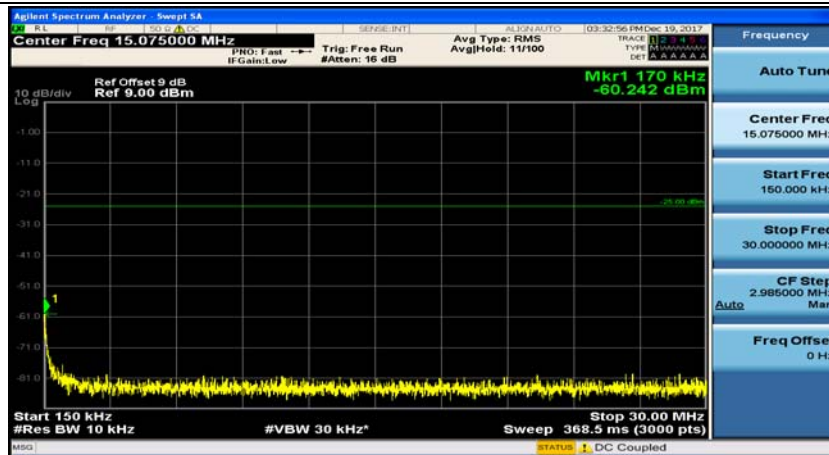
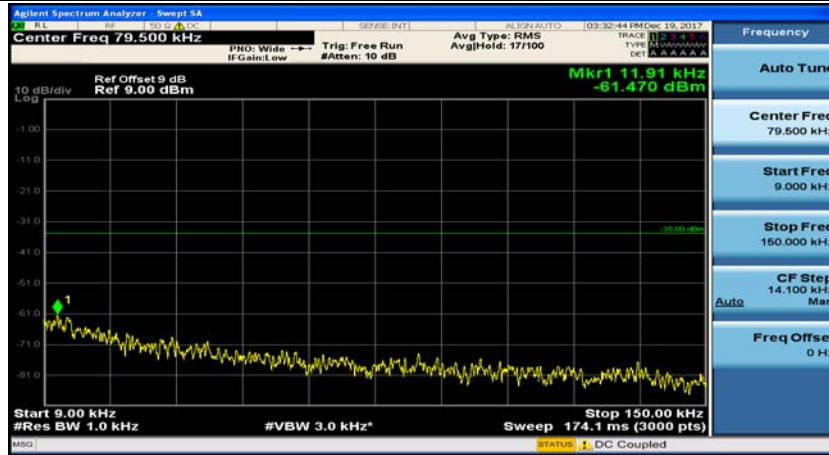
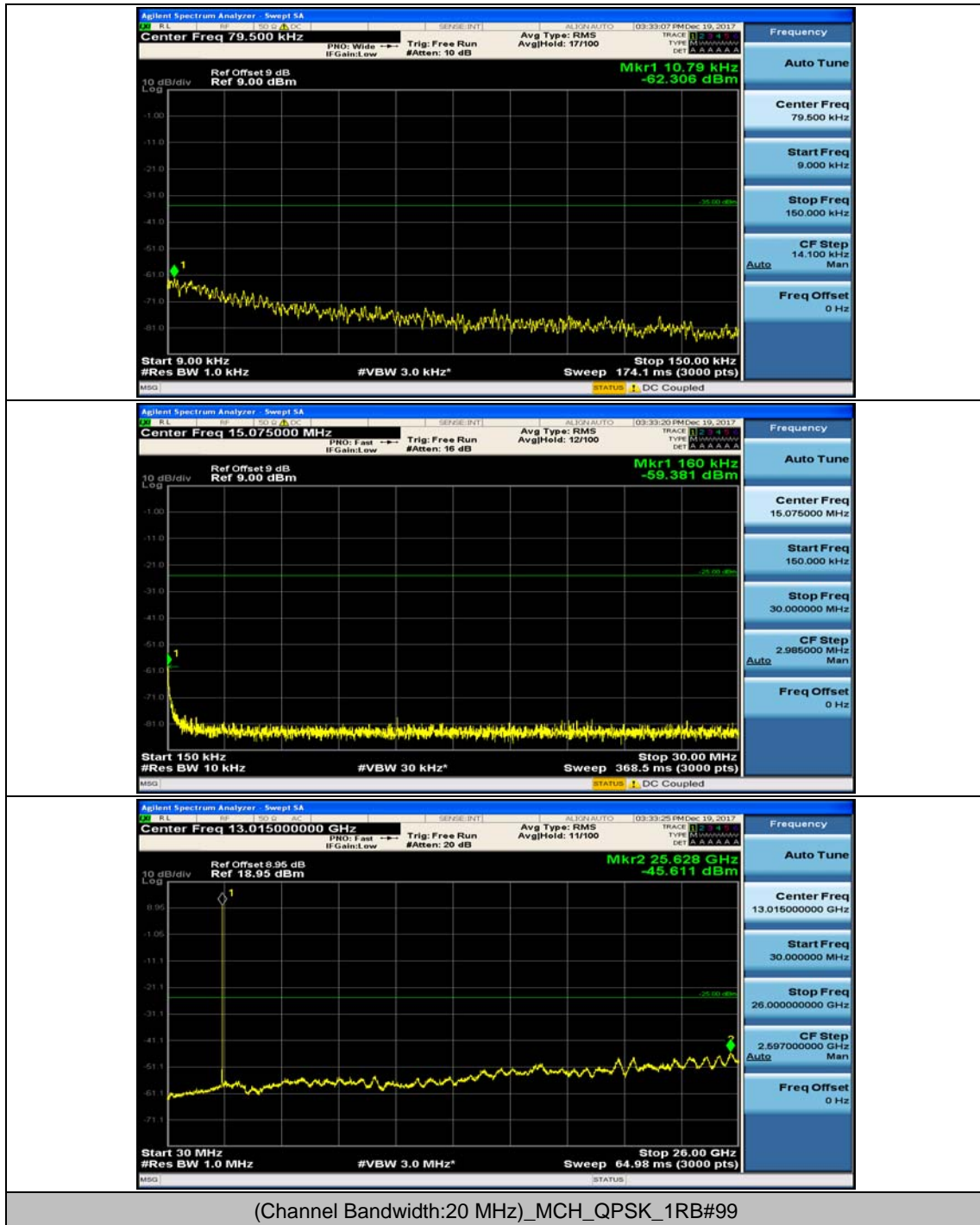
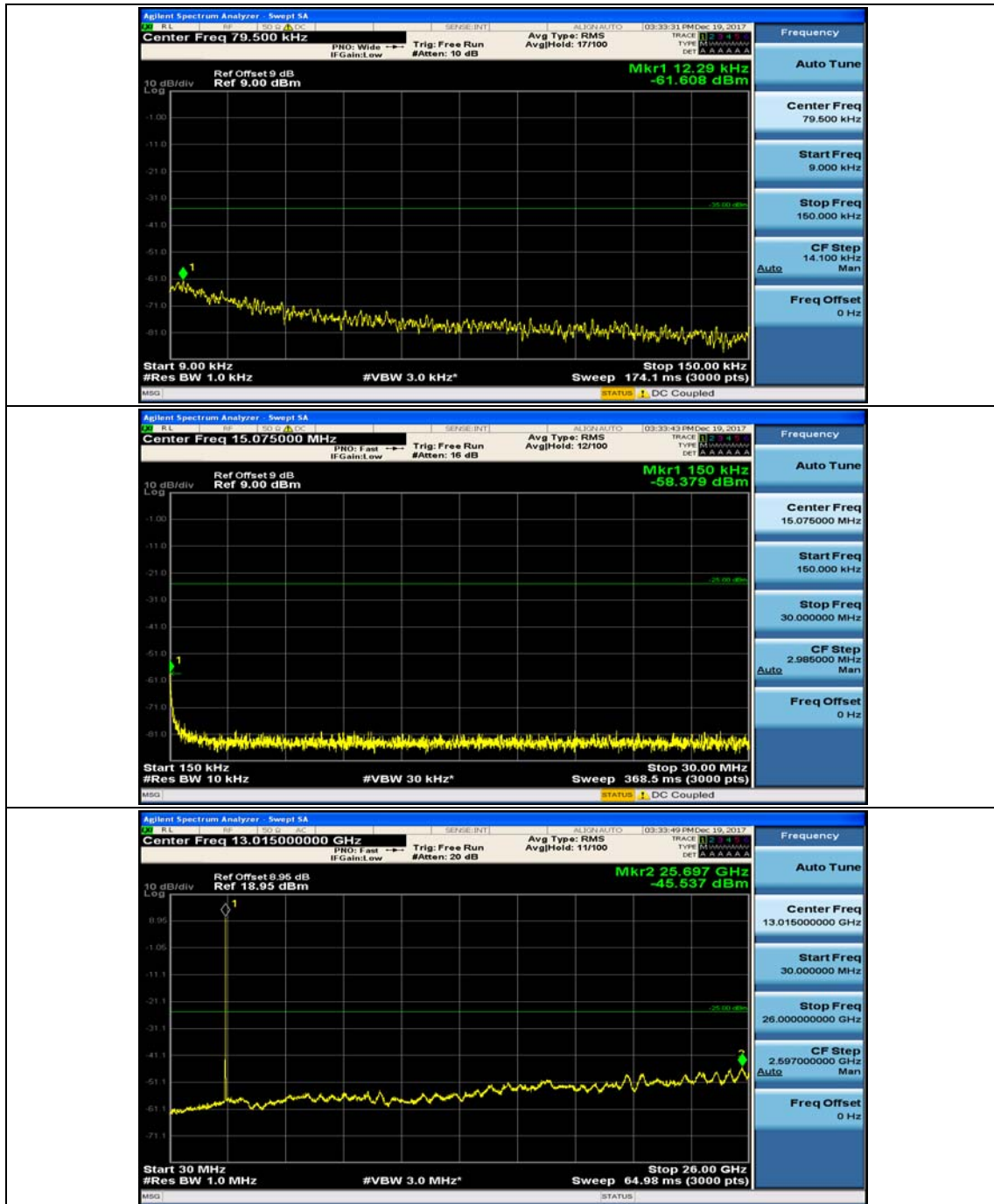


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

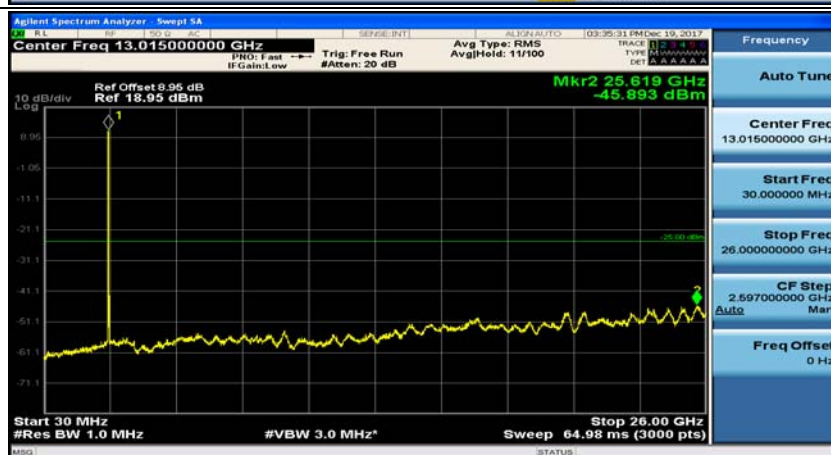
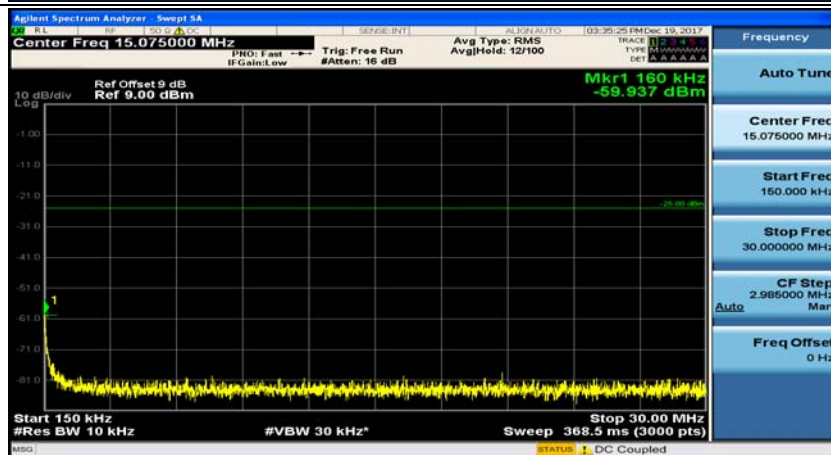
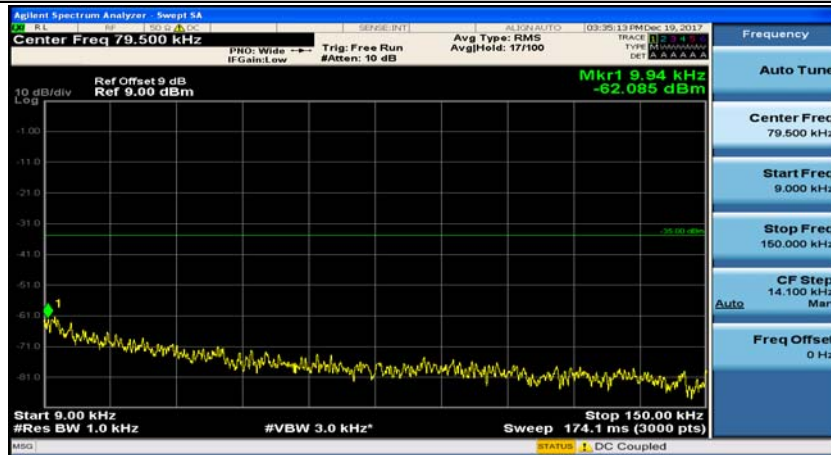


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

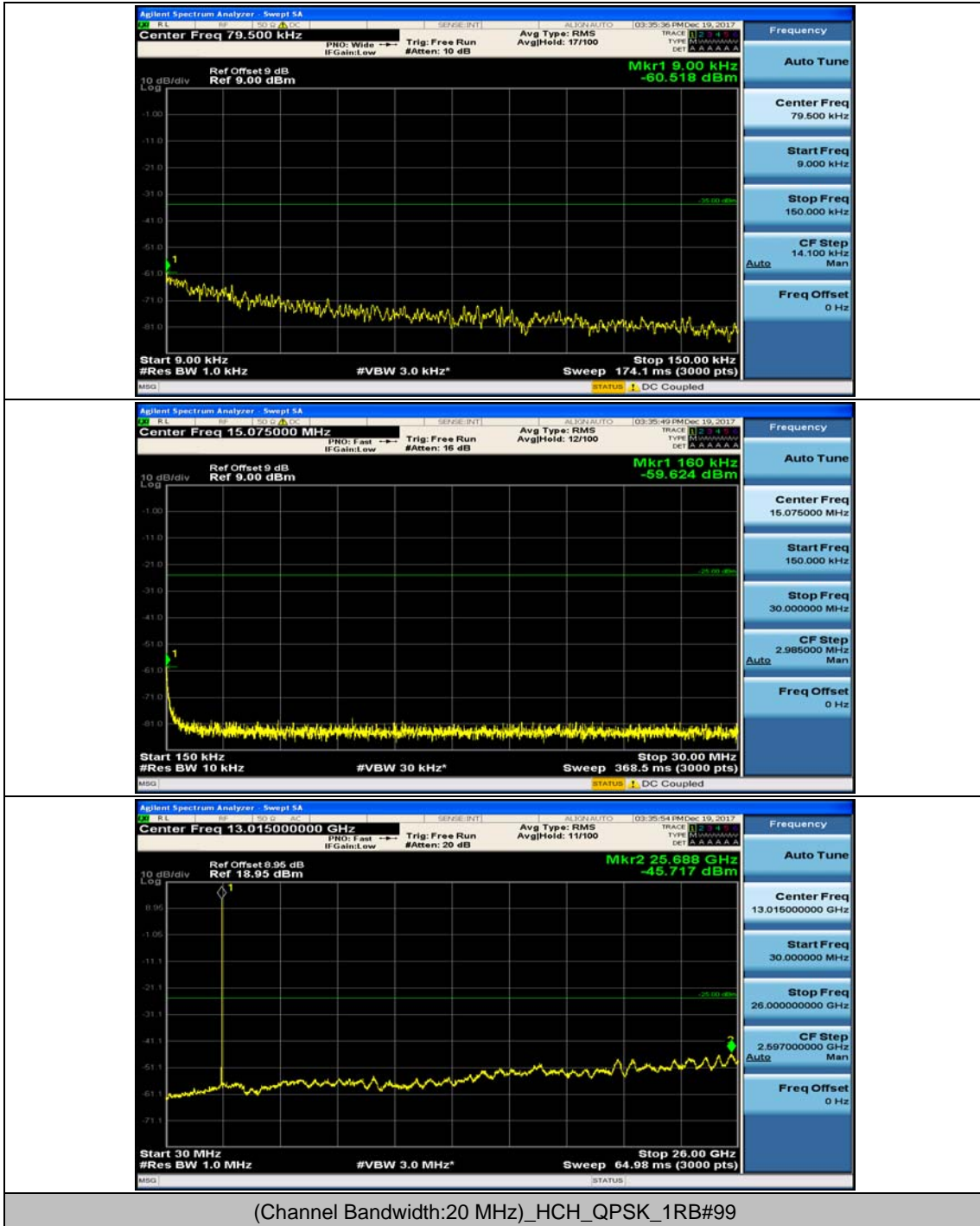


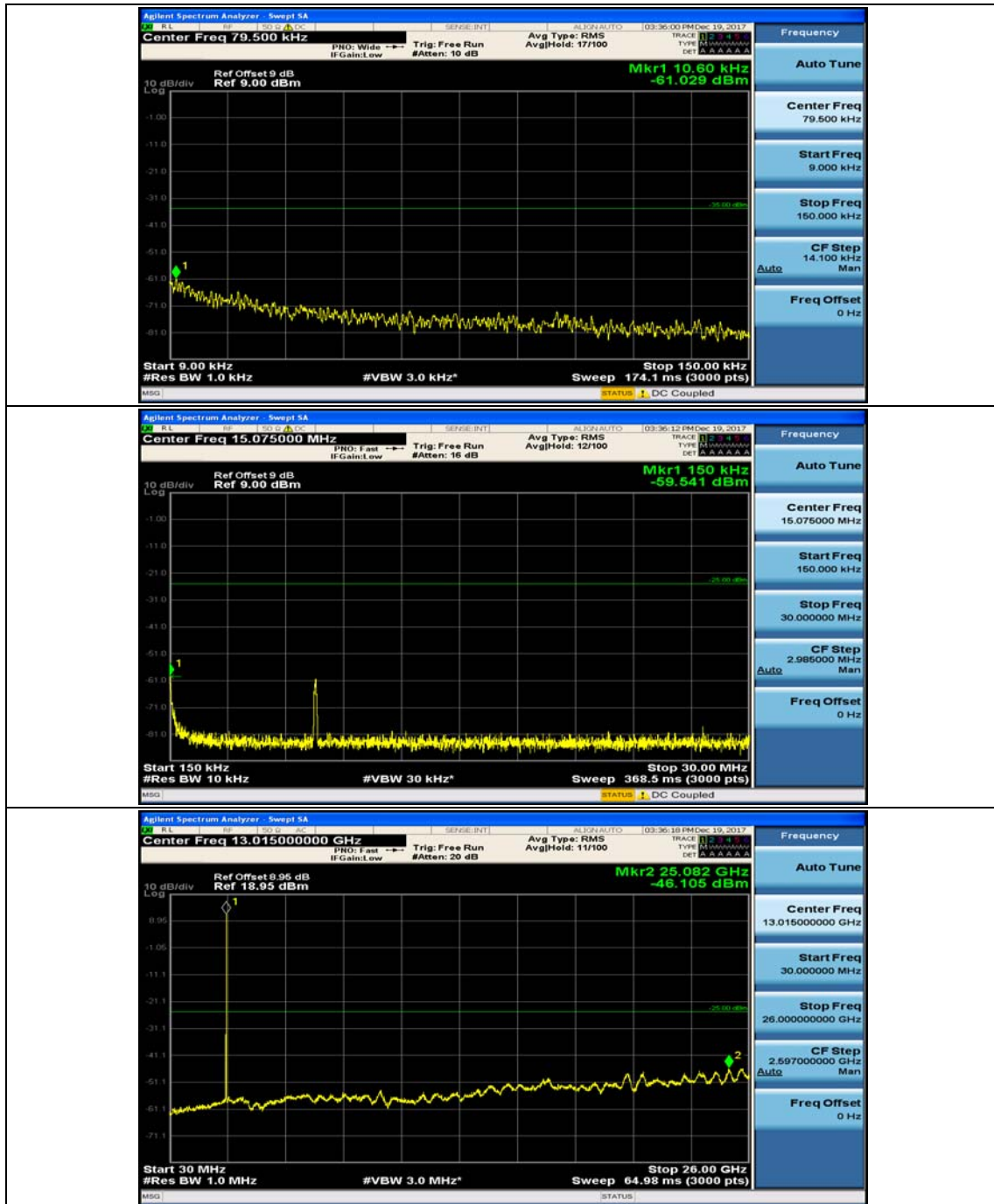


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

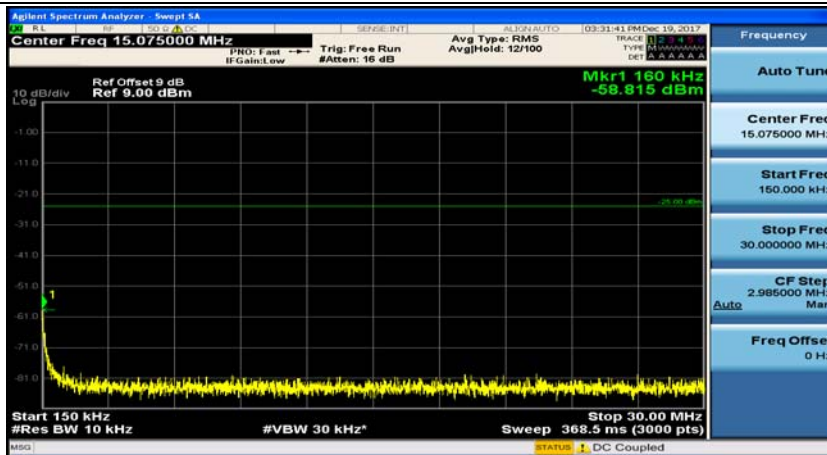
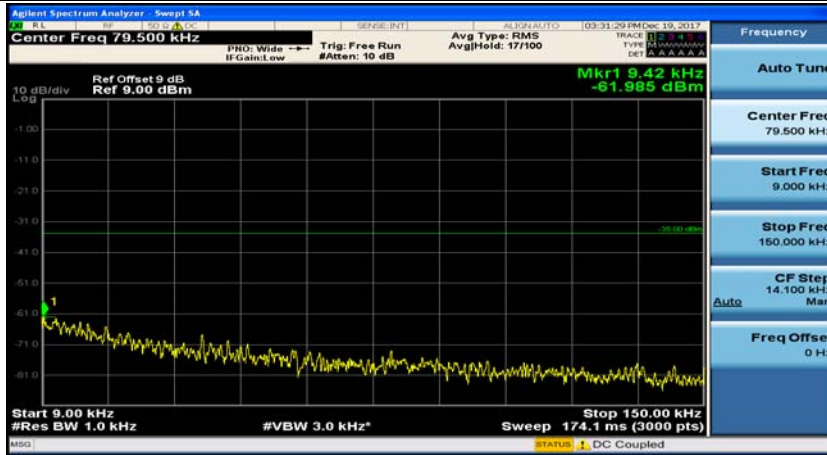


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

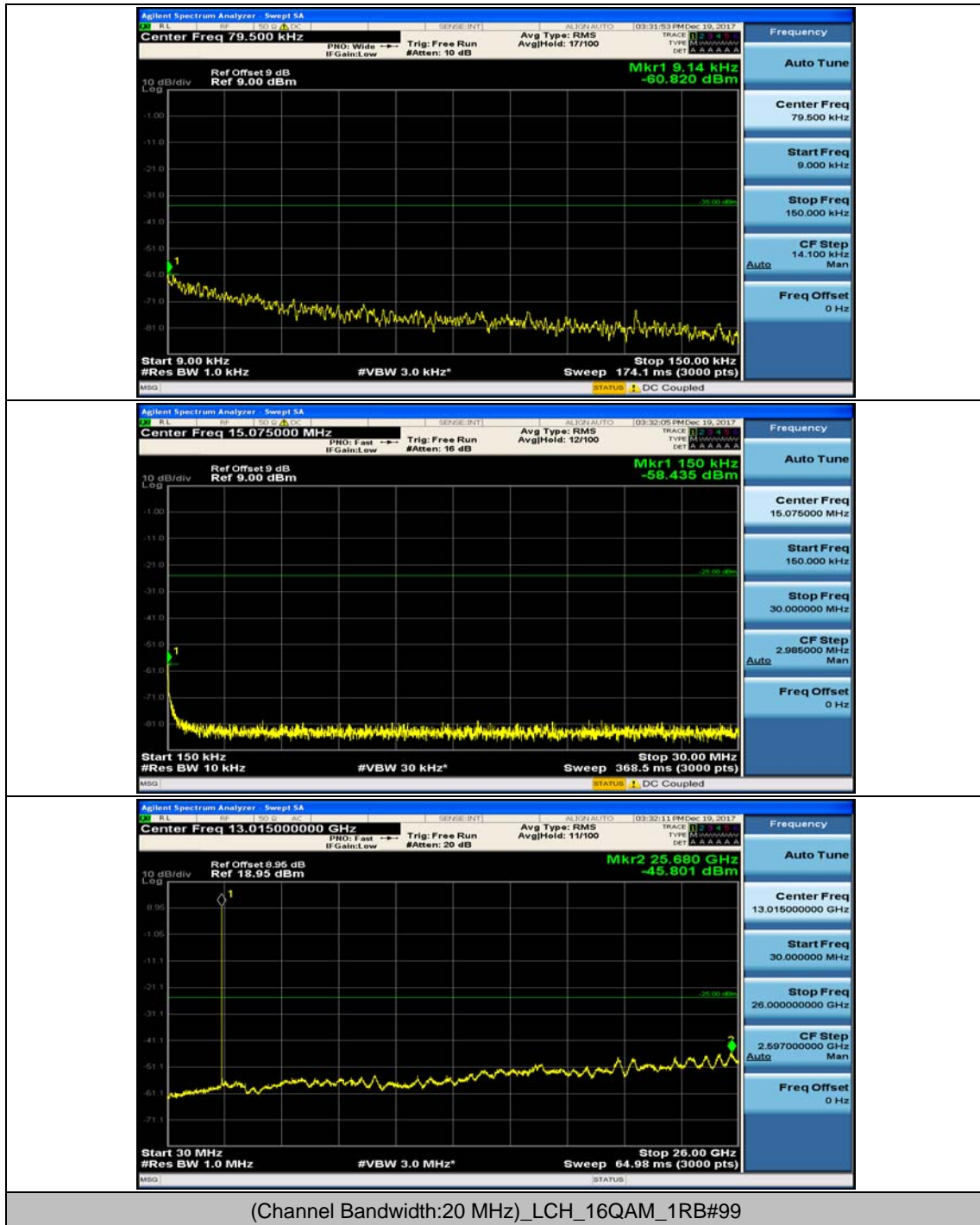


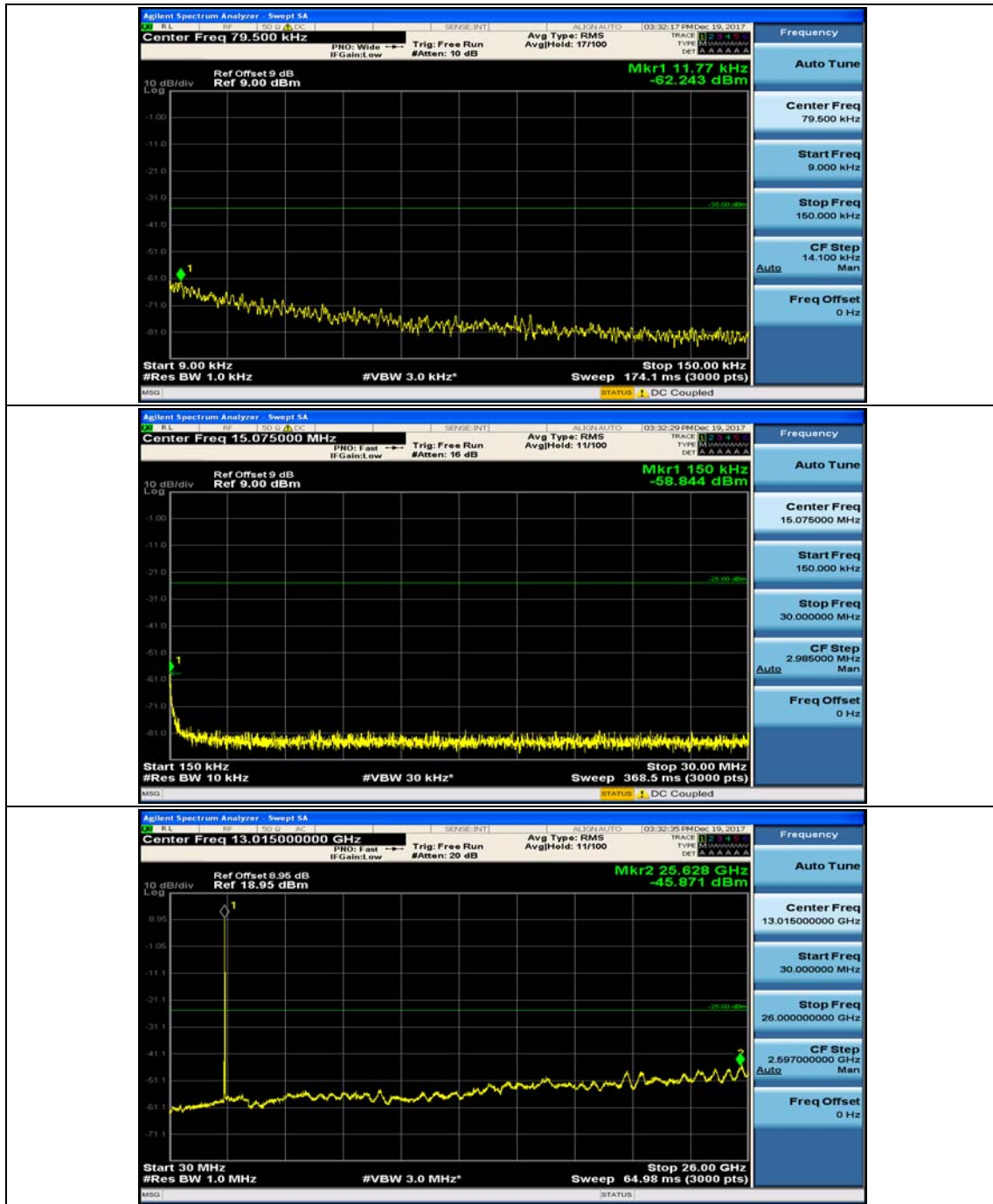


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

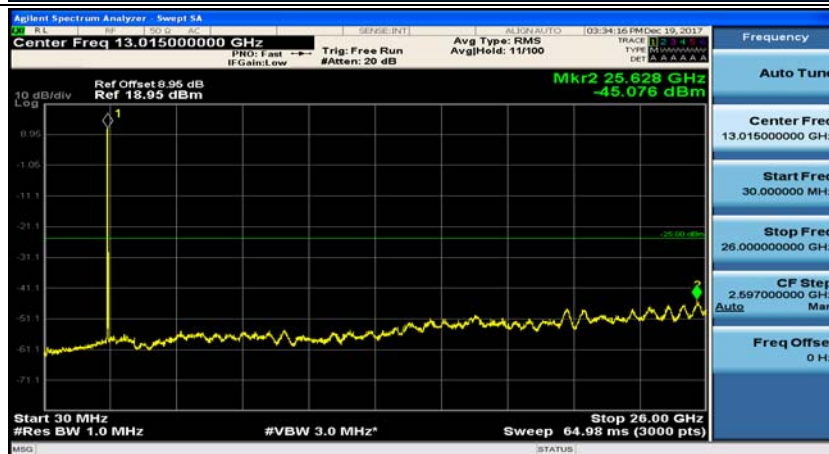
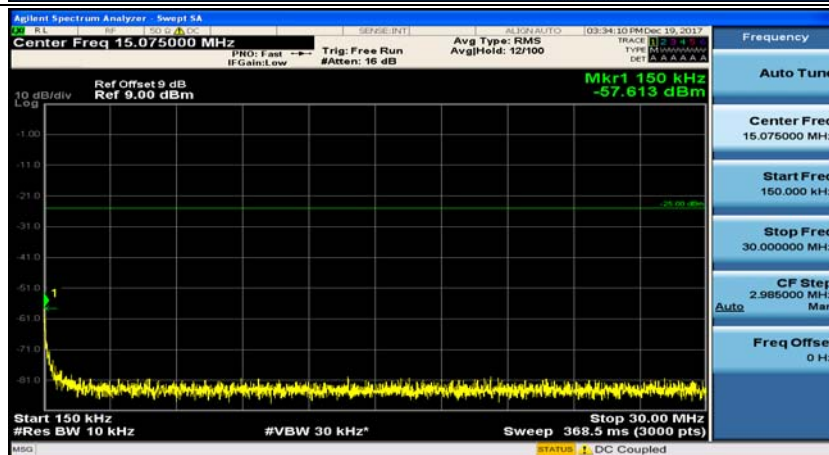
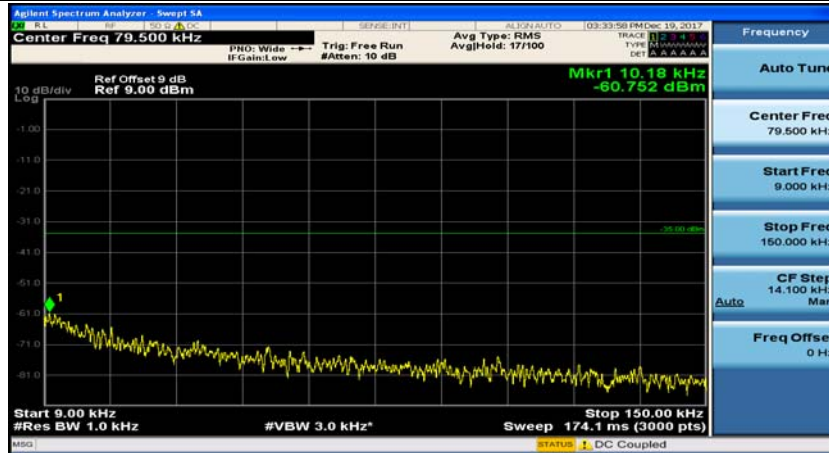


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

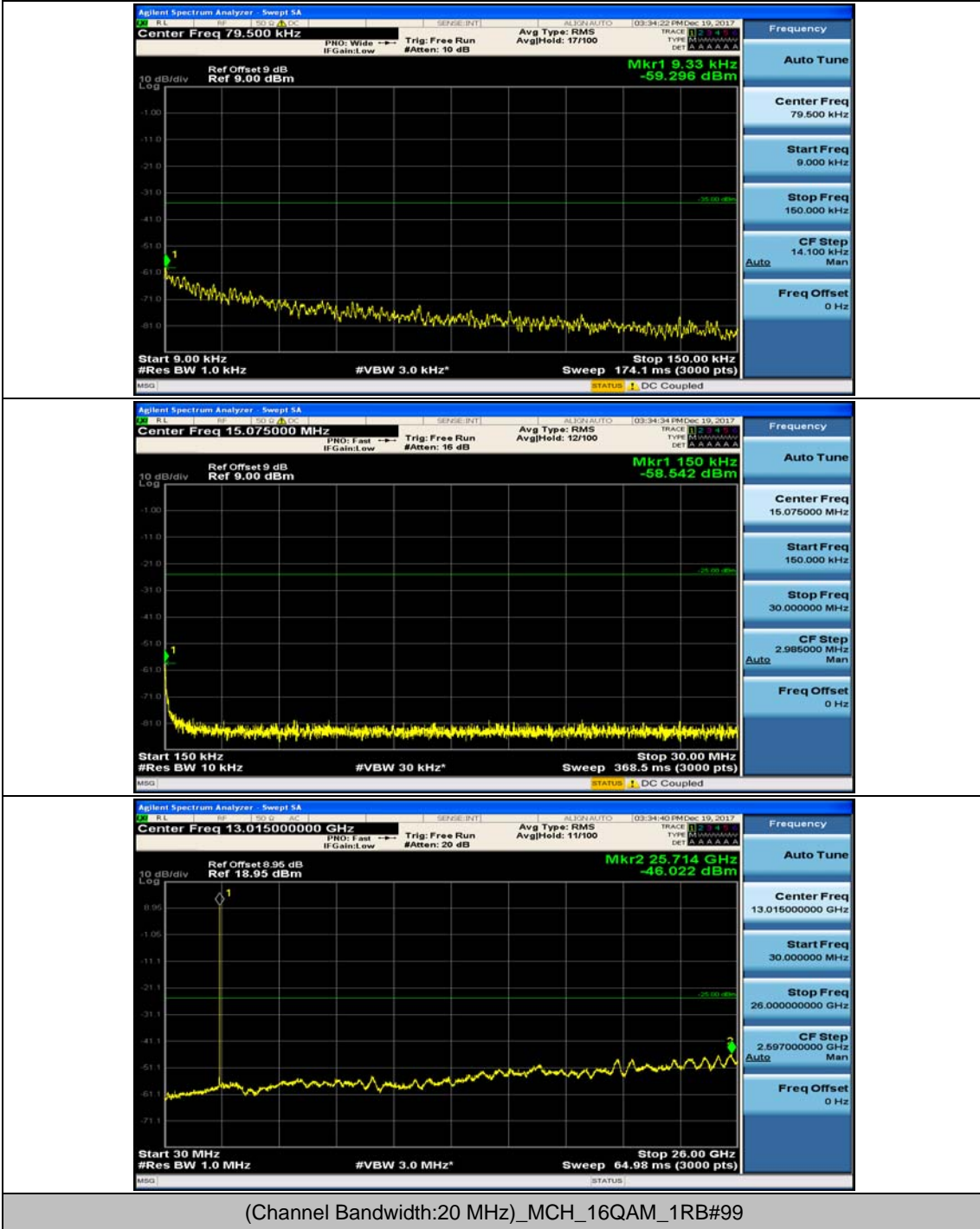


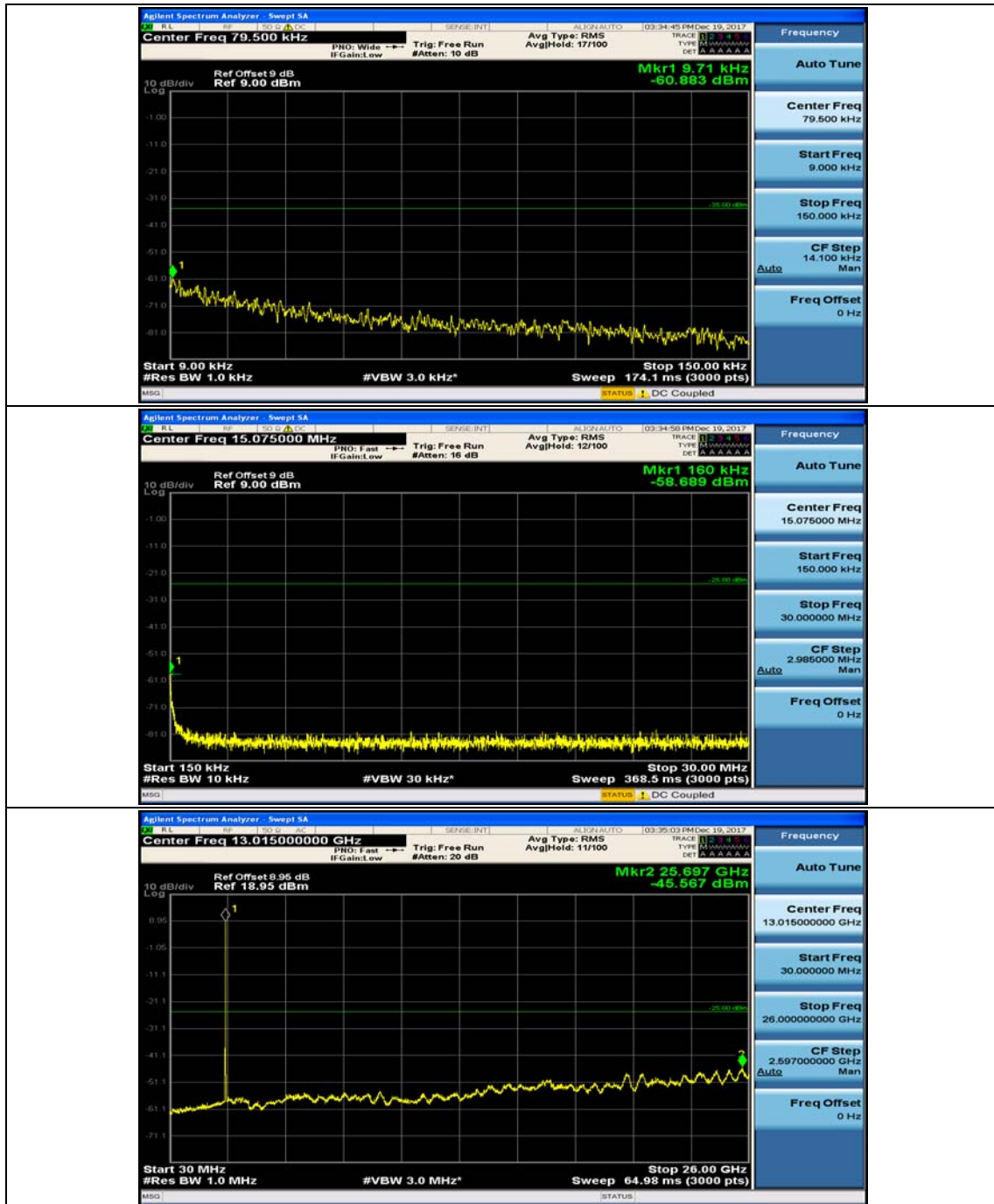


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

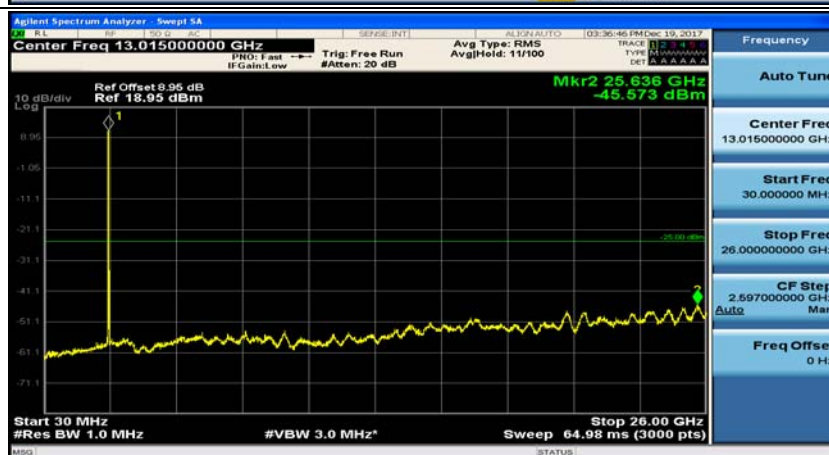
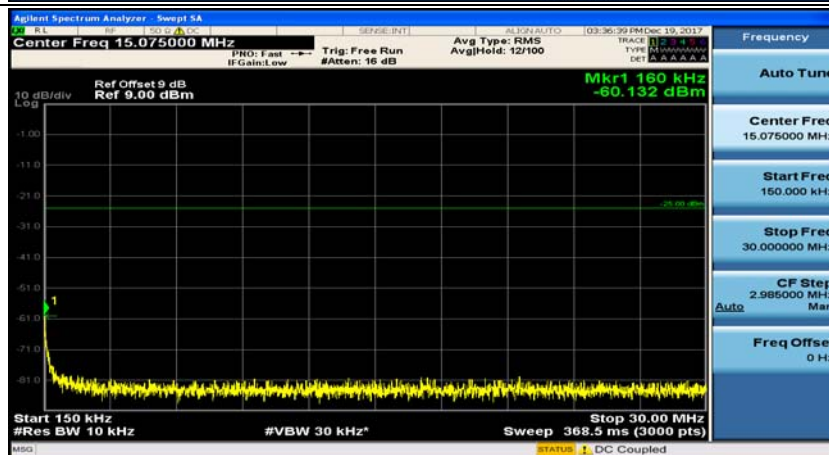
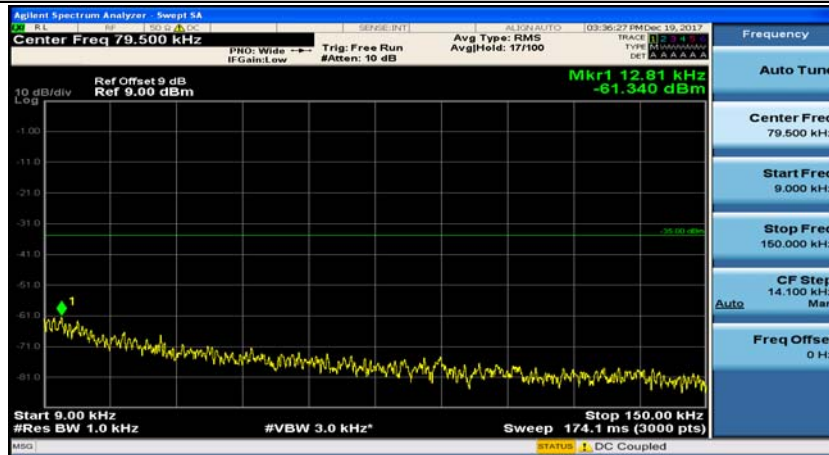


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

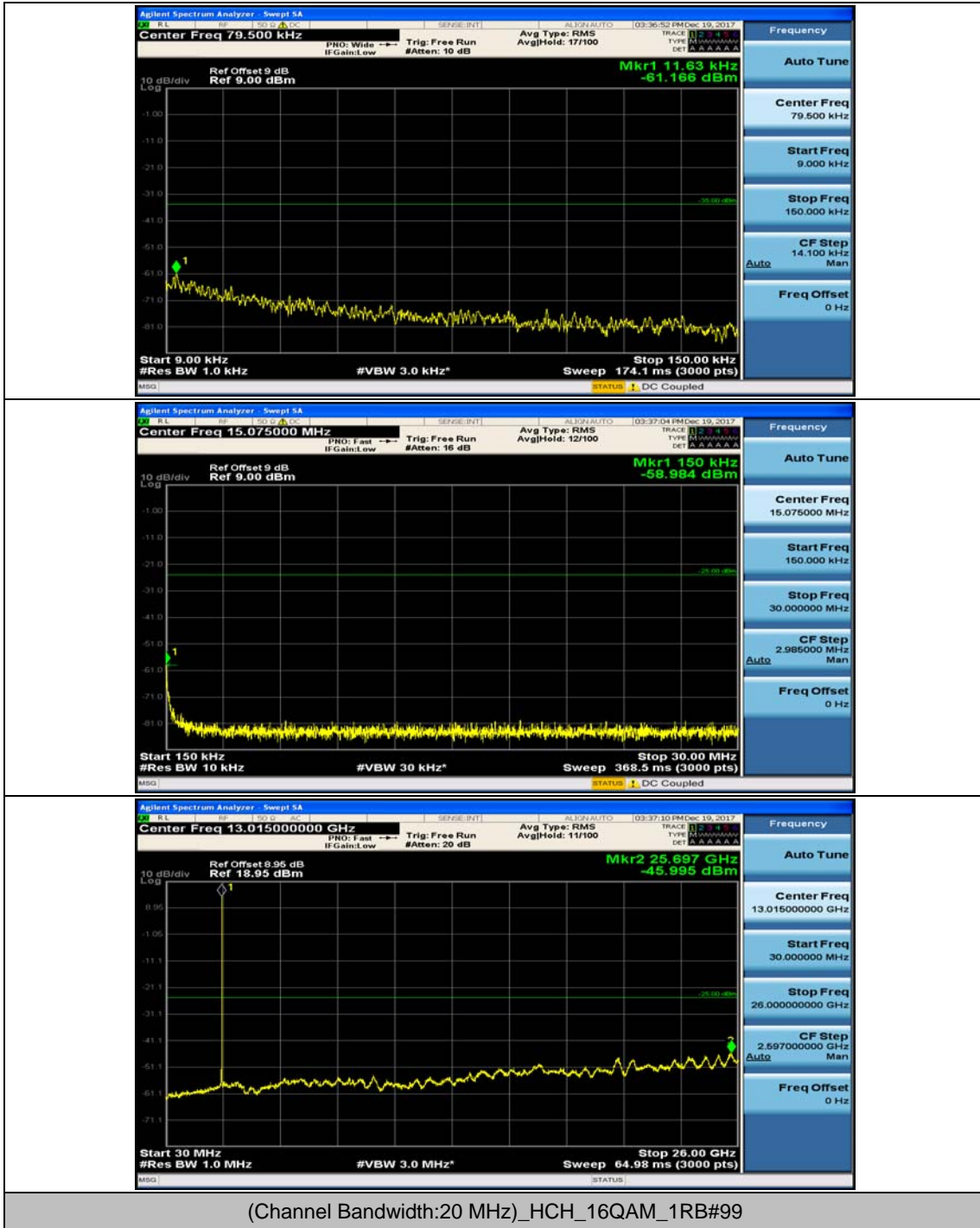


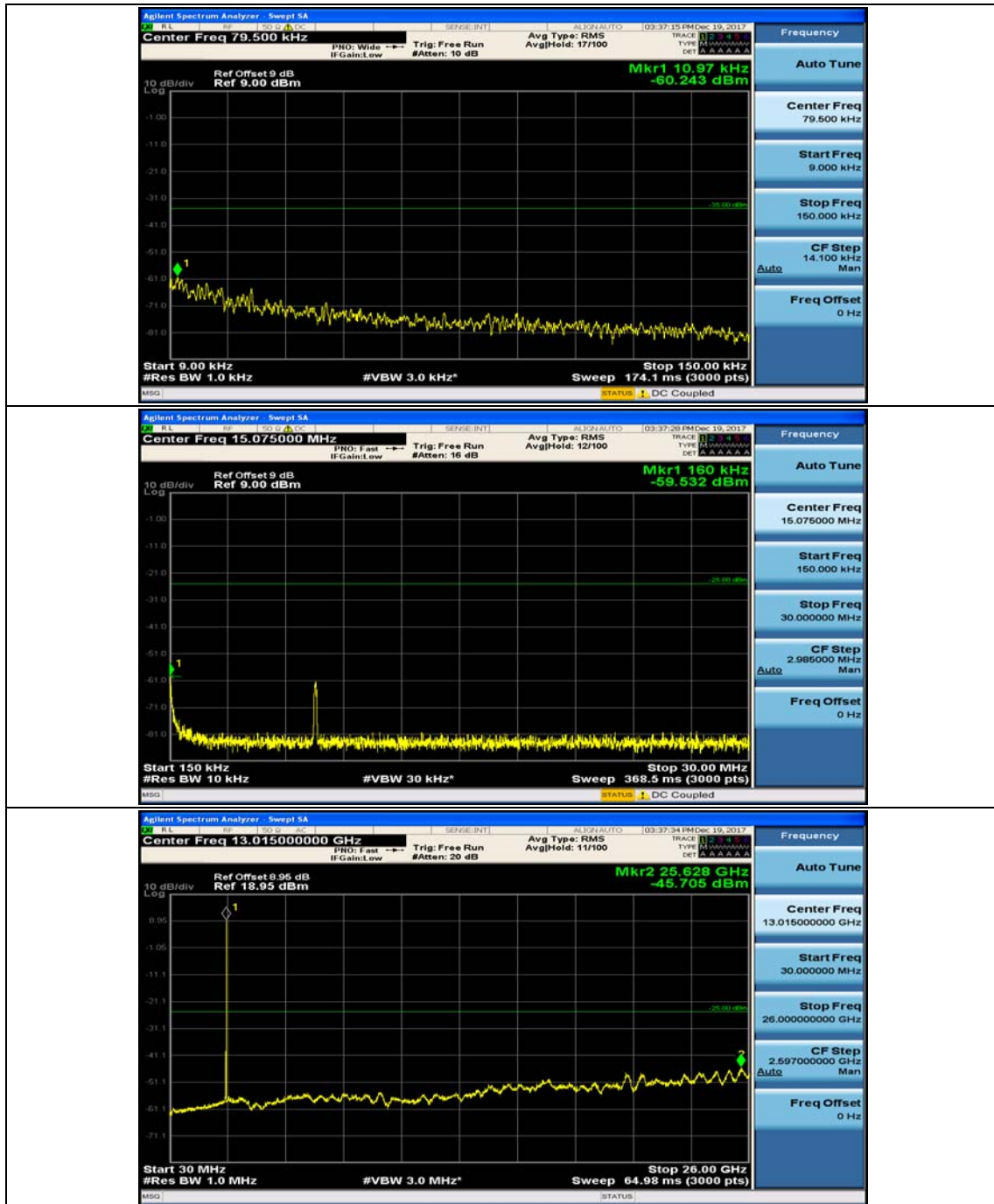


(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(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	3.03	0.001211	± 2.5	PASS
		VN	TN	0.78	0.000312	± 2.5	PASS
		VH	TN	-0.74	-0.000296	± 2.5	PASS
	MCH	VL	TN	0.1	0.000039	± 2.5	PASS
		VN	TN	0.12	0.000047	± 2.5	PASS
		VH	TN	-1.31	-0.000517	± 2.5	PASS
	HCH	VL	TN	2.04	0.000795	± 2.5	PASS
		VN	TN	-1.78	-0.000693	± 2.5	PASS
		VH	TN	3.55	0.001383	± 2.5	PASS
16QAM	LCH	VL	TN	2.47	0.000987	± 2.5	PASS
		VN	TN	-1.54	-0.000615	± 2.5	PASS
		VH	TN	3.89	0.001554	± 2.5	PASS
	MCH	VL	TN	4.35	0.001716	± 2.5	PASS
		VN	TN	2.17	0.000856	± 2.5	PASS
		VH	TN	3.47	0.001369	± 2.5	PASS
	HCH	VL	TN	1.47	0.000573	± 2.5	PASS
		VN	TN	2.08	0.000810	± 2.5	PASS
		VH	TN	0.88	0.000343	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.9	0.001159	± 2.5	PASS
		VN	-20	0.72	0.000288	± 2.5	PASS
		VN	-10	-0.64	-0.000256	± 2.5	PASS
		VN	0	-1.69	-0.000675	± 2.5	PASS
		VN	10	-0.27	-0.000108	± 2.5	PASS
		VN	20	0.25	0.000100	± 2.5	PASS
		VN	30	3.06	0.001223	± 2.5	PASS
		VN	40	-0.7	-0.000280	± 2.5	PASS
		VN	50	4.26	0.001702	± 2.5	PASS
	MCH	VN	-30	1.34	0.000529	± 2.5	PASS
		VN	-20	0.27	0.000107	± 2.5	PASS

		VN	-10	3.46	0.001365	± 2.5	PASS		
		VN	0	2	0.000789	± 2.5	PASS		
		VN	10	3.74	0.001475	± 2.5	PASS		
		VN	20	0.31	0.000122	± 2.5	PASS		
		VN	30	-1.15	-0.000454	± 2.5	PASS		
		VN	40	0.46	0.000181	± 2.5	PASS		
		VN	50	-1.58	-0.000623	± 2.5	PASS		
	HCH	VN	-30	1.55	0.000604	± 2.5	PASS		
		VN	-20	-1.9	-0.000740	± 2.5	PASS		
		VN	-10	3.96	0.001542	± 2.5	PASS		
		VN	0	1.69	0.000658	± 2.5	PASS		
		VN	10	3.24	0.001262	± 2.5	PASS		
		VN	20	-0.8	-0.000312	± 2.5	PASS		
		VN	30	4.5	0.001753	± 2.5	PASS		
		VN	40	-0.99	-0.000386	± 2.5	PASS		
		VN	50	1.97	0.000767	± 2.5	PASS		
		16QAM	LCH	VN	-30	4.03	0.001610	± 2.5	PASS
				VN	-20	1.14	0.000456	± 2.5	PASS
VN	-10			2.14	0.000855	± 2.5	PASS		
VN	0			-1.53	-0.000611	± 2.5	PASS		
VN	10			3.41	0.001363	± 2.5	PASS		
VN	20			0	0.000000	± 2.5	PASS		
VN	30			0.35	0.000140	± 2.5	PASS		
VN	40			-1.42	-0.000567	± 2.5	PASS		
VN	50			-0.87	-0.000348	± 2.5	PASS		
MCH	VN		-30	-0.76	-0.000300	± 2.5	PASS		
	VN		-20	3.6	0.001420	± 2.5	PASS		
	VN		-10	-1.22	-0.000481	± 2.5	PASS		
	VN		0	4.57	0.001803	± 2.5	PASS		
	VN		10	3.81	0.001503	± 2.5	PASS		
	VN		20	0.2	0.000079	± 2.5	PASS		
	VN		30	0.03	0.000012	± 2.5	PASS		
	VN		40	0.67	0.000264	± 2.5	PASS		
	VN		50	-0.27	-0.000107	± 2.5	PASS		
HCH	VN		-30	-0.7	-0.000273	± 2.5	PASS		
	VN		-20	-1.06	-0.000413	± 2.5	PASS		
	VN		-10	-0.57	-0.000222	± 2.5	PASS		
	VN		0	4.57	0.001780	± 2.5	PASS		
	VN		10	0.69	0.000269	± 2.5	PASS		
	VN		20	1.78	0.000693	± 2.5	PASS		
	VN		30	4.35	0.001694	± 2.5	PASS		

		VN	40	2.86	0.001114	± 2.5	PASS
		VN	50	1.13	0.000440	± 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	4.91	0.001960	± 2.5	PASS
		VN	TN	-1.17	-0.000467	± 2.5	PASS
		VH	TN	1.65	0.000659	± 2.5	PASS
	MCH	VL	TN	-1.33	-0.000525	± 2.5	PASS
		VN	TN	0.5	0.000197	± 2.5	PASS
		VH	TN	-0.18	-0.000071	± 2.5	PASS
	HCH	VL	TN	2.27	0.000885	± 2.5	PASS
		VN	TN	-1.84	-0.000717	± 2.5	PASS
		VH	TN	3.03	0.001181	± 2.5	PASS
16QAM	LCH	VL	TN	3.75	0.001497	± 2.5	PASS
		VN	TN	-1.46	-0.000583	± 2.5	PASS
		VH	TN	0.59	0.000236	± 2.5	PASS
	MCH	VL	TN	-0.09	-0.000036	± 2.5	PASS
		VN	TN	0.97	0.000383	± 2.5	PASS
		VH	TN	0.88	0.000347	± 2.5	PASS
	HCH	VL	TN	1.76	0.000686	± 2.5	PASS
		VN	TN	2.33	0.000908	± 2.5	PASS
		VH	TN	3.2	0.001248	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	-0.23	-0.000092	± 2.5	PASS
		VN	-20	0.39	0.000156	± 2.5	PASS
		VN	-10	0.68	0.000271	± 2.5	PASS
		VN	0	0.87	0.000347	± 2.5	PASS
		VN	10	2.73	0.001090	± 2.5	PASS
		VN	20	-1.74	-0.000695	± 2.5	PASS
		VN	30	-1.46	-0.000583	± 2.5	PASS
		VN	40	-1.64	-0.000655	± 2.5	PASS
		VN	50	-0.42	-0.000168	± 2.5	PASS
	MCH	VN	-30	-0.06	-0.000024	± 2.5	PASS
		VN	-20	2.49	0.000982	± 2.5	PASS
		VN	-10	-0.89	-0.000351	± 2.5	PASS

		VN	0	0.85	0.000335	± 2.5	PASS		
		VN	10	5	0.001972	± 2.5	PASS		
		VN	20	0.62	0.000245	± 2.5	PASS		
		VN	30	-1.61	-0.000635	± 2.5	PASS		
		VN	40	1.46	0.000576	± 2.5	PASS		
		VN	50	2.22	0.000876	± 2.5	PASS		
	HCH	VN	-30	-0.43	-0.000168	± 2.5	PASS		
		VN	-20	0.17	0.000066	± 2.5	PASS		
		VN	-10	4.01	0.001563	± 2.5	PASS		
		VN	0	-1.92	-0.000749	± 2.5	PASS		
		VN	10	2.84	0.001107	± 2.5	PASS		
		VN	20	-1.72	-0.000671	± 2.5	PASS		
		VN	30	4.57	0.001782	± 2.5	PASS		
		VN	40	3.74	0.001458	± 2.5	PASS		
		VN	50	0.7	0.000273	± 2.5	PASS		
		QPSK	LCH	VN	-30	2.05	0.000818	± 2.5	PASS
				VN	-20	-0.77	-0.000307	± 2.5	PASS
				VN	-10	2.96	0.001182	± 2.5	PASS
VN	0			-1.06	-0.000423	± 2.5	PASS		
VN	10			4.25	0.001697	± 2.5	PASS		
VN	20			4.96	0.001980	± 2.5	PASS		
VN	30			3.22	0.001285	± 2.5	PASS		
VN	40			-1.97	-0.000786	± 2.5	PASS		
VN	50			-0.11	-0.000044	± 2.5	PASS		
MCH	VN		-30	1.58	0.000623	± 2.5	PASS		
	VN		-20	-1.33	-0.000525	± 2.5	PASS		
	VN		-10	2.25	0.000888	± 2.5	PASS		
	VN		0	4.34	0.001712	± 2.5	PASS		
	VN		10	-1.89	-0.000746	± 2.5	PASS		
	VN		20	2.95	0.001164	± 2.5	PASS		
	VN		30	0.23	0.000091	± 2.5	PASS		
	VN		40	1.6	0.000631	± 2.5	PASS		
	VN		50	1.51	0.000596	± 2.5	PASS		
HCH	VN		-30	-0.7	-0.000273	± 2.5	PASS		
	VN		-20	1.87	0.000729	± 2.5	PASS		
	VN		-10	-1.42	-0.000554	± 2.5	PASS		
	VN		0	2.85	0.001111	± 2.5	PASS		
	VN		10	3.47	0.001353	± 2.5	PASS		
	VN		20	3.09	0.001205	± 2.5	PASS		
	VN		30	1.07	0.000417	± 2.5	PASS		
	VN		40	-1.97	-0.000768	± 2.5	PASS		

		VN	50	-1.96	-0.000764	± 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	3.14	0.001252	± 2.5	PASS
		VN	TN	-0.88	-0.000351	± 2.5	PASS
		VH	TN	0.95	0.000379	± 2.5	PASS
	MCH	VL	TN	-1.33	-0.000525	± 2.5	PASS
		VN	TN	3.46	0.001365	± 2.5	PASS
		VH	TN	0.29	0.000114	± 2.5	PASS
	HCH	VL	TN	4.35	0.001698	± 2.5	PASS
		VN	TN	4.86	0.001897	± 2.5	PASS
		VH	TN	2.58	0.001007	± 2.5	PASS
16QAM	LCH	VL	TN	0.39	0.000156	± 2.5	PASS
		VN	TN	1.94	0.000774	± 2.5	PASS
		VH	TN	-1.08	-0.000431	± 2.5	PASS
	MCH	VL	TN	-1.48	-0.000584	± 2.5	PASS
		VN	TN	-0.5	-0.000197	± 2.5	PASS
		VH	TN	3.05	0.001203	± 2.5	PASS
	HCH	VL	TN	1.39	0.000542	± 2.5	PASS
		VN	TN	-0.53	-0.000207	± 2.5	PASS
		VH	TN	-1.43	-0.000558	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	4.77	0.001902	± 2.5	PASS
		VN	-20	4.97	0.001982	± 2.5	PASS
		VN	-10	3.79	0.001511	± 2.5	PASS
		VN	0	3.72	0.001484	± 2.5	PASS
		VN	10	-0.93	-0.000371	± 2.5	PASS
		VN	20	1.52	0.000606	± 2.5	PASS
		VN	30	0.52	0.000207	± 2.5	PASS
		VN	40	0.14	0.000056	± 2.5	PASS
		VN	50	1.54	0.000614	± 2.5	PASS
	MCH	VN	-30	1.82	0.000718	± 2.5	PASS
		VN	-20	3.21	0.001266	± 2.5	PASS
		VN	-10	0.25	0.000099	± 2.5	PASS
		VN	0	2.5	0.000986	± 2.5	PASS

		VN	10	4.71	0.001858	± 2.5	PASS
		VN	20	2.26	0.000892	± 2.5	PASS
		VN	30	0.43	0.000170	± 2.5	PASS
		VN	40	-1.81	-0.000714	± 2.5	PASS
		VN	50	4.75	0.001874	± 2.5	PASS
	HCH	VN	-30	-1.86	-0.000726	± 2.5	PASS
		VN	-20	2.44	0.000952	± 2.5	PASS
		VN	-10	-0.86	-0.000336	± 2.5	PASS
		VN	0	-1.25	-0.000488	± 2.5	PASS
		VN	10	-0.63	-0.000246	± 2.5	PASS
		VN	20	0.72	0.000281	± 2.5	PASS
		VN	30	-0.28	-0.000109	± 2.5	PASS
		VN	40	-1.75	-0.000683	± 2.5	PASS
		VN	50	1.48	0.000578	± 2.5	PASS
		QPSK	LCH	VN	-30	-0.45	-0.000179
VN	-20			-1.02	-0.000407	± 2.5	PASS
VN	-10			4.82	0.001922	± 2.5	PASS
VN	0			1.17	0.000467	± 2.5	PASS
VN	10			0.39	0.000156	± 2.5	PASS
VN	20			-0.59	-0.000235	± 2.5	PASS
VN	30			1.78	0.000710	± 2.5	PASS
VN	40			-1.67	-0.000666	± 2.5	PASS
VN	50			0.03	0.000012	± 2.5	PASS
MCH	VN		-30	0.24	0.000095	± 2.5	PASS
	VN		-20	0.9	0.000355	± 2.5	PASS
	VN		-10	1.13	0.000446	± 2.5	PASS
	VN		0	-1.91	-0.000753	± 2.5	PASS
	VN		10	1.03	0.000406	± 2.5	PASS
	VN		20	-0.5	-0.000197	± 2.5	PASS
	VN		30	4.34	0.001712	± 2.5	PASS
	VN		40	-0.21	-0.000083	± 2.5	PASS
	VN		50	2.59	0.001022	± 2.5	PASS
HCH	VN		-30	1.79	0.000699	± 2.5	PASS
	VN		-20	1.9	0.000741	± 2.5	PASS
	VN		-10	-1.56	-0.000609	± 2.5	PASS
	VN		0	-1.31	-0.000511	± 2.5	PASS
	VN		10	-0.16	-0.000062	± 2.5	PASS
	VN		20	4.98	0.001943	± 2.5	PASS
	VN		30	4.28	0.001670	± 2.5	PASS
	VN		40	2.16	0.000843	± 2.5	PASS
	VN		50	3.06	0.001194	± 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	-1.1	-0.000438	± 2.5	PASS
		VN	TN	3.08	0.001227	± 2.5	PASS
		VH	TN	3.76	0.001498	± 2.5	PASS
	MCH	VL	TN	4.56	0.001799	± 2.5	PASS
		VN	TN	1.58	0.000623	± 2.5	PASS
		VH	TN	0.75	0.000296	± 2.5	PASS
	HCH	VL	TN	-1.29	-0.000504	± 2.5	PASS
		VN	TN	-1.83	-0.000715	± 2.5	PASS
		VH	TN	3.81	0.001488	± 2.5	PASS
16QAM	LCH	VL	TN	2.24	0.000892	± 2.5	PASS
		VN	TN	2.81	0.001120	± 2.5	PASS
		VH	TN	-1.74	-0.000693	± 2.5	PASS
	MCH	VL	TN	2.28	0.000899	± 2.5	PASS
		VN	TN	-0.14	-0.000055	± 2.5	PASS
		VH	TN	0.29	0.000114	± 2.5	PASS
	HCH	VL	TN	2.23	0.000871	± 2.5	PASS
		VN	TN	-1.65	-0.000645	± 2.5	PASS
		VH	TN	1.24	0.000484	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.26	0.000104	± 2.5	PASS
		VN	-20	-1.96	-0.000781	± 2.5	PASS
		VN	-10	-1.93	-0.000769	± 2.5	PASS
		VN	0	4.85	0.001932	± 2.5	PASS
		VN	10	-1.6	-0.000637	± 2.5	PASS
		VN	20	3.59	0.001430	± 2.5	PASS
		VN	30	2.16	0.000861	± 2.5	PASS
		VN	40	4.18	0.001665	± 2.5	PASS
		VN	50	-0.22	-0.000088	± 2.5	PASS
	MCH	VN	-30	0.33	0.000130	± 2.5	PASS
		VN	-20	0.91	0.000359	± 2.5	PASS
		VN	-10	1.46	0.000576	± 2.5	PASS
		VN	0	-0.14	-0.000055	± 2.5	PASS
		VN	10	2.59	0.001022	± 2.5	PASS
		VN	20	0.78	0.000308	± 2.5	PASS

		VN	30	1.17	0.000462	± 2.5	PASS
		VN	40	2.92	0.001152	± 2.5	PASS
		VN	50	-1.26	-0.000497	± 2.5	PASS
	HCH	VN	-30	3.1	0.001211	± 2.5	PASS
		VN	-20	0.6	0.000234	± 2.5	PASS
		VN	-10	3.75	0.001465	± 2.5	PASS
		VN	0	4.01	0.001566	± 2.5	PASS
		VN	10	3.03	0.001184	± 2.5	PASS
		VN	20	2.99	0.001168	± 2.5	PASS
		VN	30	1.44	0.000563	± 2.5	PASS
		VN	40	-0.4	-0.000156	± 2.5	PASS
		VN	50	-1.9	-0.000742	± 2.5	PASS
QPSK	LCH	VN	-30	4.39	0.001749	± 2.5	PASS
		VN	-20	-0.88	-0.000351	± 2.5	PASS
		VN	-10	4.94	0.001968	± 2.5	PASS
		VN	0	2.02	0.000805	± 2.5	PASS
		VN	10	-0.35	-0.000139	± 2.5	PASS
		VN	20	3.96	0.001578	± 2.5	PASS
		VN	30	0.33	0.000131	± 2.5	PASS
		VN	40	3.44	0.001371	± 2.5	PASS
		VN	50	0.04	0.000016	± 2.5	PASS
	MCH	VN	-30	2.31	0.000911	± 2.5	PASS
		VN	-20	1.3	0.000513	± 2.5	PASS
		VN	-10	4.16	0.001641	± 2.5	PASS
		VN	0	-0.47	-0.000185	± 2.5	PASS
		VN	10	3.51	0.001385	± 2.5	PASS
		VN	20	4.63	0.001826	± 2.5	PASS
		VN	30	-0.55	-0.000217	± 2.5	PASS
		VN	40	-1.13	-0.000446	± 2.5	PASS
		VN	50	-0.11	-0.000043	± 2.5	PASS
	HCH	VN	-30	-0.46	-0.000180	± 2.5	PASS
		VN	-20	3.8	0.001484	± 2.5	PASS
		VN	-10	4.69	0.001832	± 2.5	PASS
		VN	0	-1.8	-0.000703	± 2.5	PASS
		VN	10	2.76	0.001078	± 2.5	PASS
		VN	20	2.02	0.000789	± 2.5	PASS
		VN	30	-0.83	-0.000324	± 2.5	PASS
		VN	40	3.22	0.001258	± 2.5	PASS
		VN	50	-0.7	-0.000273	± 2.5	PASS