

LTE Band 13 Test Data

FCC ID: 2A8EM-B7PRO

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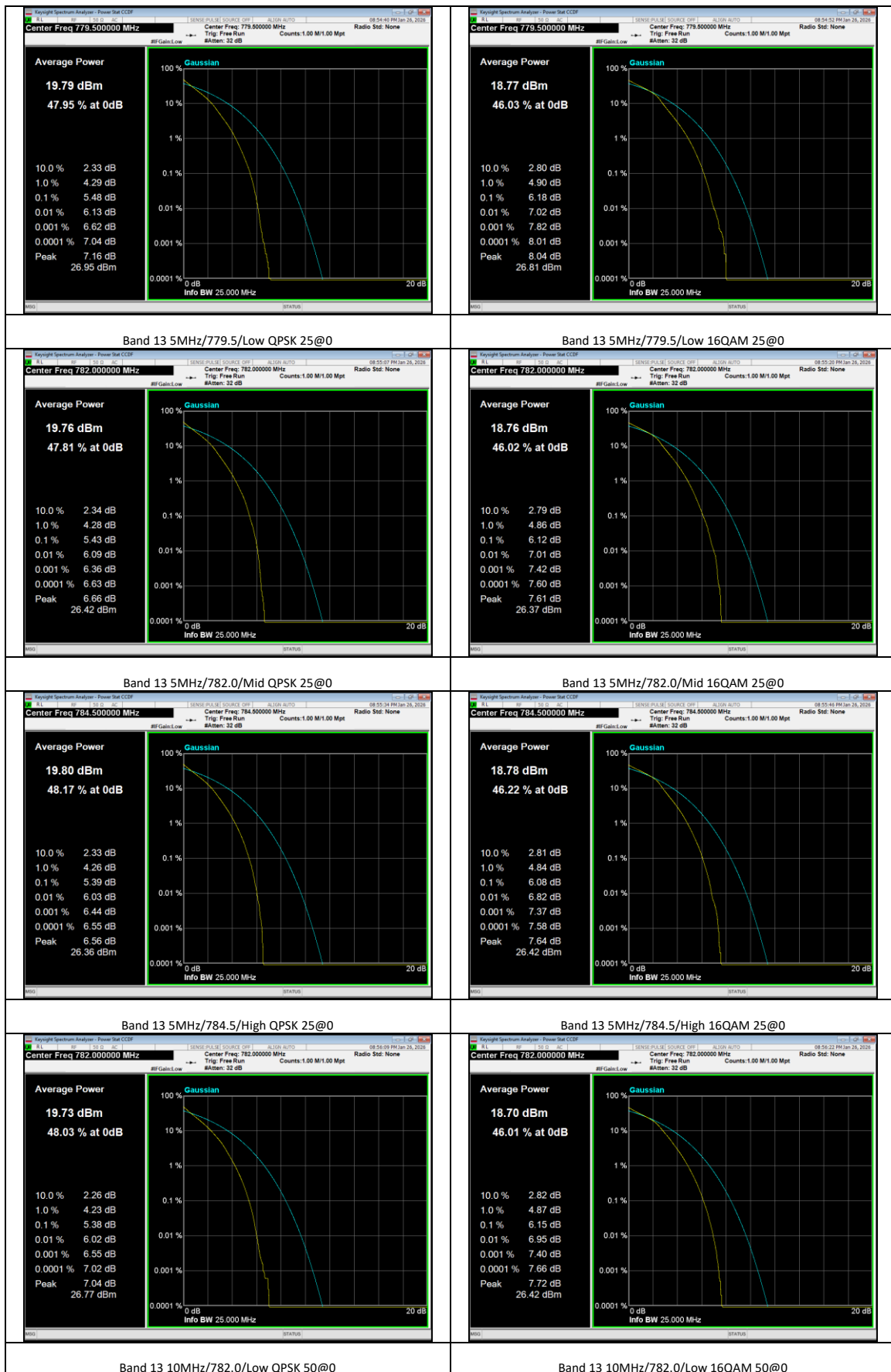
FCC LTE FDD Test Data

1. Effective (Isotropic) Radiated Power Output Data

Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	Conducted Power (dBm)	ERP/EIRP (dBm)	ERP/EIRP (W)	ERP/EIRP(Limit) (dBm)	Verdict
13	5.0	23205	779.5	QPSK	1@0	20.77	18.53	0.0712	34.77	PASS
13	5.0	23205	779.5	QPSK	1@12	20.7	18.46	0.0701	34.77	PASS
13	5.0	23205	779.5	QPSK	1@24	20.73	18.49	0.0707	34.77	PASS
13	5.0	23205	779.5	QPSK	12@0	19.57	17.33	0.054	34.77	PASS
13	5.0	23205	779.5	QPSK	12@6	19.47	17.23	0.0529	34.77	PASS
13	5.0	23205	779.5	QPSK	12@11	19.51	17.27	0.0533	34.77	PASS
13	5.0	23205	779.5	QPSK	25@0	19.55	17.31	0.0538	34.77	PASS
13	5.0	23205	779.5	16QAM	1@0	19.27	17.03	0.0505	34.77	PASS
13	5.0	23205	779.5	16QAM	1@12	19.19	16.95	0.0496	34.77	PASS
13	5.0	23205	779.5	16QAM	1@24	19.28	17.04	0.0506	34.77	PASS
13	5.0	23205	779.5	16QAM	12@0	18.57	16.33	0.043	34.77	PASS
13	5.0	23205	779.5	16QAM	12@6	18.5	16.26	0.0423	34.77	PASS
13	5.0	23205	779.5	16QAM	12@11	18.51	16.27	0.0423	34.77	PASS
13	5.0	23205	779.5	16QAM	25@0	18.57	16.33	0.043	34.77	PASS
13	5.0	23230	782.0	QPSK	1@0	20.71	18.47	0.0703	34.77	PASS
13	5.0	23230	782.0	QPSK	1@12	20.58	18.34	0.0683	34.77	PASS
13	5.0	23230	782.0	QPSK	1@24	20.67	18.43	0.0696	34.77	PASS
13	5.0	23230	782.0	QPSK	12@0	19.52	17.28	0.0534	34.77	PASS
13	5.0	23230	782.0	QPSK	12@6	19.54	17.3	0.0537	34.77	PASS
13	5.0	23230	782.0	QPSK	12@11	19.52	17.28	0.0534	34.77	PASS
13	5.0	23230	782.0	QPSK	25@0	19.49	17.25	0.0531	34.77	PASS
13	5.0	23230	782.0	16QAM	1@0	19.99	17.75	0.0596	34.77	PASS
13	5.0	23230	782.0	16QAM	1@12	19.88	17.64	0.0581	34.77	PASS
13	5.0	23230	782.0	16QAM	1@24	19.93	17.69	0.0587	34.77	PASS
13	5.0	23230	782.0	16QAM	12@0	18.44	16.2	0.0417	34.77	PASS
13	5.0	23230	782.0	16QAM	12@6	18.43	16.19	0.0416	34.77	PASS
13	5.0	23230	782.0	16QAM	12@11	18.45	16.21	0.0417	34.77	PASS
13	5.0	23230	782.0	16QAM	25@0	18.46	16.23	0.0419	34.77	PASS
13	5.0	23255	784.5	QPSK	1@0	20.66	18.42	0.0695	34.77	PASS
13	5.0	23255	784.5	QPSK	1@12	20.66	18.42	0.0695	34.77	PASS
13	5.0	23255	784.5	QPSK	1@24	20.78	18.54	0.0715	34.77	PASS
13	5.0	23255	784.5	QPSK	12@0	19.52	17.28	0.0535	34.77	PASS
13	5.0	23255	784.5	QPSK	12@6	19.53	17.29	0.0535	34.77	PASS
13	5.0	23255	784.5	QPSK	12@11	19.52	17.28	0.0534	34.77	PASS
13	5.0	23255	784.5	QPSK	25@0	19.57	17.33	0.0541	34.77	PASS
13	5.0	23255	784.5	16QAM	1@0	19.55	17.31	0.0539	34.77	PASS
13	5.0	23255	784.5	16QAM	1@12	19.49	17.25	0.0531	34.77	PASS
13	5.0	23255	784.5	16QAM	1@24	19.65	17.41	0.0551	34.77	PASS
13	5.0	23255	784.5	16QAM	12@0	18.5	16.26	0.0423	34.77	PASS
13	5.0	23255	784.5	16QAM	12@6	18.47	16.23	0.042	34.77	PASS
13	5.0	23255	784.5	16QAM	12@11	18.48	16.24	0.042	34.77	PASS
13	5.0	23255	784.5	16QAM	25@0	18.59	16.35	0.0432	34.77	PASS
13	10.0	23230	782.0	QPSK	1@0	20.5	18.26	0.0671	34.77	PASS
13	10.0	23230	782.0	QPSK	1@24	20.48	18.24	0.0667	34.77	PASS
13	10.0	23230	782.0	QPSK	1@49	20.67	18.43	0.0697	34.77	PASS
13	10.0	23230	782.0	QPSK	25@0	19.48	17.24	0.0529	34.77	PASS
13	10.0	23230	782.0	QPSK	25@12	19.49	17.25	0.053	34.77	PASS
13	10.0	23230	782.0	QPSK	25@24	19.47	17.23	0.0529	34.77	PASS
13	10.0	23230	782.0	QPSK	50@0	19.49	17.25	0.0531	34.77	PASS
13	10.0	23230	782.0	16QAM	1@0	19.13	16.89	0.0489	34.77	PASS
13	10.0	23230	782.0	16QAM	1@24	19.17	16.93	0.0493	34.77	PASS
13	10.0	23230	782.0	16QAM	1@49	19.32	17.08	0.051	34.77	PASS
13	10.0	23230	782.0	16QAM	25@0	18.52	16.28	0.0424	34.77	PASS
13	10.0	23230	782.0	16QAM	25@12	18.46	16.22	0.0418	34.77	PASS
13	10.0	23230	782.0	16QAM	25@24	18.46	16.22	0.0419	34.77	PASS
13	10.0	23230	782.0	16QAM	50@0	18.48	16.24	0.042	34.77	PASS

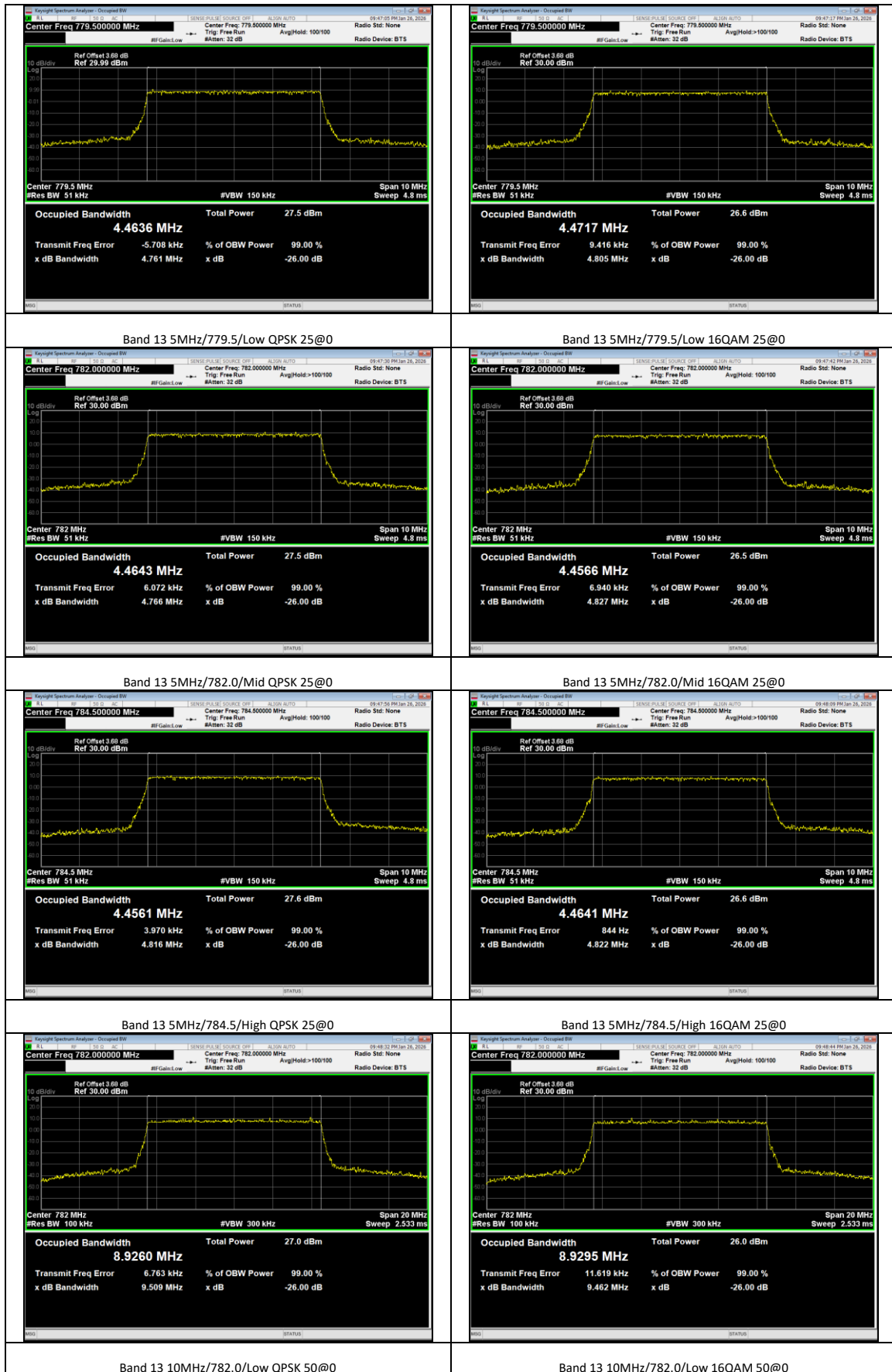
2. Peak to Average Ratio

Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
13	5.0	23205	779.5	QPSK	25@0	5.48	13	PASS
13	5.0	23205	779.5	16QAM	25@0	6.18	13	PASS
13	5.0	23230	782.0	QPSK	25@0	5.42	13	PASS
13	5.0	23230	782.0	16QAM	25@0	6.12	13	PASS
13	5.0	23255	784.5	QPSK	25@0	5.39	13	PASS
13	5.0	23255	784.5	16QAM	25@0	6.08	13	PASS
13	10.0	23230	782.0	QPSK	50@0	5.38	13	PASS
13	10.0	23230	782.0	16QAM	50@0	6.14	13	PASS



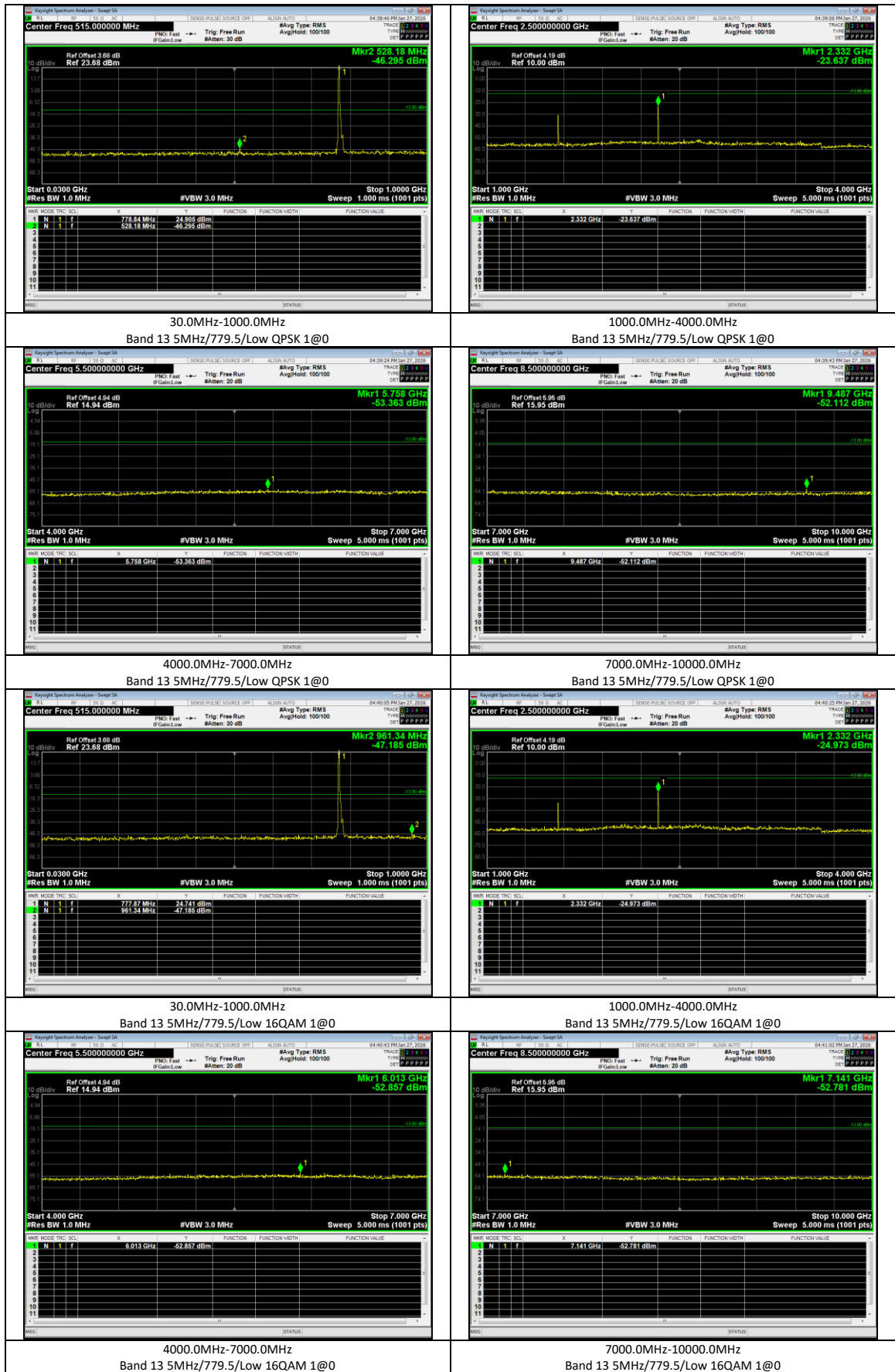
3. Occupied Bandwidth

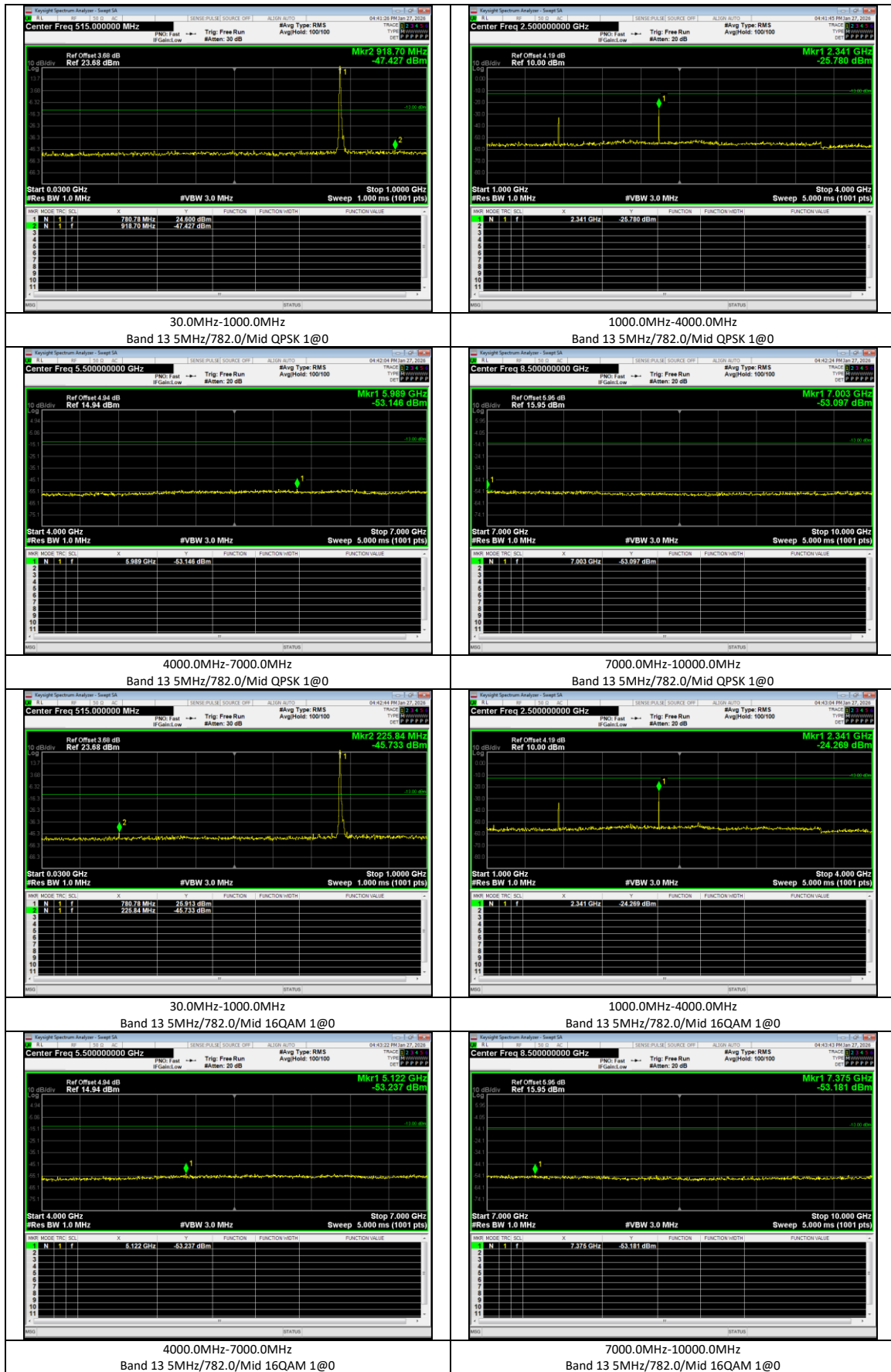
Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)	Verdict
13	5.0	23205	779.5	QPSK	25@0	4.4636	4.761	PASS
13	5.0	23205	779.5	16QAM	25@0	4.4717	4.805	PASS
13	5.0	23230	782.0	QPSK	25@0	4.4643	4.766	PASS
13	5.0	23230	782.0	16QAM	25@0	4.4566	4.827	PASS
13	5.0	23255	784.5	QPSK	25@0	4.4561	4.816	PASS
13	5.0	23255	784.5	16QAM	25@0	4.4641	4.822	PASS
13	10.0	23230	782.0	QPSK	50@0	8.9260	9.509	PASS
13	10.0	23230	782.0	16QAM	50@0	8.9295	9.462	PASS

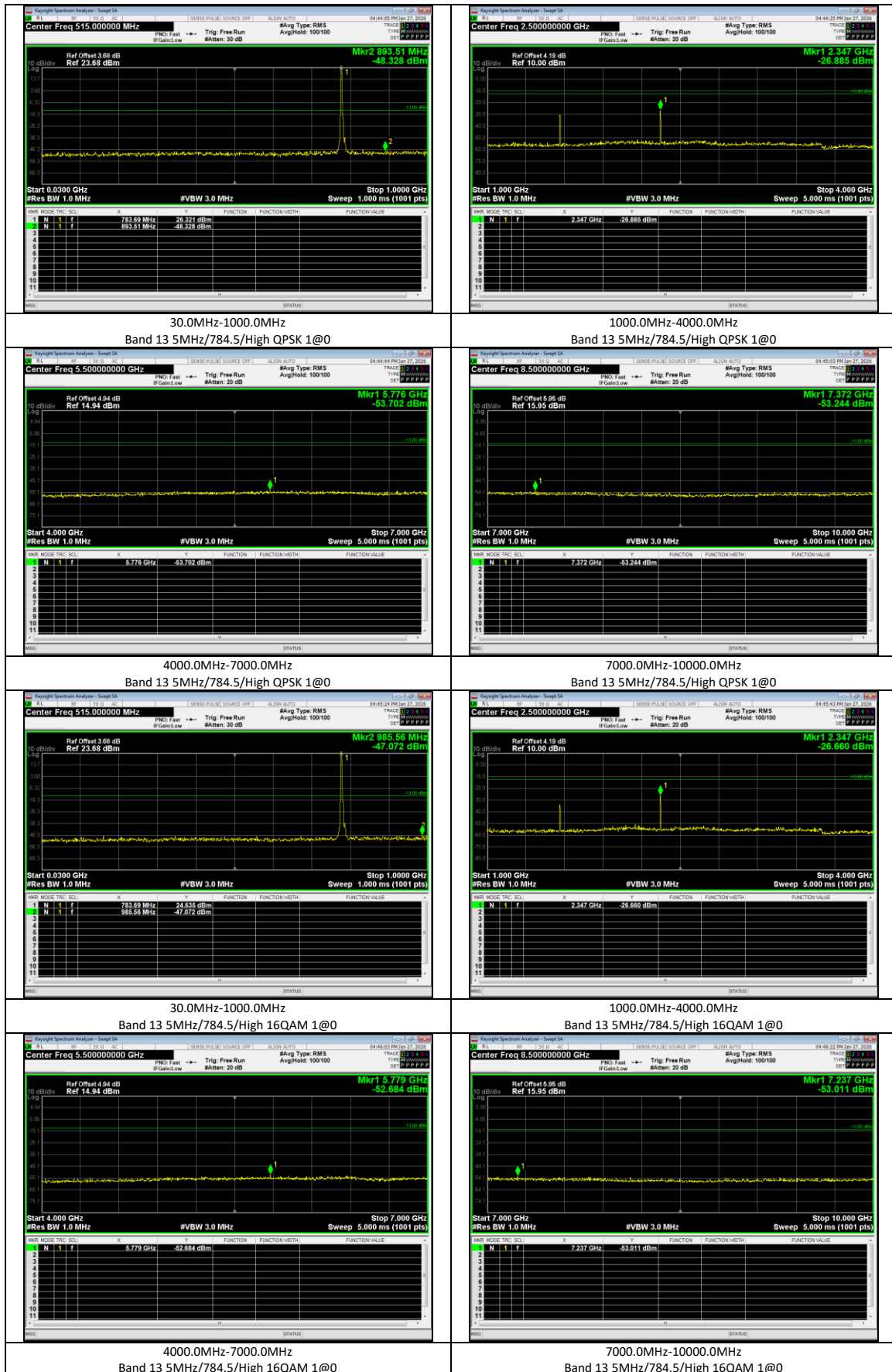


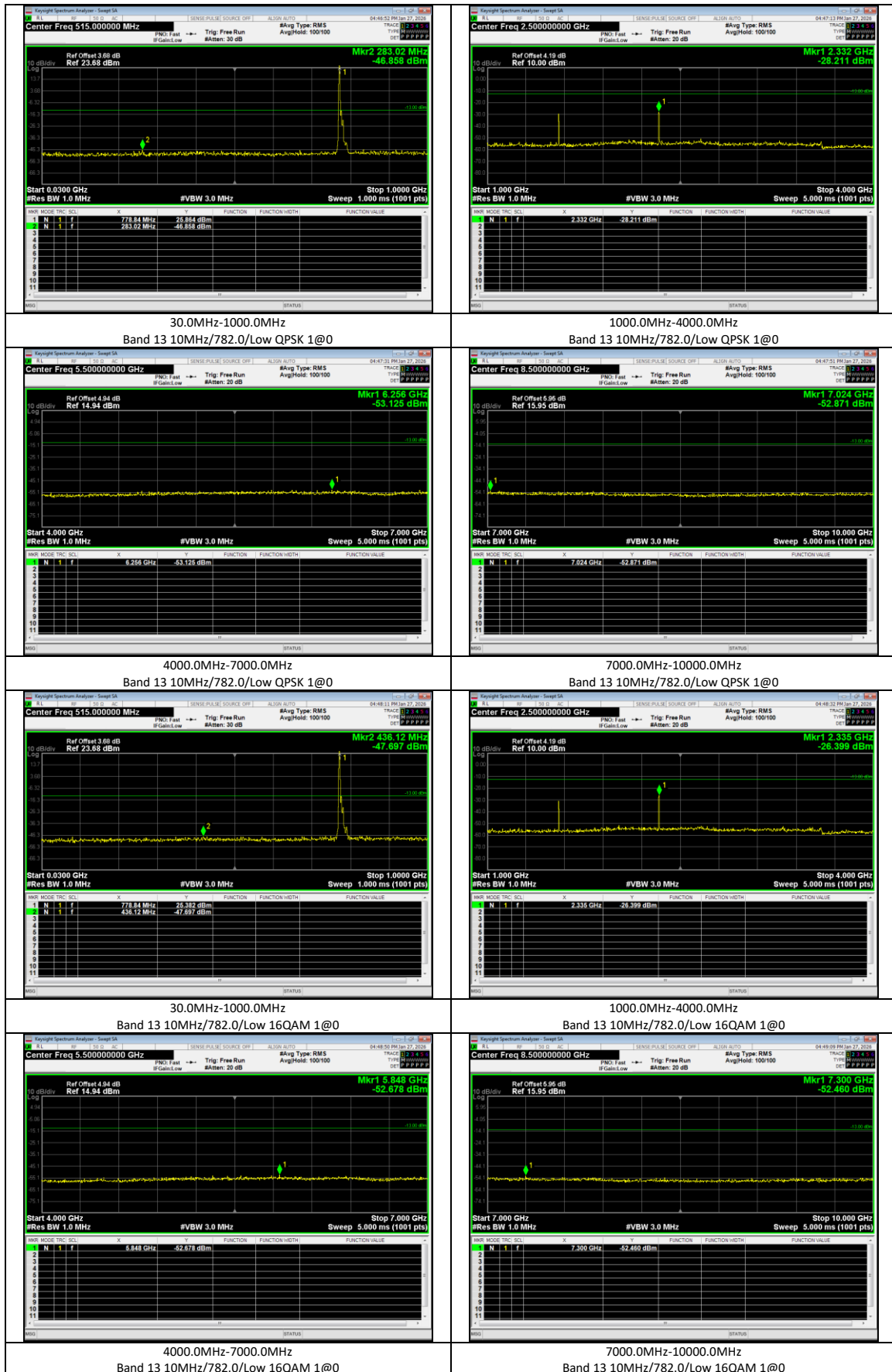
4. Unwanted Spurious Emission

Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	StartFreq (MHz)	StopFreq (MHz)	Result (dBm)	Limit (dBm)	Verdict
13	5.0	23205	779.5	QPSK	1@0	30	1000	-46.29	-13	PASS
13	5.0	23205	779.5	QPSK	1@0	1000	4000	-23.64	-13	PASS
13	5.0	23205	779.5	QPSK	1@0	4000	7000	-53.36	-13	PASS
13	5.0	23205	779.5	QPSK	1@0	7000	10000	-52.11	-13	PASS
13	5.0	23205	779.5	16QAM	1@0	30	1000	-46.74	-13	PASS
13	5.0	23205	779.5	16QAM	1@0	1000	4000	-24.97	-13	PASS
13	5.0	23205	779.5	16QAM	1@0	4000	7000	-52.86	-13	PASS
13	5.0	23205	779.5	16QAM	1@0	7000	10000	-52.78	-13	PASS
13	5.0	23230	782.0	QPSK	1@0	30	1000	-47.31	-13	PASS
13	5.0	23230	782.0	QPSK	1@0	1000	4000	-25.78	-13	PASS
13	5.0	23230	782.0	QPSK	1@0	4000	7000	-53.15	-13	PASS
13	5.0	23230	782.0	QPSK	1@0	7000	10000	-53.1	-13	PASS
13	5.0	23230	782.0	16QAM	1@0	30	1000	-45.73	-13	PASS
13	5.0	23230	782.0	16QAM	1@0	1000	4000	-24.27	-13	PASS
13	5.0	23230	782.0	16QAM	1@0	4000	7000	-53.24	-13	PASS
13	5.0	23230	782.0	16QAM	1@0	7000	10000	-53.18	-13	PASS
13	5.0	23255	784.5	QPSK	1@0	30	1000	-46.09	-13	PASS
13	5.0	23255	784.5	QPSK	1@0	1000	4000	-26.89	-13	PASS
13	5.0	23255	784.5	QPSK	1@0	4000	7000	-53.7	-13	PASS
13	5.0	23255	784.5	QPSK	1@0	7000	10000	-53.24	-13	PASS
13	5.0	23255	784.5	16QAM	1@0	30	1000	-46.91	-13	PASS
13	5.0	23255	784.5	16QAM	1@0	1000	4000	-26.66	-13	PASS
13	5.0	23255	784.5	16QAM	1@0	4000	7000	-52.68	-13	PASS
13	5.0	23255	784.5	16QAM	1@0	7000	10000	-53.01	-13	PASS
13	10.0	23230	782.0	QPSK	1@0	30	1000	-46.86	-13	PASS
13	10.0	23230	782.0	QPSK	1@0	1000	4000	-28.21	-13	PASS
13	10.0	23230	782.0	QPSK	1@0	4000	7000	-53.12	-13	PASS
13	10.0	23230	782.0	QPSK	1@0	7000	10000	-52.87	-13	PASS
13	10.0	23230	782.0	16QAM	1@0	30	1000	-47.7	-13	PASS
13	10.0	23230	782.0	16QAM	1@0	1000	4000	-26.4	-13	PASS
13	10.0	23230	782.0	16QAM	1@0	4000	7000	-52.68	-13	PASS
13	10.0	23230	782.0	16QAM	1@0	7000	10000	-52.46	-13	PASS



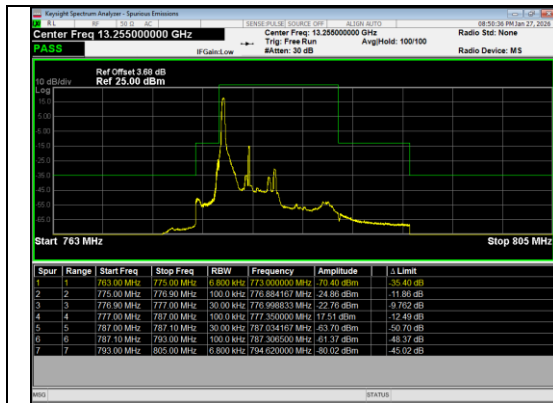




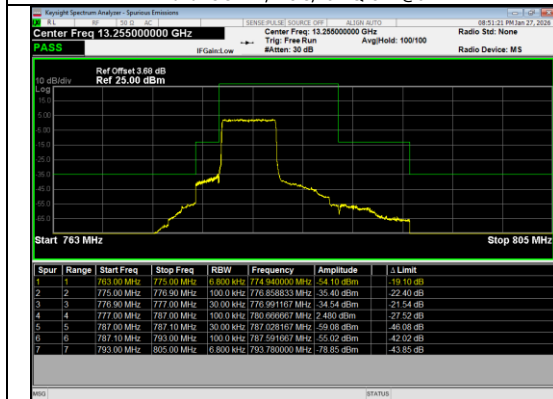


5. Band edge

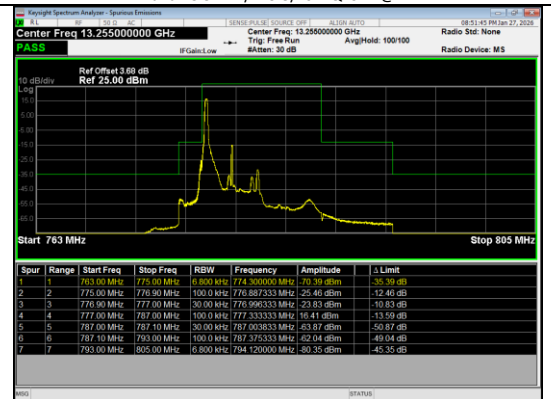
Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	Result	Verdict
13	5.0	23205	779.5	QPSK	1@0	see graph	PASS
13	5.0	23205	779.5	QPSK	1@24	see graph	PASS
13	5.0	23205	779.5	QPSK	25@0	see graph	PASS
13	5.0	23205	779.5	16QAM	1@0	see graph	PASS
13	5.0	23205	779.5	16QAM	1@24	see graph	PASS
13	5.0	23205	779.5	16QAM	25@0	see graph	PASS
13	5.0	23255	784.5	QPSK	1@0	see graph	PASS
13	5.0	23255	784.5	QPSK	1@24	see graph	PASS
13	5.0	23255	784.5	QPSK	25@0	see graph	PASS
13	5.0	23255	784.5	16QAM	1@0	see graph	PASS
13	5.0	23255	784.5	16QAM	1@24	see graph	PASS
13	5.0	23255	784.5	16QAM	25@0	see graph	PASS
13	10.0	23230	782.0	QPSK	1@0	see graph	PASS
13	10.0	23230	782.0	QPSK	1@49	see graph	PASS
13	10.0	23230	782.0	QPSK	50@0	see graph	PASS
13	10.0	23230	782.0	16QAM	1@0	see graph	PASS
13	10.0	23230	782.0	16QAM	1@49	see graph	PASS
13	10.0	23230	782.0	16QAM	50@0	see graph	PASS



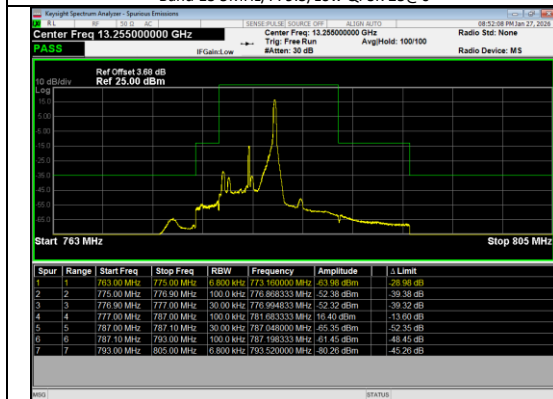
Band 13 5MHz/779.5/Low QPSK 1@0



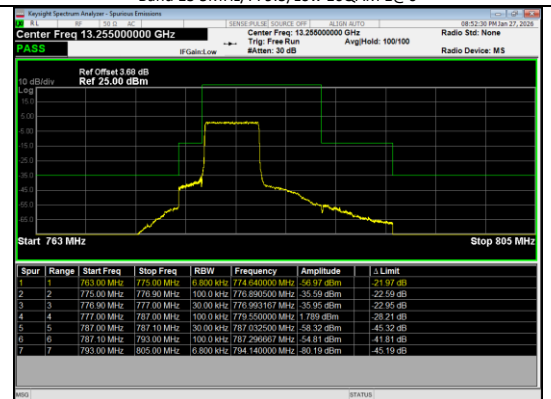
Band 13 5MHz/779.5/Low QPSK 1@24



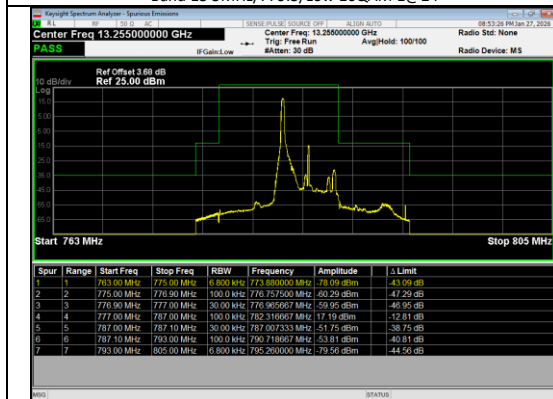
Band 13 5MHz/779.5/Low QPSK 25@0



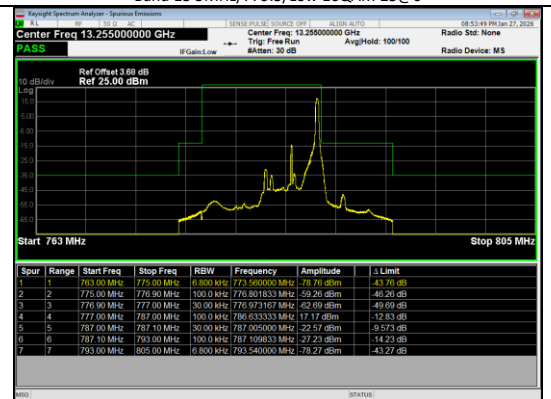
Band 13 5MHz/779.5/Low 16QAM 1@0



Band 13 5MHz/779.5/Low 16QAM 1@24

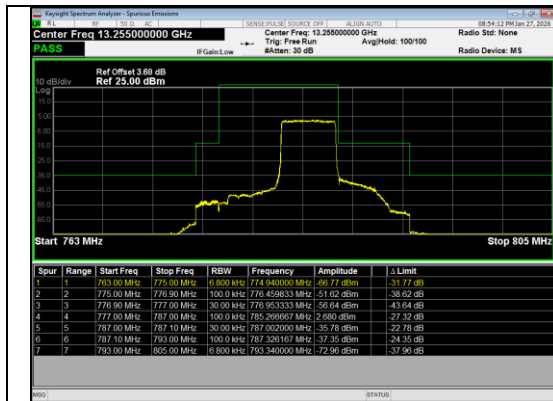


Band 13 5MHz/779.5/Low 16QAM 25@0

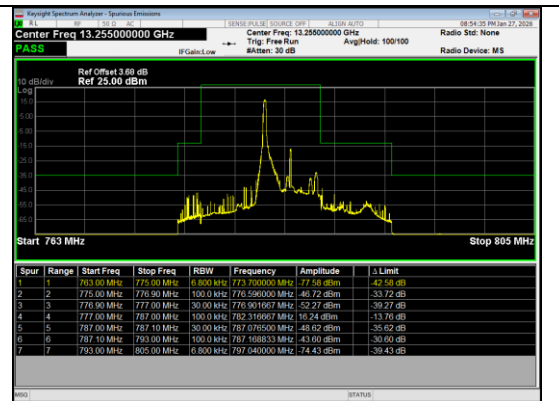
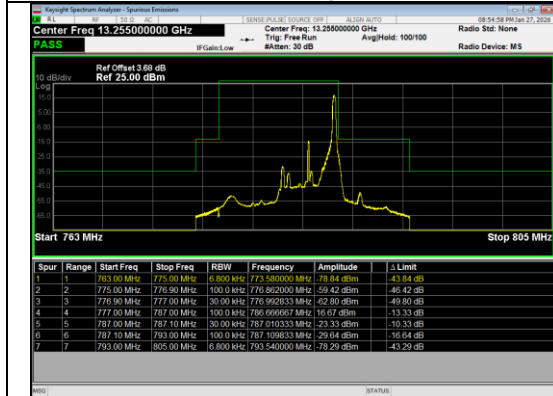


Band 13 5MHz/784.5/High QPSK 1@0

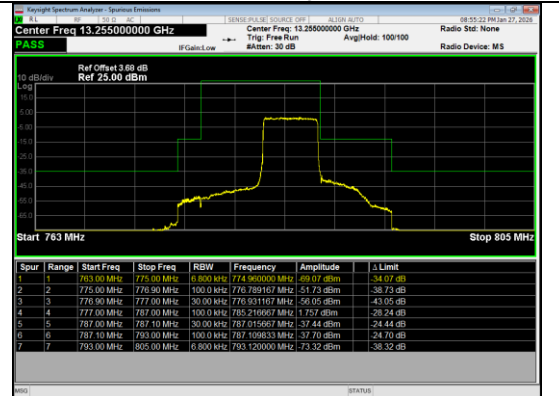
Band 13 5MHz/784.5/High QPSK 1@24



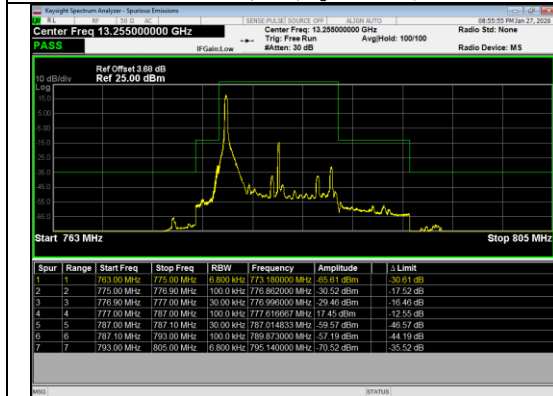
Band 13 5MHz/784.5/High QPSK 25@0



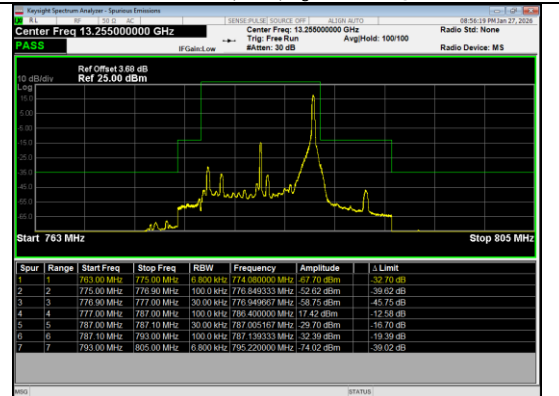
Band 13 5MHz/784.5/High 16QAM 1@0



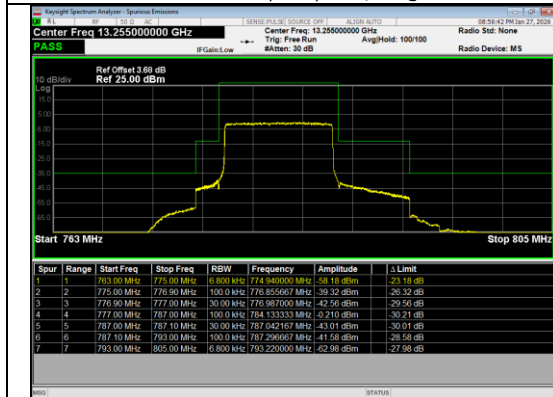
Band 13 5MHz/784.5/High 16QAM 1@24



Band 13 5MHz/784.5/High 16QAM 25@0

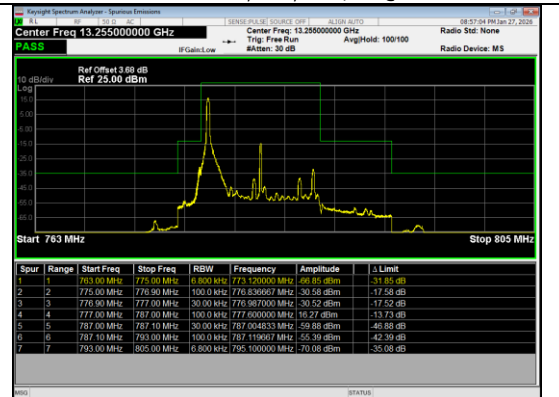


Band 13 10MHz/782.0/Low QPSK 1@0

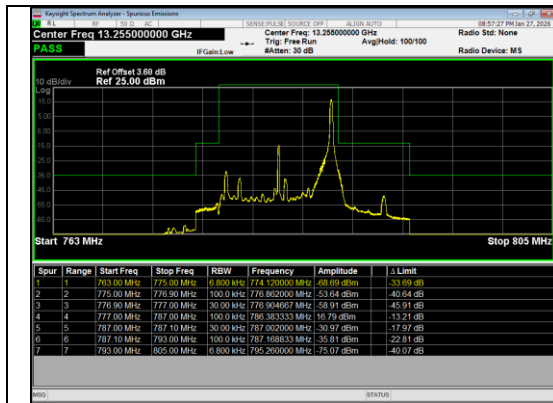


Band 13 10MHz/782.0/Low QPSK 50@0

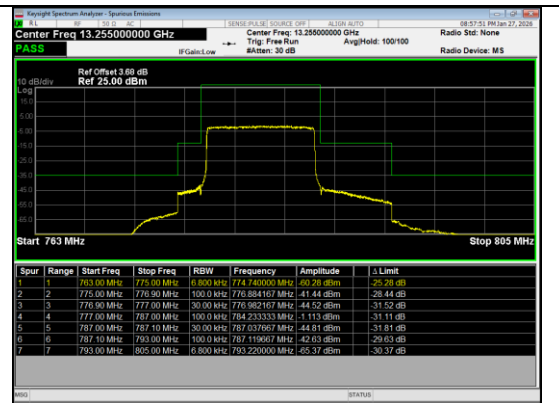
Band 13 10MHz/782.0/Low QPSK 1@49



Band 13 10MHz/782.0/Low 16QAM 1@0



Band 13 10MHz/782.0/Low 16QAM 1@49



Band 13 10MHz/782.0/Low 16QAM 50@0

6. Frequency Stability

Band	Bandwidth (MHz)	Channel	Freq (MHz)	Modulation	RB	Deviation (Hz)	Deviation (ppm)	Limit(ppm)	Verdict	Environment
13	10.0	23230	782.0	QPSK	50@0	1.12	0.00143	±2.5	PASS	TN/VN
13	10.0	23230	782.0	16QAM	50@0	-2.0	-0.00256	±2.5	PASS	TN/VN
13	10.0	23230	782.0	QPSK	50@0	-1.9	-0.00243	±2.5	PASS	TN/VL
13	10.0	23230	782.0	16QAM	50@0	-5.74	-0.00734	±2.5	PASS	TN/VL
13	10.0	23230	782.0	QPSK	50@0	2.47	0.00316	±2.5	PASS	TN/VH
13	10.0	23230	782.0	16QAM	50@0	0.32	0.00041	±2.5	PASS	TN/VH
13	10.0	23230	782.0	QPSK	50@0	-2.45	-0.00313	±2.5	PASS	-30°C/VN
13	10.0	23230	782.0	16QAM	50@0	-2.11	-0.00270	±2.5	PASS	-30°C/VN
13	10.0	23230	782.0	QPSK	50@0	2.35	0.00301	±2.5	PASS	-20°C/VN
13	10.0	23230	782.0	16QAM	50@0	3.56	0.00455	±2.5	PASS	-20°C/VN
13	10.0	23230	782.0	QPSK	50@0	-2.48	-0.00317	±2.5	PASS	-10°C/VN
13	10.0	23230	782.0	16QAM	50@0	4.78	0.00611	±2.5	PASS	-10°C/VN
13	10.0	23230	782.0	QPSK	50@0	-1.83	-0.00234	±2.5	PASS	0°C/VN
13	10.0	23230	782.0	16QAM	50@0	3.89	0.00497	±2.5	PASS	0°C/VN
13	10.0	23230	782.0	QPSK	50@0	-2.94	-0.00376	±2.5	PASS	10°C/VN
13	10.0	23230	782.0	16QAM	50@0	-5.32	-0.00680	±2.5	PASS	10°C/VN
13	10.0	23230	782.0	QPSK	50@0	4.38	0.00560	±2.5	PASS	20°C/VN
13	10.0	23230	782.0	16QAM	50@0	-6.32	-0.00808	±2.5	PASS	20°C/VN
13	10.0	23230	782.0	QPSK	50@0	4.19	0.00536	±2.5	PASS	30°C/VN
13	10.0	23230	782.0	16QAM	50@0	-2.82	-0.00361	±2.5	PASS	30°C/VN
13	10.0	23230	782.0	QPSK	50@0	1.87	0.00239	±2.5	PASS	40°C/VN
13	10.0	23230	782.0	16QAM	50@0	4.15	0.00531	±2.5	PASS	40°C/VN
13	10.0	23230	782.0	QPSK	50@0	-2.49	-0.00318	±2.5	PASS	50°C/VN
13	10.0	23230	782.0	16QAM	50@0	3.32	0.00425	±2.5	PASS	50°C/VN