

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	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☒ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
EIRP/ERP	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☒ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
Peak-to-Average Ratio	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 20	Sean
Occupied Bandwidth	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☐ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
Conducted Band Edge	☒ N.T / N.V.	☒ Low ☐ Mid ☒ High	☒ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 5 ☒ 10 ☒ 15 ☒ 20	Sean
Spurious Emission at Antenna Terminal	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☐ Half ☐ Full	☒ QPSK ☒ 16QAM	☒ 20	Sean
Field Strength of Spurious Radiation	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ worst case			Sean
Frequency Stability	☒ N.T / N.V. ☒ L.T / L.V. ☒ L.T / H.V. ☒ H.T / L.V. ☒ H.T / H.V.	☐ Low ☒ Mid ☐ High	☐ 1 ☐ Half ☒ Full	☒ QPSK ☐ 16QAM	☒ 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	22.68	1.7	24.38	33.00	Pass
				12	22.51	1.7	24.21		Pass
				24	23.08	1.7	24.78		Pass
			12	0	22.43	1.7	24.13		Pass
				7	22.69	1.7	24.39		Pass
				13	22.41	1.7	24.11		Pass
			25	0	22.52	1.7	24.22		Pass
		Mid	1	0	22.37	1.7	24.07		Pass
				12	22.89	1.7	24.59		Pass
				24	22.61	1.7	24.31		Pass
			12	0	22.58	1.7	24.28		Pass
				7	22.73	1.7	24.43		Pass
				13	22.62	1.7	24.32		Pass
			25	0	22.43	1.7	24.13		Pass
		High	1	0	22.27	1.7	23.97		Pass
				12	22.19	1.7	23.89		Pass
				24	22.81	1.7	24.51		Pass
			12	0	22.63	1.7	24.33		Pass
				7	22.46	1.7	24.16		Pass
				13	22.58	1.7	24.28		Pass
			25	0	22.41	1.7	24.11		Pass
	16QAM	Low	1	0	22.63	1.7	24.33	33.00	Pass
				12	22.55	1.7	24.25		Pass
				24	22.40	1.7	24.10		Pass
			12	0	22.19	1.7	23.89		Pass
				7	22.27	1.7	23.97		Pass
				13	22.83	1.7	24.53		Pass
			25	0	22.22	1.7	23.92		Pass
		Mid	1	0	22.47	1.7	24.17		Pass
				12	22.12	1.7	23.82		Pass
				24	22.46	1.7	24.16		Pass
			12	0	22.82	1.7	24.52		Pass
				7	22.76	1.7	24.46		Pass
				13	22.64	1.7	24.34		Pass
			25	0	22.43	1.7	24.13		Pass
		High	1	0	22.17	1.7	23.87		Pass
				12	22.60	1.7	24.30		Pass
				24	22.77	1.7	24.47		Pass
			12	0	22.48	1.7	24.18		Pass
				7	22.30	1.7	24.00		Pass
				13	22.74	1.7	24.44		Pass
			25	0	22.59	1.7	24.29		Pass

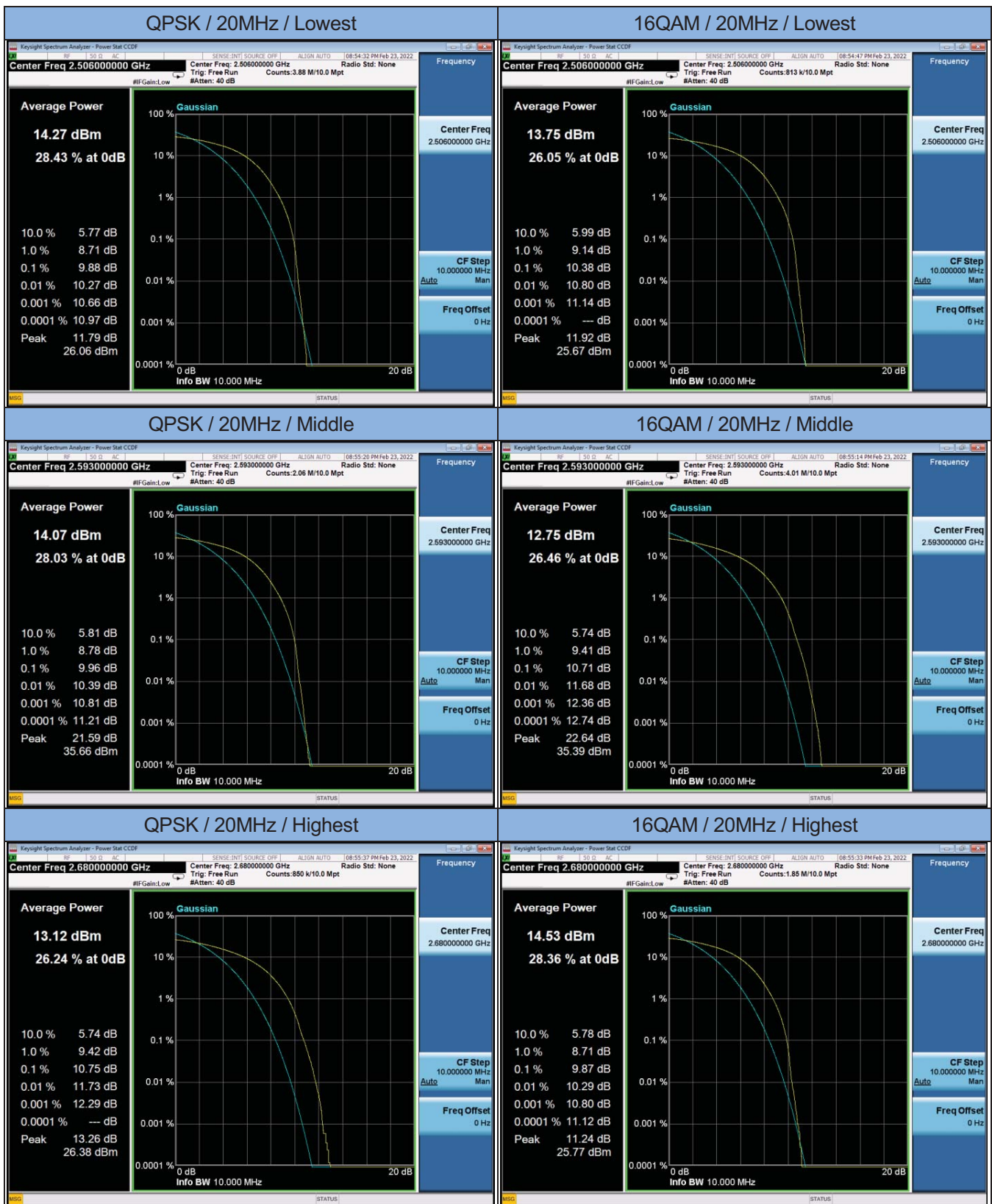
BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	EIRP (dBm)	Limit (dBm)	Result
			Size	Offset					
10	QPSK	Low	1	0	22.83	1.7	24.53	33.00	Pass
				25	22.46	1.7	24.16		Pass
				49	22.51	1.7	24.21		Pass
			25	0	22.76	1.7	24.46		Pass
				12	22.64	1.7	24.34		Pass
				25	22.20	1.7	23.90		Pass
			50	0	22.17	1.7	23.87		Pass
		Mid	1	0	22.95	1.7	24.65		Pass
				25	23.04	1.7	24.74		Pass
				49	22.49	1.7	24.19		Pass
			25	0	22.97	1.7	24.67		Pass
				12	22.56	1.7	24.26		Pass
				25	22.33	1.7	24.03		Pass
			50	0	22.61	1.7	24.31		Pass
		High	1	0	22.80	1.7	24.50		Pass
				25	22.42	1.7	24.12		Pass
				49	22.68	1.7	24.38		Pass
			25	0	22.84	1.7	24.54		Pass
				12	22.75	1.7	24.45		Pass
				25	22.17	1.7	23.87		Pass
			50	0	22.26	1.7	23.96		Pass
	16QAM	Low	1	0	22.31	1.7	24.01	33.00	Pass
				25	22.79	1.7	24.49		Pass
				49	22.85	1.7	24.55		Pass
			25	0	22.64	1.7	24.34		Pass
				12	22.76	1.7	24.46		Pass
				25	22.43	1.7	24.13		Pass
			50	0	22.18	1.7	23.88		Pass
		Mid	1	0	22.52	1.7	24.22		Pass
				25	22.71	1.7	24.41		Pass
				49	22.65	1.7	24.35		Pass
			25	0	22.40	1.7	24.10		Pass
				12	22.63	1.7	24.33		Pass
				25	22.44	1.7	24.14		Pass
			50	0	22.62	1.7	24.32		Pass
		High	1	0	22.79	1.7	24.49		Pass
				25	22.84	1.7	24.54		Pass
				49	22.63	1.7	24.33		Pass
			25	0	22.42	1.7	24.12		Pass
				12	22.60	1.7	24.30		Pass
				25	22.14	1.7	23.84		Pass
			50	0	22.18	1.7	23.88		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	22.95	1.7	24.65	33.00	Pass
				37	22.47	1.7	24.17		Pass
				74	22.63	1.7	24.33		Pass
			36	0	22.46	1.7	24.16		Pass
				20	22.52	1.7	24.22		Pass
				39	22.19	1.7	23.89		Pass
			75	0	22.34	1.7	24.04		Pass
		Mid	1	0	22.28	1.7	23.98		Pass
				37	22.55	1.7	24.25		Pass
				74	22.49	1.7	24.19		Pass
			36	0	22.41	1.7	24.11		Pass
				20	22.86	1.7	24.56		Pass
				39	22.71	1.7	24.41		Pass
			75	0	22.63	1.7	24.33		Pass
		High	1	0	22.46	1.7	24.16		Pass
				37	22.35	1.7	24.05		Pass
				74	22.07	1.7	23.77		Pass
			36	0	22.16	1.7	23.86		Pass
				20	22.68	1.7	24.38		Pass
				39	22.40	1.7	24.10		Pass
			75	0	22.12	1.7	23.82		Pass
	16QAM	Low	1	0	22.37	1.7	24.07	33.00	Pass
				37	22.63	1.7	24.33		Pass
				74	22.52	1.7	24.22		Pass
			36	0	22.79	1.7	24.49		Pass
				20	22.73	1.7	24.43		Pass
				39	22.91	1.7	24.61		Pass
			75	0	22.86	1.7	24.56		Pass
		Mid	1	0	22.07	1.7	23.77		Pass
				37	22.49	1.7	24.19		Pass
				74	22.85	1.7	24.55		Pass
			36	0	22.76	1.7	24.46		Pass
				20	22.40	1.7	24.10		Pass
				39	22.63	1.7	24.33		Pass
			75	0	22.52	1.7	24.22		Pass
		High	1	0	22.91	1.7	24.61		Pass
				37	22.46	1.7	24.16		Pass
				74	22.87	1.7	24.57		Pass
			36	0	22.79	1.7	24.49		Pass
				20	22.60	1.7	24.30		Pass
				39	22.11	1.7	23.81		Pass
			75	0	22.35	1.7	24.05		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	22.90	1.7	24.60	33.00	Pass
				49	22.47	1.7	24.17		Pass
				99	22.79	1.7	24.49		Pass
			50	0	22.51	1.7	24.21		Pass
				24	22.33	1.7	24.03		Pass
				50	22.46	1.7	24.16		Pass
			100	0	22.52	1.7	24.22		Pass
		Mid	1	0	22.34	1.7	24.04		Pass
				49	22.17	1.7	23.87		Pass
				99	22.86	1.7	24.56		Pass
			50	0	22.71	1.7	24.41		Pass
				24	22.50	1.7	24.20		Pass
				50	22.44	1.7	24.14		Pass
			100	0	22.92	1.7	24.62		Pass
		High	1	0	22.75	1.7	24.45		Pass
				49	22.41	1.7	24.11		Pass
				99	22.86	1.7	24.56		Pass
			50	0	22.63	1.7	24.33		Pass
				24	22.52	1.7	24.22		Pass
				50	22.27	1.7	23.97		Pass
			100	0	22.46	1.7	24.16		Pass
	16QAM	Low	1	0	22.43	1.7	24.13	33.00	Pass
				49	22.19	1.7	23.89		Pass
				99	22.87	1.7	24.57		Pass
			50	0	22.64	1.7	24.34		Pass
				24	22.93	1.7	24.63		Pass
				50	22.12	1.7	23.82		Pass
			100	0	22.55	1.7	24.25		Pass
		Mid	1	0	22.85	1.7	24.55		Pass
				49	22.77	1.7	24.47		Pass
				99	22.10	1.7	23.80		Pass
			50	0	22.29	1.7	23.99		Pass
				24	22.61	1.7	24.31		Pass
				50	22.38	1.7	24.08		Pass
			100	0	22.28	1.7	23.98		Pass
		High	1	0	22.83	1.7	24.53		Pass
				49	22.66	1.7	24.36		Pass
				99	22.21	1.7	23.91		Pass
			50	0	22.58	1.7	24.28		Pass
				24	22.49	1.7	24.19		Pass
				50	22.72	1.7	24.42		Pass
			100	0	22.30	1.7	24.00		Pass

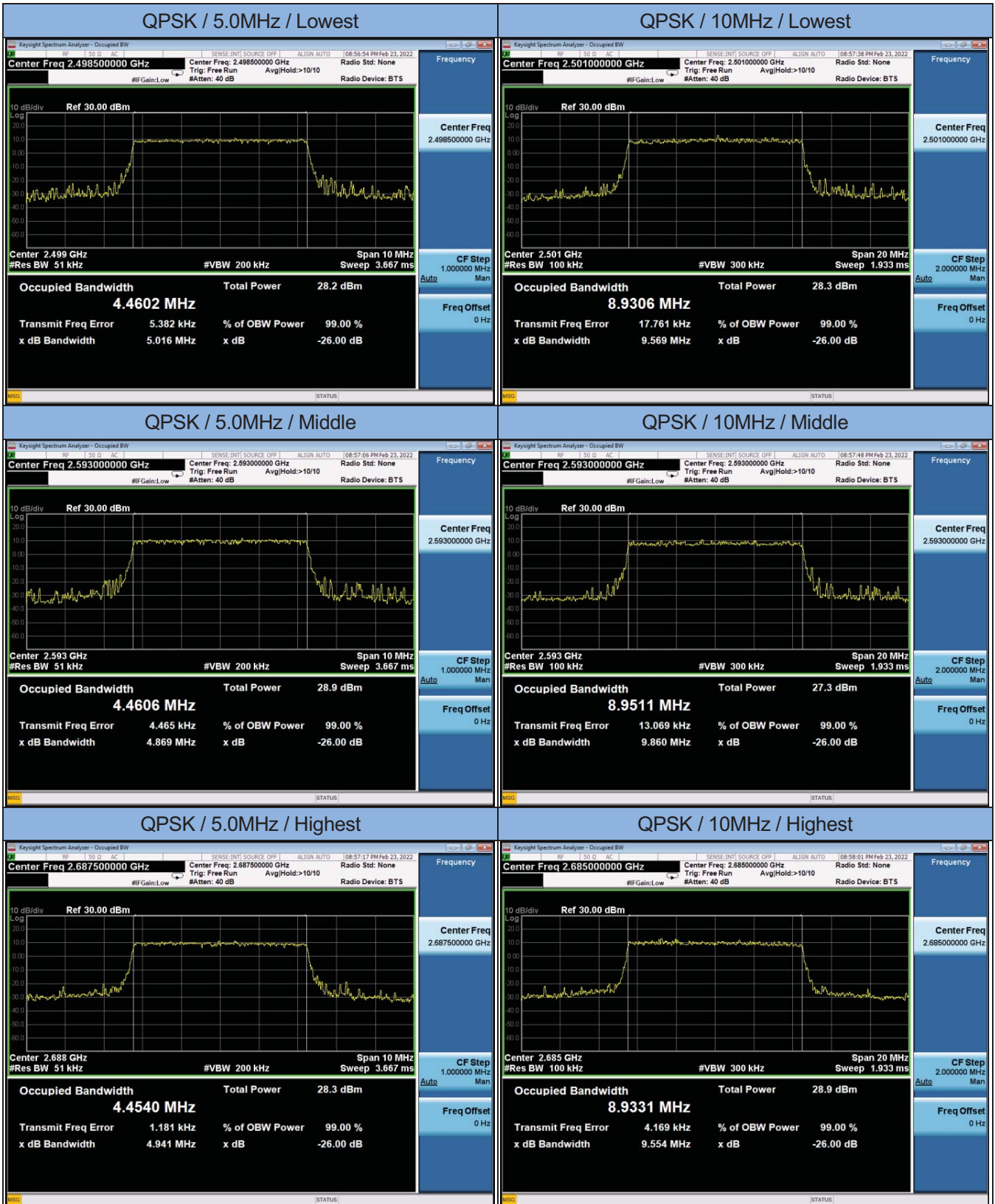
3. Peak-to-Average Ratio

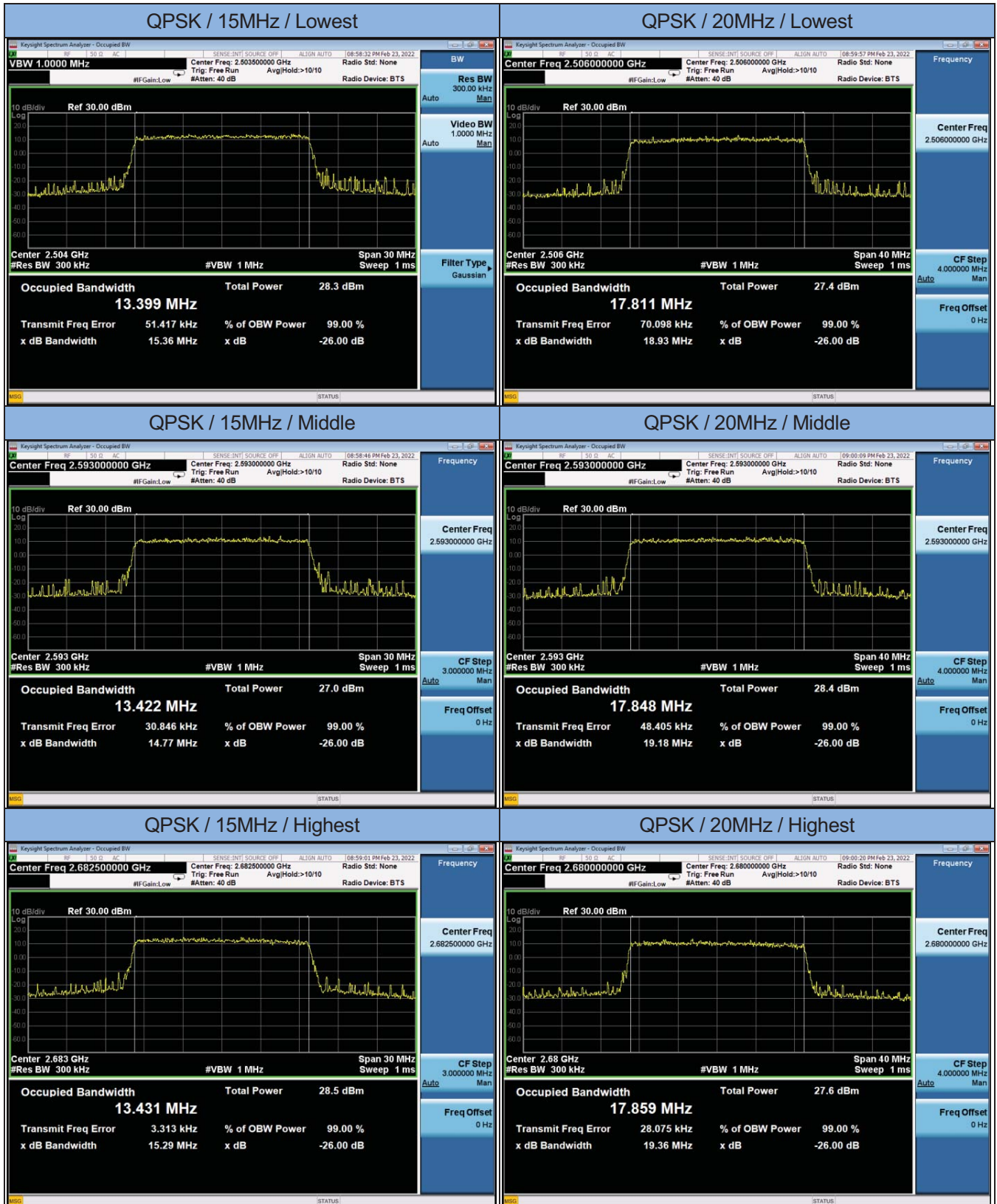
BW (MHz)	Modulation	Channel	RB Allocation		Peak-to-Average Ratio (dB)	Limit (dBm)	Result
			Size	Offset			
20	QPSK	Low	Full	0	9.88	13.0	Pass
		Mid	Full	0	9.96		Pass
		High	Full	0	10.75		Pass
	16QAM	Low	Full	0	10.38	13.0	Pass
		Mid	Full	0	10.71		Pass
		High	Full	0	9.87		Pass

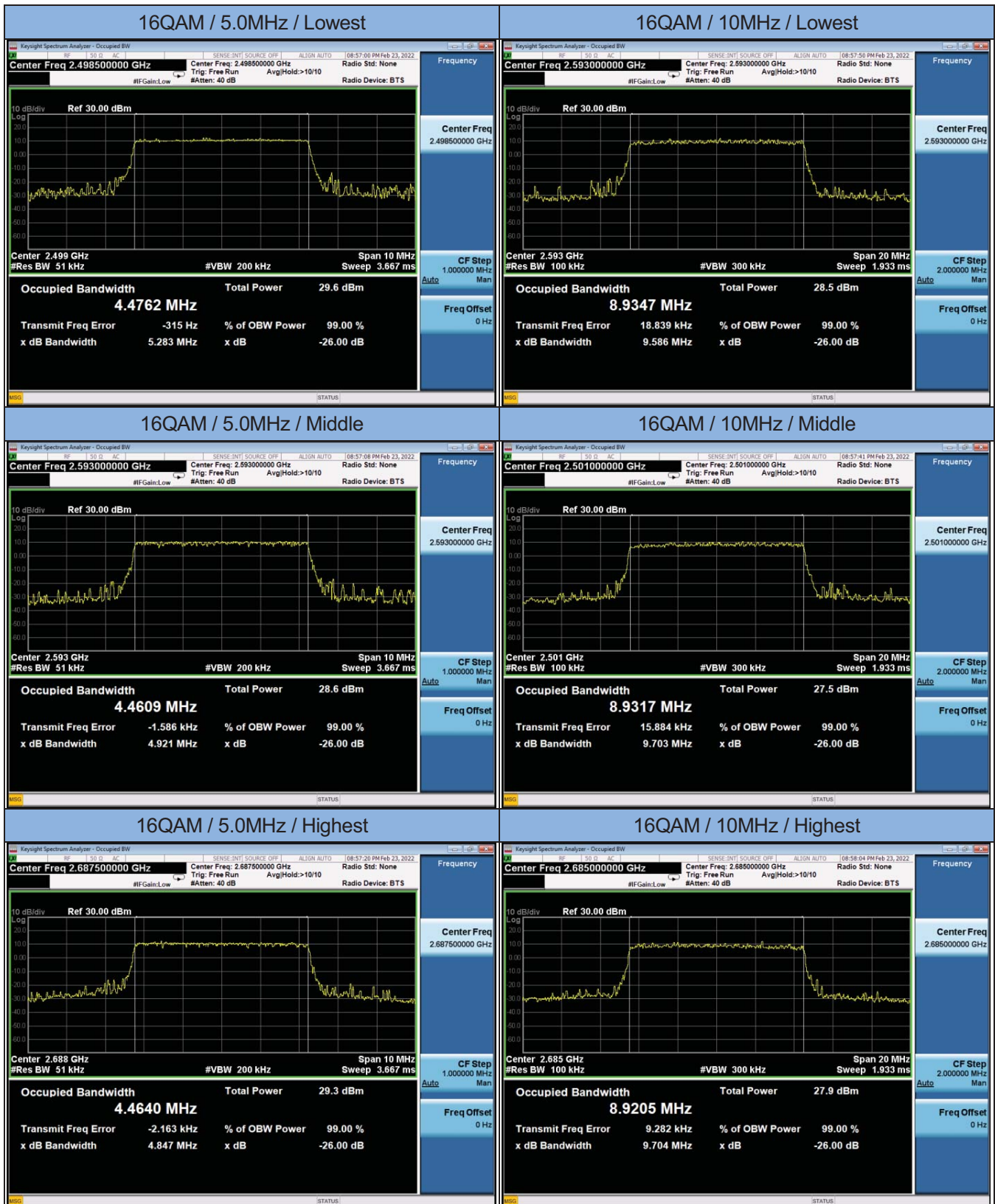


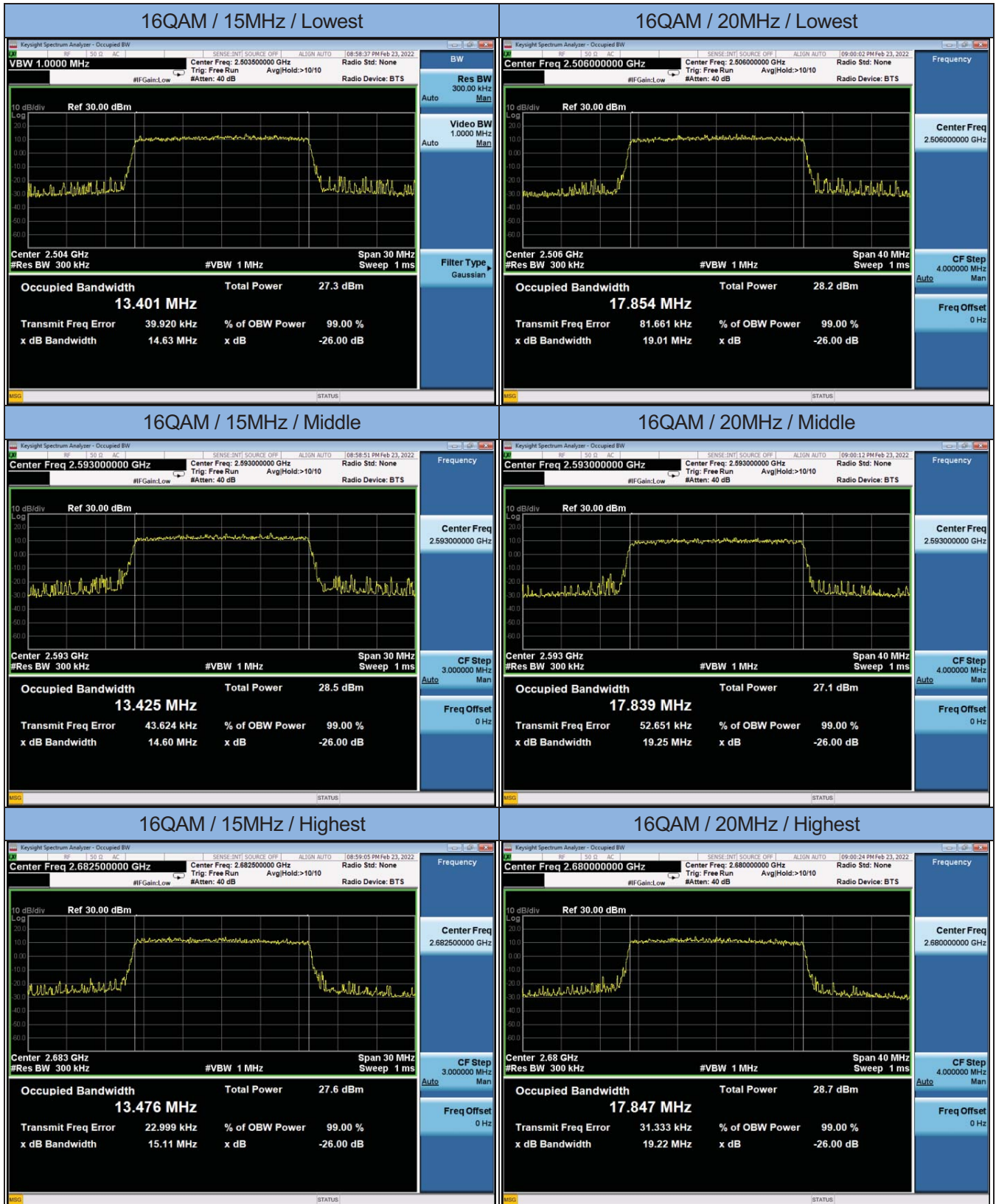
4. Occupied Bandwidth

BW (MHz)	Modulation	Channel	RB Allocation		26dB BW (MHz)	99% OBW (MHz)	Limit (dBm)	Result
			Size	Offset				
5.0	QPSK	Low	Full	0	5.016	4.4602	---	Pass
		Mid	Full	0	4.869	4.4606		Pass
		High	Full	0	4.941	4.4540		Pass
	16QAM	Low	Full	0	5.283	4.4762	---	Pass
		Mid	Full	0	4.921	4.4609		Pass
		High	Full	0	4.847	4.4640		Pass
10	QPSK	Low	Full	0	9.569	8.9306	---	Pass
		Mid	Full	0	9.860	8.9511		Pass
		High	Full	0	9.554	8.9331		Pass
	16QAM	Low	Full	0	9.586	8.9347	---	Pass
		Mid	Full	0	9.703	8.9317		Pass
		High	Full	0	9.704	8.9205		Pass
15	QPSK	Low	Full	0	15.36	13.399	---	Pass
		Mid	Full	0	14.77	13.422		Pass
		High	Full	0	15.29	13.431		Pass
	16QAM	Low	Full	0	14.63	13.401	---	Pass
		Mid	Full	0	14.60	13.425		Pass
		High	Full	0	15.11	13.476		Pass
20	QPSK	Low	Full	0	18.93	17.811	---	Pass
		Mid	Full	0	19.18	17.848		Pass
		High	Full	0	19.36	17.859		Pass
	16QAM	Low	Full	0	19.01	17.854	---	Pass
		Mid	Full	0	19.25	17.839		Pass
		High	Full	0	19.22	17.847		Pass

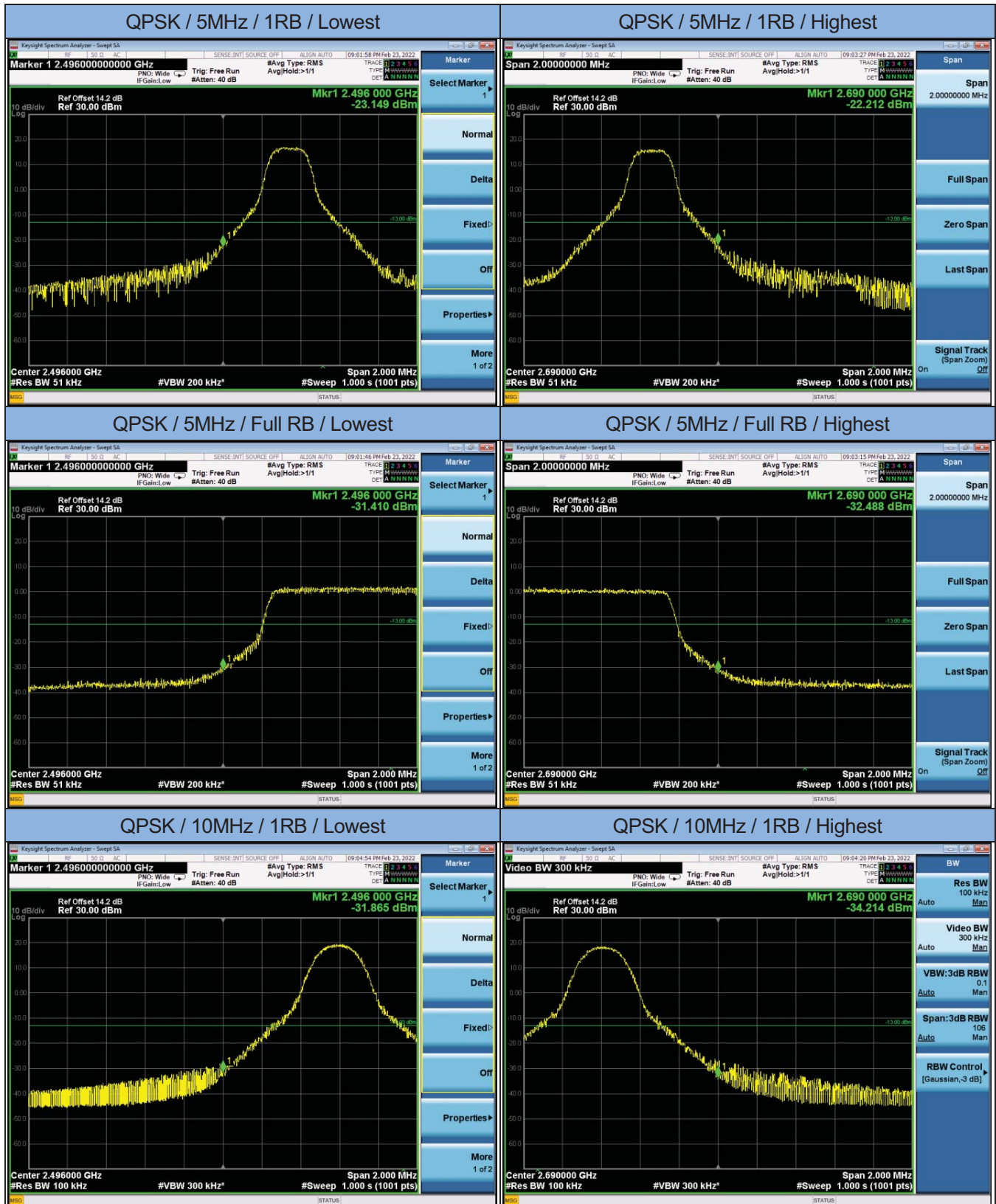


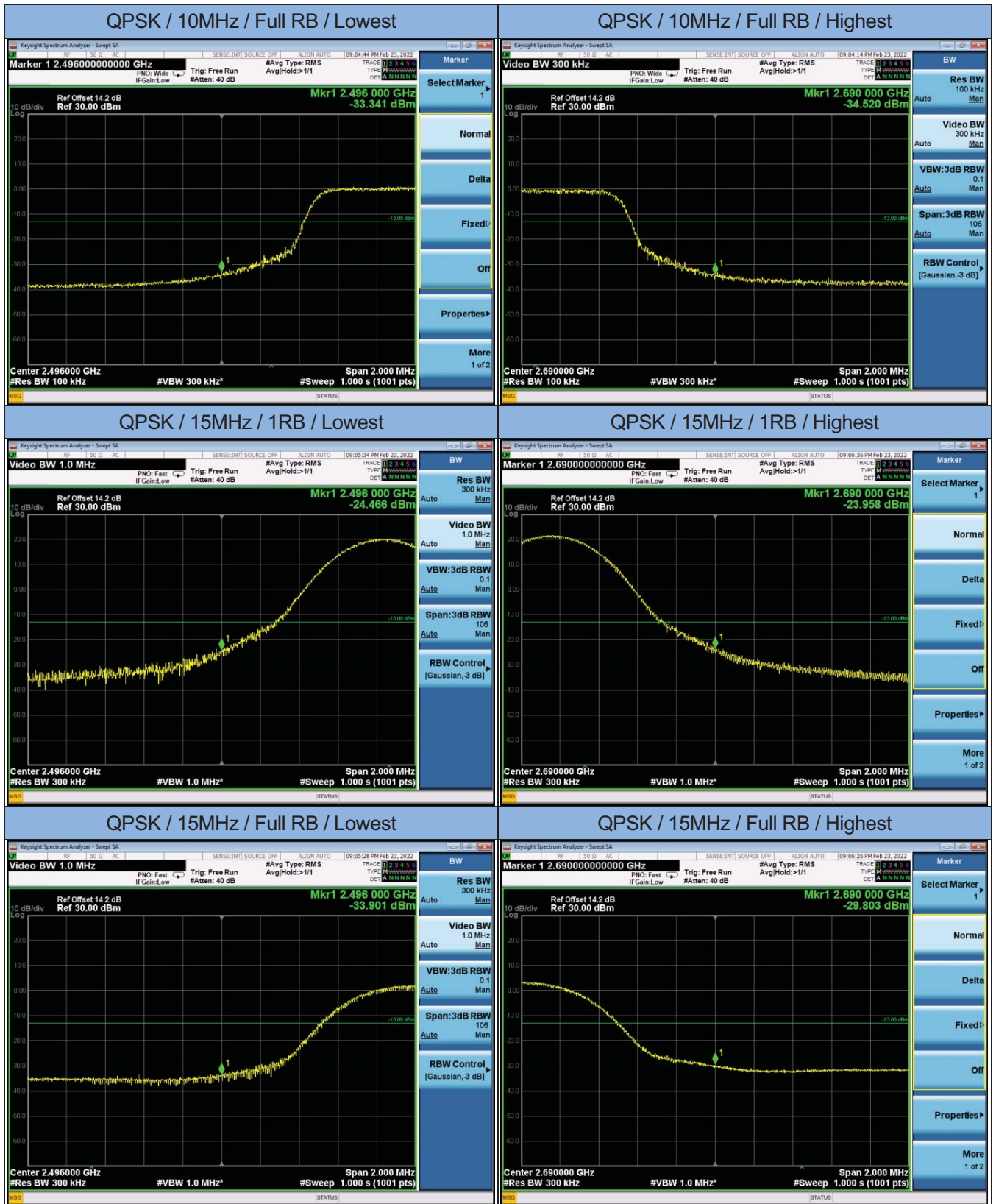


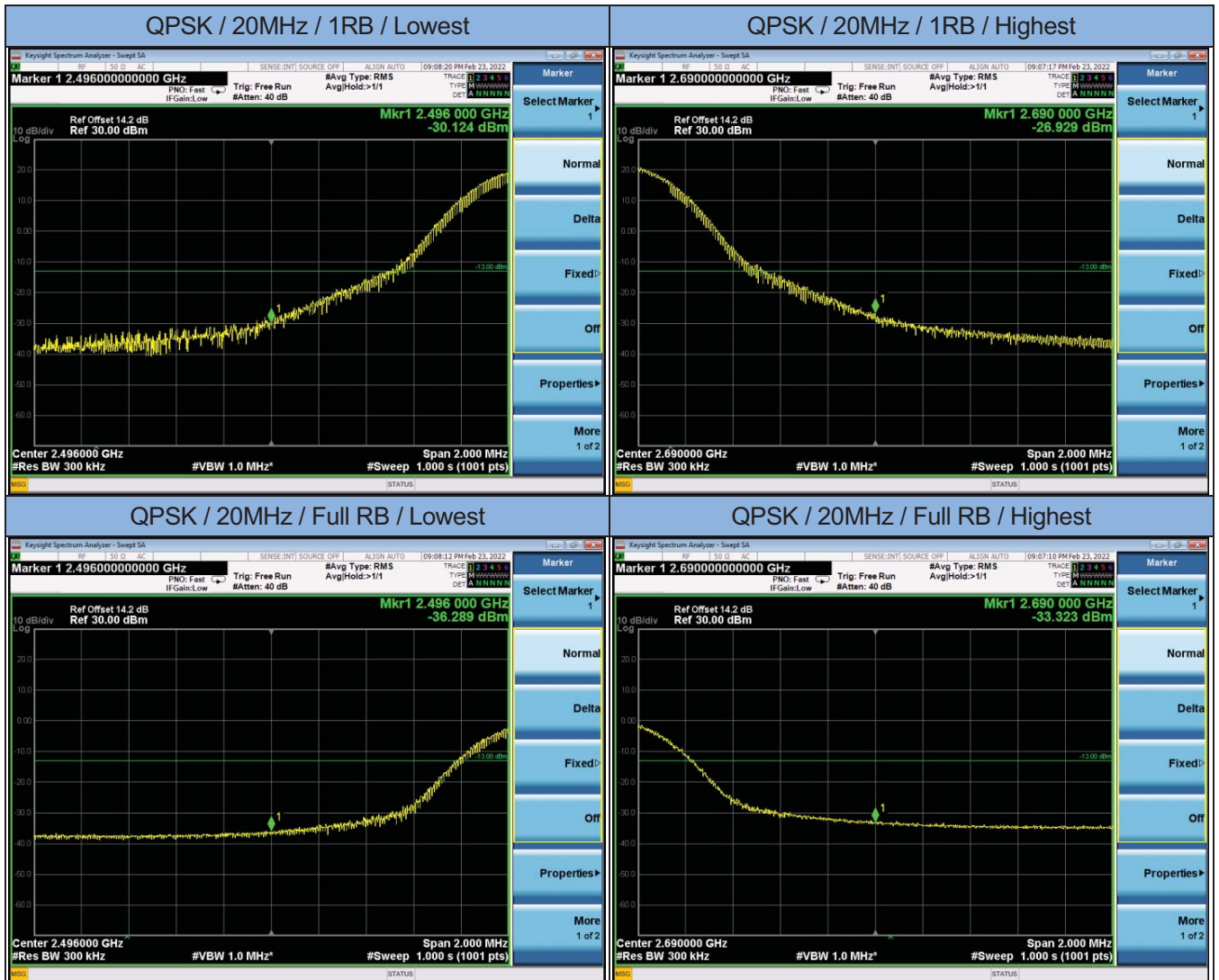


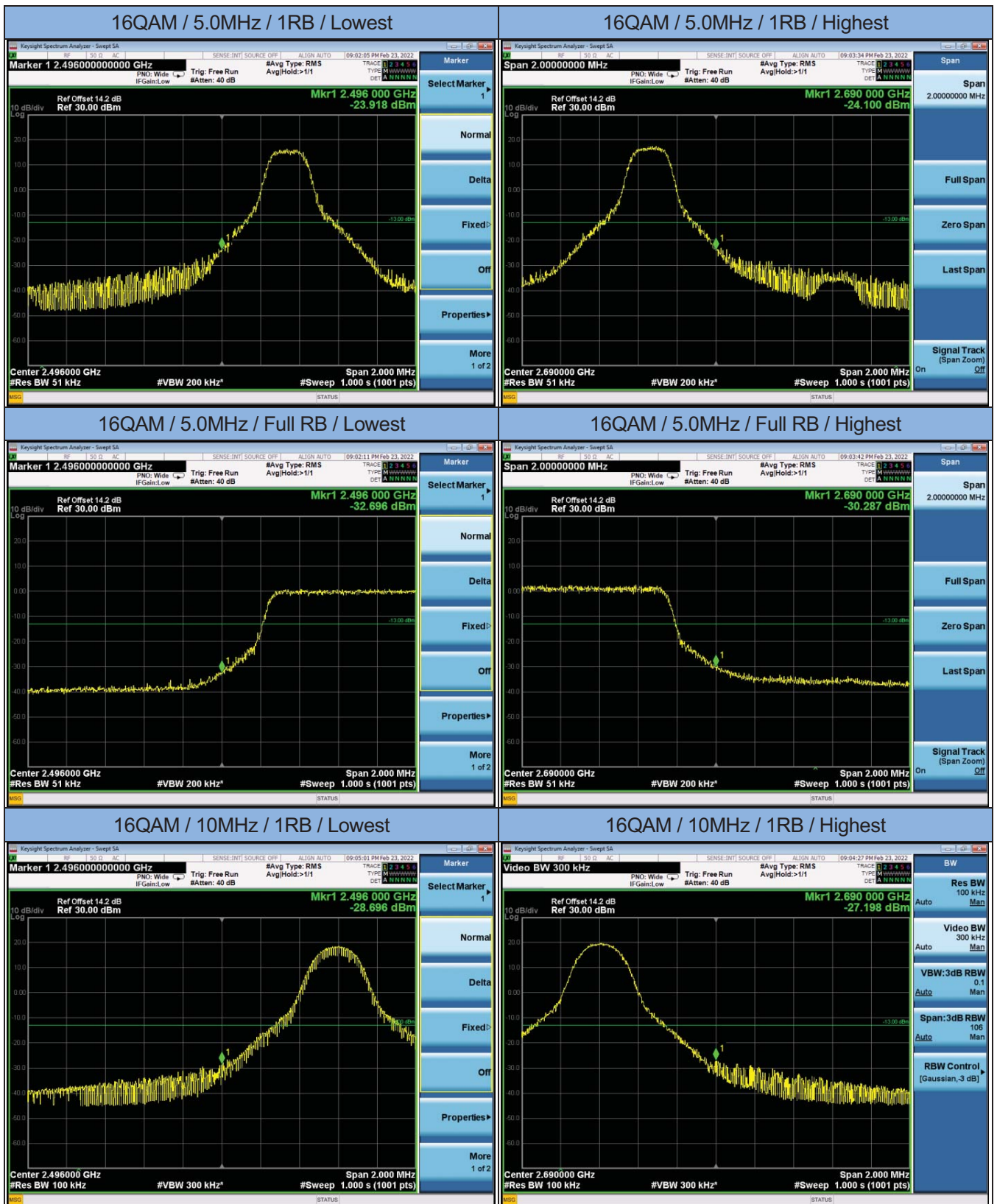


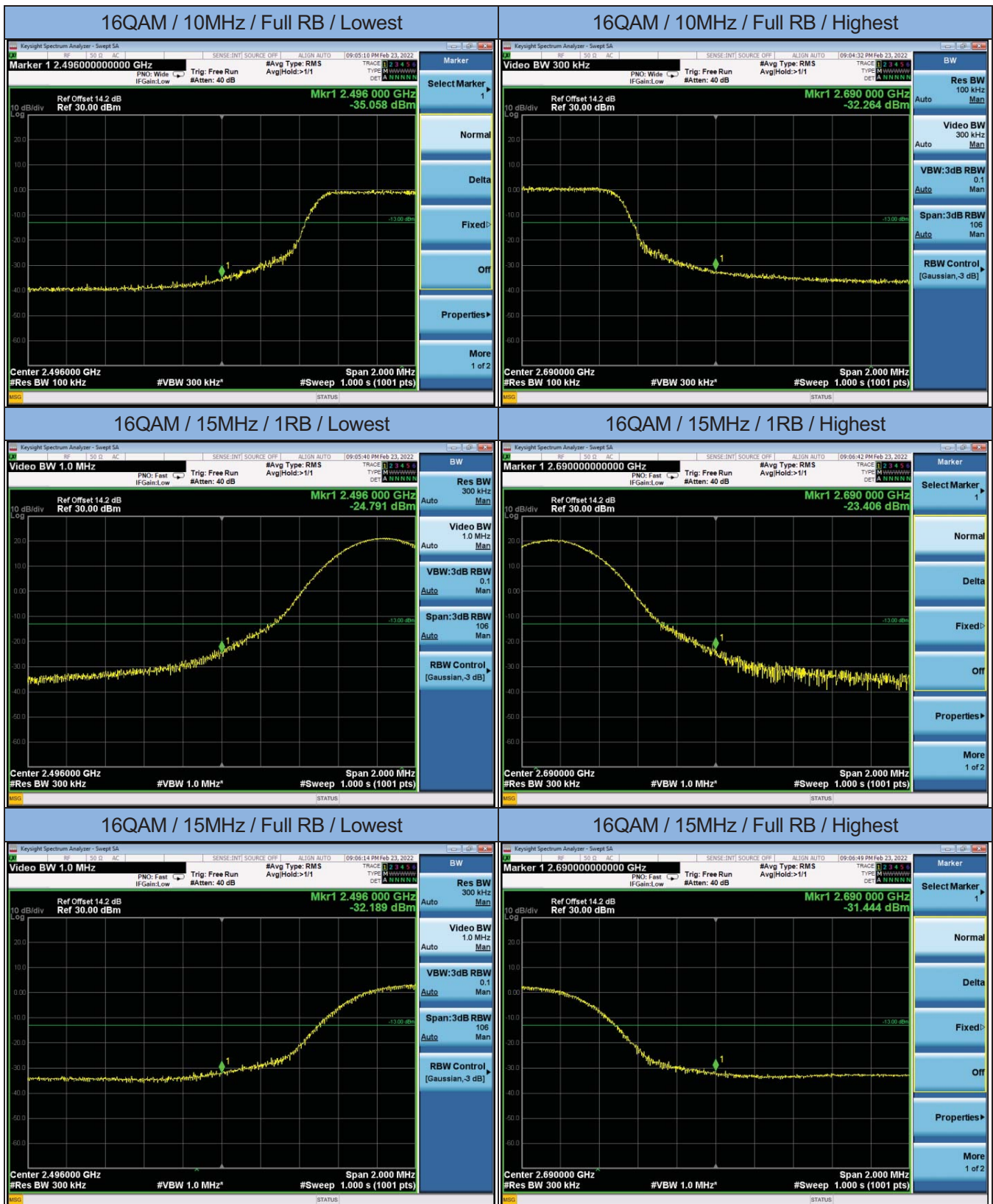
5. Band Edge

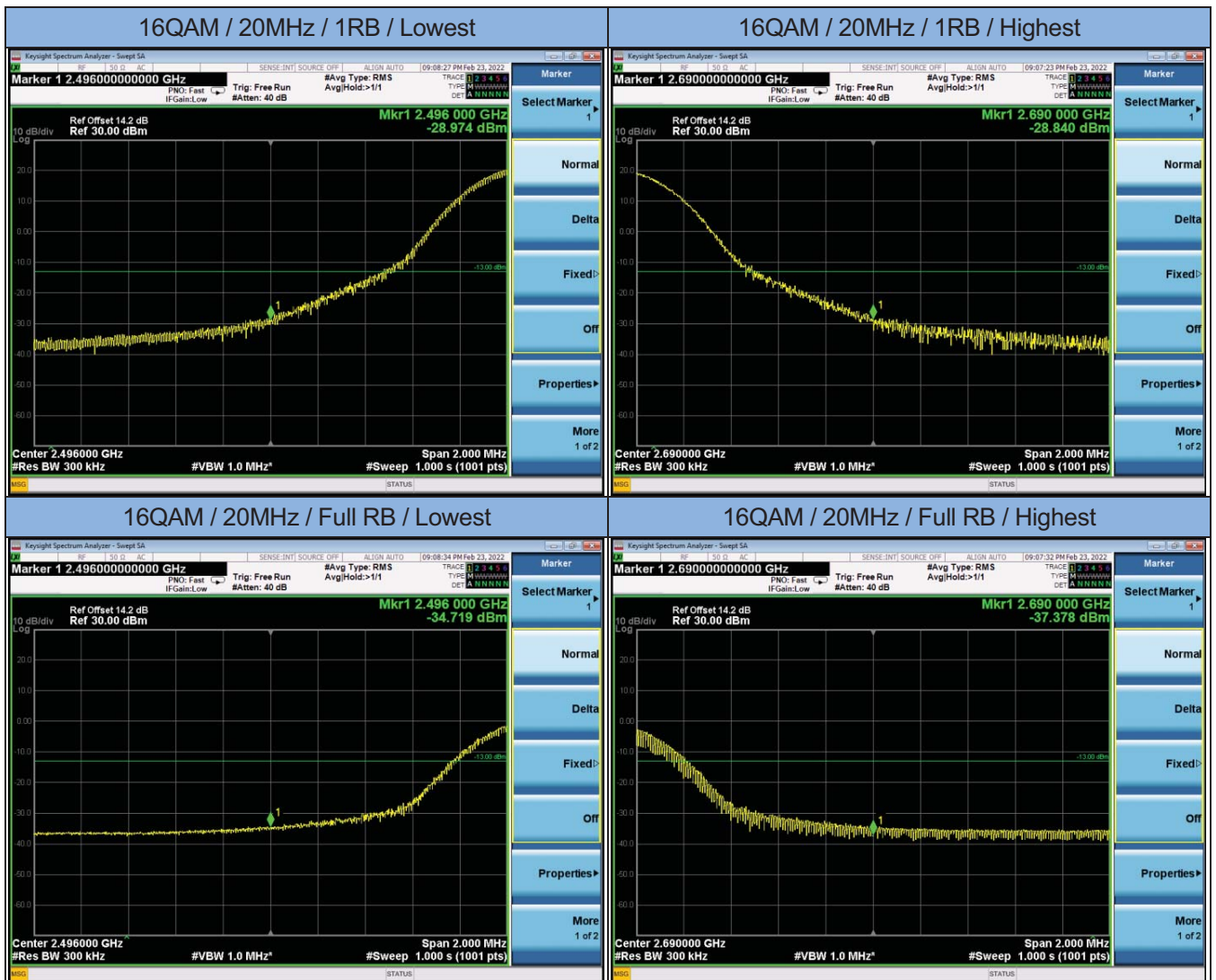




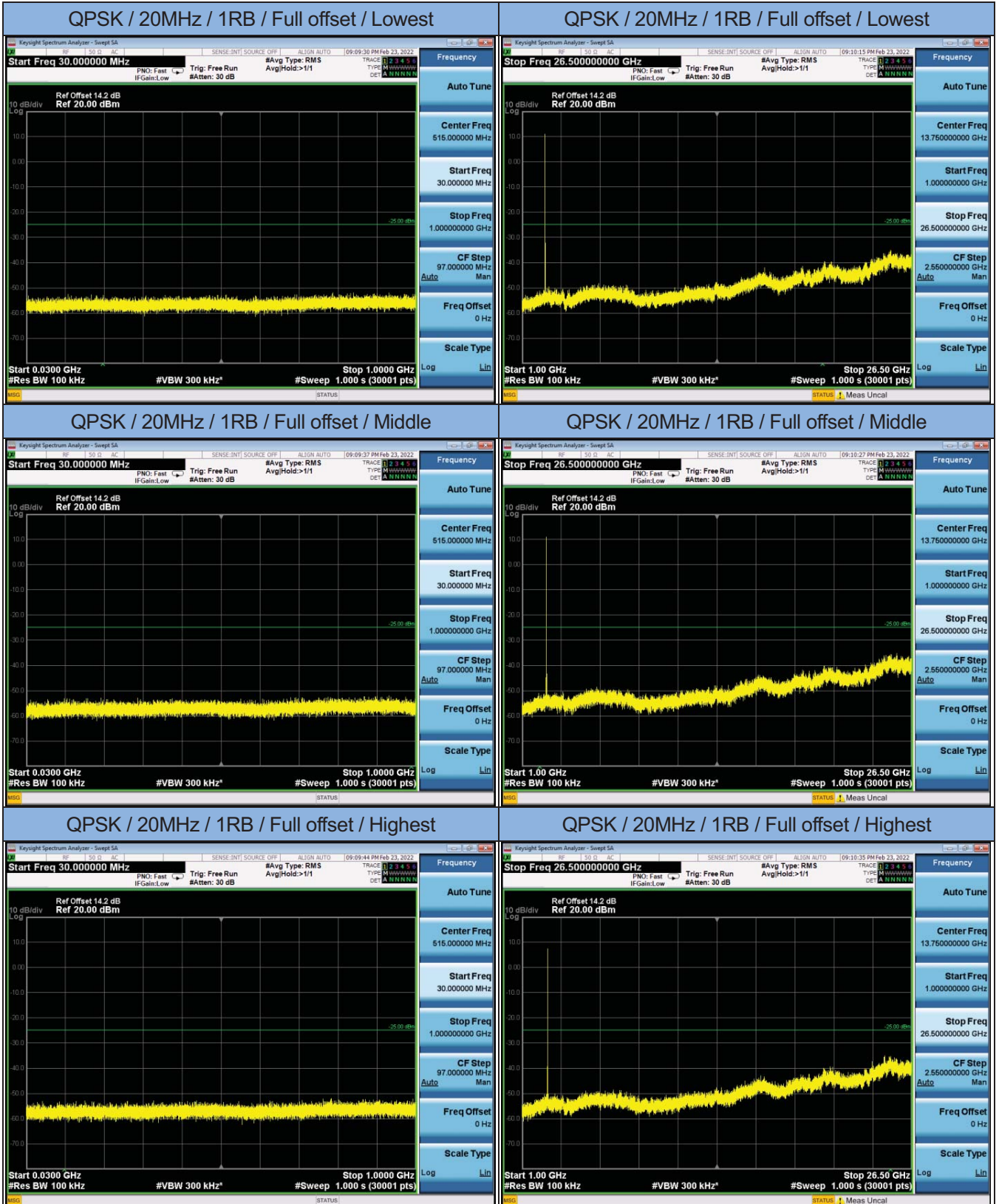


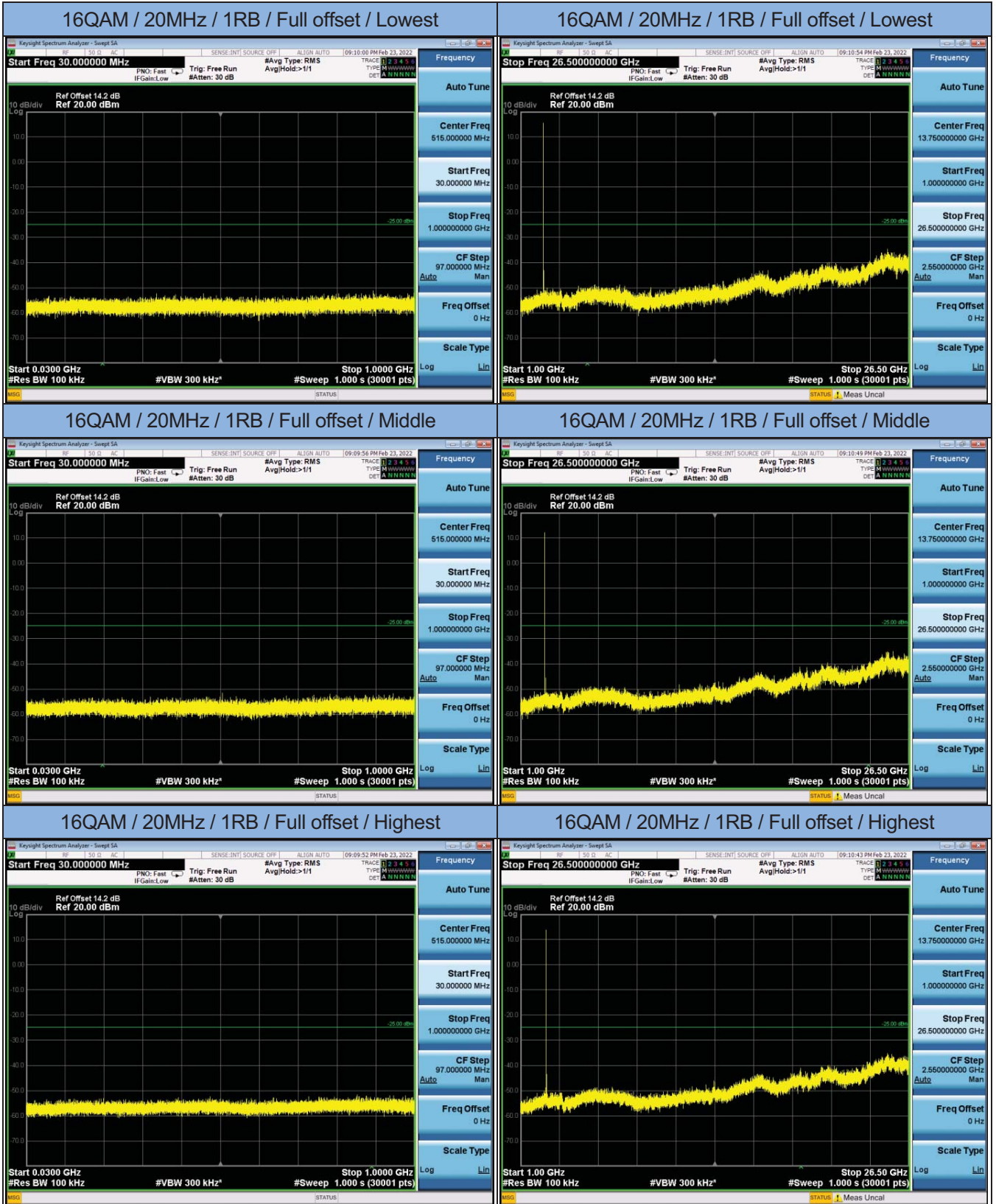






6. Transmitter Spurious Emissions





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	652.26	H	-54.44	-25	-29.44
	5012	H	-46.23	-25	-21.23
	7518	H	-36.58	-25	-11.58
	10024	H	-48.99	-25	-23.99
	654.89	V	-65.14	-25	-40.14
	5012	V	-47.70	-25	-22.70
	7518	V	-37.12	-25	-12.12
	10024	V	-49.55	-25	-24.55
Middle	652.43	H	-53.60	-25	-28.60
	5186	H	-45.29	-25	-20.29
	7779	H	-35.07	-25	-10.07
	10372	H	-48.12	-25	-23.12
	654.25	V	-64.28	-25	-39.28
	5186	V	-46.65	-25	-21.65
	7779	V	-36.53	-25	-11.53
	10372	V	-48.82	-25	-23.82
Highest	652.12	H	-54.80	-25	-29.80
	5360	H	-46.40	-25	-21.40
	8040	H	-36.18	-25	-11.18
	10720	H	-48.57	-25	-23.57
	654.87	V	-64.88	-25	-39.88
	5360	V	-46.89	-25	-21.89
	8040	V	-36.55	-25	-11.55
	10720	V	-48.71	-25	-23.71

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	2.3	0.000887	±2.5	PASS
-20		1.1	0.000424	±2.5	PASS
-10		1.9	0.000733	±2.5	PASS
0		1.4	0.000540	±2.5	PASS
20		2.9	0.001118	±2.5	PASS
30		-1.8	-0.000694	±2.5	PASS
40		-1.3	-0.000501	±2.5	PASS
50		-0.4	-0.000154	±2.5	PASS
20	10.8	-2.6	-0.001003	±2.5	PASS
	52.8	-1.5	-0.000578	±2.5	PASS

---End---