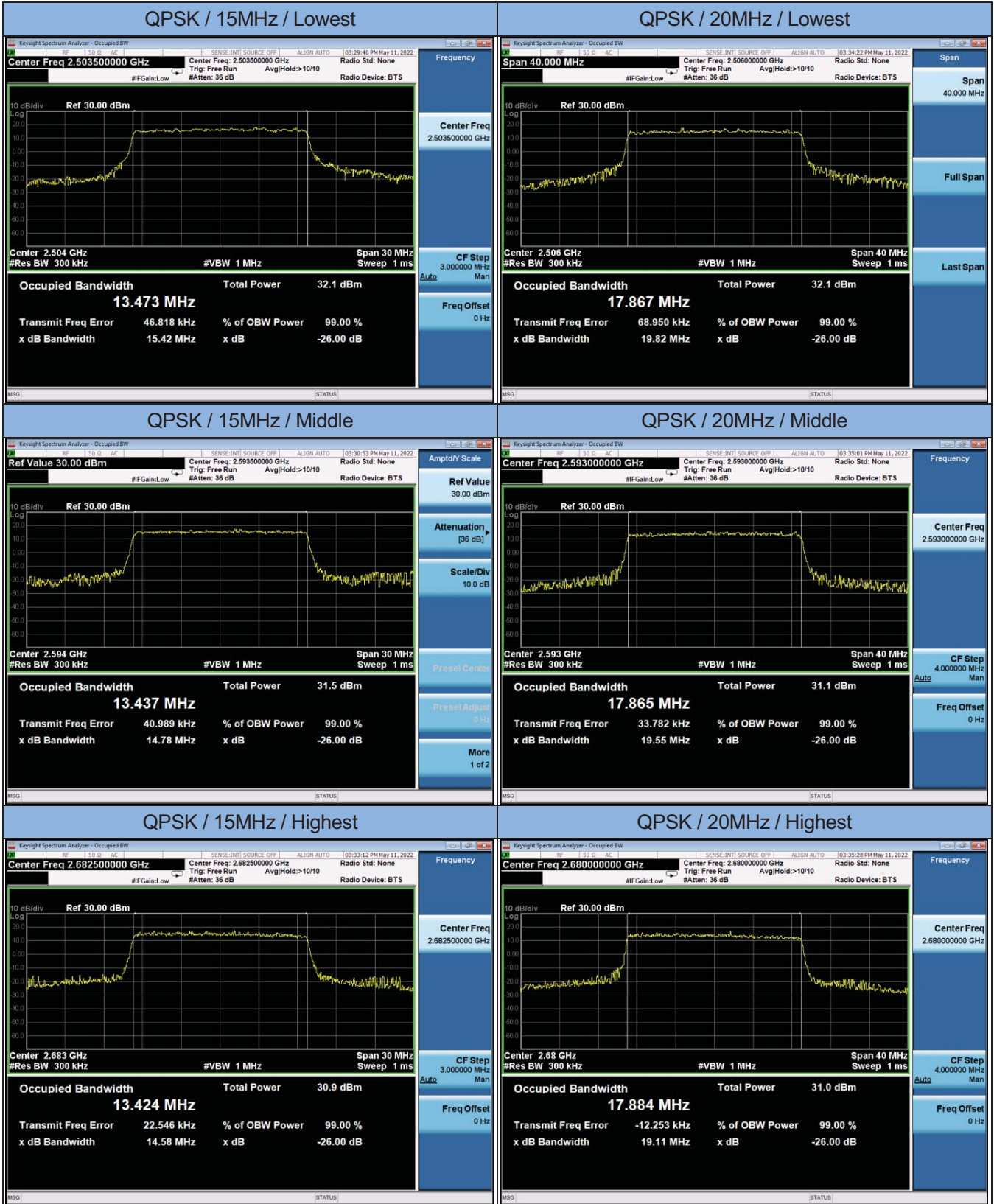
BW (MHz)	Modulation	Channel	RB Allocation		Peak-to-Average Ratio (dB)	Limit (dBm)	Result
			Size	Offset			
20	QPSK	Low	Full	0	9.88	13.0	Pass
		Mid	Full	0	10.10		Pass
		High	Full	0	10.08		Pass
	16QAM	Low	Full	0	9.93	13.0	Pass
		Mid	Full	0	9.90		Pass
		High	Full	0	9.88		Pass

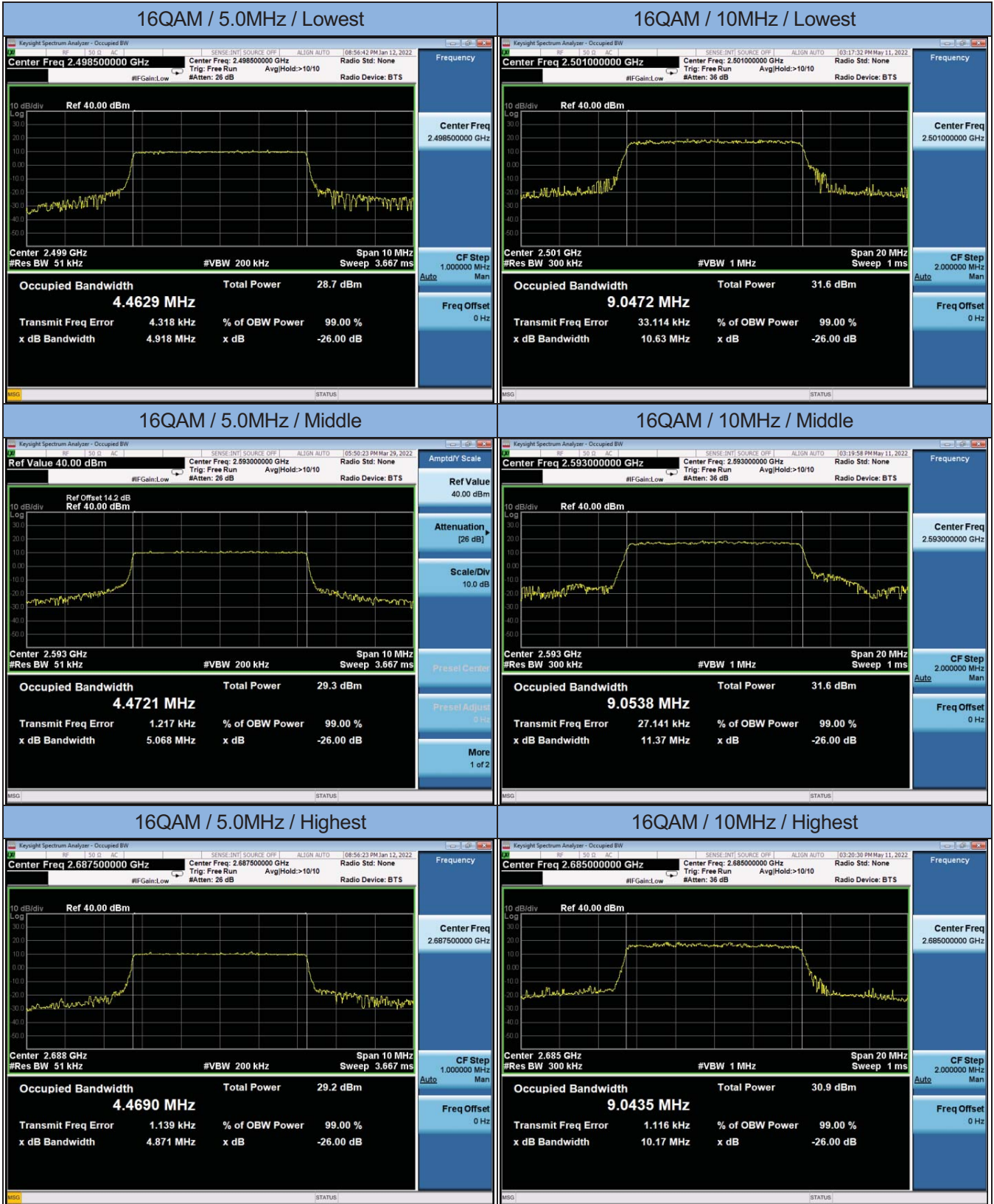


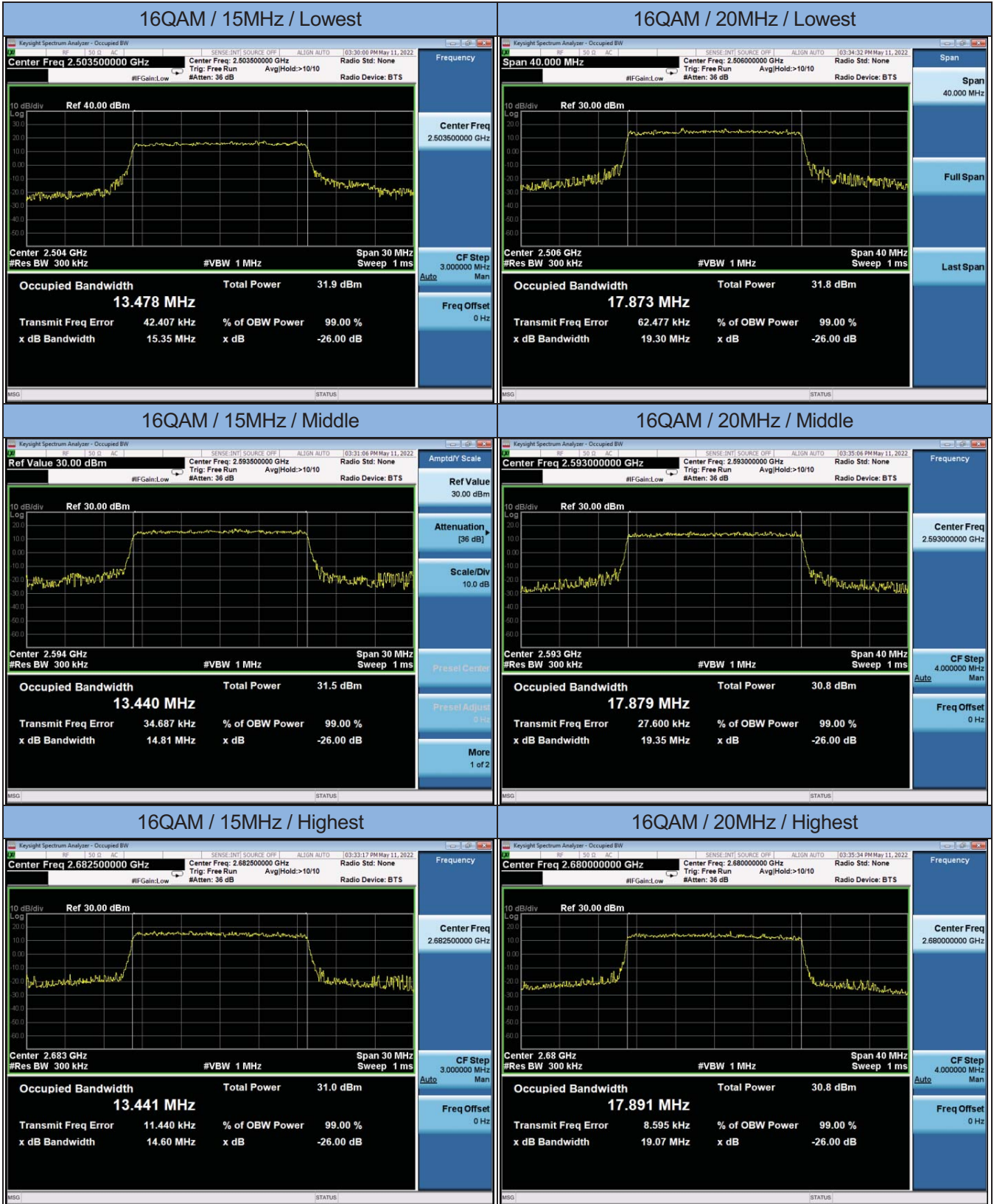
4. Occupied Bandwidth

BW (MHz)	Modulation	Channel	RB Allocation		26dB BW (MHz)	99% OBW (MHz)	Limit (dBm)	Result
			Size	Offset				
5.0	QPSK	Low	Full	0	4.862	4.4868	---	Pass
		Mid	Full	0	4.977	4.4700		Pass
		High	Full	0	4.892	4.4661		Pass
	16QAM	Low	Full	0	4.918	4.4629	---	Pass
		Mid	Full	0	5.068	4.4721		Pass
		High	Full	0	4.871	4.4690		Pass
10	QPSK	Low	Full	0	10.600	9.0584	---	Pass
		Mid	Full	0	11.360	9.0575		Pass
		High	Full	0	10.210	9.0725		Pass
	16QAM	Low	Full	0	10.630	9.0472	---	Pass
		Mid	Full	0	11.370	9.0538		Pass
		High	Full	0	10.170	9.0435		Pass
15	QPSK	Low	Full	0	15.420	13.473	---	Pass
		Mid	Full	0	14.780	13.437		Pass
		High	Full	0	14.580	13.424		Pass
	16QAM	Low	Full	0	15.350	13.478	---	Pass
		Mid	Full	0	14.810	13.440		Pass
		High	Full	0	14.600	13.441		Pass
20	QPSK	Low	Full	0	19.820	17.867	---	Pass
		Mid	Full	0	19.550	17.865		Pass
		High	Full	0	19.110	17.884		Pass
	16QAM	Low	Full	0	19.300	17.873	---	Pass
		Mid	Full	0	19.350	17.879		Pass
		High	Full	0	19.070	17.891		Pass

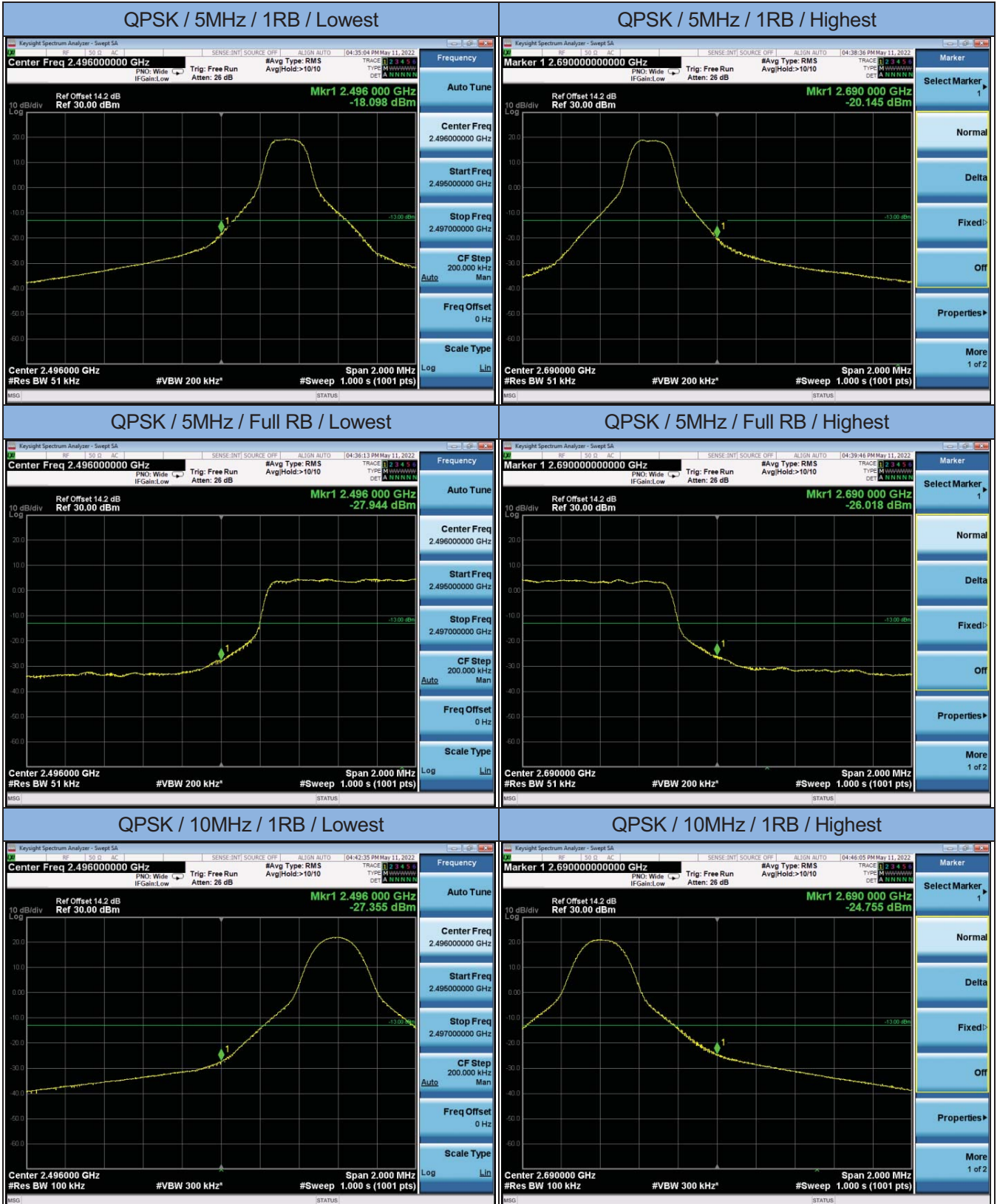


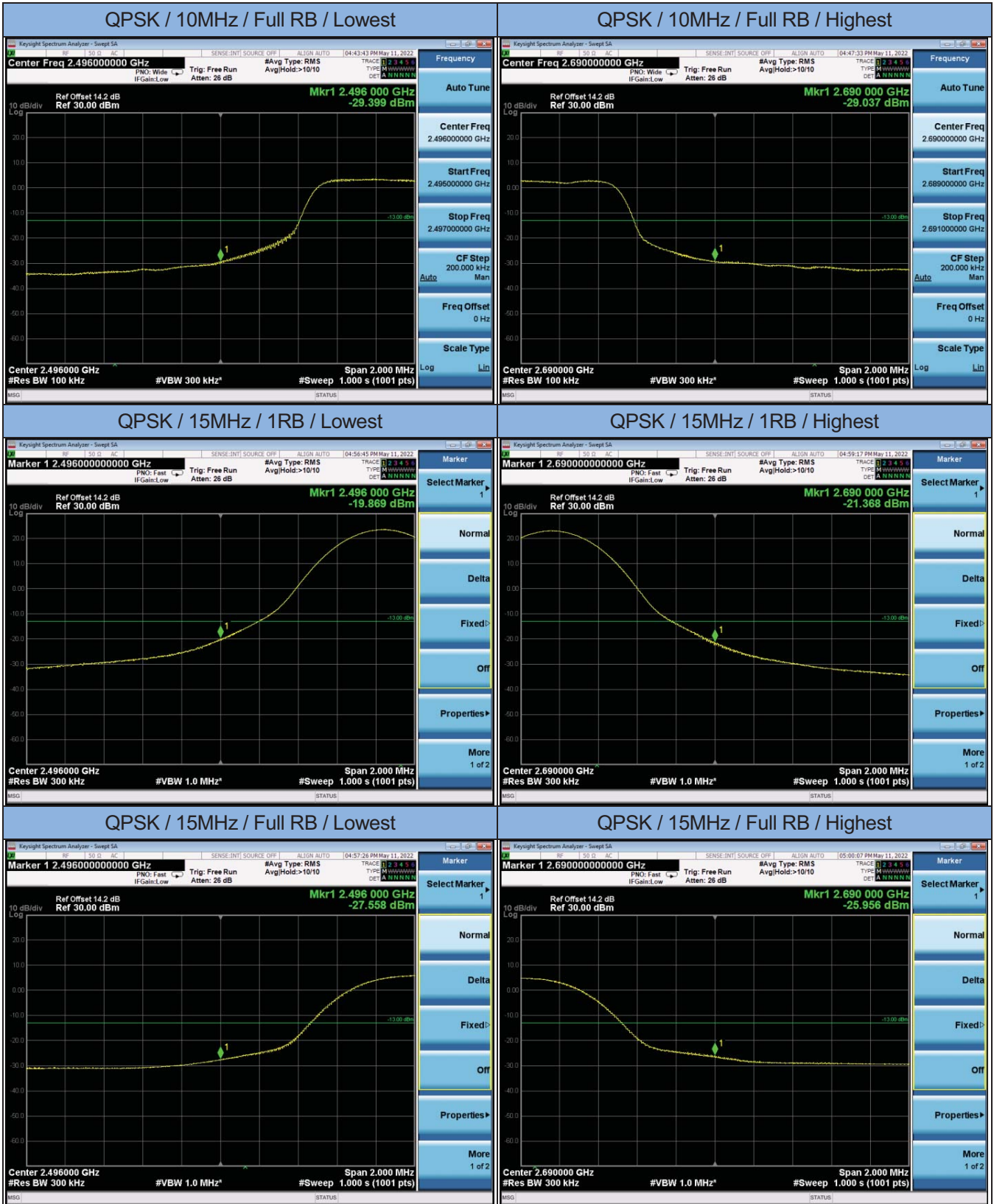


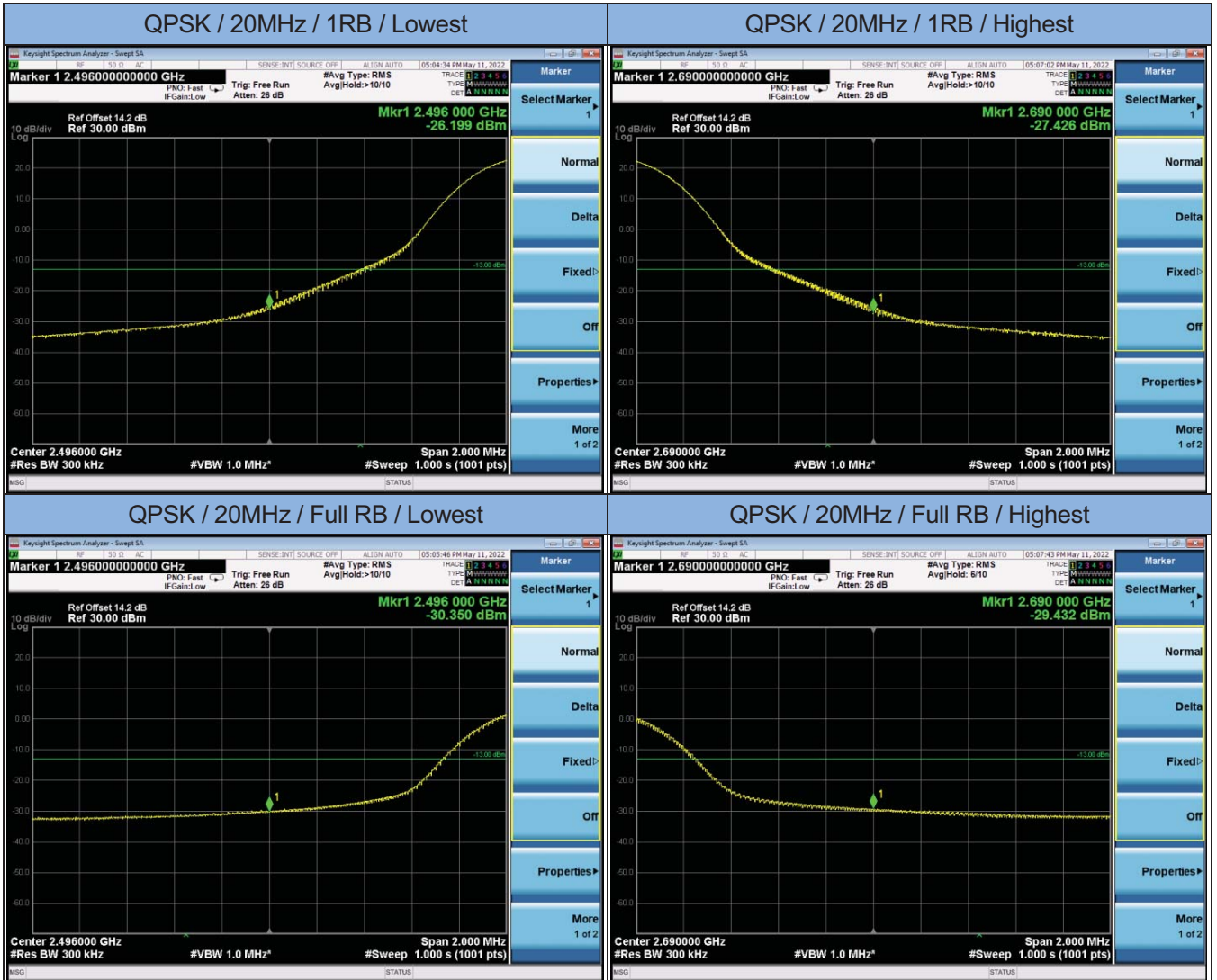


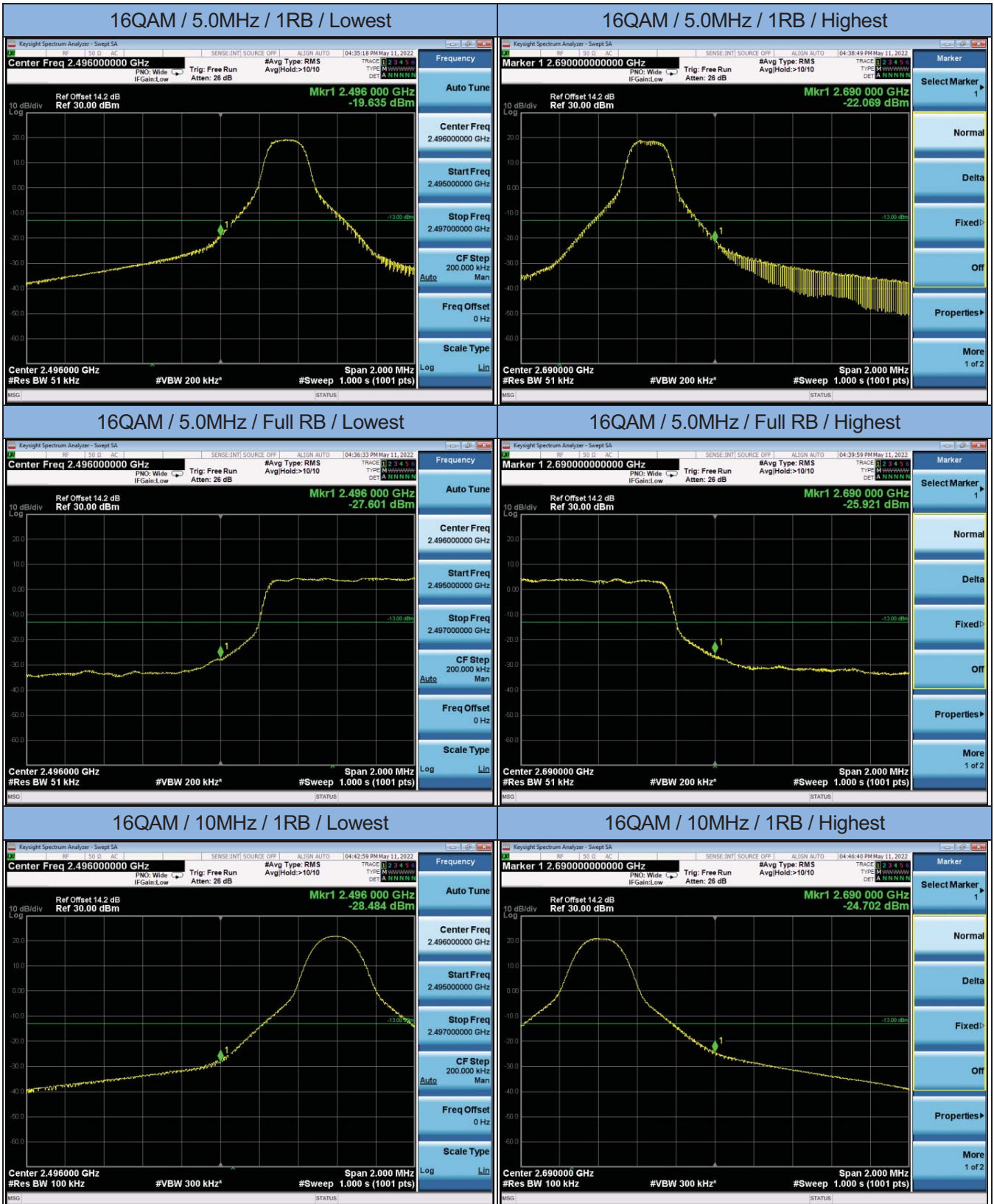


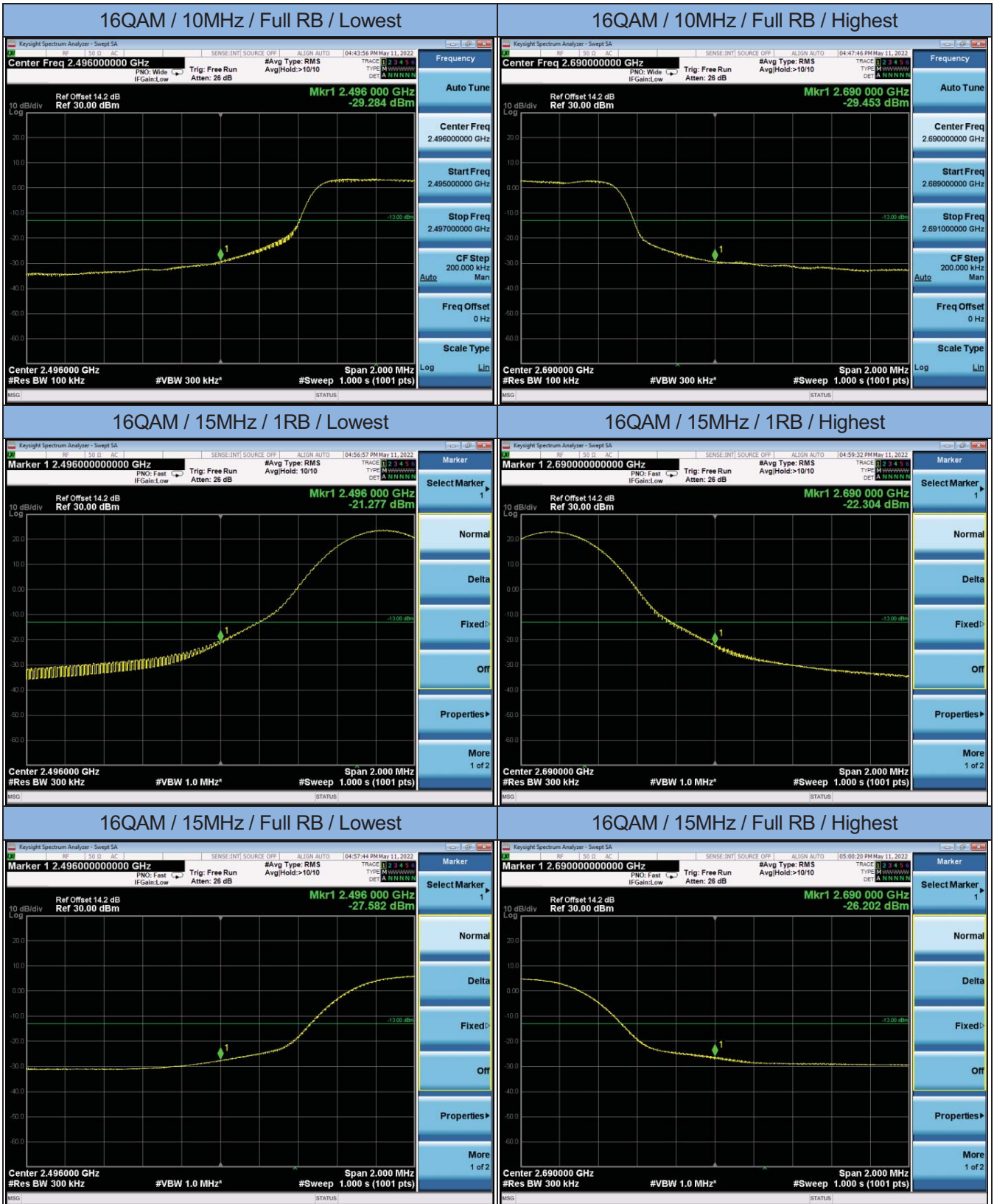
5. Band Edge

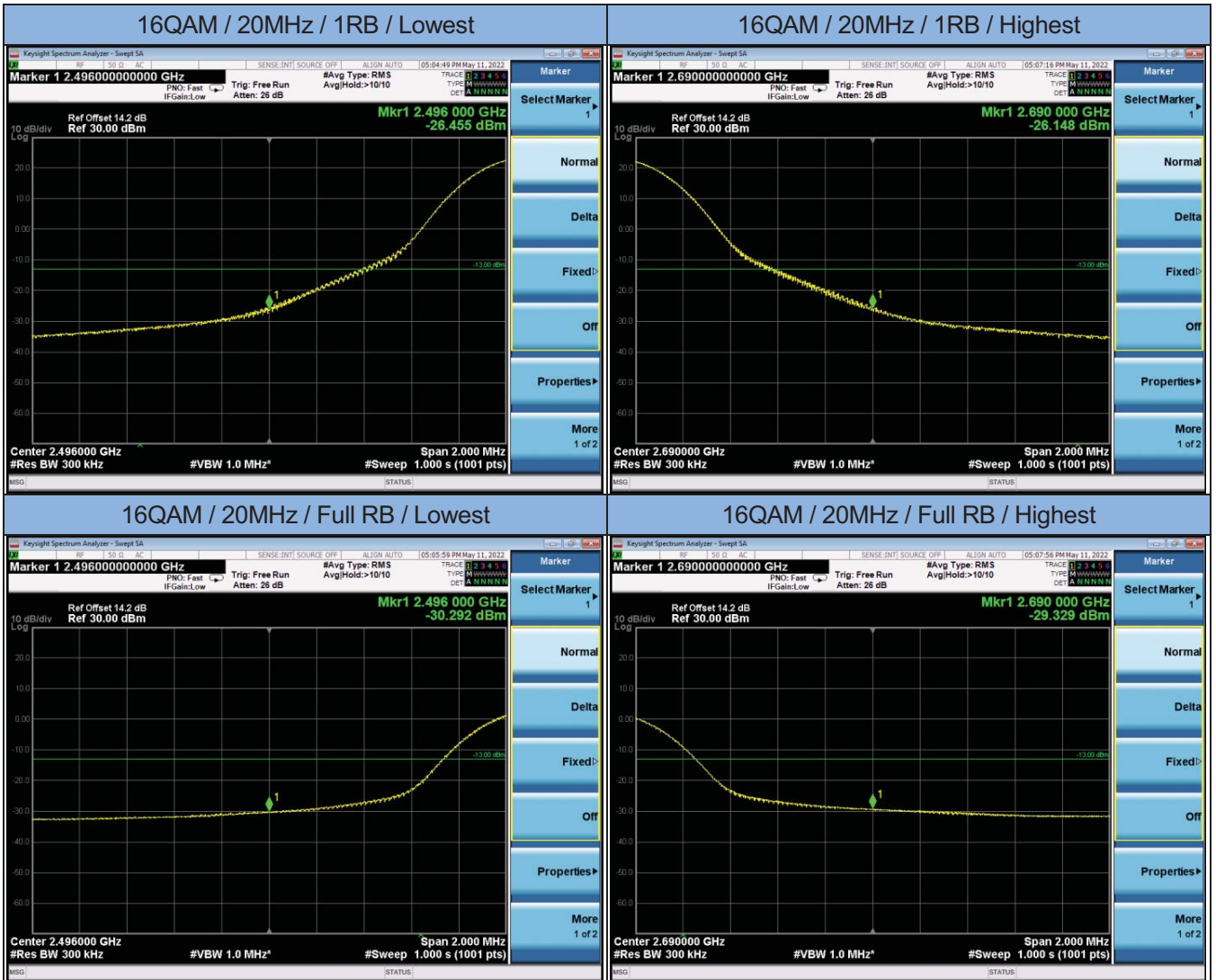












6. Transmitter Spurious Emissions





7. Field Strength of Spurious Radiation

LTE Band 41 / 20M / QPSK					
Channel	Frequency (MHz)	Polarization (H/V)	Meas. Level (dBm)	Limit (dBm)	Margin (dBm)
Lowest	149.3100	H	-65.78	-25	-40.78
	5012	H	-42.65	-25	-17.65
	7518	H	-34.12	-25	-9.12
	10024	H	-31.27	-25	-6.27
	584.7690	V	-66.98	-25	-41.98
	5012	V	-44.08	-25	-19.08
	7518	V	-40.32	-25	-15.32
	10024	V	-32.09	-25	-7.09
Middle	149.3100	H	-64.20	-25	-39.20
	5186	H	-41.46	-25	-16.46
	7779	H	-32.43	-25	-7.43
	10372	H	-30.98	-25	-5.98
	855.2900	V	-64.48	-25	-39.48
	5186	V	-42.68	-25	-17.68
	7779	V	-39.11	-25	-14.11
	10372	V	-31.52	-25	-6.52
Highest	149.3100	H	-65.57	-25	-40.57
	5360	H	-41.97	-25	-16.97
	8040	H	-32.89	-25	-7.89
	10720	H	-32.03	-25	-7.03
	548.2900	V	-66.12	-25	-41.12
	5360	V	-42.95	-25	-17.95
	8040	V	-40.78	-25	-15.78
	10720	V	-31.64	-25	-6.64

Note: Other emissions are more than 20dB below the limits.

8. Frequency Stability

LTE Band 41 / 20M / QPSK / Full RB					
Middle channel, $f_o = 2593.0$ MHz					
Temperature (°C)	Power Supplied (Vdc)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (dBm)	Result
-30	12	-1.8	-0.000694	±2.5	PASS
-20		-1.0	-0.000386	±2.5	PASS
-10		2.4	0.000926	±2.5	PASS
0		-3.7	-0.001427	±2.5	PASS
20		-0.8	-0.000309	±2.5	PASS
30		-1.7	-0.000656	±2.5	PASS
40		2.0	0.000771	±2.5	PASS
50		1.6	0.000617	±2.5	PASS
20		10.8	1.3	0.000501	±2.5
	52.8	-1.5	-0.000578	±2.5	PASS

---End---