

Appendix I

Test Results of LTE Band 5

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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	☒ 1.4 ☒ 3 ☒ 5 ☒ 10	Sean
EIRP/ERP	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☒ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 1.4 ☒ 3 ☒ 5 ☒ 10	Sean
Peak-to-Average Ratio	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 10	Sean
Occupied Bandwidth	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☐ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 1.4 ☒ 3 ☒ 5 ☒ 10	Sean
Conducted Band Edge	☒ N.T / N.V.	☒ Low ☐ Mid ☒ High	☒ 1 ☐ Half ☒ Full	☒ QPSK ☒ 16QAM	☒ 1.4 ☒ 3 ☒ 5 ☒ 10	Sean
Spurious Emission at Antenna Terminal	☒ N.T / N.V.	☒ Low ☒ Mid ☒ High	☒ 1 ☐ Half ☐ Full	☒ QPSK ☒ 16QAM	☒ 10	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	☒ 10	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)	ERP (dBm)	Limit (dBm)	Result
			Size	Offset					
1.4	QPSK	Low	1	0	23.15	0.22	21.22	38.45	Pass
				3	23.09	0.22	21.16		Pass
				5	23.42	0.22	21.49		Pass
			3	0	22.07	0.22	20.14		Pass
				1	22.19	0.22	20.26		Pass
				3	22.58	0.22	20.65		Pass
			6	0	21.97	0.22	20.04		Pass
		Mid	1	0	23.55	0.22	21.62		Pass
				3	23.28	0.22	21.35		Pass
				5	23.12	0.22	21.19		Pass
			3	0	22.69	0.22	20.76		Pass
				1	22.43	0.22	20.50		Pass
				3	22.15	0.22	20.22		Pass
			6	0	22.32	0.22	20.39		Pass
		High	1	0	23.61	0.22	21.68		Pass
				3	23.44	0.22	21.51		Pass
				5	23.35	0.22	21.42		Pass
			3	0	22.70	0.22	20.77		Pass
				1	22.64	0.22	20.71		Pass
				3	22.49	0.22	20.56		Pass
			6	0	22.16	0.22	20.23		Pass
	16QAM	Low	1	0	23.43	0.22	21.50	38.45	Pass
				3	23.61	0.22	21.68		Pass
				5	23.80	0.22	21.87		Pass
			3	0	22.64	0.22	20.71		Pass
				1	22.59	0.22	20.66		Pass
				3	22.47	0.22	20.54		Pass
			6	0	22.18	0.22	20.25		Pass
		Mid	1	0	23.09	0.22	21.16		Pass
				3	23.20	0.22	21.27		Pass
				5	23.12	0.22	21.19		Pass
			3	0	22.98	0.22	21.05		Pass
				1	22.71	0.22	20.78		Pass
				3	22.63	0.22	20.70		Pass
			6	0	22.41	0.22	20.48		Pass
		High	1	0	23.11	0.22	21.18		Pass
				3	23.39	0.22	21.46		Pass
				5	23.54	0.22	21.61		Pass
			3	0	22.20	0.22	20.27		Pass
				1	22.87	0.22	20.94		Pass
				3	22.41	0.22	20.48		Pass
			6	0	22.16	0.22	20.23		Pass

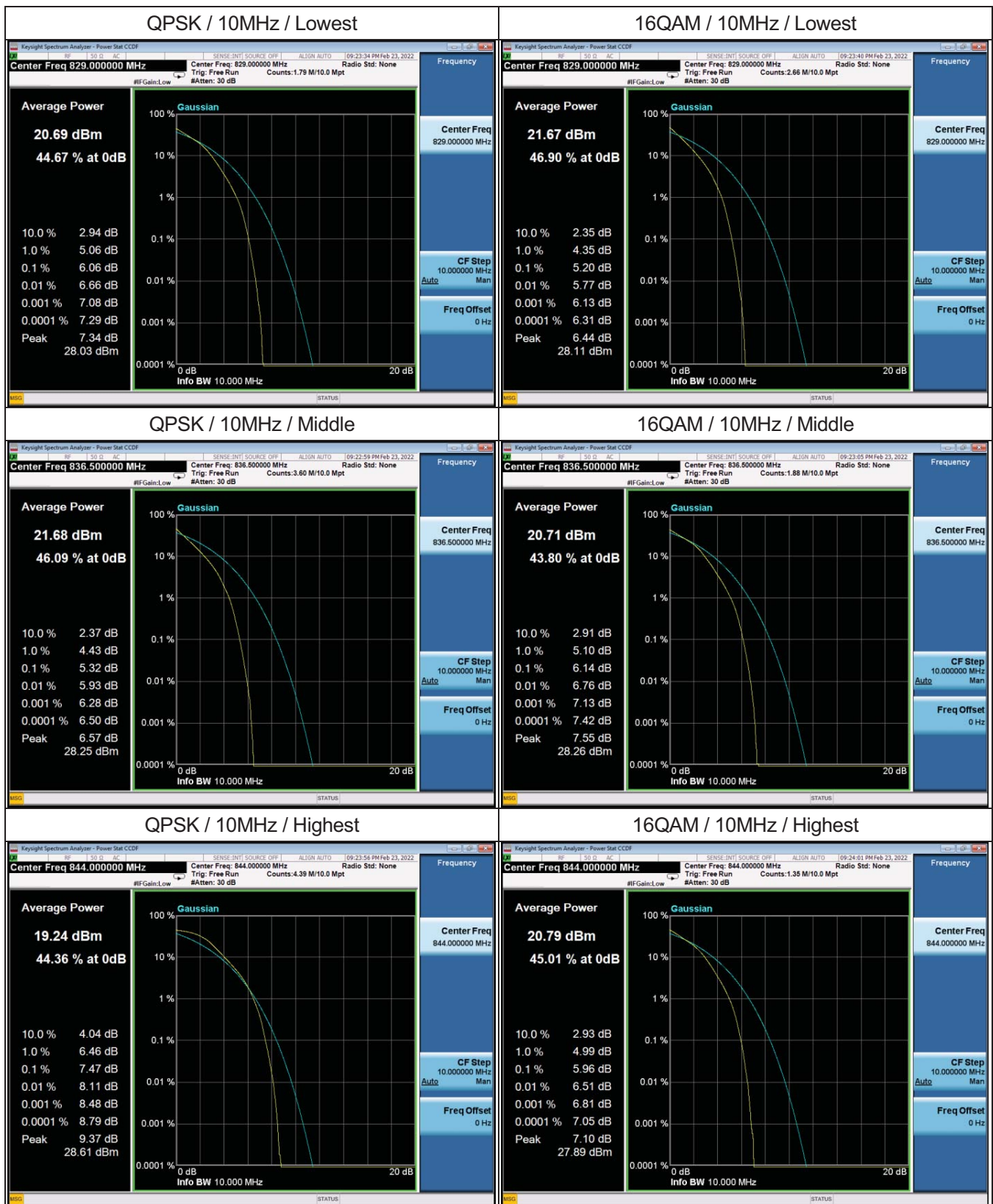
BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	ERP (dBm)	Limit (dBm)	Result
			Size	Offset					
3.0	QPSK	Low	1	0	22.51	0.22	20.58	38.45	Pass
				8	22.30	0.22	20.37		Pass
				14	22.47	0.22	20.54		Pass
			8	0	22.09	0.22	20.16		Pass
				4	22.58	0.22	20.65		Pass
				7	22.12	0.22	20.19		Pass
			15	0	22.43	0.22	20.50		Pass
		Mid	1	0	22.10	0.22	20.17		Pass
				8	22.65	0.22	20.72		Pass
				14	22.33	0.22	20.40		Pass
			8	0	22.29	0.22	20.36		Pass
				4	22.78	0.22	20.85		Pass
				7	21.95	0.22	20.02		Pass
			15	0	22.04	0.22	20.11		Pass
		High	1	0	22.63	0.22	20.70		Pass
				8	22.57	0.22	20.64		Pass
				14	21.99	0.22	20.06		Pass
			8	0	21.82	0.22	19.89		Pass
				4	21.90	0.22	19.97		Pass
				7	21.53	0.22	19.60		Pass
			15	0	22.01	0.22	20.08		Pass
	16QAM	Low	1	0	22.67	0.22	20.74	38.45	Pass
				8	21.92	0.22	19.99		Pass
				14	21.75	0.22	19.82		Pass
			8	0	22.03	0.22	20.10		Pass
				4	21.77	0.22	19.84		Pass
				7	21.63	0.22	19.70		Pass
			15	0	21.52	0.22	19.59		Pass
		Mid	1	0	21.80	0.22	19.87		Pass
				8	21.91	0.22	19.98		Pass
				14	21.86	0.22	19.93		Pass
			8	0	21.69	0.22	19.76		Pass
				4	21.74	0.22	19.81		Pass
				7	21.33	0.22	19.40		Pass
			15	0	21.11	0.22	19.18		Pass
		High	1	0	21.89	0.22	19.96		Pass
				8	22.03	0.22	20.10		Pass
				14	22.58	0.22	20.65		Pass
			8	0	22.07	0.22	20.14		Pass
				4	21.84	0.22	19.91		Pass
				7	21.69	0.22	19.76		Pass
			15	0	21.53	0.22	19.60		Pass

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	ERP (dBm)	Limit (dBm)	Result
			Size	Offset					
5.0	QPSK	Low	1	0	22.02	0.22	20.09	38.45	Pass
				12	22.11	0.22	20.18		Pass
				24	22.19	0.22	20.26		Pass
			12	0	21.35	0.22	19.42		Pass
				7	21.90	0.22	19.97		Pass
				13	22.19	0.22	20.26		Pass
			25	0	22.43	0.22	20.50		Pass
		Mid	1	0	22.27	0.22	20.34		Pass
				12	22.65	0.22	20.72		Pass
				24	22.18	0.22	20.25		Pass
			12	0	22.52	0.22	20.59		Pass
				7	22.86	0.22	20.93		Pass
				13	22.74	0.22	20.81		Pass
			25	0	21.95	0.22	20.02		Pass
		High	1	0	21.48	0.22	19.55		Pass
				12	21.63	0.22	19.70		Pass
				24	21.82	0.22	19.89		Pass
			12	0	21.33	0.22	19.40		Pass
				7	21.42	0.22	19.49		Pass
				13	21.58	0.22	19.65		Pass
			25	0	21.66	0.22	19.73		Pass
	16QAM	Low	1	0	21.79	0.22	19.86	38.45	Pass
				12	21.50	0.22	19.57		Pass
				24	21.67	0.22	19.74		Pass
			12	0	21.21	0.22	19.28		Pass
				7	22.07	0.22	20.14		Pass
				13	21.87	0.22	19.94		Pass
			25	0	21.93	0.22	20.00		Pass
		Mid	1	0	21.59	0.22	19.66		Pass
				12	21.10	0.22	19.17		Pass
				24	21.69	0.22	19.76		Pass
			12	0	21.57	0.22	19.64		Pass
				7	21.23	0.22	19.30		Pass
				13	21.09	0.22	19.16		Pass
			25	0	21.87	0.22	19.94		Pass
		High	1	0	22.30	0.22	20.37		Pass
				12	21.98	0.22	20.05		Pass
				24	21.73	0.22	19.80		Pass
			12	0	21.42	0.22	19.49		Pass
				7	21.66	0.22	19.73		Pass
				13	21.81	0.22	19.88		Pass
			25	0	21.50	0.22	19.57		Pass

BW (MHz)	Modulation	Channel	RB Allocation		Average Power (dBm)	GT - LC (dB)	ERP (dBm)	Limit (dBm)	Result
			Size	Offset					
10	QPSK	Low	1	0	21.97	0.22	20.04	38.45	Pass
				25	21.88	0.22	19.95		Pass
				49	21.63	0.22	19.70		Pass
			25	0	22.05	0.22	20.12		Pass
				12	21.78	0.22	19.85		Pass
				25	21.64	0.22	19.71		Pass
			50	0	21.29	0.22	19.36		Pass
		Mid	1	0	21.53	0.22	19.60		Pass
				25	21.49	0.22	19.56		Pass
				49	21.27	0.22	19.34		Pass
			25	0	21.10	0.22	19.17		Pass
				12	21.23	0.22	19.30		Pass
				25	21.31	0.22	19.38		Pass
			50	0	21.40	0.22	19.47		Pass
		High	1	0	21.64	0.22	19.71		Pass
				25	21.52	0.22	19.59		Pass
				49	21.77	0.22	19.84		Pass
			25	0	21.63	0.22	19.70		Pass
				12	21.70	0.22	19.77		Pass
				25	21.12	0.22	19.19		Pass
			50	0	21.29	0.22	19.36		Pass
	16QAM	Low	1	0	21.49	0.22	19.56	38.45	Pass
				25	21.67	0.22	19.74		Pass
				49	21.84	0.22	19.91		Pass
			25	0	21.27	0.22	19.34		Pass
				12	22.01	0.22	20.08		Pass
				25	21.35	0.22	19.42		Pass
			50	0	22.07	0.22	20.14		Pass
		Mid	1	0	21.87	0.22	19.94		Pass
				25	21.46	0.22	19.53		Pass
				49	21.82	0.22	19.89		Pass
			25	0	21.69	0.22	19.76		Pass
				12	21.57	0.22	19.64		Pass
				25	21.31	0.22	19.38		Pass
			50	0	21.68	0.22	19.75		Pass
		High	1	0	21.97	0.22	20.04		Pass
				25	21.51	0.22	19.58		Pass
				49	21.90	0.22	19.97		Pass
			25	0	21.46	0.22	19.53		Pass
				12	21.34	0.22	19.41		Pass
				25	21.55	0.22	19.62		Pass
			50	0	21.72	0.22	19.79		Pass

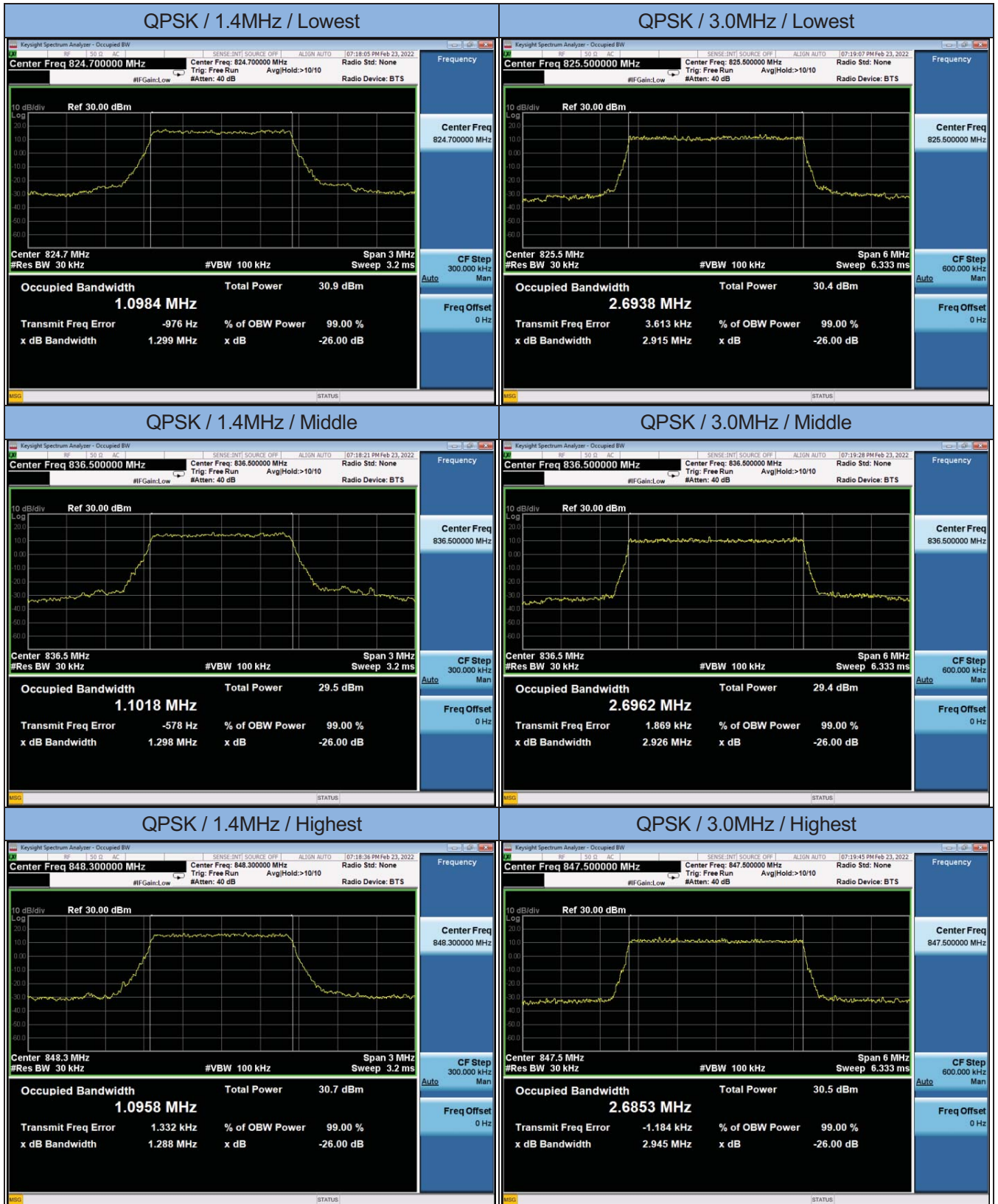
3. Peak-to-Average Ratio

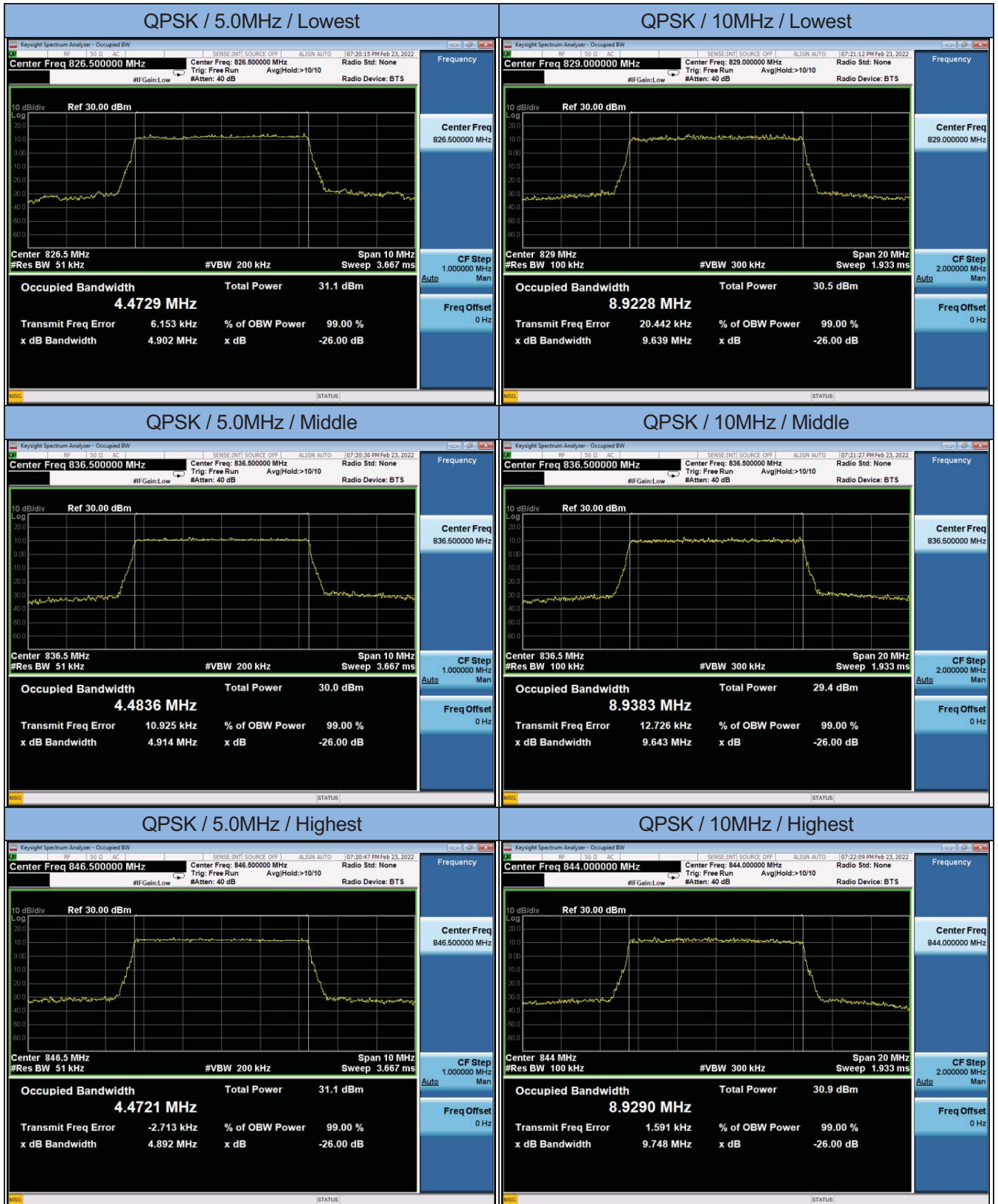
BW (MHz)	Modulation	Channel	RB Allocation		Peak-to-Average Ratio (dB)	Limit (dBm)	Result
			Size	Offset			
10	QPSK	Low	Full	0	6.06	13.0	Pass
		Mid	Full	0	5.32		Pass
		High	Full	0	7.47		Pass
	16QAM	Low	Full	0	5.20	13.0	Pass
		Mid	Full	0	6.14		Pass
		High	Full	0	5.96		Pass

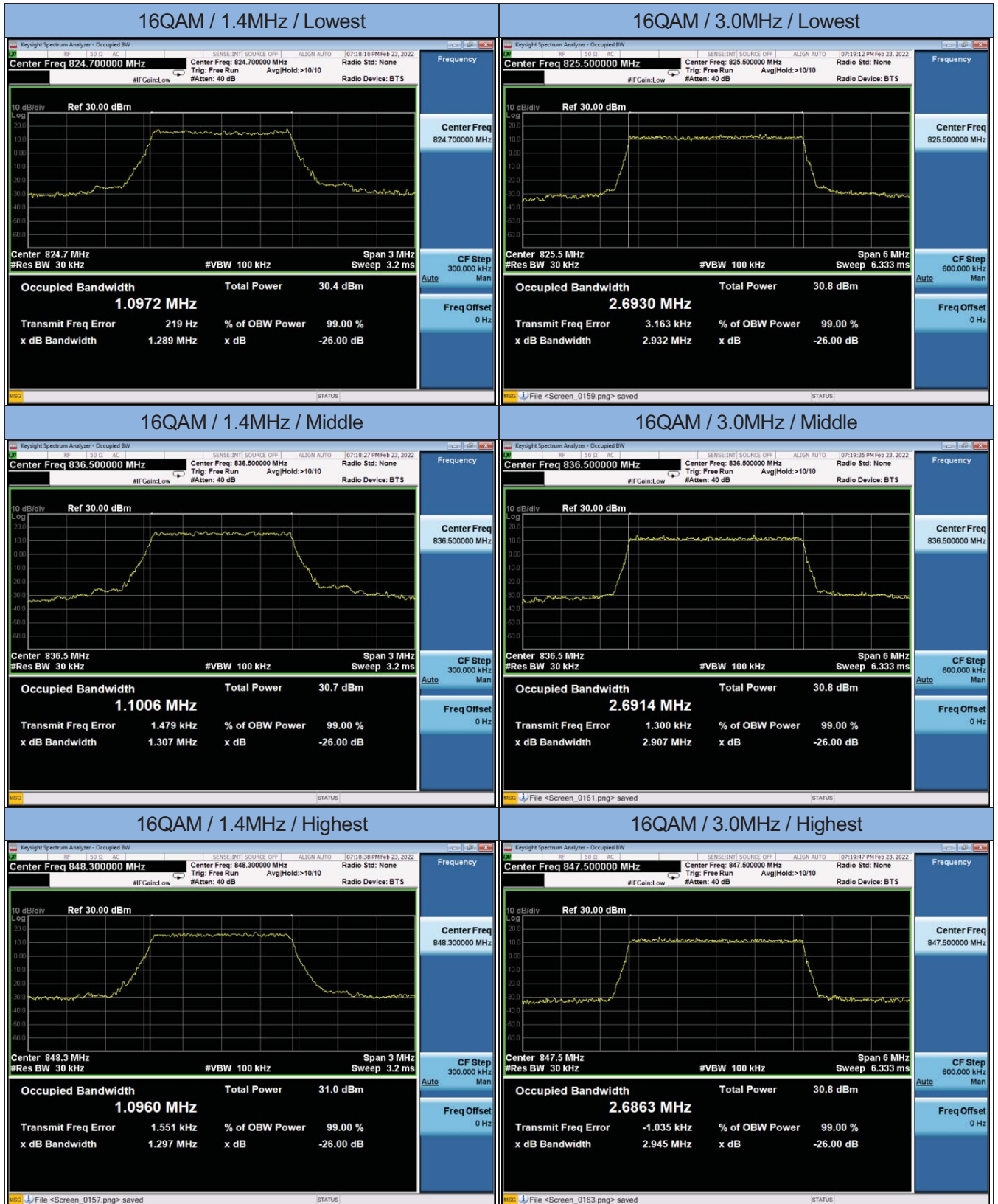


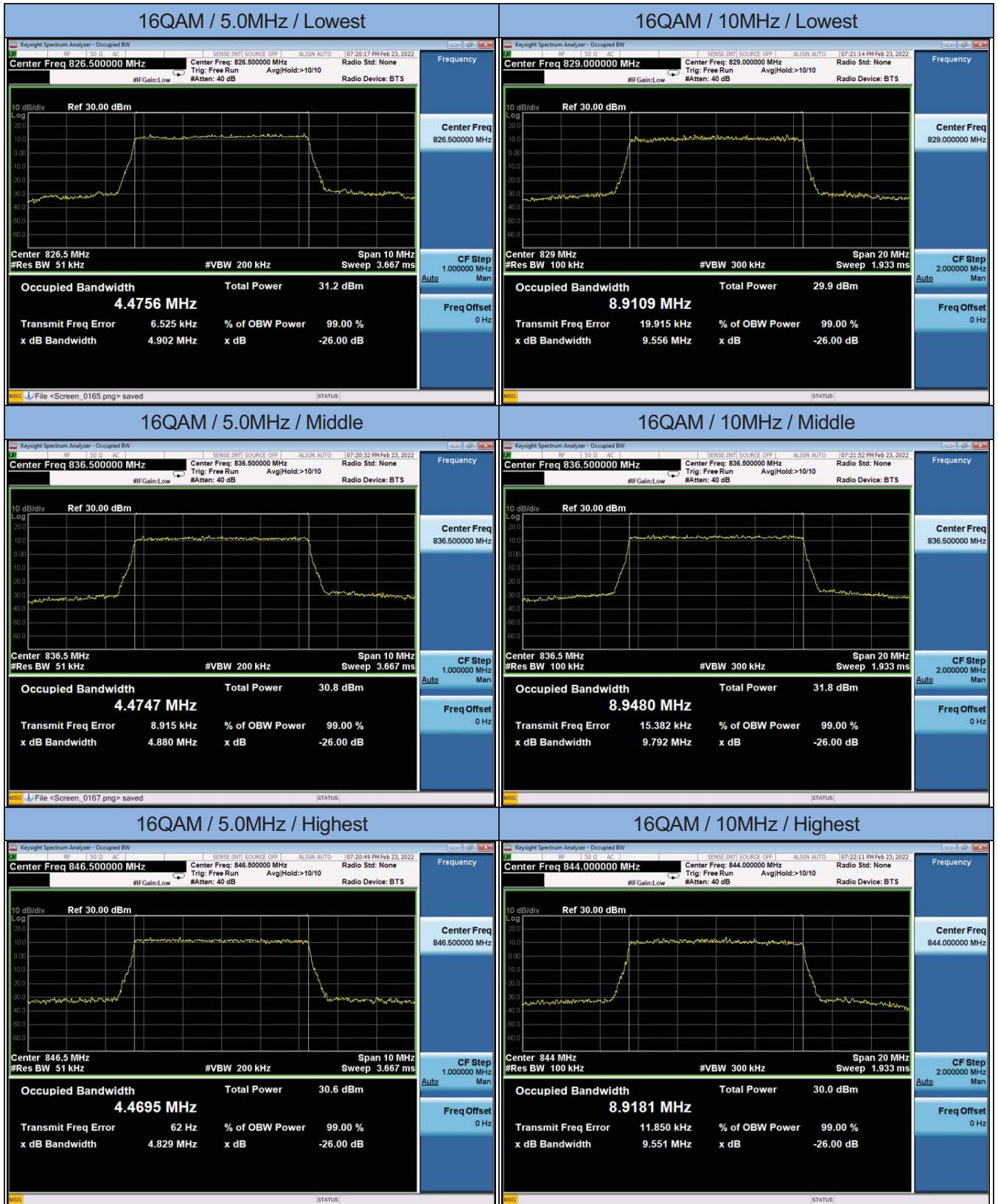
4. Occupied Bandwidth

BW (MHz)	Modulation	Channel	RB Allocation		26dB BW (MHz)	99% OBW (MHz)	Limit (dBm)	Result
			Size	Offset				
1.4	QPSK	Low	Full	0	1.299	1.0984	---	Pass
		Mid	Full	0	1.298	1.1018		Pass
		High	Full	0	1.288	1.0958		Pass
	16QAM	Low	Full	0	1.289	1.0972	---	Pass
		Mid	Full	0	1.307	1.1006		Pass
		High	Full	0	1.297	1.0960		Pass
3.0	QPSK	Low	Full	0	2.915	2.6938	---	Pass
		Mid	Full	0	2.926	2.6962		Pass
		High	Full	0	2.945	2.6853		Pass
	16QAM	Low	Full	0	2.932	2.6930	---	Pass
		Mid	Full	0	2.907	2.6914		Pass
		High	Full	0	2.945	2.6863		Pass
5.0	QPSK	Low	Full	0	4.902	4.4729	---	Pass
		Mid	Full	0	4.914	4.4836		Pass
		High	Full	0	4.892	4.4721		Pass
	16QAM	Low	Full	0	4.902	4.4756	---	Pass
		Mid	Full	0	4.880	4.4747		Pass
		High	Full	0	4.829	4.4695		Pass
10	QPSK	Low	Full	0	9.639	8.9228	---	Pass
		Mid	Full	0	9.643	8.9383		Pass
		High	Full	0	9.748	8.9290		Pass
	16QAM	Low	Full	0	9.556	8.9109	---	Pass
		Mid	Full	0	9.792	8.9480		Pass
		High	Full	0	9.551	8.9181		Pass

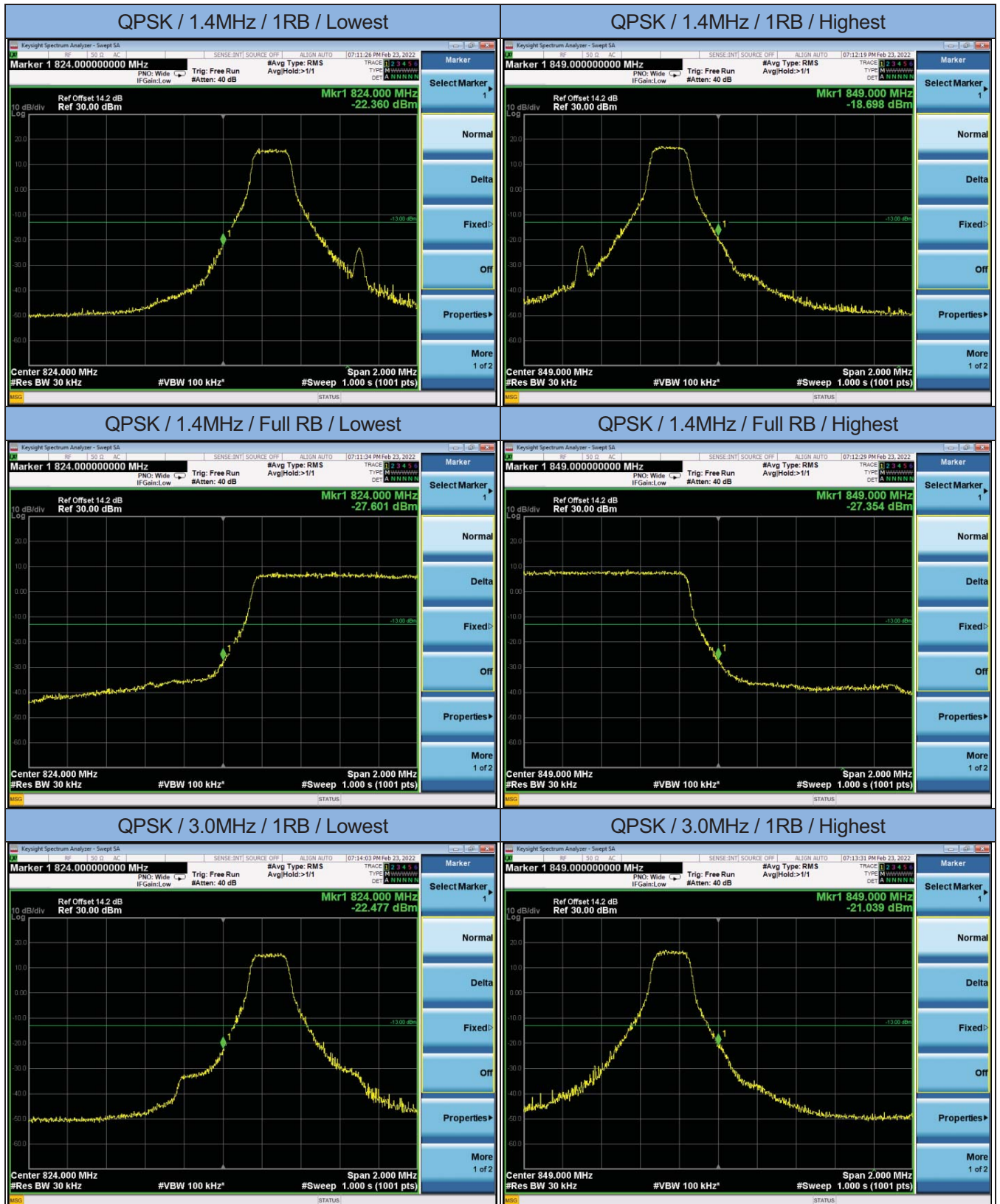


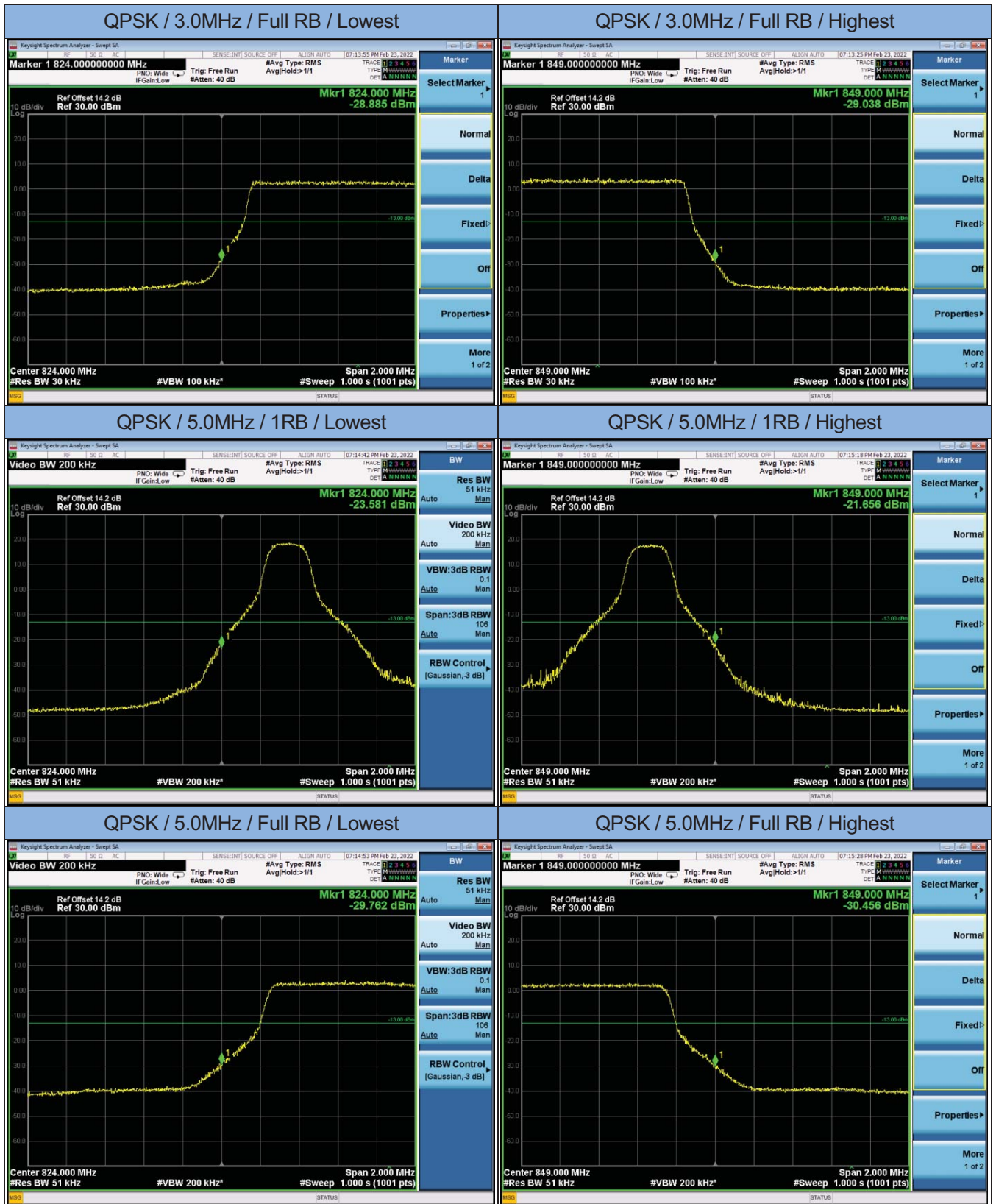


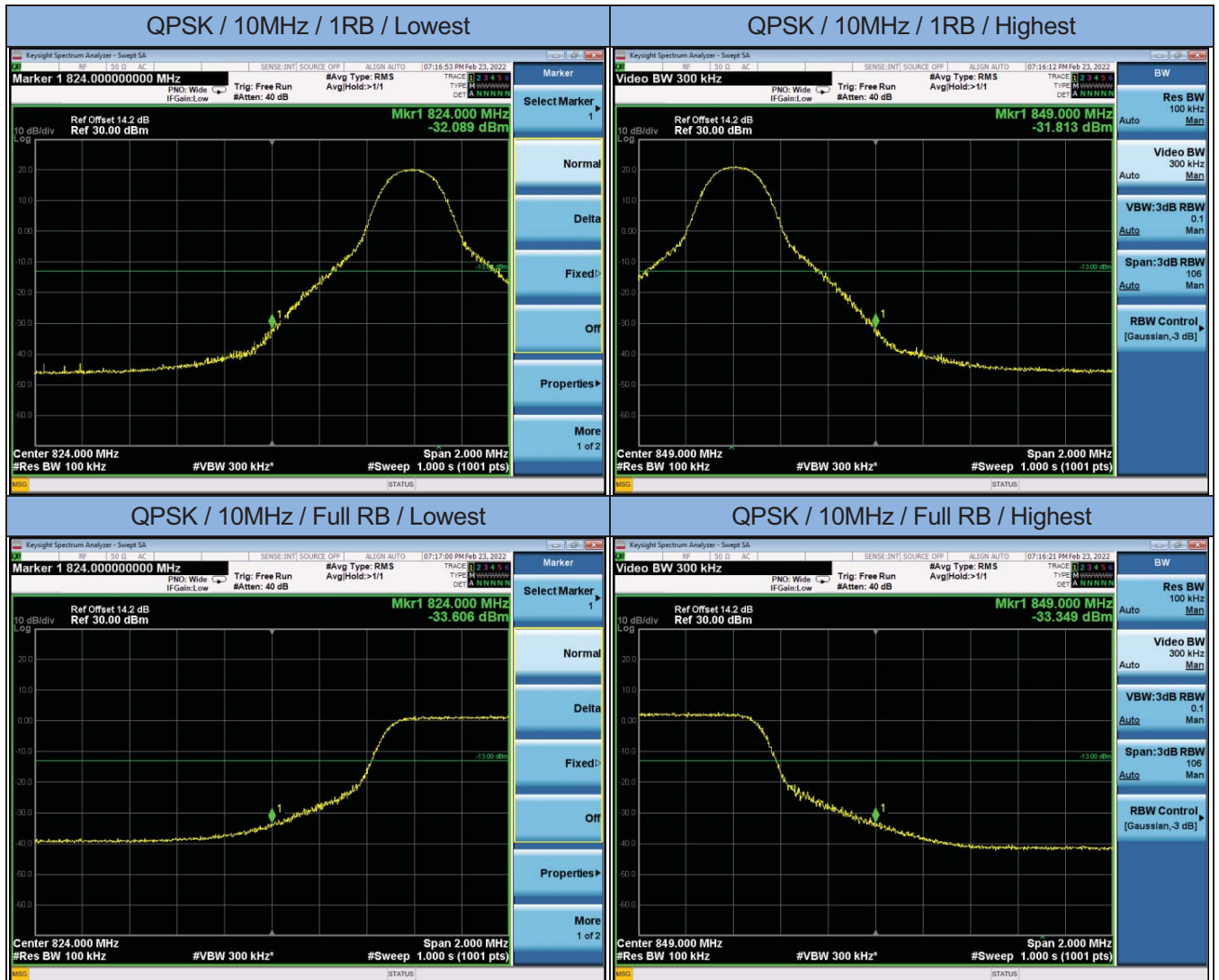


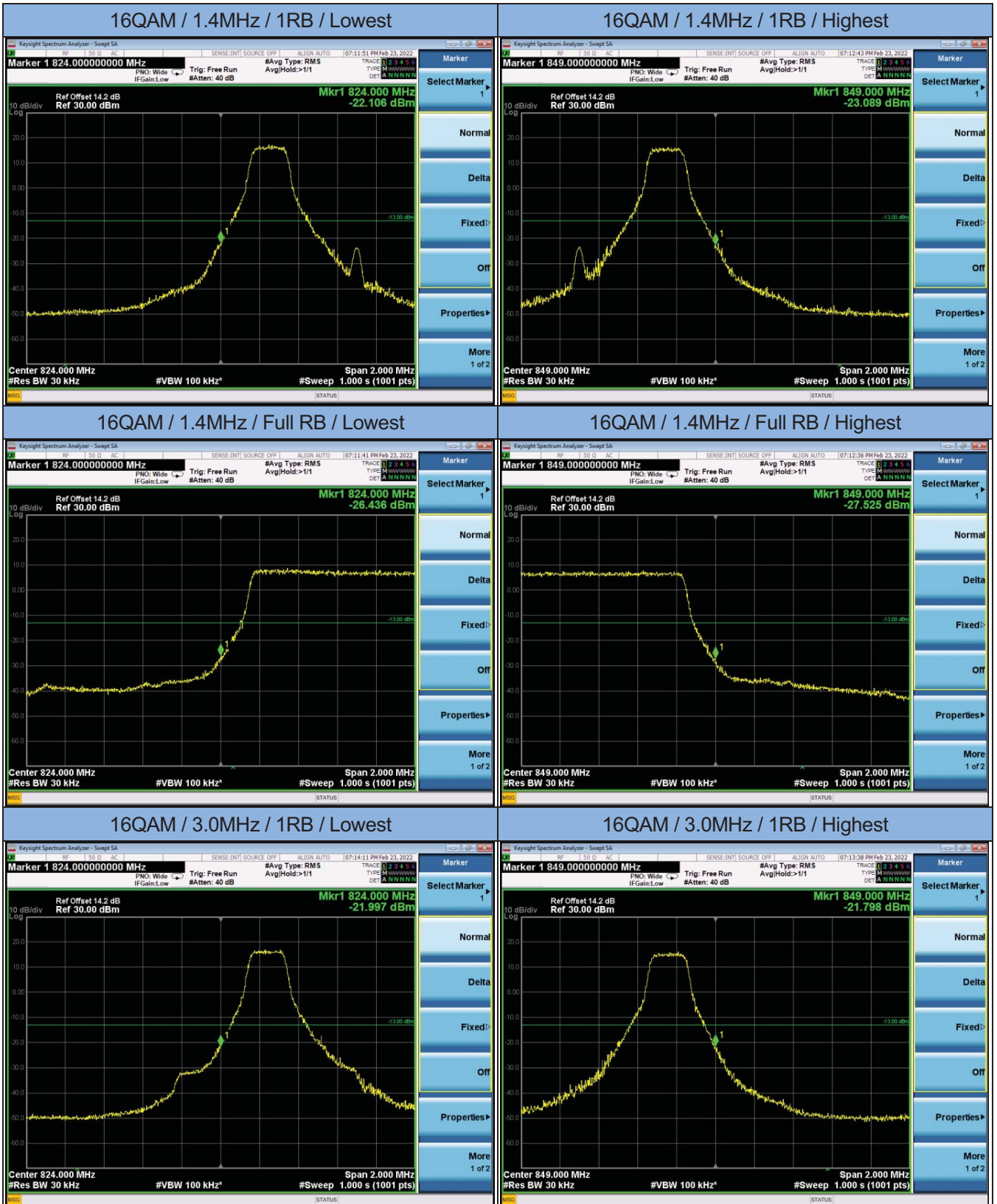


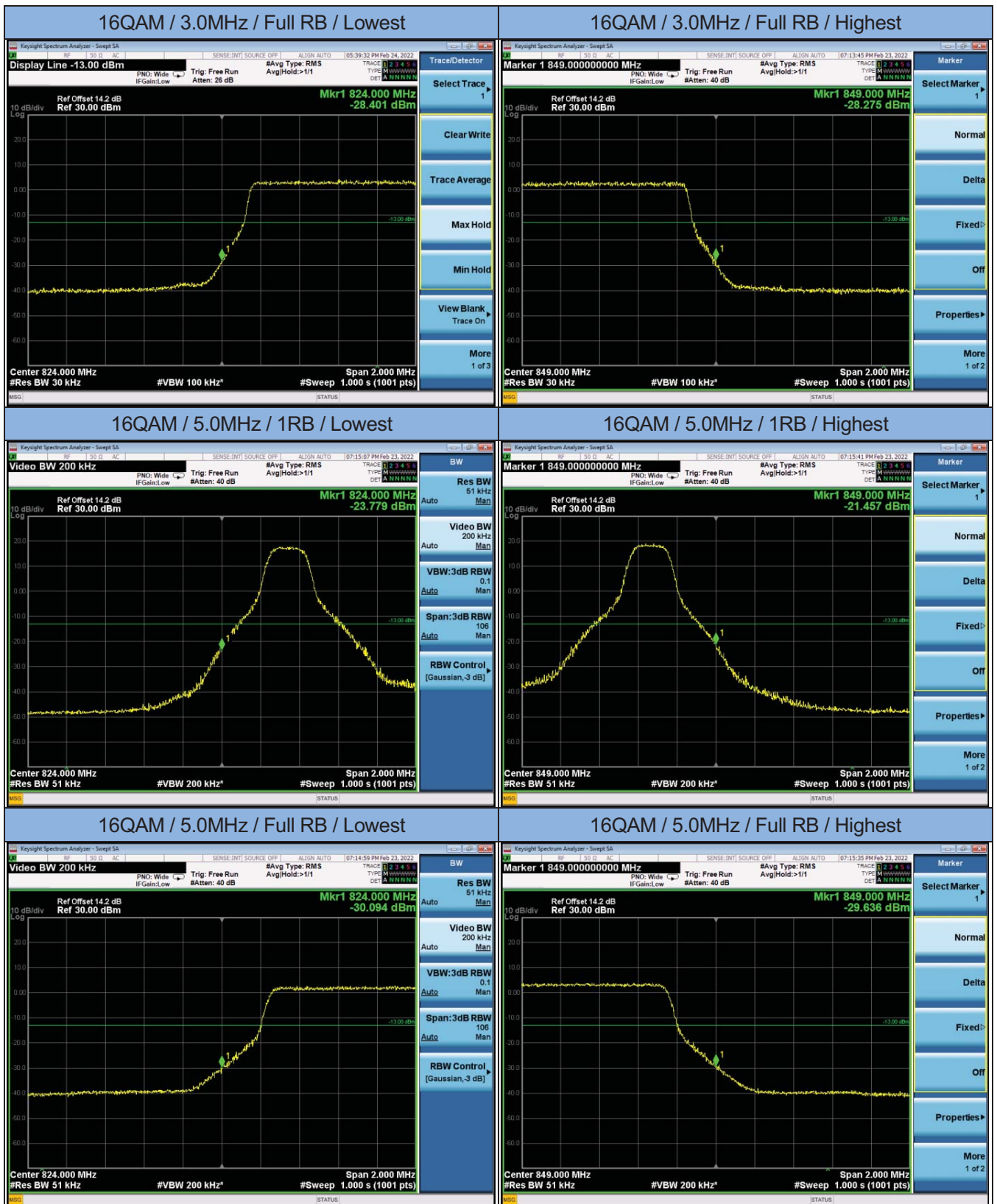
5. Band Edge

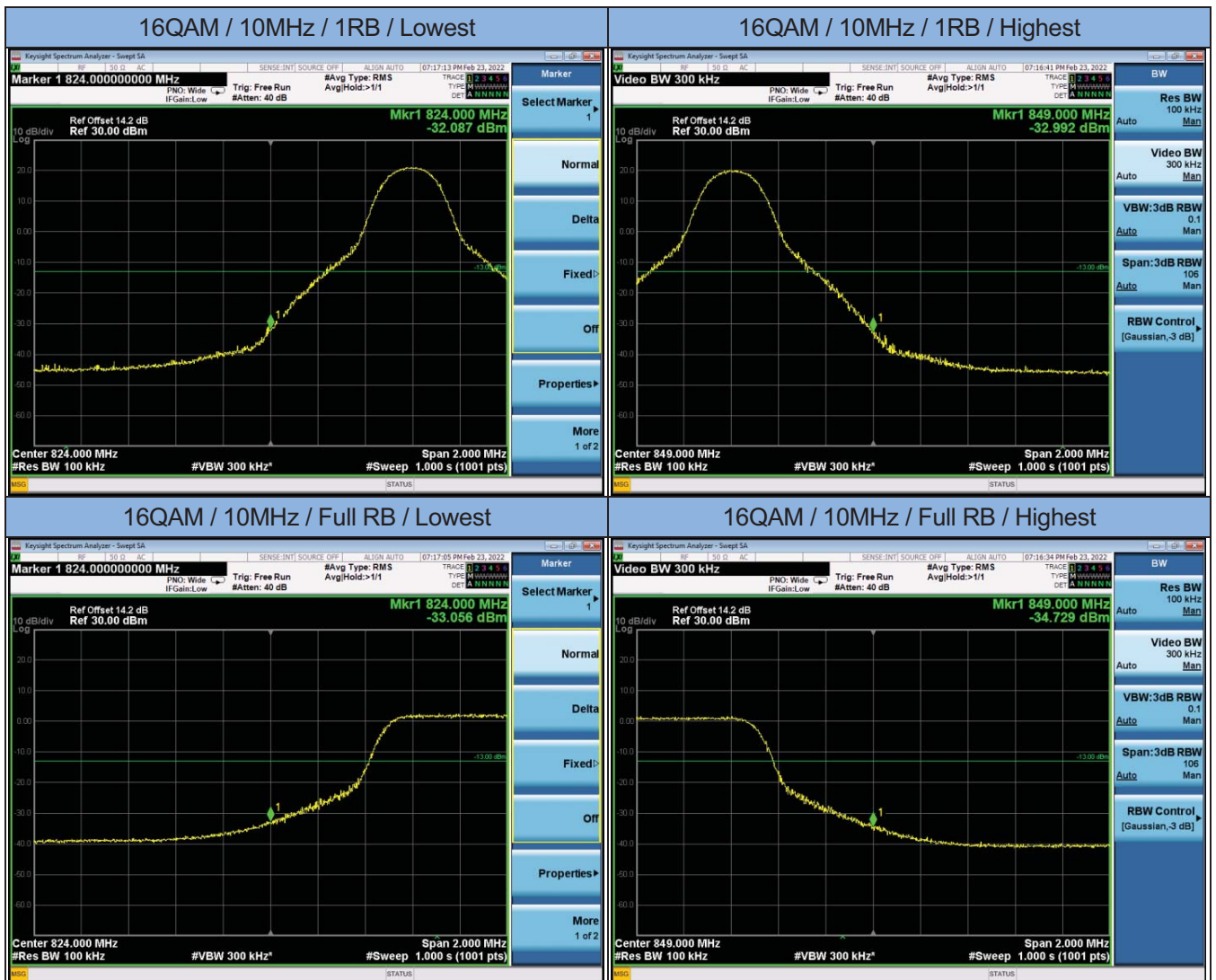




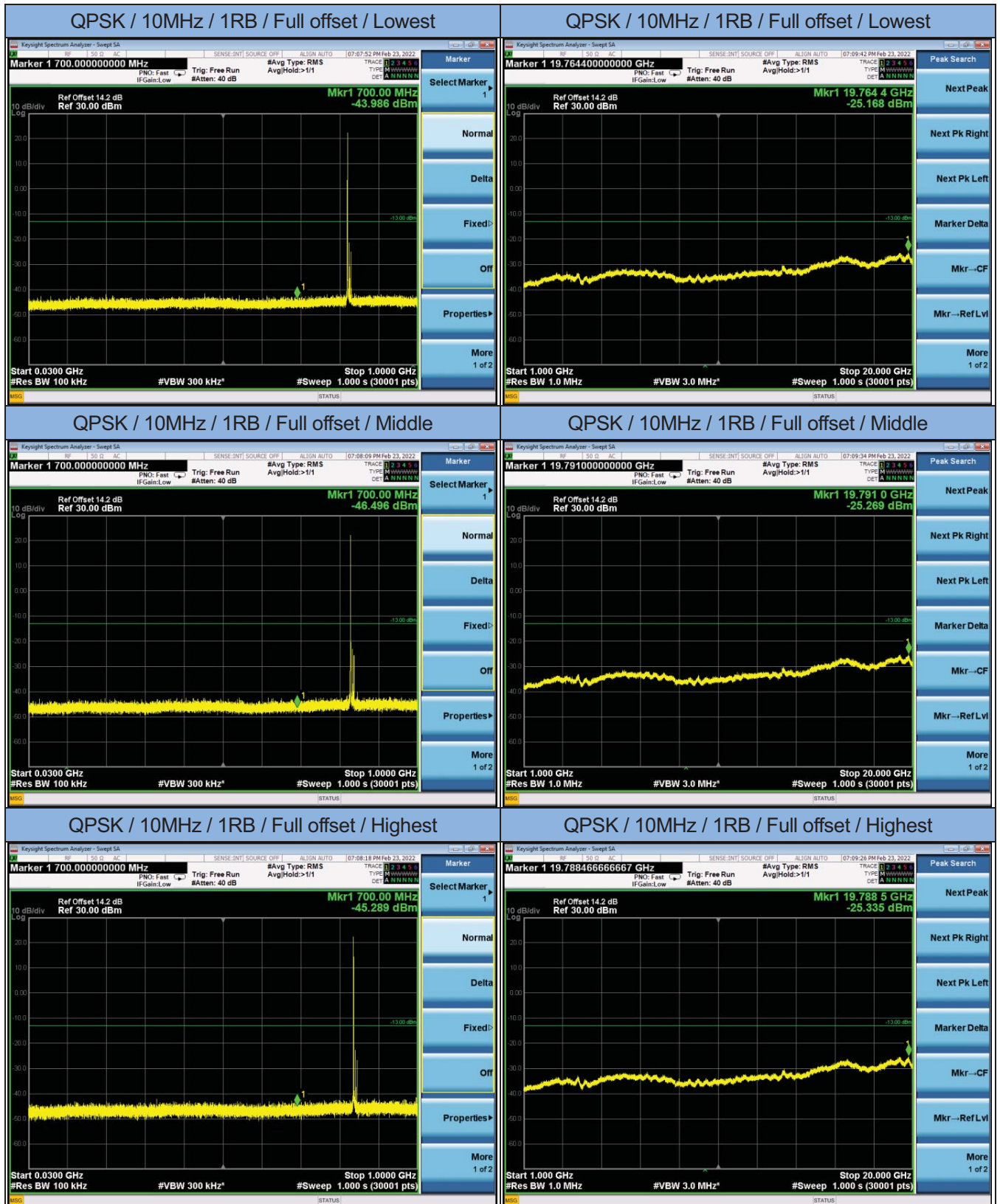


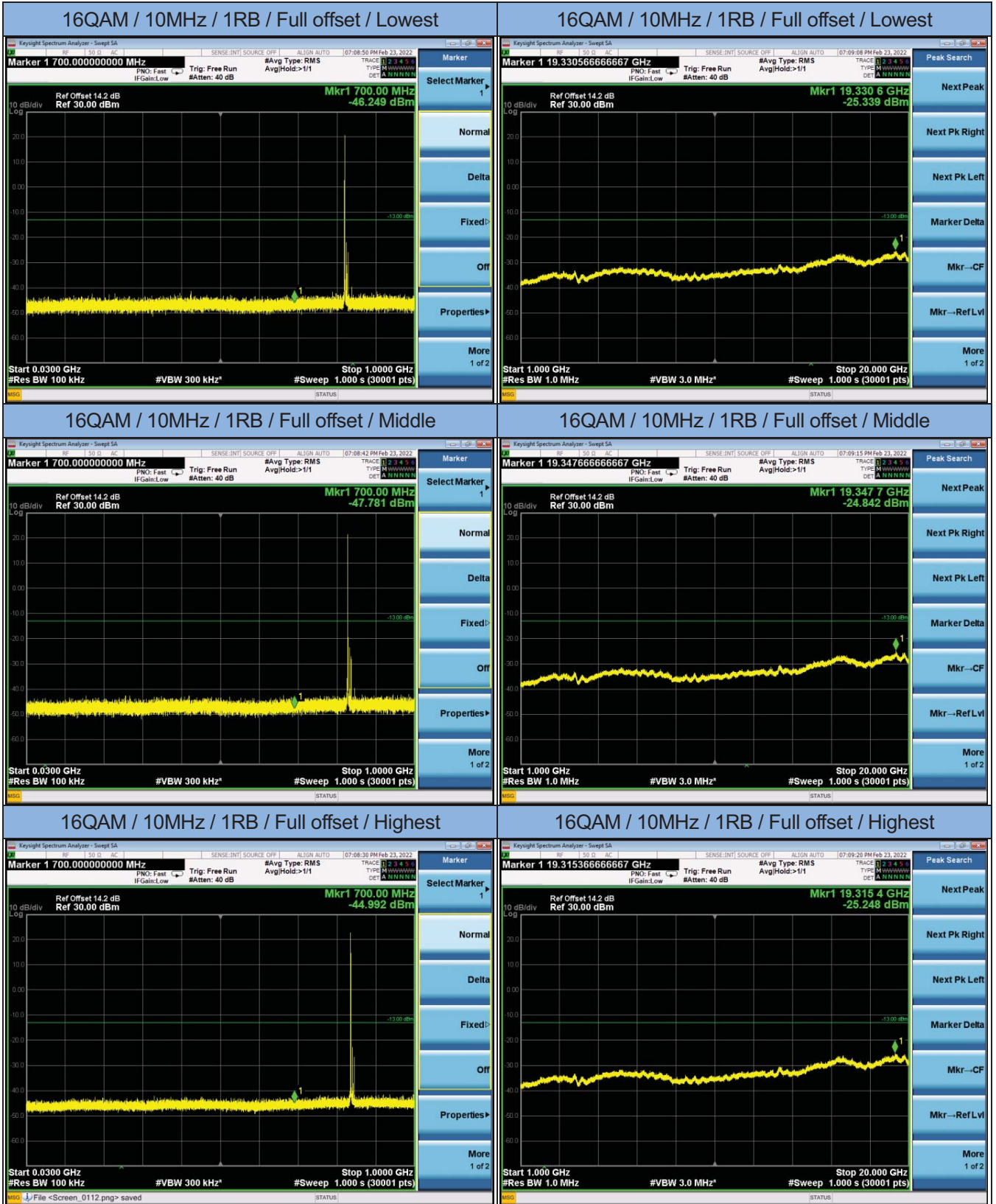






6. Transmitter Spurious Emissions





7. Field Strength of Spurious Radiation

LTE Band 5 / 10M / QPSK					
Channel	Frequency (MHz)	Polarization (H/V)	Meas. Level (dBm)	Limit (dBm)	Margin (dBm)
Lowest	652.66	H	-55.70	-13	-42.70
	1658	H	-42.69	-13	-29.69
	2487	H	-34.95	-13	-21.95
	3316	H	-50.79	-13	-37.79
	654.86	V	-65.63	-13	-52.63
	1658	V	-44.61	-13	-31.61
	2487	V	-37.72	-13	-24.72
	3316	V	-51.23	-13	-38.23
Middle	652.11	H	-53.19	-13	-40.19
	1673	H	-41.97	-13	-28.97
	2509.5	H	-35.08	-13	-22.08
	3346	H	-49.30	-13	-36.30
	654.25	V	-64.19	-13	-51.19
	1673	V	-45.07	-13	-32.07
	2509.5	V	-38.62	-13	-25.62
	3346	V	-51.53	-13	-38.53
Highest	652.92	H	-54.51	-13	-41.51
	1688	H	-42.98	-13	-29.98
	2532	H	-35.81	-13	-22.81
	3376	H	-49.43	-13	-36.43
	654.58	V	-65.77	-13	-52.77
	1688	V	-44.86	-13	-31.86
	2532	V	-36.60	-13	-23.60
	3376	V	-50.29	-13	-37.29

8. Frequency Stability

LTE Band 5 / 10M / QPSK / Full RB					
Middle channel, $f_o = 836.5$ MHz					
Temperature (°C)	Power Supplied (Vdc)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (dBm)	Result
-30	12	1.9	0.002271	±2.5	PASS
-20		-2.8	-0.003347	±2.5	PASS
-10		-1.1	-0.001315	±2.5	PASS
0		-2.9	-0.003467	±2.5	PASS
20		-3.4	-0.004065	±2.5	PASS
30		-1.5	-0.001793	±2.5	PASS
40		0.9	0.001076	±2.5	PASS
50		2.6	0.003108	±2.5	PASS
20	10.8	-1.6	-0.001913	±2.5	PASS
	52.8	1.8	0.002152	±2.5	PASS

---End---