



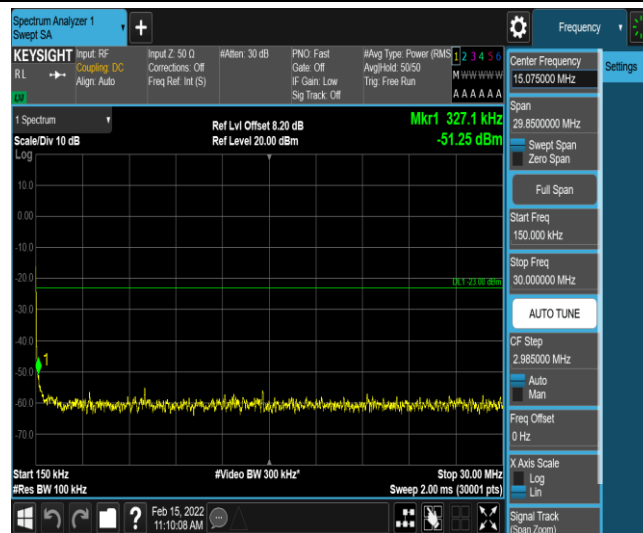
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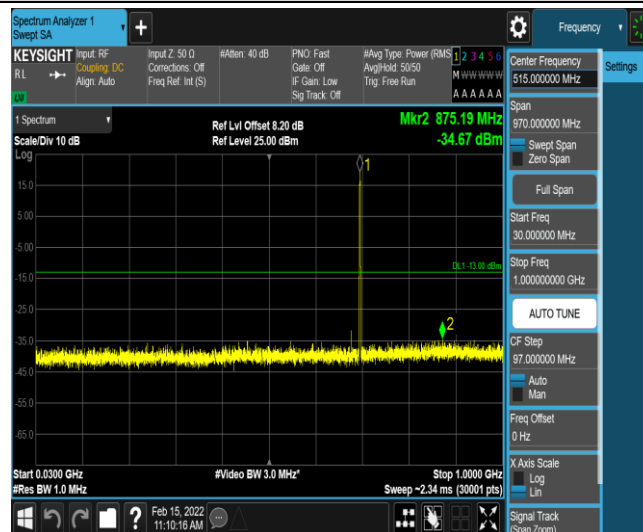
Band12-10MHz-16QAM-23060-1-0-Low-12000-26500--52.59-PASS



Band12-10MHz-16QAM-23095-1-0-Low-0.009-0.15--53.59-PASS



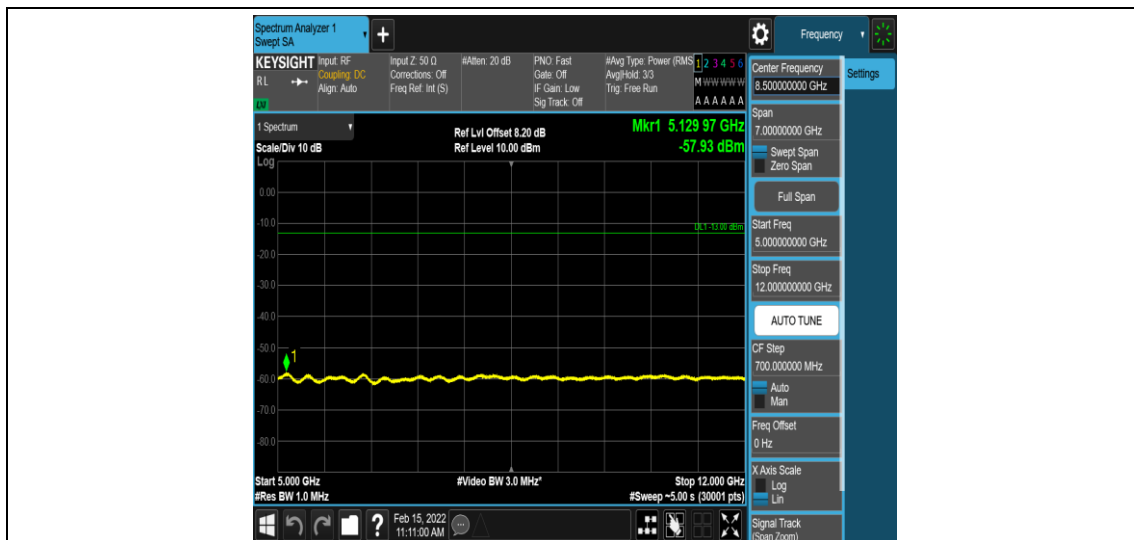
Band12-10MHz-16QAM-23095-1-0-Low-0.15-30--51.25-PASS



Band12-10MHz-16QAM-23095-1-0-Low-30-1000--34.67-PASS



Band12-10MHz-16QAM-23095-1-0-Low-1000-5000--36.91-PASS



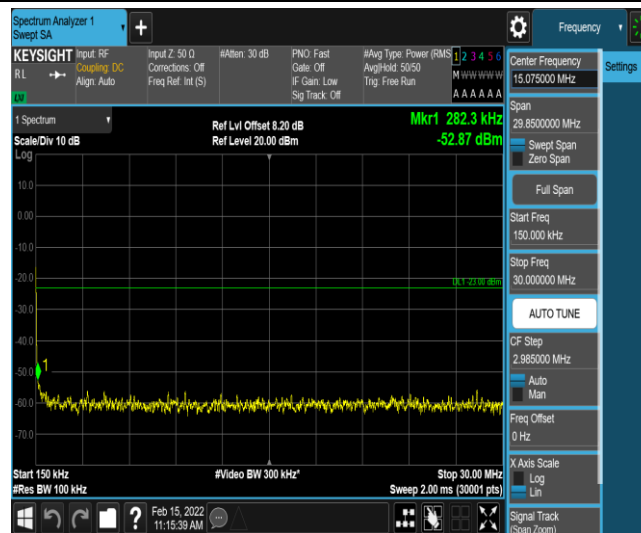
Band12-10MHz-16QAM-23095-1-0-Low-5000-12000--57.93-PASS



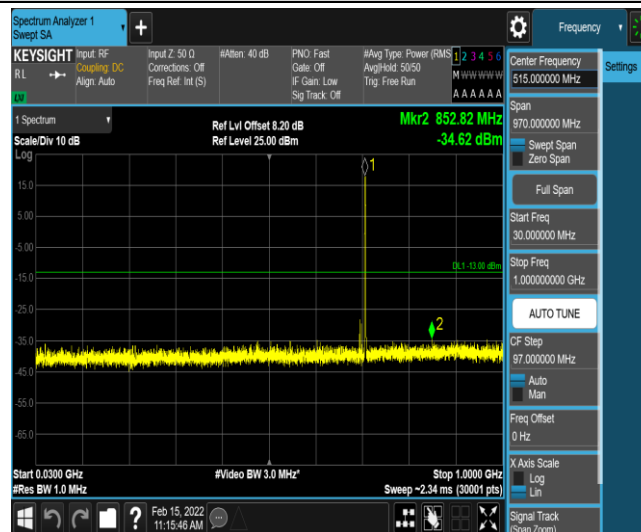
Band12-10MHz-16QAM-23095-1-0-Low-12000-26500--52.6-PASS



Band12-10MHz-16QAM-23130-1-0-High-0.009-0.15--52.33-PASS



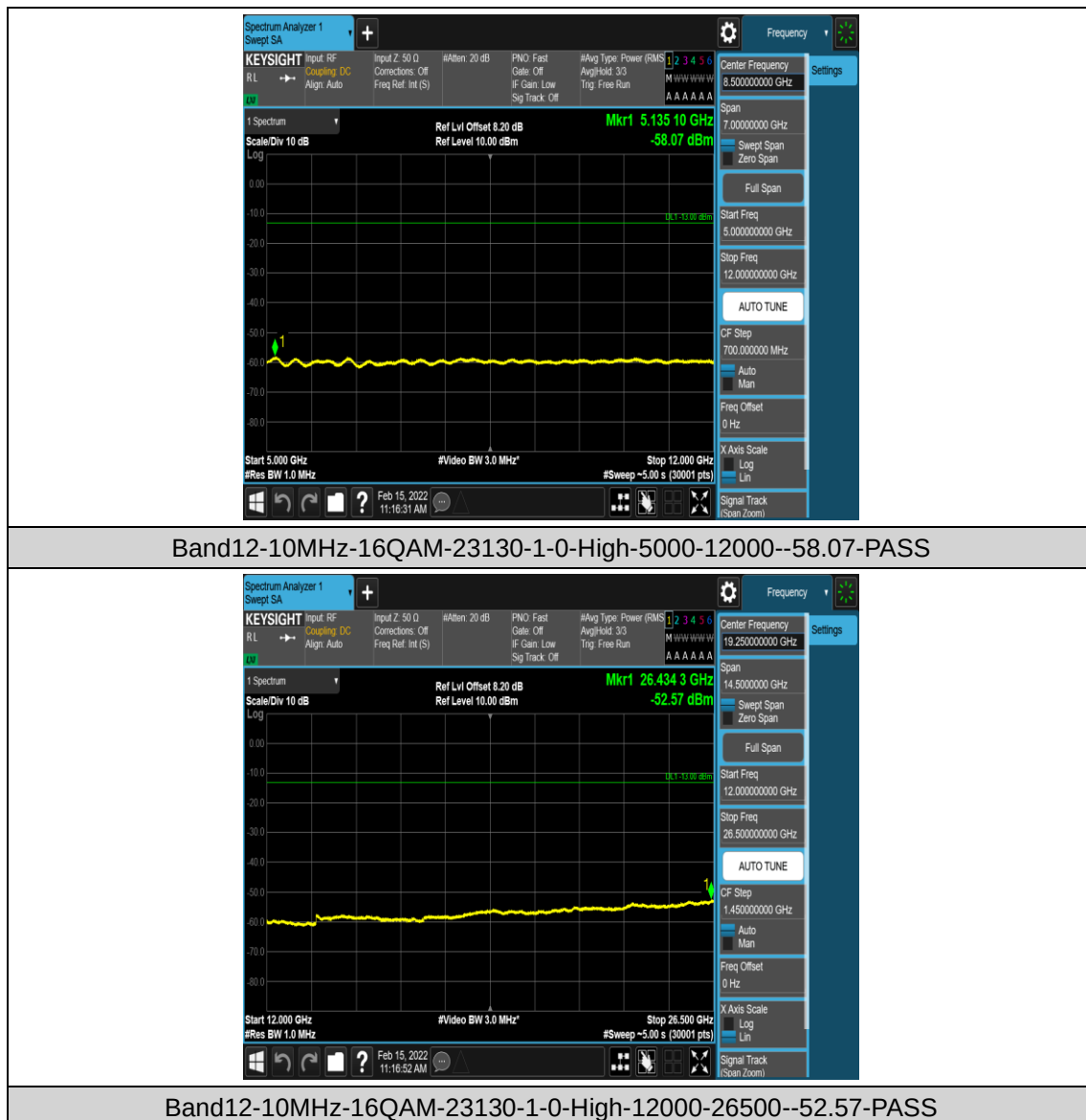
Band12-10MHz-16QAM-23130-1-0-High-0.15-30--52.87-PASS



Band12-10MHz-16QAM-23130-1-0-High-30-1000--34.62-PASS



Band12-10MHz-16QAM-23130-1-0-High-1000-5000--36.95-PASS



Appendix F: Frequency Stability for M1

Test Result

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	2.4	0.003430	± 2.5	PASS
		VN	TN	3.42	0.004888	± 2.5	PASS
		VH	TN	3.73	0.005331	± 2.5	PASS
	MCH	VL	TN	-1.23	-0.001739	± 2.5	PASS
		VN	TN	-1.86	-0.002629	± 2.5	PASS
		VH	TN	-0.58	-0.000820	± 2.5	PASS
	HCH	VL	TN	0.64	0.000895	± 2.5	PASS
		VN	TN	-0.16	-0.000224	± 2.5	PASS
		VH	TN	0.26	0.000363	± 2.5	PASS
16QAM	LCH	VL	TN	1.87	0.002673	± 2.5	PASS
		VN	TN	-0.42	-0.000600	± 2.5	PASS
		VH	TN	-0.19	-0.000272	± 2.5	PASS
	MCH	VL	TN	2.61	0.003689	± 2.5	PASS
		VN	TN	1.19	0.001682	± 2.5	PASS
		VH	TN	-1.79	-0.002530	± 2.5	PASS
	HCH	VL	TN	1.69	0.002363	± 2.5	PASS
		VN	TN	-0.11	-0.000154	± 2.5	PASS
		VH	TN	-0.15	-0.000210	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.83	0.005474	± 2.5	PASS
		VN	-20	0.1	0.000143	± 2.5	PASS
		VN	-10	3.51	0.005016	± 2.5	PASS
		VN	0	4.3	0.006145	± 2.5	PASS
		VN	10	2.1	0.003001	± 2.5	PASS
		VN	20	1.9	0.002715	± 2.5	PASS
		VN	30	4.83	0.006903	± 2.5	PASS
		VN	40	3.05	0.004359	± 2.5	PASS
		VN	50	0.14	0.000200	± 2.5	PASS
	MCH	VN	-30	-0.9	-0.001272	± 2.5	PASS

		VN	-20	4.54	0.006417	± 2.5	PASS
		VN	-10	3.27	0.004622	± 2.5	PASS
		VN	0	-1.3	-0.001837	± 2.5	PASS
		VN	10	4.95	0.006996	± 2.5	PASS
		VN	20	-1.85	-0.002615	± 2.5	PASS
		VN	30	-1.03	-0.001456	± 2.5	PASS
		VN	40	-0.94	-0.001329	± 2.5	PASS
		VN	50	-1.45	-0.002049	± 2.5	PASS
	HCH	VN	-30	4.58	0.006403	± 2.5	PASS
		VN	-20	-1.53	-0.002139	± 2.5	PASS
		VN	-10	0.77	0.001076	± 2.5	PASS
		VN	0	0.96	0.001342	± 2.5	PASS
		VN	10	-1.15	-0.001608	± 2.5	PASS
		VN	20	2.99	0.004180	± 2.5	PASS
		VN	30	4.78	0.006683	± 2.5	PASS
		VN	40	1.39	0.001943	± 2.5	PASS
		VN	50	3.42	0.004781	± 2.5	PASS
16QAM	LCH	VN	-30	-0.78	-0.001115	± 2.5	PASS
		VN	-20	2.4	0.003430	± 2.5	PASS
		VN	-10	3.51	0.005016	± 2.5	PASS
		VN	0	3.93	0.005617	± 2.5	PASS
		VN	10	4.34	0.006203	± 2.5	PASS
		VN	20	3.28	0.004688	± 2.5	PASS
		VN	30	2.67	0.003816	± 2.5	PASS
		VN	40	-0.41	-0.000586	± 2.5	PASS
		VN	50	3.48	0.004974	± 2.5	PASS
	MCH	VN	-30	-0.87	-0.001230	± 2.5	PASS
		VN	-20	1.04	0.001470	± 2.5	PASS
		VN	-10	0.27	0.000382	± 2.5	PASS
		VN	0	4.13	0.005837	± 2.5	PASS
		VN	10	4.07	0.005753	± 2.5	PASS
		VN	20	-1.97	-0.002784	± 2.5	PASS
		VN	30	0.95	0.001343	± 2.5	PASS
		VN	40	4.06	0.005739	± 2.5	PASS
		VN	50	-1.61	-0.002276	± 2.5	PASS
	HCH	VN	-30	2.52	0.003523	± 2.5	PASS
		VN	-20	0.37	0.000517	± 2.5	PASS
		VN	-10	0.71	0.000993	± 2.5	PASS
		VN	0	1.42	0.001985	± 2.5	PASS
		VN	10	-0.24	-0.000336	± 2.5	PASS
		VN	20	2.66	0.003719	± 2.5	PASS

		VN	30	1.84	0.002572	± 2.5	PASS
		VN	40	0.38	0.000531	± 2.5	PASS
		VN	50	-1.05	-0.001468	± 2.5	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz+							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	1.36	0.001941	± 2.5	PASS
		VN	TN	-0.89	-0.001271	± 2.5	PASS
		VH	TN	-1.99	-0.002841	± 2.5	PASS
	MCH	VL	TN	1.94	0.002742	± 2.5	PASS
		VN	TN	2.67	0.003774	± 2.5	PASS
		VH	TN	4.94	0.006982	± 2.5	PASS
	HCH	VL	TN	2.19	0.003065	± 2.5	PASS
		VN	TN	3.25	0.004549	± 2.5	PASS
		VH	TN	-1.29	-0.001805	± 2.5	PASS
16QAM	LCH	VL	TN	-0.48	-0.000685	± 2.5	PASS
		VN	TN	3.65	0.005211	± 2.5	PASS
		VH	TN	4.08	0.005824	± 2.5	PASS
	MCH	VL	TN	-1.61	-0.002276	± 2.5	PASS
		VN	TN	2.27	0.003208	± 2.5	PASS
		VH	TN	0.89	0.001258	± 2.5	PASS
	HCH	VL	TN	1.7	0.002379	± 2.5	PASS
		VN	TN	2.09	0.002925	± 2.5	PASS
		VH	TN	3.44	0.004815	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.07	0.004383	± 2.5	PASS
		VN	-20	0.21	0.000300	± 2.5	PASS
		VN	-10	0.4	0.000571	± 2.5	PASS
		VN	0	2.39	0.003412	± 2.5	PASS
		VN	10	3.03	0.004325	± 2.5	PASS
		VN	20	-0.23	-0.000328	± 2.5	PASS
		VN	30	4.79	0.006838	± 2.5	PASS
		VN	40	0.47	0.000671	± 2.5	PASS
		VN	50	-1.08	-0.001542	± 2.5	PASS
	MCH	VN	-30	0.99	0.001399	± 2.5	PASS
		VN	-20	-1.49	-0.002106	± 2.5	PASS

		VN	-10	-0.34	-0.000481	± 2.5	PASS	
		VN	0	1.35	0.001908	± 2.5	PASS	
		VN	10	0.14	0.000198	± 2.5	PASS	
		VN	20	4.41	0.006233	± 2.5	PASS	
		VN	30	-0.13	-0.000184	± 2.5	PASS	
		VN	40	3.26	0.004608	± 2.5	PASS	
		VN	50	2.19	0.003095	± 2.5	PASS	
	HCH	VN	-30	3.88	0.005430	± 2.5	PASS	
		VN	-20	-1.28	-0.001791	± 2.5	PASS	
		VN	-10	3.01	0.004213	± 2.5	PASS	
		VN	0	0.23	0.000322	± 2.5	PASS	
		VN	10	0.44	0.000616	± 2.5	PASS	
		VN	20	1.65	0.002309	± 2.5	PASS	
		VN	30	3.49	0.004885	± 2.5	PASS	
		VN	40	3.82	0.005346	± 2.5	PASS	
		VN	50	4.13	0.005780	± 2.5	PASS	
	16QAM	LCH	VN	-30	2.65	0.003783	± 2.5	PASS
			VN	-20	3.62	0.005168	± 2.5	PASS
VN			-10	-1.25	-0.001784	± 2.5	PASS	
VN			0	4.94	0.007052	± 2.5	PASS	
VN			10	-1.27	-0.001813	± 2.5	PASS	
VN			20	1.46	0.002084	± 2.5	PASS	
VN			30	0.89	0.001271	± 2.5	PASS	
VN			40	0.16	0.000228	± 2.5	PASS	
VN			50	2.62	0.003740	± 2.5	PASS	
MCH		VN	-30	1.72	0.002431	± 2.5	PASS	
		VN	-20	1.79	0.002530	± 2.5	PASS	
		VN	-10	-1.29	-0.001823	± 2.5	PASS	
		VN	0	1.08	0.001527	± 2.5	PASS	
		VN	10	4.36	0.006163	± 2.5	PASS	
		VN	20	2.23	0.003152	± 2.5	PASS	
		VN	30	2.33	0.003293	± 2.5	PASS	
		VN	40	0.09	0.000127	± 2.5	PASS	
		VN	50	-1.41	-0.001993	± 2.5	PASS	
HCH		VN	-30	-0.03	-0.000042	± 2.5	PASS	
		VN	-20	-1.99	-0.002785	± 2.5	PASS	
		VN	-10	0.55	0.000770	± 2.5	PASS	
		VN	0	4.09	0.005724	± 2.5	PASS	
		VN	10	1.9	0.002659	± 2.5	PASS	
		VN	20	3.35	0.004689	± 2.5	PASS	
		VN	30	1.55	0.002169	± 2.5	PASS	

		VN	40	3.47	0.004857	± 2.5	PASS
		VN	50	4.92	0.006886	± 2.5	PASS

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	-1.64	-0.002338	± 2.5	PASS
		VN	TN	3.24	0.004619	± 2.5	PASS
		VH	TN	0.1	0.000143	± 2.5	PASS
	MCH	VL	TN	0.92	0.001300	± 2.5	PASS
		VN	TN	4.08	0.005767	± 2.5	PASS
		VH	TN	3.65	0.005159	± 2.5	PASS
	HCH	VL	TN	0.84	0.001177	± 2.5	PASS
		VN	TN	4.13	0.005788	± 2.5	PASS
		VH	TN	-1.79	-0.002509	± 2.5	PASS
16QAM	LCH	VL	TN	-1.71	-0.002438	± 2.5	PASS
		VN	TN	1.06	0.001511	± 2.5	PASS
		VH	TN	-0.15	-0.000214	± 2.5	PASS
	MCH	VL	TN	1.54	0.002177	± 2.5	PASS
		VN	TN	0.1	0.000141	± 2.5	PASS
		VH	TN	3.13	0.004424	± 2.5	PASS
	HCH	VL	TN	4.07	0.005704	± 2.5	PASS
		VN	TN	4.62	0.006475	± 2.5	PASS
		VH	TN	2.72	0.003812	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.18	0.003108	± 2.5	PASS
		VN	-20	3.69	0.005260	± 2.5	PASS
		VN	-10	4.39	0.006258	± 2.5	PASS
		VN	0	-1.75	-0.002495	± 2.5	PASS
		VN	10	-1.72	-0.002452	± 2.5	PASS
		VN	20	3.81	0.005431	± 2.5	PASS
		VN	30	-1.92	-0.002737	± 2.5	PASS
		VN	40	2.32	0.003307	± 2.5	PASS
		VN	50	-1.81	-0.002580	± 2.5	PASS
	MCH	VN	-30	3.13	0.004424	± 2.5	PASS
		VN	-20	0.35	0.000495	± 2.5	PASS
		VN	-10	-0.55	-0.000777	± 2.5	PASS

		VN	0	4.67	0.006601	± 2.5	PASS
		VN	10	3.16	0.004466	± 2.5	PASS
		VN	20	1.56	0.002205	± 2.5	PASS
		VN	30	1.95	0.002756	± 2.5	PASS
		VN	40	2.26	0.003194	± 2.5	PASS
		VN	50	4.12	0.005823	± 2.5	PASS
	HCH	VN	-30	0.62	0.000869	± 2.5	PASS
		VN	-20	2.59	0.003630	± 2.5	PASS
		VN	-10	1.42	0.001990	± 2.5	PASS
		VN	0	2.99	0.004191	± 2.5	PASS
		VN	10	3.87	0.005424	± 2.5	PASS
		VN	20	0.15	0.000210	± 2.5	PASS
		VN	30	3.71	0.005200	± 2.5	PASS
		VN	40	-1.67	-0.002341	± 2.5	PASS
		VN	50	3.85	0.005396	± 2.5	PASS
16QAM	LCH	VN	-30	-1.61	-0.002295	± 2.5	PASS
		VN	-20	-1.94	-0.002766	± 2.5	PASS
		VN	-10	4.13	0.005887	± 2.5	PASS
		VN	0	3.11	0.004433	± 2.5	PASS
		VN	10	-0.72	-0.001026	± 2.5	PASS
		VN	20	2.83	0.004034	± 2.5	PASS
		VN	30	4.78	0.006814	± 2.5	PASS
		VN	40	4.61	0.006572	± 2.5	PASS
		VN	50	2.01	0.002865	± 2.5	PASS
	MCH	VN	-30	-0.69	-0.000975	± 2.5	PASS
		VN	-20	2.28	0.003223	± 2.5	PASS
		VN	-10	3.58	0.005060	± 2.5	PASS
		VN	0	1.39	0.001965	± 2.5	PASS
		VN	10	-1.59	-0.002247	± 2.5	PASS
		VN	20	0.65	0.000919	± 2.5	PASS
		VN	30	4.15	0.005866	± 2.5	PASS
		VN	40	0.15	0.000212	± 2.5	PASS
		VN	50	-1.38	-0.001951	± 2.5	PASS
	HCH	VN	-30	3.76	0.005270	± 2.5	PASS
		VN	-20	0.17	0.000238	± 2.5	PASS
		VN	-10	-0.08	-0.000112	± 2.5	PASS
		VN	0	4.31	0.006041	± 2.5	PASS
		VN	10	-1.37	-0.001920	± 2.5	PASS
		VN	20	1.76	0.002467	± 2.5	PASS
		VN	30	3.75	0.005256	± 2.5	PASS
		VN	40	0.56	0.000785	± 2.5	PASS

		VN	50	4.95	0.006938	± 2.5	PASS
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Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	3.57	0.005071	± 2.5	PASS
		VN	TN	-0.35	-0.000497	± 2.5	PASS
		VH	TN	0.91	0.001293	± 2.5	PASS
	MCH	VL	TN	4.23	0.005979	± 2.5	PASS
		VN	TN	3.97	0.005611	± 2.5	PASS
		VH	TN	4.67	0.006601	± 2.5	PASS
	HCH	VL	TN	3	0.004219	± 2.5	PASS
		VN	TN	3.27	0.004599	± 2.5	PASS
		VH	TN	-0.84	-0.001181	± 2.5	PASS
16QAM	LCH	VL	TN	1.2	0.001705	± 2.5	PASS
		VN	TN	1.19	0.001690	± 2.5	PASS
		VH	TN	-0.79	-0.001122	± 2.5	PASS
	MCH	VL	TN	1.25	0.001767	± 2.5	PASS
		VN	TN	-0.27	-0.000382	± 2.5	PASS
		VH	TN	0.54	0.000763	± 2.5	PASS
	HCH	VL	TN	1.87	0.002630	± 2.5	PASS
		VN	TN	-1.9	-0.002672	± 2.5	PASS
		VH	TN	-1.46	-0.002053	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.73	0.003878	± 2.5	PASS
		VN	-20	3.19	0.004531	± 2.5	PASS
		VN	-10	1.07	0.001520	± 2.5	PASS
		VN	0	3.79	0.005384	± 2.5	PASS
		VN	10	4.05	0.005753	± 2.5	PASS
		VN	20	1.06	0.001506	± 2.5	PASS
		VN	30	4.34	0.006165	± 2.5	PASS
		VN	40	0.6	0.000852	± 2.5	PASS
		VN	50	2.47	0.003509	± 2.5	PASS
	MCH	VN	-30	2.12	0.002996	± 2.5	PASS
		VN	-20	2.65	0.003746	± 2.5	PASS
		VN	-10	2.27	0.003208	± 2.5	PASS
		VN	0	4.72	0.006671	± 2.5	PASS
		VN	10	-2	-0.002827	± 2.5	PASS

		VN	20	-2	-0.002827	± 2.5	PASS
		VN	30	-1.25	-0.001767	± 2.5	PASS
		VN	40	-1.82	-0.002572	± 2.5	PASS
		VN	50	4.54	0.006417	± 2.5	PASS
	HCH	VN	-30	0.19	0.000267	± 2.5	PASS
		VN	-20	4.2	0.005907	± 2.5	PASS
		VN	-10	3.68	0.005176	± 2.5	PASS
		VN	0	1.05	0.001477	± 2.5	PASS
		VN	10	3.78	0.005316	± 2.5	PASS
		VN	20	-0.56	-0.000788	± 2.5	PASS
		VN	30	1.12	0.001575	± 2.5	PASS
		VN	40	-0.43	-0.000605	± 2.5	PASS
		VN	50	-1.42	-0.001997	± 2.5	PASS
		VN	-30	0.1	0.000142	± 2.5	PASS
		VN	-20	1.59	0.002259	± 2.5	PASS
		VN	-10	1.53	0.002173	± 2.5	PASS
		VN	0	-0.14	-0.000199	± 2.5	PASS
		VN	10	4.68	0.006648	± 2.5	PASS
16QAM	LCH	VN	20	4.86	0.006903	± 2.5	PASS
		VN	30	4.53	0.006435	± 2.5	PASS
		VN	40	4.07	0.005781	± 2.5	PASS
		VN	50	-1.78	-0.002528	± 2.5	PASS
	MCH	VN	-30	-1.34	-0.001894	± 2.5	PASS
		VN	-20	0.43	0.000608	± 2.5	PASS
		VN	-10	4.49	0.006346	± 2.5	PASS
		VN	0	1.2	0.001696	± 2.5	PASS
		VN	10	-1.33	-0.001880	± 2.5	PASS
		VN	20	2.11	0.002982	± 2.5	PASS
		VN	30	-1.33	-0.001880	± 2.5	PASS
		VN	40	1.7	0.002403	± 2.5	PASS
		VN	50	0.35	0.000495	± 2.5	PASS
	HCH	VN	-30	0.24	0.000338	± 2.5	PASS
		VN	-20	3.66	0.005148	± 2.5	PASS
		VN	-10	-0.19	-0.000267	± 2.5	PASS
		VN	0	4.46	0.006273	± 2.5	PASS
		VN	10	-0.77	-0.001083	± 2.5	PASS
		VN	20	1.17	0.001646	± 2.5	PASS
		VN	30	-0.36	-0.000506	± 2.5	PASS
		VN	40	2.57	0.003615	± 2.5	PASS
		VN	50	-1.44	-0.002025	± 2.5	PASS