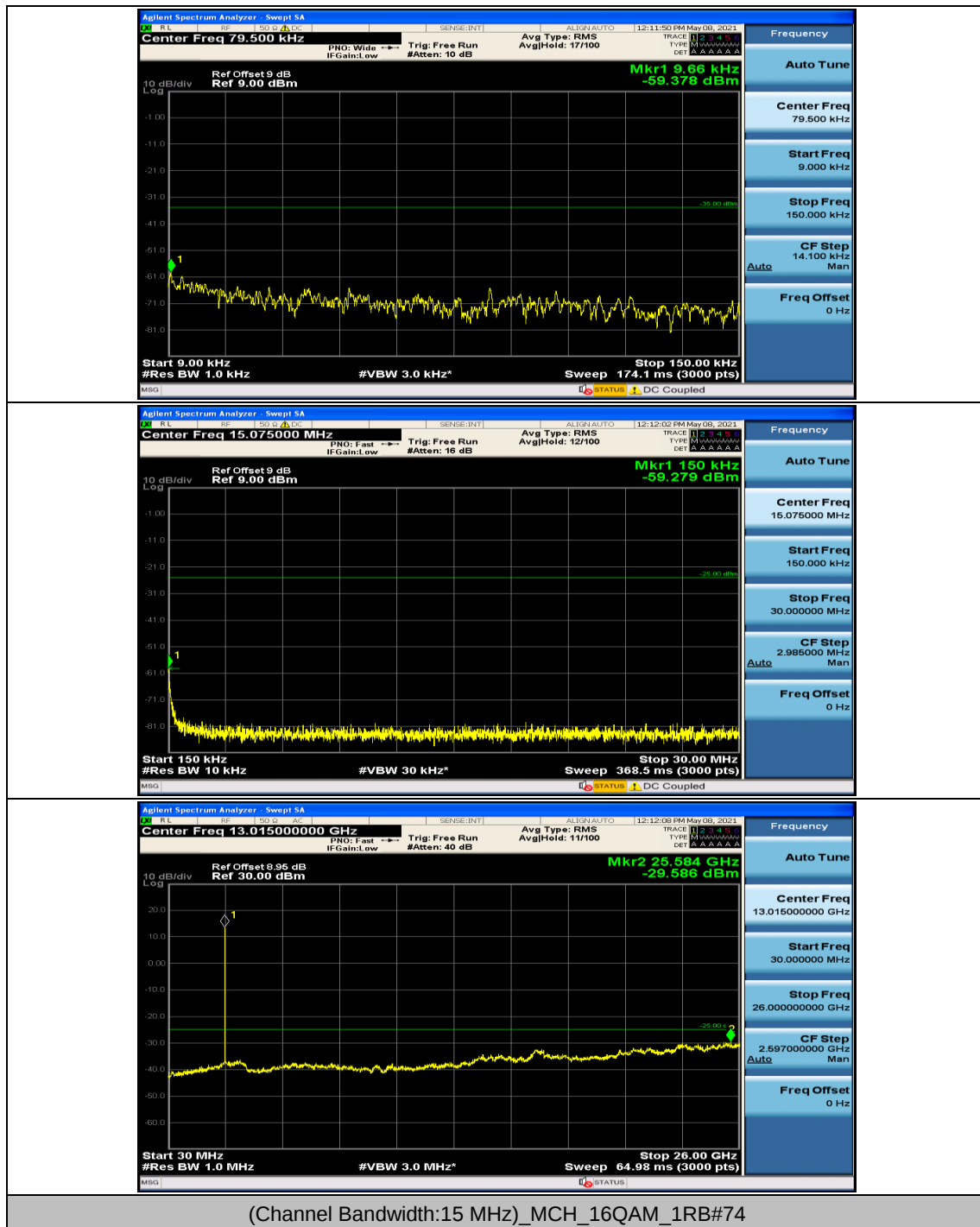
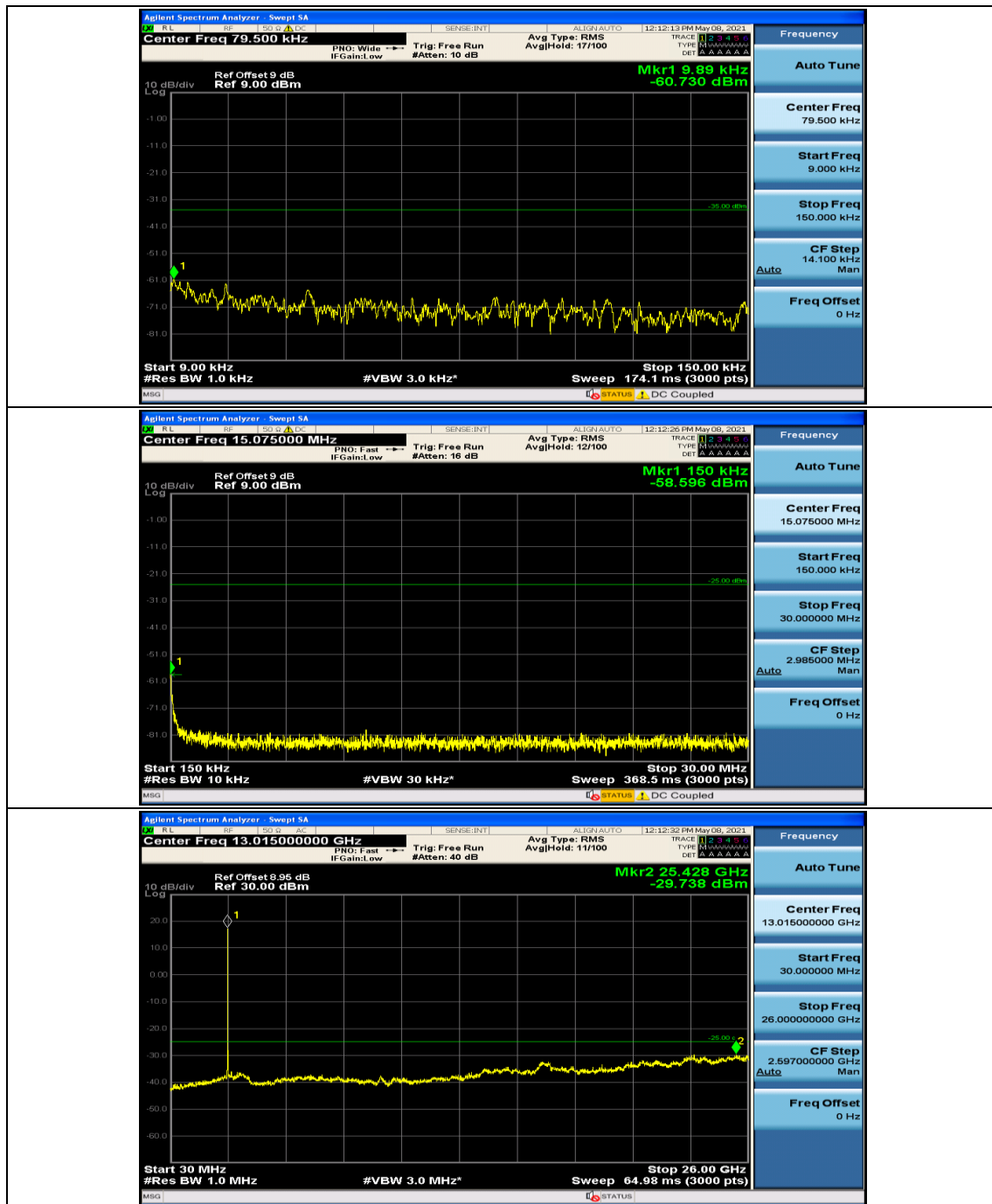
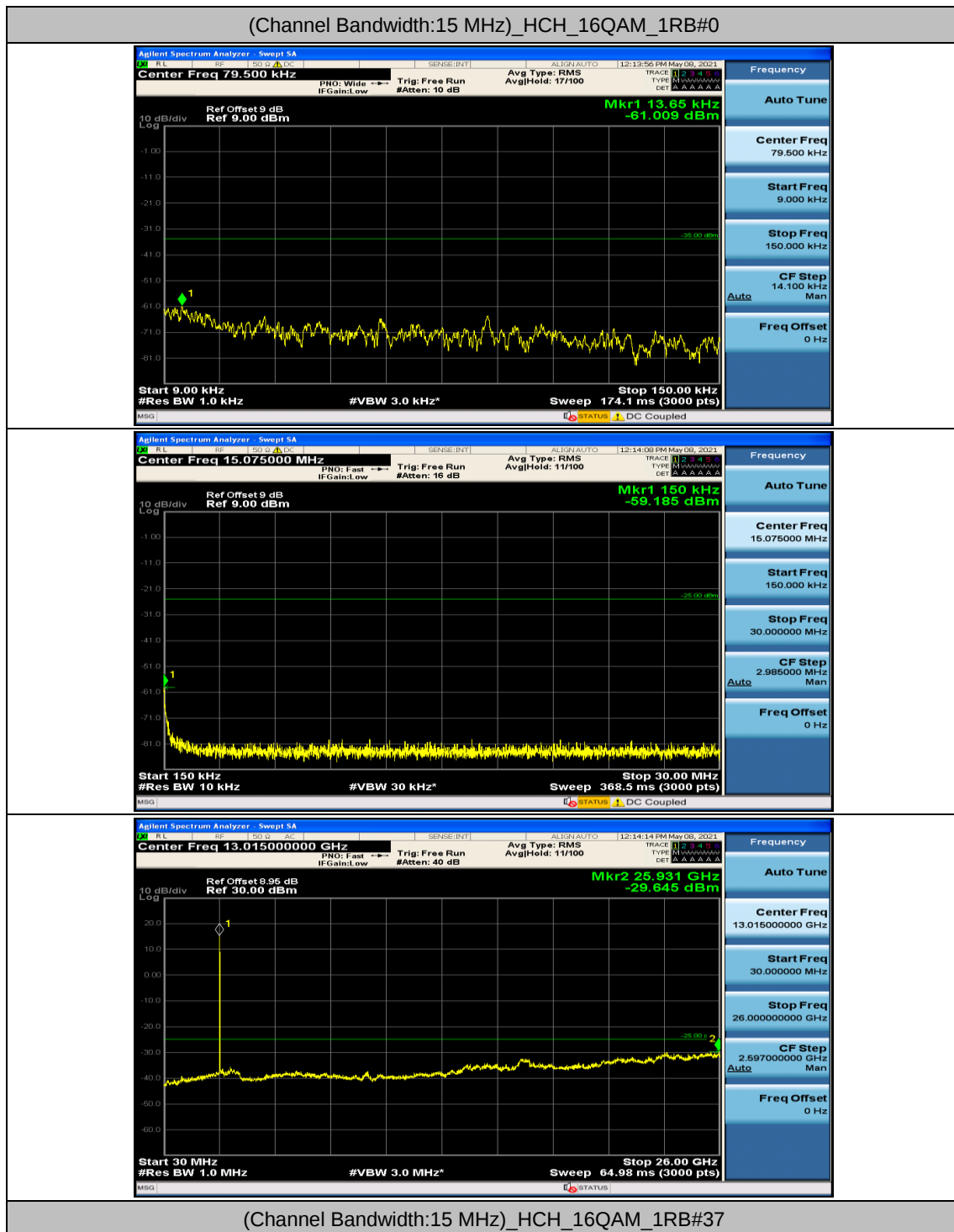
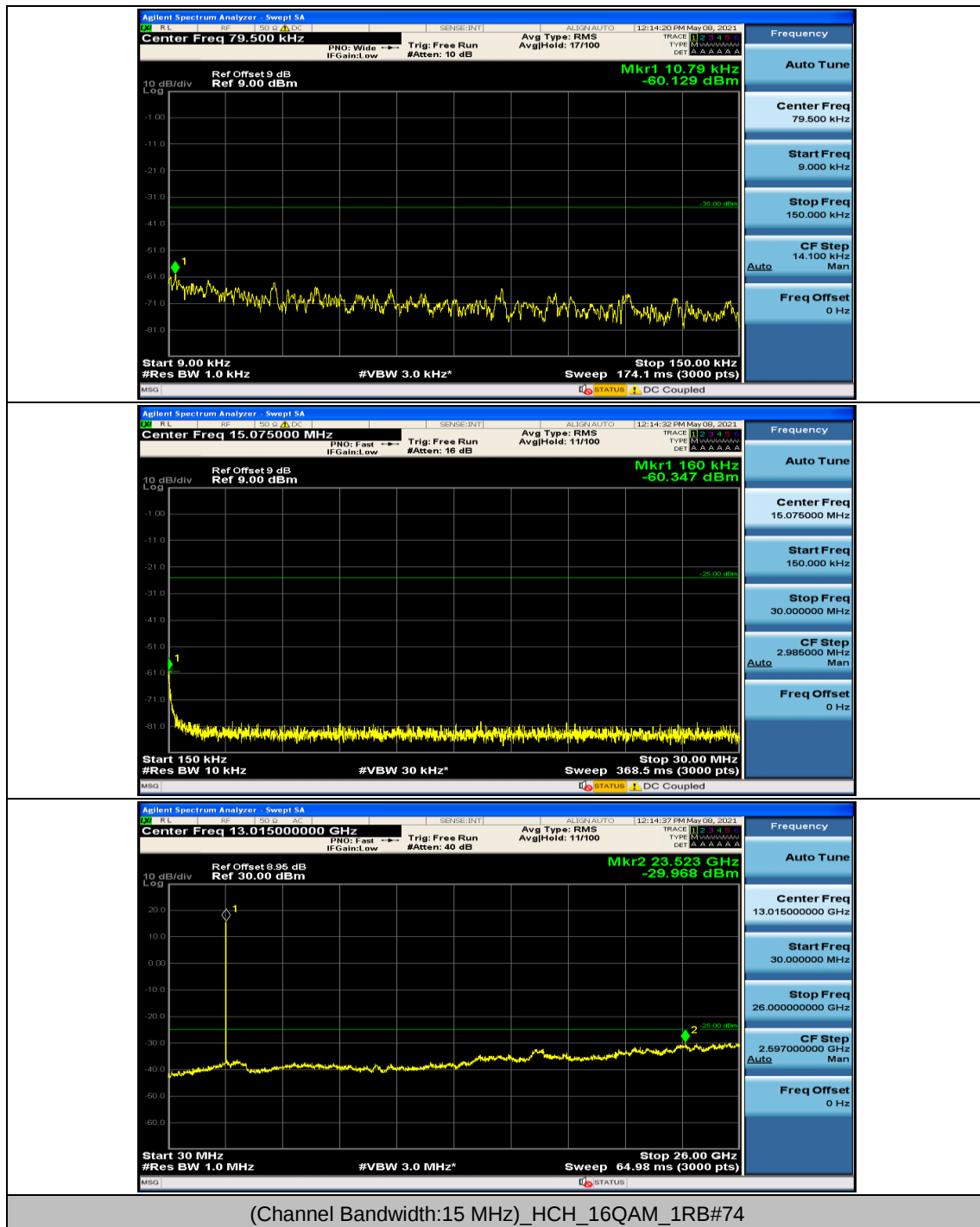
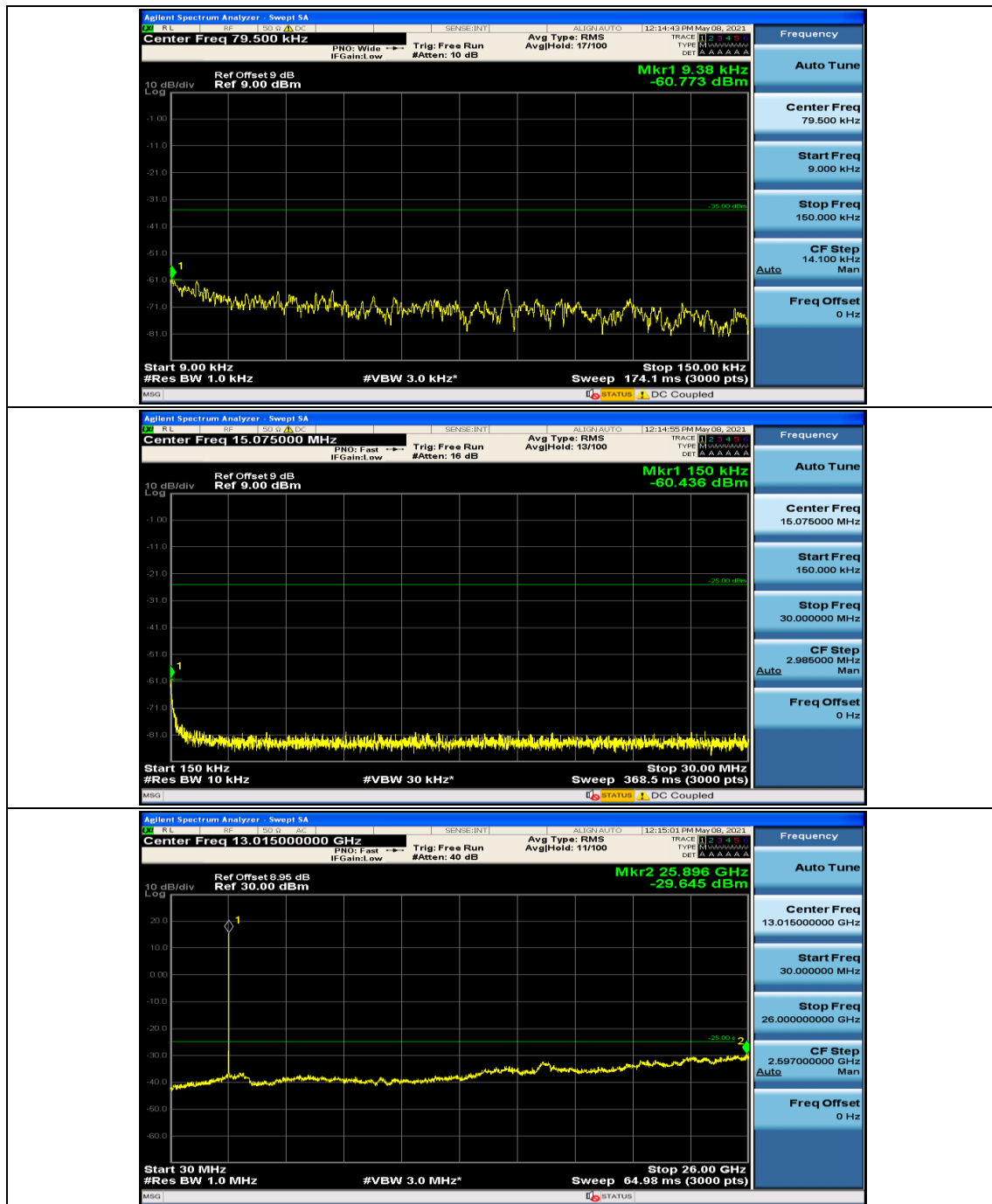




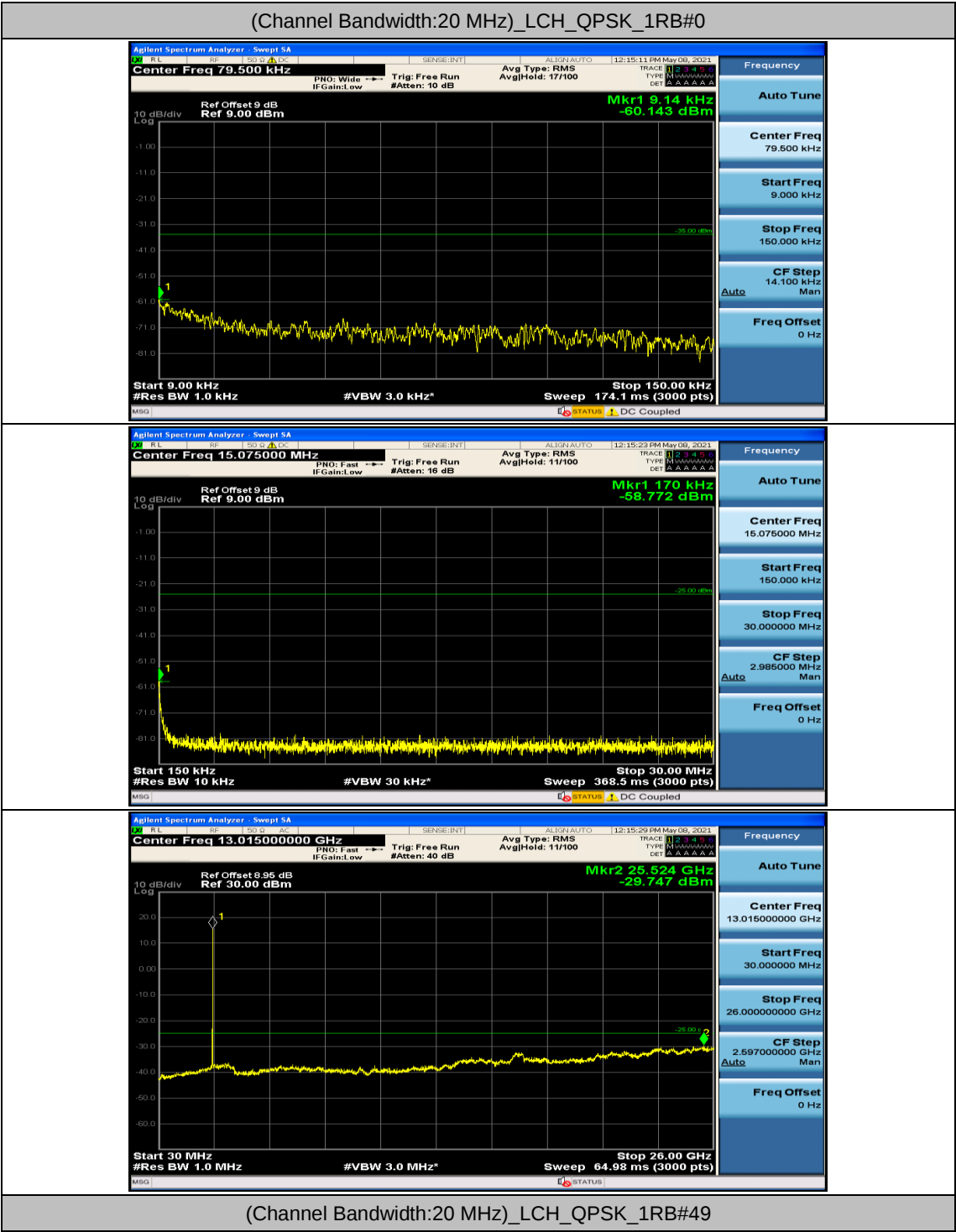


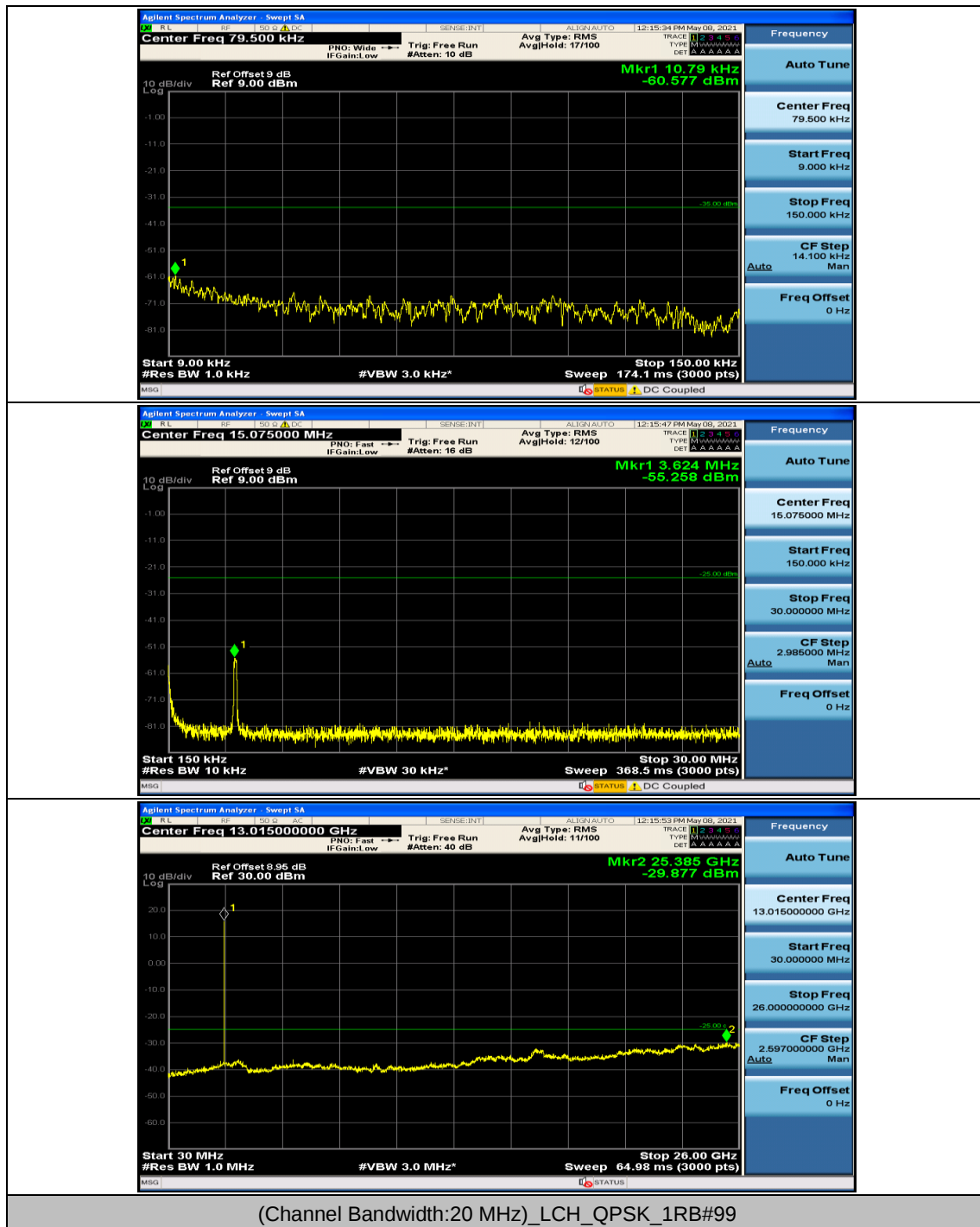


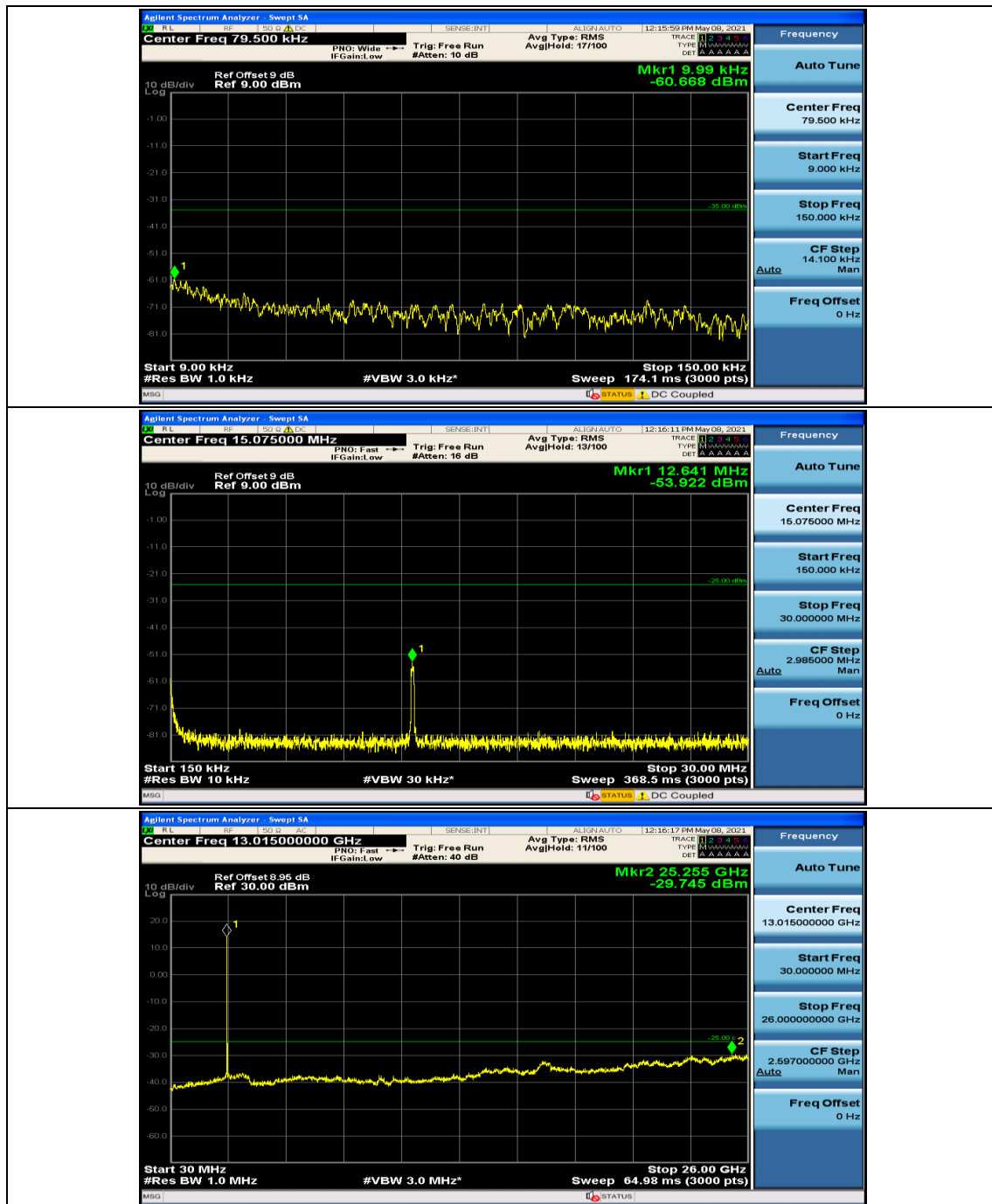


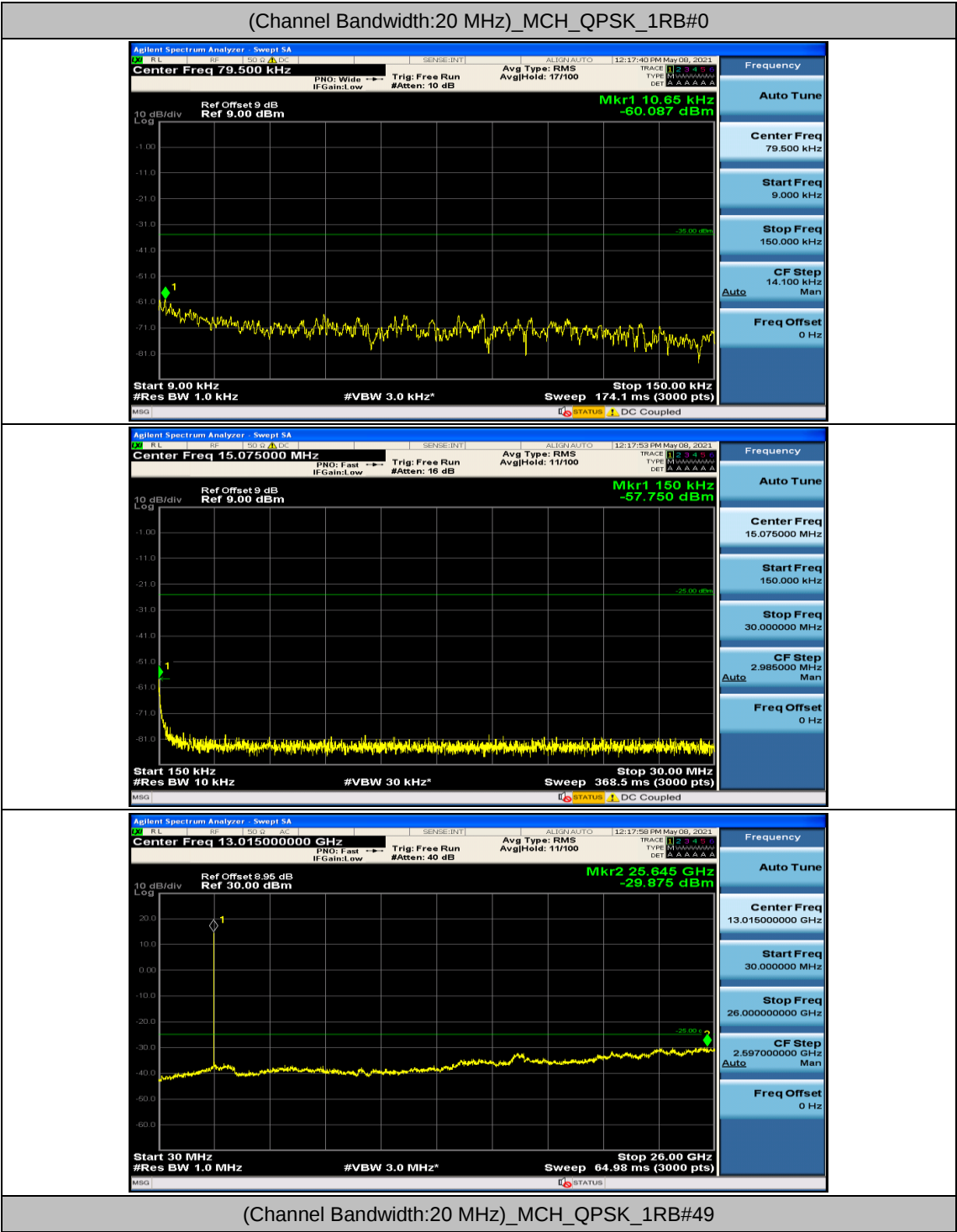


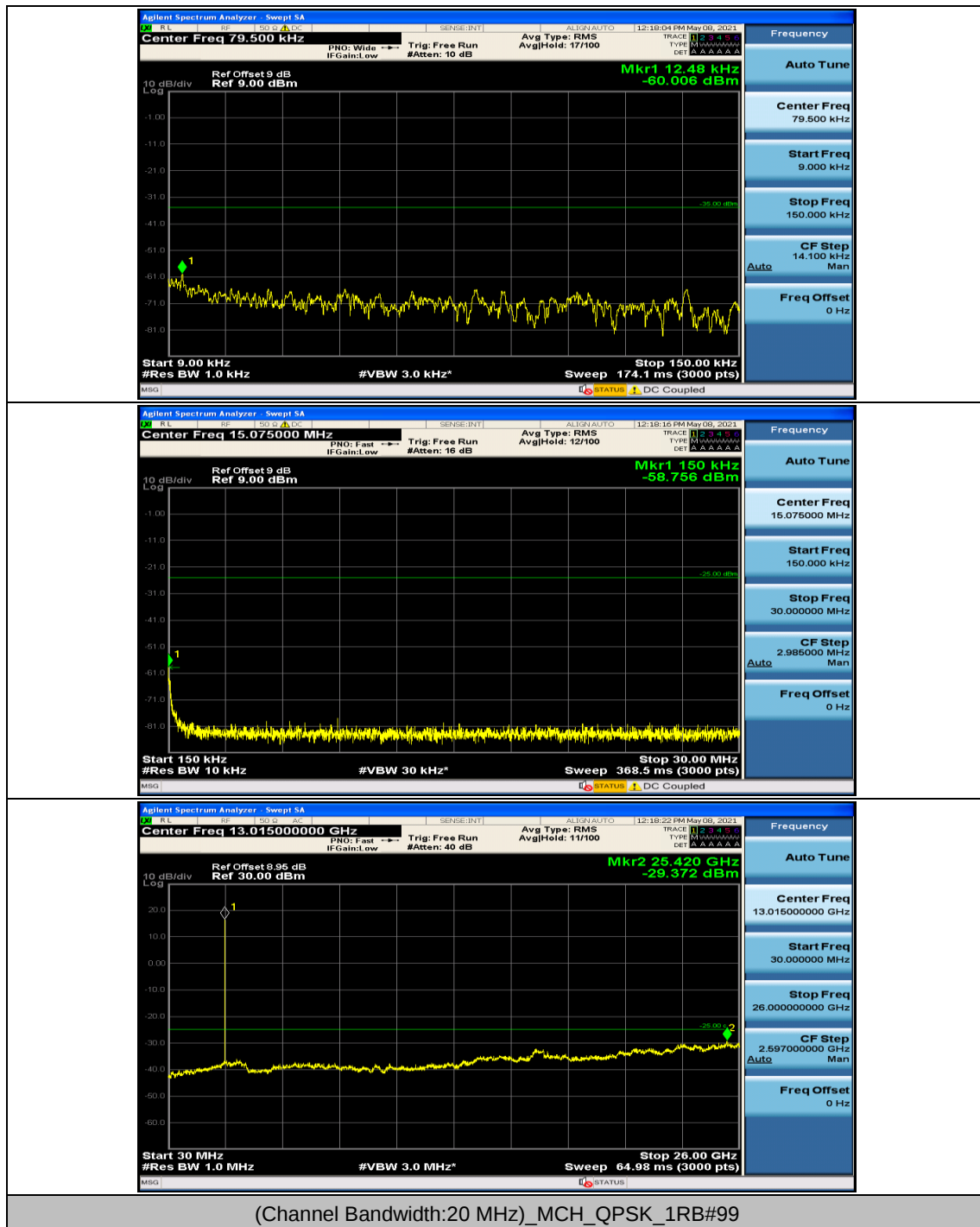
Channel Bandwidth: 20 MHz

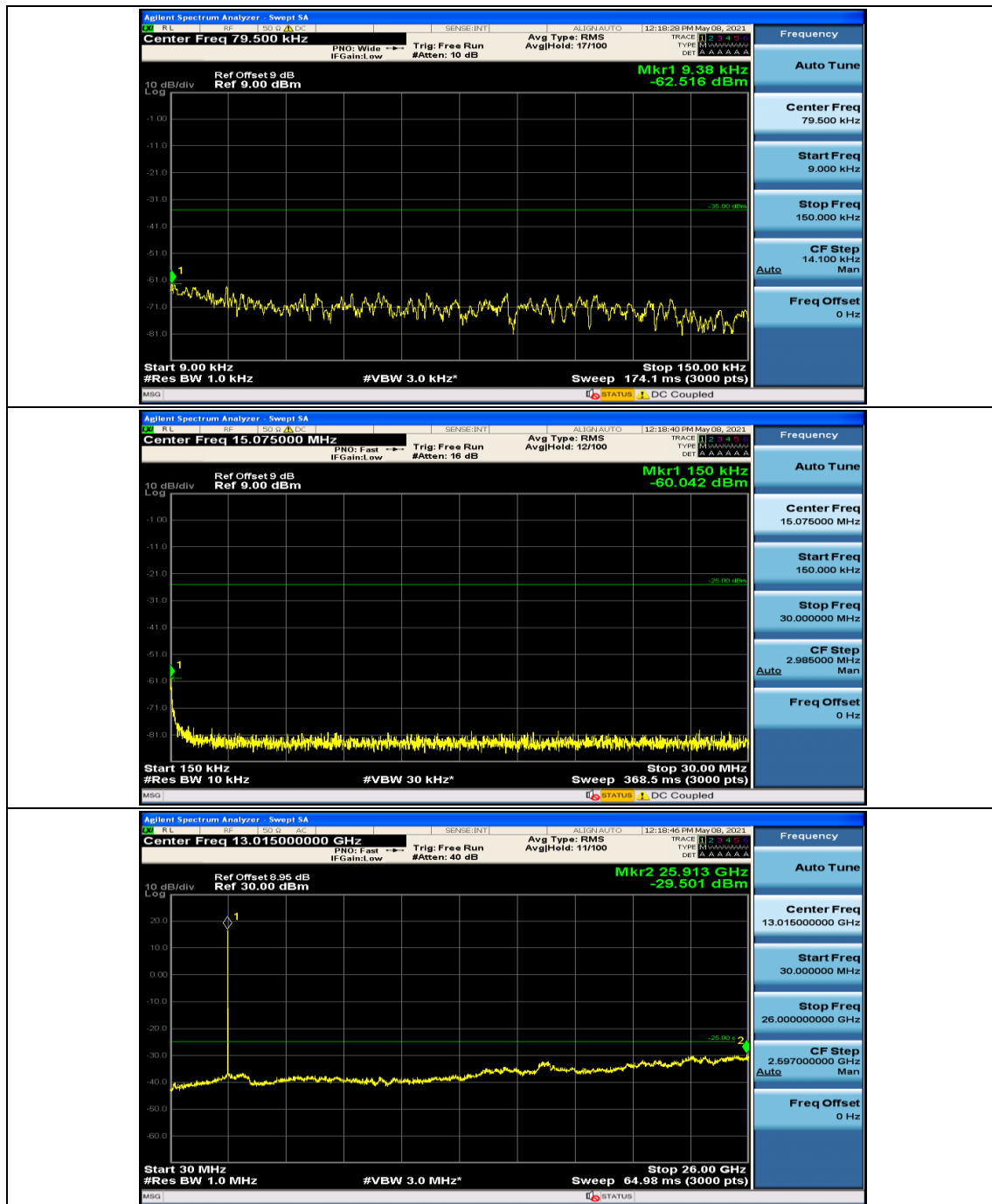


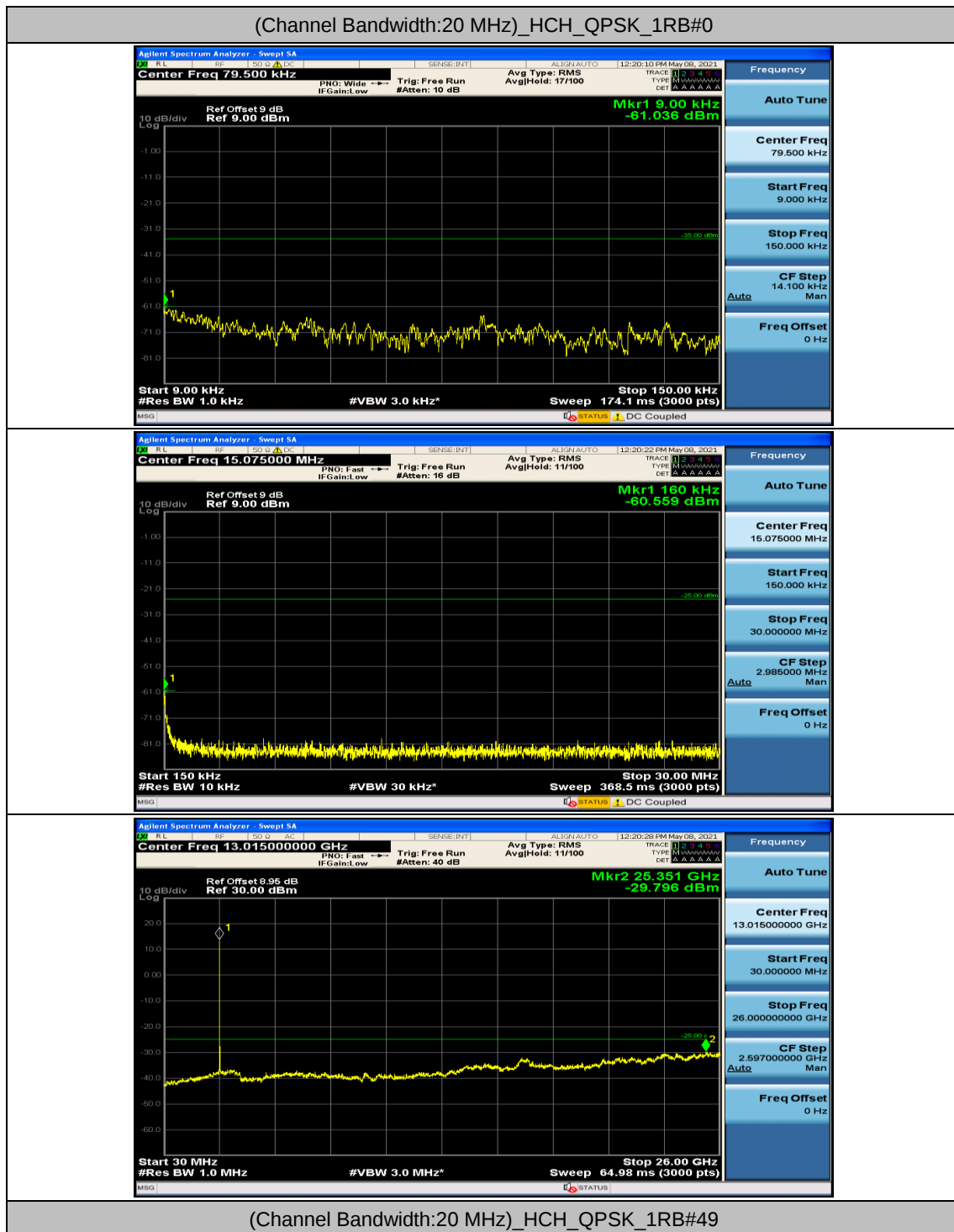


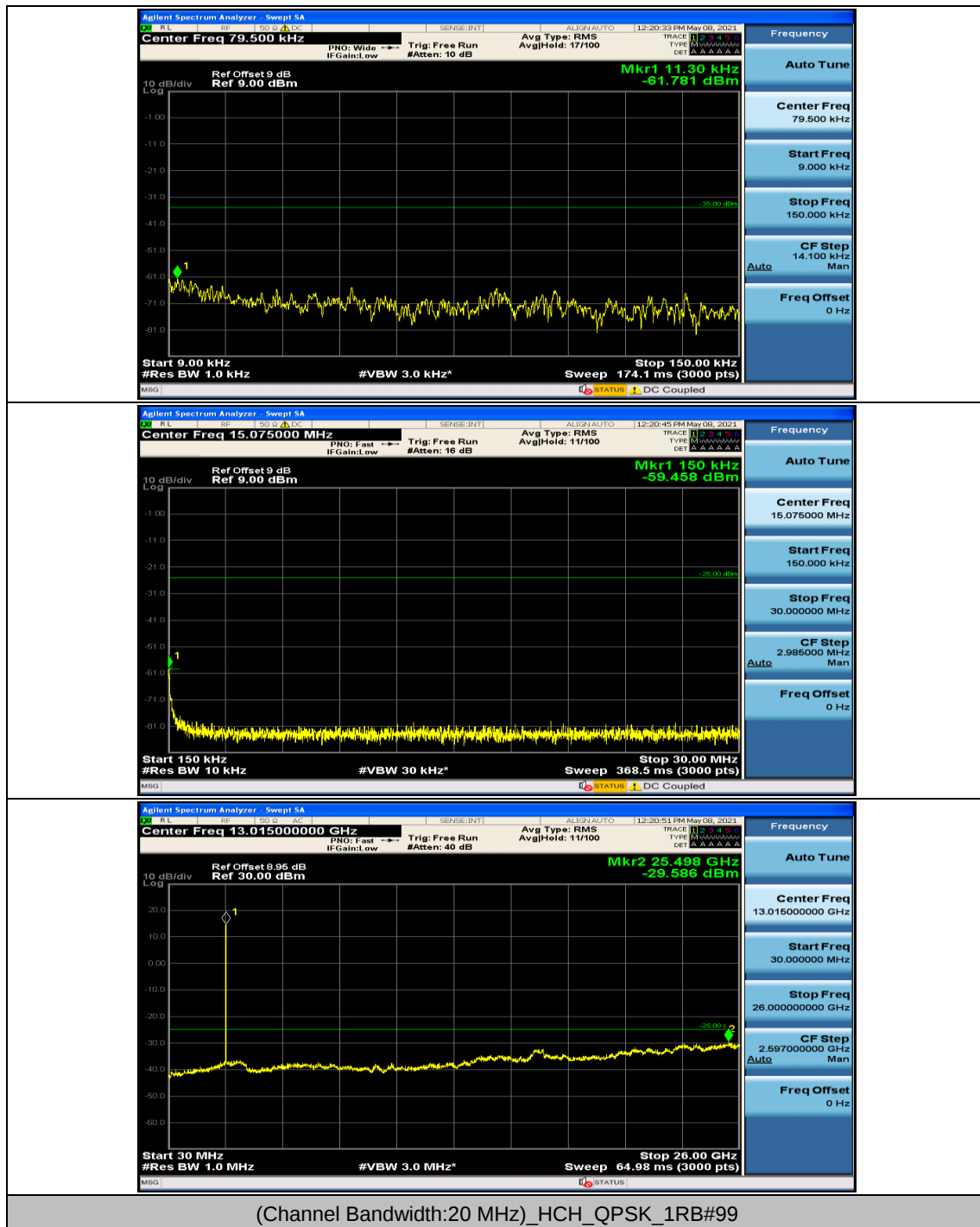


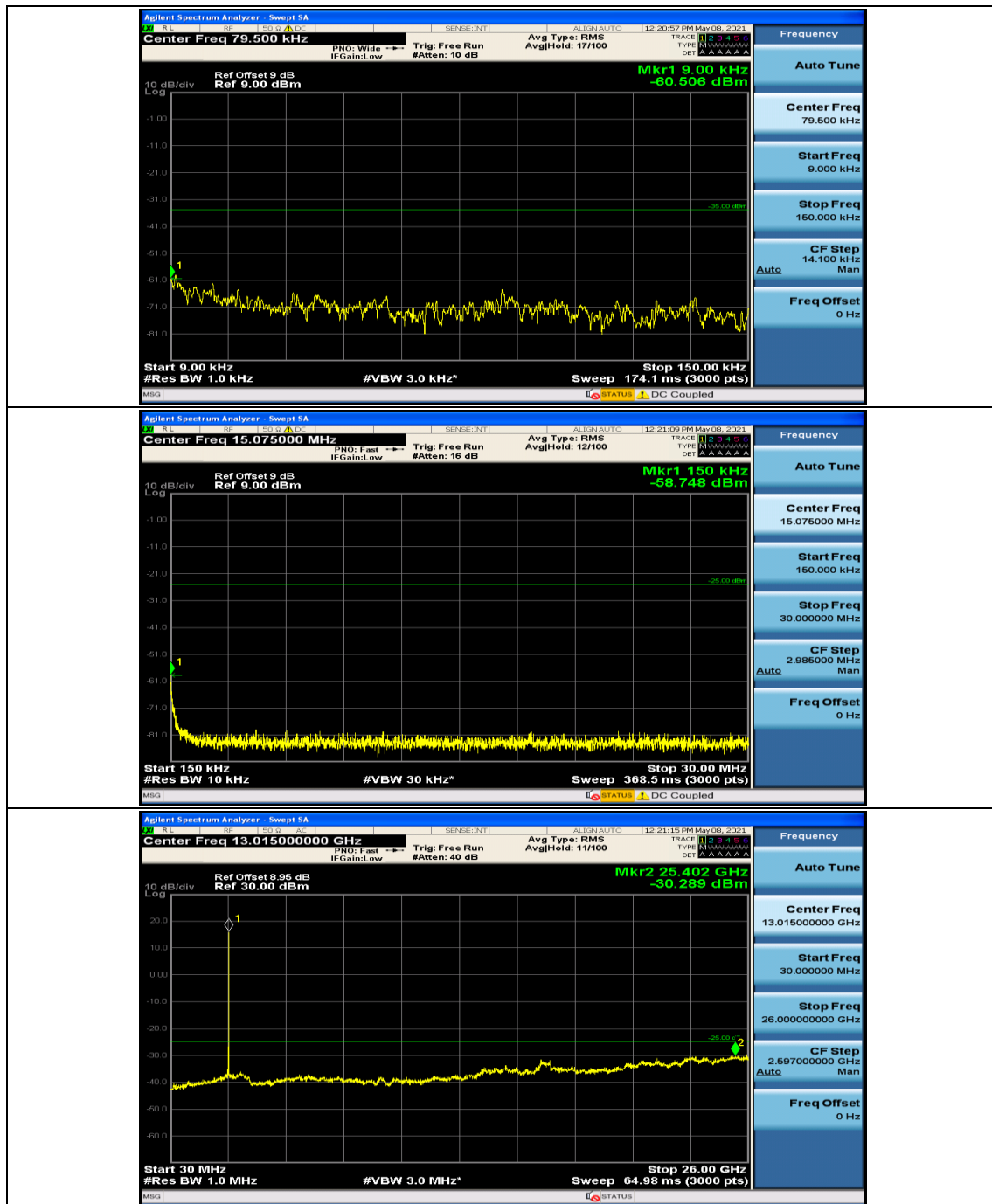


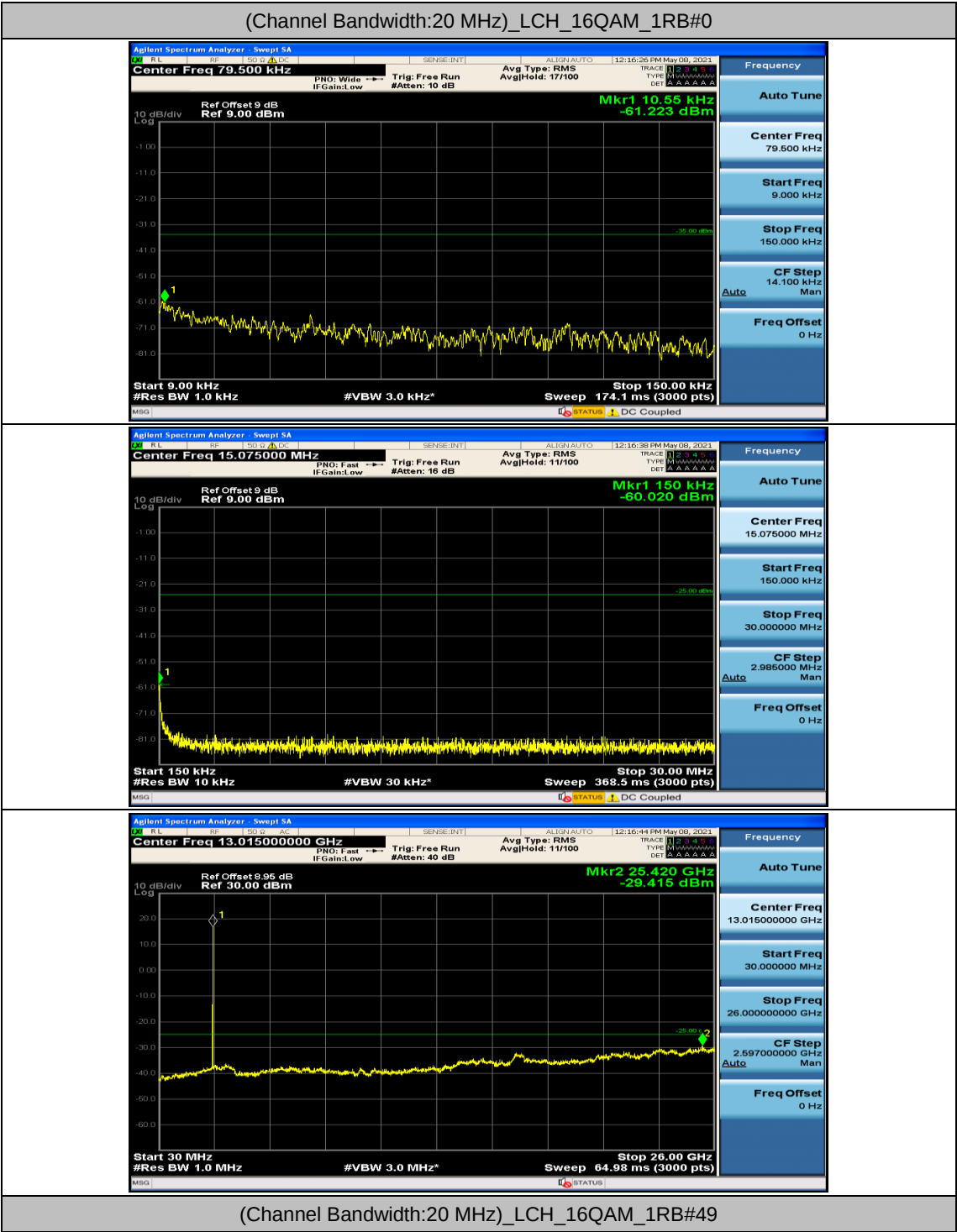


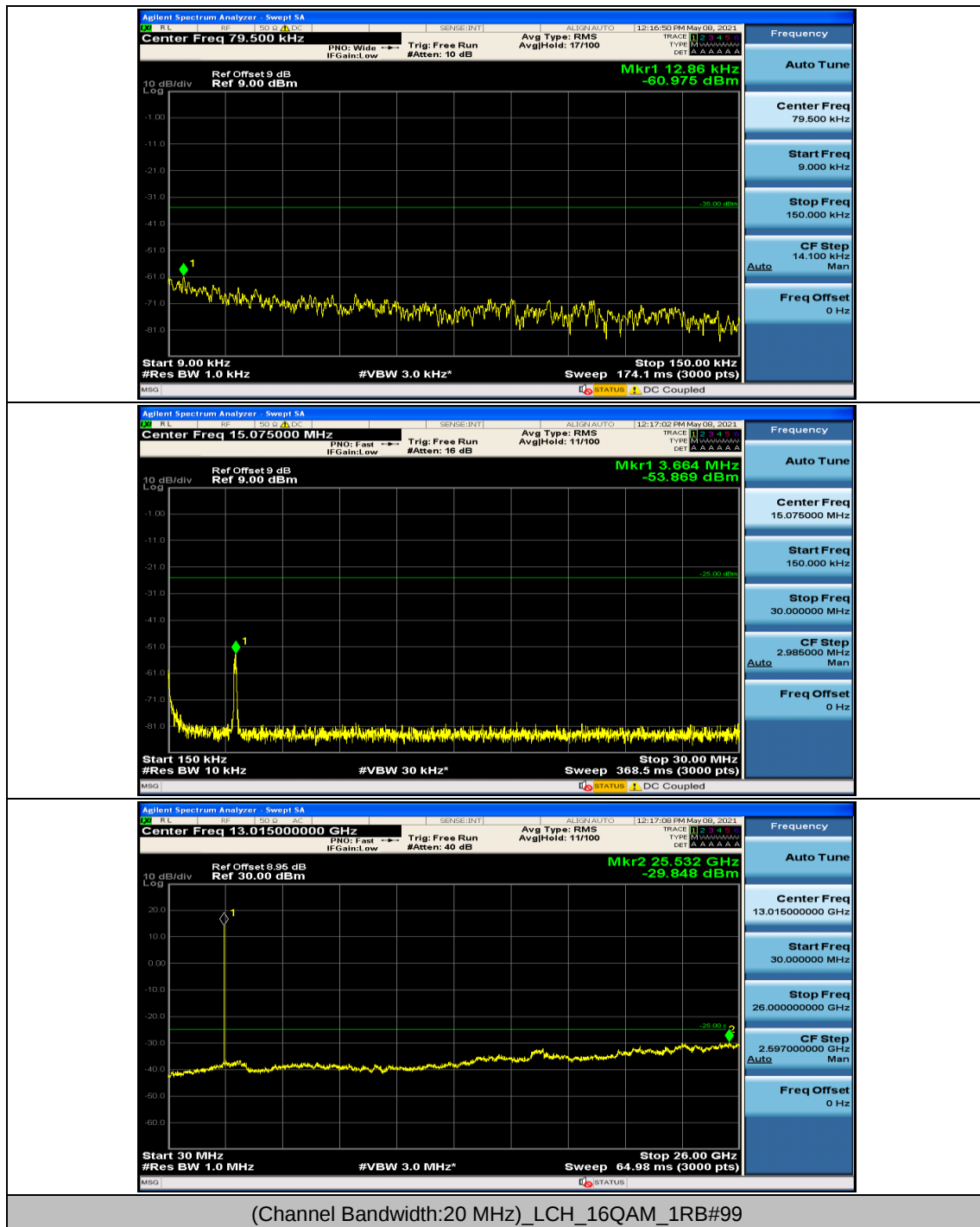


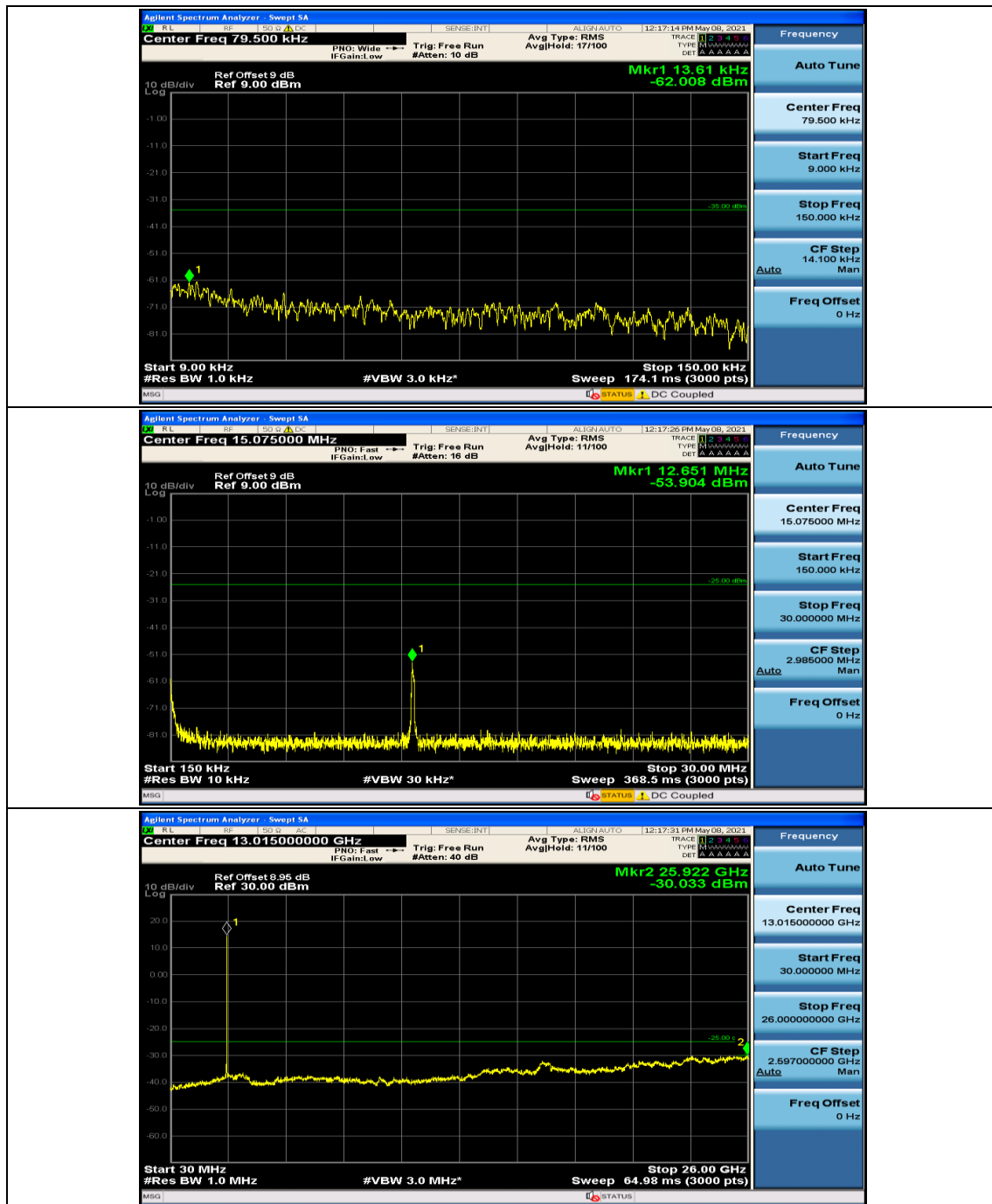


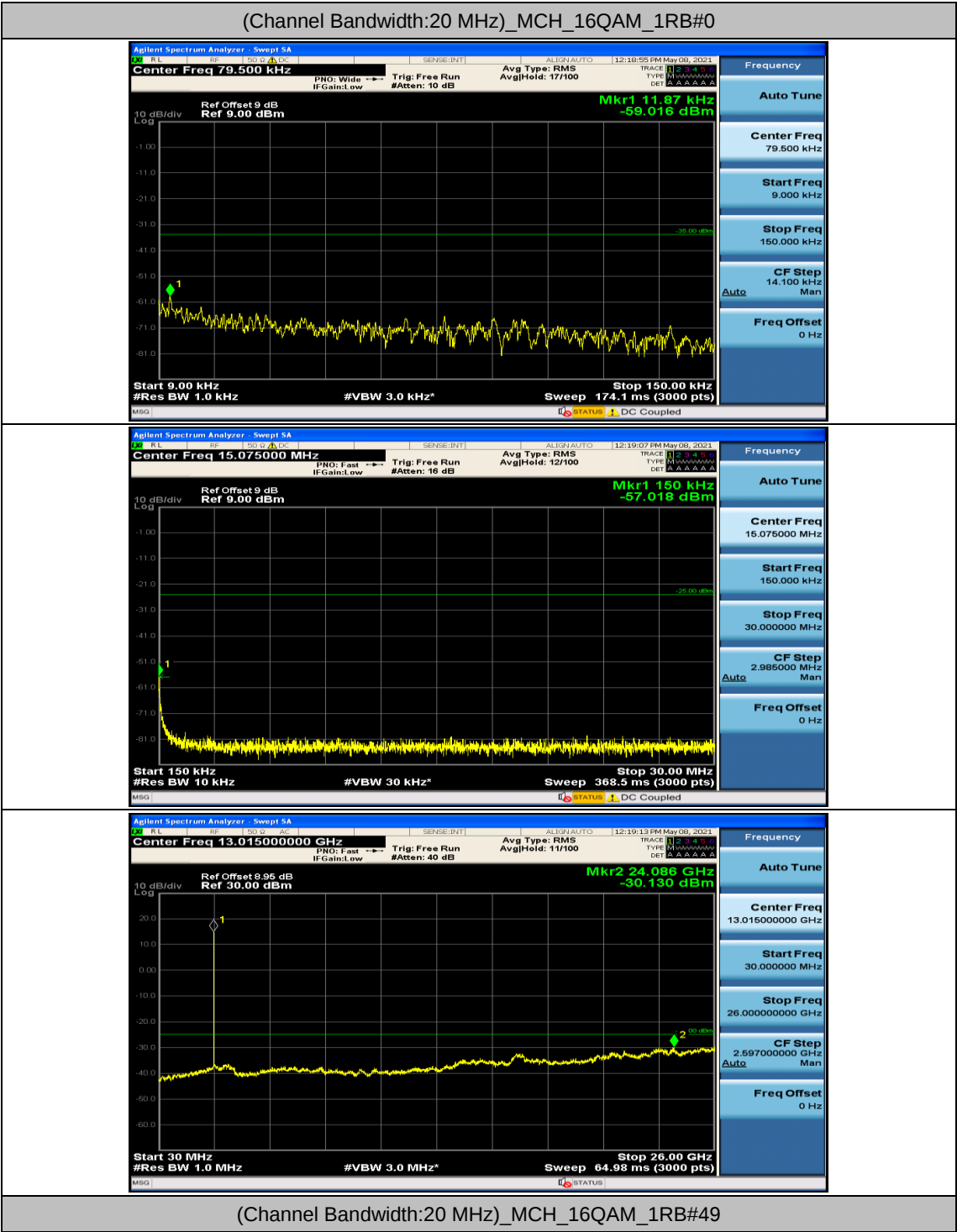


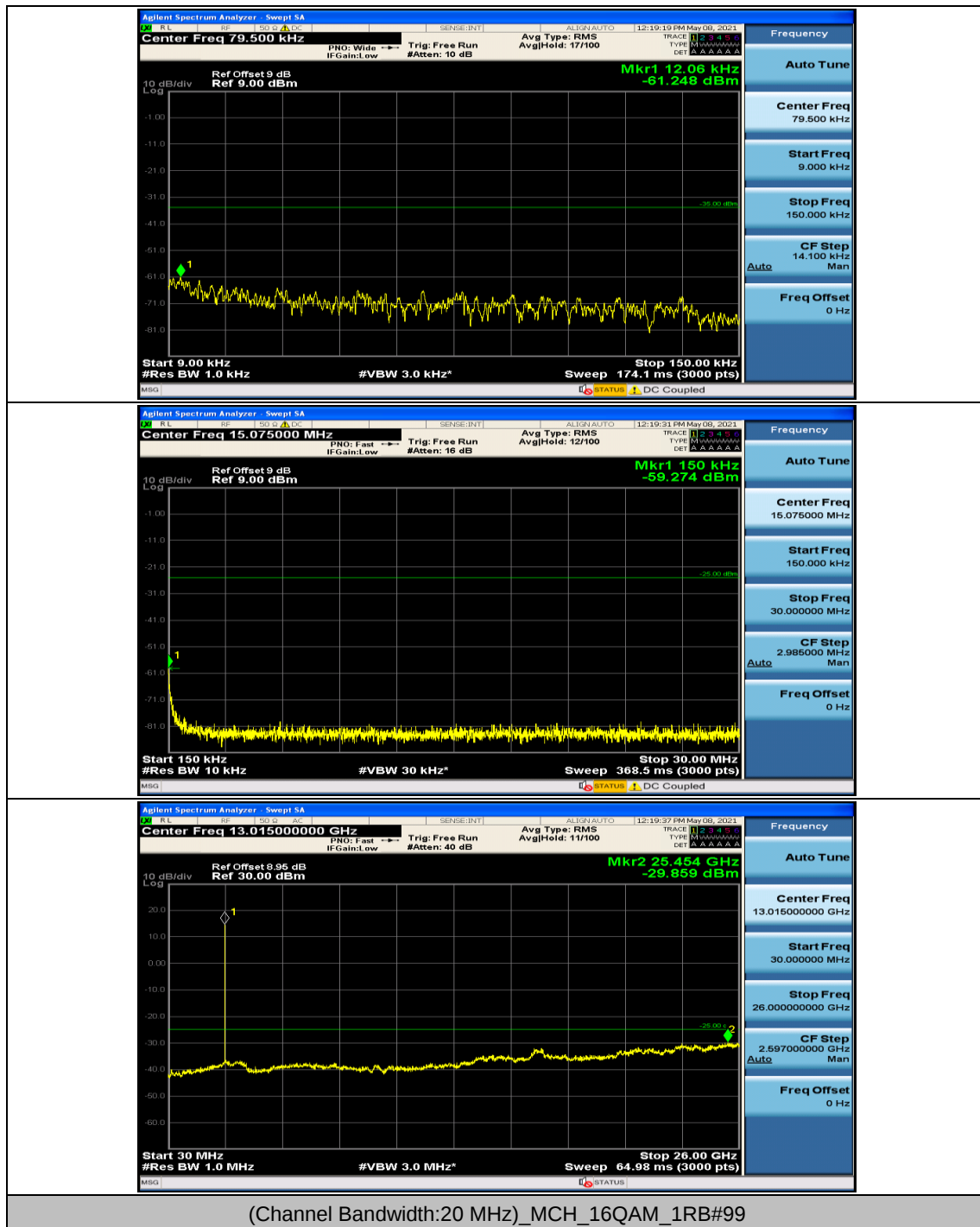


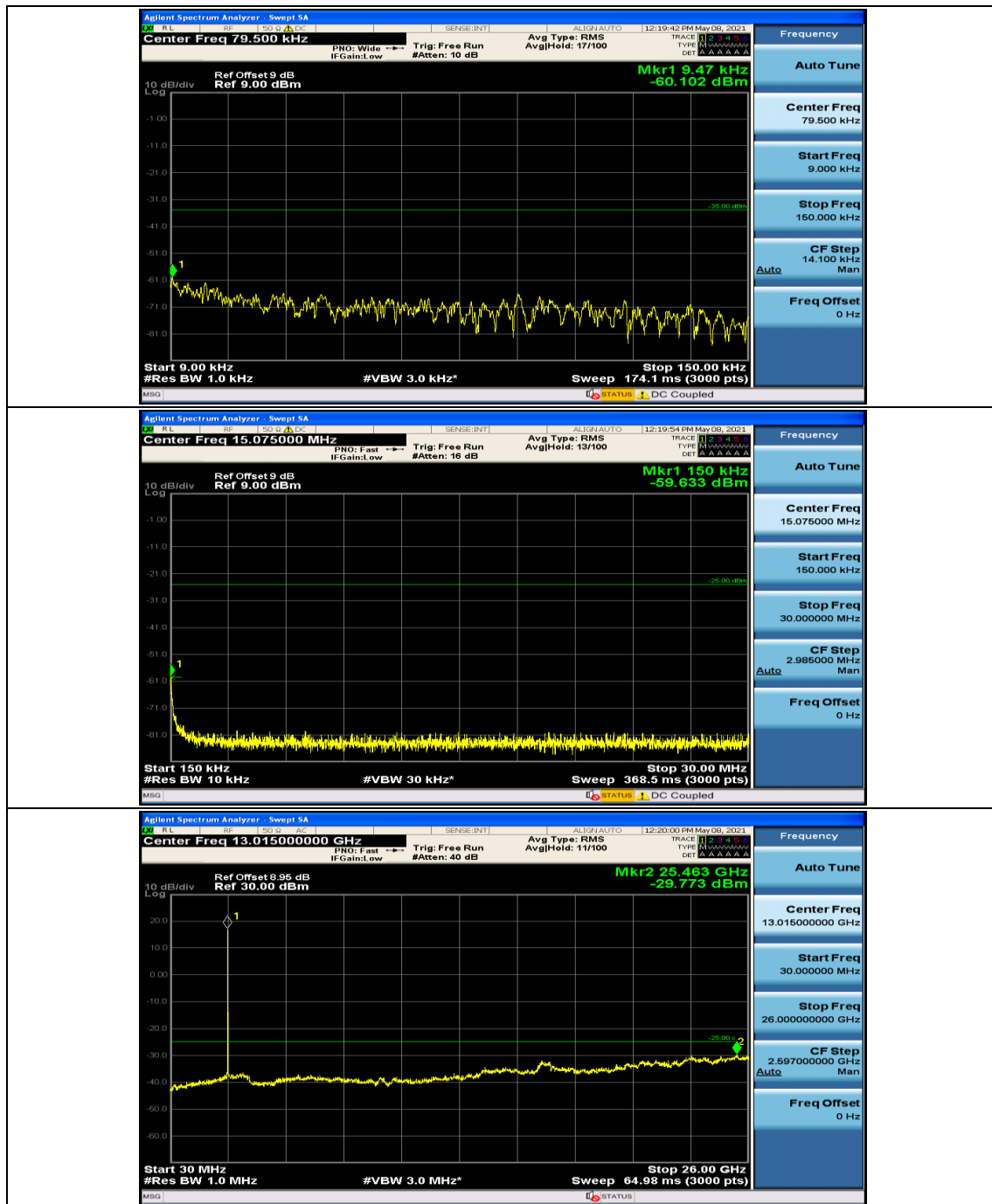


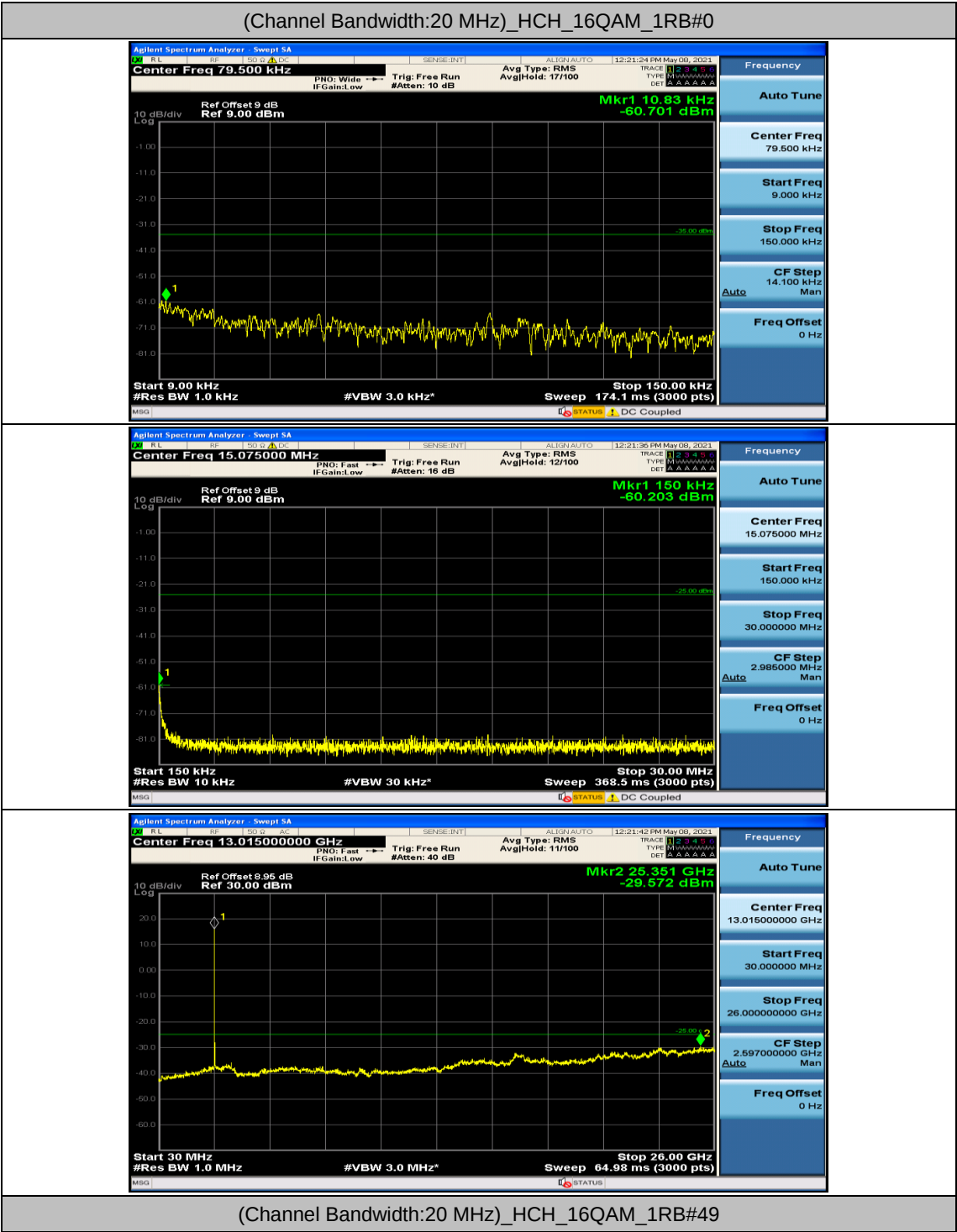


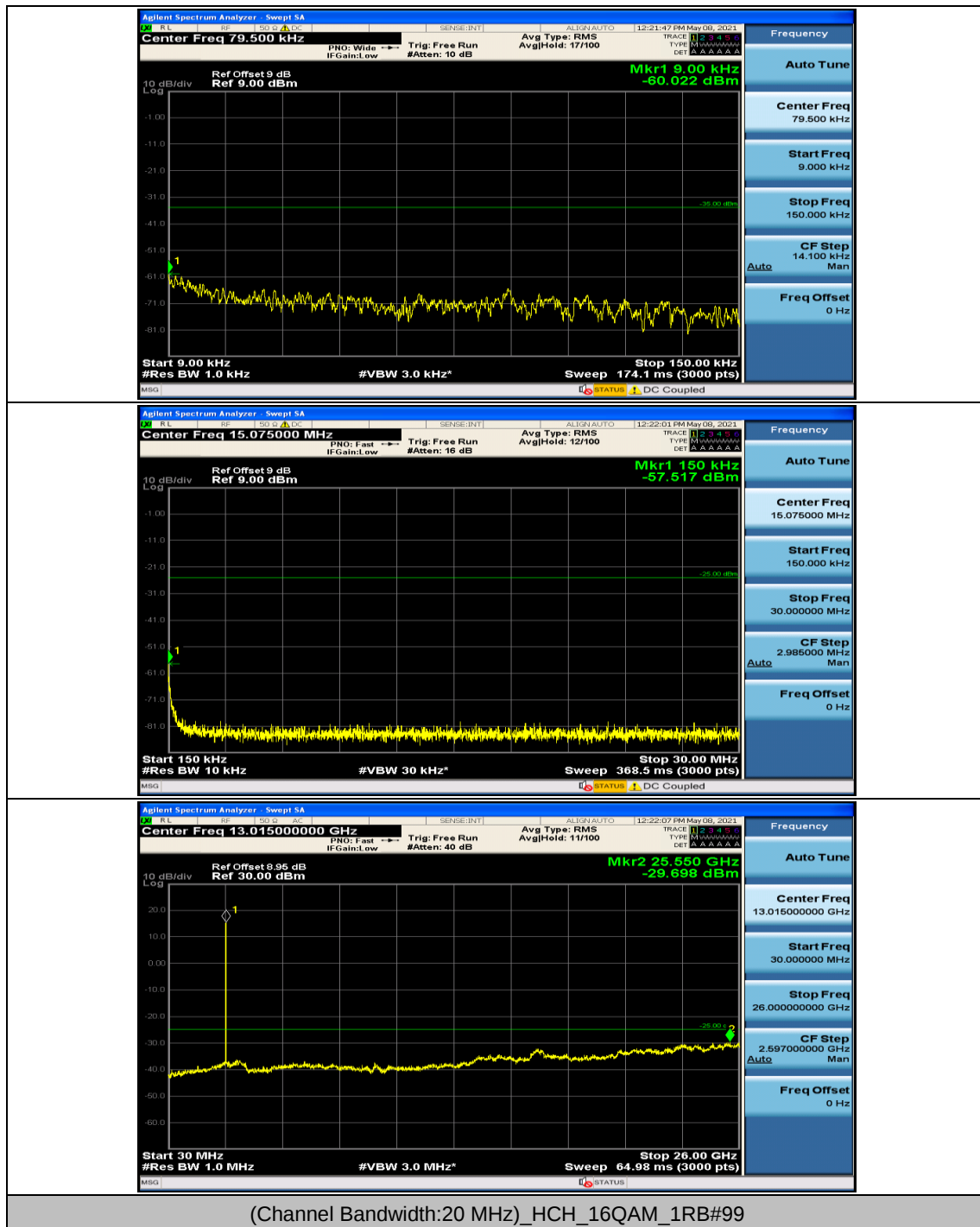


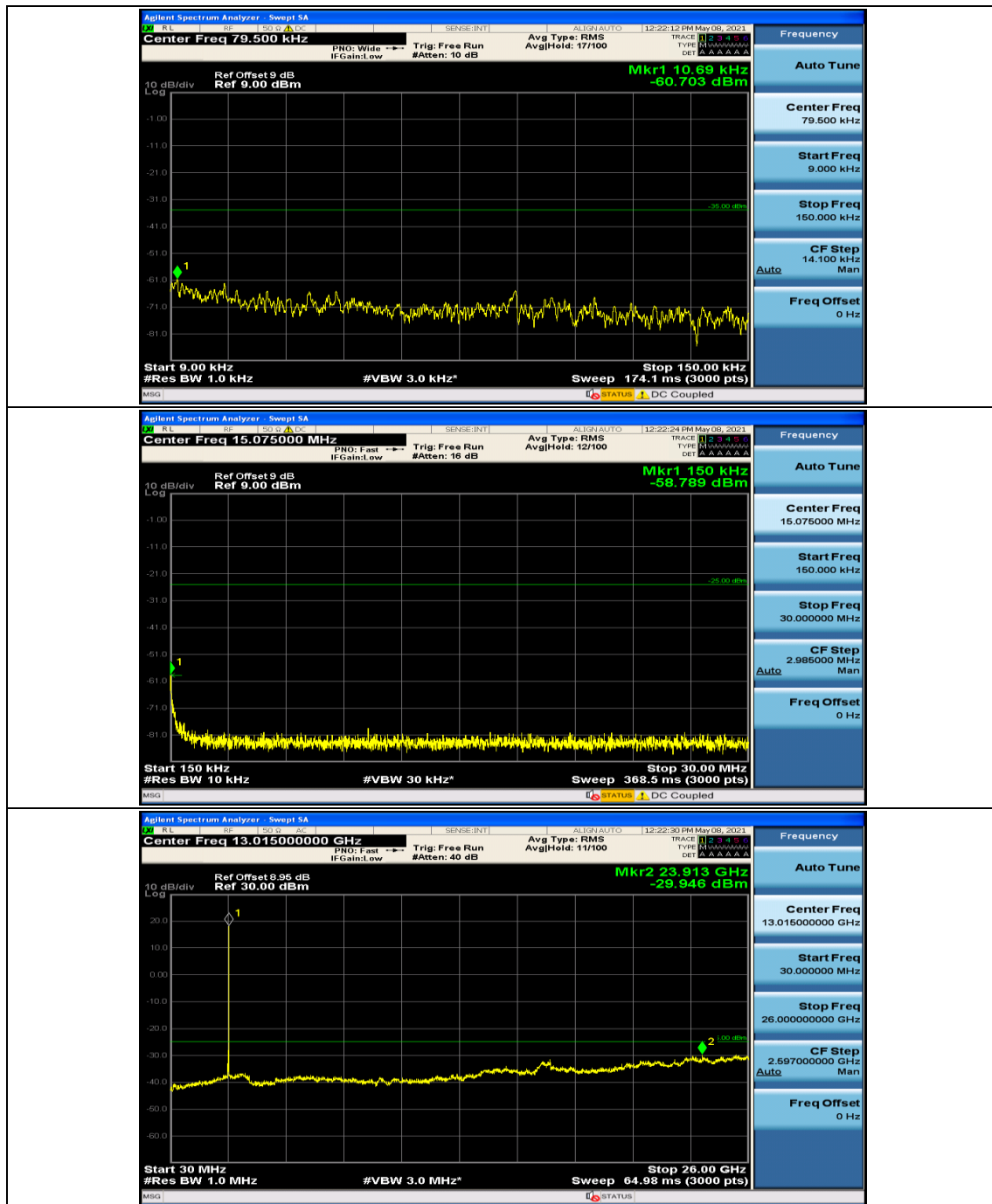












Appendix F: Frequency Stability

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	2.46	0.000985	± 2.5	PASS
		VN	TN	-1.99	-0.000796	± 2.5	PASS
		VH	TN	3.65	0.001461	± 2.5	PASS
	MCH	VL	TN	4.27	0.001647	± 2.5	PASS
		VN	TN	1.48	0.000571	± 2.5	PASS
		VH	TN	2.88	0.001111	± 2.5	PASS
	HCH	VL	TN	1.65	0.000614	± 2.5	PASS
		VN	TN	4.09	0.001522	± 2.5	PASS
		VH	TN	1.17	0.000435	± 2.5	PASS
16QAM	LCH	VL	TN	3.44	0.001377	± 2.5	PASS
		VN	TN	-1.62	-0.000648	± 2.5	PASS
		VH	TN	3.59	0.001437	± 2.5	PASS
	MCH	VL	TN	3.21	0.001238	± 2.5	PASS
		VN	TN	0.58	0.000224	± 2.5	PASS
		VH	TN	1.24	0.000478	± 2.5	PASS
	HCH	VL	TN	3.48	0.001295	± 2.5	PASS
		VN	TN	0.2	0.000074	± 2.5	PASS
		VH	TN	1.07	0.000398	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.25	-0.000500	± 2.5	PASS
		VN	-20	4.24	0.001697	± 2.5	PASS
		VN	-10	0.55	0.000220	± 2.5	PASS
		VN	0	3.67	0.001469	± 2.5	PASS
		VN	10	-1.68	-0.000672	± 2.5	PASS
		VN	20	3.04	0.001217	± 2.5	PASS
		VN	30	1.47	0.000588	± 2.5	PASS
		VN	40	-0.94	-0.000376	± 2.5	PASS
		VN	50	1.38	0.000552	± 2.5	PASS

	MCH	VN	-30	3.23	0.001246	± 2.5	PASS
		VN	-20	3.24	0.001250	± 2.5	PASS
		VN	-10	-1.93	-0.000744	± 2.5	PASS
		VN	0	0.94	0.000363	± 2.5	PASS
		VN	10	-1.64	-0.000632	± 2.5	PASS
		VN	20	3.91	0.001508	± 2.5	PASS
		VN	30	2.39	0.000922	± 2.5	PASS
		VN	40	-1.14	-0.000440	± 2.5	PASS
		VN	50	3.94	0.001519	± 2.5	PASS
	HCH	VN	-30	1.1	0.000409	± 2.5	PASS
		VN	-20	4.03	0.001500	± 2.5	PASS
		VN	-10	3.13	0.001165	± 2.5	PASS
		VN	0	-0.75	-0.000279	± 2.5	PASS
		VN	10	-0.24	-0.000089	± 2.5	PASS
		VN	20	3.9	0.001451	± 2.5	PASS
		VN	30	1.14	0.000424	± 2.5	PASS
		VN	40	-1.21	-0.000450	± 2.5	PASS
		VN	50	4.23	0.001574	± 2.5	PASS
16QAM	LCH	VN	-30	0.9	0.000360	± 2.5	PASS
		VN	-20	4.28	0.001713	± 2.5	PASS
		VN	-10	0.63	0.000252	± 2.5	PASS
		VN	0	-0.4	-0.000160	± 2.5	PASS
		VN	10	-0.68	-0.000272	± 2.5	PASS
		VN	20	1.37	0.000548	± 2.5	PASS
		VN	30	-1.14	-0.000456	± 2.5	PASS
		VN	40	2.54	0.001017	± 2.5	PASS
		VN	50	1.24	0.000496	± 2.5	PASS
	MCH	VN	-30	-1.83	-0.000706	± 2.5	PASS
		VN	-20	-1.07	-0.000413	± 2.5	PASS
		VN	-10	4.72	0.001820	± 2.5	PASS
		VN	0	-1.77	-0.000683	± 2.5	PASS
		VN	10	1.42	0.000548	± 2.5	PASS
		VN	20	-1.54	-0.000594	± 2.5	PASS
		VN	30	1.16	0.000447	± 2.5	PASS
		VN	40	1.9	0.000733	± 2.5	PASS
		VN	50	-1.63	-0.000629	± 2.5	PASS
	HCH	VN	-30	-1.91	-0.000711	± 2.5	PASS
		VN	-20	4.92	0.001831	± 2.5	PASS
		VN	-10	2.93	0.001090	± 2.5	PASS
		VN	0	2.06	0.000767	± 2.5	PASS
		VN	10	4.21	0.001567	± 2.5	PASS

		VN	20	0.22	0.000082	± 2.5	PASS
		VN	30	2.49	0.000927	± 2.5	PASS
		VN	40	-1.38	-0.000513	± 2.5	PASS
		VN	50	-11.63	-0.004327	± 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	0.05	0.000020	± 2.5	PASS
		VN	TN	-1.35	-0.000540	± 2.5	PASS
		VH	TN	4.43	0.001771	± 2.5	PASS
	MCH	VL	TN	-0.52	-0.000201	± 2.5	PASS
		VN	TN	2.69	0.001037	± 2.5	PASS
		VH	TN	1	0.000386	± 2.5	PASS
	HCH	VL	TN	0.12	0.000045	± 2.5	PASS
		VN	TN	-0.54	-0.000201	± 2.5	PASS
		VH	TN	3.54	0.001318	± 2.5	PASS
16QAM	LCH	VL	TN	-1.46	-0.000584	± 2.5	PASS
		VN	TN	1.01	0.000404	± 2.5	PASS
		VH	TN	1.93	0.000772	± 2.5	PASS
	MCH	VL	TN	4.4	0.001697	± 2.5	PASS
		VN	TN	2.24	0.000864	± 2.5	PASS
		VH	TN	2.27	0.000875	± 2.5	PASS
	HCH	VL	TN	2.68	0.000998	± 2.5	PASS
		VN	TN	3.81	0.001419	± 2.5	PASS
		VH	TN	2.86	0.001065	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.9	-0.000760	± 2.5	PASS
		VN	-20	1.11	0.000444	± 2.5	PASS
		VN	-10	-1.45	-0.000580	± 2.5	PASS
		VN	0	3.74	0.001495	± 2.5	PASS
		VN	10	-0.56	-0.000224	± 2.5	PASS
		VN	20	2.8	0.001120	± 2.5	PASS
		VN	30	2.2	0.000880	± 2.5	PASS
		VN	40	-1.2	-0.000480	± 2.5	PASS
		VN	50	-0.91	-0.000364	± 2.5	PASS
	MCH	VN	-30	-1.26	-0.000486	± 2.5	PASS

		VN	-20	-1.44	-0.000555	± 2.5	PASS
		VN	-10	1.79	0.000690	± 2.5	PASS
		VN	0	-0.61	-0.000235	± 2.5	PASS
		VN	10	4.96	0.001913	± 2.5	PASS
		VN	20	-1.23	-0.000474	± 2.5	PASS
		VN	30	1.26	0.000486	± 2.5	PASS
		VN	40	-1.79	-0.000690	± 2.5	PASS
		VN	50	3.1	0.001196	± 2.5	PASS
	HCH	VN	-30	4.61	0.001717	± 2.5	PASS
		VN	-20	0.41	0.000153	± 2.5	PASS
		VN	-10	-1.72	-0.000641	± 2.5	PASS
		VN	0	-1.91	-0.000711	± 2.5	PASS
		VN	10	4.32	0.001609	± 2.5	PASS
		VN	20	-0.41	-0.000153	± 2.5	PASS
		VN	30	0.02	0.000007	± 2.5	PASS
		VN	40	-1.76	-0.000655	± 2.5	PASS
		VN	50	0.66	0.000246	± 2.5	PASS
16QAM	LCH	VN	-30	1.38	0.000552	± 2.5	PASS
		VN	-20	3.32	0.001327	± 2.5	PASS
		VN	-10	2.48	0.000992	± 2.5	PASS
		VN	0	-1.11	-0.000444	± 2.5	PASS
		VN	10	-0.65	-0.000260	± 2.5	PASS
		VN	20	-0.1	-0.000040	± 2.5	PASS
		VN	30	-0.65	-0.000260	± 2.5	PASS
		VN	40	1.05	0.000420	± 2.5	PASS
		VN	50	1.84	0.000736	± 2.5	PASS
	MCH	VN	-30	1.67	0.000644	± 2.5	PASS
		VN	-20	2.93	0.001130	± 2.5	PASS
		VN	-10	0.73	0.000282	± 2.5	PASS
		VN	0	3.22	0.001242	± 2.5	PASS
		VN	10	2.35	0.000906	± 2.5	PASS
		VN	20	2.43	0.000937	± 2.5	PASS
		VN	30	0.47	0.000181	± 2.5	PASS
		VN	40	1.03	0.000397	± 2.5	PASS
		VN	50	2.94	0.001134	± 2.5	PASS
	HCH	VN	-30	3.79	0.001412	± 2.5	PASS
		VN	-20	-0.45	-0.000168	± 2.5	PASS
		VN	-10	-1.41	-0.000525	± 2.5	PASS
		VN	0	-0.41	-0.000153	± 2.5	PASS
		VN	10	-0.37	-0.000138	± 2.5	PASS
		VN	20	1.17	0.000436	± 2.5	PASS

		VN	30	2.95	0.001099	± 2.5	PASS
		VN	40	4.65	0.001732	± 2.5	PASS
		VN	50	-11.63	-0.004331	± 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	3.66	0.001462	± 2.5	PASS
		VN	TN	0.66	0.000264	± 2.5	PASS
		VH	TN	2.89	0.001154	± 2.5	PASS
	MCH	VL	TN	4.29	0.001654	± 2.5	PASS
		VN	TN	0.65	0.000251	± 2.5	PASS
		VH	TN	3.11	0.001199	± 2.5	PASS
	HCH	VL	TN	0.7	0.000261	± 2.5	PASS
		VN	TN	4.42	0.001648	± 2.5	PASS
		VH	TN	1.98	0.000738	± 2.5	PASS
16QAM	LCH	VL	TN	2.62	0.001047	± 2.5	PASS
		VN	TN	4.45	0.001778	± 2.5	PASS
		VH	TN	0.49	0.000196	± 2.5	PASS
	MCH	VL	TN	3.32	0.001280	± 2.5	PASS
		VN	TN	3.39	0.001307	± 2.5	PASS
		VH	TN	4.68	0.001805	± 2.5	PASS
	HCH	VL	TN	-1.17	-0.000436	± 2.5	PASS
		VN	TN	2.98	0.001111	± 2.5	PASS
		VH	TN	2.57	0.000958	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.82	0.001526	± 2.5	PASS
		VN	-20	1.16	0.000463	± 2.5	PASS
		VN	-10	-1.09	-0.000435	± 2.5	PASS
		VN	0	2.82	0.001126	± 2.5	PASS
		VN	10	3.14	0.001254	± 2.5	PASS
		VN	20	4.75	0.001897	± 2.5	PASS
		VN	30	-0.63	-0.000252	± 2.5	PASS
		VN	40	0.91	0.000363	± 2.5	PASS
		VN	50	-1.42	-0.000567	± 2.5	PASS
	MCH	VN	-30	-1.01	-0.000390	± 2.5	PASS
		VN	-20	-0.78	-0.000301	± 2.5	PASS

		VN	-10	0.16	0.000062	± 2.5	PASS	
		VN	0	4.49	0.001732	± 2.5	PASS	
		VN	10	-0.1	-0.000039	± 2.5	PASS	
		VN	20	0.01	0.000004	± 2.5	PASS	
		VN	30	1.2	0.000463	± 2.5	PASS	
		VN	40	2.24	0.000864	± 2.5	PASS	
		VN	50	-0.77	-0.000297	± 2.5	PASS	
	HCH	VN	-30	-1.81	-0.000675	± 2.5	PASS	
		VN	-20	-0.1	-0.000037	± 2.5	PASS	
		VN	-10	-0.17	-0.000063	± 2.5	PASS	
		VN	0	3.84	0.001432	± 2.5	PASS	
		VN	10	3.9	0.001454	± 2.5	PASS	
		VN	20	-1.41	-0.000526	± 2.5	PASS	
		VN	30	2.19	0.000816	± 2.5	PASS	
		VN	40	-1.86	-0.000693	± 2.5	PASS	
		VN	50	1.12	0.000418	± 2.5	PASS	
	16QAM	LCH	VN	-30	0.98	0.000391	± 2.5	PASS
			VN	-20	4.43	0.001770	± 2.5	PASS
VN			-10	-0.68	-0.000272	± 2.5	PASS	
VN			0	1.94	0.000775	± 2.5	PASS	
VN			10	0.96	0.000383	± 2.5	PASS	
VN			20	2.22	0.000887	± 2.5	PASS	
VN			30	2.36	0.000943	± 2.5	PASS	
VN			40	-0.95	-0.000379	± 2.5	PASS	
VN			50	3.02	0.001206	± 2.5	PASS	
MCH		VN	-30	3.97	0.001531	± 2.5	PASS	
		VN	-20	4.27	0.001647	± 2.5	PASS	
		VN	-10	4.88	0.001882	± 2.5	PASS	
		VN	0	2.66	0.001026	± 2.5	PASS	
		VN	10	3.83	0.001477	± 2.5	PASS	
		VN	20	0.24	0.000093	± 2.5	PASS	
		VN	30	0.64	0.000247	± 2.5	PASS	
		VN	40	3.47	0.001338	± 2.5	PASS	
		VN	50	0.53	0.000204	± 2.5	PASS	
HCH		VN	-30	2.45	0.000913	± 2.5	PASS	
		VN	-20	4.01	0.001495	± 2.5	PASS	
		VN	-10	1.86	0.000693	± 2.5	PASS	
		VN	0	0.67	0.000250	± 2.5	PASS	
		VN	10	2.71	0.001010	± 2.5	PASS	
		VN	20	1.09	0.000406	± 2.5	PASS	
		VN	30	-0.21	-0.000078	± 2.5	PASS	

		VN	40	4.54	0.001692	± 2.5	PASS
		VN	50	-11.63	-0.004336	± 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	2.09	0.000834	± 2.5	PASS
		VN	TN	-0.93	-0.000371	± 2.5	PASS
		VH	TN	2.56	0.001022	± 2.5	PASS
	MCH	VL	TN	1.48	0.000571	± 2.5	PASS
		VN	TN	4.71	0.001816	± 2.5	PASS
		VH	TN	2.78	0.001072	± 2.5	PASS
	HCH	VL	TN	2.34	0.000873	± 2.5	PASS
		VN	TN	1.27	0.000474	± 2.5	PASS
		VH	TN	0.84	0.000313	± 2.5	PASS
16QAM	LCH	VL	TN	-0.59	-0.000235	± 2.5	PASS
		VN	TN	4.05	0.001616	± 2.5	PASS
		VH	TN	0.12	0.000048	± 2.5	PASS
	MCH	VL	TN	-0.81	-0.000312	± 2.5	PASS
		VN	TN	2.59	0.000999	± 2.5	PASS
		VH	TN	0.44	0.000170	± 2.5	PASS
	HCH	VL	TN	-0.53	-0.000198	± 2.5	PASS
		VN	TN	4.69	0.001750	± 2.5	PASS
		VH	TN	1.36	0.000507	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.65	-0.000259	± 2.5	PASS
		VN	-20	4.88	0.001947	± 2.5	PASS
		VN	-10	0.44	0.000176	± 2.5	PASS
		VN	0	3.96	0.001580	± 2.5	PASS
		VN	10	2.93	0.001169	± 2.5	PASS
		VN	20	-0.26	-0.000104	± 2.5	PASS
		VN	30	1.41	0.000563	± 2.5	PASS
		VN	40	-0.99	-0.000395	± 2.5	PASS
		VN	50	2.9	0.001157	± 2.5	PASS
	MCH	VN	-30	0.32	0.000123	± 2.5	PASS
		VN	-20	4.54	0.001751	± 2.5	PASS
		VN	-10	2.52	0.000972	± 2.5	PASS

		VN	0	3.51	0.001354	± 2.5	PASS
		VN	10	4.26	0.001643	± 2.5	PASS
		VN	20	-0.76	-0.000293	± 2.5	PASS
		VN	30	-0.95	-0.000366	± 2.5	PASS
		VN	40	1.19	0.000459	± 2.5	PASS
		VN	50	1.99	0.000767	± 2.5	PASS
	HCH	VN	-30	-1.6	-0.000597	± 2.5	PASS
		VN	-20	0.65	0.000243	± 2.5	PASS
		VN	-10	1.95	0.000728	± 2.5	PASS
		VN	0	-0.91	-0.000340	± 2.5	PASS
		VN	10	2.21	0.000825	± 2.5	PASS
		VN	20	1.5	0.000560	± 2.5	PASS
		VN	30	0.83	0.000310	± 2.5	PASS
		VN	40	3.11	0.001160	± 2.5	PASS
		VN	50	-1.41	-0.000526	± 2.5	PASS
16QAM	LCH	VN	-30	0.74	0.000295	± 2.5	PASS
		VN	-20	3.89	0.001552	± 2.5	PASS
		VN	-10	2.3	0.000918	± 2.5	PASS
		VN	0	2.37	0.000946	± 2.5	PASS
		VN	10	-0.92	-0.000367	± 2.5	PASS
		VN	20	-0.89	-0.000355	± 2.5	PASS
		VN	30	2.11	0.000842	± 2.5	PASS
		VN	40	0.04	0.000016	± 2.5	PASS
		VN	50	0.19	0.000076	± 2.5	PASS
	MCH	VN	-30	3.39	0.001307	± 2.5	PASS
		VN	-20	2.81	0.001084	± 2.5	PASS
		VN	-10	-1.06	-0.000409	± 2.5	PASS
		VN	0	-0.93	-0.000359	± 2.5	PASS
		VN	10	0.29	0.000112	± 2.5	PASS
		VN	20	2.14	0.000825	± 2.5	PASS
		VN	30	1.4	0.000540	± 2.5	PASS
		VN	40	1.5	0.000578	± 2.5	PASS
		VN	50	1.95	0.000752	± 2.5	PASS
	HCH	VN	-30	-1.7	-0.000634	± 2.5	PASS
		VN	-20	2.68	0.001000	± 2.5	PASS
		VN	-10	-0.89	-0.000332	± 2.5	PASS
		VN	0	0.85	0.000317	± 2.5	PASS
		VN	10	3.3	0.001231	± 2.5	PASS
		VN	20	4.43	0.001653	± 2.5	PASS
		VN	30	1.01	0.000377	± 2.5	PASS
		VN	40	4.98	0.001858	± 2.5	PASS

		VN	50	-11.63	-0.004340	± 2.5	PASS
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