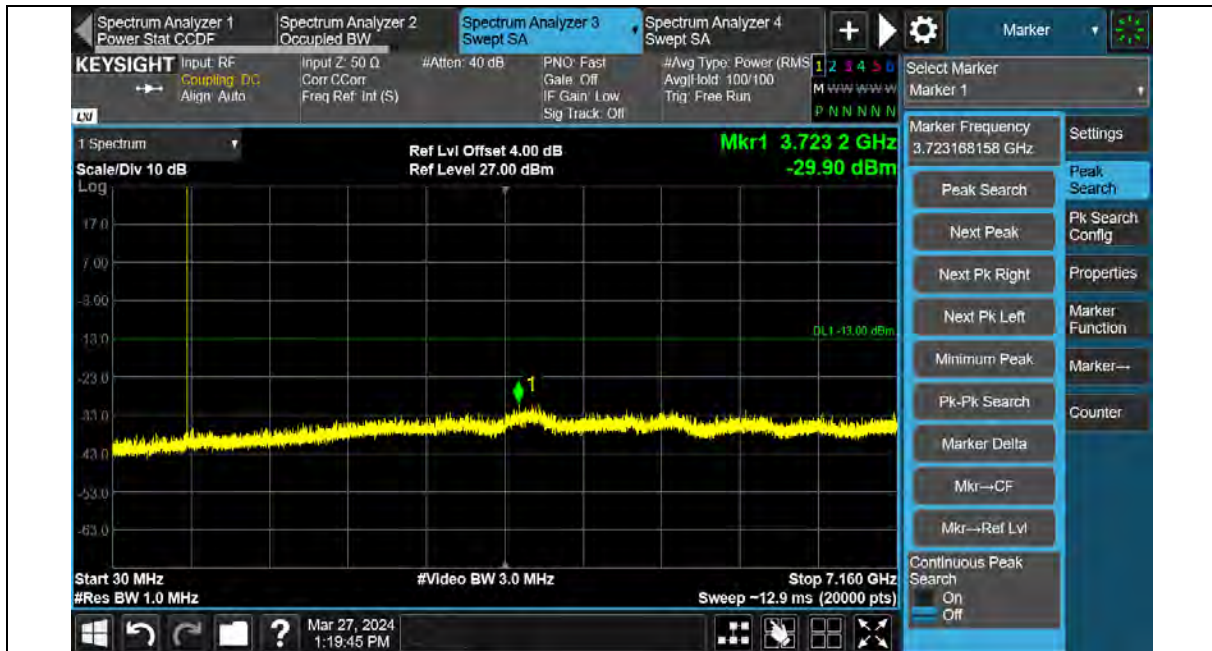


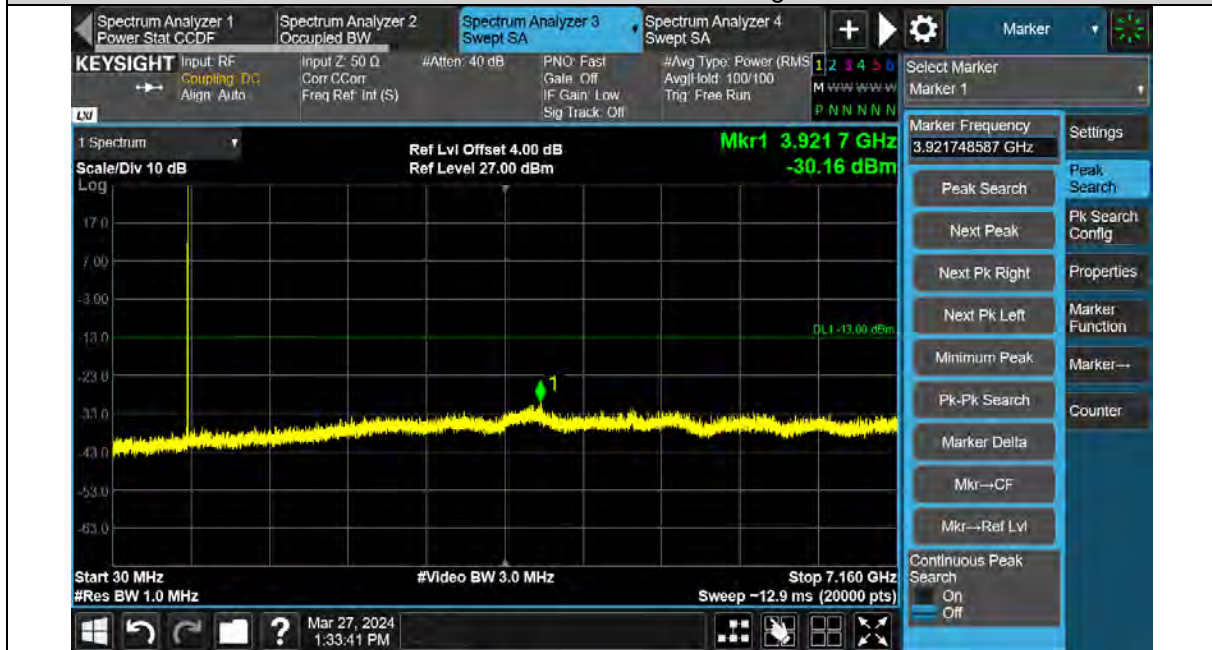


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Test Report No.: W7L-240204W001RF03



Band12-5MHz-16QAM-23155-1RB#0-Range:30~7160MH

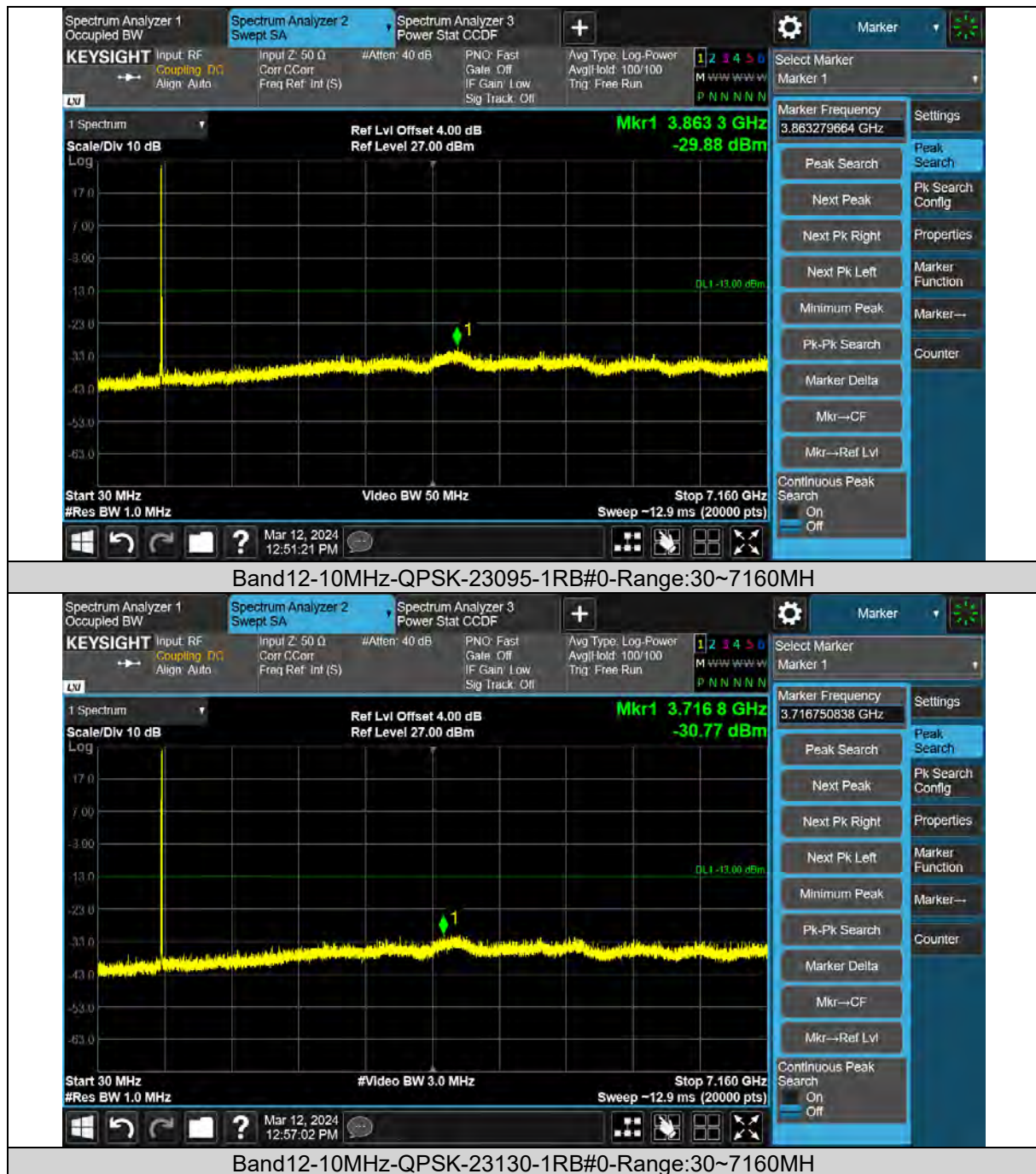


Band12-10MHz-QPSK-23060-1RB#0-Range:30~7160MH



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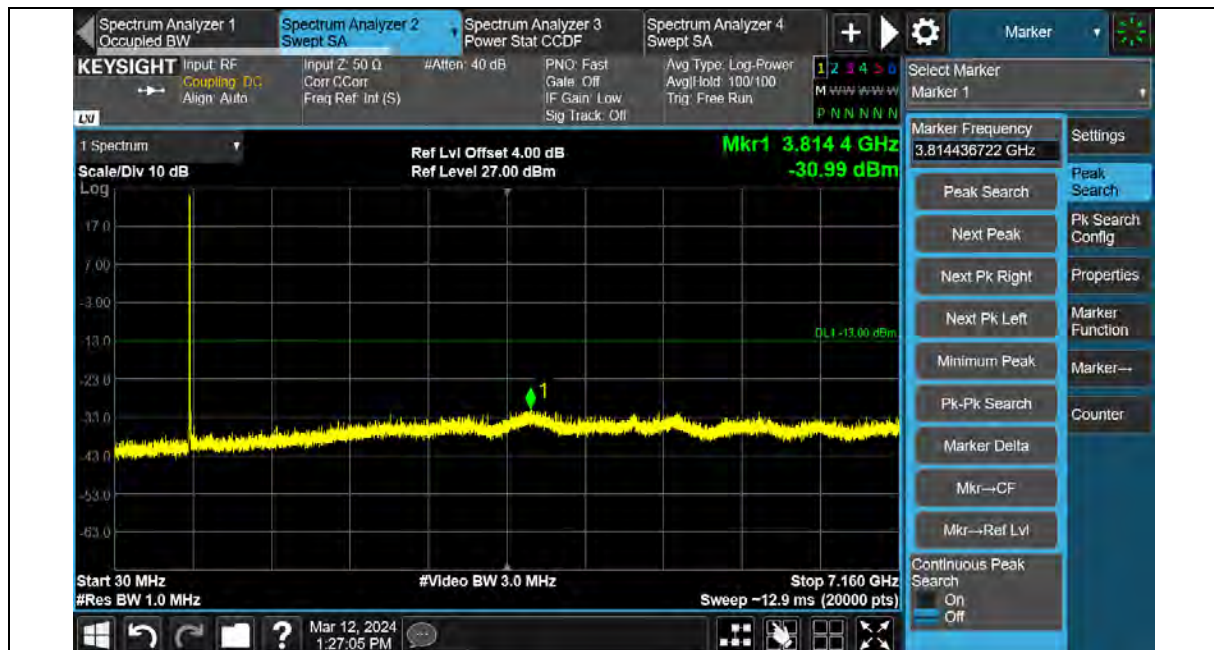
Test Report No.: W7L-240204W001RF03



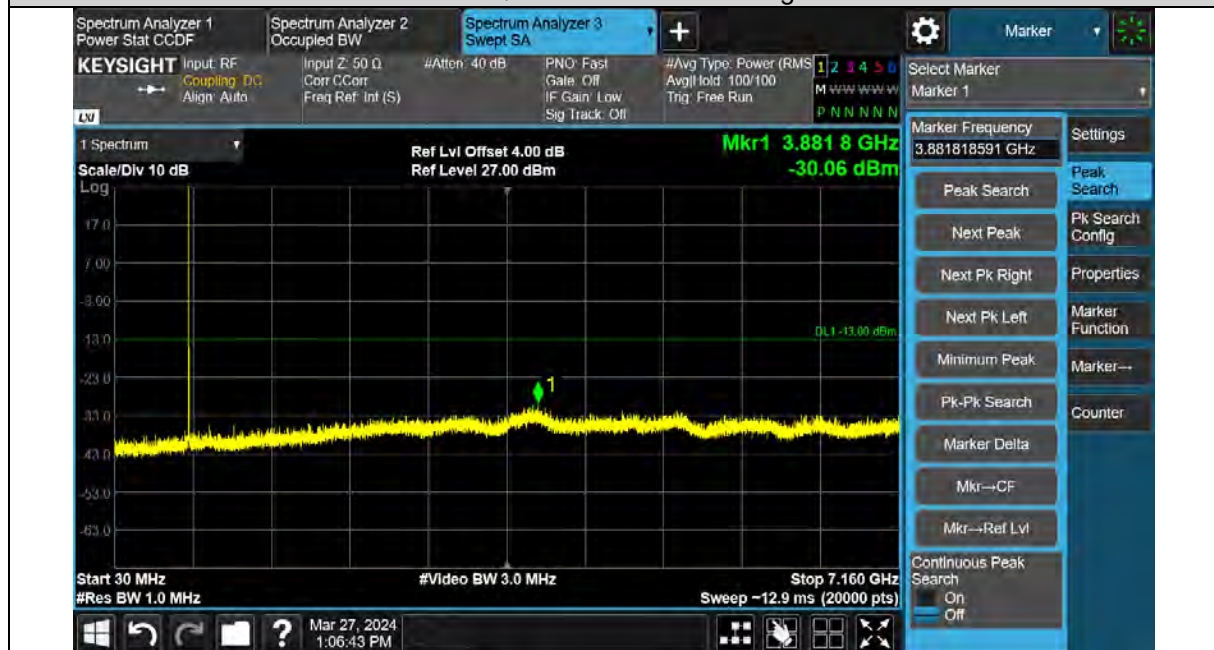


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Test Report No.: W7L-240204W001RF03



Band12-10MHz-16QAM-23060-1RB#0-Range:30~7160MH

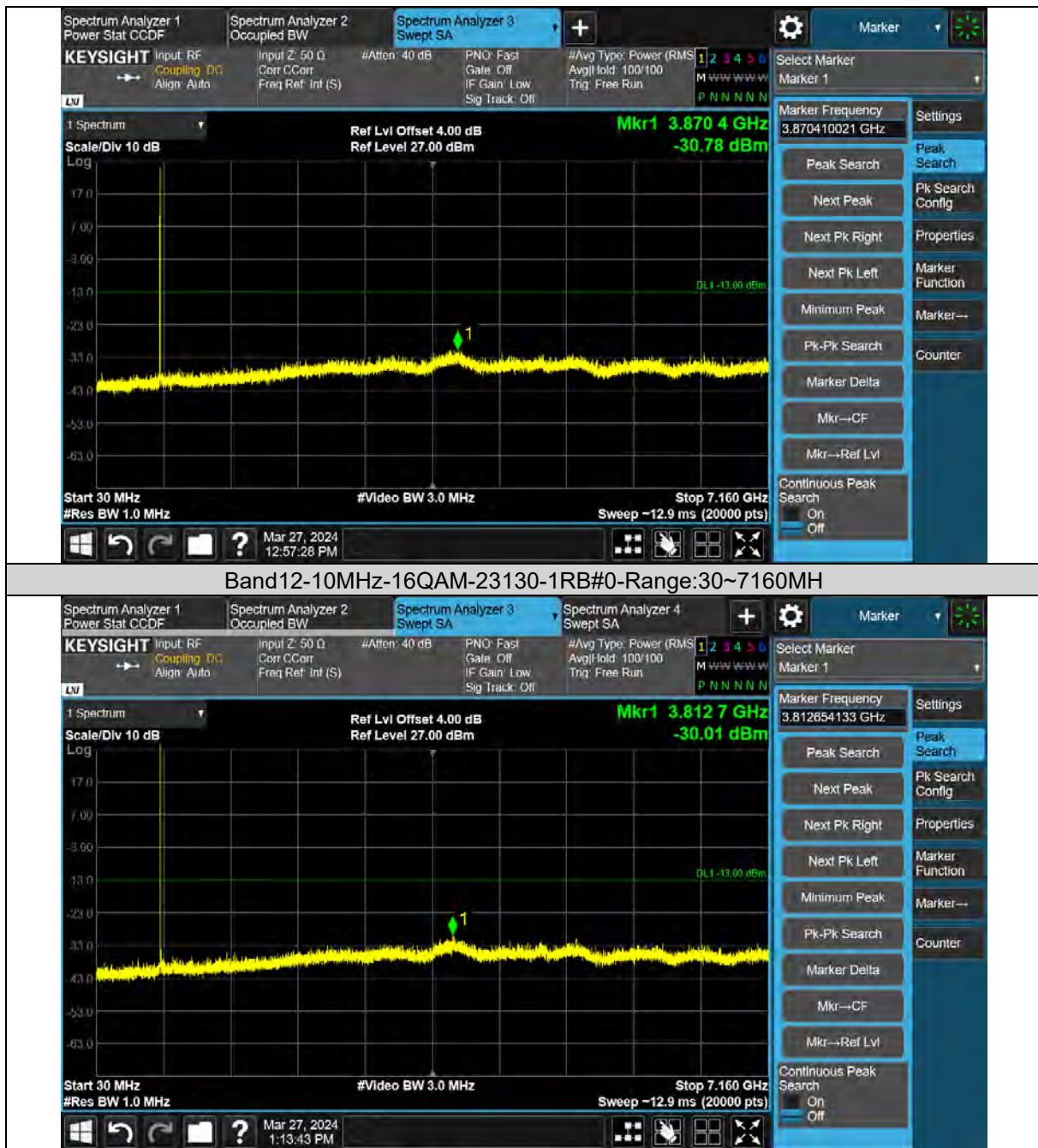


Band12-10MHz-16QAM-23095-1RB#0-Range:30~7160MH



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Test Report No.: W7L-240204W001RF03



FREQUENCY STABILITY

Test Result

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band12	10MHz	QPSK	23060	6RB#0	VL	NT	11.5	0.016335	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	VN	NT	-5.2	-0.007386	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	VH	NT	-2.6	-0.003693	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	VL	NT	-2.5	-0.003534	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	VN	NT	-0.7	-0.000989	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	VH	NT	-3.3	-0.004664	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	VL	NT	-1.6	-0.002250	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	VN	NT	-2.8	-0.003938	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	VH	NT	-13.5	-0.018987	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	VL	NT	11.1	0.015767	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	VN	NT	-3.5	-0.004972	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	VH	NT	-13.9	-0.019744	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	VL	NT	5.6	0.007915	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	VN	NT	7.1	0.010035	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	VH	NT	0.3	0.000424	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	VL	NT	-12.9	-0.018143	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	VN	NT	-8	-0.011252	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	VH	NT	-9.7	-0.013643	±2.5	PASS

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band12	10MHz	QPSK	23060	6RB#0	NV	-30	-12.2	-0.017330	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	-20	-0.1	-0.000142	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	-10	19.9	0.028267	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	0	-8.4	-0.011932	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	10	-24.9	-0.035369	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	20	-16.9	-0.024006	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	30	12.2	0.017330	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	40	-20.1	-0.028551	±2.5	PASS
Band12	10MHz	QPSK	23060	6RB#0	NV	50	-14.6	-0.020636	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	-30	10.1	0.014276	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	-20	5.8	0.008198	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	-10	20.8	0.029399	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	0	17.5	0.024735	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	10	-11.7	-0.016537	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	20	-16.4	-0.023180	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	30	4.2	0.005936	±2.5	PASS
Band12	10MHz	QPSK	23095	6RB#0	NV	40	-9	-0.012658	±2.5	PASS

Band12	10MHz	QPSK	23095	6RB#0	NV	50	-11.9	-0.016737	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	-30	6.7	0.009423	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	-20	-15.4	-0.021660	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	-10	-17.9	-0.025176	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	0	20	0.028129	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	10	3.7	0.005204	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	20	7.2	0.010127	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	30	-11.4	-0.016193	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	40	-3.2	-0.004545	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	50	12	0.017045	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	-30	-9.7	-0.013778	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	-20	-11.2	-0.015909	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	-10	-12.4	-0.017614	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	0	-6.6	-0.009375	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	10	-13.6	-0.019318	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	20	18.4	0.026007	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	30	-17.4	-0.024594	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	40	7.5	0.010601	±2.5	PASS
Band12	10MHz	16QAM	23060	6RB#0	NV	50	23.2	0.032792	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	-30	-2.3	-0.003251	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	-20	-2.5	-0.003534	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	-10	-4	-0.005654	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	0	-15.6	-0.022049	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	10	14.5	0.020394	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	20	-17.8	-0.025035	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	30	23	0.032349	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	40	1.9	0.002672	±2.5	PASS
Band12	10MHz	16QAM	23095	6RB#0	NV	50	6.3	0.008861	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	NV	-30	-2.3	-0.003235	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	NV	-20	15.6	0.021941	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	NV	-10	17.9	0.025176	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	NV	0	11.1	0.015612	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	NV	10	4.7	0.006610	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	NV	20	-16.7	-0.023488	±2.5	PASS
Band12	10MHz	16QAM	23130	6RB#0	NV	30	7.2	0.010127	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	40	14.6	0.020534	±2.5	PASS
Band12	10MHz	QPSK	23130	6RB#0	NV	50	4	0.005626	±2.5	PASS



Test Report No.: W7L-240204W001RF03

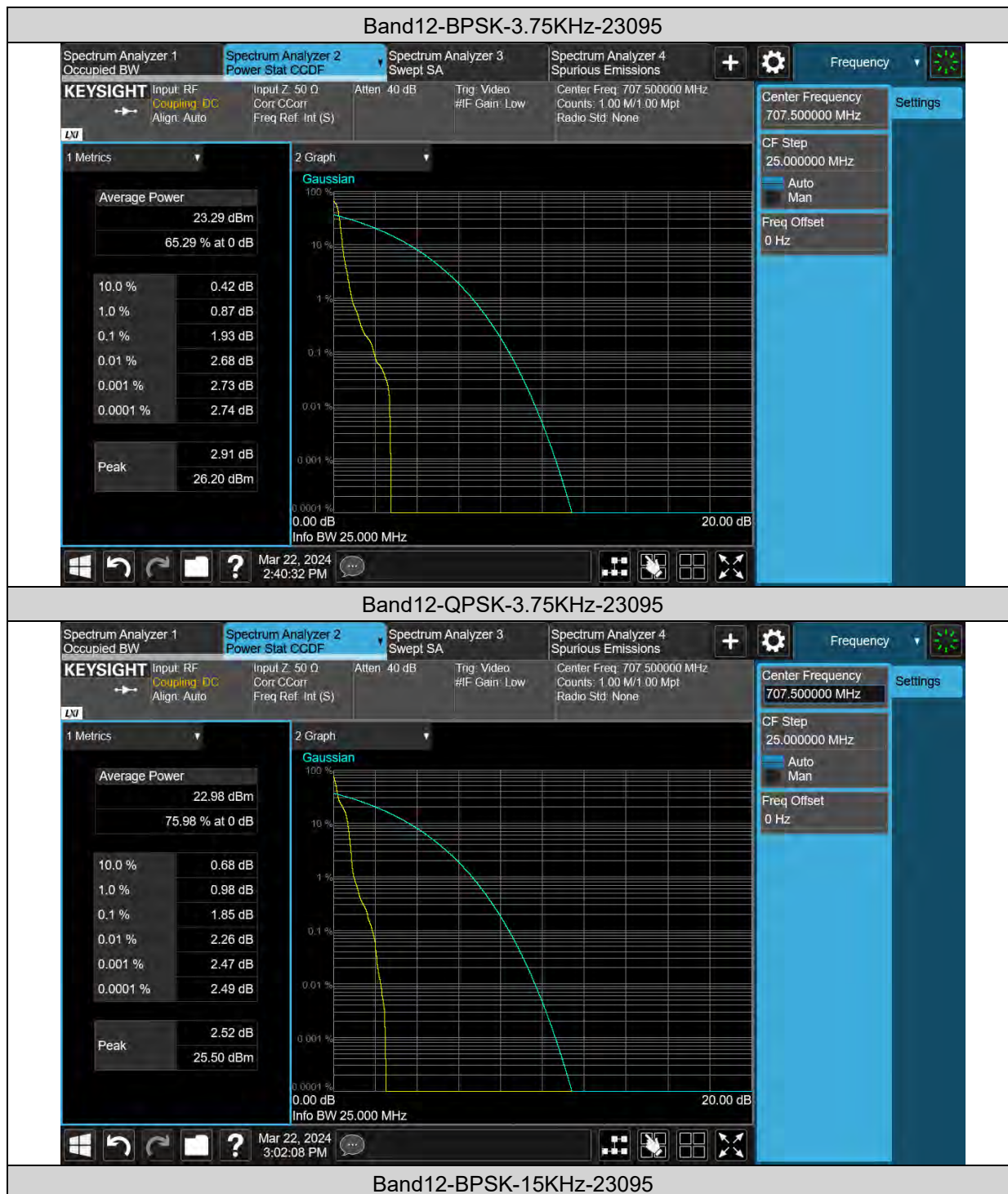
NB-IOT: LTE BAND12

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Result(dB)	Limit(dB)	Verdict
Band12	BPSK	3.75	23095	1.93	13	PASS
	QPSK	3.75	23095	1.85	13	PASS
	BPSK	15	23095	2.05	13	PASS
	QPSK	15	23095	2.08	13	PASS

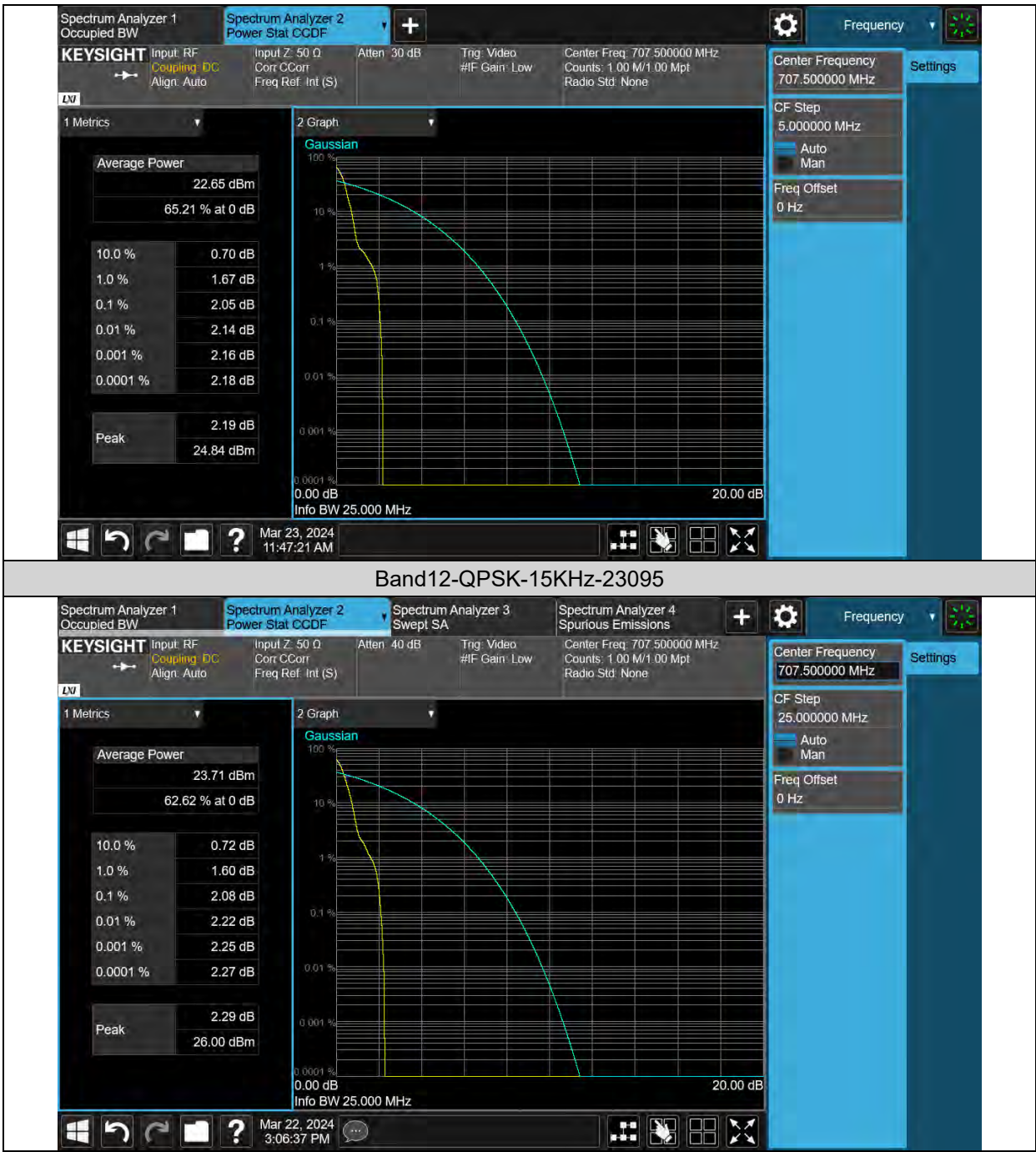
Test Graphs





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Test Report No.: W7L-240204W001RF03



26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Verdict
Band12	BPSK	3.75	23012	1RB#0	44.487	31.44	PASS
Band12	BPSK	3.75	23095	1RB#0	69.093	31.58	PASS
Band12	BPSK	3.75	23178	1RB#0	41.305	31.64	PASS
Band12	QPSK	3.75	23012	1RB#0	96.454	35.37	PASS
Band12	QPSK	3.75	23095	1RB#0	69.680	31.86	PASS
Band12	QPSK	3.75	23178	1RB#0	43.784	34.55	PASS
Band12	BPSK	15	23012	1RB#0	110.37	100.9	PASS
Band12	BPSK	15	23095	1RB#0	132.45	74.36	PASS
Band12	BPSK	15	23178	1RB#0	109.05	103.5	PASS
Band12	QPSK	15	23012	1RB#0	122.62	129.1	PASS
Band12	QPSK	15	23095	1RB#0	110.42	103.8	PASS
Band12	QPSK	15	23178	1RB#0	109.94	104.1	PASS
Band12	QPSK	15	23012	112RB#0	190.48	210.6	PASS
Band12	QPSK	15	23095	112RB#0	189.50	209.6	PASS
Band12	QPSK	15	23178	112RB#0	190.55	211.0	PASS

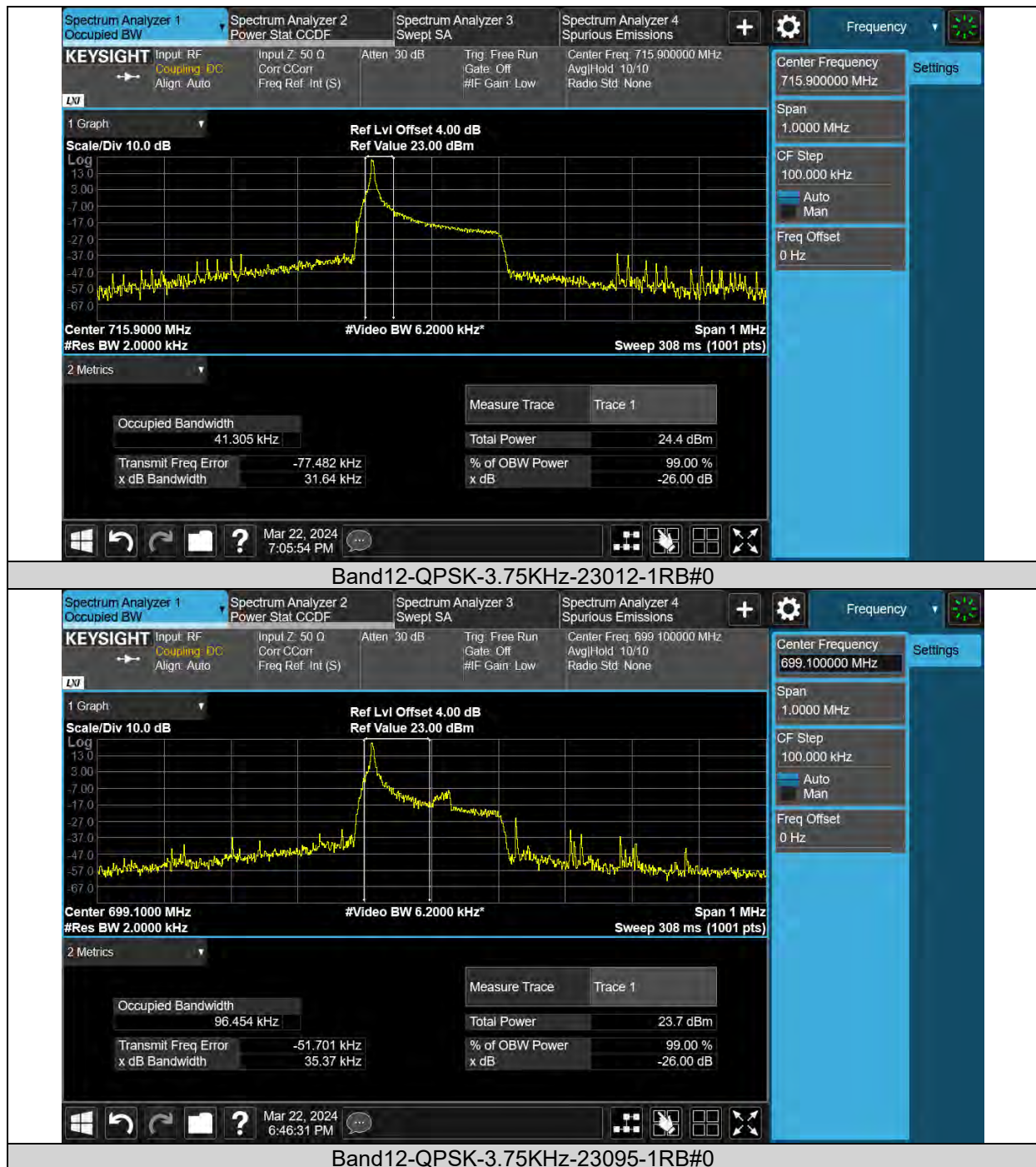
Test Graphs





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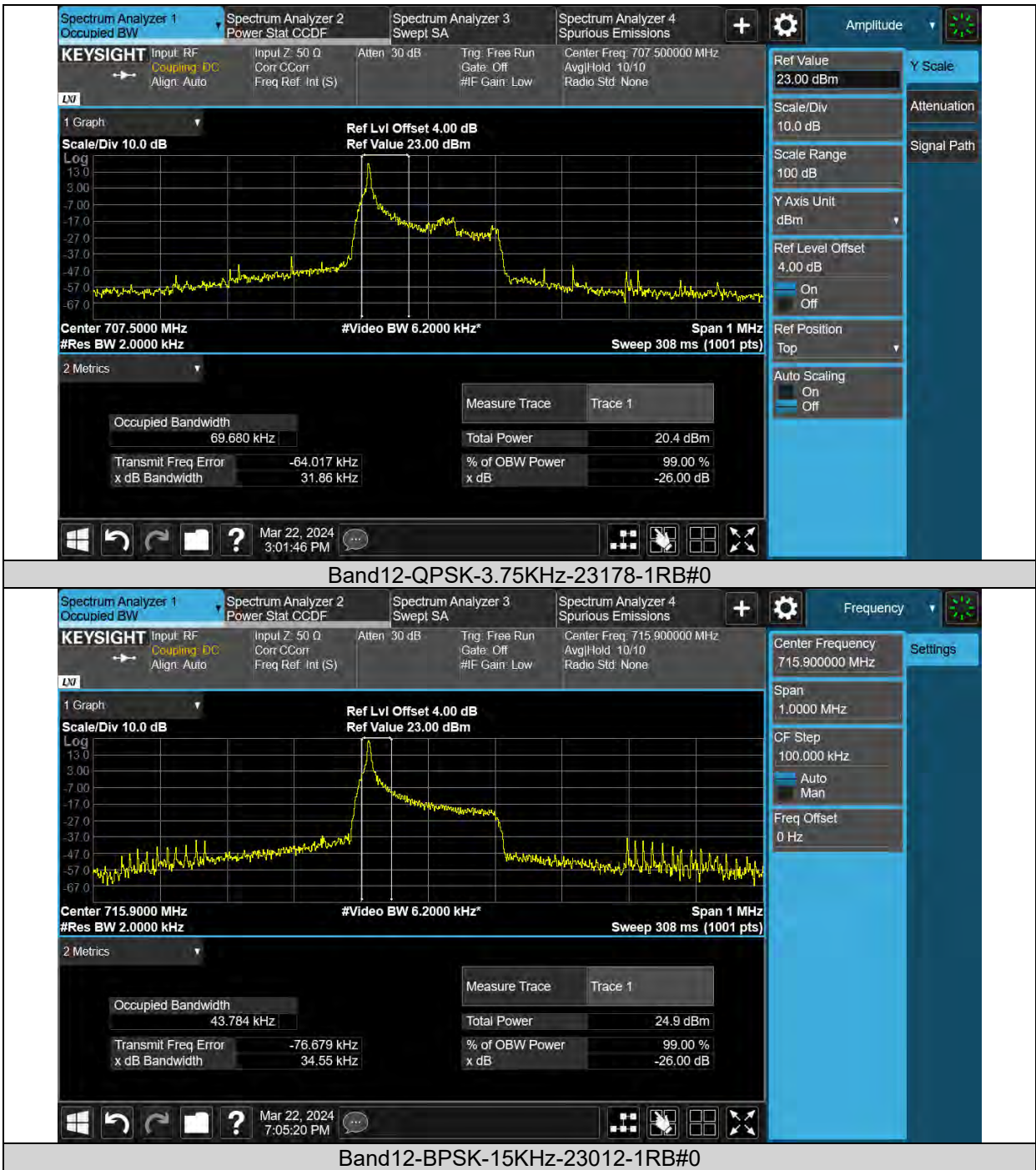
Test Report No.: W7L-240204W001RF03





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Test Report No.: W7L-240204W001RF03







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Test Report No.: W7L-240204W001RF03





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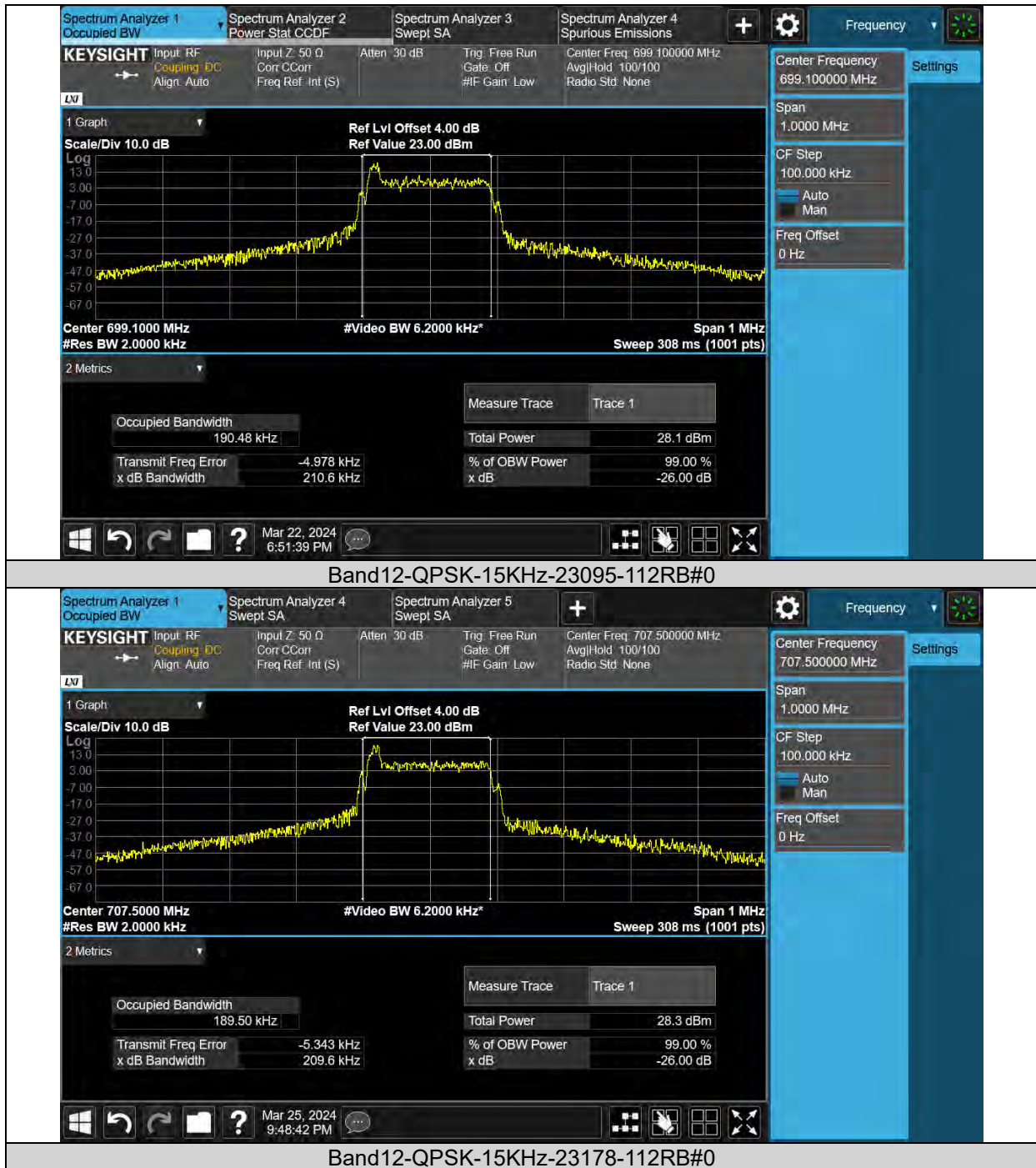
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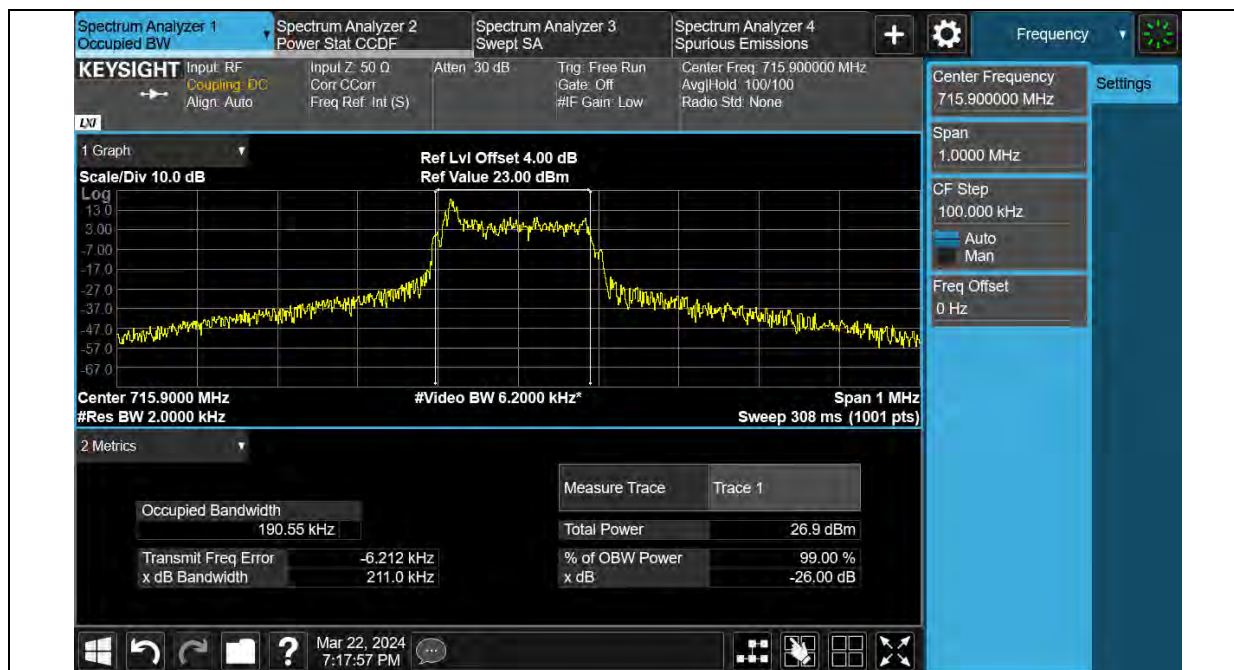




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Test Report No.: W7L-240204W001RF03



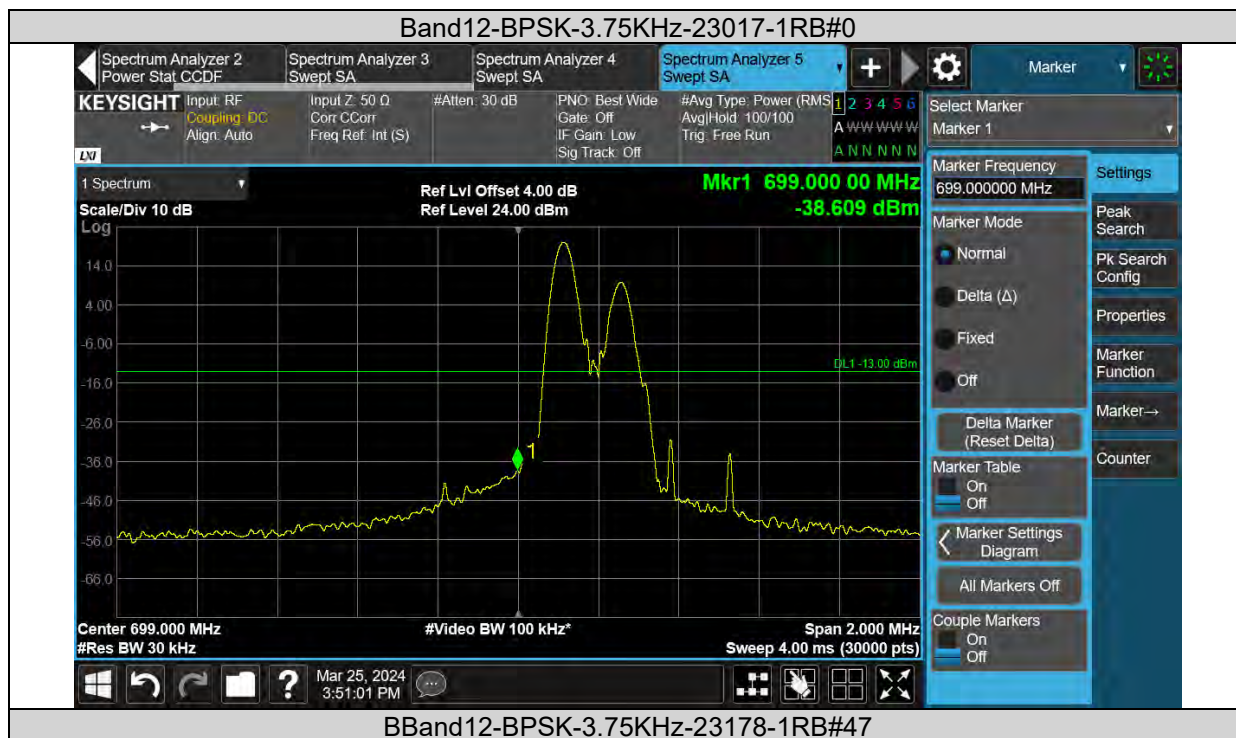


BAND EDGE

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Result(dBm)	Verdict
Band12	BPSK	3.75	23012	1RB#0	See Graph	PASS
Band12	BPSK	3.75	23178	1RB#47	See Graph	PASS
Band12	QPSK	3.75	23012	1RB#0	See Graph	PASS
Band12	QPSK	3.75	23178	1RB#47	See Graph	PASS
Band12	BPSK	15	23012	1RB#0	See Graph	PASS
Band12	BPSK	15	23178	1RB#11	See Graph	PASS
Band12	QPSK	15	23012	1RB#0	See Graph	PASS
Band12	QPSK	15	23178	1RB#11	See Graph	PASS
Band12	QPSK	15	23012	112RB#0	See Graph	PASS
Band12	QPSK	15	23178	112RB#0	See Graph	PASS

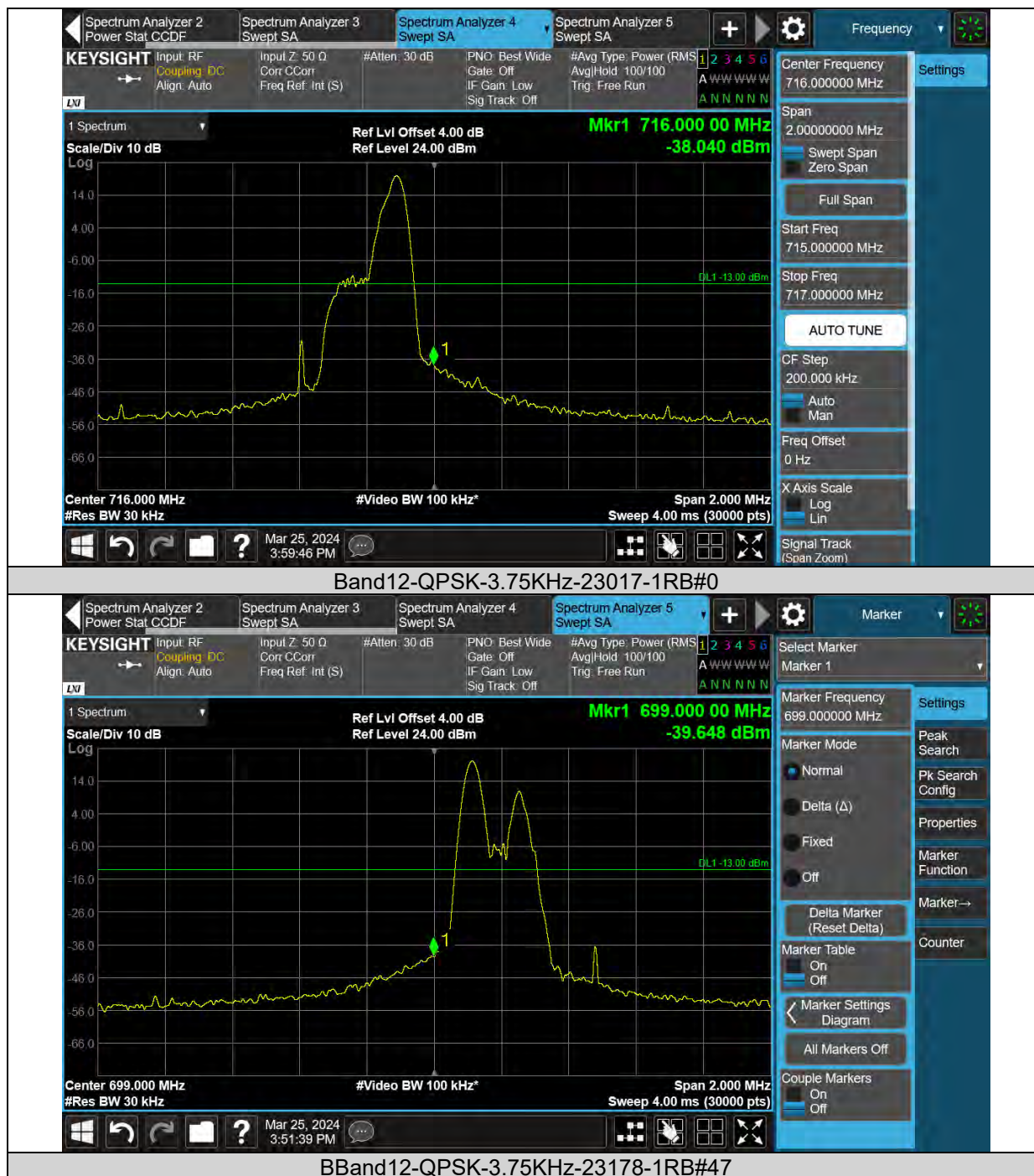
Test Graphs





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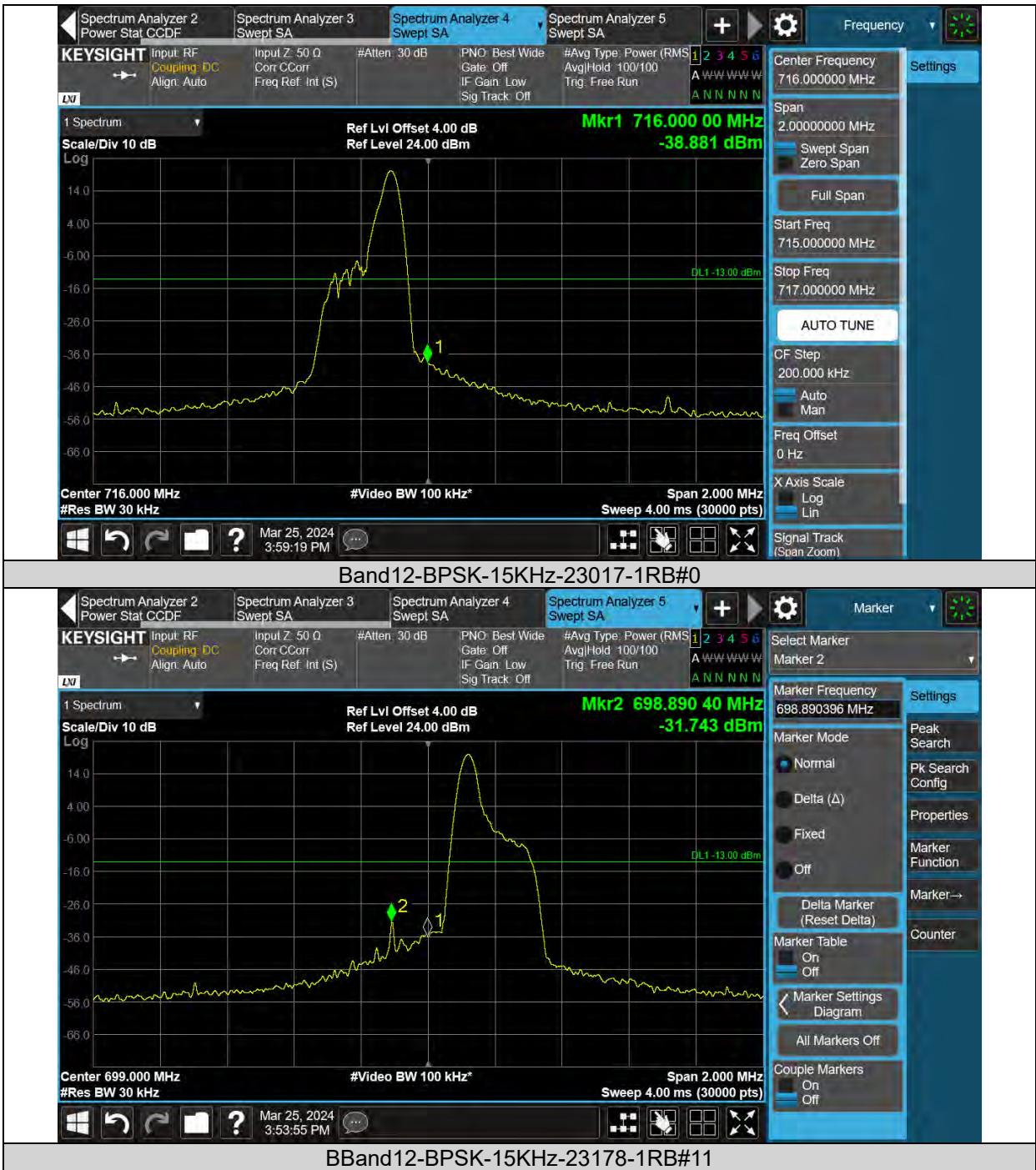
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Test Report No.: W7L-240204W001RF03





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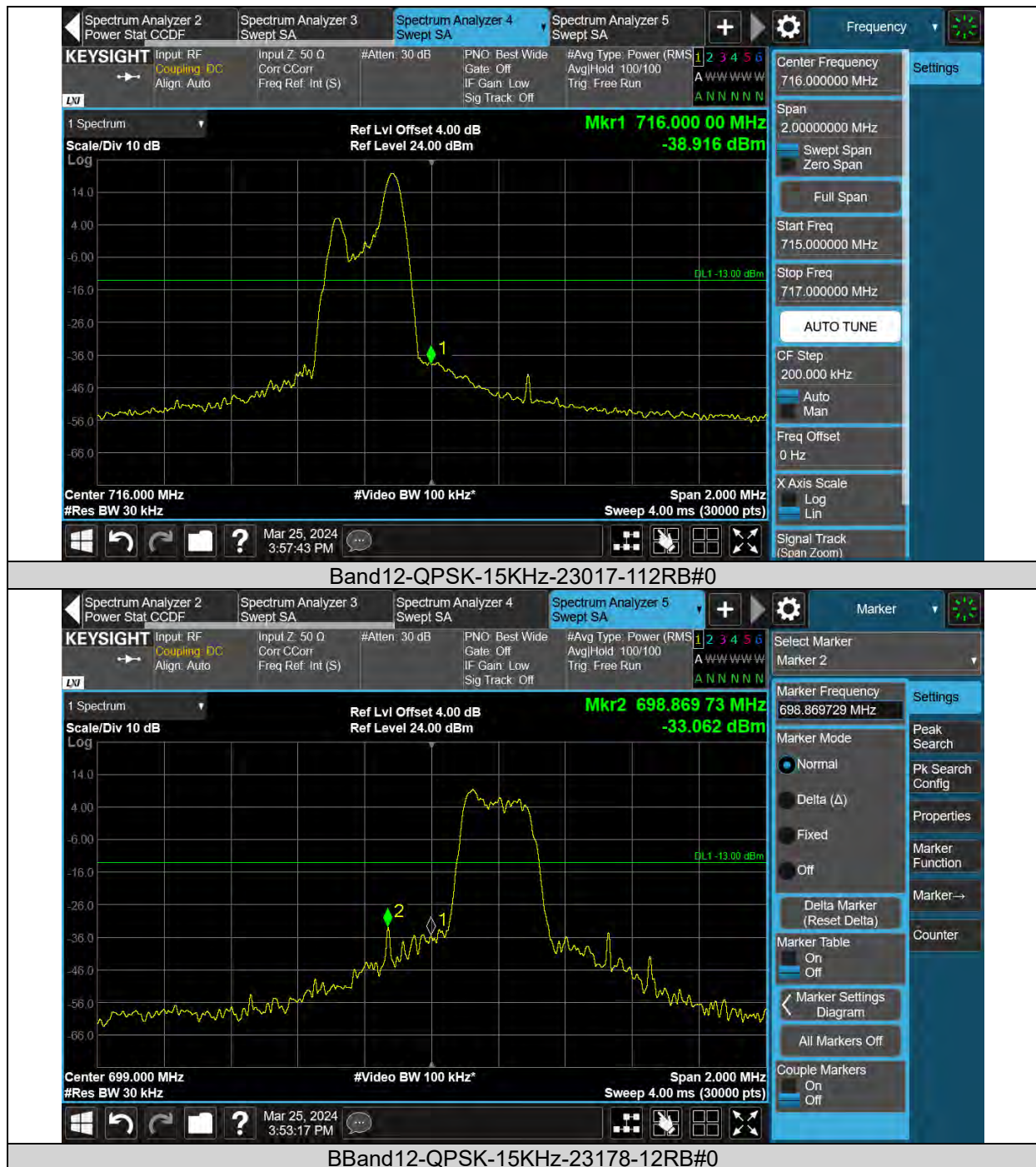
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Test Report No.: W7L-240204W001RF03



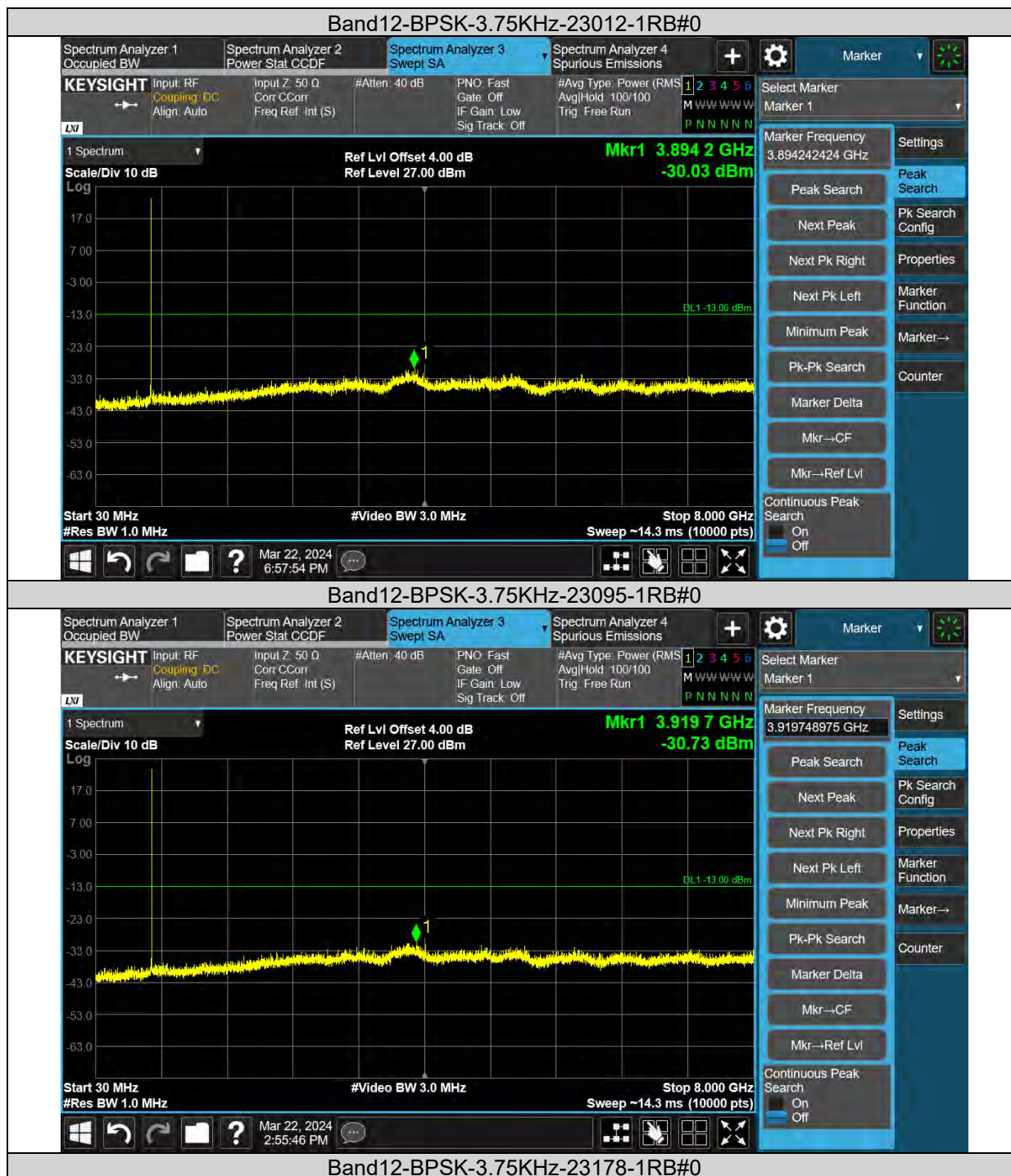


CONDUCTED SPURIOUS EMISSION

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Frequency Range	Result (dBm)	Verdict
Band12	BPSK	3.75	23012	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	BPSK	3.75	23095	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	BPSK	3.75	23178	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	3.75	23012	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	3.75	23095	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	3.75	23178	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	BPSK	15	23012	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	BPSK	15	23095	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	BPSK	15	23178	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	15	23012	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	15	23095	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	15	23178	1RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	15	23012	112RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	15	23095	112RB#0	Range:30M-8000M	See Graph	PASS
Band12	QPSK	15	23178	112RB#0	Range:30M-8000M	See Graph	PASS

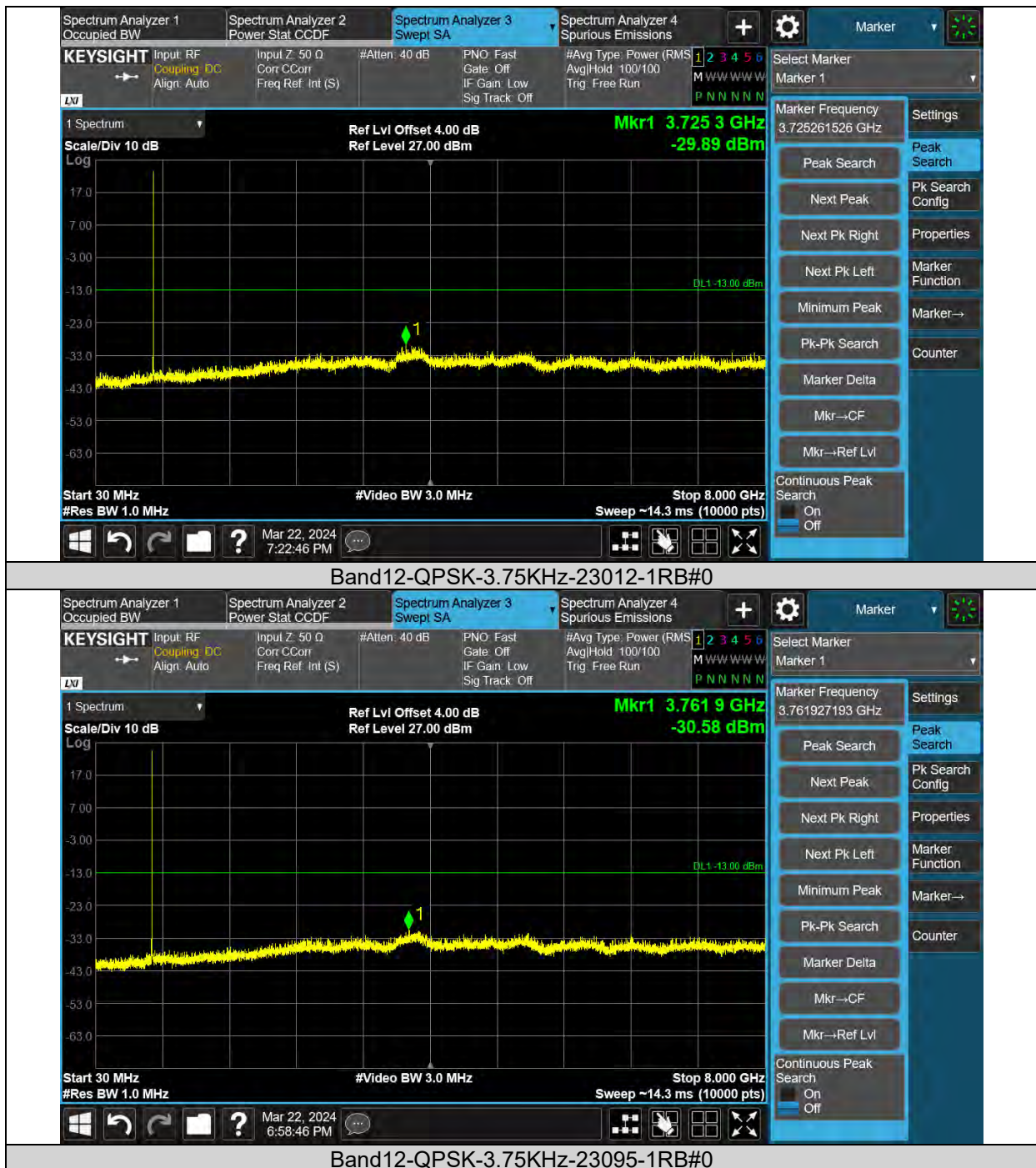
Test Graphs





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VERITAS

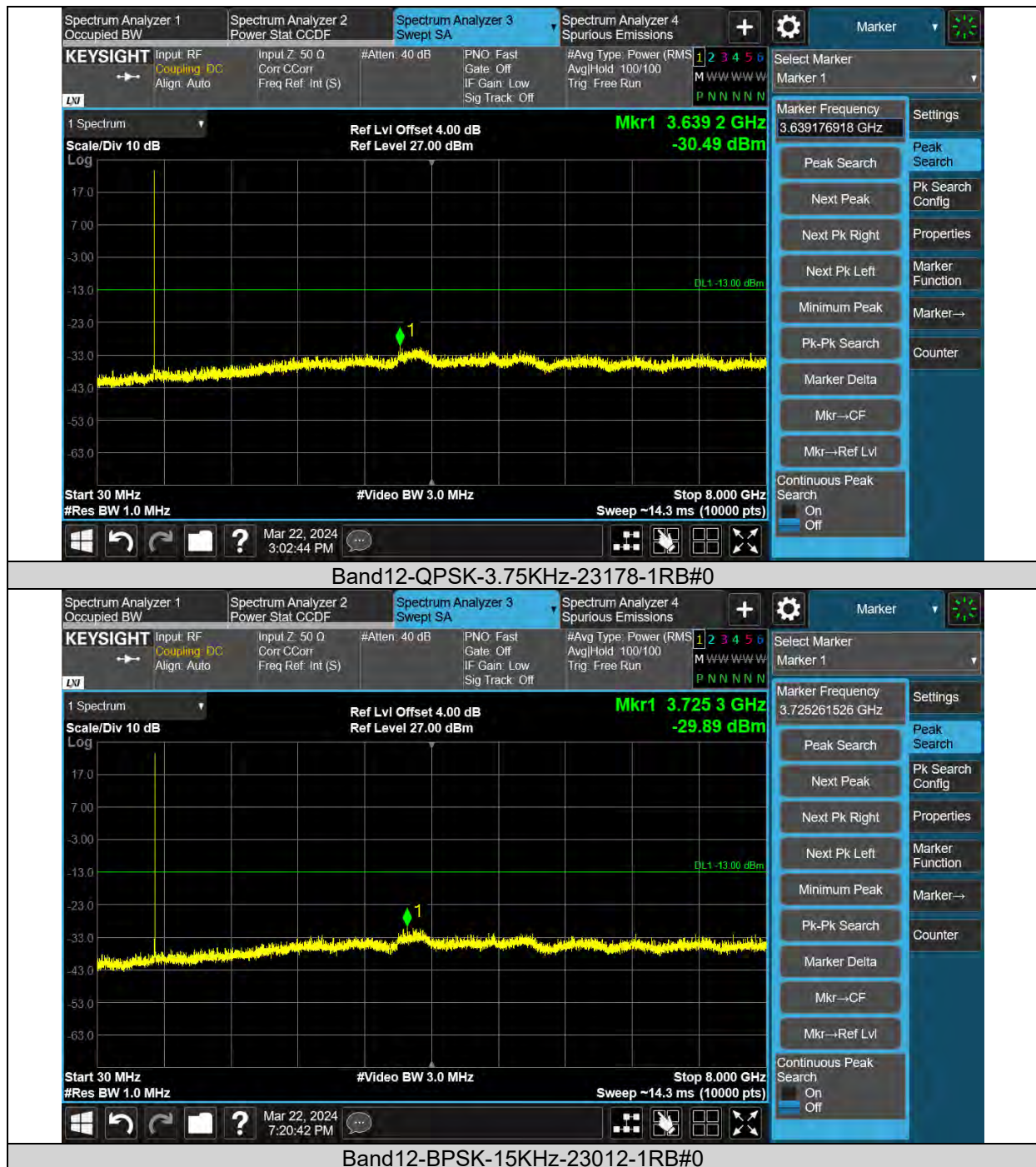
Test Report No.: W7L-240204W001RF03





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VERITAS

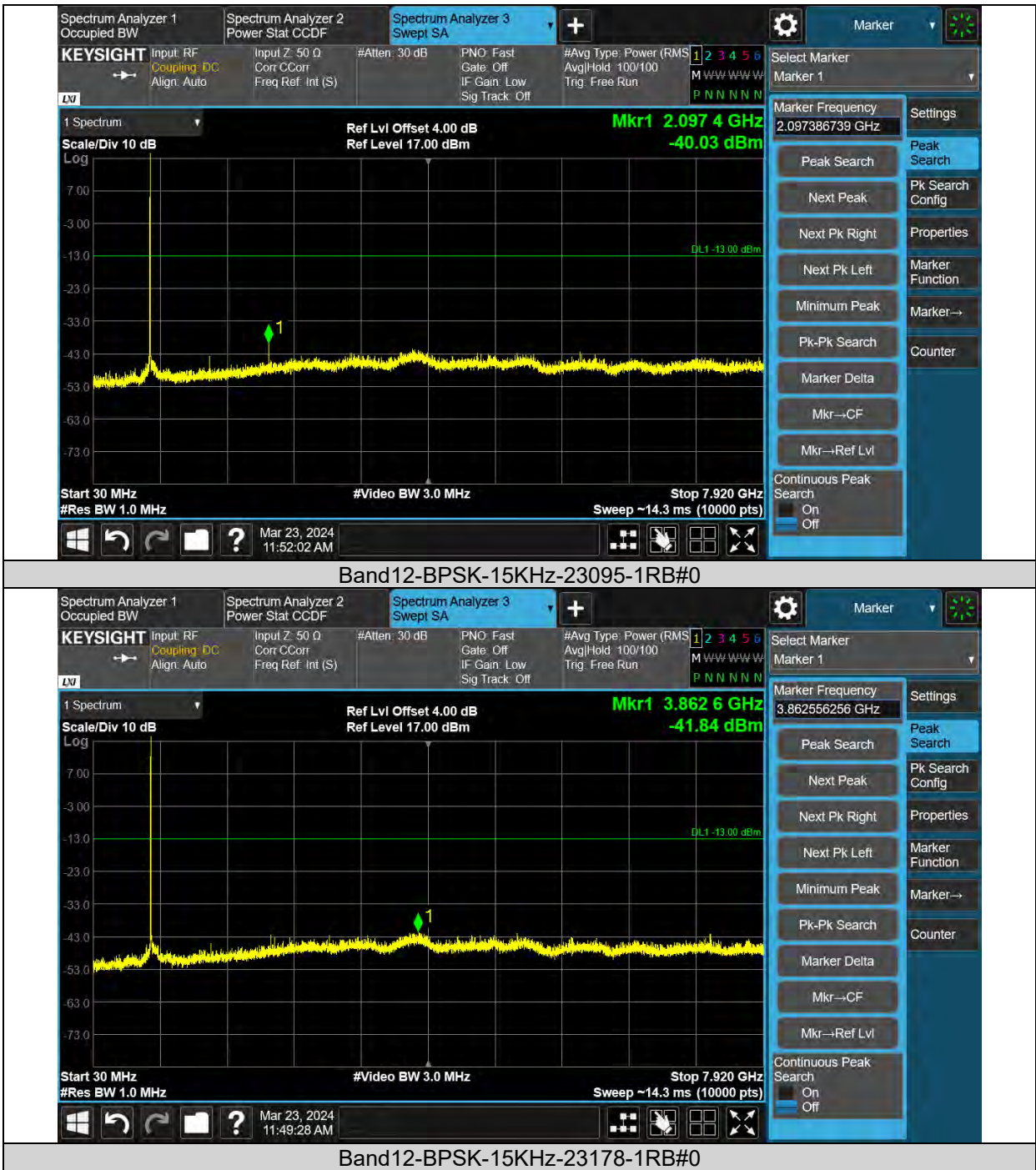
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VERITAS

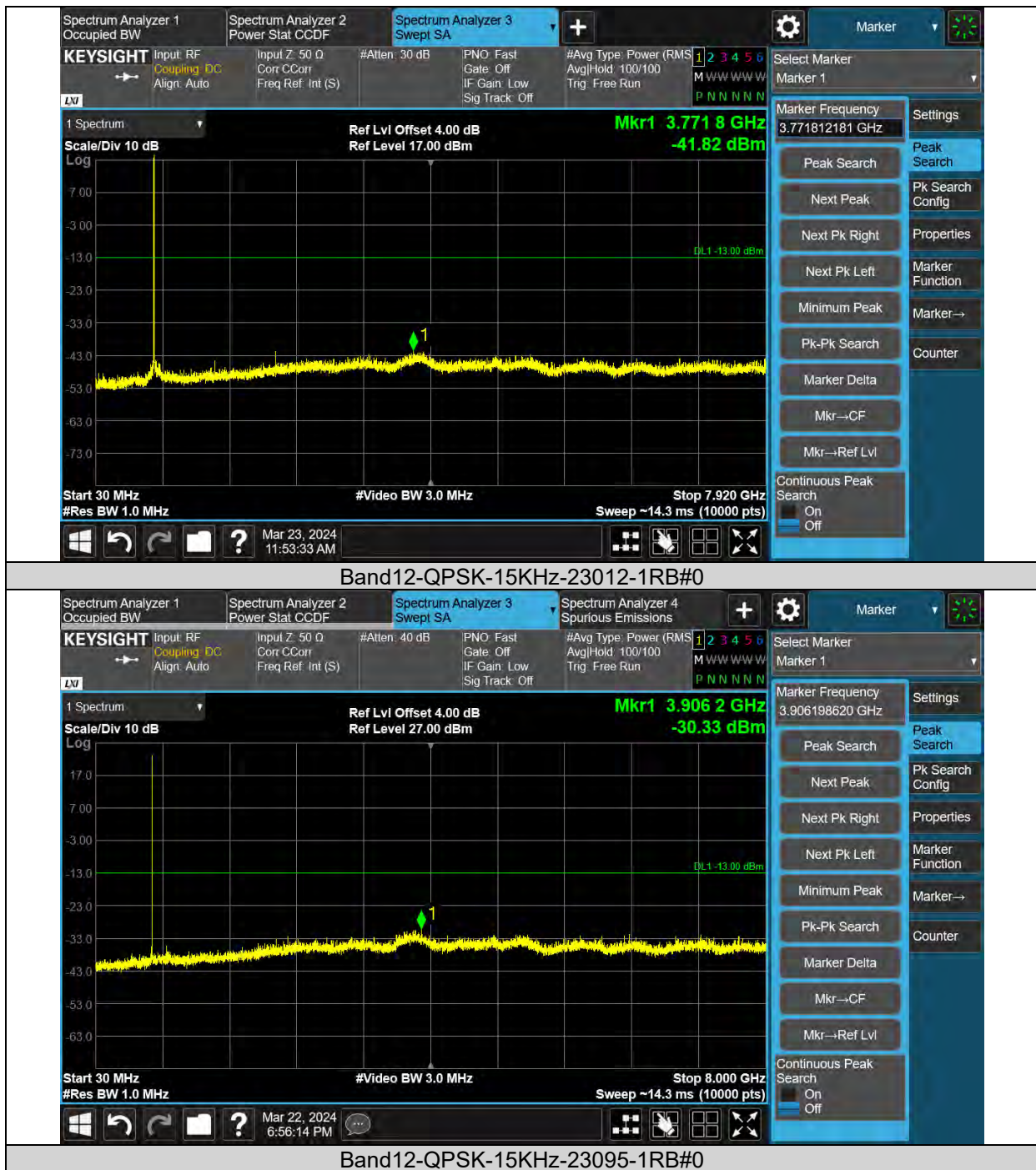
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VERITAS

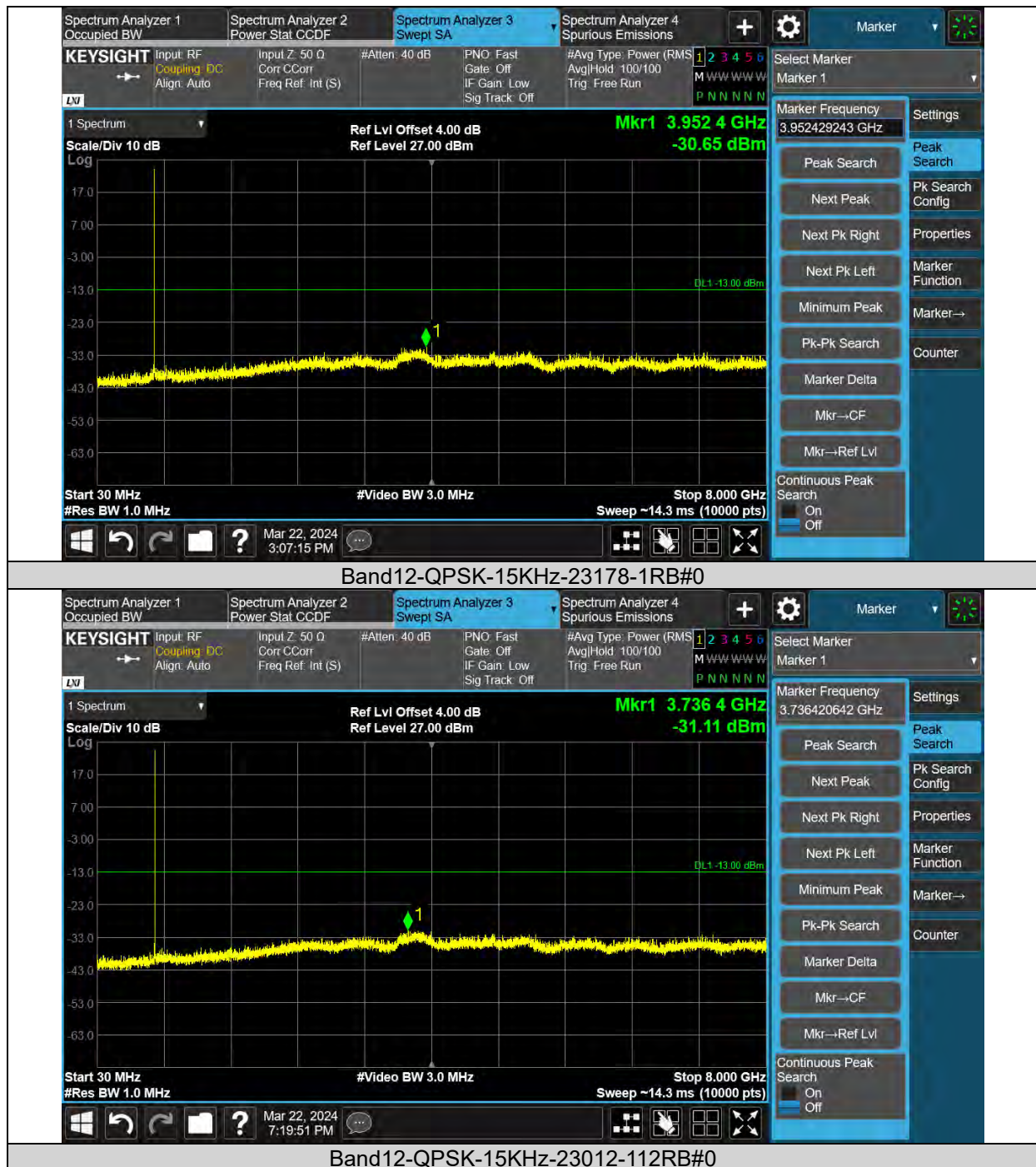
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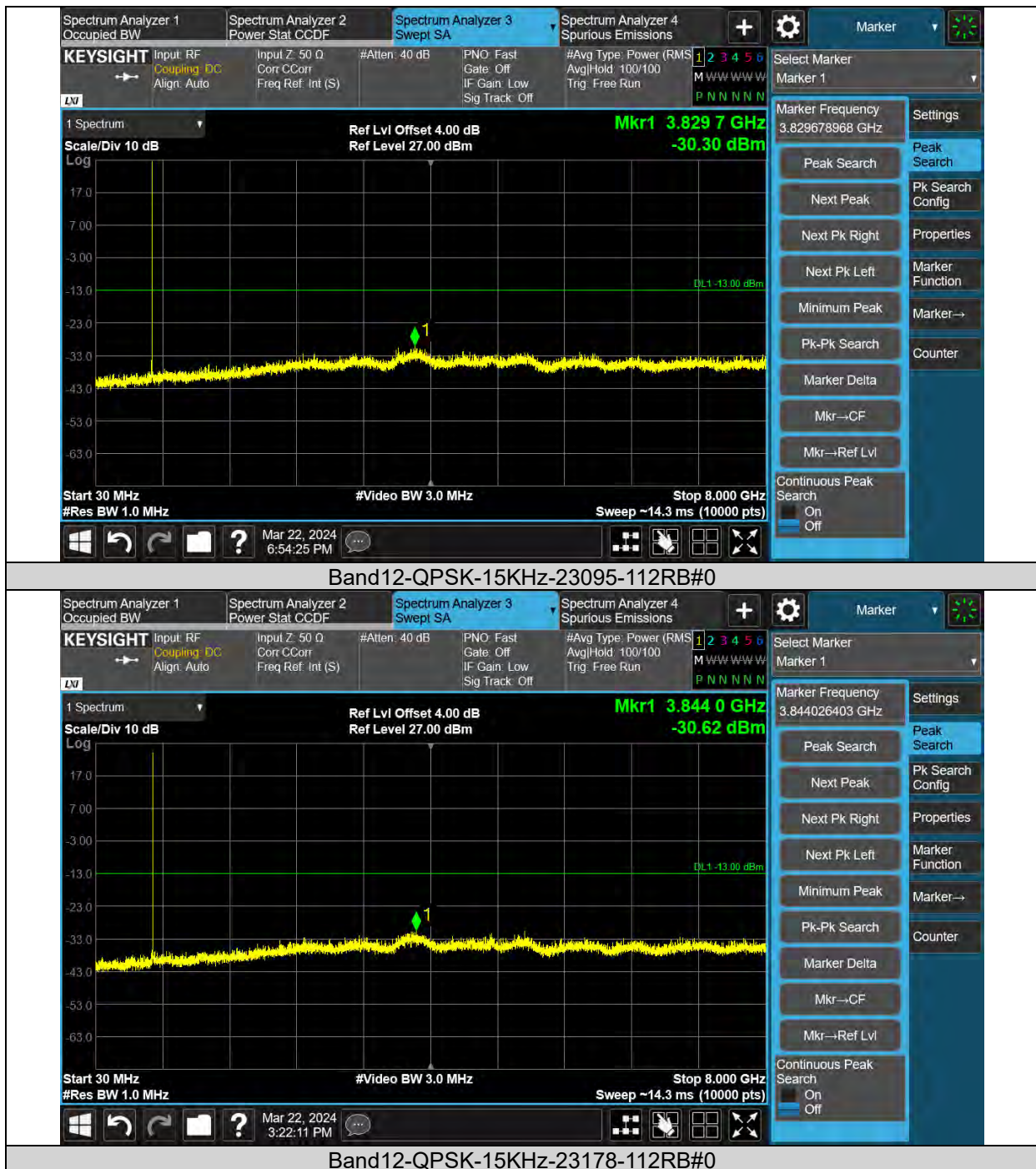
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VERITAS

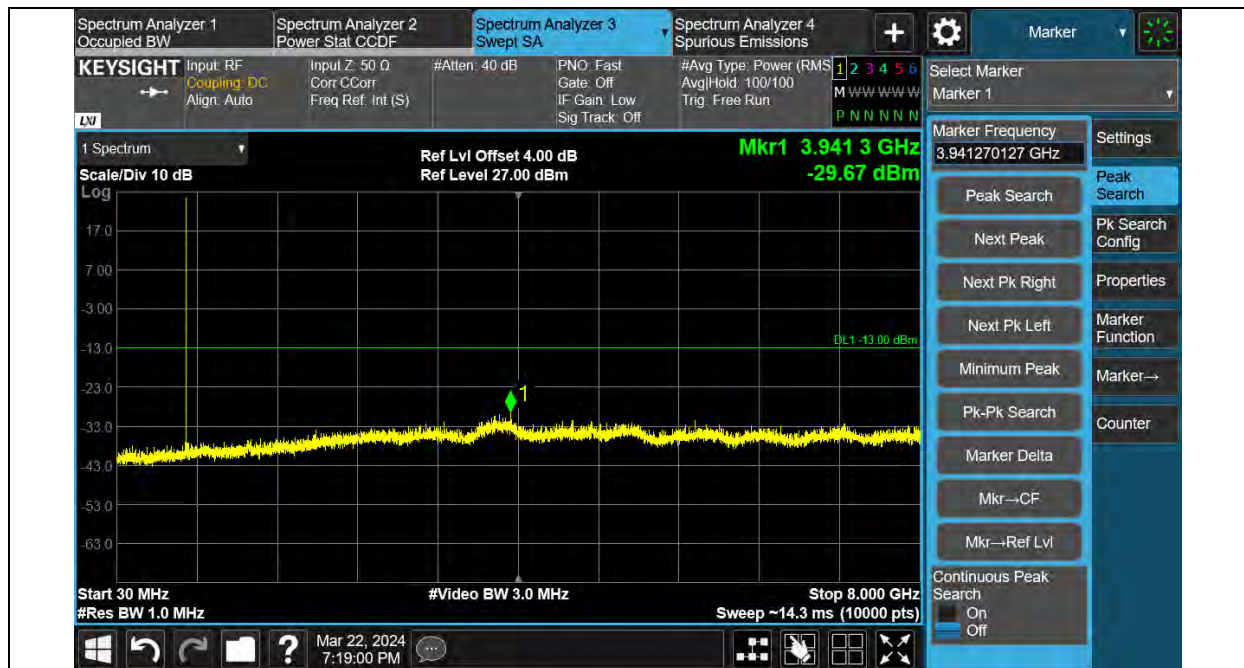
Test Report No.: W7L-240204W001RF03





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Test Report No.: W7L-240204W001RF03



FREQUENCY STABILITY

Test Result

Voltage								
Band	Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band12	QPSK	23095	VL	NT	12.5	0.017756	±2.5	PASS
Band12	QPSK	23095	VN	NT	-10.2	-0.014489	±2.5	PASS
Band12	QPSK	23095	VH	NT	-9.3	-0.013210	±2.5	PASS
Band12	BPSK	23095	VL	NT	-7.7	-0.010883	±2.5	PASS
Band12	BPSK	23095	VN	NT	-8.9	-0.012580	±2.5	PASS
Band12	BPSK	23095	VH	NT	11.6	0.016396	±2.5	PASS

Temperature								
Band	Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band12	QPSK	23095	NV	-30	-6.5	-0.009233	±2.5	PASS
Band12	QPSK	23095	NV	-20	-20.7	-0.029403	±2.5	PASS
Band12	QPSK	23095	NV	-10	-17.2	-0.024432	±2.5	PASS
Band12	QPSK	23095	NV	0	3.6	0.005114	±2.5	PASS
Band12	QPSK	23095	NV	10	-19.9	-0.028267	±2.5	PASS
Band12	QPSK	23095	NV	20	12.5	0.017756	±2.5	PASS
Band12	QPSK	23095	NV	30	-16.8	-0.023864	±2.5	PASS
Band12	QPSK	23095	NV	40	18.6	0.026420	±2.5	PASS
Band12	QPSK	23095	NV	50	1.8	0.002557	±2.5	PASS
Band12	BPSK	23095	NV	-30	-4.3	-0.006078	±2.5	PASS
Band12	BPSK	23095	NV	-20	-12	-0.016961	±2.5	PASS
Band12	BPSK	23095	NV	-10	-23.2	-0.032792	±2.5	PASS
Band12	BPSK	23095	NV	0	22.4	0.031661	±2.5	PASS
Band12	BPSK	23095	NV	10	4.8	0.006784	±2.5	PASS
Band12	BPSK	23095	NV	20	21.5	0.030389	±2.5	PASS
Band12	BPSK	23095	NV	30	-12	-0.016961	±2.5	PASS
Band12	BPSK	23095	NV	40	6.4	0.009046	±2.5	PASS
Band12	BPSK	23095	NV	50	9.3	0.013145	±2.5	PASS

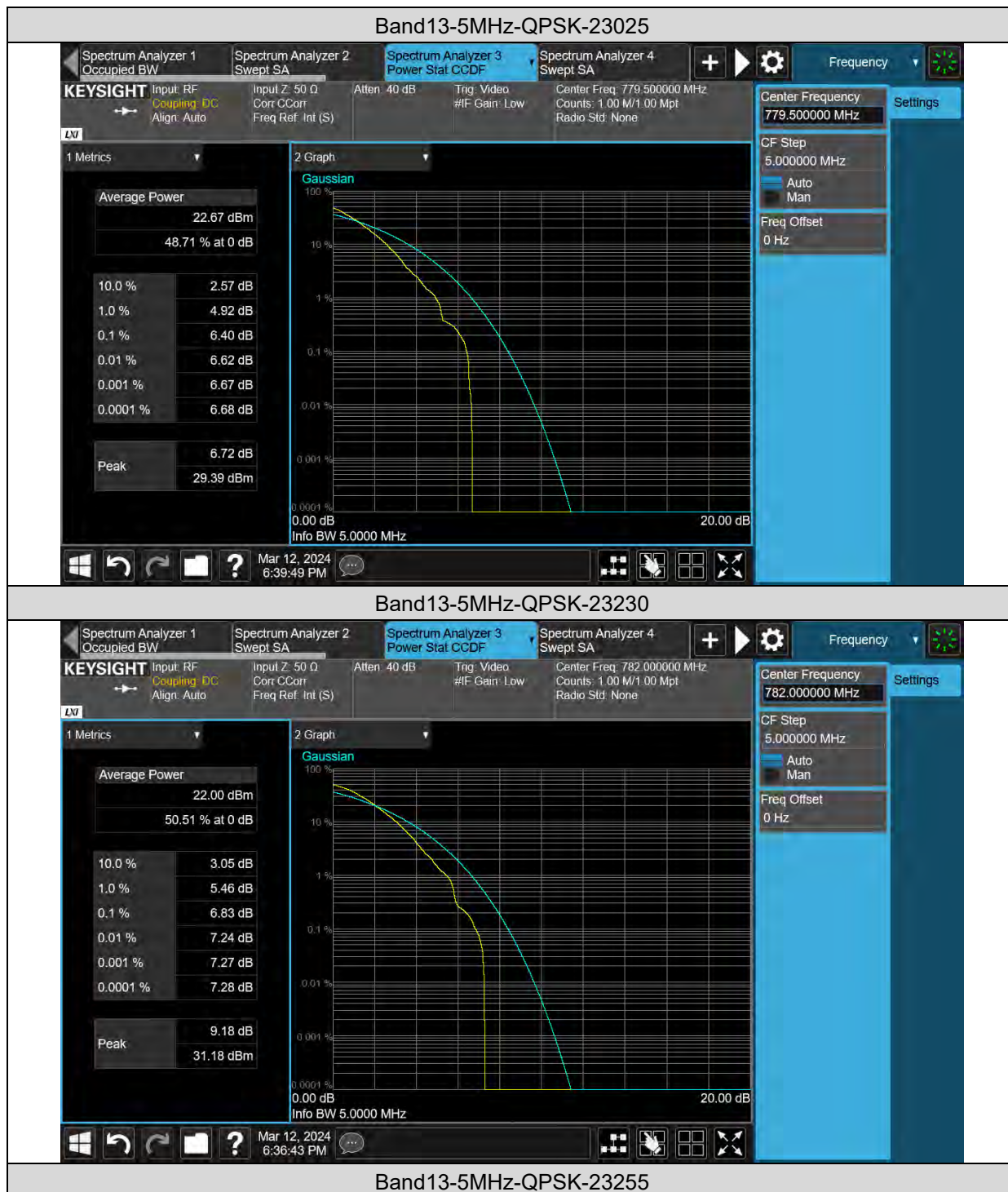
CAT-M: LTE BAND13

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23025	6.40	13	PASS
Band13	5MHz	QPSK	23230	6.83	13	PASS
Band13	5MHz	QPSK	23255	6.65	13	PASS
Band13	5MHz	16QAM	23025	7.55	13	PASS
Band13	5MHz	16QAM	23230	7.37	13	PASS
Band13	5MHz	16QAM	23255	6.72	13	PASS
Band13	10MHz	QPSK	23230	6.56	13	PASS
Band13	10MHz	16QAM	23230	6.64	13	PASS

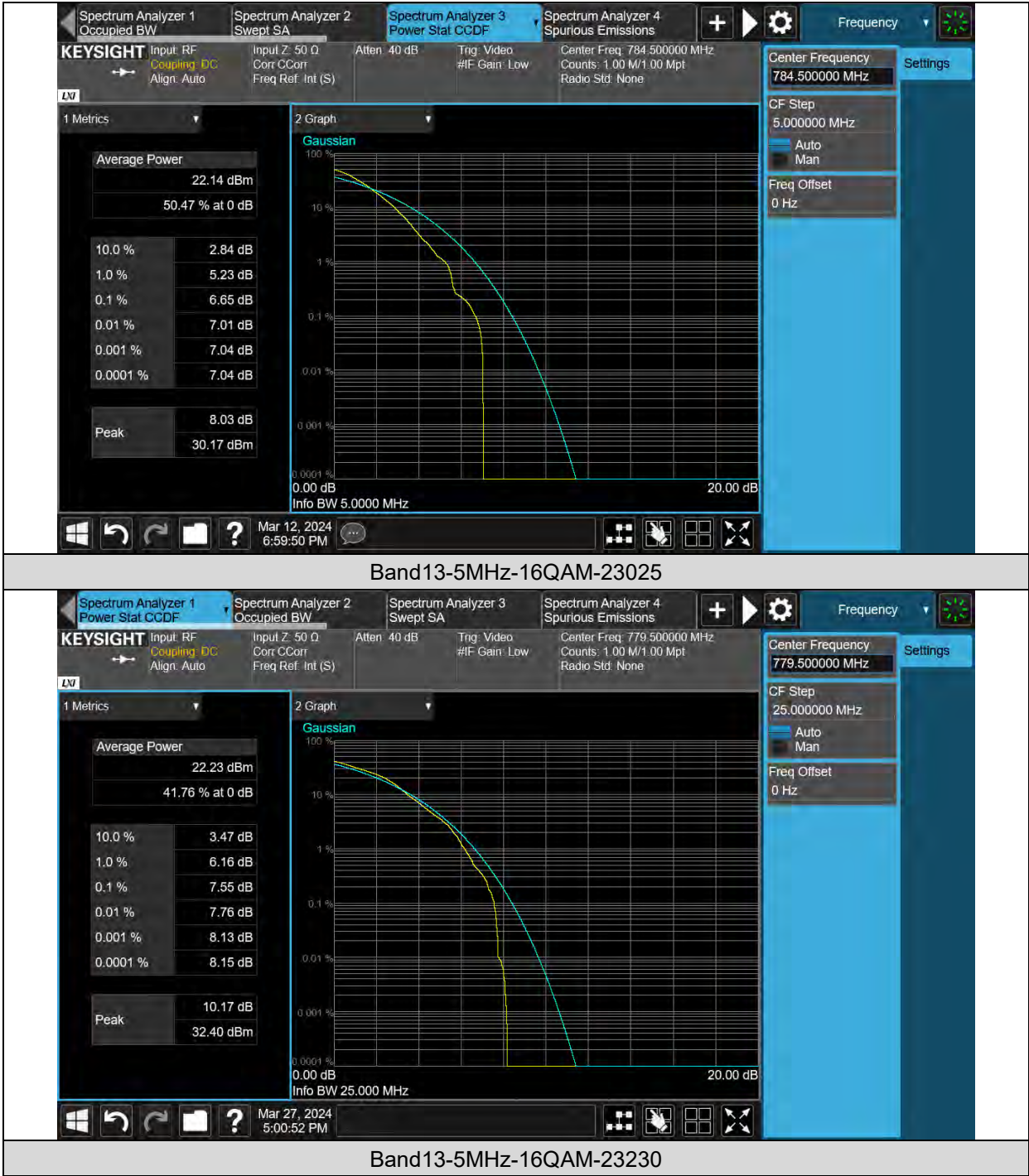
Test Graphs





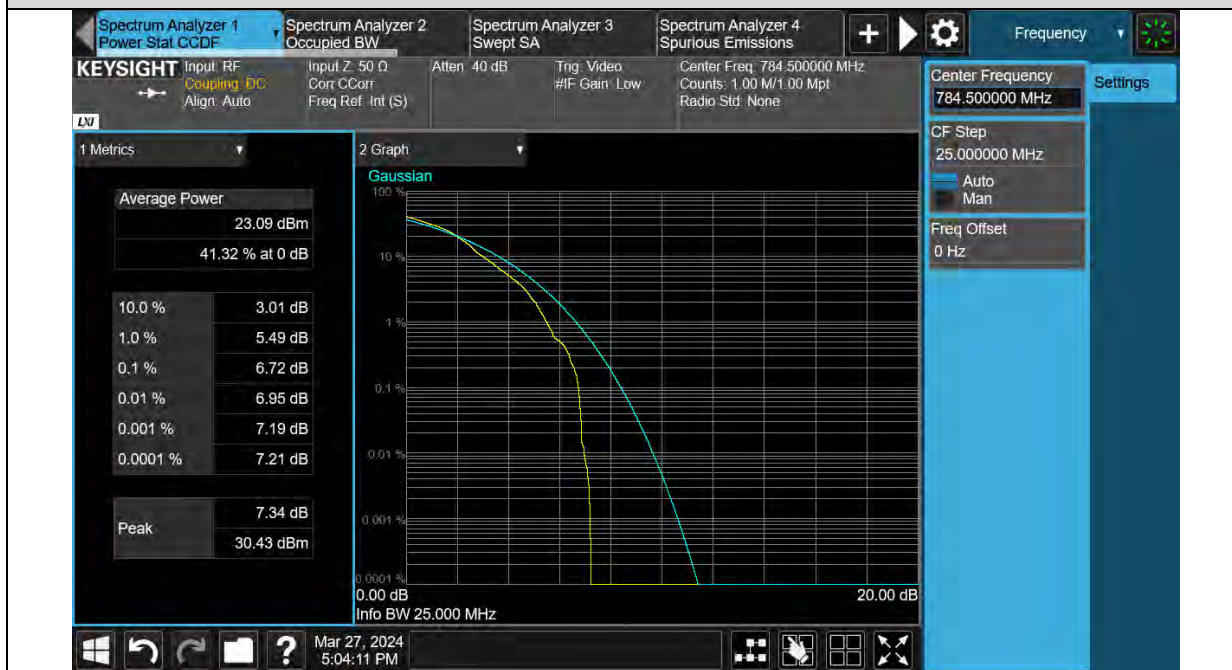
BUREAU
VERITAS

Test Report No.: W7L-240204W001RF03

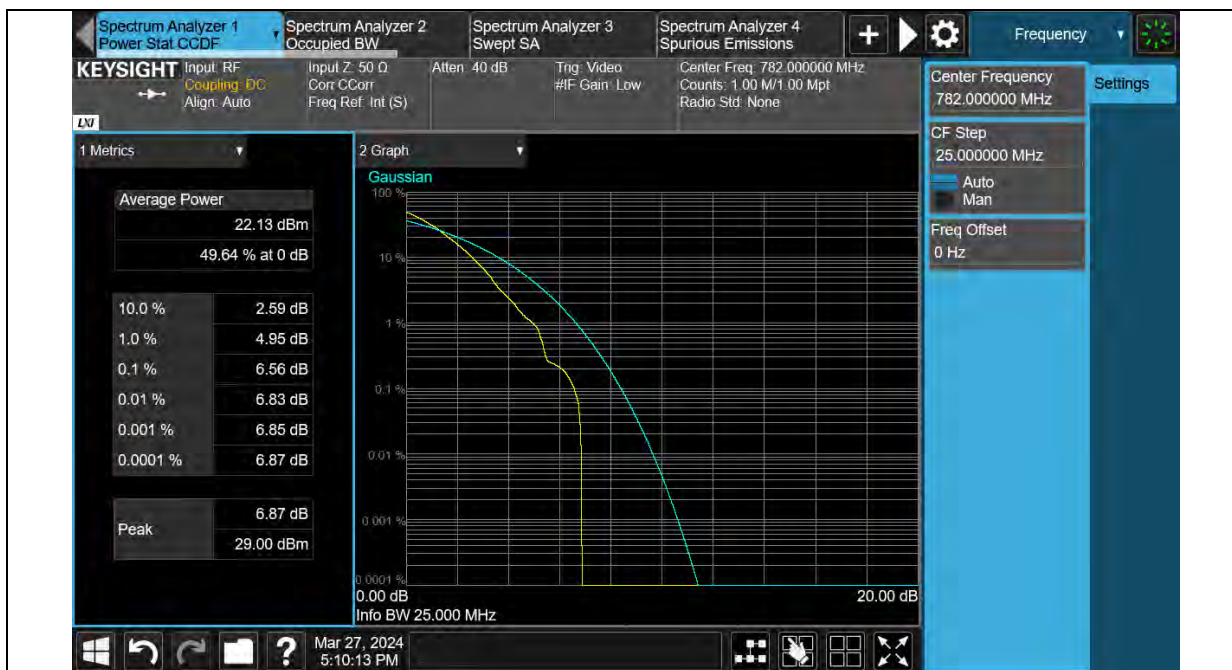




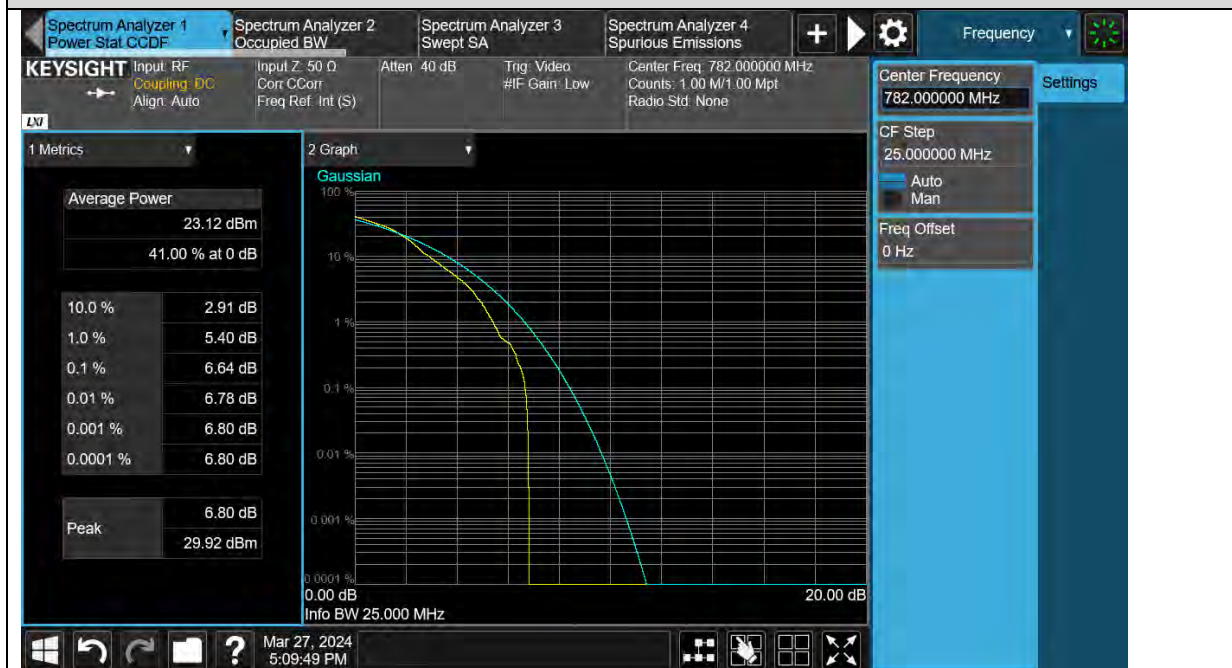
Band13-5MHz-16QAM-23255



Band13-10MHz-QPSK-23230



Band13-10MHz-16QAM-23230



26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23025	6RB#0	1.0805	1.275	PASS
Band13	5MHz	QPSK	23230	6RB#0	1.0831	1.261	PASS
Band13	5MHz	QPSK	23255	6RB#0	1.0848	1.270	PASS
Band13	5MHz	16QAM	23025	6RB#0	1.0768	1.280	PASS
Band13	5MHz	16QAM	23230	6RB#0	1.0749	1.277	PASS
Band13	5MHz	16QAM	23255	6RB#0	1.0736	1.267	PASS
Band13	10MHz	QPSK	23230	6RB#0	1.0758	1.269	PASS
Band13	10MHz	16QAM	23230	6RB#0	1.0769	1.287	PASS

Test Graphs





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VERITAS

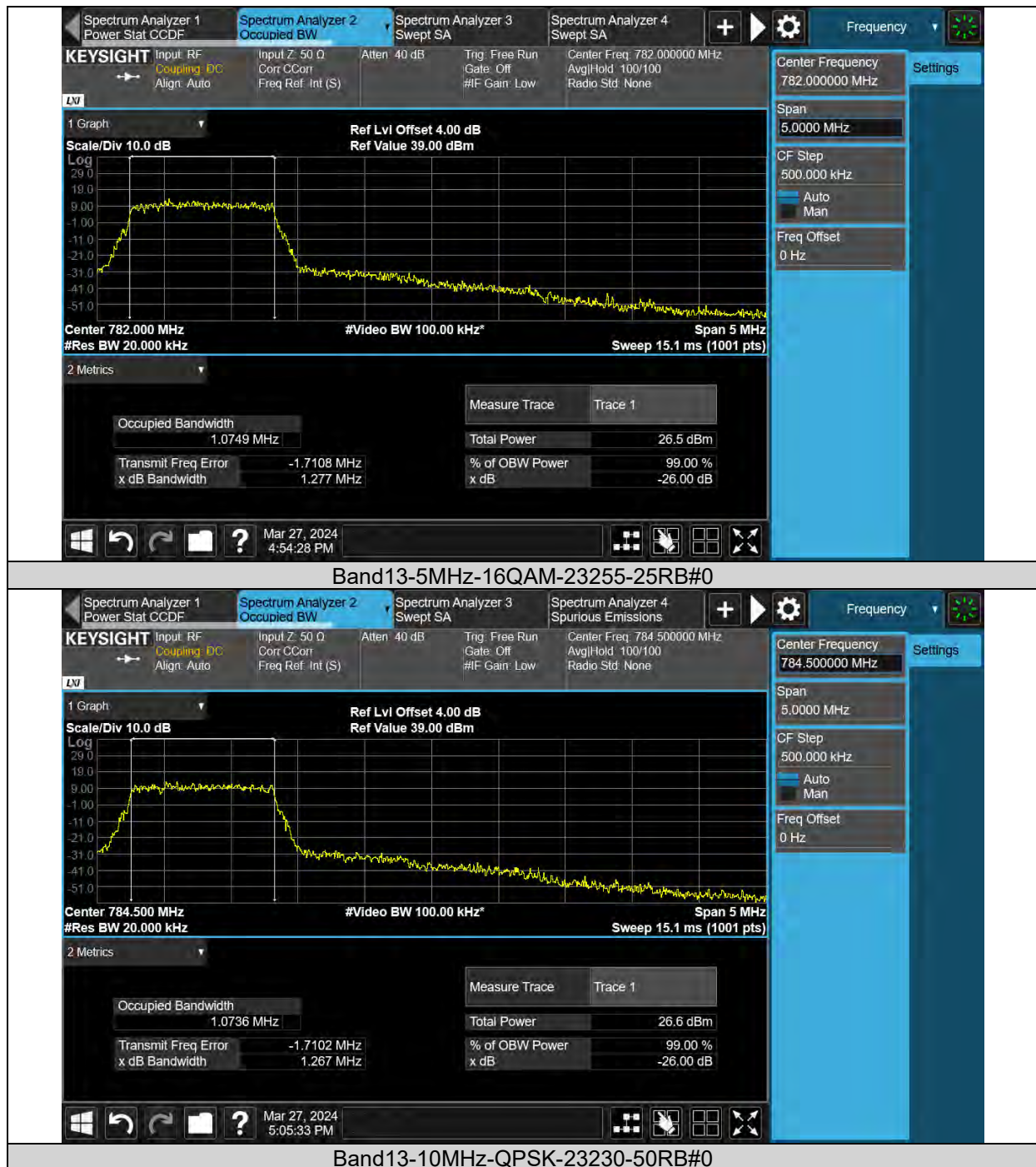
Test Report No.: W7L-240204W001RF03





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Test Report No.: W7L-240204W001RF03



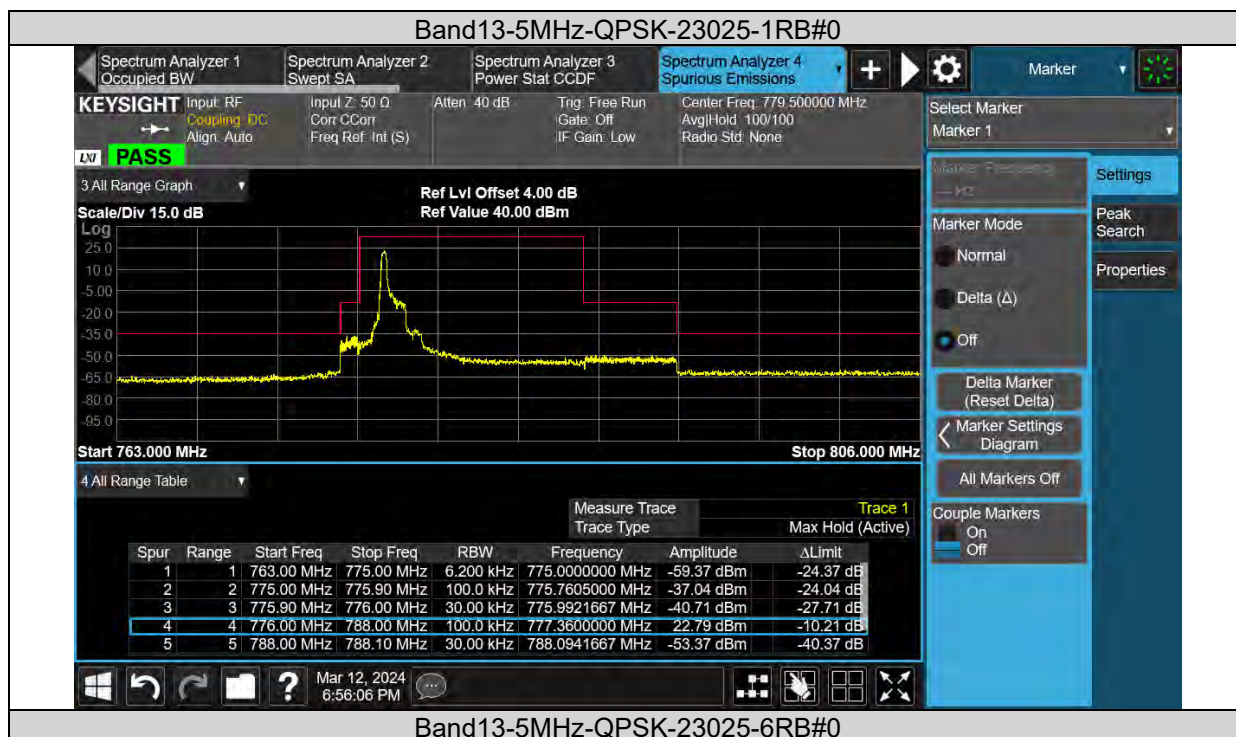


BAND EDGE

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23025	1RB#0	See Graph	PASS
Band13	5MHz	QPSK	23025	6RB#0	See Graph	PASS
Band13	5MHz	QPSK	23255	1RB#5	See Graph	PASS
Band13	5MHz	QPSK	23255	6RB#0	See Graph	PASS
Band13	5MHz	16QAM	23025	1RB#0	See Graph	PASS
Band13	5MHz	16QAM	23025	6RB#0	See Graph	PASS
Band13	5MHz	16QAM	23255	1RB#5	See Graph	PASS
Band13	5MHz	16QAM	23255	6RB#0	See Graph	PASS
Band13	10MHz	QPSK	23230	1RB#0	See Graph	PASS
Band13	10MHz	QPSK	23230	1RB#5	See Graph	PASS
Band13	10MHz	QPSK	23230	6RB#0	See Graph	PASS
Band13	10MHz	16QAM	23230	1RB#0	See Graph	PASS
Band13	10MHz	16QAM	23230	1RB#5	See Graph	PASS
Band13	10MHz	16QAM	23230	6RB#0	See Graph	PASS

Test Graphs





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Test Report No.: W7L-240204W001RF03





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Test Report No.: W7L-240204W001RF03





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Test Report No.: W7L-240204W001RF03



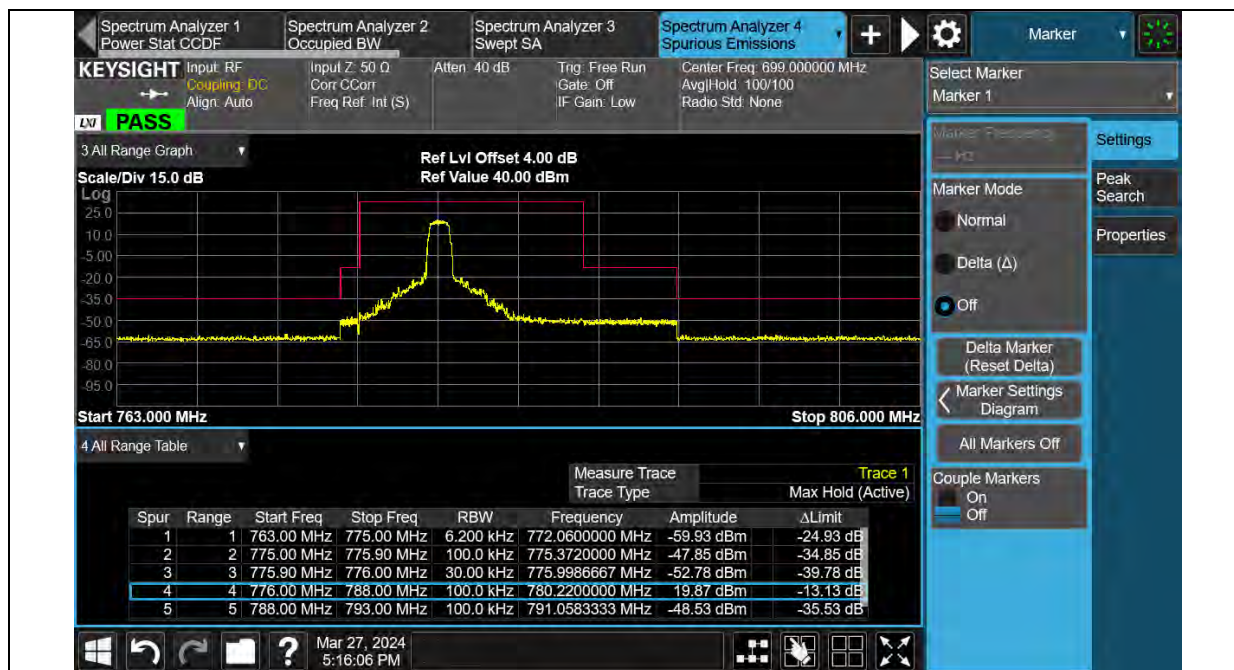




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VERITAS

Test Report No.: W7L-240204W001RF03





CONDUCTED SPURIOUS EMISSION

Test Result

Band	Bandwidth	Modulation	Channel	RB Configurat ion	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23025	1RB#0	Range:30~10000MHz	Pass	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range:30~10000MHz	Pass	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range:30~10000MHz	Pass	PASS
Band13	5MHz	16QAM	23025	1RB#0	Range:30~10000MHz	Pass	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range:30~10000MHz	Pass	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range:30~10000MHz	Pass	PASS
Band13	10MHz	QPSK	23255	1RB#0	Range:30~10000MHz	Pass	PASS
Band13	10MHz	16QAM	23255	1RB#0	Range:30~10000MHz	Pass	PASS