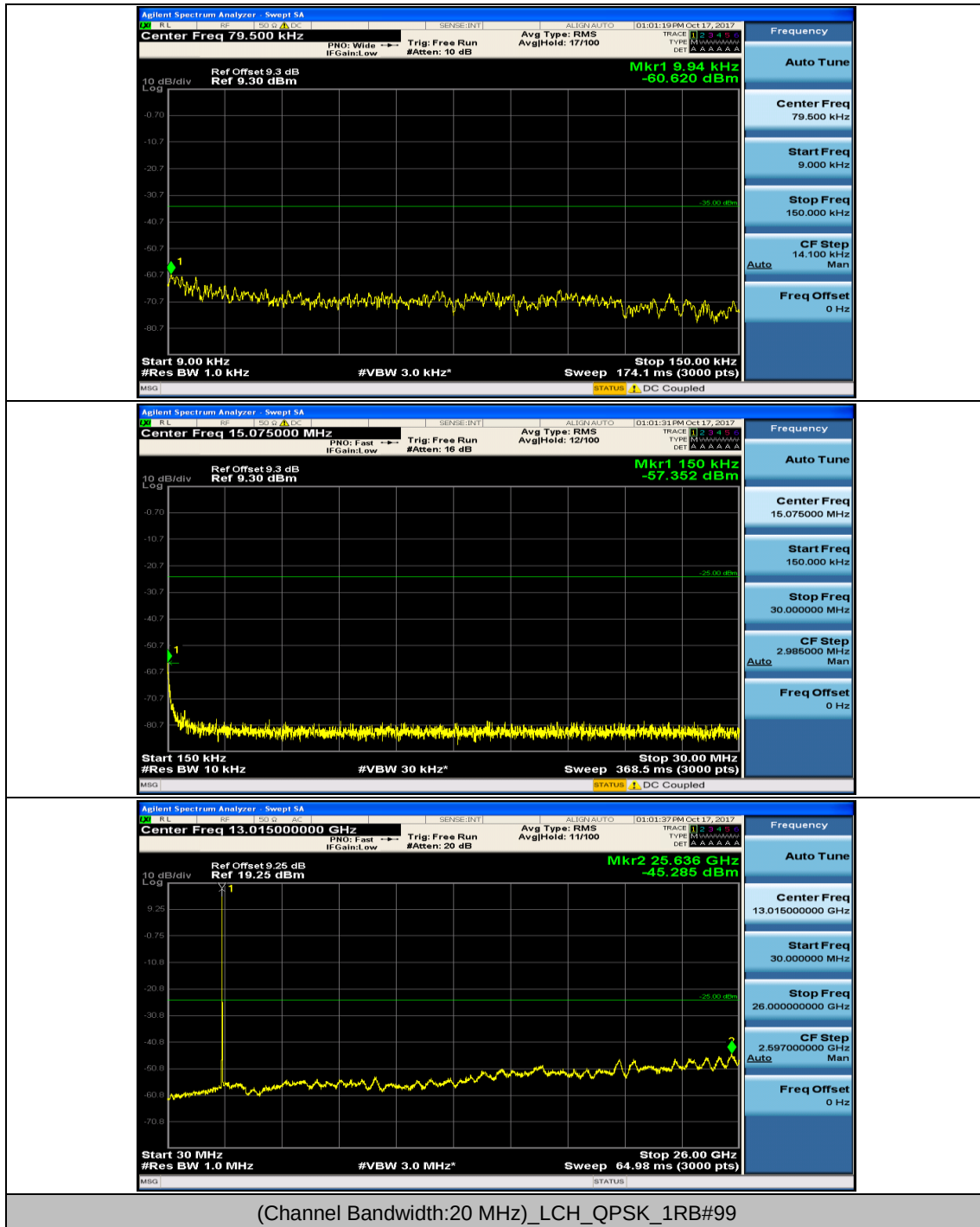
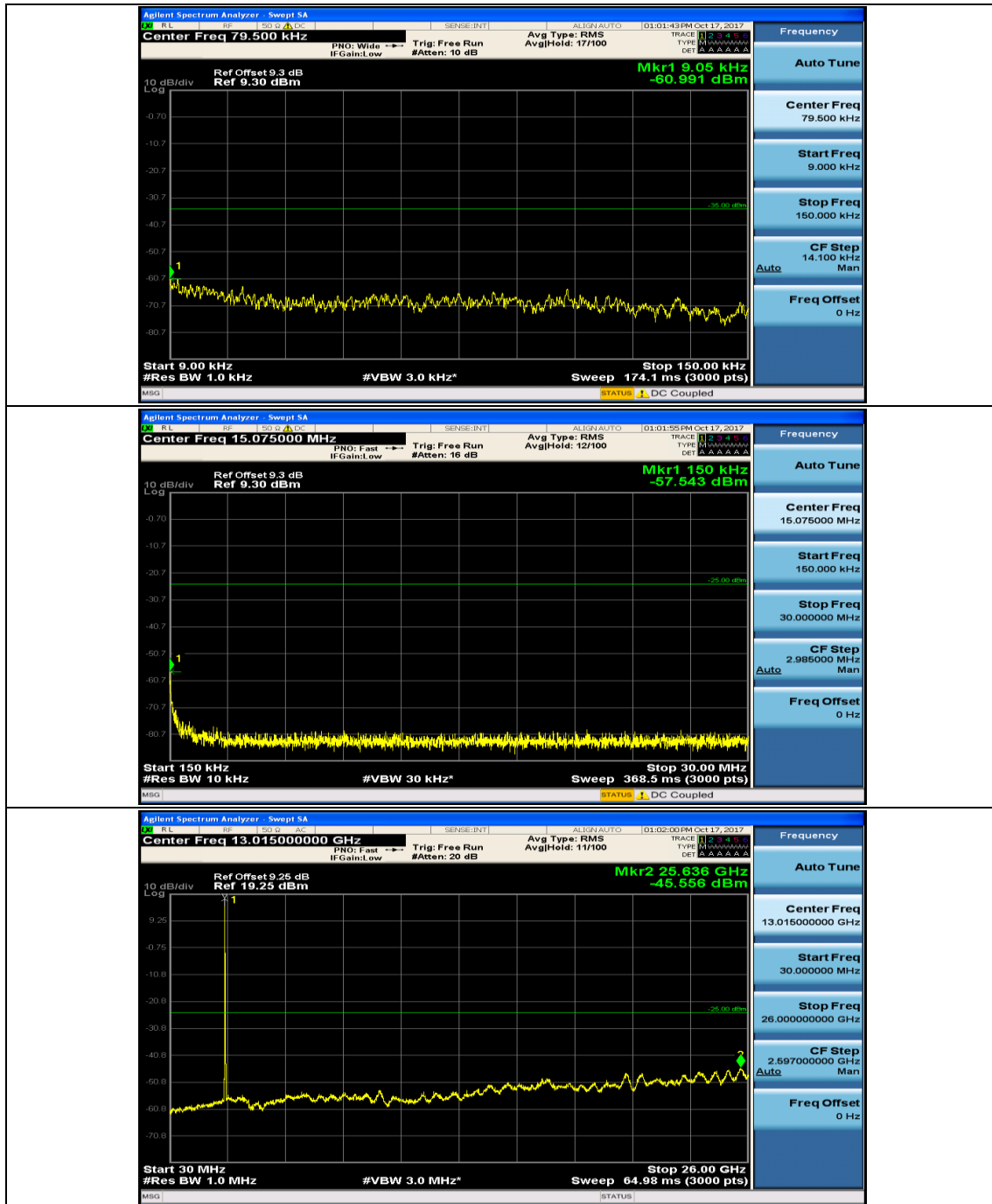
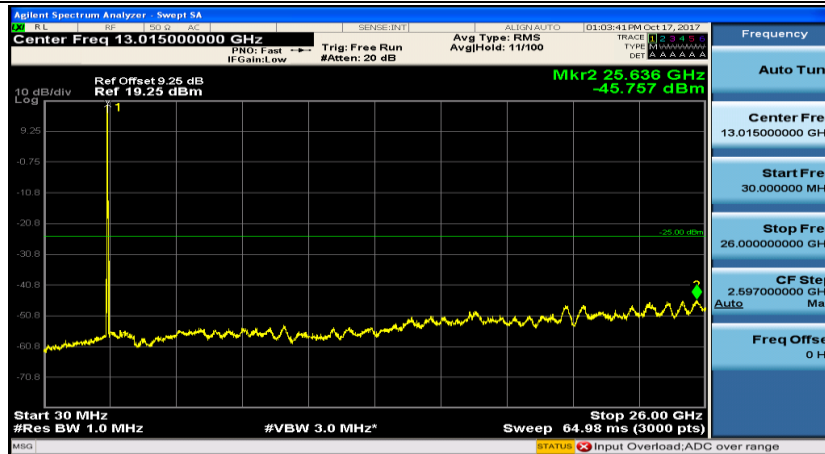
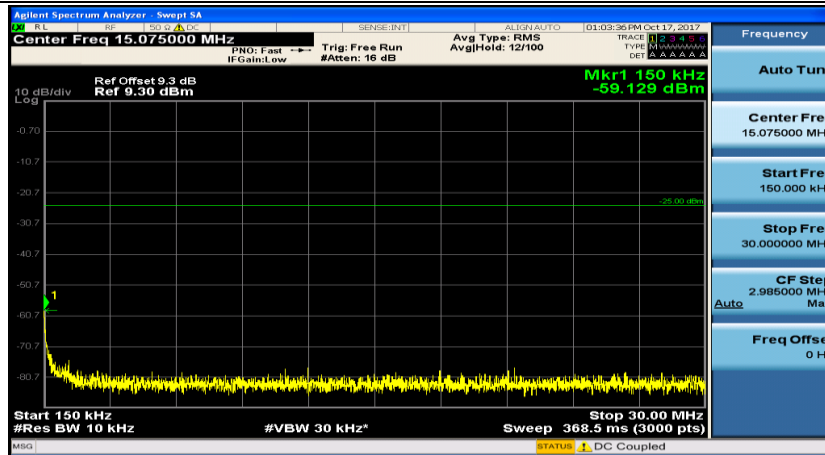
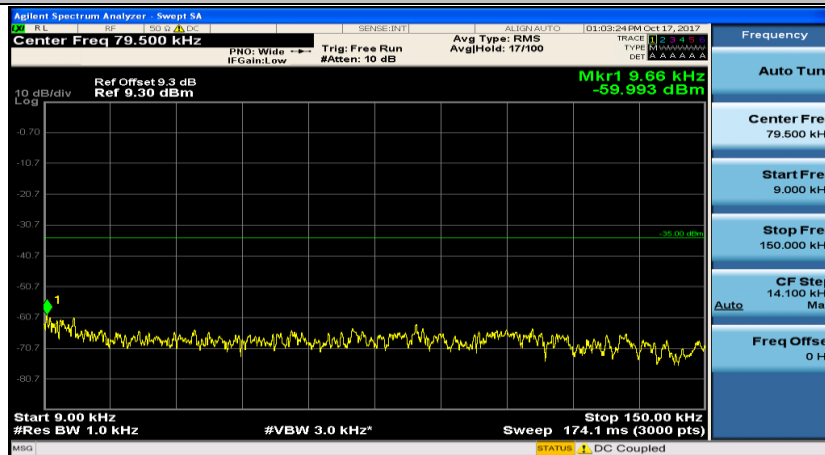


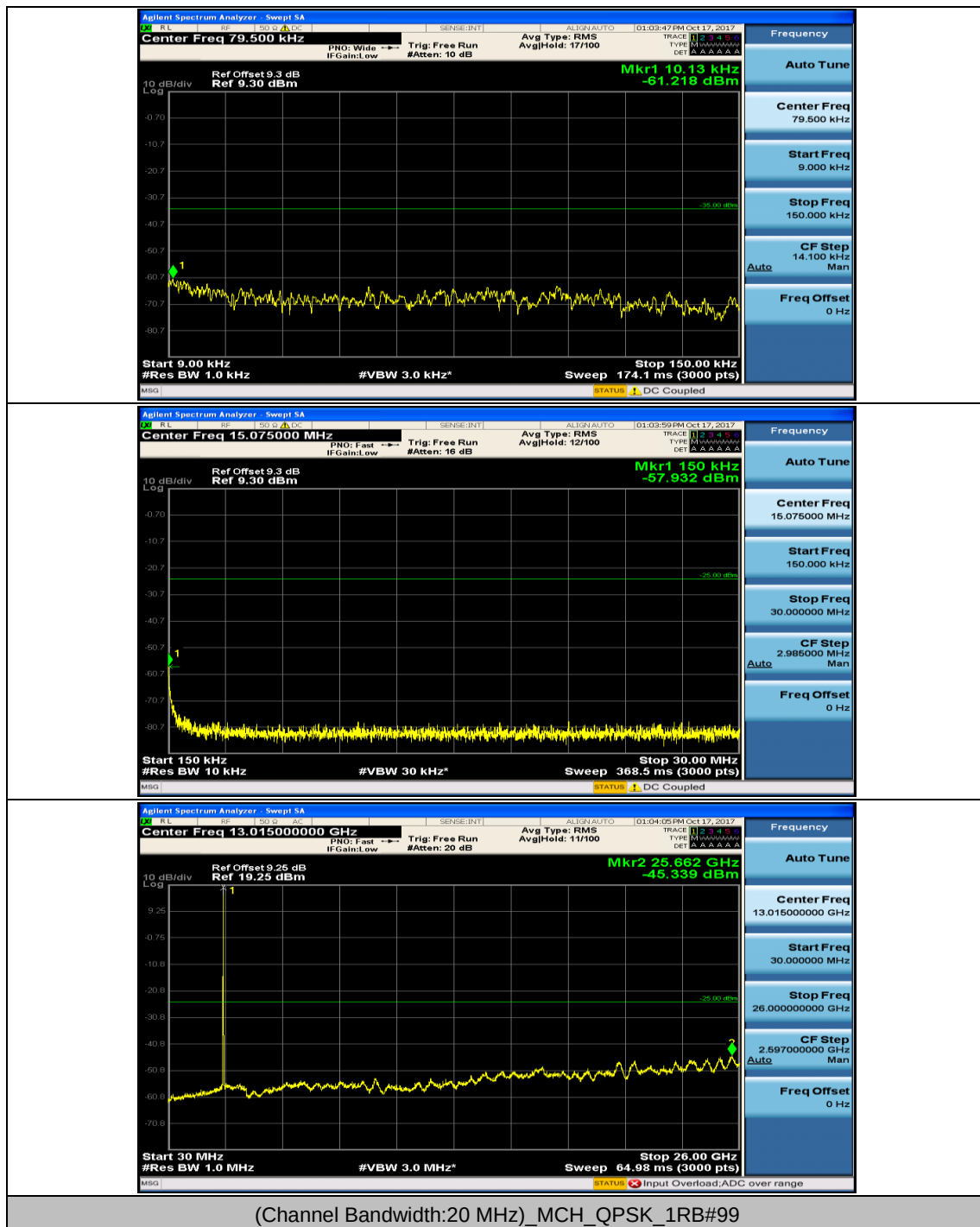


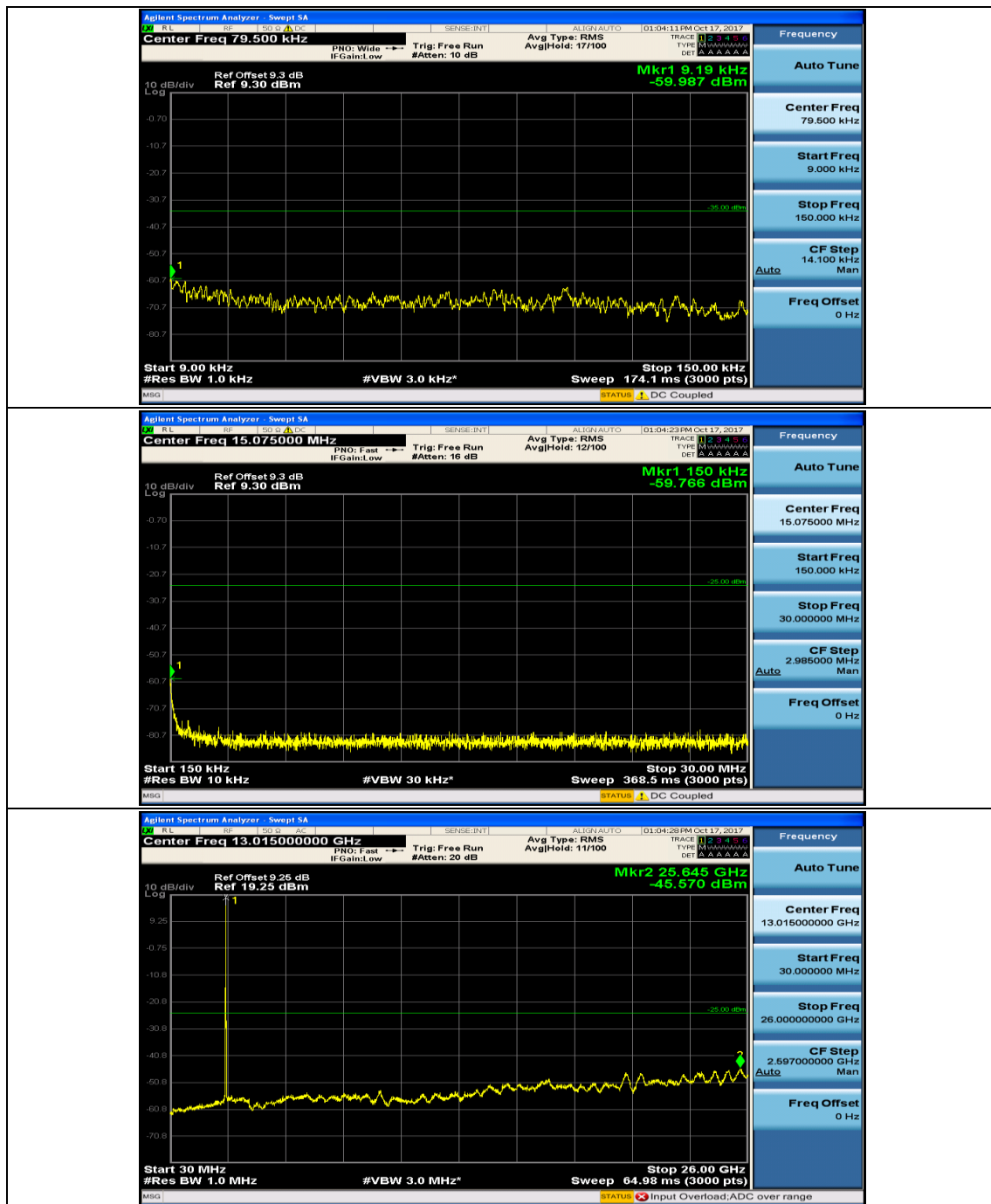


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

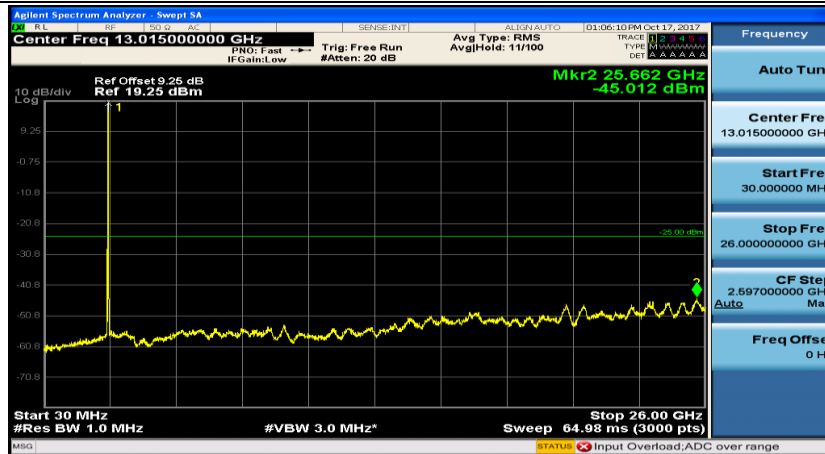
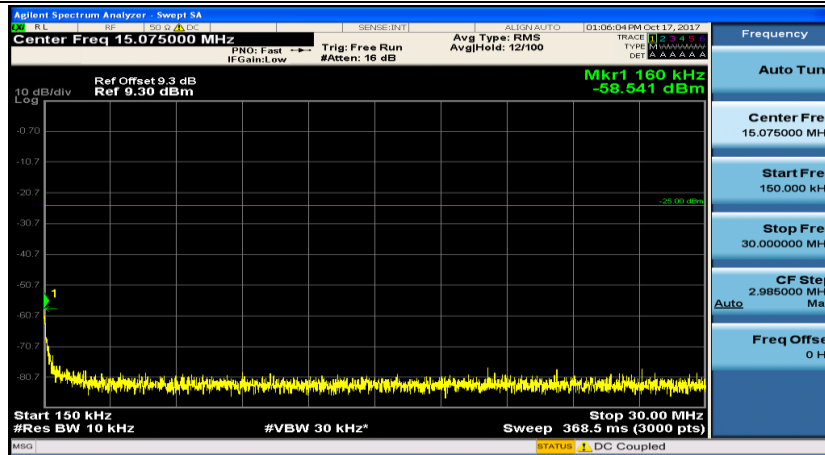
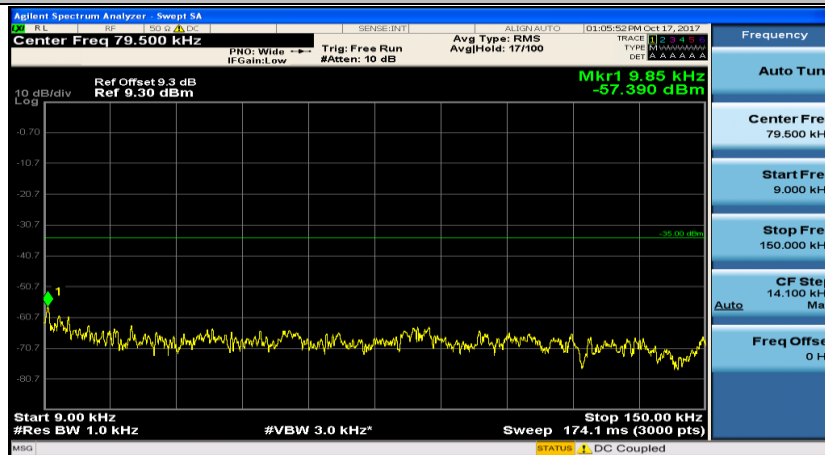


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

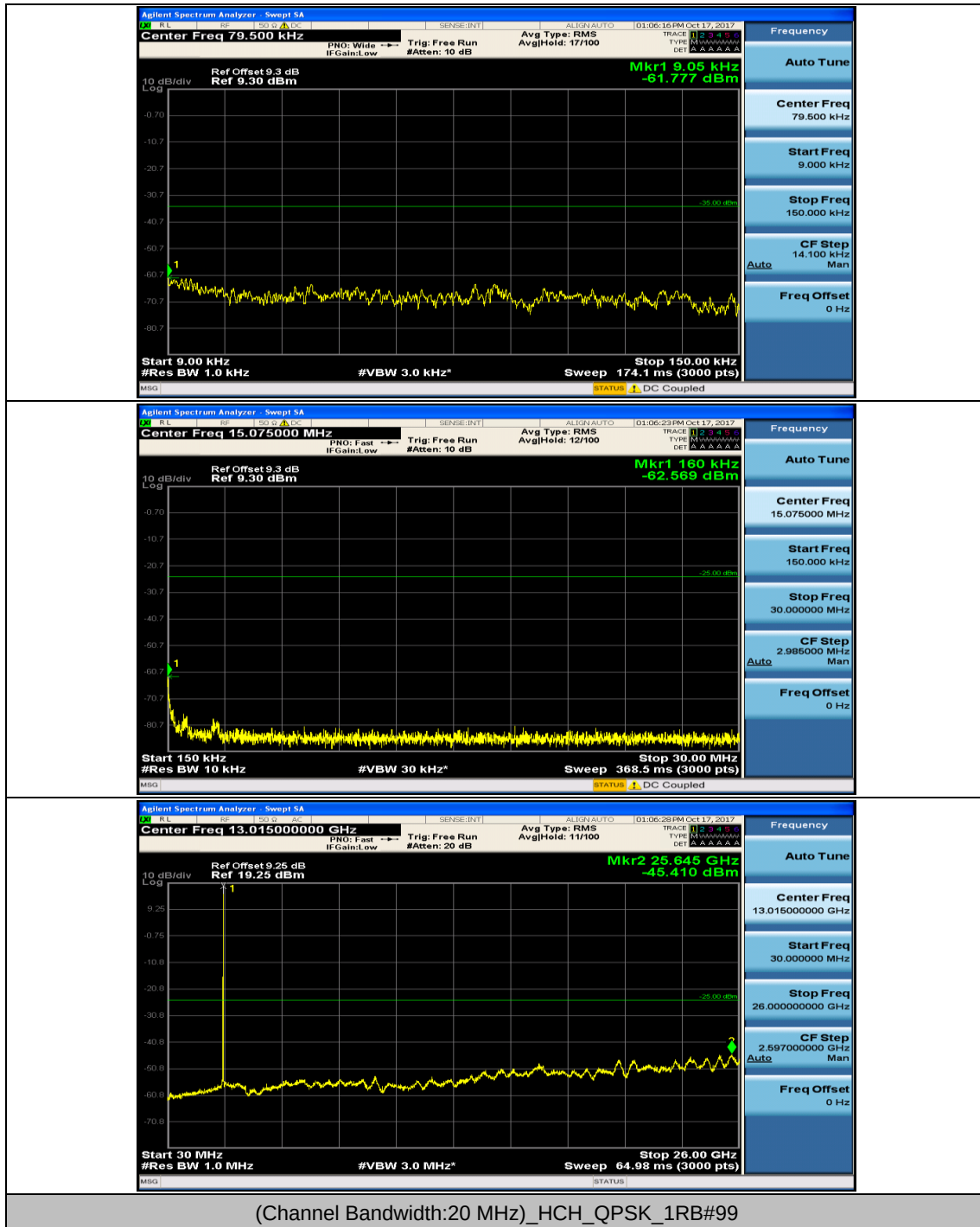


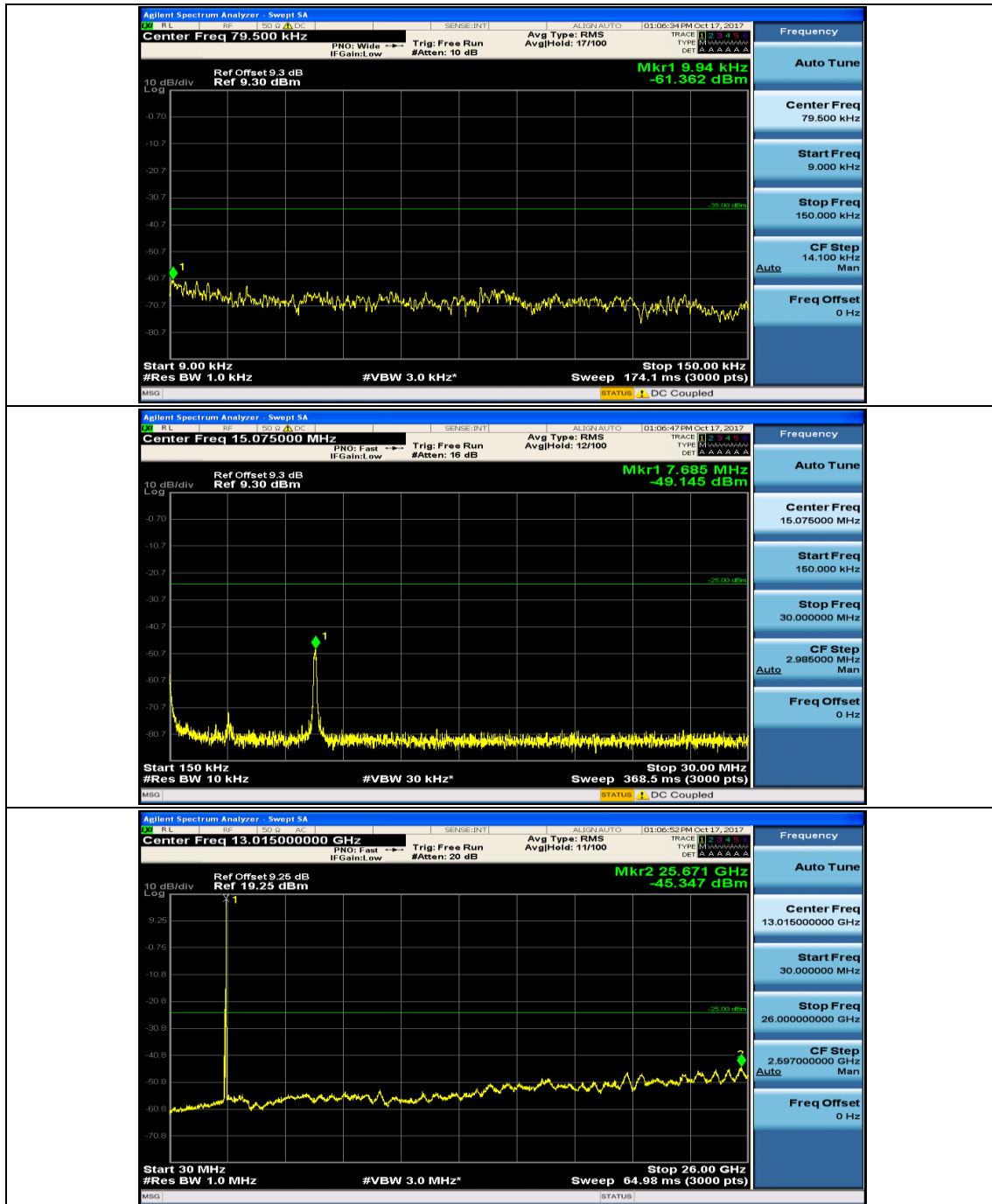


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

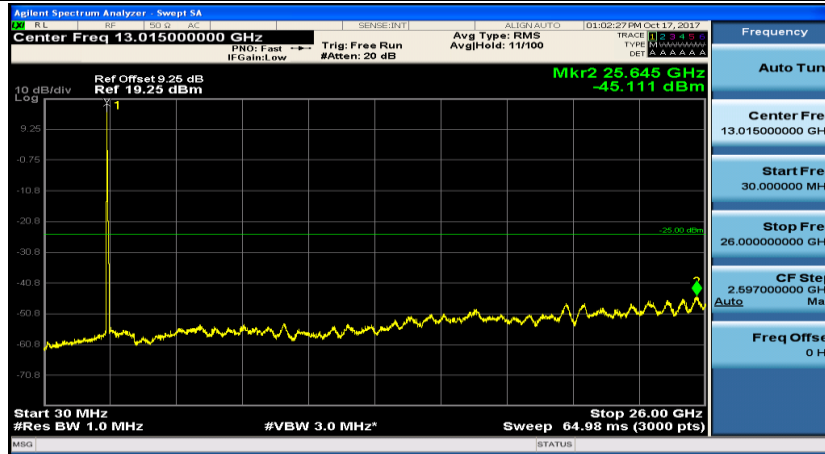
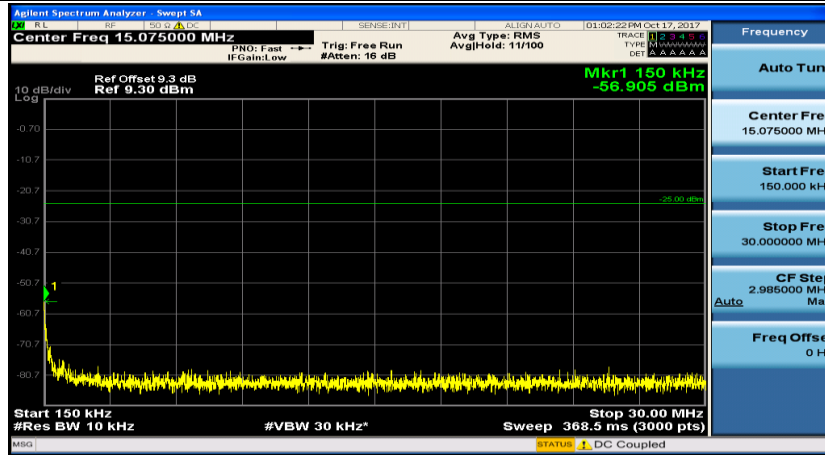
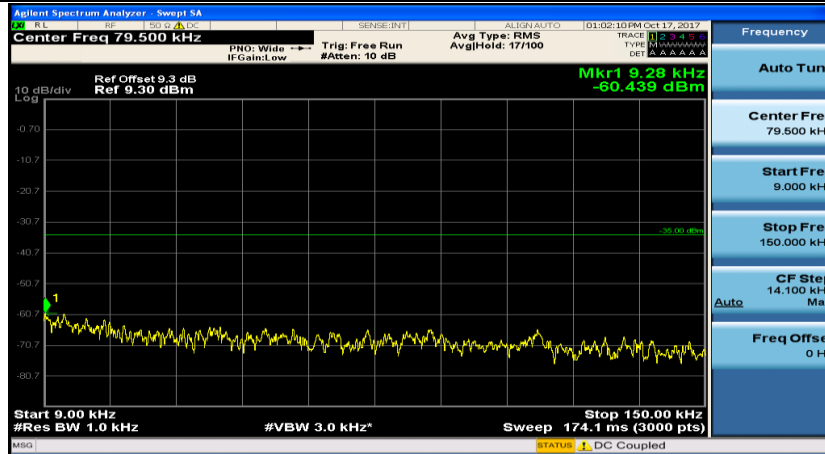


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

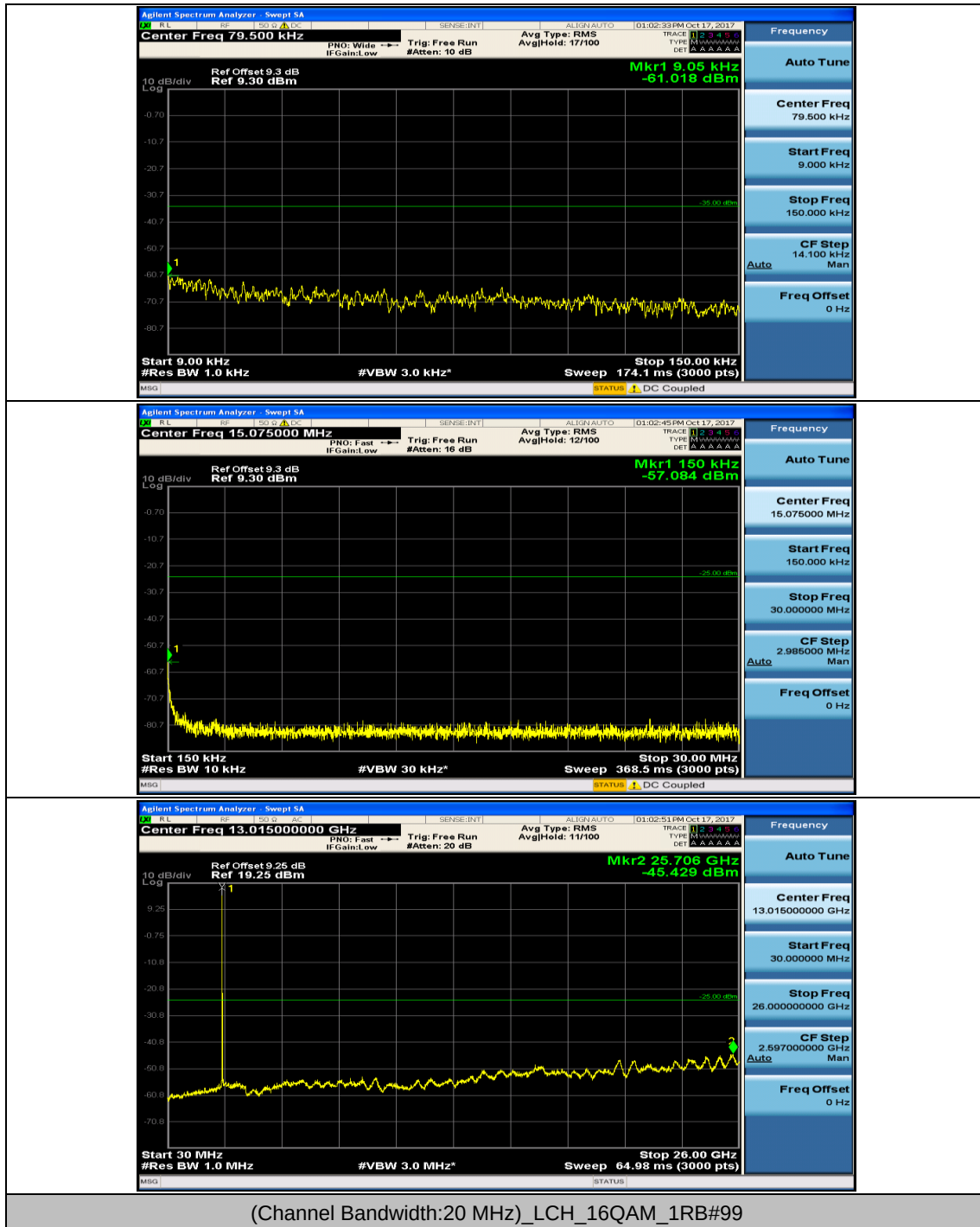


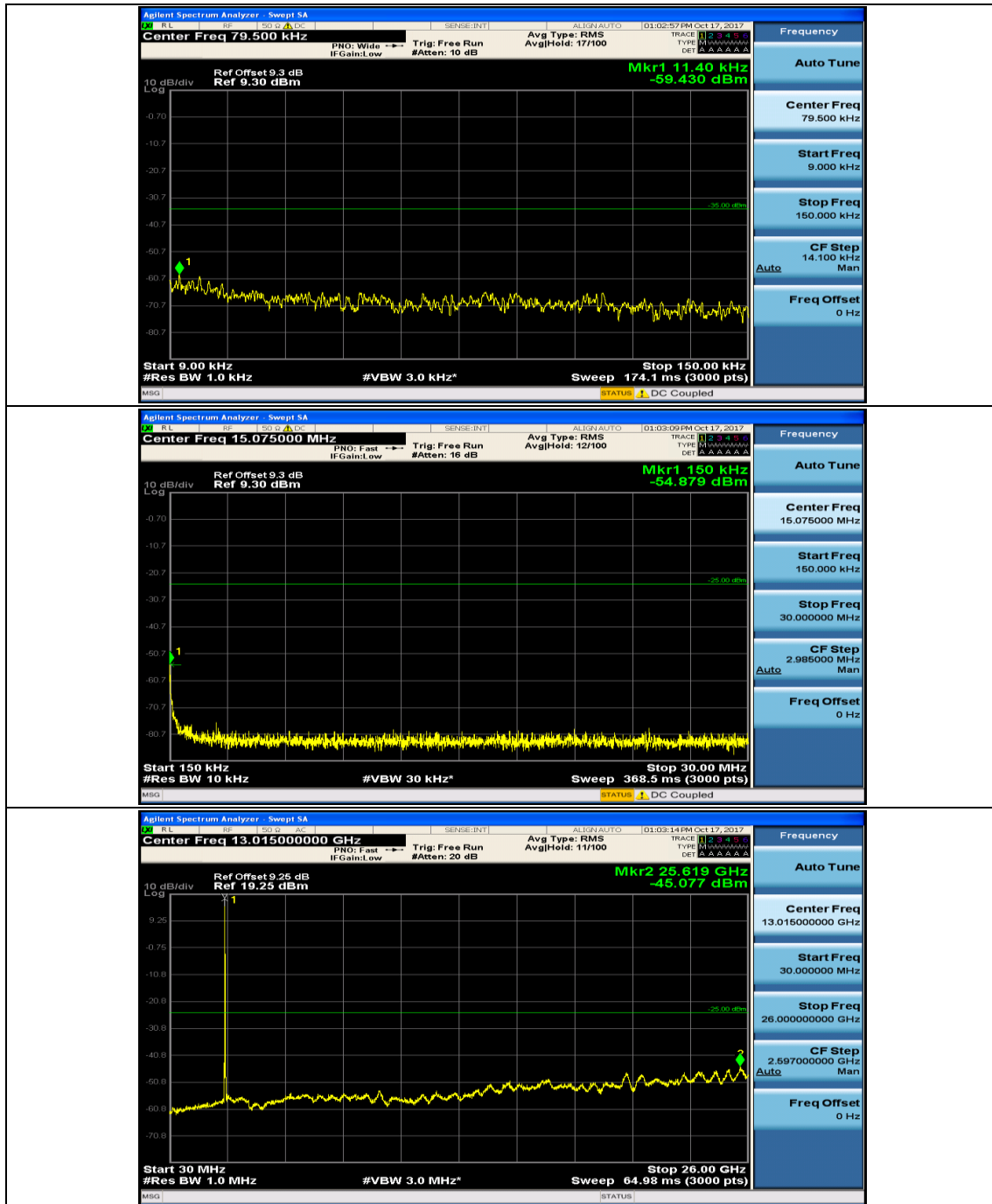


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

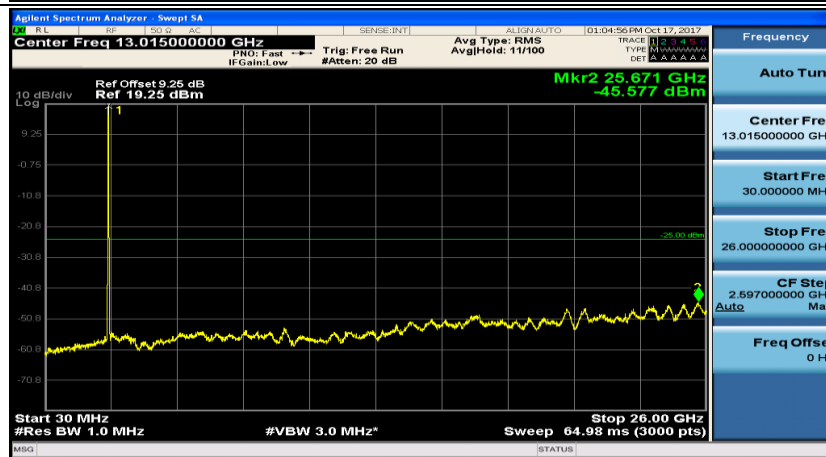
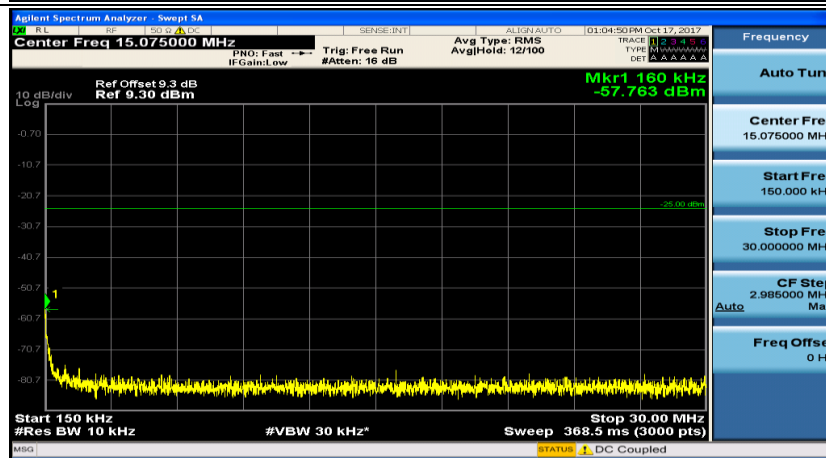
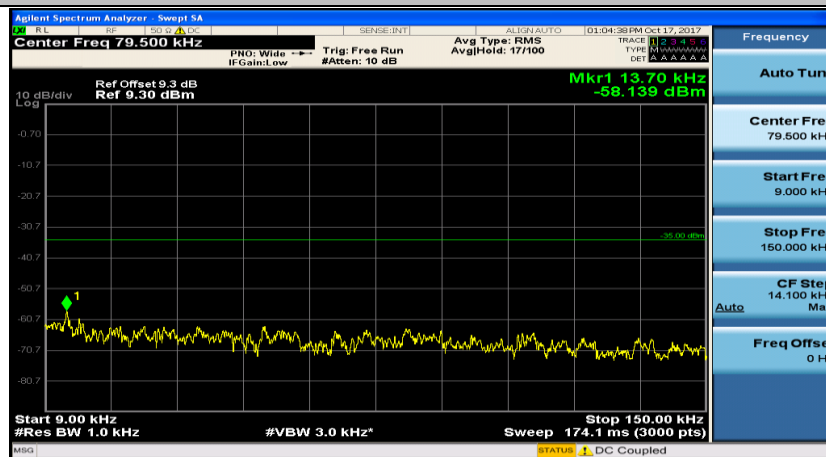


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

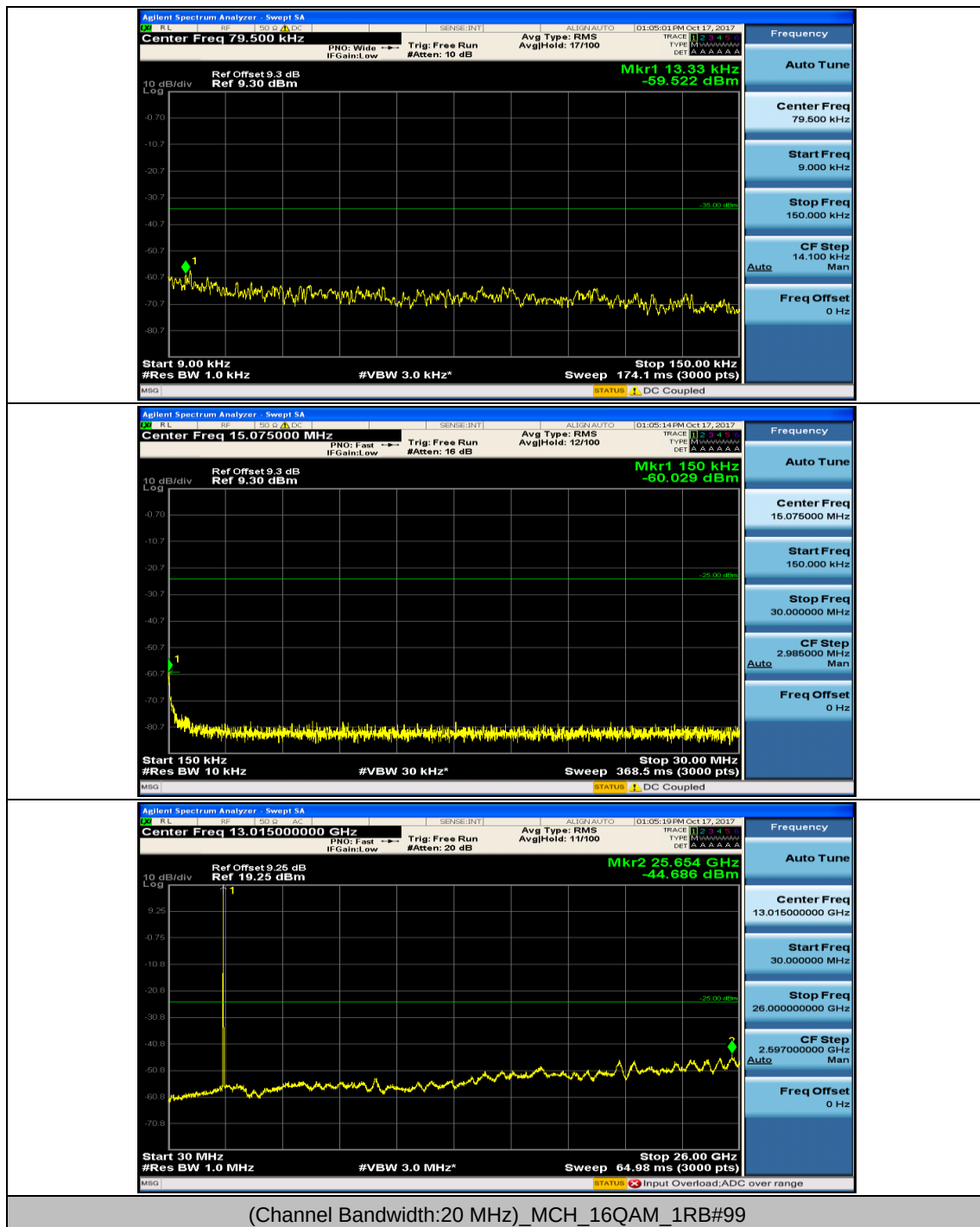


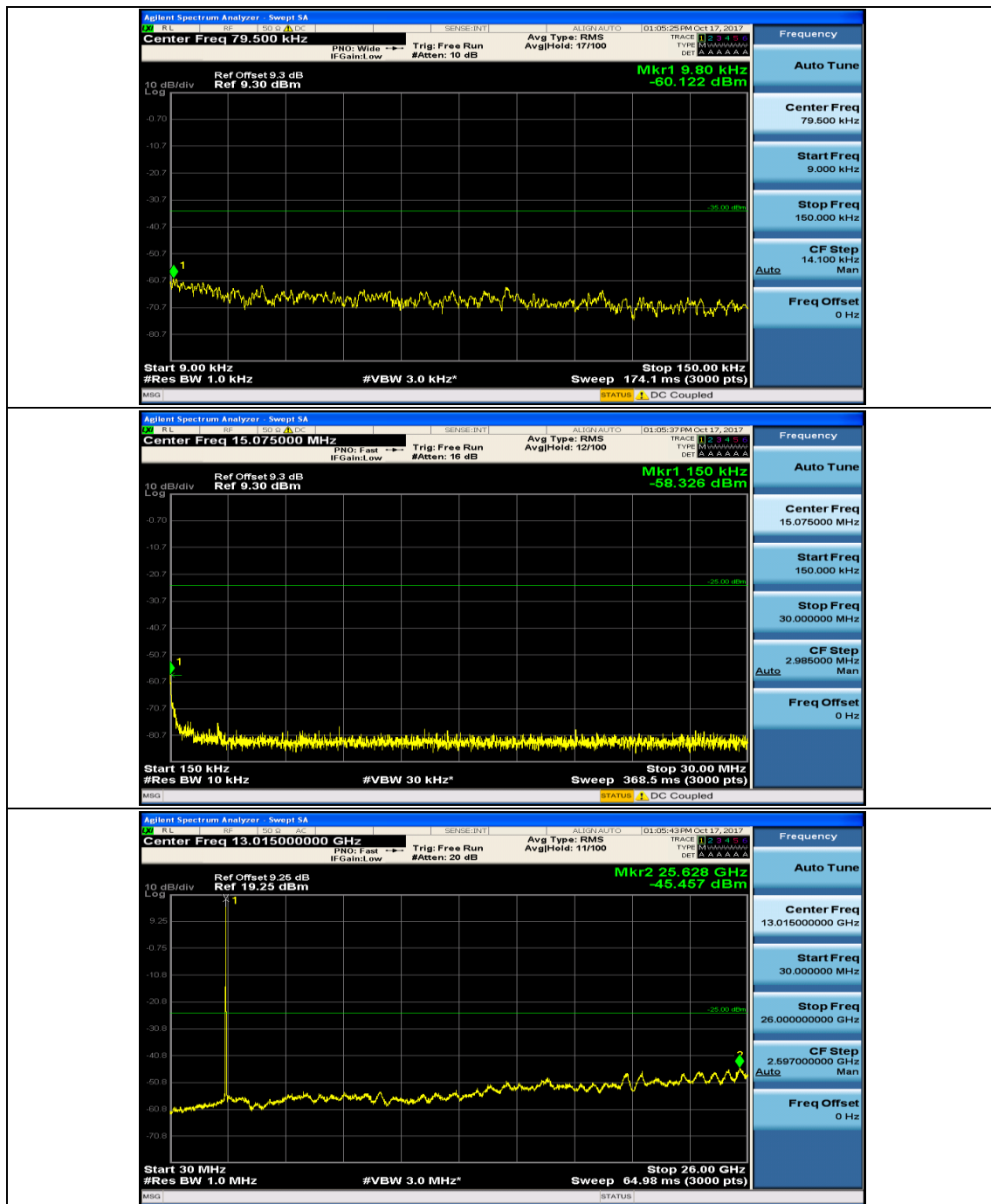


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

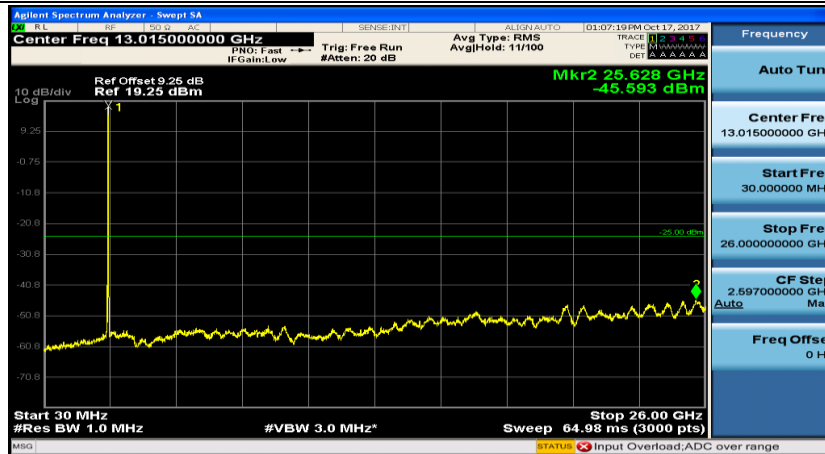
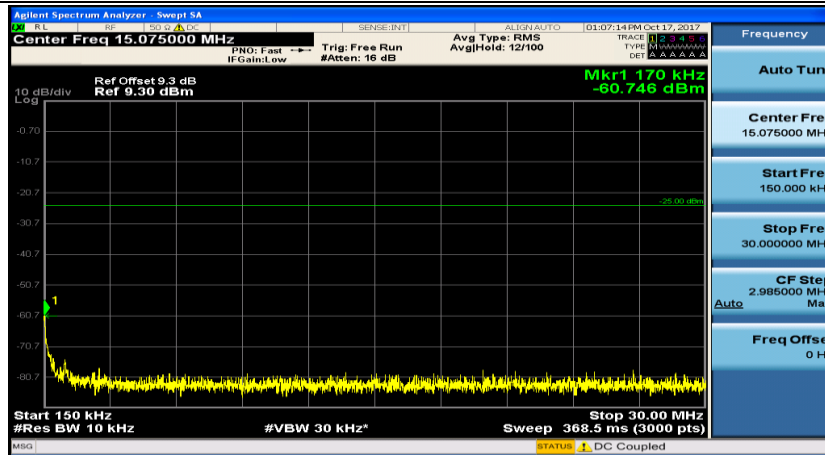
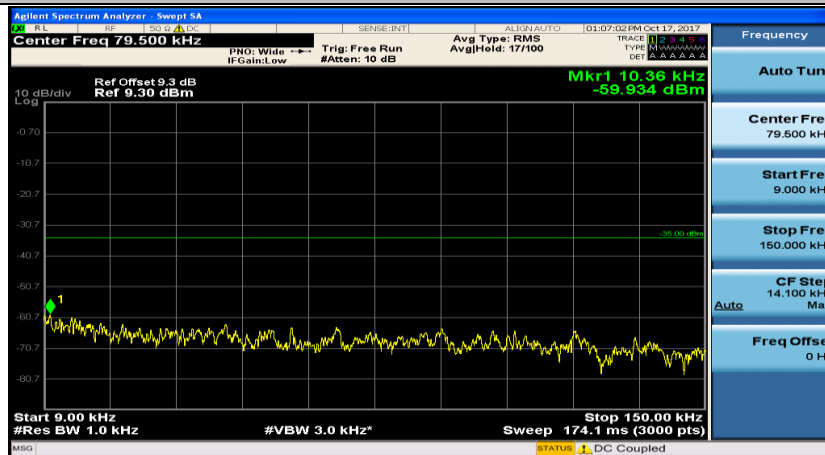


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

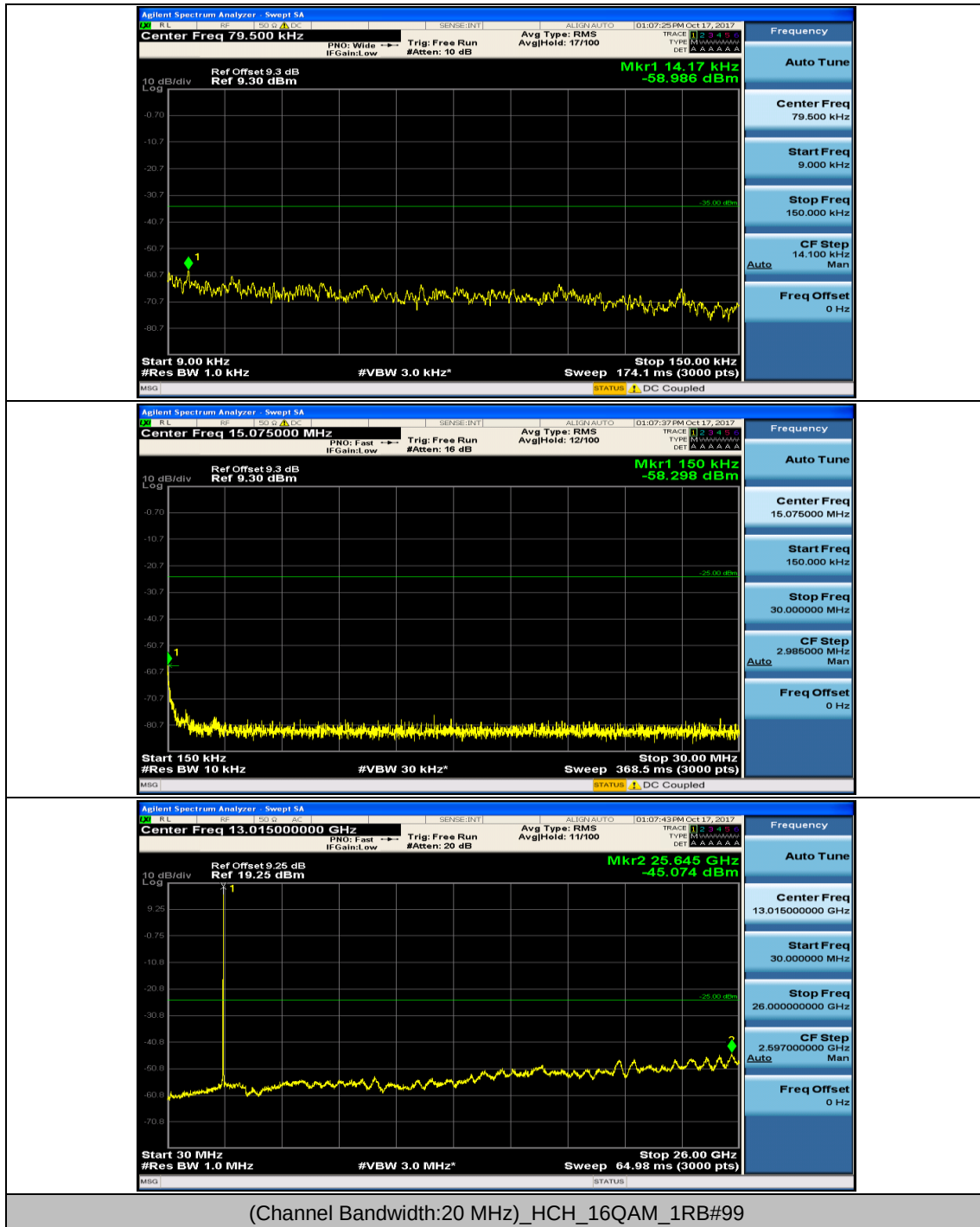


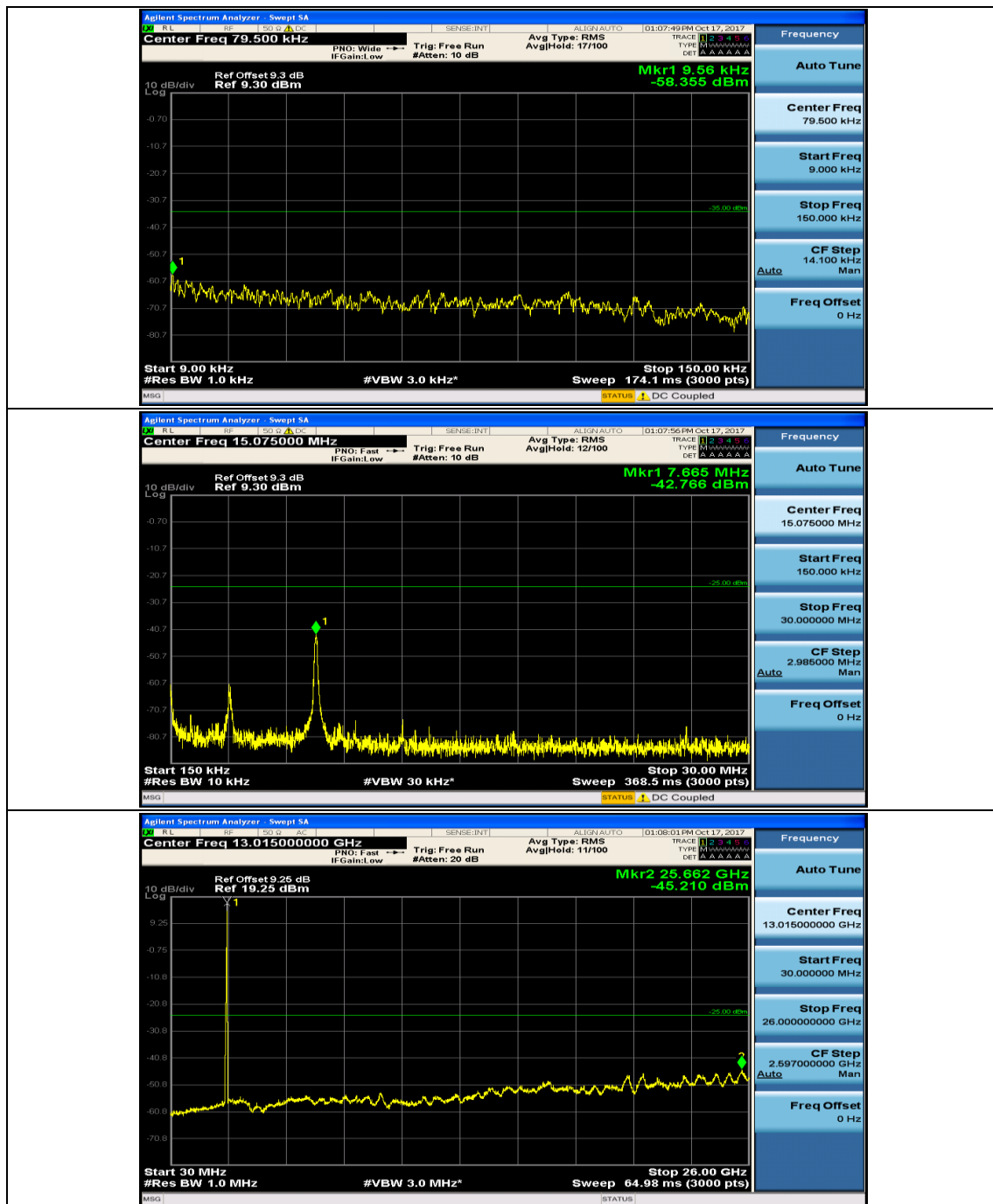


(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(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	3.81	0.001518	± 2.5	PASS
		VN	TN	0.05	0.000020	± 2.5	PASS
		VH	TN	-0.46	-0.000183	± 2.5	PASS
	MCH	VL	TN	-1.56	-0.000615	± 2.5	PASS
		VN	TN	1.51	0.000596	± 2.5	PASS
		VH	TN	2.55	0.001006	± 2.5	PASS
	HCH	VL	TN	-0.06	-0.000023	± 2.5	PASS
		VN	TN	1.5	0.000586	± 2.5	PASS
		VH	TN	4.44	0.001734	± 2.5	PASS
16QAM	LCH	VL	TN	1.05	0.000418	± 2.5	PASS
		VN	TN	3.26	0.001299	± 2.5	PASS
		VH	TN	3.25	0.001295	± 2.5	PASS
	MCH	VL	TN	-1.4	-0.000552	± 2.5	PASS
		VN	TN	3.88	0.001531	± 2.5	PASS
		VH	TN	4.12	0.001625	± 2.5	PASS
	HCH	VL	TN	4.13	0.001613	± 2.5	PASS
		VN	TN	4.26	0.001664	± 2.5	PASS
		VH	TN	3.99	0.001559	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.74	-0.000295	± 2.5	PASS
		VN	-20	2.72	0.001084	± 2.5	PASS
		VN	-10	-1.28	-0.000510	± 2.5	PASS
		VN	0	2.49	0.000992	± 2.5	PASS
		VN	10	-1.5	-0.000598	± 2.5	PASS
		VN	20	-1.96	-0.000781	± 2.5	PASS
		VN	30	1.28	0.000510	± 2.5	PASS

		VN	40	-0.57	-0.000227	± 2.5	PASS
		VN	50	0.75	0.000299	± 2.5	PASS
	MCH	VN	-30	-1.87	-0.000738	± 2.5	PASS
		VN	-20	-0.72	-0.000284	± 2.5	PASS
		VN	-10	3.21	0.001266	± 2.5	PASS
		VN	0	-1.99	-0.000785	± 2.5	PASS
		VN	10	3.5	0.001381	± 2.5	PASS
		VN	20	3.61	0.001424	± 2.5	PASS
		VN	30	0.39	0.000154	± 2.5	PASS
		VN	40	3	0.001183	± 2.5	PASS
		VN	50	2.15	0.000848	± 2.5	PASS
		VN	-30	-0.14	-0.000055	± 2.5	PASS
	HCH	VN	-20	3.5	0.001367	± 2.5	PASS
		VN	-10	2.11	0.000824	± 2.5	PASS
		VN	0	0.77	0.000301	± 2.5	PASS
		VN	10	-0.9	-0.000352	± 2.5	PASS
		VN	20	3.58	0.001398	± 2.5	PASS
		VN	30	4.69	0.001832	± 2.5	PASS
		VN	40	4.8	0.001875	± 2.5	PASS
		VN	50	1.13	0.000441	± 2.5	PASS
16QAM	LCH	VN	-30	3.75	0.001494	± 2.5	PASS
		VN	-20	1.21	0.000482	± 2.5	PASS
		VN	-10	-1.37	-0.000546	± 2.5	PASS
		VN	0	2.99	0.001191	± 2.5	PASS
		VN	10	1.61	0.000641	± 2.5	PASS
		VN	20	1.45	0.000578	± 2.5	PASS
		VN	30	4.93	0.001964	± 2.5	PASS
		VN	40	0.83	0.000331	± 2.5	PASS
		VN	50	-1.07	-0.000426	± 2.5	PASS
	MCH	VN	-30	-0.55	-0.000217	± 2.5	PASS
		VN	-20	0.96	0.000379	± 2.5	PASS
		VN	-10	1.38	0.000544	± 2.5	PASS
		VN	0	-1.68	-0.000663	± 2.5	PASS
		VN	10	4.78	0.001886	± 2.5	PASS
		VN	20	-1.55	-0.000611	± 2.5	PASS
		VN	30	-1.96	-0.000773	± 2.5	PASS
		VN	40	0.08	0.000032	± 2.5	PASS
		VN	50	4.6	0.001815	± 2.5	PASS
	HCH	VN	-30	3.72	0.001453	± 2.5	PASS
		VN	-20	-0.39	-0.000152	± 2.5	PASS
		VN	-10	3.96	0.001547	± 2.5	PASS

		VN	0	4.46	0.001742	± 2.5	PASS
		VN	10	0.54	0.000211	± 2.5	PASS
		VN	20	-1.16	-0.000453	± 2.5	PASS
		VN	30	4.43	0.001730	± 2.5	PASS
		VN	40	4.63	0.001809	± 2.5	PASS
		VN	50	-1.61	-0.000629	± 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	-1.83	-0.000729	± 2.5	PASS
		VN	TN	-1.74	-0.000693	± 2.5	PASS
		VH	TN	1.09	0.000434	± 2.5	PASS
	MCH	VL	TN	-0.35	-0.000138	± 2.5	PASS
		VN	TN	1.15	0.000454	± 2.5	PASS
		VH	TN	1.92	0.000757	± 2.5	PASS
	HCH	VL	TN	-1.07	-0.000418	± 2.5	PASS
		VN	TN	3.9	0.001523	± 2.5	PASS
		VH	TN	4.63	0.001809	± 2.5	PASS
16QAM	LCH	VL	TN	4.07	0.001622	± 2.5	PASS
		VN	TN	4.18	0.001665	± 2.5	PASS
		VH	TN	-0.05	-0.000020	± 2.5	PASS
	MCH	VL	TN	4.22	0.001665	± 2.5	PASS
		VN	TN	2.25	0.000888	± 2.5	PASS
		VH	TN	2.97	0.001172	± 2.5	PASS
	HCH	VL	TN	1.47	0.000574	± 2.5	PASS
		VN	TN	0.72	0.000281	± 2.5	PASS
		VH	TN	-1.22	-0.000477	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	3.25	0.001295	± 2.5	PASS
		VN	-20	1.1	0.000438	± 2.5	PASS
		VN	-10	1.89	0.000753	± 2.5	PASS
		VN	0	1.58	0.000629	± 2.5	PASS
		VN	10	1.09	0.000434	± 2.5	PASS
		VN	20	0.03	0.000012	± 2.5	PASS
		VN	30	2.81	0.001120	± 2.5	PASS
		VN	40	-1.08	-0.000430	± 2.5	PASS

	MCH	VN	50	2.29	0.000912	± 2.5	PASS
		VN	-30	-1.69	-0.000667	± 2.5	PASS
		VN	-20	1.18	0.000465	± 2.5	PASS
		VN	-10	4.95	0.001953	± 2.5	PASS
		VN	0	2.42	0.000955	± 2.5	PASS
		VN	10	4.16	0.001641	± 2.5	PASS
		VN	20	1.47	0.000580	± 2.5	PASS
		VN	30	4.62	0.001822	± 2.5	PASS
		VN	40	4.35	0.001716	± 2.5	PASS
		VN	50	1.33	0.000525	± 2.5	PASS
	HCH	VN	-30	3.48	0.001359	± 2.5	PASS
		VN	-20	2.97	0.001160	± 2.5	PASS
		VN	-10	2.57	0.001004	± 2.5	PASS
		VN	0	0.21	0.000082	± 2.5	PASS
		VN	10	-1.69	-0.000660	± 2.5	PASS
		VN	20	0.49	0.000191	± 2.5	PASS
		VN	30	1.79	0.000699	± 2.5	PASS
		VN	40	1.6	0.000625	± 2.5	PASS
		VN	50	-0.45	-0.000176	± 2.5	PASS
QPSK	LCH	VN	-30	4.49	0.001789	± 2.5	PASS
		VN	-20	-1.17	-0.000466	± 2.5	PASS
		VN	-10	4.59	0.001829	± 2.5	PASS
		VN	0	-1.69	-0.000673	± 2.5	PASS
		VN	10	3.33	0.001327	± 2.5	PASS
		VN	20	1.7	0.000677	± 2.5	PASS
		VN	30	4.55	0.001813	± 2.5	PASS
		VN	40	-0.57	-0.000227	± 2.5	PASS
		VN	50	3.03	0.001207	± 2.5	PASS
	MCH	VN	-30	4.84	0.001909	± 2.5	PASS
		VN	-20	-0.98	-0.000387	± 2.5	PASS
		VN	-10	0.27	0.000107	± 2.5	PASS
		VN	0	1.81	0.000714	± 2.5	PASS
		VN	10	-0.33	-0.000130	± 2.5	PASS
		VN	20	4.66	0.001838	± 2.5	PASS
		VN	30	2.47	0.000974	± 2.5	PASS
		VN	40	-0.04	-0.000016	± 2.5	PASS
		VN	50	0.01	0.000004	± 2.5	PASS
	HCH	VN	-30	-1.68	-0.000656	± 2.5	PASS
		VN	-20	0.32	0.000125	± 2.5	PASS
		VN	-10	0.43	0.000168	± 2.5	PASS
		VN	0	-1.64	-0.000641	± 2.5	PASS

		VN	10	3.37	0.001316	± 2.5	PASS
		VN	20	-0.24	-0.000094	± 2.5	PASS
		VN	30	4.7	0.001836	± 2.5	PASS
		VN	40	4.22	0.001648	± 2.5	PASS
		VN	50	1.58	0.000617	± 2.5	PASS

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	-1.59	-0.000633	± 2.5	PASS
		VN	TN	1.07	0.000426	± 2.5	PASS
		VH	TN	1.48	0.000590	± 2.5	PASS
	MCH	VL	TN	1.72	0.000679	± 2.5	PASS
		VN	TN	3.99	0.001574	± 2.5	PASS
		VH	TN	1.54	0.000607	± 2.5	PASS
	HCH	VL	TN	3.64	0.001422	± 2.5	PASS
		VN	TN	-0.72	-0.000281	± 2.5	PASS
		VH	TN	0.34	0.000133	± 2.5	PASS
16QAM	LCH	VL	TN	1.66	0.000661	± 2.5	PASS
		VN	TN	1.63	0.000649	± 2.5	PASS
		VH	TN	2.84	0.001131	± 2.5	PASS
	MCH	VL	TN	4.57	0.001803	± 2.5	PASS
		VN	TN	-1.69	-0.000667	± 2.5	PASS
		VH	TN	0.39	0.000154	± 2.5	PASS
	HCH	VL	TN	4.99	0.001949	± 2.5	PASS
		VN	TN	0.33	0.000129	± 2.5	PASS
		VH	TN	2.44	0.000953	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.62	0.001044	± 2.5	PASS
		VN	-20	0.41	0.000163	± 2.5	PASS
		VN	-10	0.87	0.000347	± 2.5	PASS
		VN	0	2.91	0.001159	± 2.5	PASS
		VN	10	3.03	0.001207	± 2.5	PASS
		VN	20	-1.95	-0.000777	± 2.5	PASS
		VN	30	-0.48	-0.000191	± 2.5	PASS
		VN	40	1.33	0.000530	± 2.5	PASS
		VN	50	4.08	0.001625	± 2.5	PASS

	MCH	VN	-30	-1.37	-0.000540	± 2.5	PASS
		VN	-20	4.45	0.001755	± 2.5	PASS
		VN	-10	3.73	0.001471	± 2.5	PASS
		VN	0	3.45	0.001361	± 2.5	PASS
		VN	10	3.91	0.001542	± 2.5	PASS
		VN	20	2.18	0.000860	± 2.5	PASS
		VN	30	-0.06	-0.000024	± 2.5	PASS
		VN	40	3.62	0.001428	± 2.5	PASS
		VN	50	4.49	0.001771	± 2.5	PASS
	HCH	VN	-30	-0.82	-0.000320	± 2.5	PASS
		VN	-20	4.47	0.001746	± 2.5	PASS
		VN	-10	0.82	0.000320	± 2.5	PASS
		VN	0	0.47	0.000184	± 2.5	PASS
		VN	10	2.03	0.000793	± 2.5	PASS
		VN	20	3.09	0.001207	± 2.5	PASS
		VN	30	1.26	0.000492	± 2.5	PASS
		VN	40	-0.03	-0.000012	± 2.5	PASS
		VN	50	1.64	0.000641	± 2.5	PASS
QPSK	LCH	VN	-30	3.54	0.001410	± 2.5	PASS
		VN	-20	0.22	0.000088	± 2.5	PASS
		VN	-10	3.81	0.001518	± 2.5	PASS
		VN	0	0.28	0.000112	± 2.5	PASS
		VN	10	-0.78	-0.000311	± 2.5	PASS
		VN	20	2.71	0.001080	± 2.5	PASS
		VN	30	3.04	0.001211	± 2.5	PASS
		VN	40	-1.58	-0.000629	± 2.5	PASS
		VN	50	4.33	0.001725	± 2.5	PASS
	MCH	VN	-30	1.44	0.000568	± 2.5	PASS
		VN	-20	4.39	0.001732	± 2.5	PASS
		VN	-10	1.46	0.000576	± 2.5	PASS
		VN	0	0.04	0.000016	± 2.5	PASS
		VN	10	0.1	0.000039	± 2.5	PASS
		VN	20	2.08	0.000821	± 2.5	PASS
		VN	30	4.62	0.001822	± 2.5	PASS
		VN	40	3.52	0.001389	± 2.5	PASS
		VN	50	2.3	0.000907	± 2.5	PASS
	HCH	VN	-30	0.62	0.000242	± 2.5	PASS
		VN	-20	1.64	0.000641	± 2.5	PASS
		VN	-10	2.48	0.000969	± 2.5	PASS
		VN	0	4.59	0.001793	± 2.5	PASS
		VN	10	2.22	0.000867	± 2.5	PASS

		VN	20	3.52	0.001375	± 2.5	PASS
		VN	30	0.42	0.000164	± 2.5	PASS
		VN	40	-0.44	-0.000172	± 2.5	PASS
		VN	50	1.91	0.000746	± 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	3.62	0.001442	± 2.5	PASS
		VN	TN	1.35	0.000538	± 2.5	PASS
		VH	TN	-1.55	-0.000618	± 2.5	PASS
	MCH	VL	TN	3.36	0.001325	± 2.5	PASS
		VN	TN	4.41	0.001740	± 2.5	PASS
		VH	TN	1.46	0.000576	± 2.5	PASS
	HCH	VL	TN	3.94	0.001539	± 2.5	PASS
		VN	TN	0.88	0.000344	± 2.5	PASS
		VH	TN	4.63	0.001809	± 2.5	PASS
16QAM	LCH	VL	TN	1.34	0.000534	± 2.5	PASS
		VN	TN	4.85	0.001932	± 2.5	PASS
		VH	TN	0.69	0.000275	± 2.5	PASS
	MCH	VL	TN	0.88	0.000347	± 2.5	PASS
		VN	TN	2.42	0.000955	± 2.5	PASS
		VH	TN	4.08	0.001609	± 2.5	PASS
	HCH	VL	TN	2.42	0.000945	± 2.5	PASS
		VN	TN	0.13	0.000051	± 2.5	PASS
		VH	TN	0.13	0.000051	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.37	0.000944	± 2.5	PASS
		VN	-20	-1.59	-0.000633	± 2.5	PASS
		VN	-10	-0.27	-0.000108	± 2.5	PASS
		VN	0	3.95	0.001574	± 2.5	PASS
		VN	10	4.64	0.001849	± 2.5	PASS
		VN	20	1.66	0.000661	± 2.5	PASS
		VN	30	3.16	0.001259	± 2.5	PASS
		VN	40	1.96	0.000781	± 2.5	PASS
		VN	50	2.33	0.000928	± 2.5	PASS
	MCH	VN	-30	4.44	0.001751	± 2.5	PASS

		VN	-20	0.14	0.000055	± 2.5	PASS
		VN	-10	3.93	0.001550	± 2.5	PASS
		VN	0	4.12	0.001625	± 2.5	PASS
		VN	10	4.41	0.001740	± 2.5	PASS
		VN	20	-1.07	-0.000422	± 2.5	PASS
		VN	30	0.98	0.000387	± 2.5	PASS
		VN	40	1.5	0.000592	± 2.5	PASS
		VN	50	0.77	0.000304	± 2.5	PASS
	HCH	VN	-30	1.13	0.000441	± 2.5	PASS
		VN	-20	-0.58	-0.000227	± 2.5	PASS
		VN	-10	0.64	0.000250	± 2.5	PASS
		VN	0	4.9	0.001914	± 2.5	PASS
		VN	10	-1.76	-0.000688	± 2.5	PASS
		VN	20	4.34	0.001695	± 2.5	PASS
		VN	30	3.58	0.001398	± 2.5	PASS
		VN	40	3.77	0.001473	± 2.5	PASS
		VN	50	-1.69	-0.000660	± 2.5	PASS
QPSK	LCH	VN	-30	3.32	0.001323	± 2.5	PASS
		VN	-20	2.1	0.000837	± 2.5	PASS
		VN	-10	4.48	0.001785	± 2.5	PASS
		VN	0	2.6	0.001036	± 2.5	PASS
		VN	10	-0.76	-0.000303	± 2.5	PASS
		VN	20	1.33	0.000530	± 2.5	PASS
		VN	30	0.64	0.000255	± 2.5	PASS
		VN	40	1.16	0.000462	± 2.5	PASS
		VN	50	4.4	0.001753	± 2.5	PASS
	MCH	VN	-30	2.85	0.001124	± 2.5	PASS
		VN	-20	-0.25	-0.000099	± 2.5	PASS
		VN	-10	0.92	0.000363	± 2.5	PASS
		VN	0	-1.85	-0.000730	± 2.5	PASS
		VN	10	1.4	0.000552	± 2.5	PASS
		VN	20	1.65	0.000651	± 2.5	PASS
		VN	30	4.99	0.001968	± 2.5	PASS
		VN	40	-0.39	-0.000154	± 2.5	PASS
		VN	50	3.45	0.001361	± 2.5	PASS
	HCH	VN	-30	0.25	0.000098	± 2.5	PASS
		VN	-20	2.14	0.000836	± 2.5	PASS
		VN	-10	3.27	0.001277	± 2.5	PASS
		VN	0	1.72	0.000672	± 2.5	PASS
		VN	10	0.29	0.000113	± 2.5	PASS
		VN	20	-1.25	-0.000488	± 2.5	PASS

		VN	30	-0.68	-0.000266	± 2.5	PASS
		VN	40	-1.35	-0.000527	± 2.5	PASS
		VN	50	-0.28	-0.000109	± 2.5	PASS