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VERITAS

Test Report No.: W7L-240204W001RF02



Band25-5MHz-16QAM-26665-1RB#0-Range:30~20000MHz

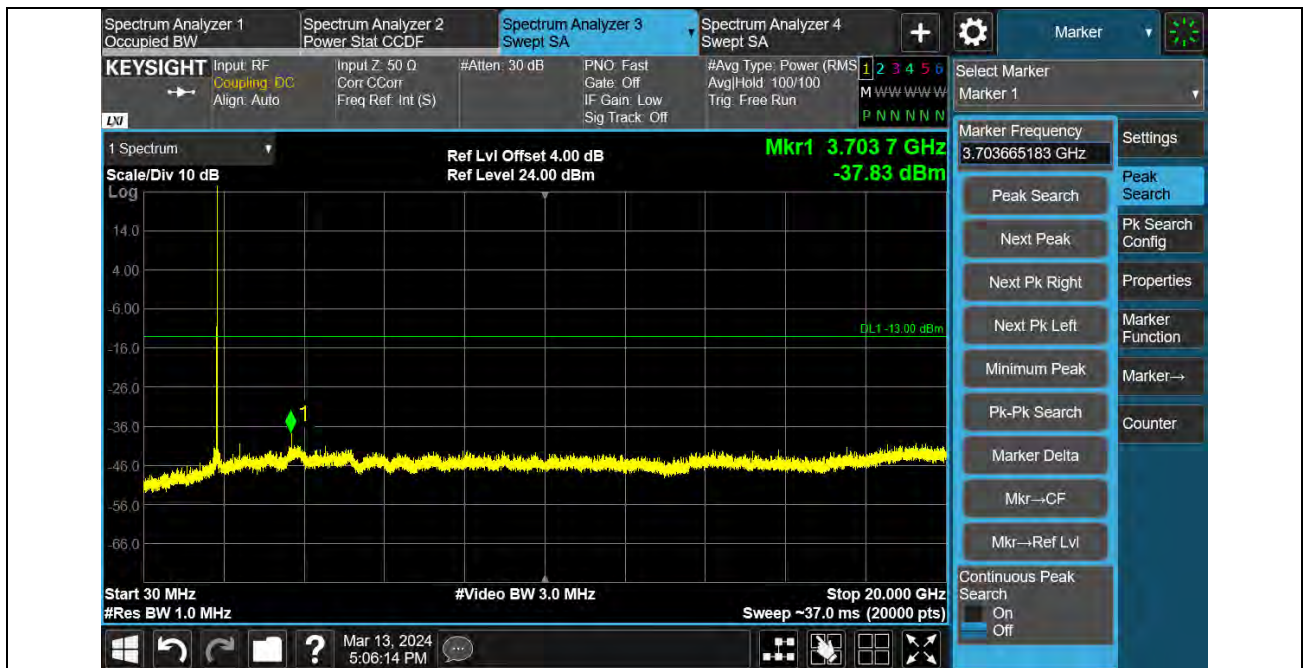


Band25-10MHz-QPSK-26090-1RB#0-Range:30~20000MHz

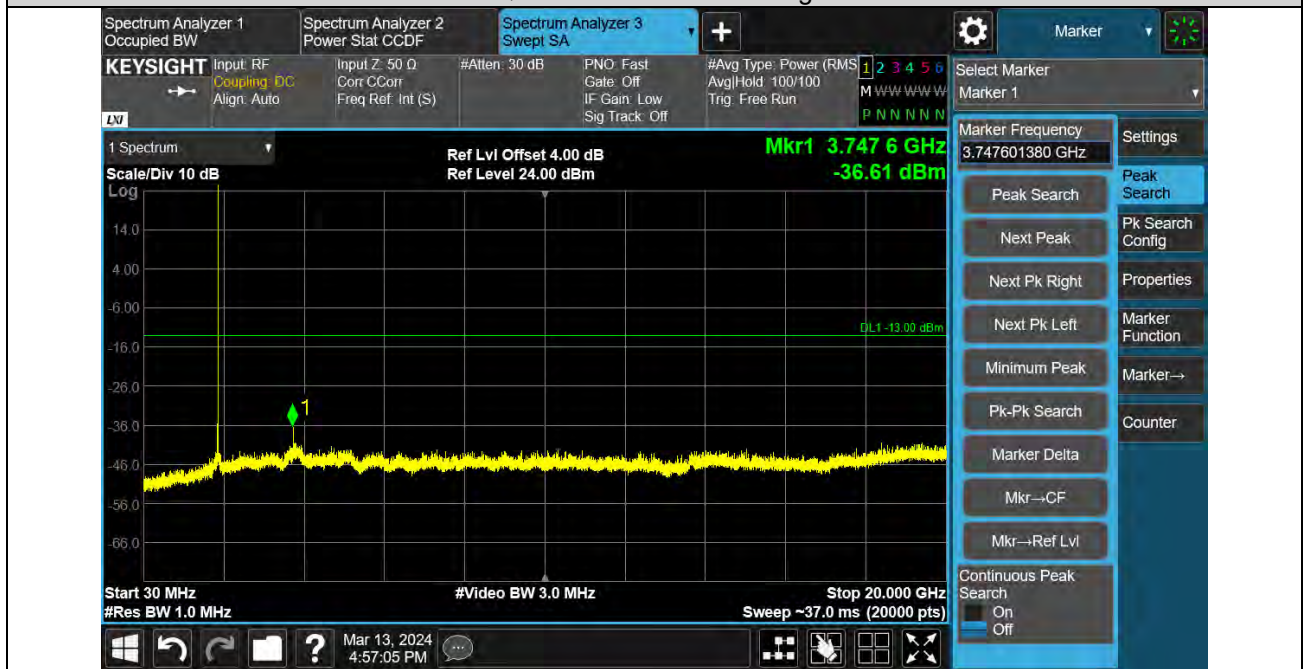


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Band25-10MHz-QPSK-26365-1RB#0-Range:30~20000MHz

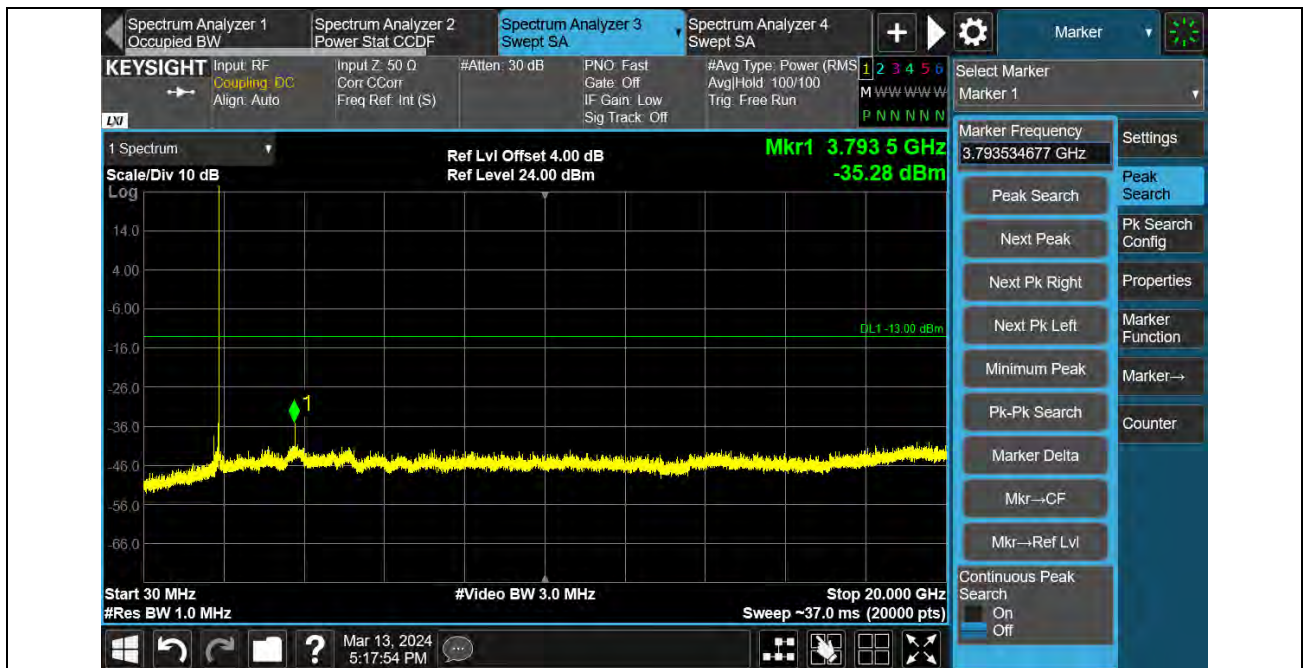


Band25-10MHz-QPSK-26640-1RB#0-Range:30~20000MHz

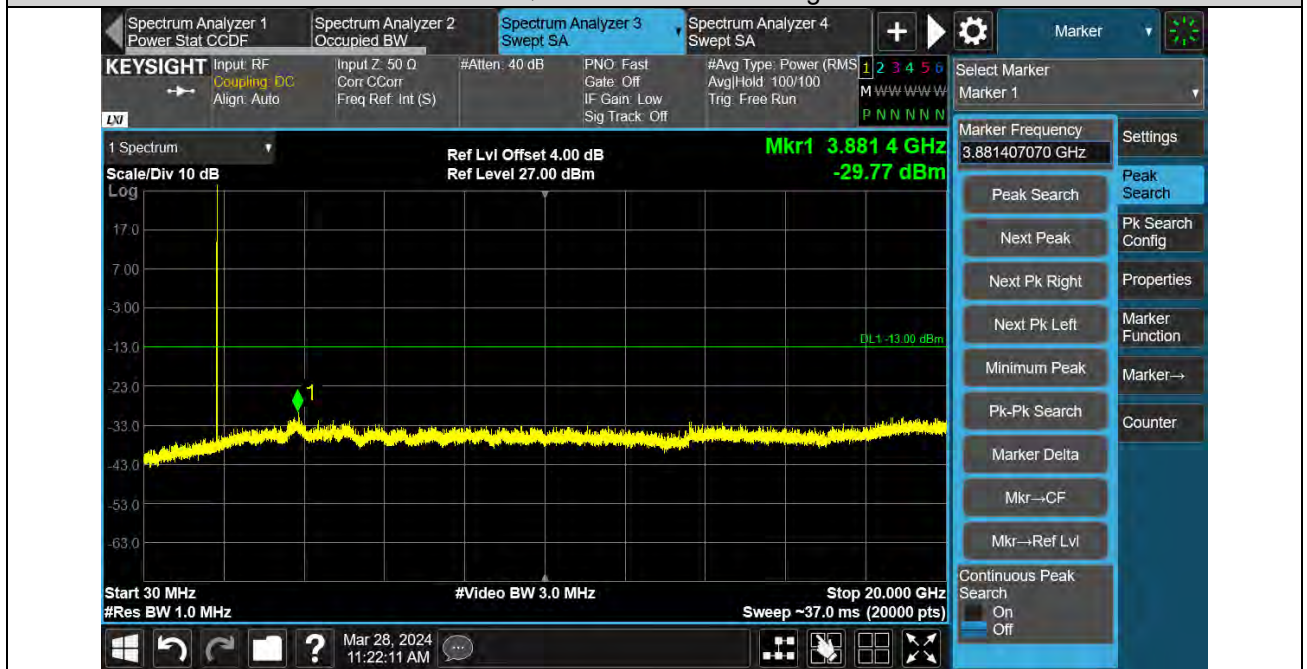


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Band25-10MHz-16QAM-26090-1RB#0-Range:30~20000MHz



Band25-10MHz-16QAM-26365-1RB#0-Range:30~20000MHz



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Band25-10MHz-16QAM-26640-1RB#0-Range:30~20000MHz

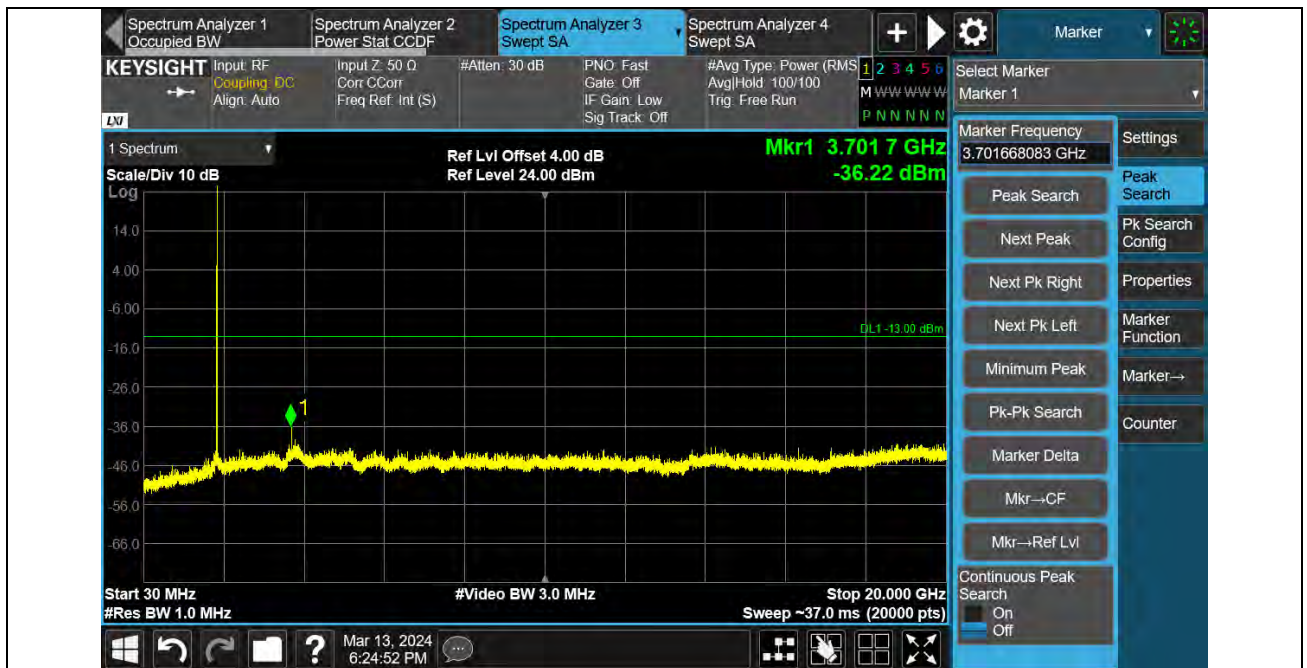


Band25-15MHz-QPSK-26115-1RB#0-Range:30~20000MHz

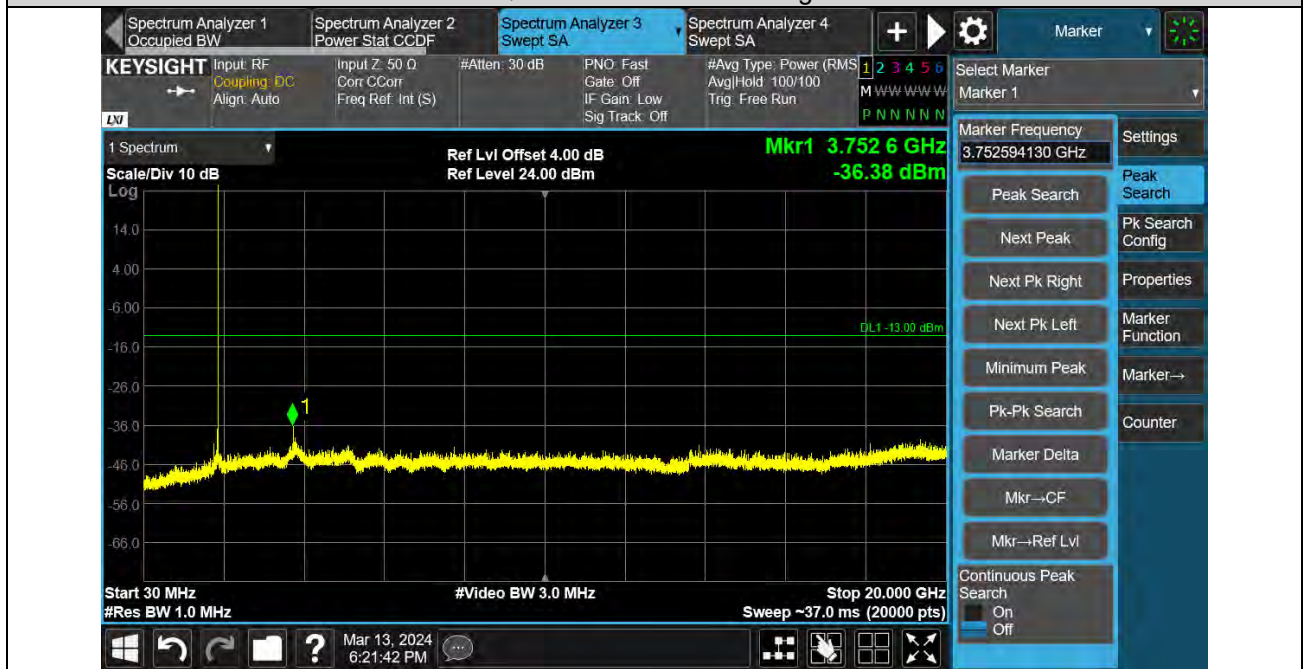


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Band25-15MHz-QPSK-26365-1RB#0-Range:30~20000MHz

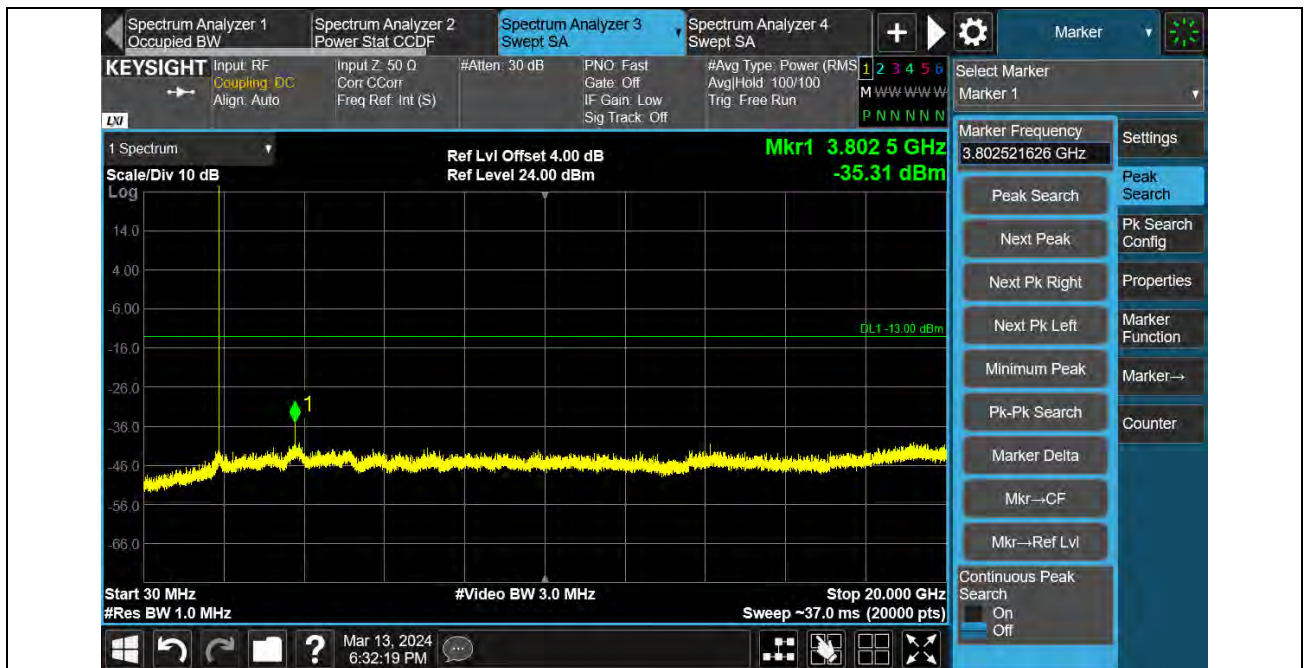


Band25-15MHz-QPSK-26615-1RB#0-Range:30~20000MHz



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Band25-15MHz-16QAM-26115-1RB#0-Range:30~20000MHz

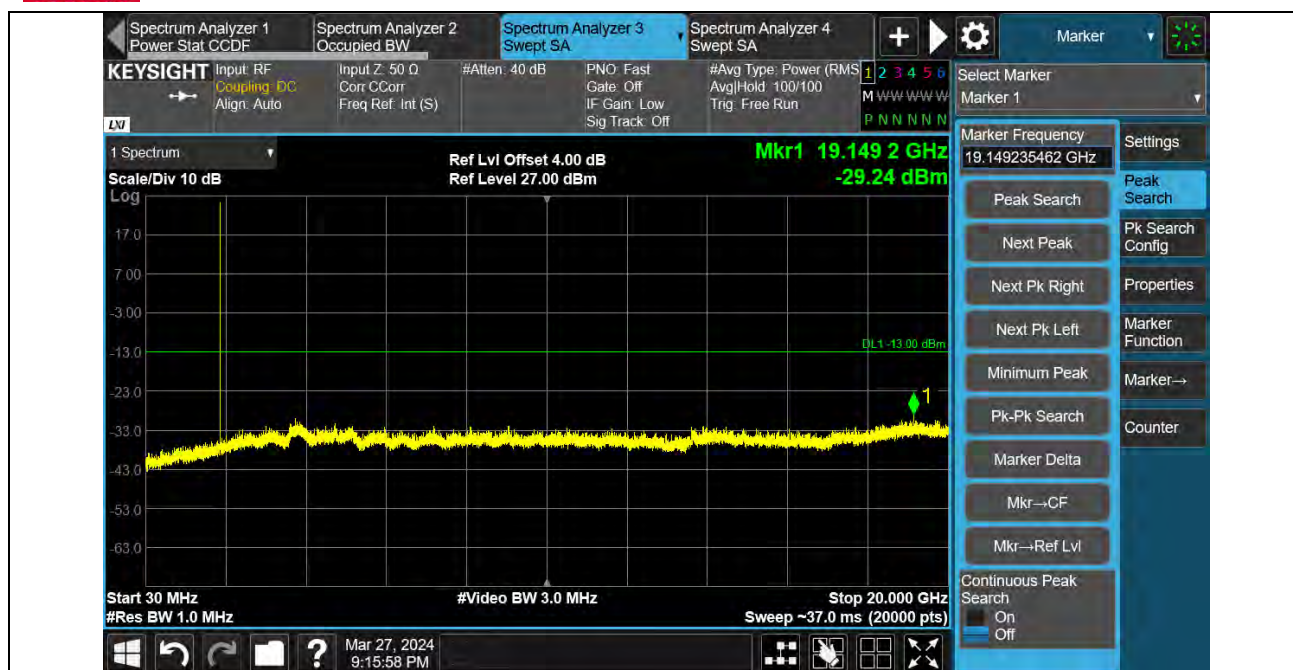


Band25-15MHz-16QAM-26365-1RB#0-Range:30~20000MHz

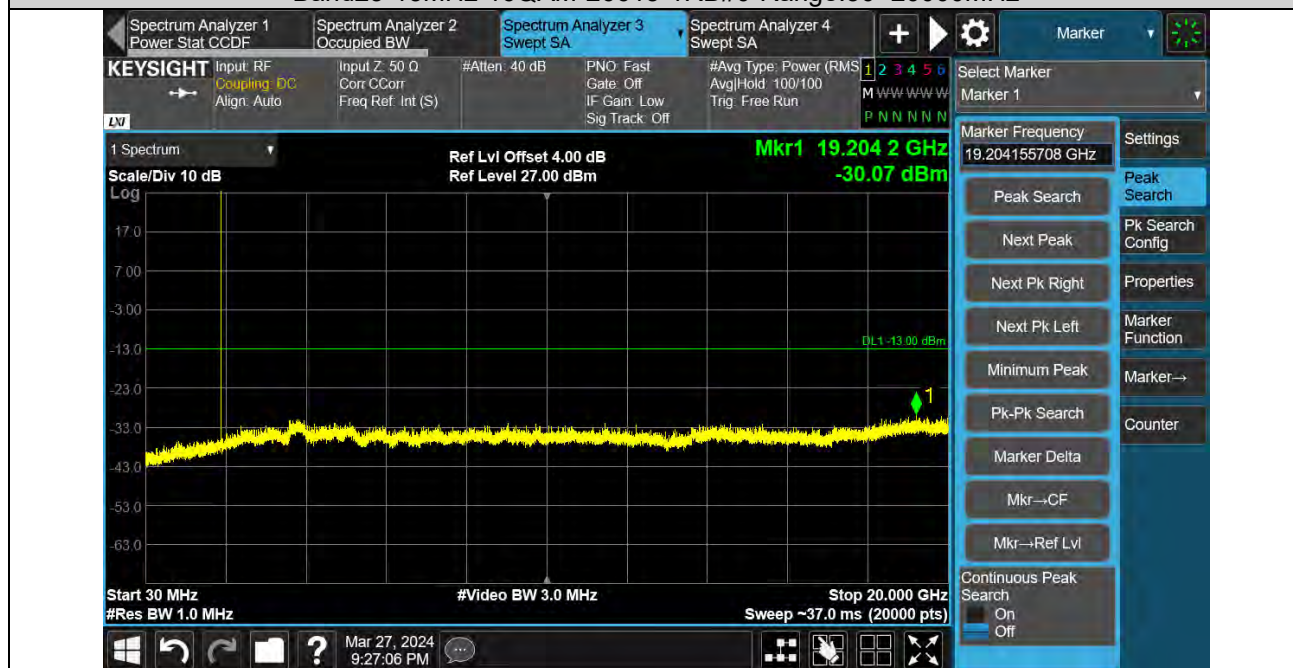


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Band25-15MHz-16QAM-26615-1RB#0-Range:30~20000MHz

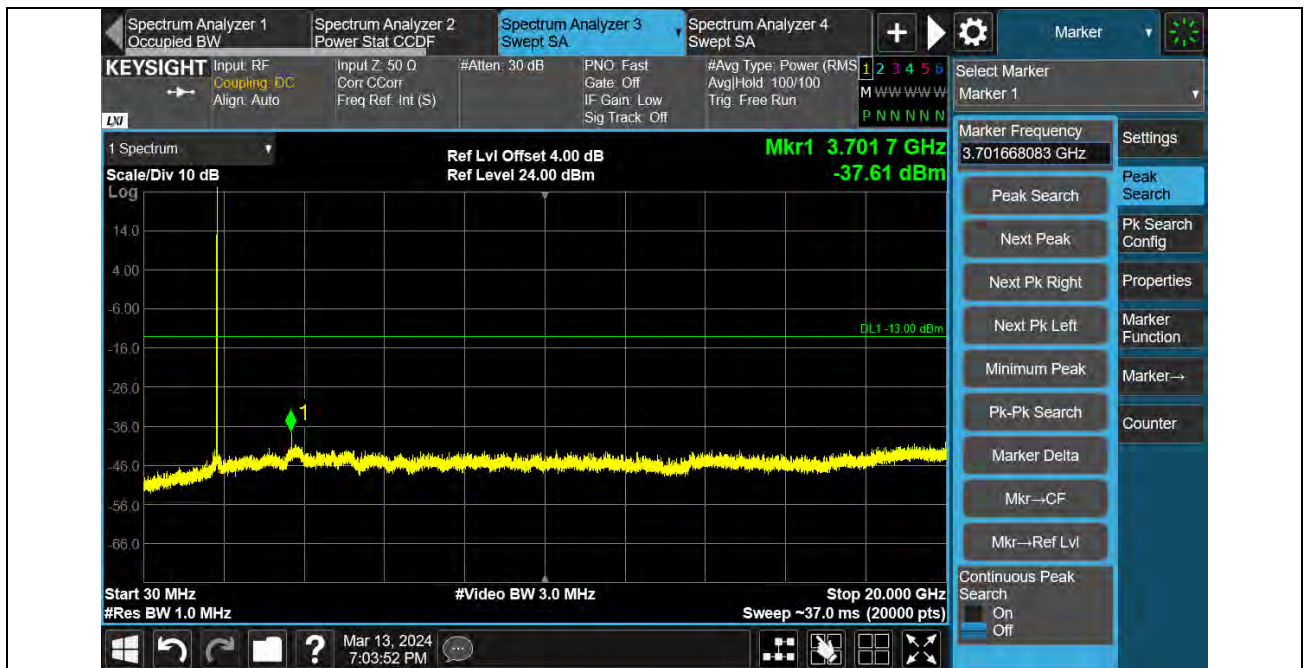


Band25-20MHz-QPSK-26140-1RB#0-Range:30~20000MHz

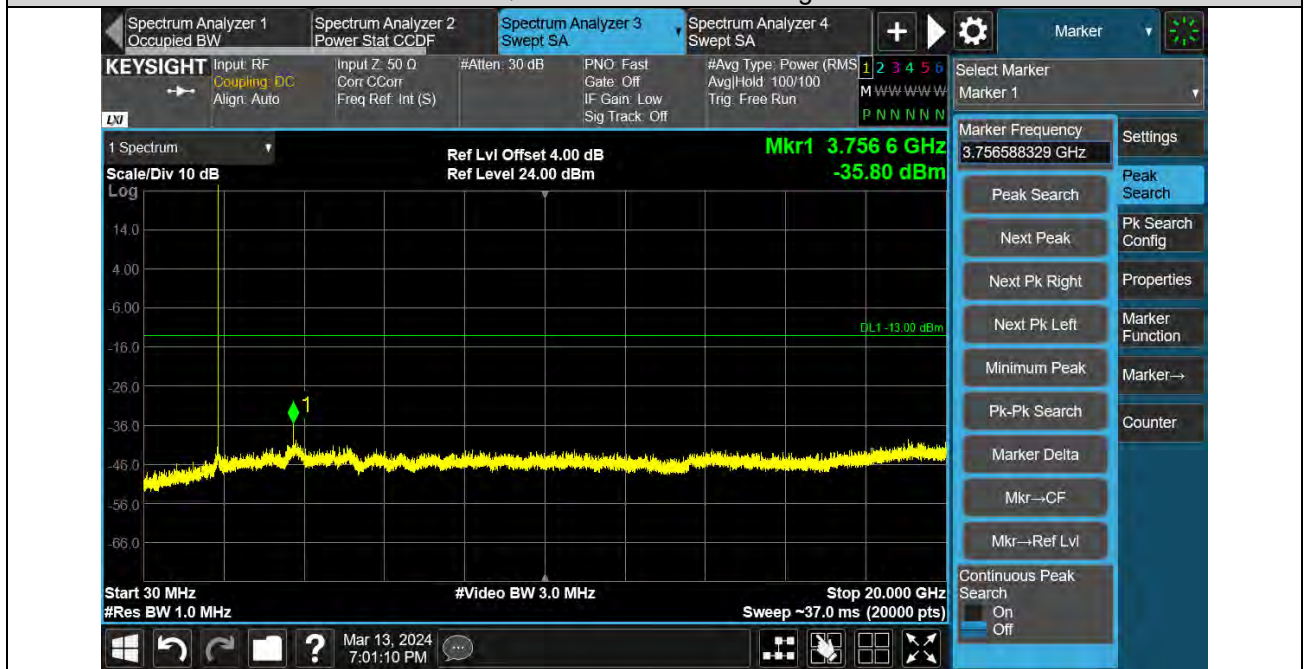


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Band25-20MHz-QPSK-26365-1RB#0-Range:30~20000MHz

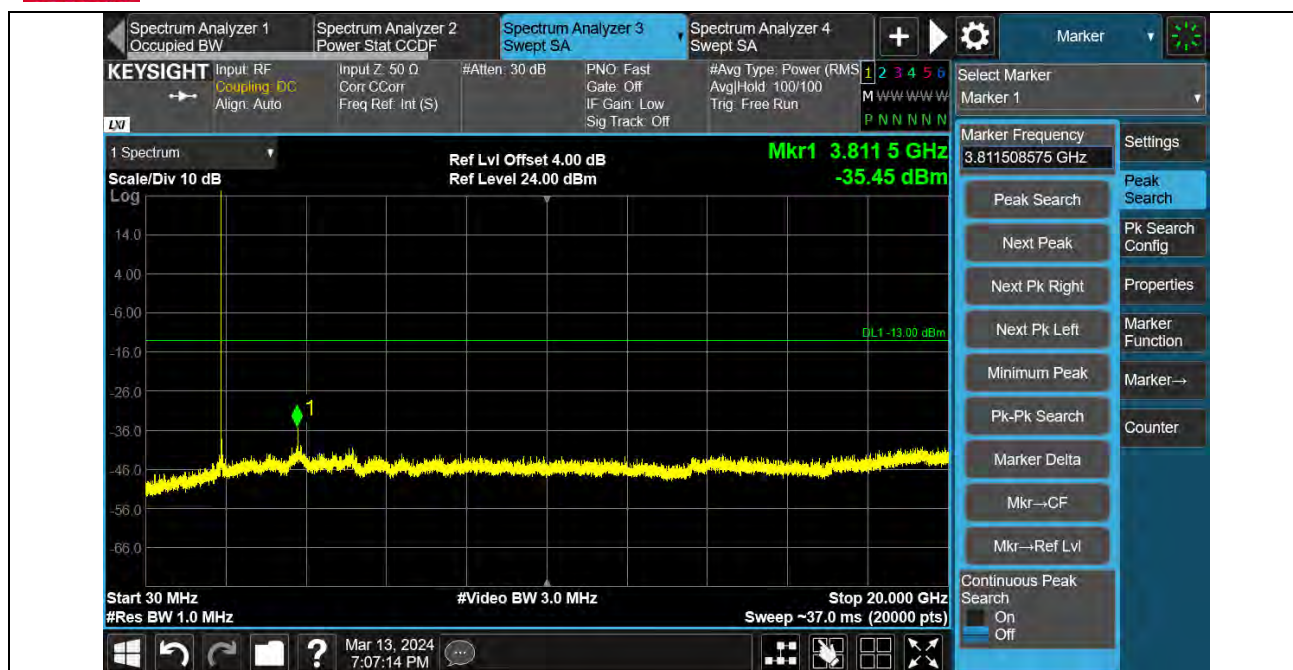


Band25-20MHz-QPSK-26590-1RB#0-Range:30~20000MHz

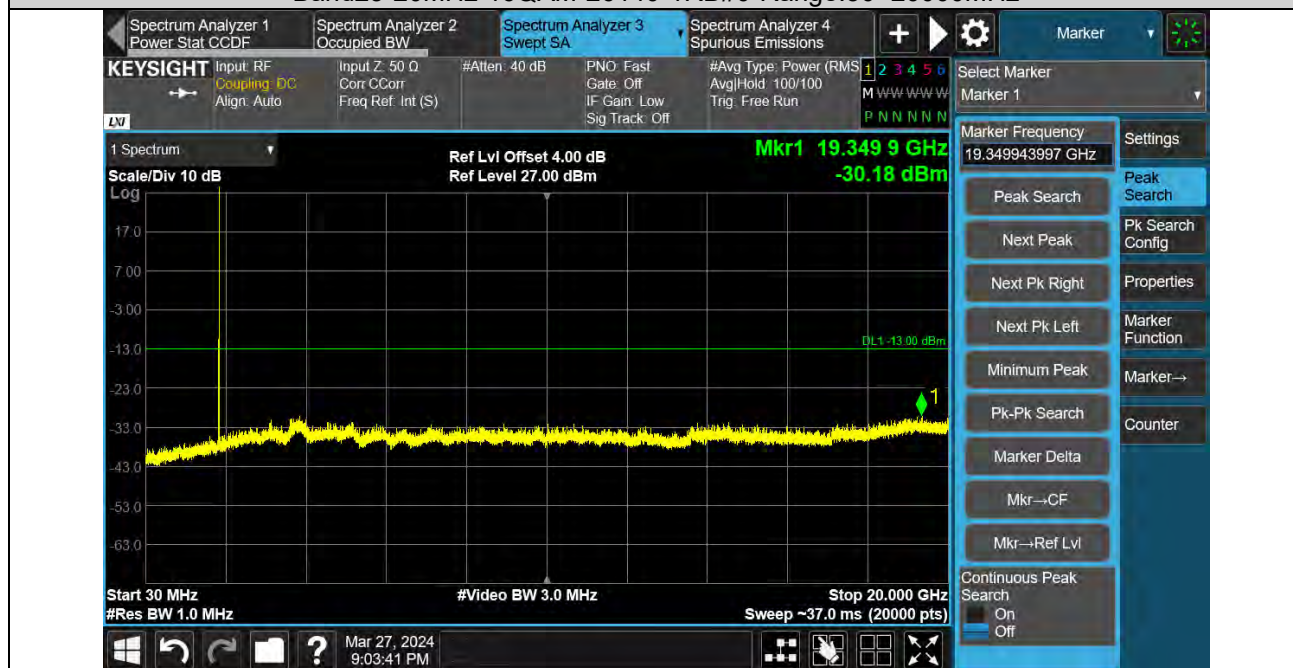


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Test Report No.: W7L-240204W001RF02



Band25-20MHz-16QAM-26140-1RB#0-Range:30~20000MHz

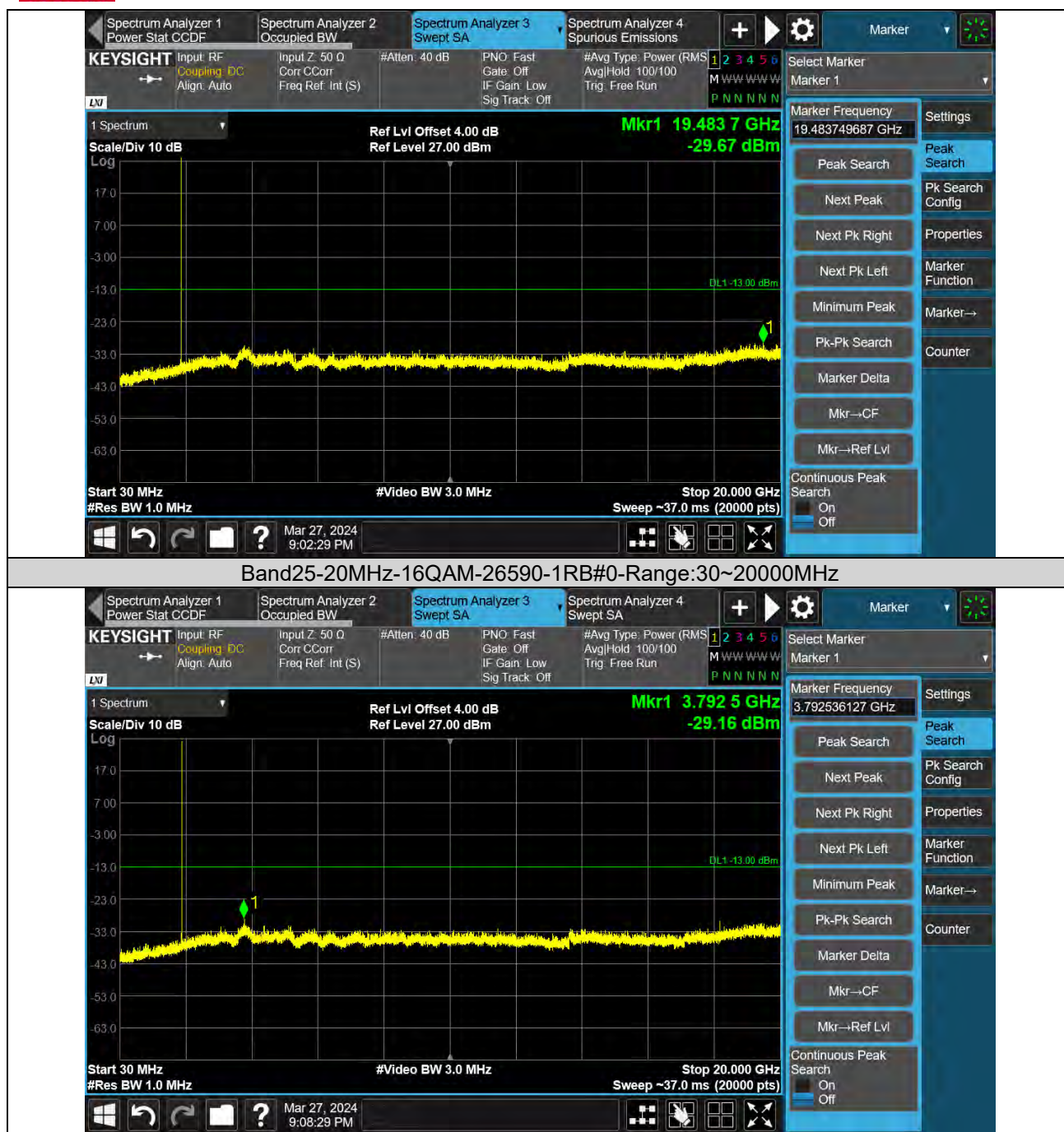


Band25-20MHz-16QAM-26365-1RB#0-Range:30~20000MHz



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FREQUENCY STABILITY

Test Result

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band25	20MHz	QPSK	26140	6RB#0	VL	NT	3.4	0.001828	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	VN	NT	-24	-0.012903	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	VH	NT	-23.5	-0.012634	±2.5	PASS

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Band25	20MHz	QPSK	26365	6RB#0	VL	NT	18.3	0.009734	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	VN	NT	24.4	0.012979	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	VH	NT	13.7	0.007287	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	VL	NT	-7.6	-0.003990	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	VN	NT	24.2	0.012703	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	VH	NT	-12.6	-0.006614	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	VL	NT	27	0.014516	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	VN	NT	20.2	0.010860	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	VH	NT	-11.7	-0.006290	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	VL	NT	27	0.014362	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	VN	NT	21.1	0.011223	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	VH	NT	5.2	0.002766	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	VL	NT	27	0.014173	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	VN	NT	-3.9	-0.002047	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	VH	NT	5.1	0.002677	±2.5	PASS

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band25	20MHz	QPSK	26140	6RB#0	NV	-30	-10.5	-0.005645	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	-20	15.9	0.008548	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	-10	-8.3	-0.004462	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	0	17.6	0.009462	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	10	1.1	0.000591	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	20	4.7	0.002527	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	30	-28.4	-0.015269	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	40	16.9	0.009086	±2.5	PASS
Band25	20MHz	QPSK	26140	6RB#0	NV	50	-19.3	-0.010376	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	-30	19.6	0.010426	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	-20	-4	-0.002128	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	-10	-22.9	-0.012181	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	0	10	0.005319	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	10	22.9	0.012181	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	20	16.8	0.008936	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	30	30.4	0.016170	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	40	4.9	0.002606	±2.5	PASS
Band25	20MHz	QPSK	26365	6RB#0	NV	50	34.4	0.018298	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	-30	9.3	0.004882	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	-20	-2.1	-0.001102	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	-10	-10.1	-0.005302	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	0	34.8	0.018268	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	10	34.3	0.018005	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	20	-9.2	-0.004829	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	30	-15.1	-0.007927	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	40	-27.7	-0.014541	±2.5	PASS
Band25	20MHz	QPSK	26590	6RB#0	NV	50	7.3	0.003832	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	-30	-10.5	-0.005645	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	-20	-23.1	-0.012419	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	-10	1	0.000538	±2.5	PASS



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Band25	20MHz	16QAM	26140	6RB#0	NV	0	27.9	0.015000	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	10	-3.3	-0.001774	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	20	9.6	0.005161	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	30	6.5	0.003495	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	40	30.1	0.016183	±2.5	PASS
Band25	20MHz	16QAM	26140	6RB#0	NV	50	16.5	0.008871	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	-30	9.9	0.005266	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	-20	-34.1	-0.018138	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	-10	-34.4	-0.018298	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	0	-19.4	-0.010319	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	10	-22.1	-0.011755	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	20	-8.7	-0.004628	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	30	-3.1	-0.001649	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	40	-8.6	-0.004574	±2.5	PASS
Band25	20MHz	16QAM	26365	6RB#0	NV	50	29.9	0.015904	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	-30	-22.2	-0.011654	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	-20	-7	-0.003675	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	-10	7.6	0.003990	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	0	-8.5	-0.004462	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	10	-21.5	-0.011286	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	20	-24.2	-0.012703	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	30	-11.7	-0.006142	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	40	-10.2	-0.005354	±2.5	PASS
Band25	20MHz	16QAM	26590	6RB#0	NV	50	5.3	0.002782	±2.5	PASS



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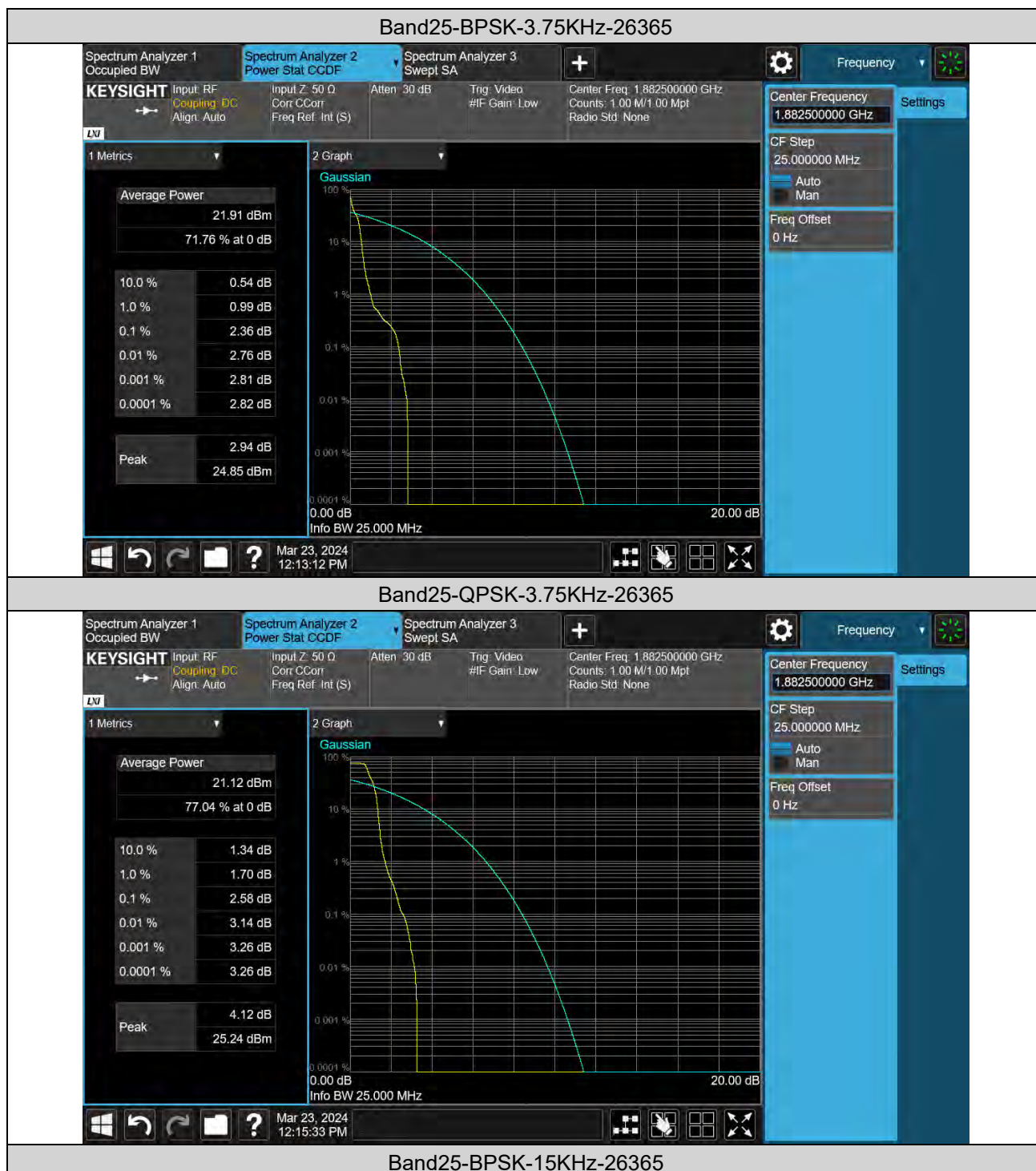
NB-IOT: LTE BAND25(INCLUDING LTE BAND2)

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Result(dB)	Limit(dB)	Verdict
Band25	BPSK	3.75	26365	2.36	13	PASS
	QPSK	3.75	26365	2.58	13	PASS
	BPSK	15	26365	2.31	13	PASS
	QPSK	15	26365	2.53	13	PASS

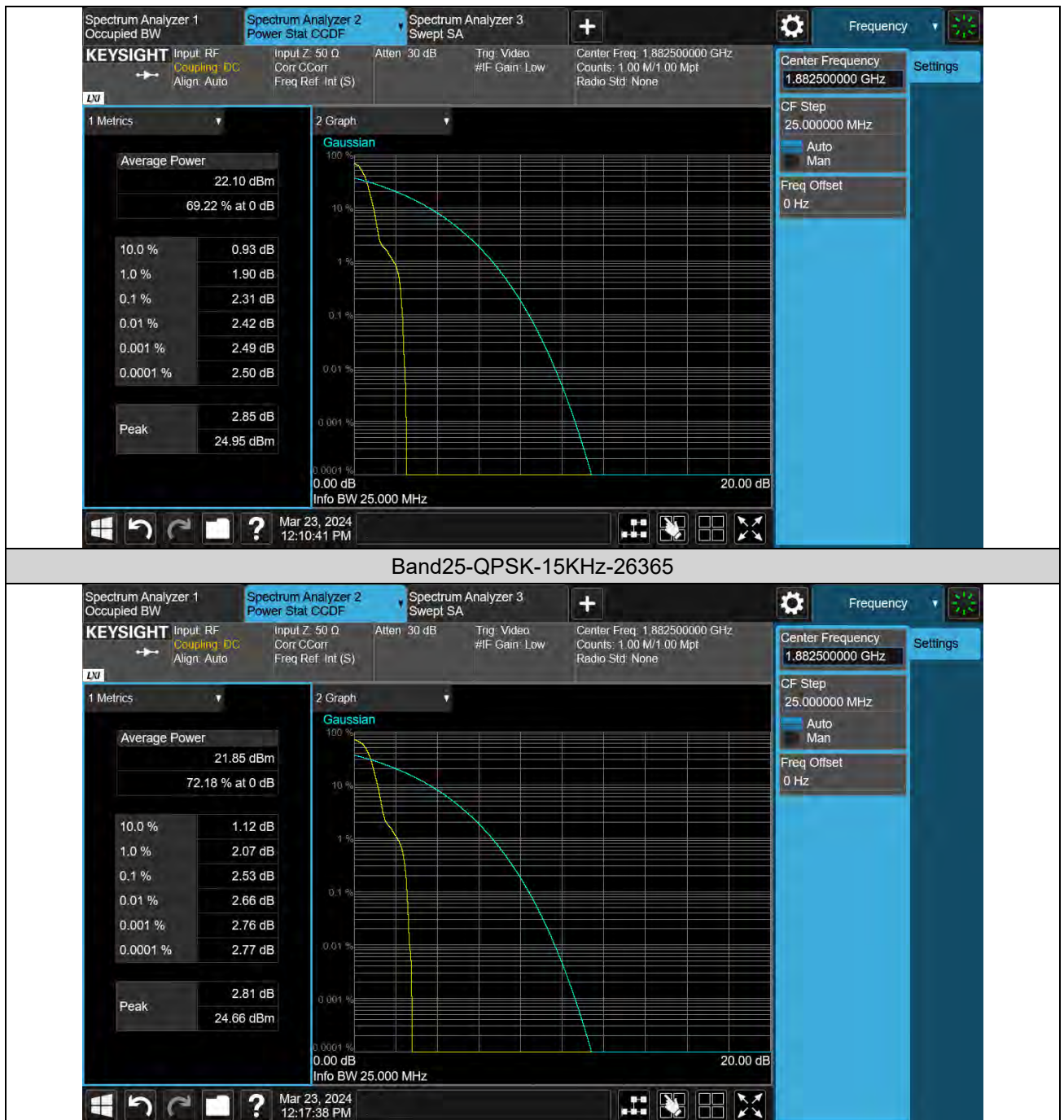
Test Graphs





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26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

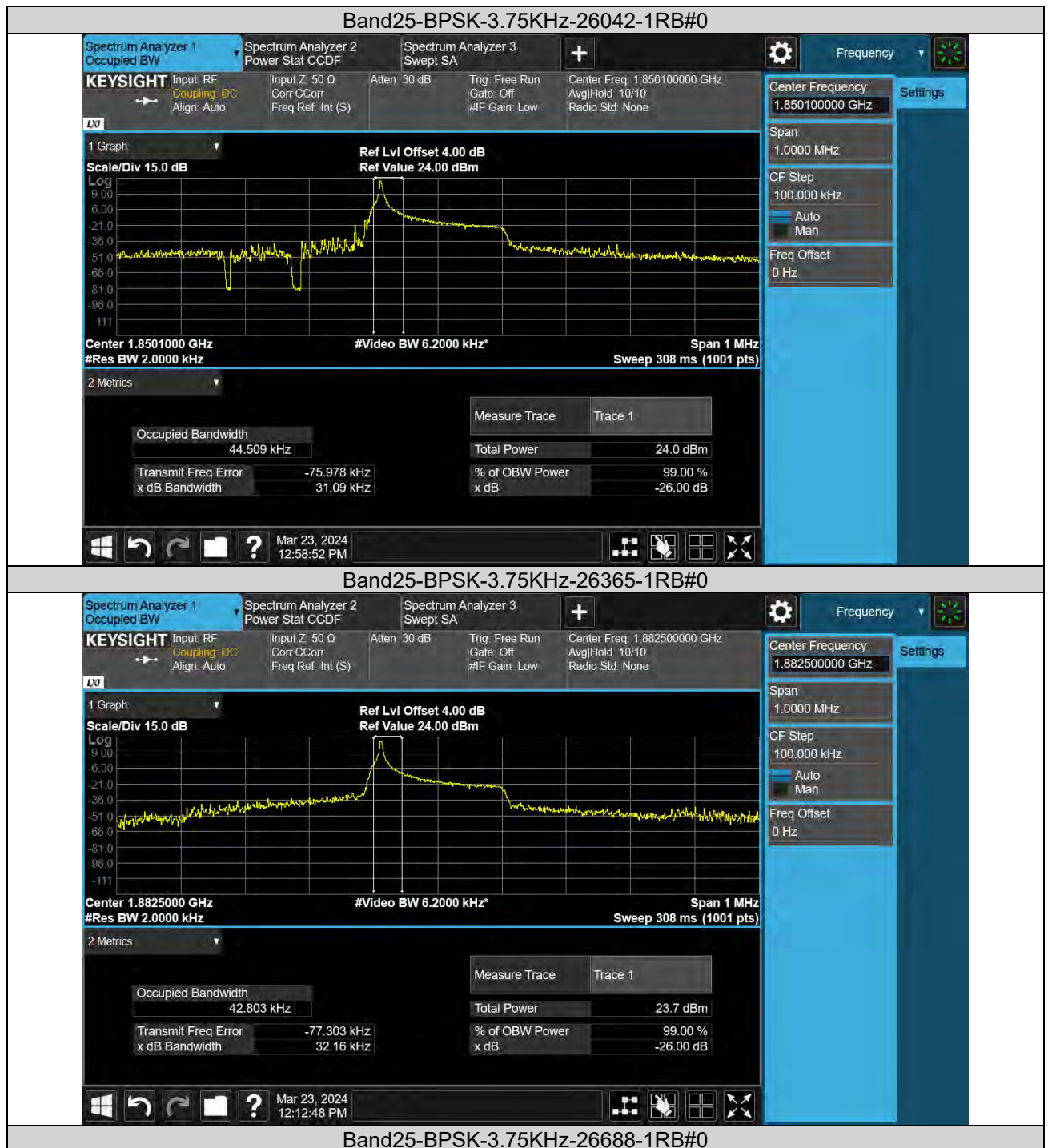
Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)	Verdict
Band25	BPSK	3.75	26042	1RB#0	44.509	31.09	PASS
Band25	BPSK	3.75	26365	1RB#0	42.803	32.16	PASS
Band25	BPSK	3.75	26688	1RB#0	41.853	31.99	PASS
Band25	QPSK	3.75	26042	1RB#0	49.268	35.21	PASS
Band25	QPSK	3.75	26365	1RB#0	48.954	35.25	PASS
Band25	QPSK	3.75	26688	1RB#0	48.801	35.29	PASS
Band25	BPSK	15	26042	1RB#0	121.60	114.5	PASS
Band25	BPSK	15	26365	1RB#0	107.84	88.88	PASS
Band25	BPSK	15	26688	1RB#0	113.28	118.0	PASS
Band25	QPSK	15	26042	1RB#0	102.83	129.6	PASS
Band25	QPSK	15	26365	1RB#0	95.329	116.2	PASS
Band25	QPSK	15	26688	1RB#0	107.27	101.0	PASS
Band25	QPSK	15	26042	12RB#0	187.16	202.5	PASS
Band25	QPSK	15	26365	12RB#0	189.60	201.6	PASS
Band25	QPSK	15	26688	12RB#0	190.62	202.9	PASS



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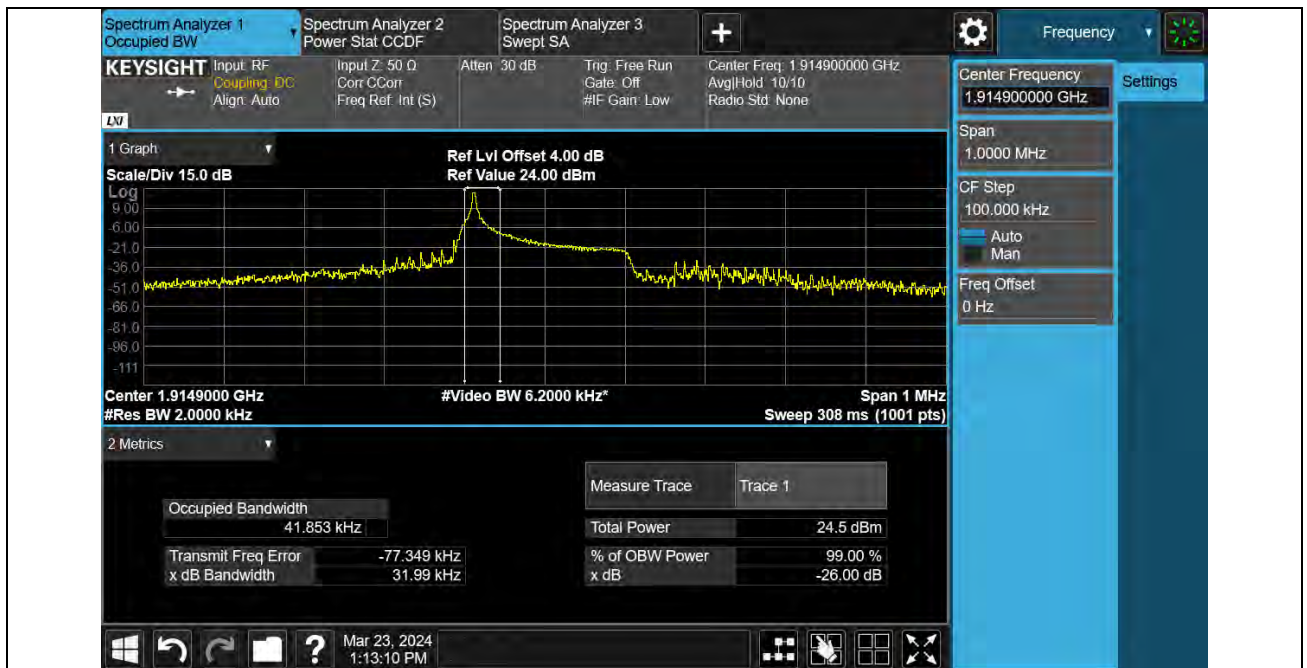
Test Graphs



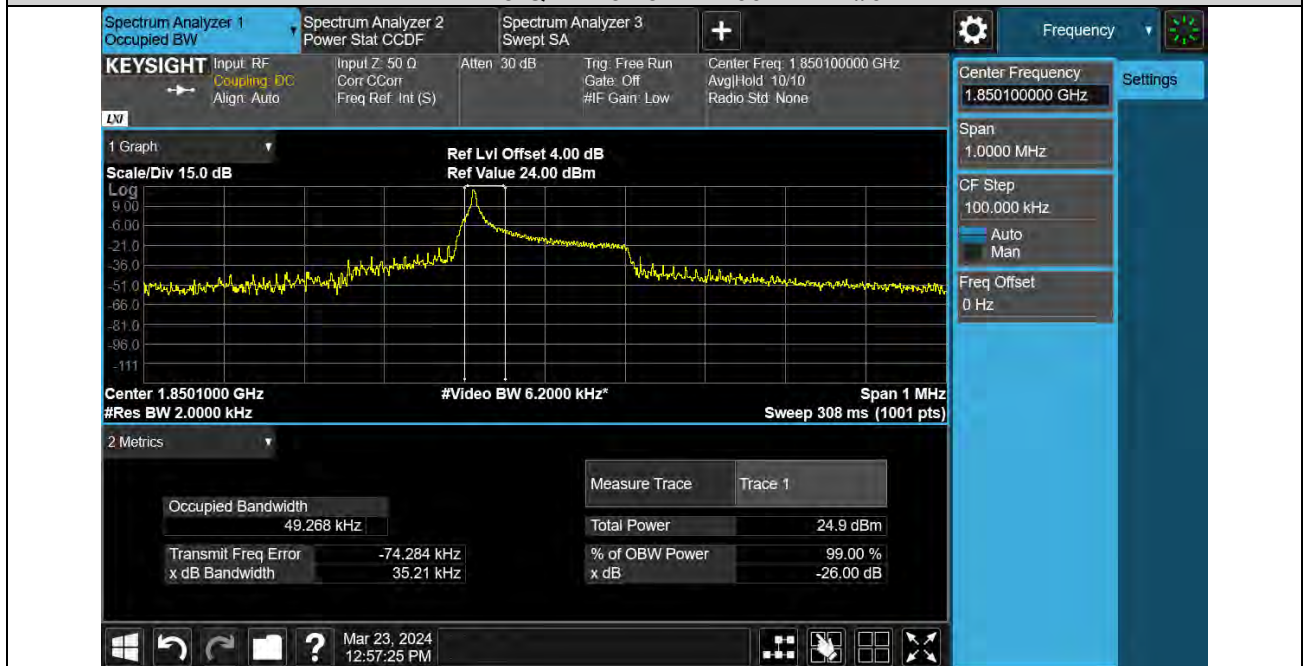


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Band25-QPSK-3.75KHz-26042-1RB#0



Band25-QPSK-3.75KHz-26365-1RB#0

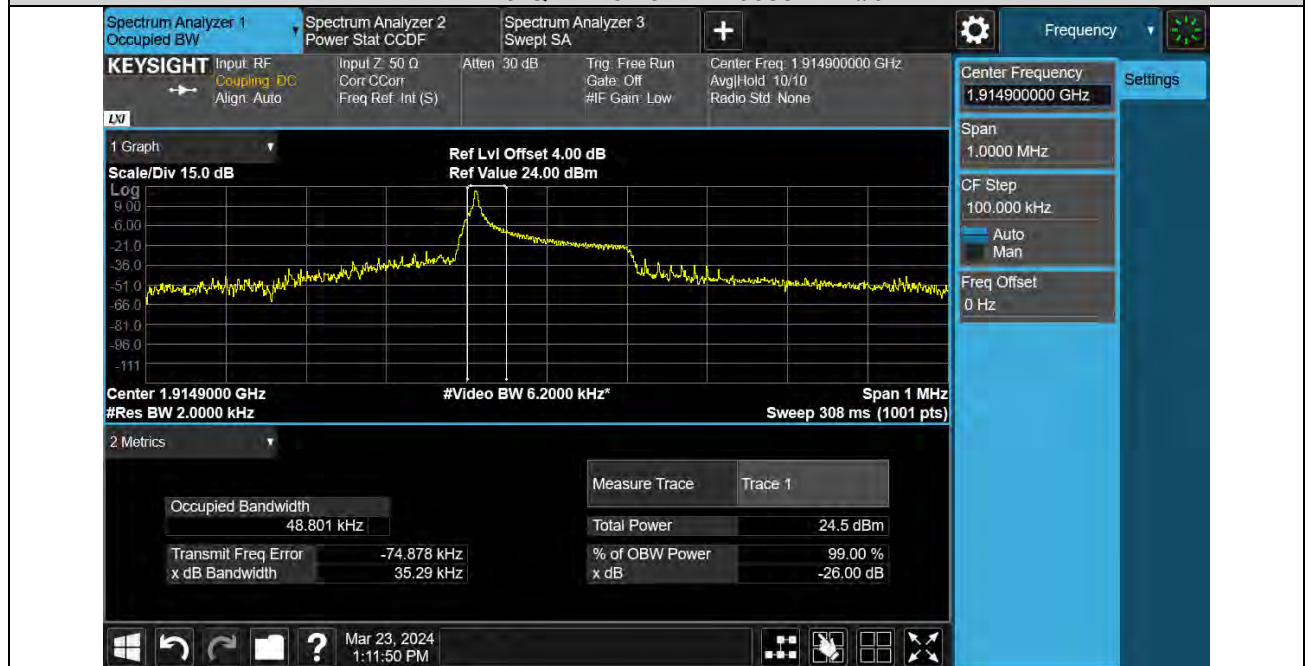


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Test Report No.: W7L-240204W001RF02



Band25-QPSK-3.75KHz-26688-1RB#0

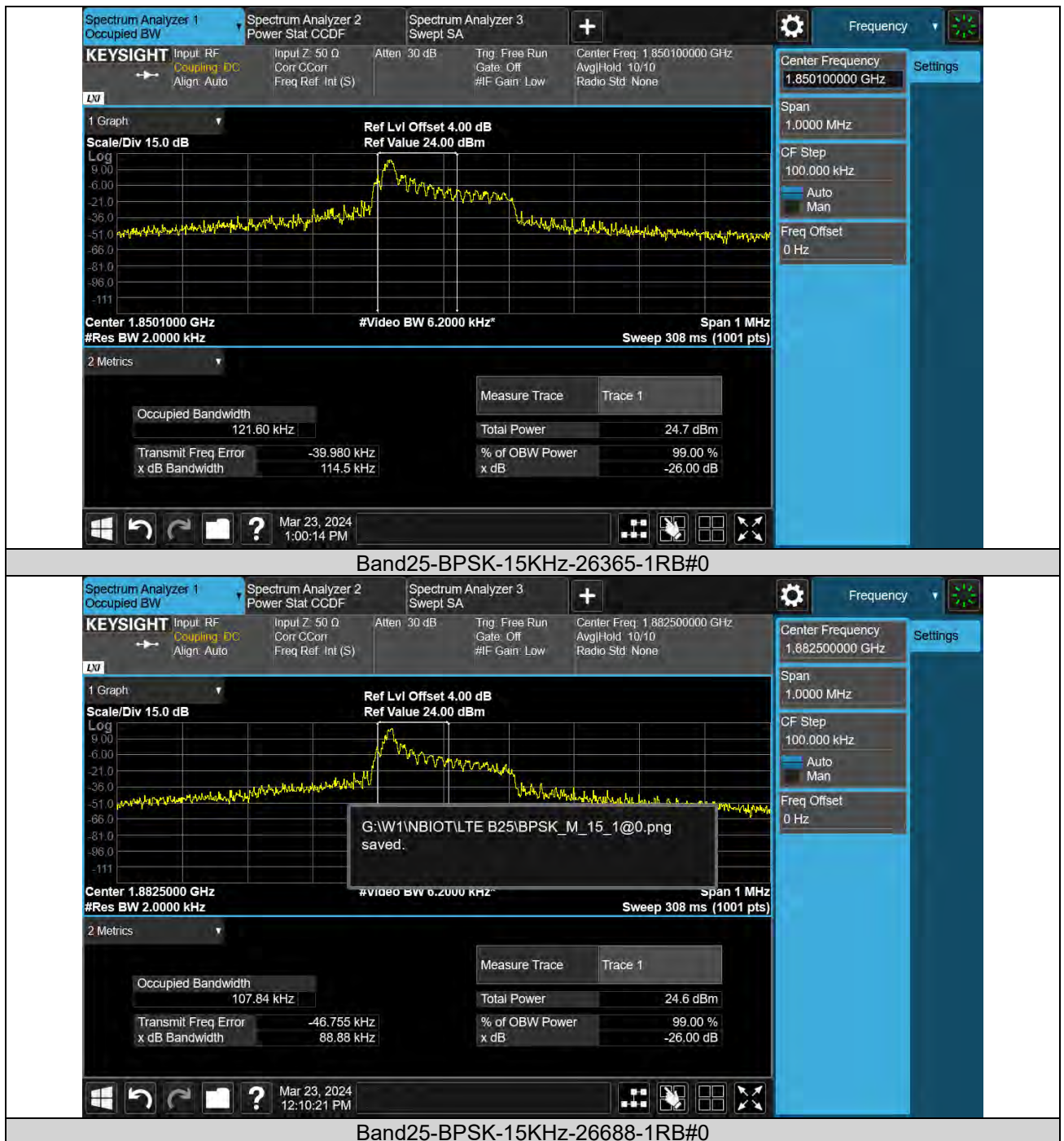


Band25-BPSK-15KHz-26042-1RB#0



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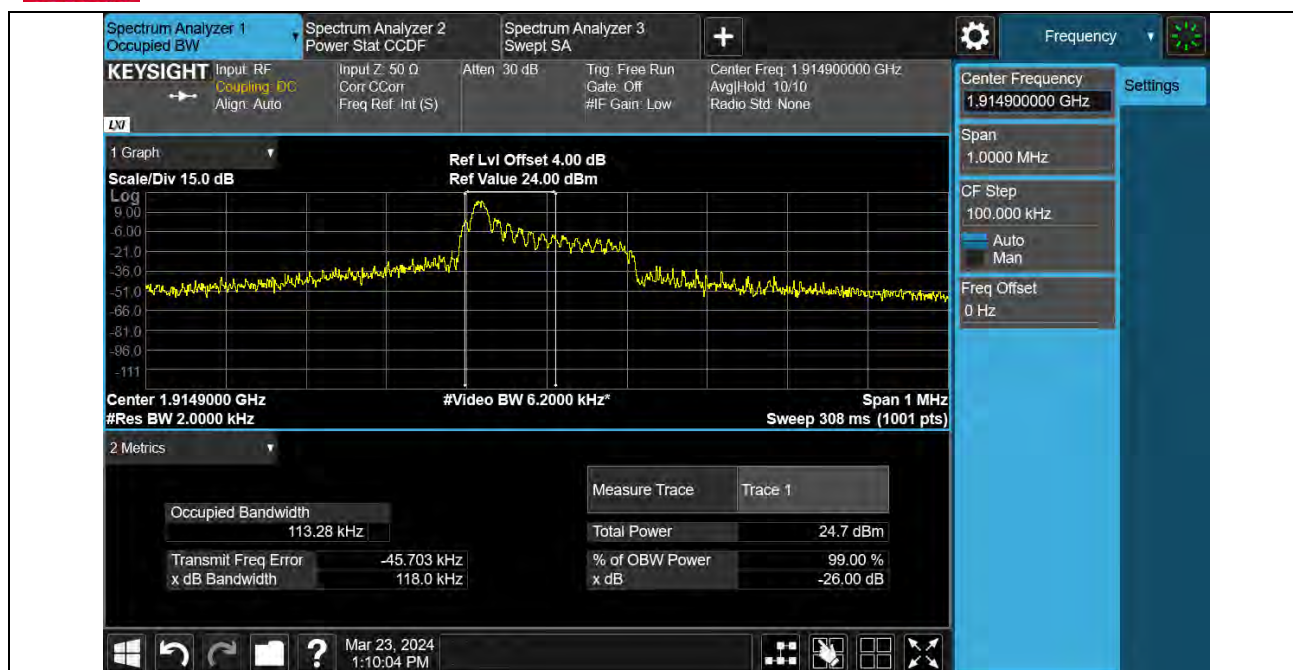
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Band25-QPSK-15KHz-26042-1RB#0

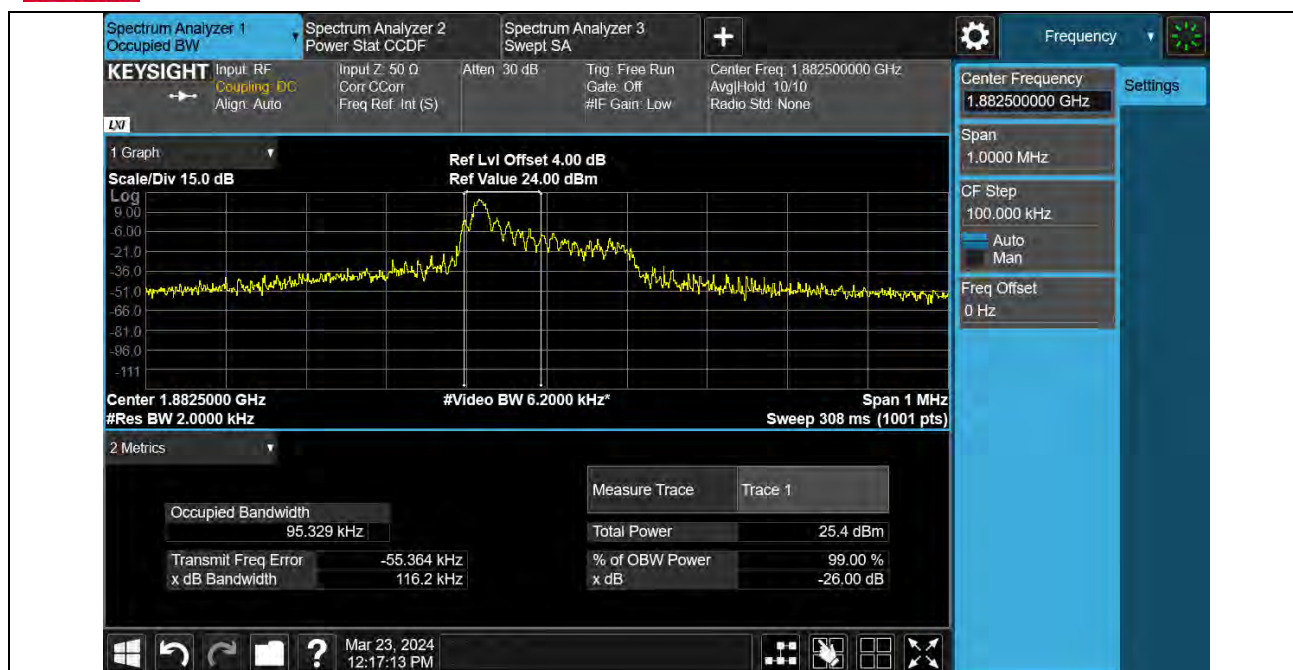


Band25-QPSK-15KHz-26365-1RB#0



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Band25-QPSK-15KHz-26688-1RB#0

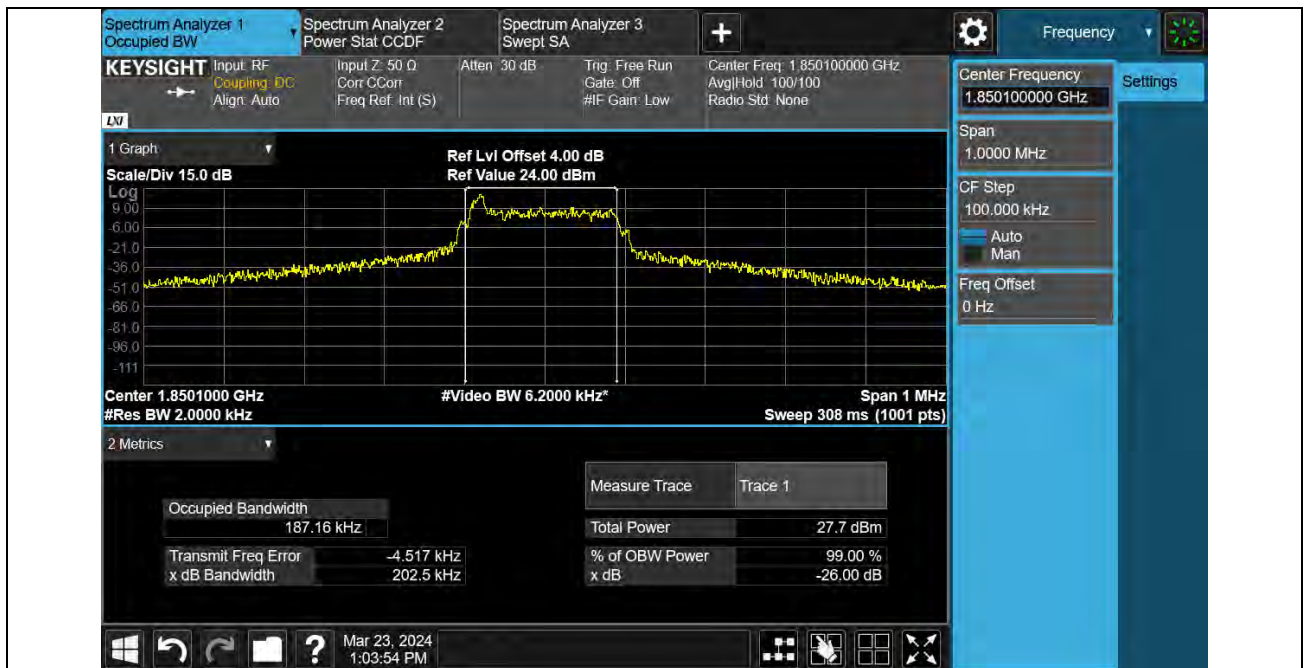


Band25-QPSK-15KHz-26042-12RB#0

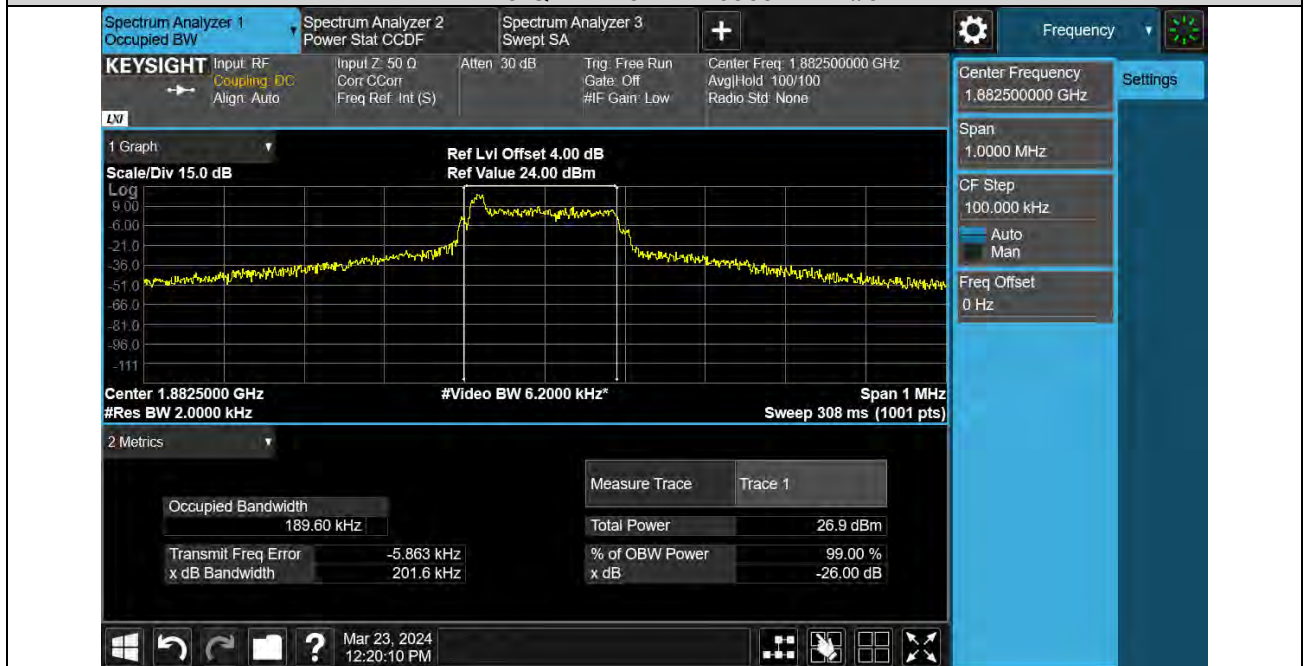


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Band25-QPSK-15KHz-26365-12RB#0



Band25-QPSK-15KHz-26688-12RB#0



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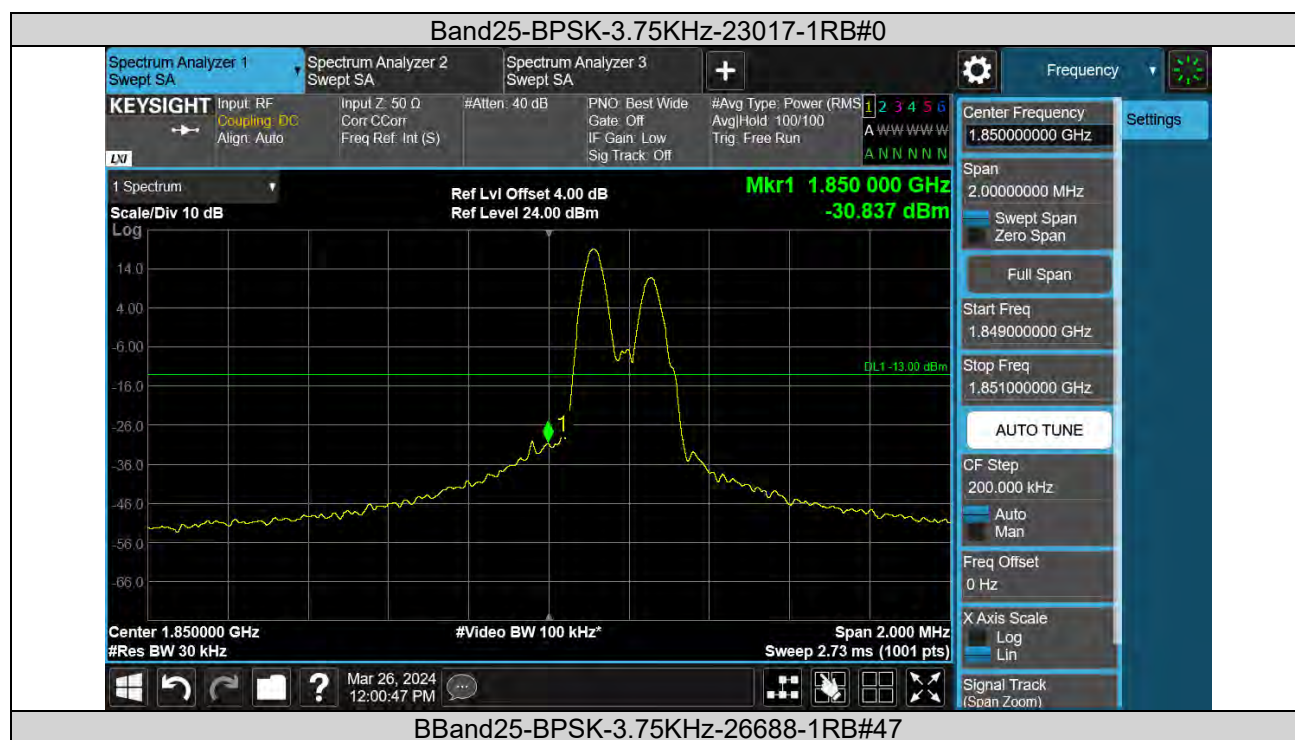


BAND EDGE

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Result(dBm)	Verdict
Band25	BPSK	3.75	26042	1RB#0	See Graph	PASS
Band25	BPSK	3.75	26688	1RB#47	See Graph	PASS
Band25	QPSK	3.75	26042	1RB#0	See Graph	PASS
Band25	QPSK	3.75	26688	1RB#47	See Graph	PASS
Band25	BPSK	15	26042	1RB#0	See Graph	PASS
Band25	BPSK	15	26688	1RB#11	See Graph	PASS
Band25	QPSK	15	26042	1RB#0	See Graph	PASS
Band25	QPSK	15	26688	1RB#11	See Graph	PASS
Band25	QPSK	15	26042	12RB#0	See Graph	PASS
Band25	QPSK	15	26688	12RB#0	See Graph	PASS

Test Graphs





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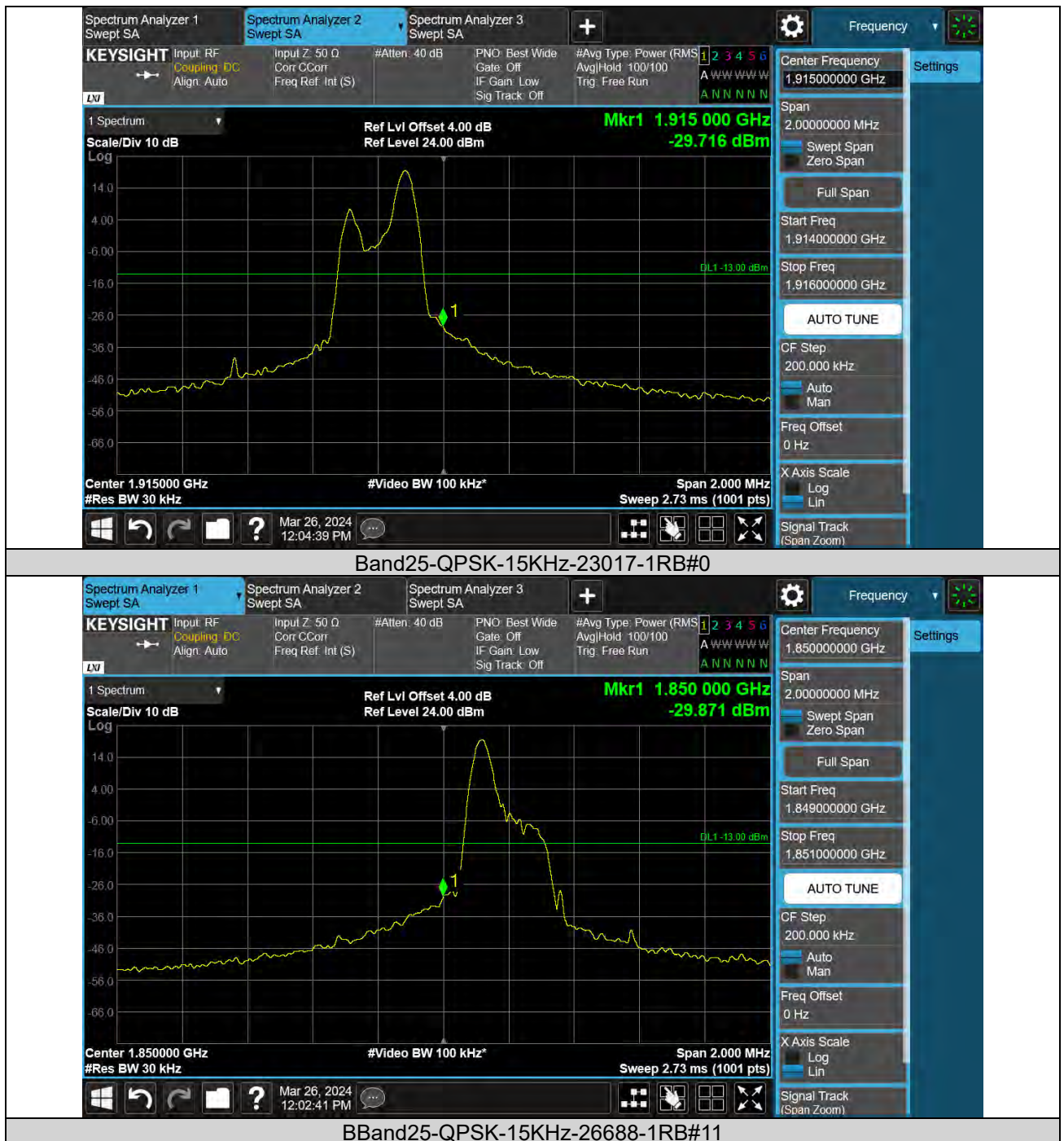
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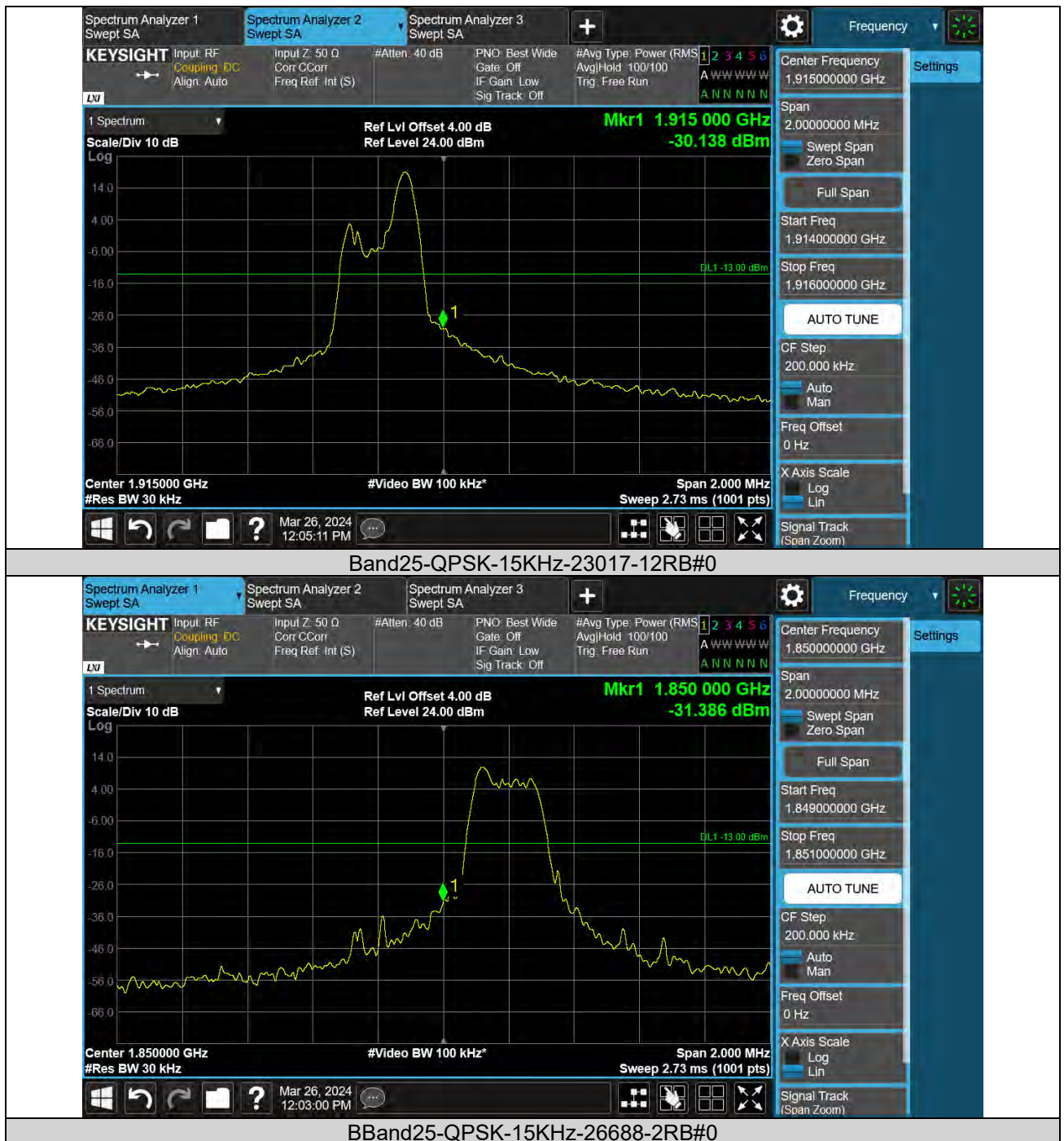
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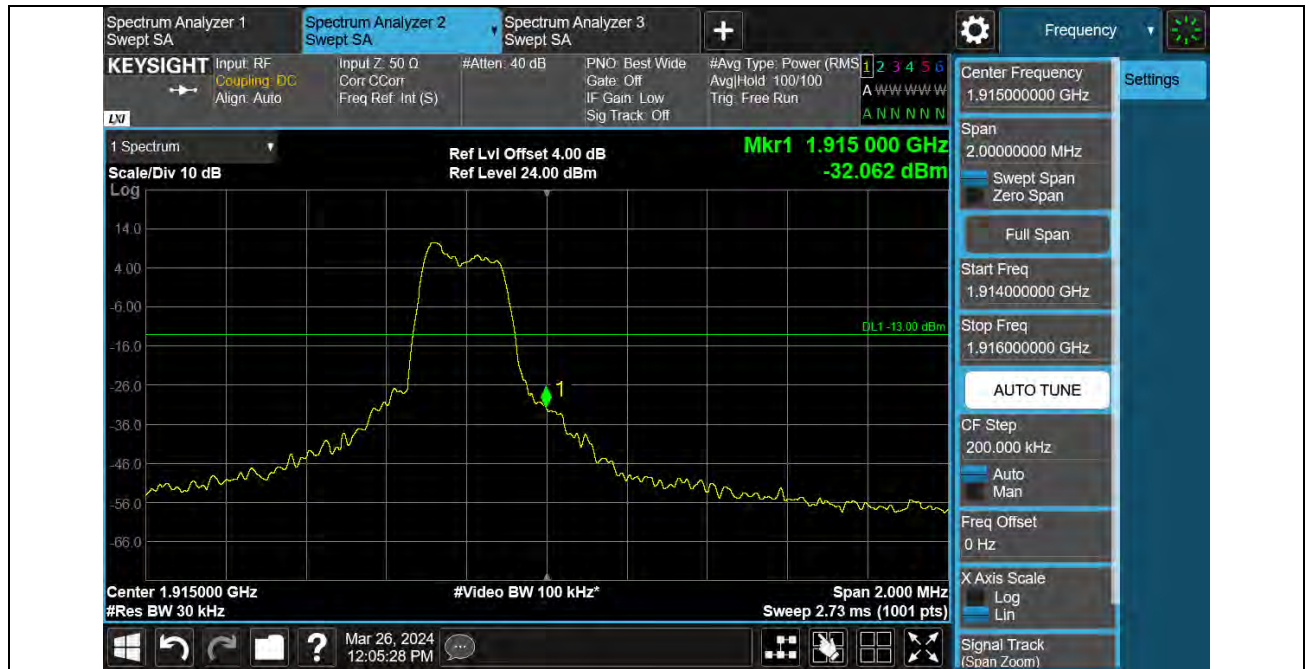
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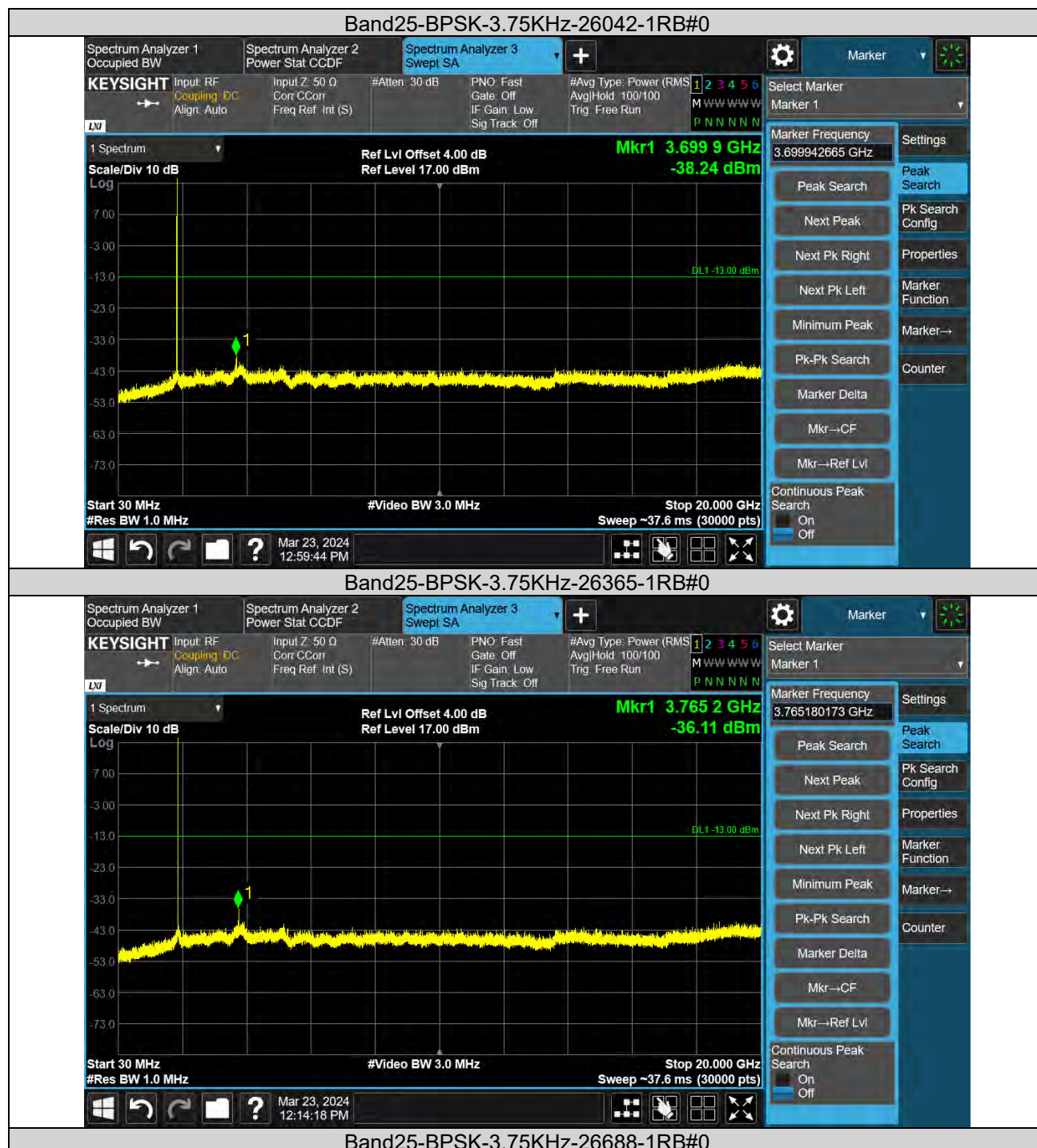


CONDUCTED SPURIOUS EMISSION

Test Result

Band	Modulation	Sub-carrier spacing(KHz)	Channel	Ntones	Frequency Range	Result (dBm)	Verdict
Band25	BPSK	3.75	26042	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	BPSK	3.75	26365	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	BPSK	3.75	26688	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	3.75	26042	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	3.75	26365	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	3.75	26688	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	BPSK	15	26042	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	BPSK	15	26365	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	BPSK	15	26688	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	15	26042	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	15	26365	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	15	26688	1RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	15	26042	12RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	15	26365	12RB#0	Range:30M~20000M	See Graph	PASS
Band25	QPSK	15	26688	12RB#0	Range:30M~20000M	See Graph	PASS

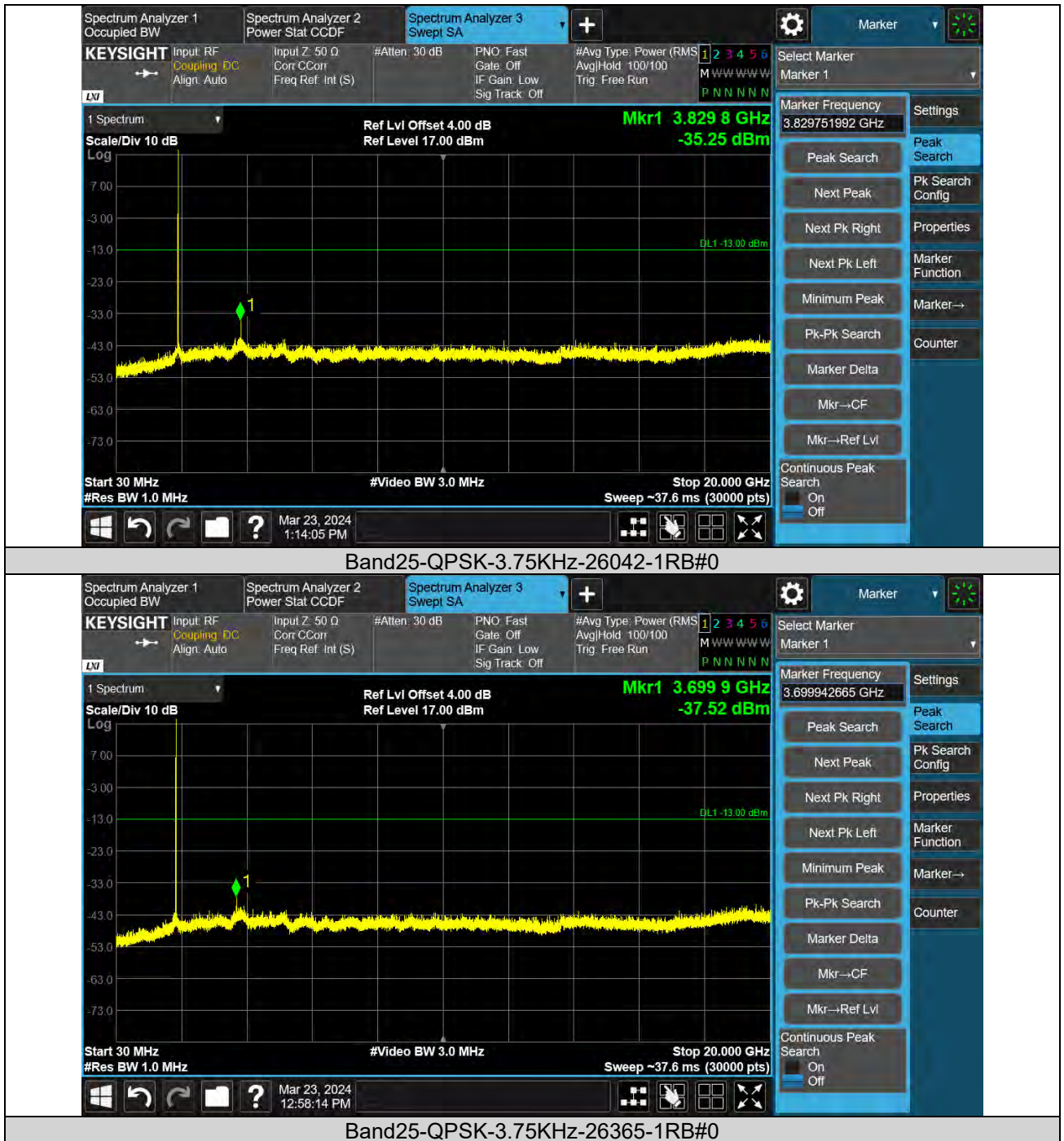
Test Graphs





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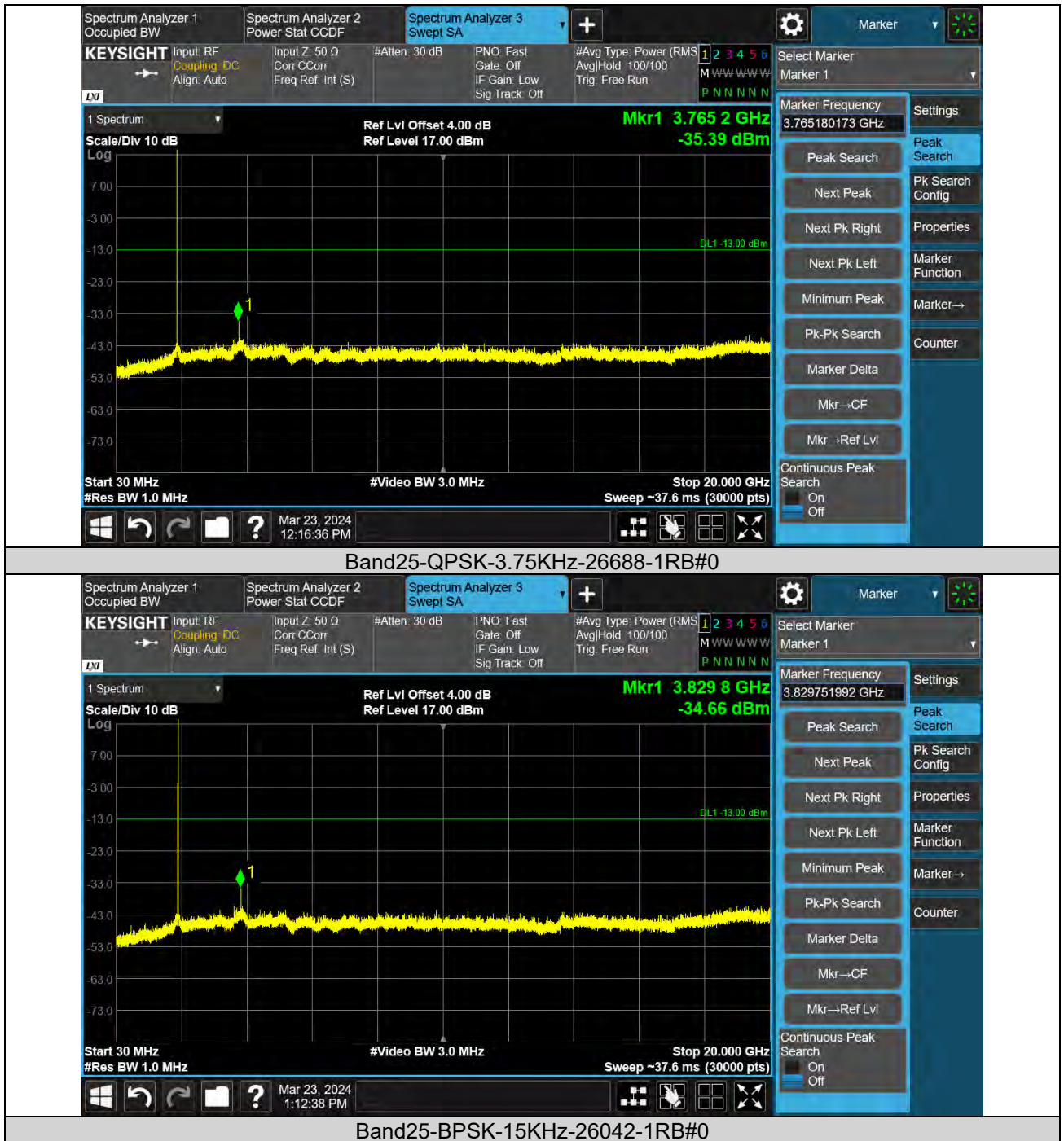
Test Report No.: W7L-240204W001RF02





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VERITAS

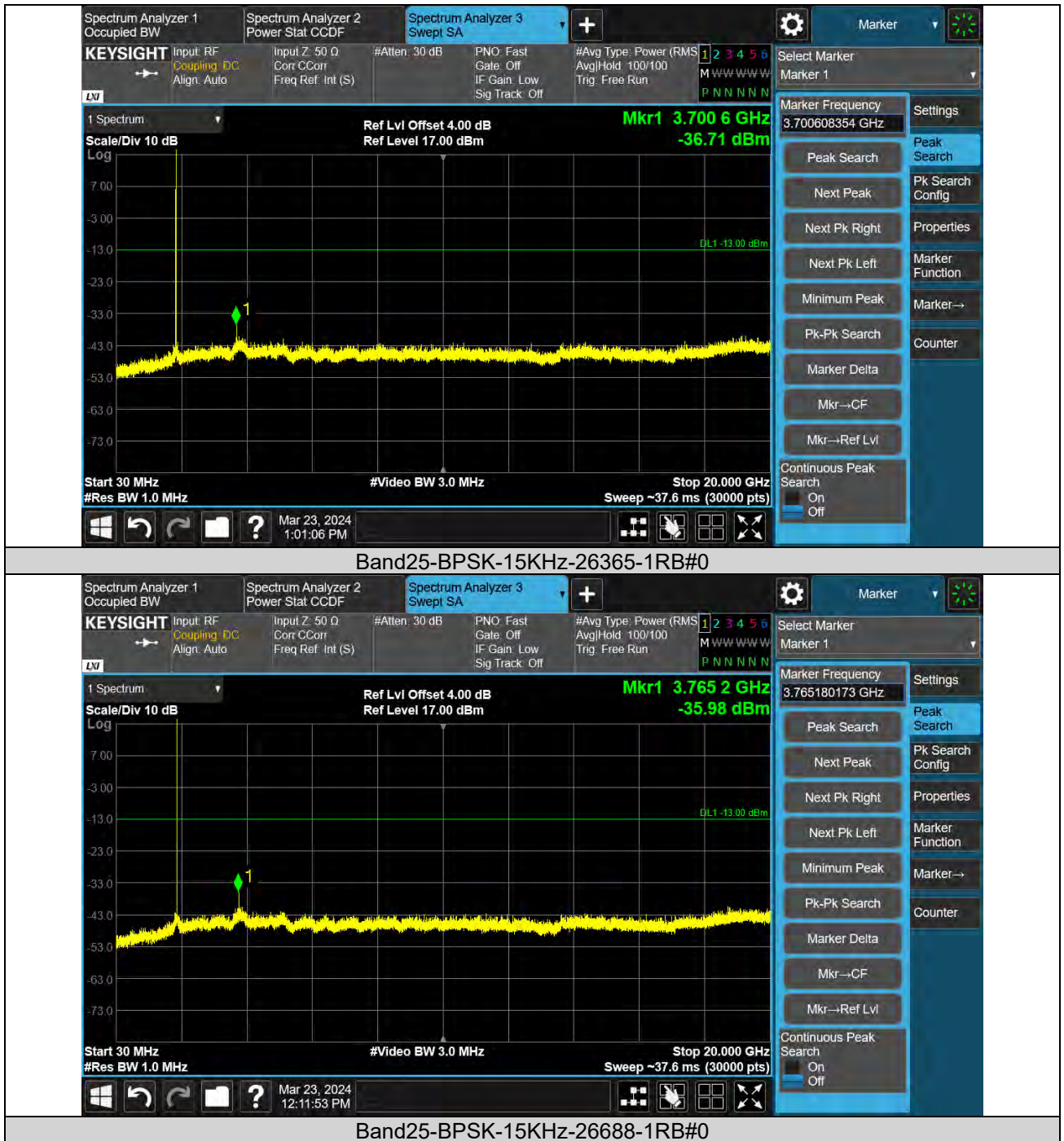
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VERITAS

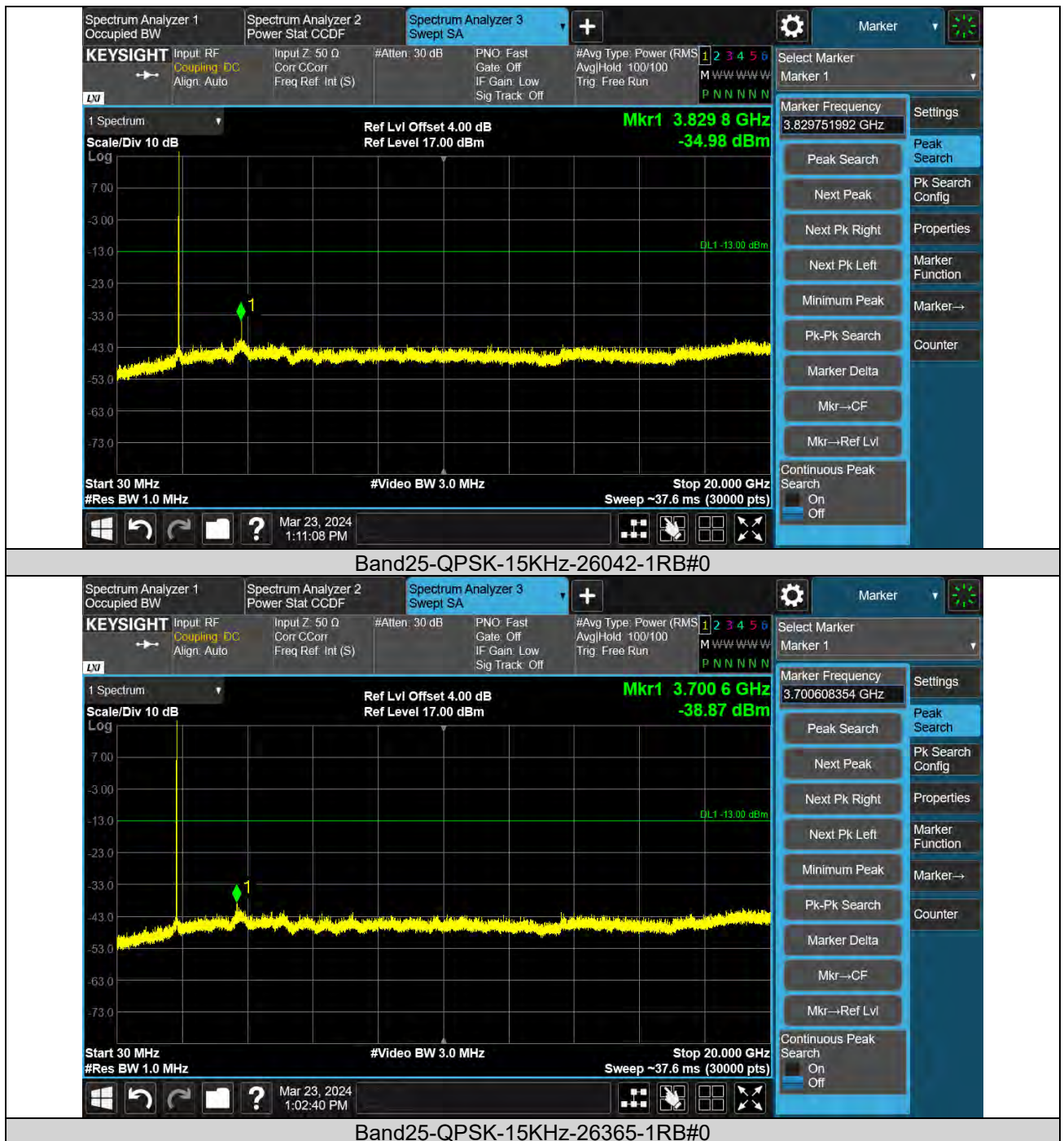
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VERITAS

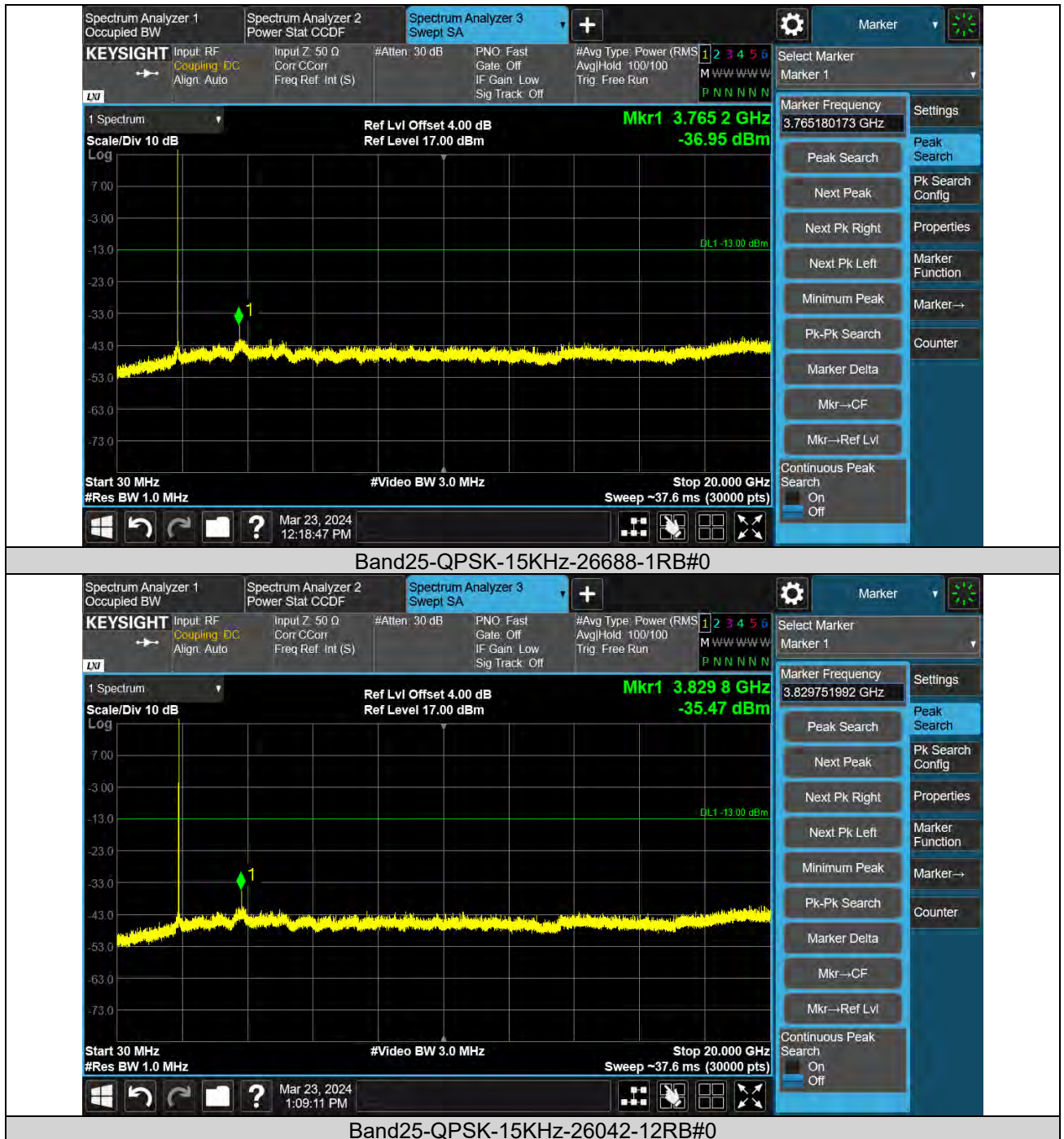
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VERITAS

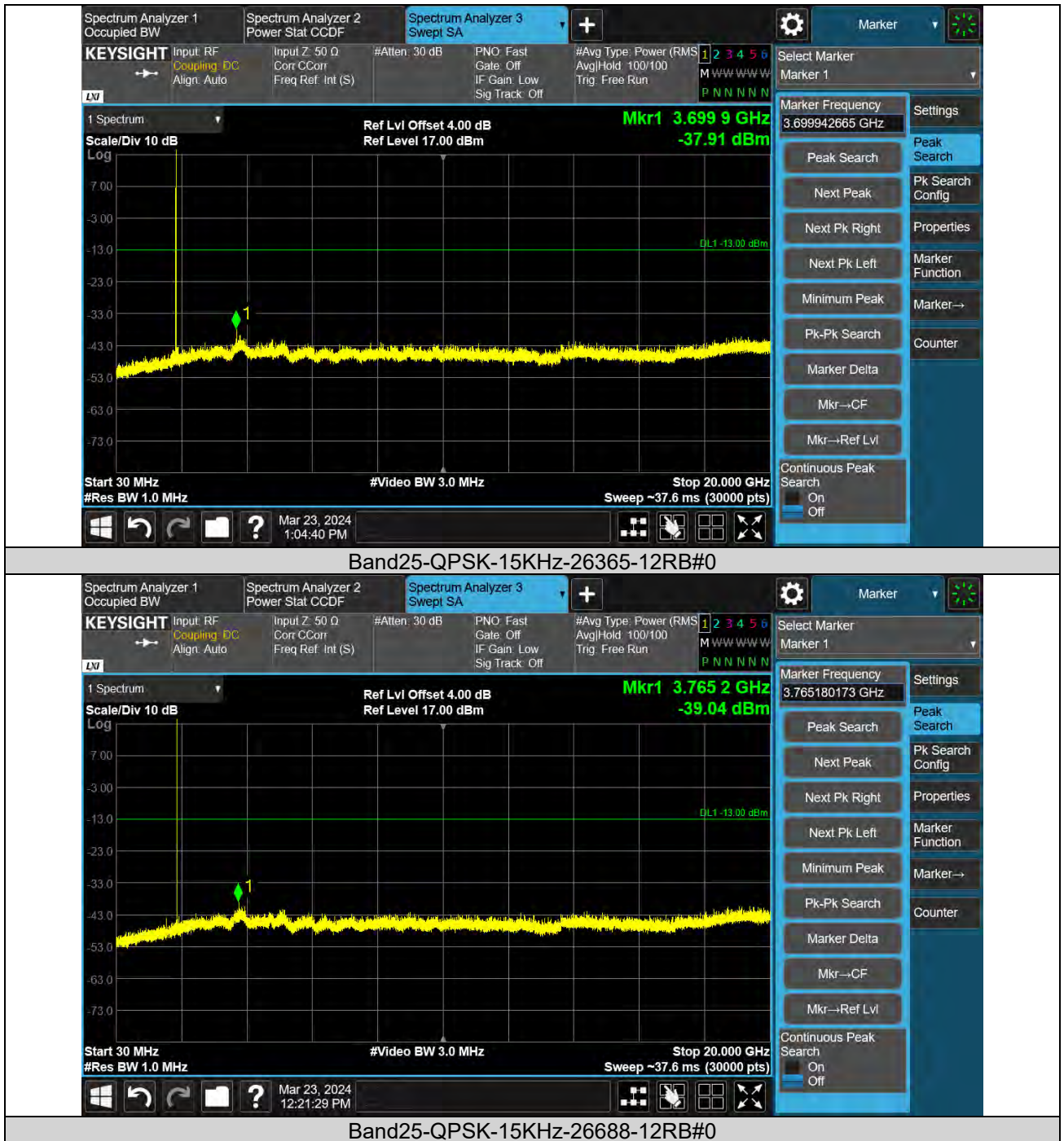
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VERITAS

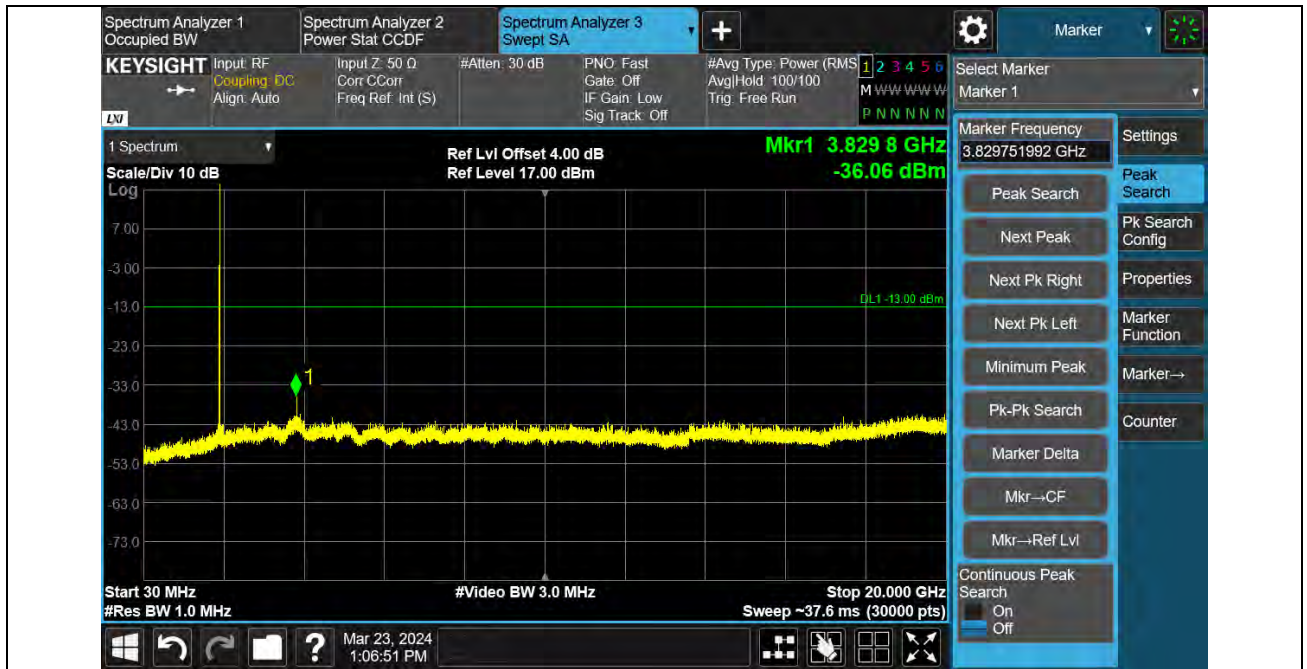
Test Report No.: W7L-240204W001RF02





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VERITAS

Test Report No.: W7L-240204W001RF02



FREQUENCY STABILITY

Test Result

Voltage								
Band	Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band25	QPSK	26365	VL	NT	-15.7	-0.008441	±2.5	PASS
Band25	QPSK	26365	VN	NT	-10.8	-0.005806	±2.5	PASS
Band25	QPSK	26365	VH	NT	-3.8	-0.002043	±2.5	PASS
Band25	BPSK	26365	VL	NT	-8	-0.004255	±2.5	PASS
Band25	BPSK	26365	VN	NT	-7.5	-0.003989	±2.5	PASS
Band25	BPSK	26365	VH	NT	-4.4	-0.002340	±2.5	PASS

Temperature								
Band	Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band25	QPSK	26365	NV	-30	26.2	0.014086	±2.5	PASS
Band25	QPSK	26365	NV	-20	-10.4	-0.005591	±2.5	PASS
Band25	QPSK	26365	NV	-10	-22.2	-0.011935	±2.5	PASS
Band25	QPSK	26365	NV	0	-18	-0.009677	±2.5	PASS
Band25	QPSK	26365	NV	10	19.4	0.010430	±2.5	PASS
Band25	QPSK	26365	NV	20	-4.8	-0.002581	±2.5	PASS
Band25	QPSK	26365	NV	30	-34	-0.018280	±2.5	PASS
Band25	QPSK	26365	NV	40	27.1	0.014570	±2.5	PASS
Band25	QPSK	26365	NV	50	26.4	0.014194	±2.5	PASS
Band25	BPSK	26365	NV	-30	31	0.016489	±2.5	PASS
Band25	BPSK	26365	NV	-20	9.6	0.005106	±2.5	PASS
Band25	BPSK	26365	NV	-10	13.7	0.007287	±2.5	PASS
Band25	BPSK	26365	NV	0	-16.3	-0.008670	±2.5	PASS
Band25	BPSK	26365	NV	10	19.3	0.010266	±2.5	PASS
Band25	BPSK	26365	NV	20	14.5	0.007713	±2.5	PASS
Band25	BPSK	26365	NV	30	-22	-0.011702	±2.5	PASS
Band25	BPSK	26365	NV	40	18.8	0.010000	±2.5	PASS
Band25	BPSK	26365	NV	50	-5	-0.002660	±2.5	PASS

---END---