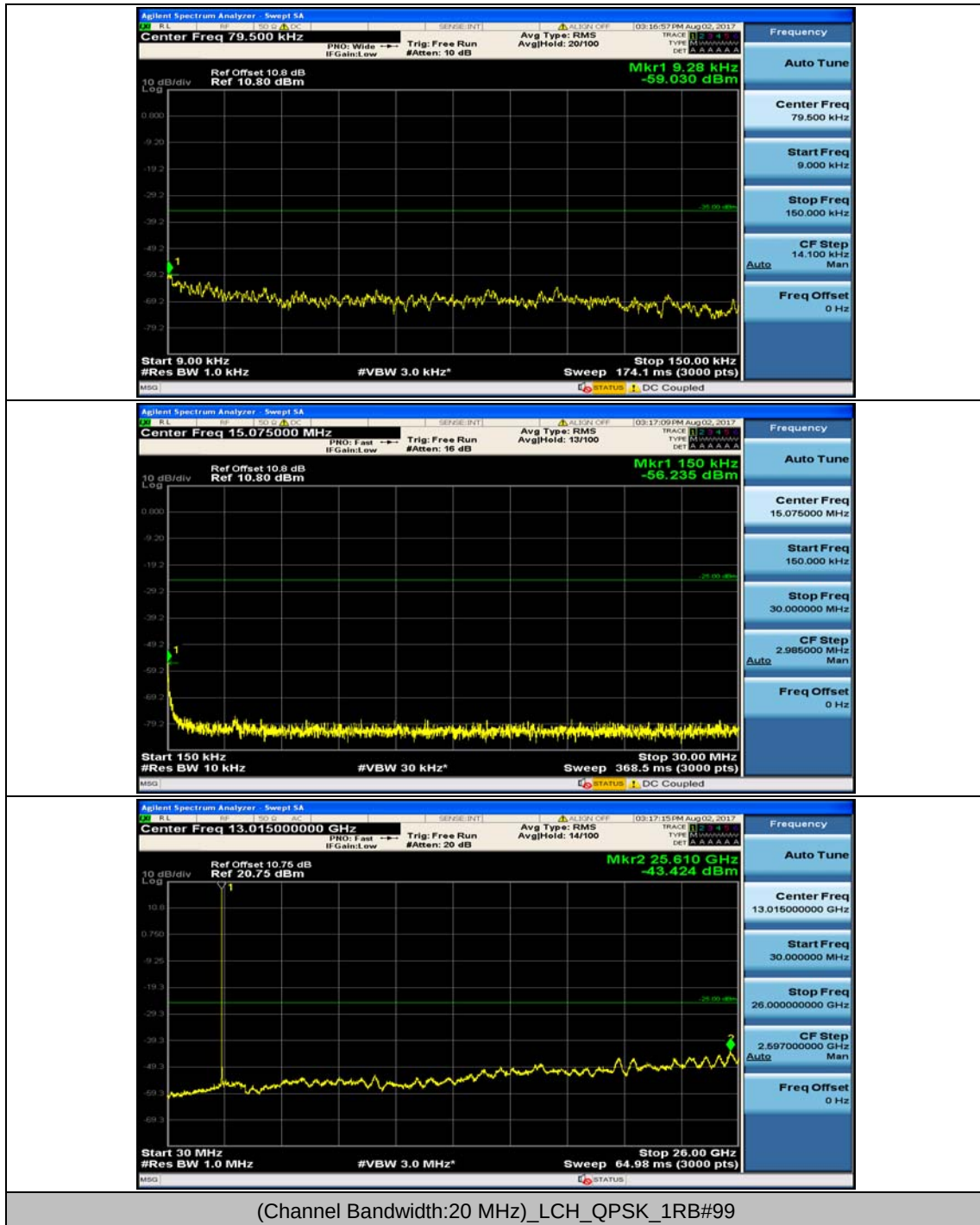
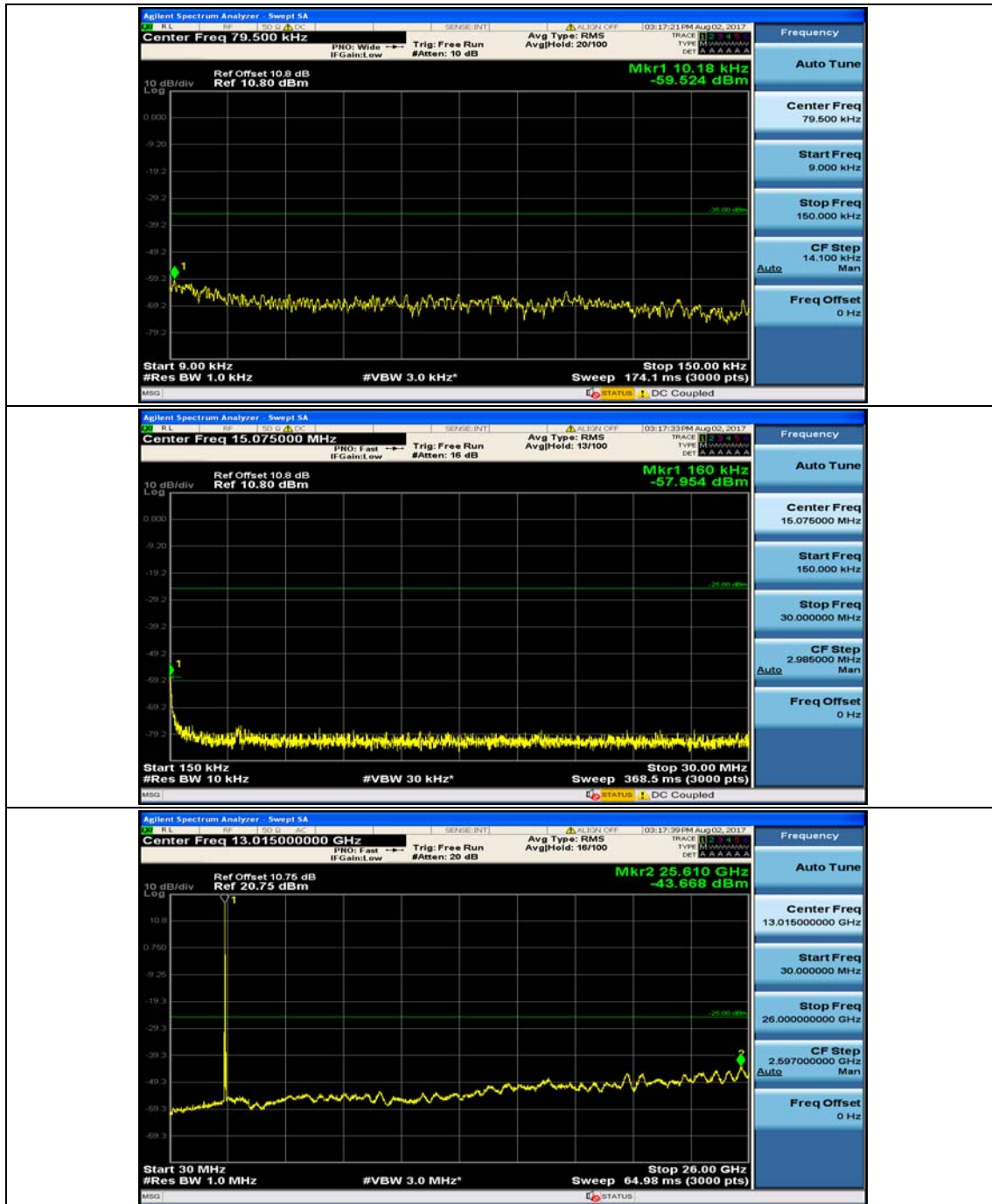
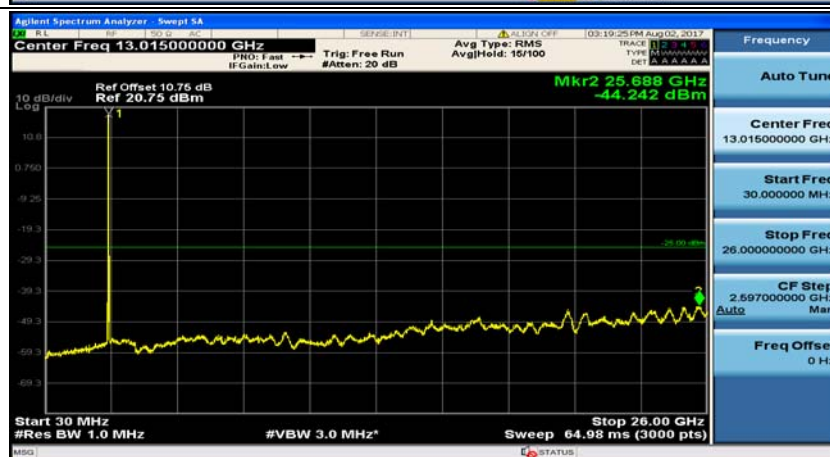
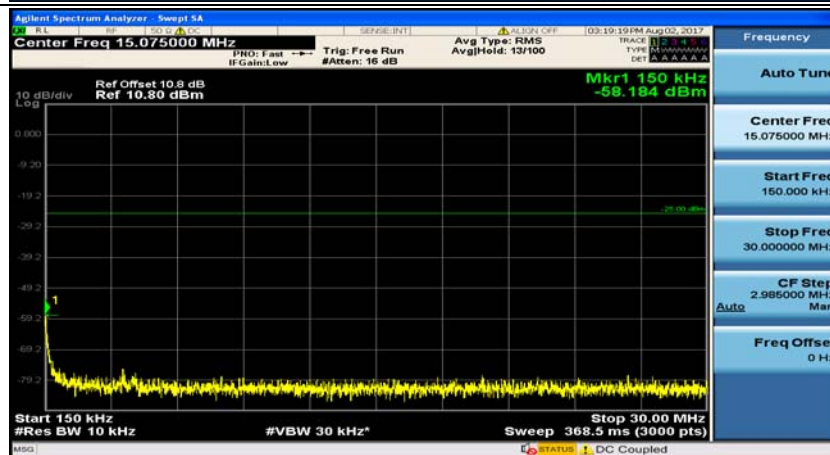
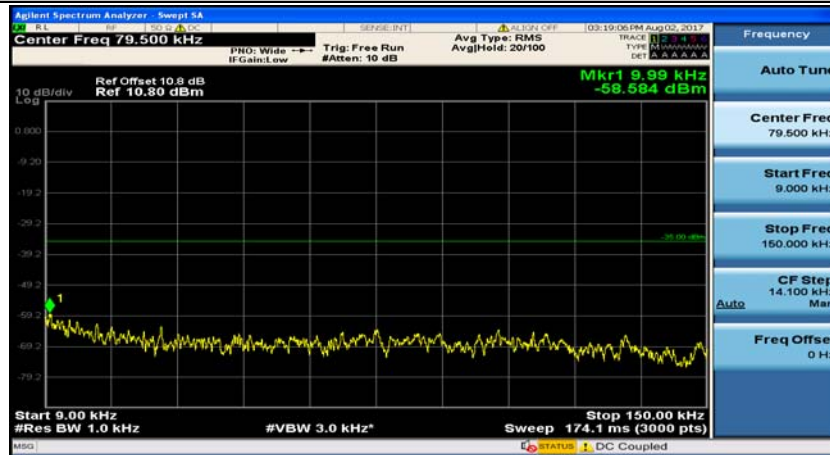


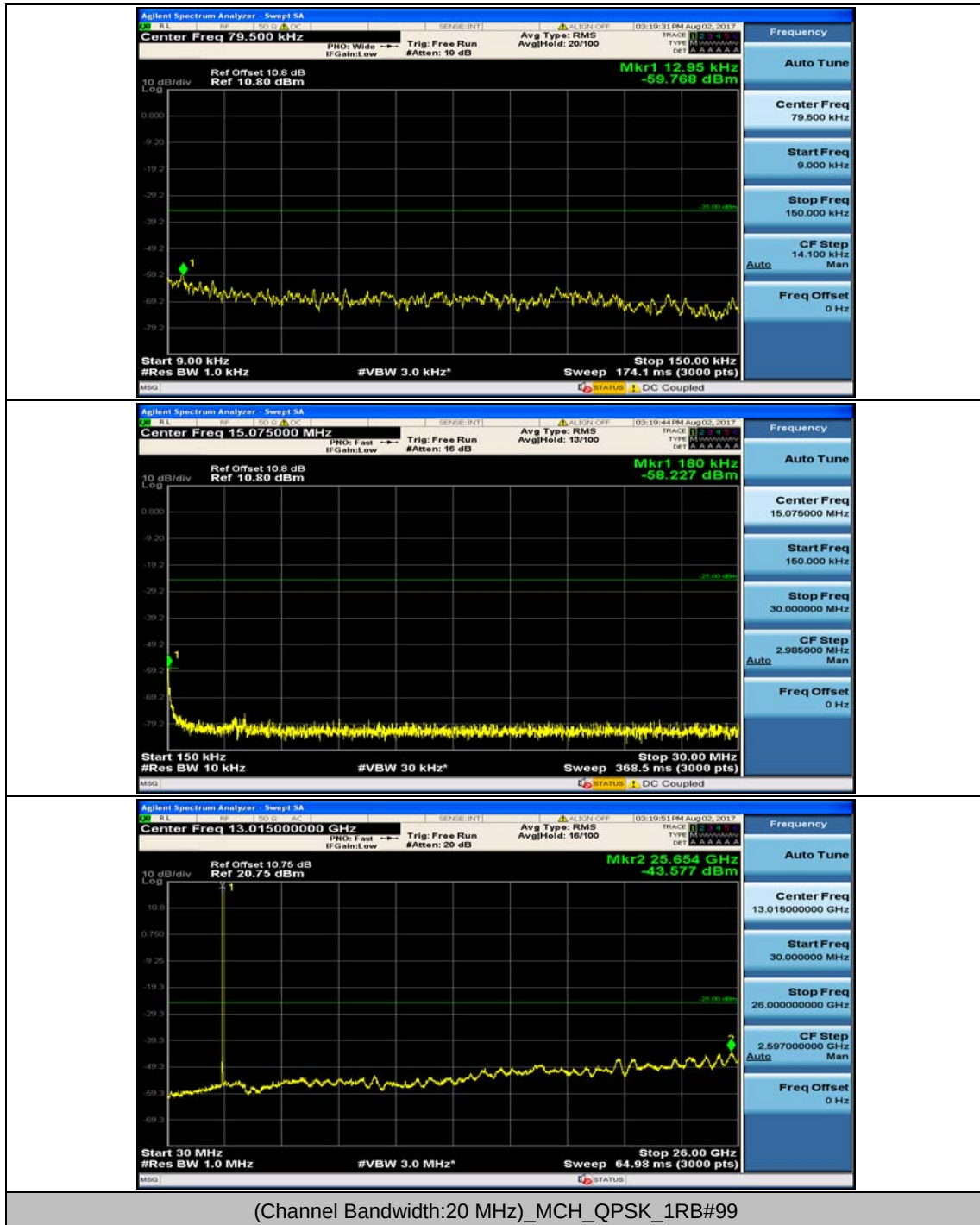


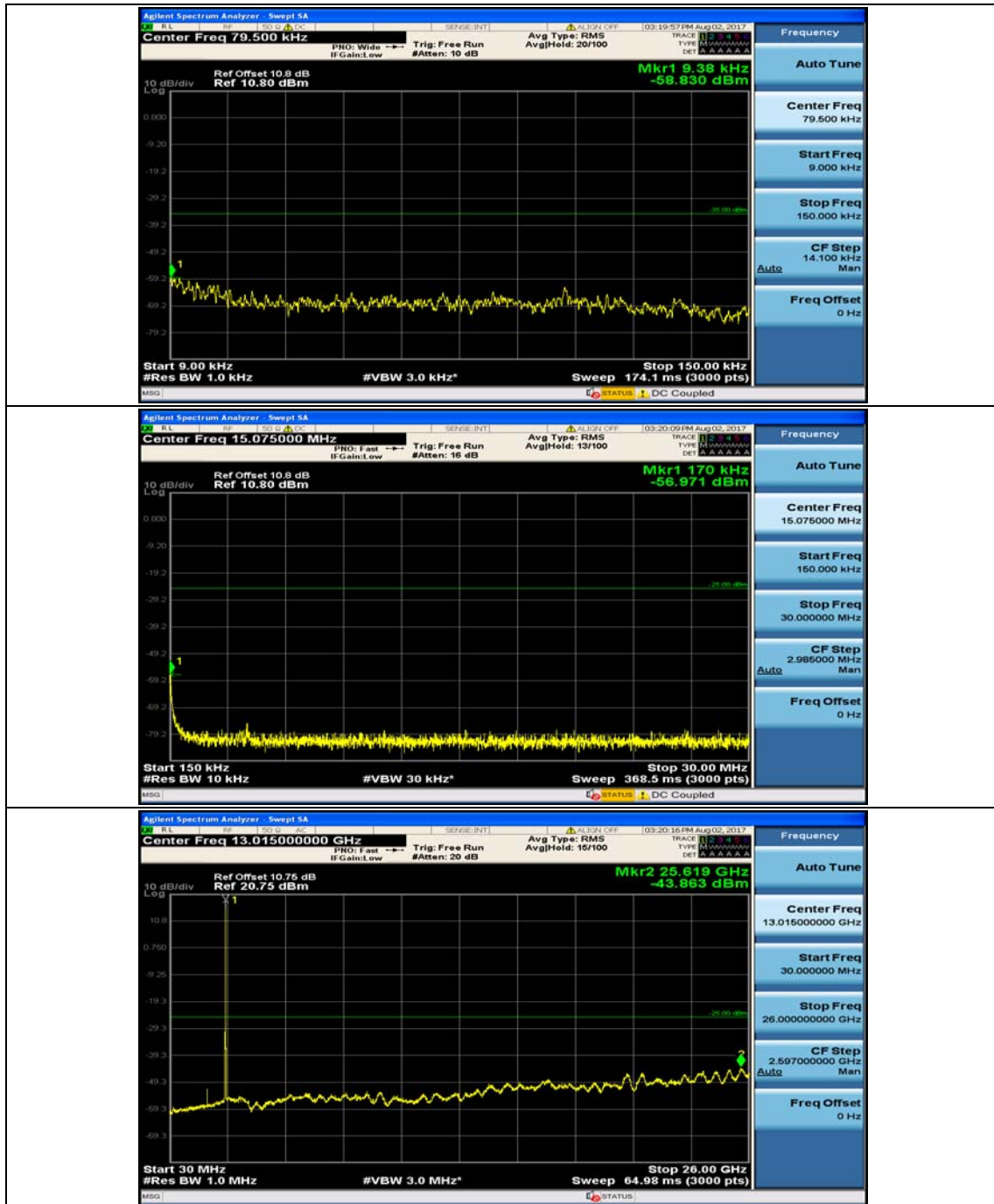


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

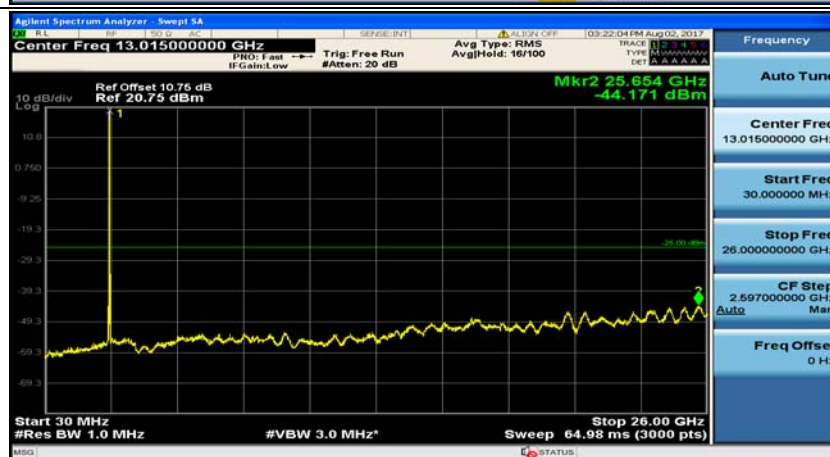
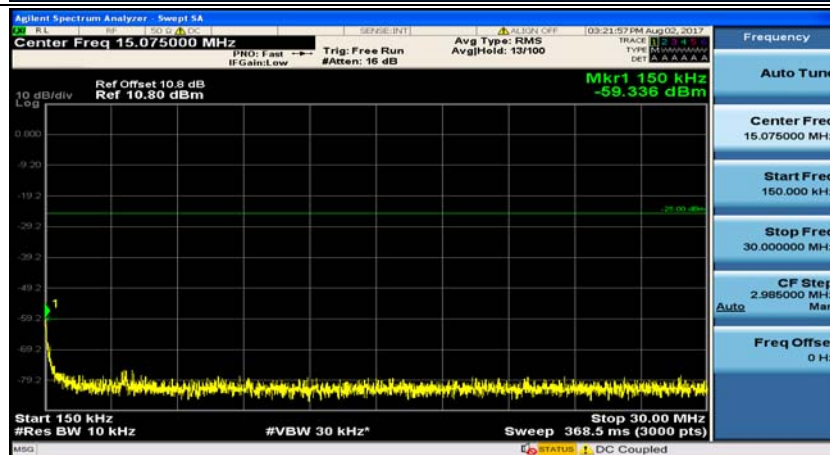
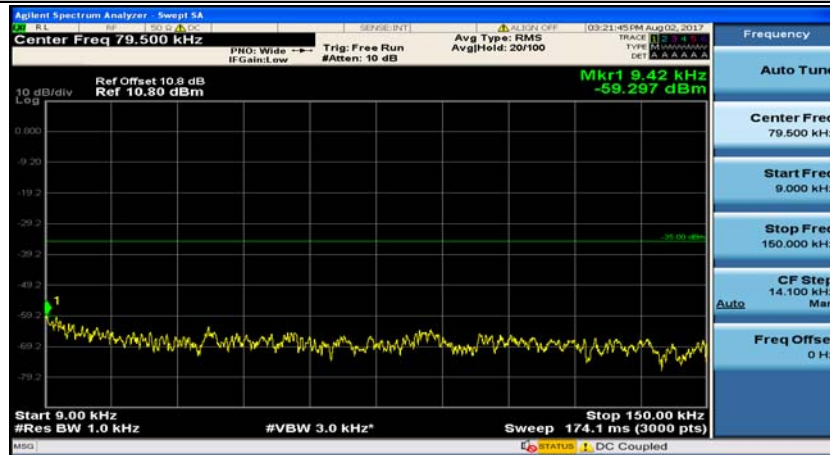


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

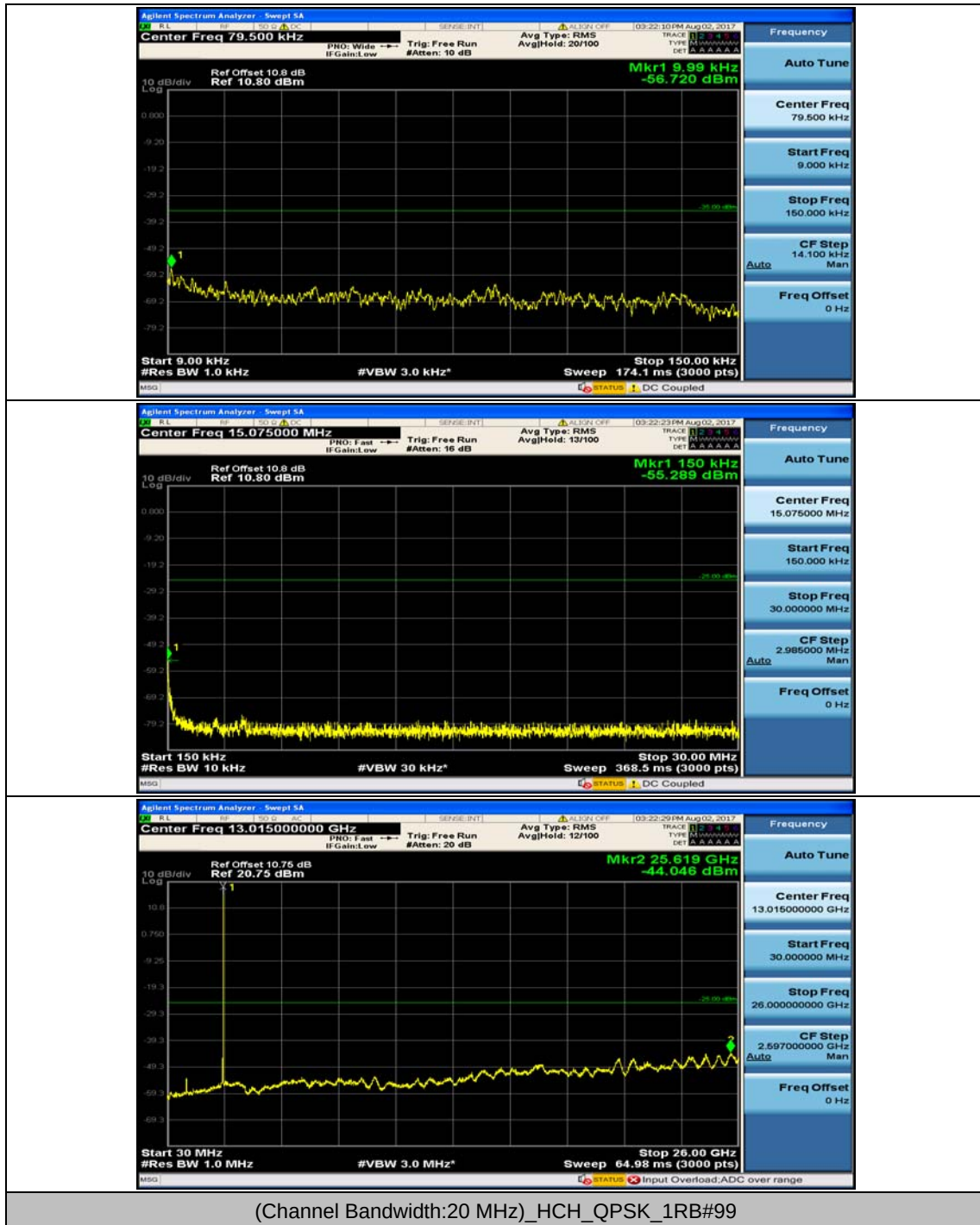


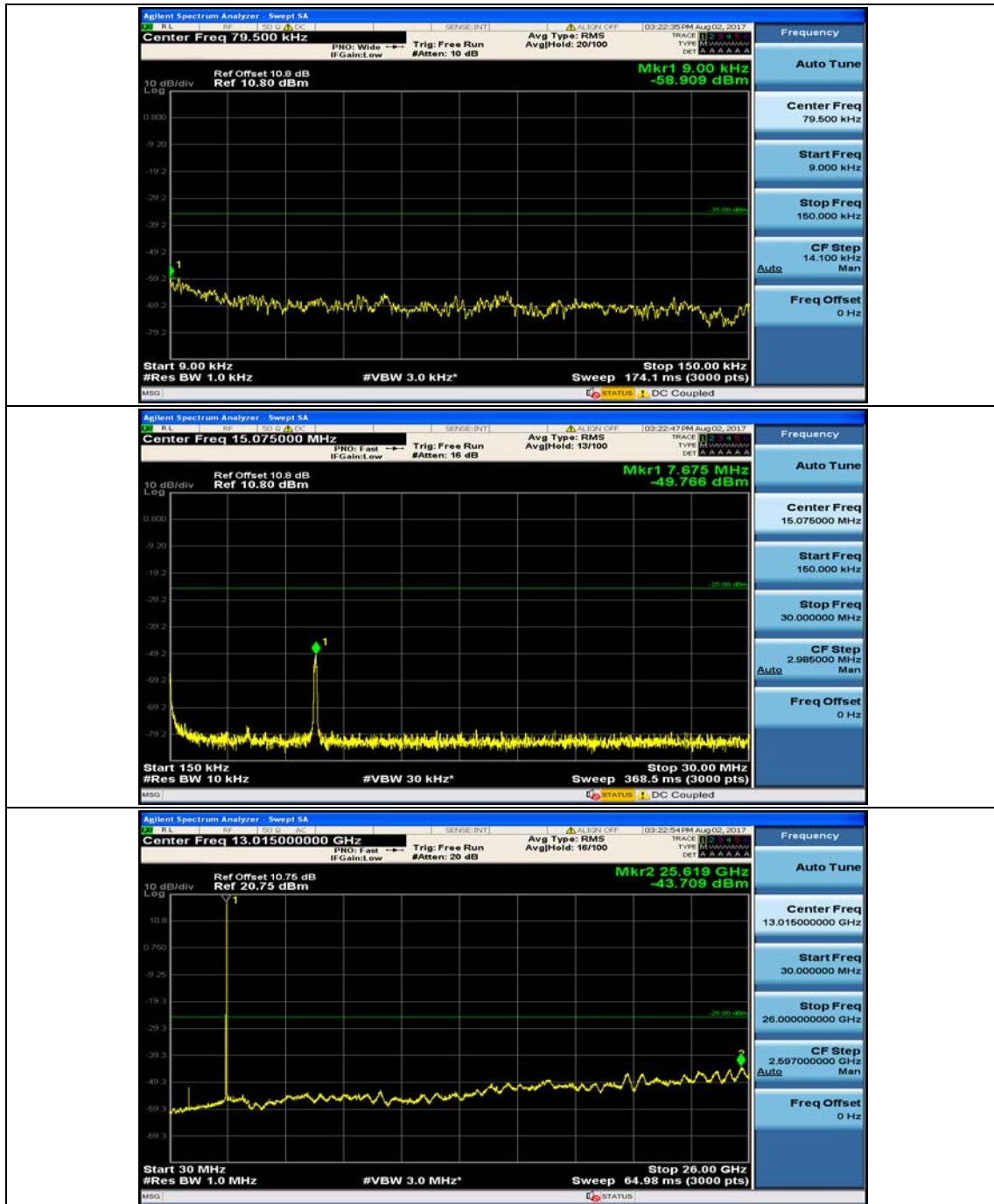


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

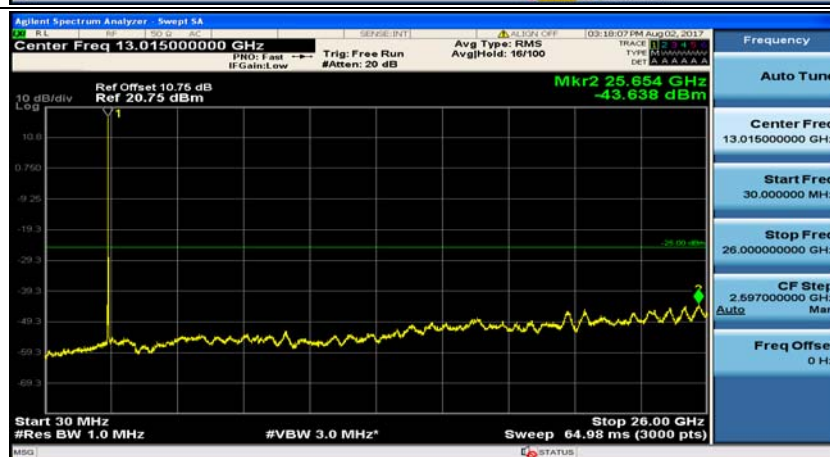
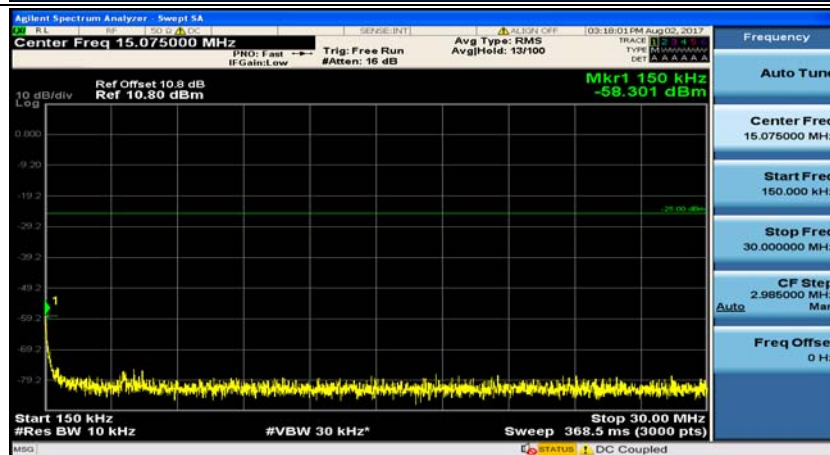
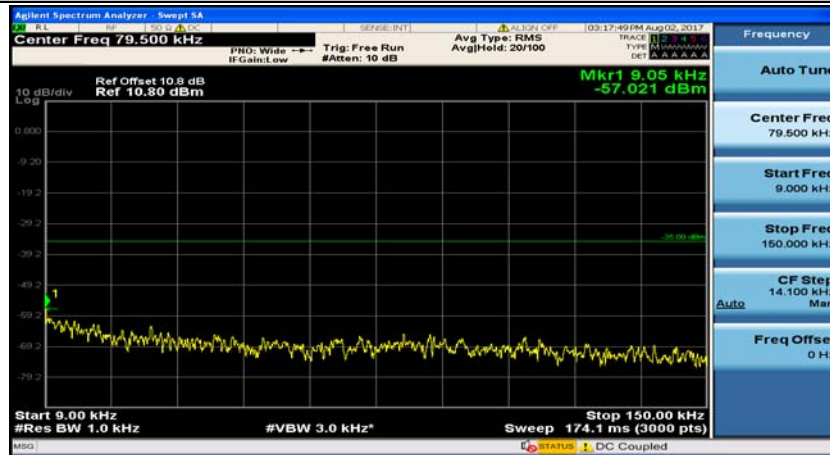


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

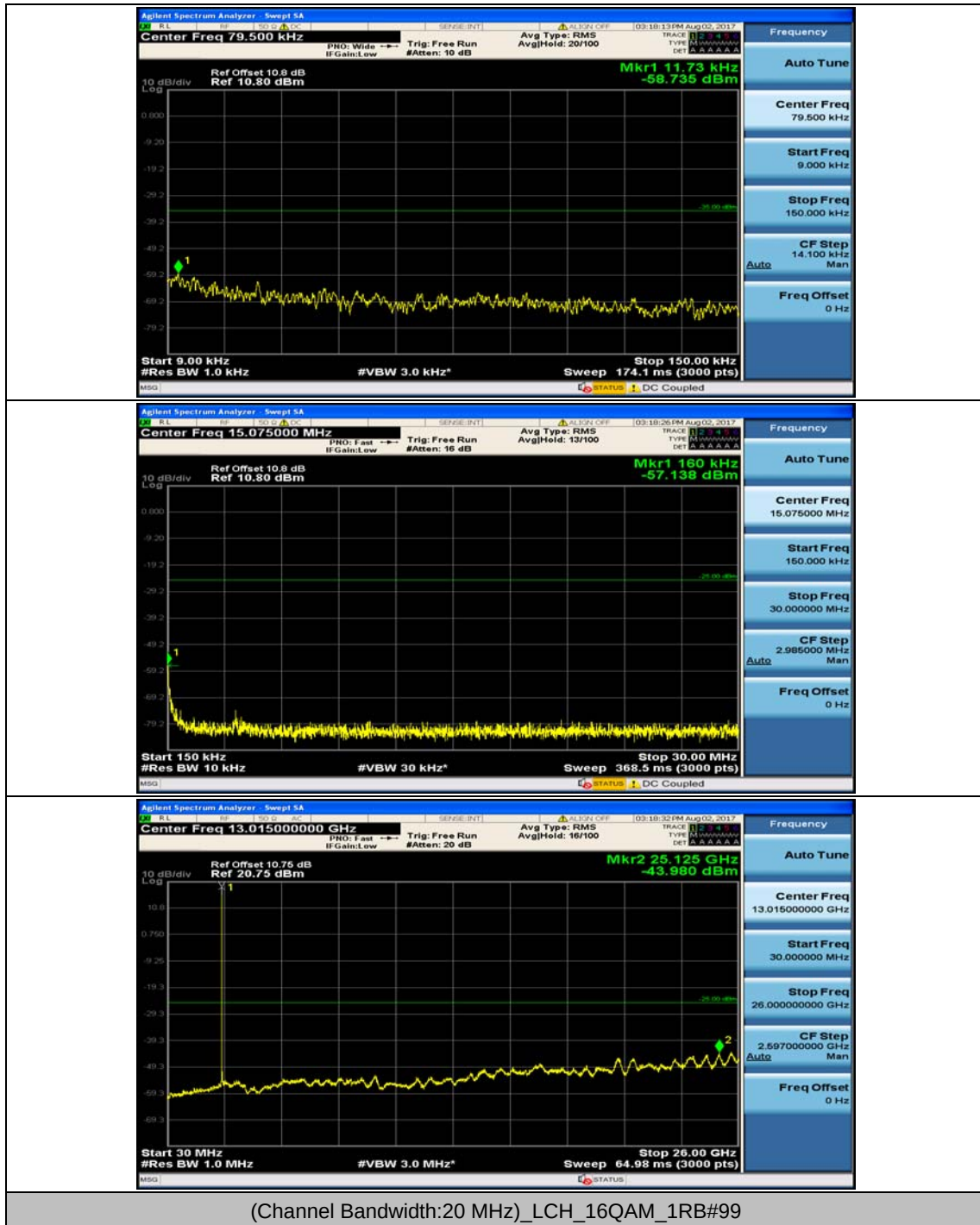


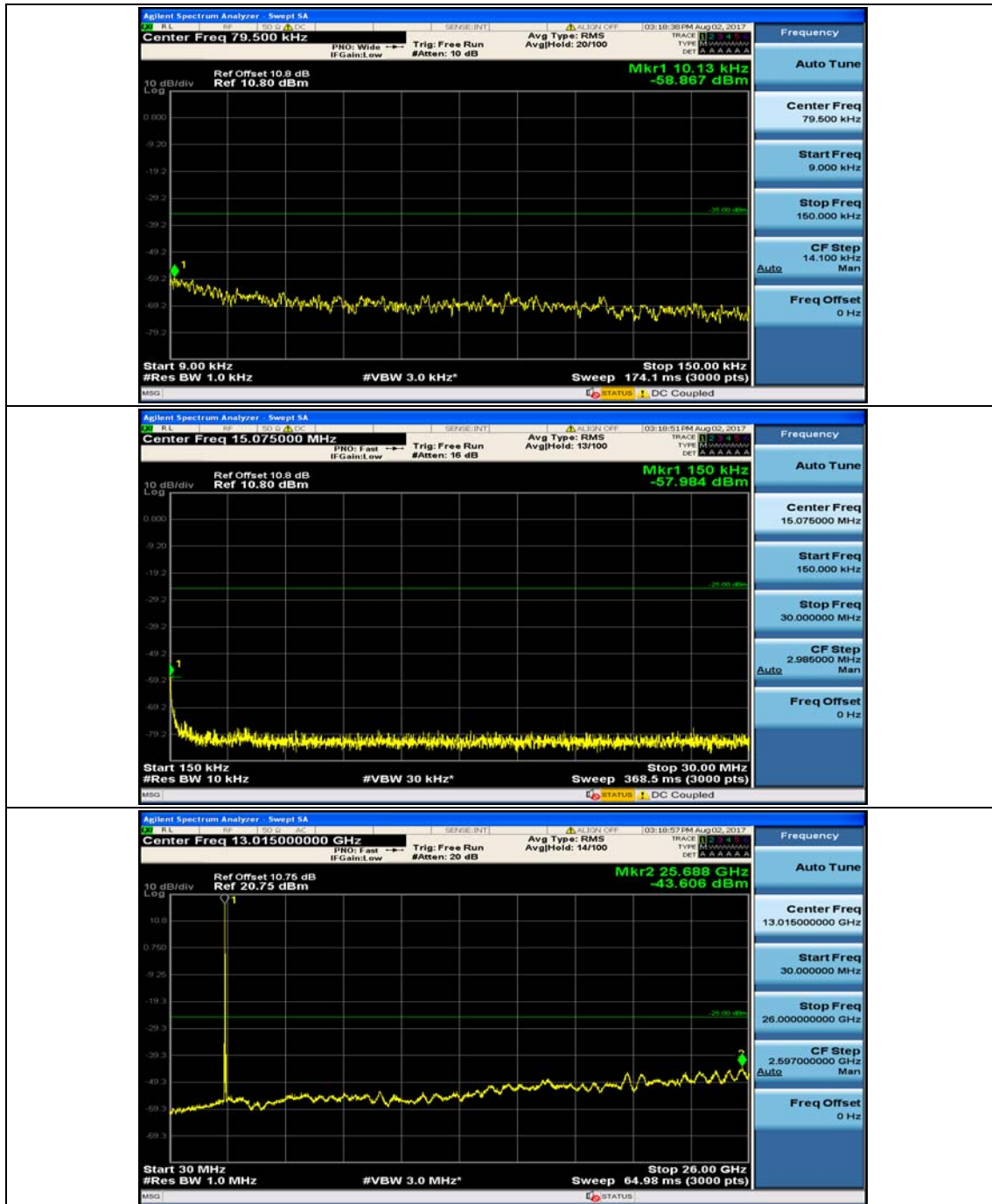


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

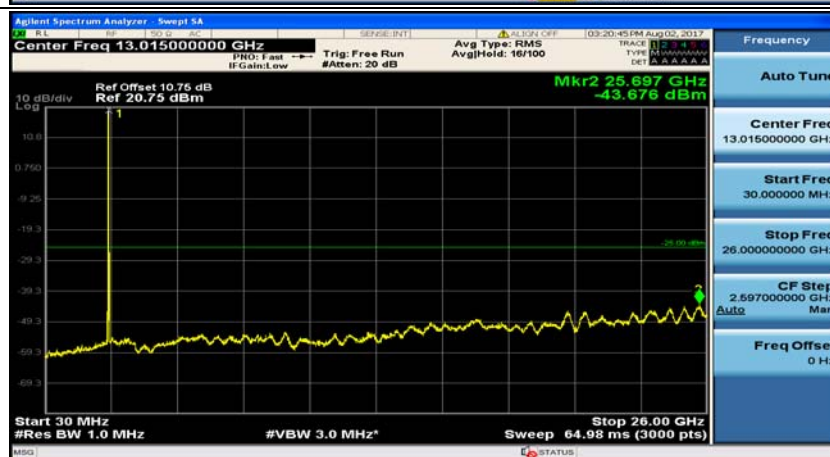
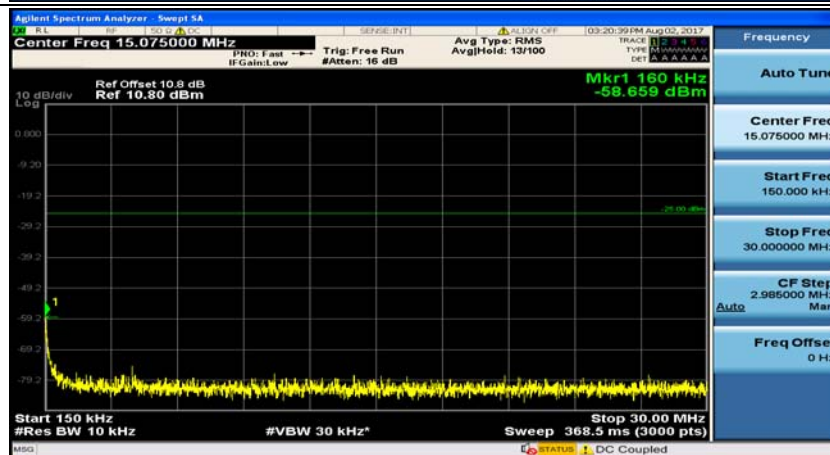
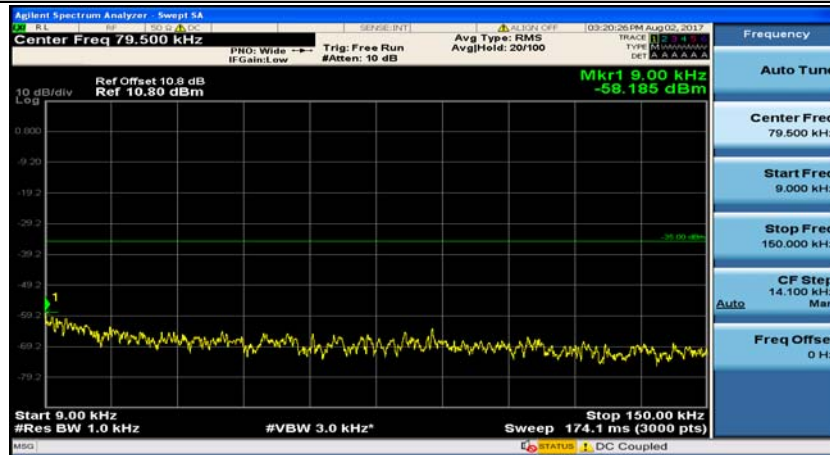


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

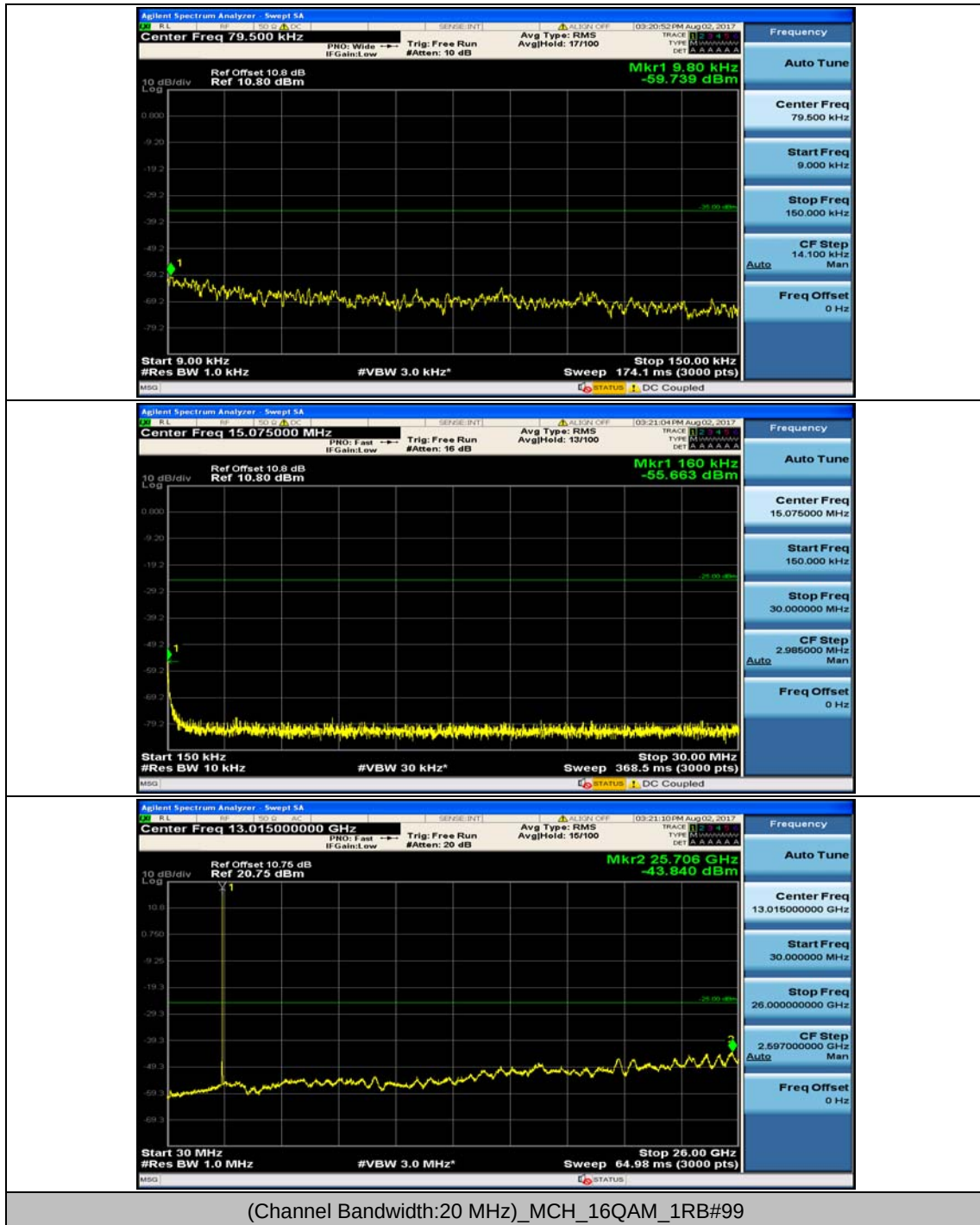




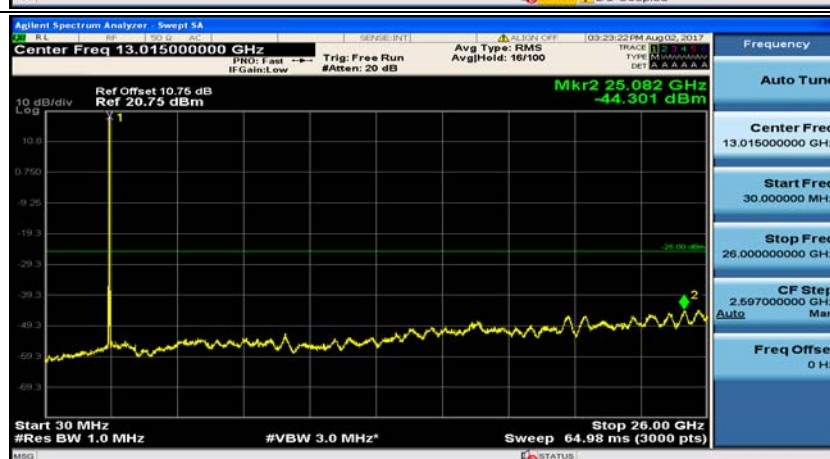
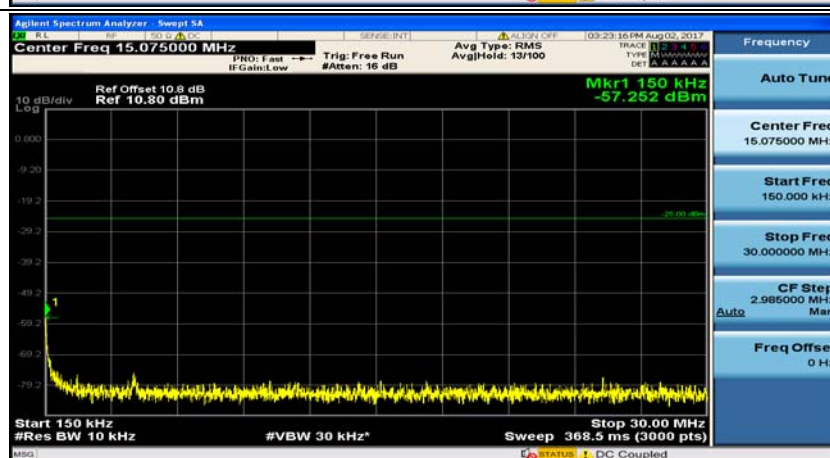
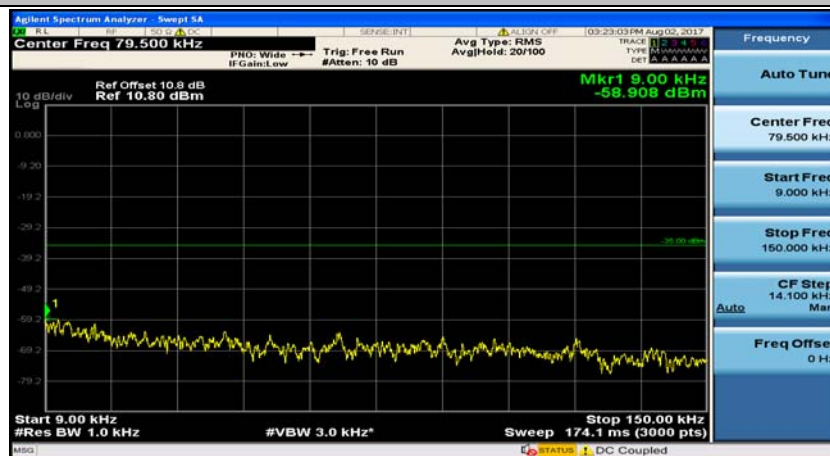
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0



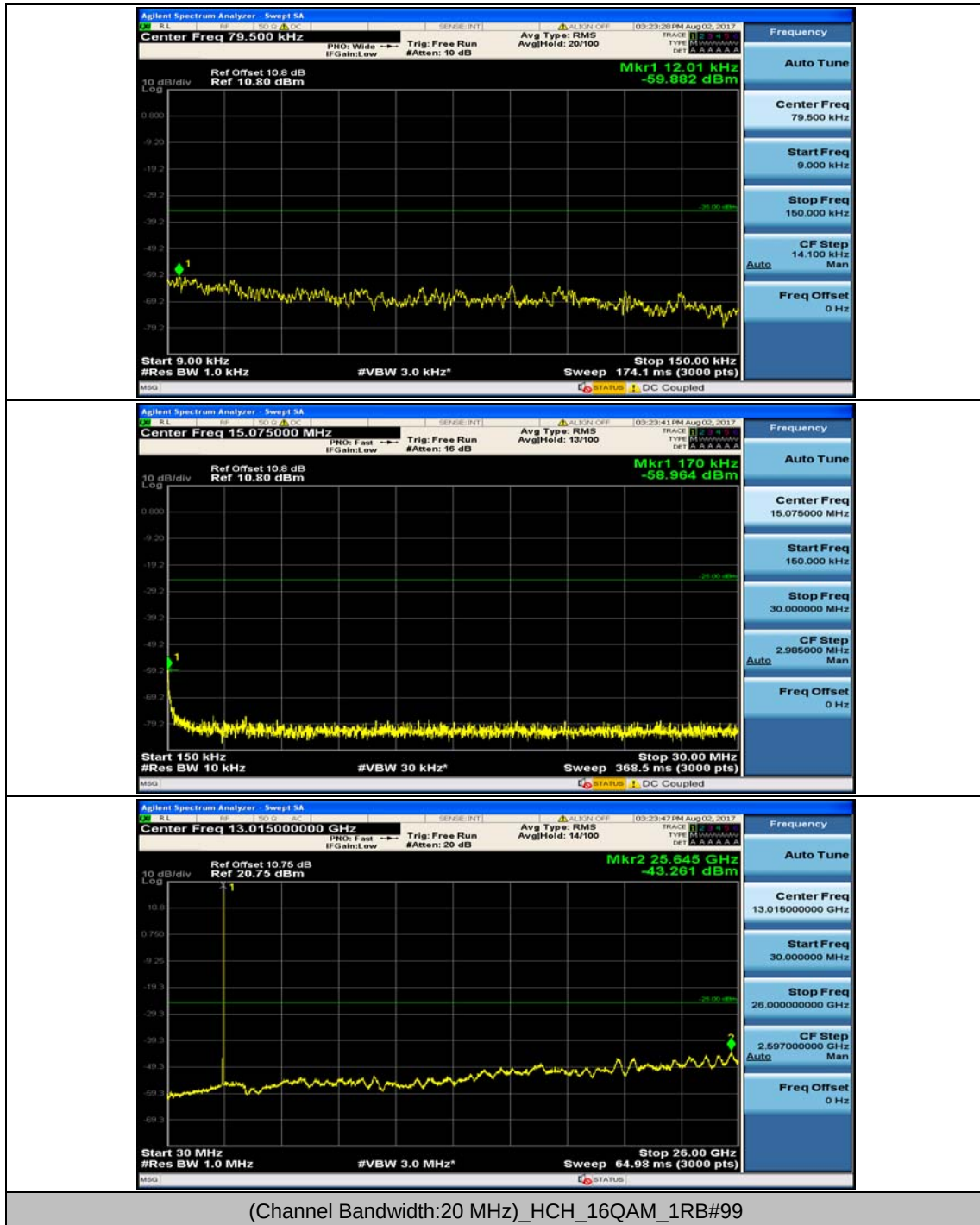
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49



(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49



Appendix F: Frequency Stability

Test Result

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	-1.5	-0.000598	± 2.5	PASS
		VN	TN	4.67	0.001861	± 2.5	PASS
		VH	TN	-1.28	-0.000510	± 2.5	PASS
	MCH	VL	TN	-1.55	-0.000611	± 2.5	PASS
		VN	TN	-1.49	-0.000588	± 2.5	PASS
		VH	TN	2.99	0.001179	± 2.5	PASS
	HCH	VL	TN	-0.31	-0.000121	± 2.5	PASS
		VN	TN	3.94	0.001539	± 2.5	PASS
		VH	TN	3	0.001172	± 2.5	PASS
16QAM	LCH	VL	TN	3.35	0.001335	± 2.5	PASS
		VN	TN	2.75	0.001096	± 2.5	PASS
		VH	TN	2.94	0.001171	± 2.5	PASS
	MCH	VL	TN	-0.98	-0.000387	± 2.5	PASS
		VN	TN	1.98	0.000781	± 2.5	PASS
		VH	TN	2.12	0.000836	± 2.5	PASS
	HCH	VL	TN	4.14	0.001617	± 2.5	PASS
		VN	TN	4.83	0.001887	± 2.5	PASS
		VH	TN	1.8	0.000703	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.46	-0.000183	± 2.5	PASS
		VN	-20	0.65	0.000259	± 2.5	PASS
		VN	-10	-0.55	-0.000219	± 2.5	PASS
		VN	0	1.67	0.000665	± 2.5	PASS
		VN	10	0.94	0.000375	± 2.5	PASS
		VN	20	-0.53	-0.000211	± 2.5	PASS
		VN	30	0.32	0.000127	± 2.5	PASS
		VN	40	2.9	0.001155	± 2.5	PASS
		VN	50	-1.6	-0.000637	± 2.5	PASS
	MCH	VN	-30	0.73	0.000288	± 2.5	PASS
		VN	-20	4.93	0.001945	± 2.5	PASS

		VN	-10	4.87	0.001921	± 2.5	PASS
		VN	0	0.46	0.000181	± 2.5	PASS
		VN	10	-0.91	-0.000359	± 2.5	PASS
		VN	20	0.18	0.000071	± 2.5	PASS
		VN	30	-0.97	-0.000383	± 2.5	PASS
		VN	40	2.05	0.000809	± 2.5	PASS
		VN	50	2.86	0.001128	± 2.5	PASS
	HCH	VN	-30	-0.88	-0.000344	± 2.5	PASS
		VN	-20	0.24	0.000094	± 2.5	PASS
		VN	-10	2.44	0.000953	± 2.5	PASS
		VN	0	2.18	0.000852	± 2.5	PASS
		VN	10	3.45	0.001348	± 2.5	PASS
		VN	20	0.99	0.000387	± 2.5	PASS
		VN	30	4.06	0.001586	± 2.5	PASS
		VN	40	-0.84	-0.000328	± 2.5	PASS
		VN	50	-1.76	-0.000688	± 2.5	PASS
16QAM	LCH	VN	-30	0.76	0.000303	± 2.5	PASS
		VN	-20	0.54	0.000215	± 2.5	PASS
		VN	-10	1.21	0.000482	± 2.5	PASS
		VN	0	0.57	0.000227	± 2.5	PASS
		VN	10	0.61	0.000243	± 2.5	PASS
		VN	20	-1.57	-0.000625	± 2.5	PASS
		VN	30	-1.89	-0.000753	± 2.5	PASS
		VN	40	-1.36	-0.000542	± 2.5	PASS
		VN	50	-1.95	-0.000777	± 2.5	PASS
	MCH	VN	-30	4.97	0.001961	± 2.5	PASS
		VN	-20	2.96	0.001168	± 2.5	PASS
		VN	-10	3.43	0.001353	± 2.5	PASS
		VN	0	2.43	0.000959	± 2.5	PASS
		VN	10	3.66	0.001444	± 2.5	PASS
		VN	20	-0.5	-0.000197	± 2.5	PASS
		VN	30	4.87	0.001921	± 2.5	PASS
		VN	40	1.05	0.000414	± 2.5	PASS
		VN	50	4.46	0.001759	± 2.5	PASS
	HCH	VN	-30	-0.32	-0.000125	± 2.5	PASS
		VN	-20	4.68	0.001828	± 2.5	PASS
		VN	-10	0.66	0.000258	± 2.5	PASS
		VN	0	2.94	0.001148	± 2.5	PASS
		VN	10	0.67	0.000262	± 2.5	PASS
		VN	20	4.06	0.001586	± 2.5	PASS
		VN	30	-1.76	-0.000688	± 2.5	PASS

		VN	40	1.47	0.000574	± 2.5	PASS
		VN	50	-0.35	-0.000137	± 2.5	PASS

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	-0.21	-0.000084	± 2.5	PASS
		VN	TN	4.56	0.001817	± 2.5	PASS
		VH	TN	-1.94	-0.000773	± 2.5	PASS
	MCH	VL	TN	-0.94	-0.000371	± 2.5	PASS
		VN	TN	-1.14	-0.000450	± 2.5	PASS
		VH	TN	-0.84	-0.000331	± 2.5	PASS
	HCH	VL	TN	1.4	0.000547	± 2.5	PASS
		VN	TN	0.08	0.000031	± 2.5	PASS
		VH	TN	-1.48	-0.000578	± 2.5	PASS
16QAM	LCH	VL	TN	4.23	0.001685	± 2.5	PASS
		VN	TN	4.95	0.001972	± 2.5	PASS
		VH	TN	2.17	0.000865	± 2.5	PASS
	MCH	VL	TN	-0.74	-0.000292	± 2.5	PASS
		VN	TN	2.35	0.000927	± 2.5	PASS
		VH	TN	-0.51	-0.000201	± 2.5	PASS
	HCH	VL	TN	-0.17	-0.000066	± 2.5	PASS
		VN	TN	-1.55	-0.000605	± 2.5	PASS
		VH	TN	-1.4	-0.000547	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	4.6	0.001833	± 2.5	PASS
		VN	-20	2.14	0.000853	± 2.5	PASS
		VN	-10	0.15	0.000060	± 2.5	PASS
		VN	0	1.35	0.000538	± 2.5	PASS
		VN	10	-0.95	-0.000378	± 2.5	PASS
		VN	20	0.86	0.000343	± 2.5	PASS
		VN	30	-1.08	-0.000430	± 2.5	PASS
		VN	40	4.07	0.001622	± 2.5	PASS
		VN	50	1.52	0.000606	± 2.5	PASS
	MCH	VN	-30	3.84	0.001515	± 2.5	PASS
		VN	-20	2.22	0.000876	± 2.5	PASS
		VN	-10	3.25	0.001282	± 2.5	PASS

		VN	0	2.85	0.001124	± 2.5	PASS
		VN	10	-1.9	-0.000750	± 2.5	PASS
		VN	20	2.3	0.000907	± 2.5	PASS
		VN	30	1.15	0.000454	± 2.5	PASS
		VN	40	-0.94	-0.000371	± 2.5	PASS
		VN	50	-0.5	-0.000197	± 2.5	PASS
	HCH	VN	-30	3.37	0.001316	± 2.5	PASS
		VN	-20	-0.93	-0.000363	± 2.5	PASS
		VN	-10	4.23	0.001652	± 2.5	PASS
		VN	0	2.77	0.001082	± 2.5	PASS
		VN	10	2.91	0.001137	± 2.5	PASS
		VN	20	0.2	0.000078	± 2.5	PASS
		VN	30	4.83	0.001887	± 2.5	PASS
		VN	40	1.84	0.000719	± 2.5	PASS
		VN	50	4.4	0.001719	± 2.5	PASS
QPSK	LCH	VN	-30	3.98	0.001586	± 2.5	PASS
		VN	-20	-1.72	-0.000685	± 2.5	PASS
		VN	-10	-0.5	-0.000199	± 2.5	PASS
		VN	0	1.21	0.000482	± 2.5	PASS
		VN	10	2.47	0.000984	± 2.5	PASS
		VN	20	-1.84	-0.000733	± 2.5	PASS
		VN	30	4.98	0.001984	± 2.5	PASS
		VN	40	0.41	0.000163	± 2.5	PASS
		VN	50	4.5	0.001793	± 2.5	PASS
	MCH	VN	-30	0.42	0.000166	± 2.5	PASS
		VN	-20	1.65	0.000651	± 2.5	PASS
		VN	-10	-0.8	-0.000316	± 2.5	PASS
		VN	0	-1.06	-0.000418	± 2.5	PASS
		VN	10	0.52	0.000205	± 2.5	PASS
		VN	20	3.61	0.001424	± 2.5	PASS
		VN	30	-1.06	-0.000418	± 2.5	PASS
		VN	40	0.93	0.000367	± 2.5	PASS
		VN	50	3.6	0.001420	± 2.5	PASS
	HCH	VN	-30	1.46	0.000570	± 2.5	PASS
		VN	-20	-0.7	-0.000273	± 2.5	PASS
		VN	-10	2.86	0.001117	± 2.5	PASS
		VN	0	-0.96	-0.000375	± 2.5	PASS
		VN	10	4.87	0.001902	± 2.5	PASS
		VN	20	-0.86	-0.000336	± 2.5	PASS
		VN	30	1.78	0.000695	± 2.5	PASS
		VN	40	2.85	0.001113	± 2.5	PASS

		VN	50	0.45	0.000176	± 2.5	PASS
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Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	0.9	0.000359	± 2.5	PASS
		VN	TN	4.02	0.001602	± 2.5	PASS
		VH	TN	0.13	0.000052	± 2.5	PASS
	MCH	VL	TN	1.86	0.000734	± 2.5	PASS
		VN	TN	-1.88	-0.000742	± 2.5	PASS
		VH	TN	3.91	0.001542	± 2.5	PASS
	HCH	VL	TN	-1.26	-0.000492	± 2.5	PASS
		VN	TN	3.42	0.001336	± 2.5	PASS
		VH	TN	-0.54	-0.000211	± 2.5	PASS
16QAM	LCH	VL	TN	4.53	0.001805	± 2.5	PASS
		VN	TN	-1.48	-0.000590	± 2.5	PASS
		VH	TN	0.91	0.000363	± 2.5	PASS
	MCH	VL	TN	4	0.001578	± 2.5	PASS
		VN	TN	0.61	0.000241	± 2.5	PASS
		VH	TN	4.86	0.001917	± 2.5	PASS
	HCH	VL	TN	1.04	0.000406	± 2.5	PASS
		VN	TN	-0.03	-0.000012	± 2.5	PASS
		VH	TN	-0.65	-0.000254	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.66	0.001060	± 2.5	PASS
		VN	-20	-1.53	-0.000610	± 2.5	PASS
		VN	-10	-1.51	-0.000602	± 2.5	PASS
		VN	0	3.86	0.001538	± 2.5	PASS
		VN	10	1.73	0.000689	± 2.5	PASS
		VN	20	4.08	0.001625	± 2.5	PASS
		VN	30	0.62	0.000247	± 2.5	PASS
		VN	40	-1.56	-0.000622	± 2.5	PASS
		VN	50	-1.13	-0.000450	± 2.5	PASS
	MCH	VN	-30	0.7	0.000276	± 2.5	PASS
		VN	-20	0	0.000000	± 2.5	PASS
		VN	-10	2.42	0.000955	± 2.5	PASS
		VN	0	3.66	0.001444	± 2.5	PASS

		VN	10	0.6	0.000237	± 2.5	PASS
		VN	20	-1.95	-0.000769	± 2.5	PASS
		VN	30	2.64	0.001041	± 2.5	PASS
		VN	40	0.02	0.000008	± 2.5	PASS
		VN	50	3.44	0.001357	± 2.5	PASS
	HCH	VN	-30	0.42	0.000164	± 2.5	PASS
		VN	-20	-0.64	-0.000250	± 2.5	PASS
		VN	-10	-1.15	-0.000449	± 2.5	PASS
		VN	0	2.25	0.000879	± 2.5	PASS
		VN	10	2.43	0.000949	± 2.5	PASS
		VN	20	1.79	0.000699	± 2.5	PASS
		VN	30	-1.66	-0.000648	± 2.5	PASS
		VN	40	-1.88	-0.000734	± 2.5	PASS
		VN	50	-0.79	-0.000309	± 2.5	PASS
QPSK	LCH	VN	-30	-0.98	-0.000390	± 2.5	PASS
		VN	-20	1.14	0.000454	± 2.5	PASS
		VN	-10	-1.85	-0.000737	± 2.5	PASS
		VN	0	-0.04	-0.000016	± 2.5	PASS
		VN	10	-1.38	-0.000550	± 2.5	PASS
		VN	20	0.74	0.000295	± 2.5	PASS
		VN	30	-0.44	-0.000175	± 2.5	PASS
		VN	40	4.8	0.001912	± 2.5	PASS
		VN	50	4.6	0.001833	± 2.5	PASS
	MCH	VN	-30	4.36	0.001720	± 2.5	PASS
		VN	-20	-0.59	-0.000233	± 2.5	PASS
		VN	-10	2.08	0.000821	± 2.5	PASS
		VN	0	-1.22	-0.000481	± 2.5	PASS
		VN	10	3.38	0.001333	± 2.5	PASS
		VN	20	2.65	0.001045	± 2.5	PASS
		VN	30	1.11	0.000438	± 2.5	PASS
		VN	40	3.81	0.001503	± 2.5	PASS
		VN	50	-0.69	-0.000272	± 2.5	PASS
	HCH	VN	-30	-1.63	-0.000637	± 2.5	PASS
		VN	-20	2.69	0.001051	± 2.5	PASS
		VN	-10	1.29	0.000504	± 2.5	PASS
		VN	0	2.71	0.001059	± 2.5	PASS
		VN	10	2.86	0.001117	± 2.5	PASS
		VN	20	-1.45	-0.000566	± 2.5	PASS
		VN	30	-1.17	-0.000457	± 2.5	PASS
		VN	40	2.54	0.000992	± 2.5	PASS
		VN	50	0.72	0.000281	± 2.5	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	0.23	0.000092	± 2.5	PASS
		VN	TN	4.63	0.001845	± 2.5	PASS
		VH	TN	4.33	0.001725	± 2.5	PASS
	MCH	VL	TN	4.47	0.001763	± 2.5	PASS
		VN	TN	-1.34	-0.000529	± 2.5	PASS
		VH	TN	4.68	0.001846	± 2.5	PASS
	HCH	VL	TN	-1.61	-0.000629	± 2.5	PASS
		VN	TN	1.72	0.000672	± 2.5	PASS
		VH	TN	-0.47	-0.000184	± 2.5	PASS
16QAM	LCH	VL	TN	-1.24	-0.000494	± 2.5	PASS
		VN	TN	4.67	0.001861	± 2.5	PASS
		VH	TN	0.71	0.000283	± 2.5	PASS
	MCH	VL	TN	4.42	0.001744	± 2.5	PASS
		VN	TN	1.16	0.000458	± 2.5	PASS
		VH	TN	1.86	0.000734	± 2.5	PASS
	HCH	VL	TN	2.81	0.001098	± 2.5	PASS
		VN	TN	1.45	0.000566	± 2.5	PASS
		VH	TN	2.4	0.000938	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.37	0.001343	± 2.5	PASS
		VN	-20	2.79	0.001112	± 2.5	PASS
		VN	-10	1.28	0.000510	± 2.5	PASS
		VN	0	-0.54	-0.000215	± 2.5	PASS
		VN	10	4.29	0.001709	± 2.5	PASS
		VN	20	0.28	0.000112	± 2.5	PASS
		VN	30	1.03	0.000410	± 2.5	PASS
		VN	40	1.27	0.000506	± 2.5	PASS
		VN	50	2.16	0.000861	± 2.5	PASS
	MCH	VN	-30	-0.27	-0.000107	± 2.5	PASS
		VN	-20	2.76	0.001089	± 2.5	PASS
		VN	-10	1.94	0.000765	± 2.5	PASS
		VN	0	0.34	0.000134	± 2.5	PASS
		VN	10	2.65	0.001045	± 2.5	PASS
		VN	20	2.67	0.001053	± 2.5	PASS

		VN	30	0.94	0.000371	± 2.5	PASS
		VN	40	3.97	0.001566	± 2.5	PASS
		VN	50	3.28	0.001294	± 2.5	PASS
	HCH	VN	-30	-0.62	-0.000242	± 2.5	PASS
		VN	-20	2.73	0.001066	± 2.5	PASS
		VN	-10	2.21	0.000863	± 2.5	PASS
		VN	0	4.97	0.001941	± 2.5	PASS
		VN	10	3.64	0.001422	± 2.5	PASS
		VN	20	4.78	0.001867	± 2.5	PASS
		VN	30	0.02	0.000008	± 2.5	PASS
		VN	40	1.12	0.000438	± 2.5	PASS
		VN	50	3.66	0.001430	± 2.5	PASS
QPSK	LCH	VN	-30	-0.49	-0.000195	± 2.5	PASS
		VN	-20	-0.99	-0.000394	± 2.5	PASS
		VN	-10	0.23	0.000092	± 2.5	PASS
		VN	0	2.66	0.001060	± 2.5	PASS
		VN	10	2.52	0.001004	± 2.5	PASS
		VN	20	4.62	0.001841	± 2.5	PASS
		VN	30	2.74	0.001092	± 2.5	PASS
		VN	40	-0.04	-0.000016	± 2.5	PASS
		VN	50	1.7	0.000677	± 2.5	PASS
	MCH	VN	-30	1.88	0.000742	± 2.5	PASS
		VN	-20	1.09	0.000430	± 2.5	PASS
		VN	-10	2.08	0.000821	± 2.5	PASS
		VN	0	4.55	0.001795	± 2.5	PASS
		VN	10	0.12	0.000047	± 2.5	PASS
		VN	20	-0.16	-0.000063	± 2.5	PASS
		VN	30	2.77	0.001093	± 2.5	PASS
		VN	40	-1.24	-0.000489	± 2.5	PASS
		VN	50	1.79	0.000706	± 2.5	PASS
	HCH	VN	-30	-1.09	-0.000426	± 2.5	PASS
		VN	-20	2.31	0.000902	± 2.5	PASS
		VN	-10	1.07	0.000418	± 2.5	PASS
		VN	0	2.81	0.001098	± 2.5	PASS
		VN	10	-1.5	-0.000586	± 2.5	PASS
		VN	20	1.13	0.000441	± 2.5	PASS
		VN	30	1.33	0.000520	± 2.5	PASS
		VN	40	-0.7	-0.000273	± 2.5	PASS
		VN	50	-0.18	-0.000070	± 2.5	PASS