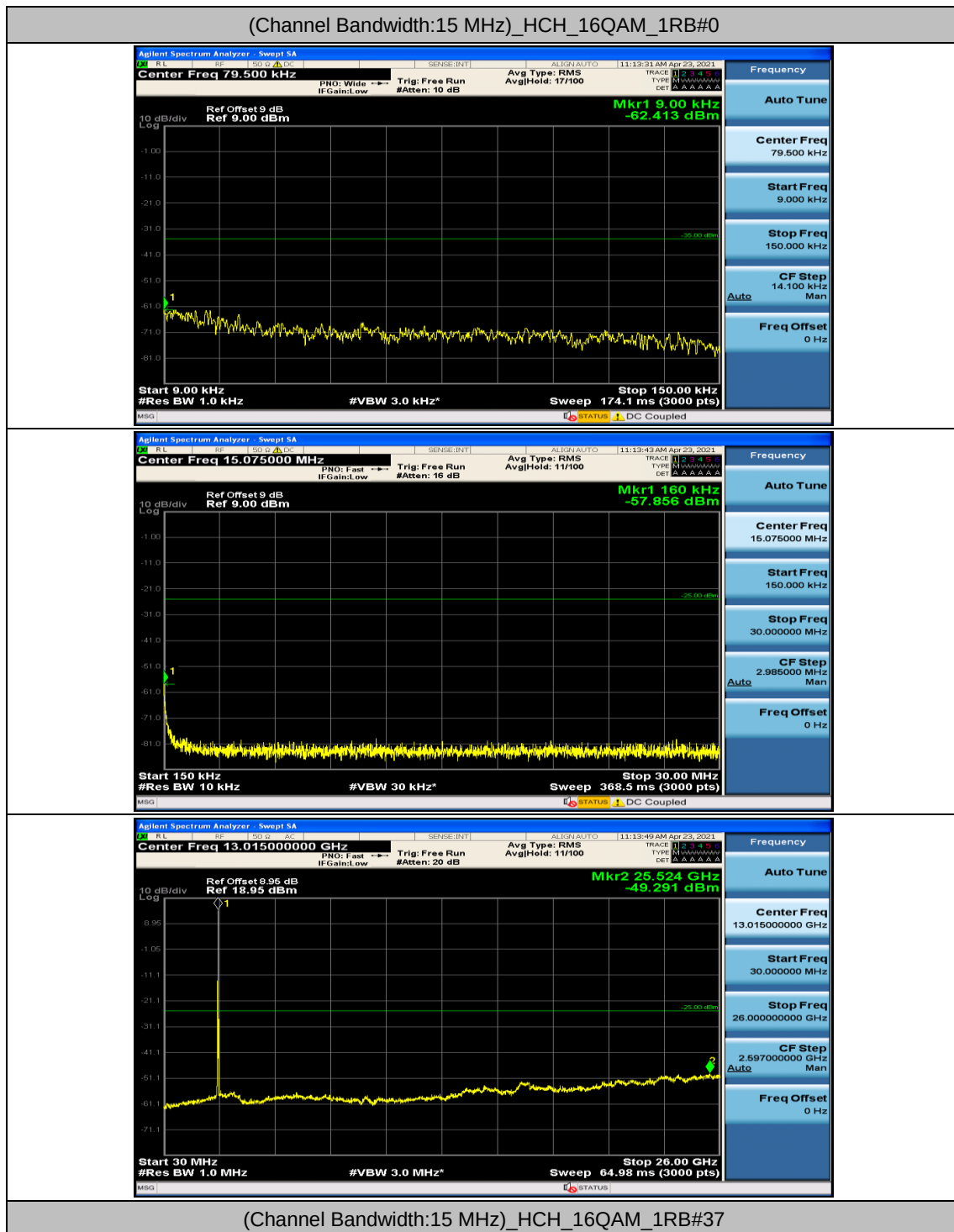
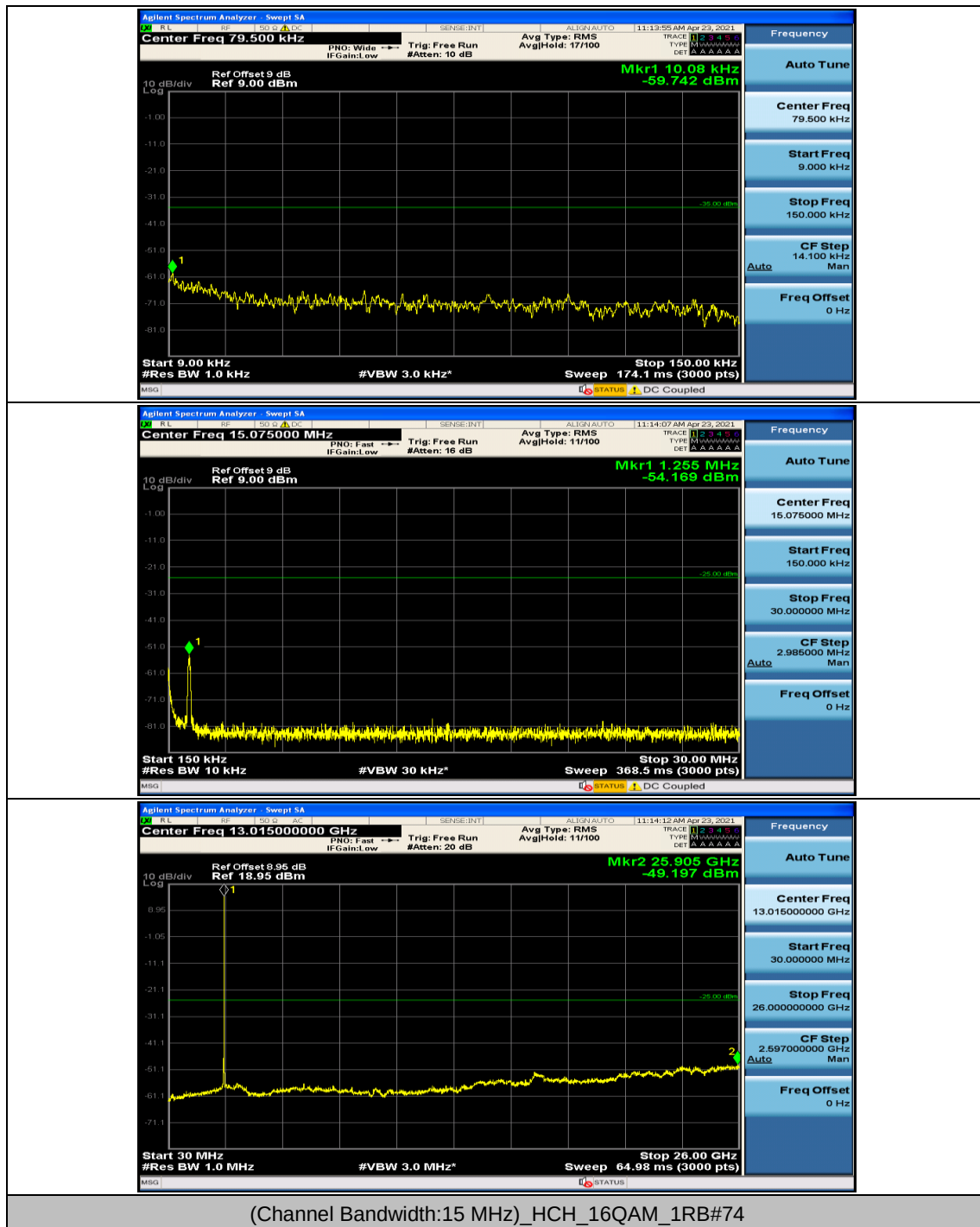
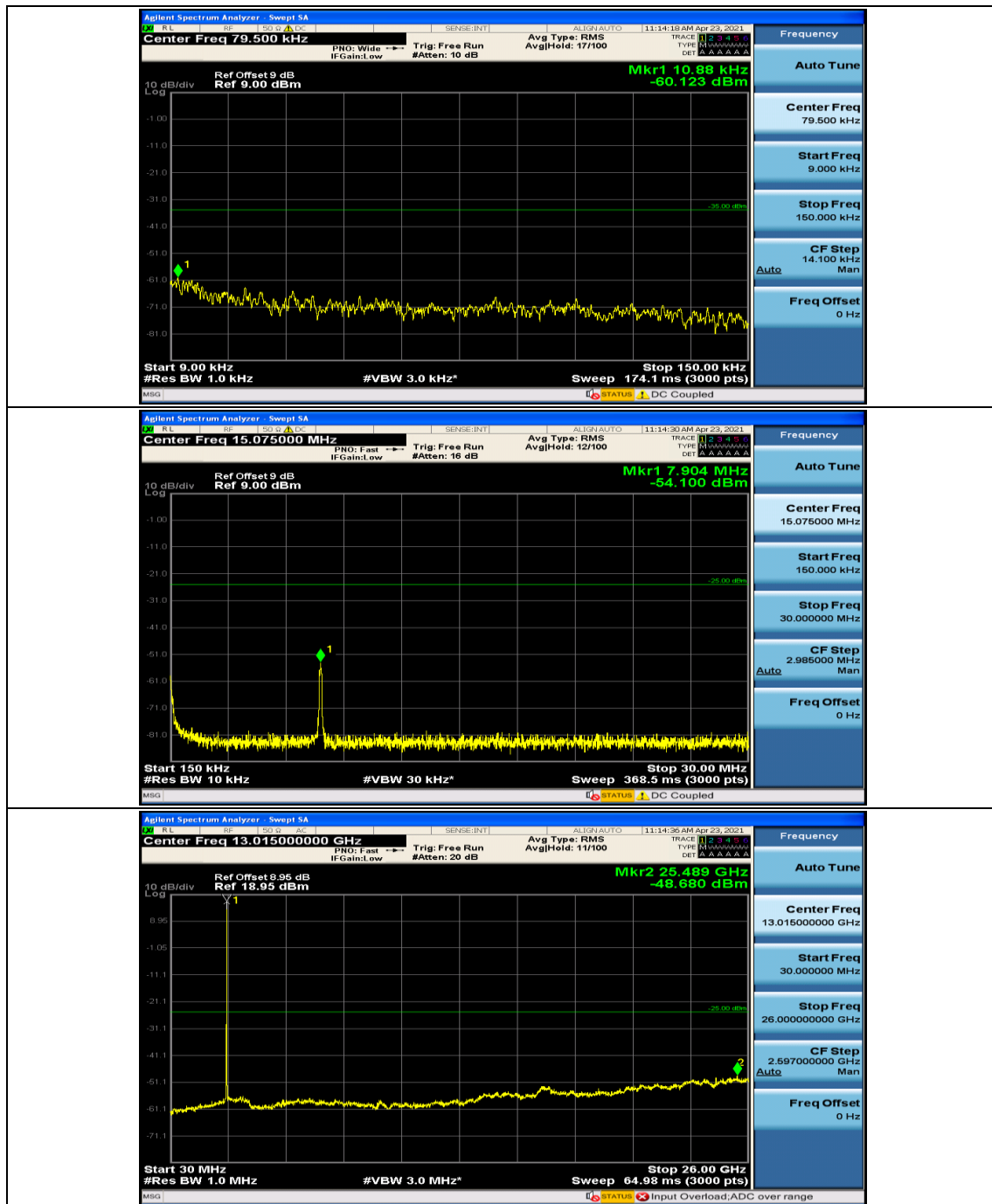
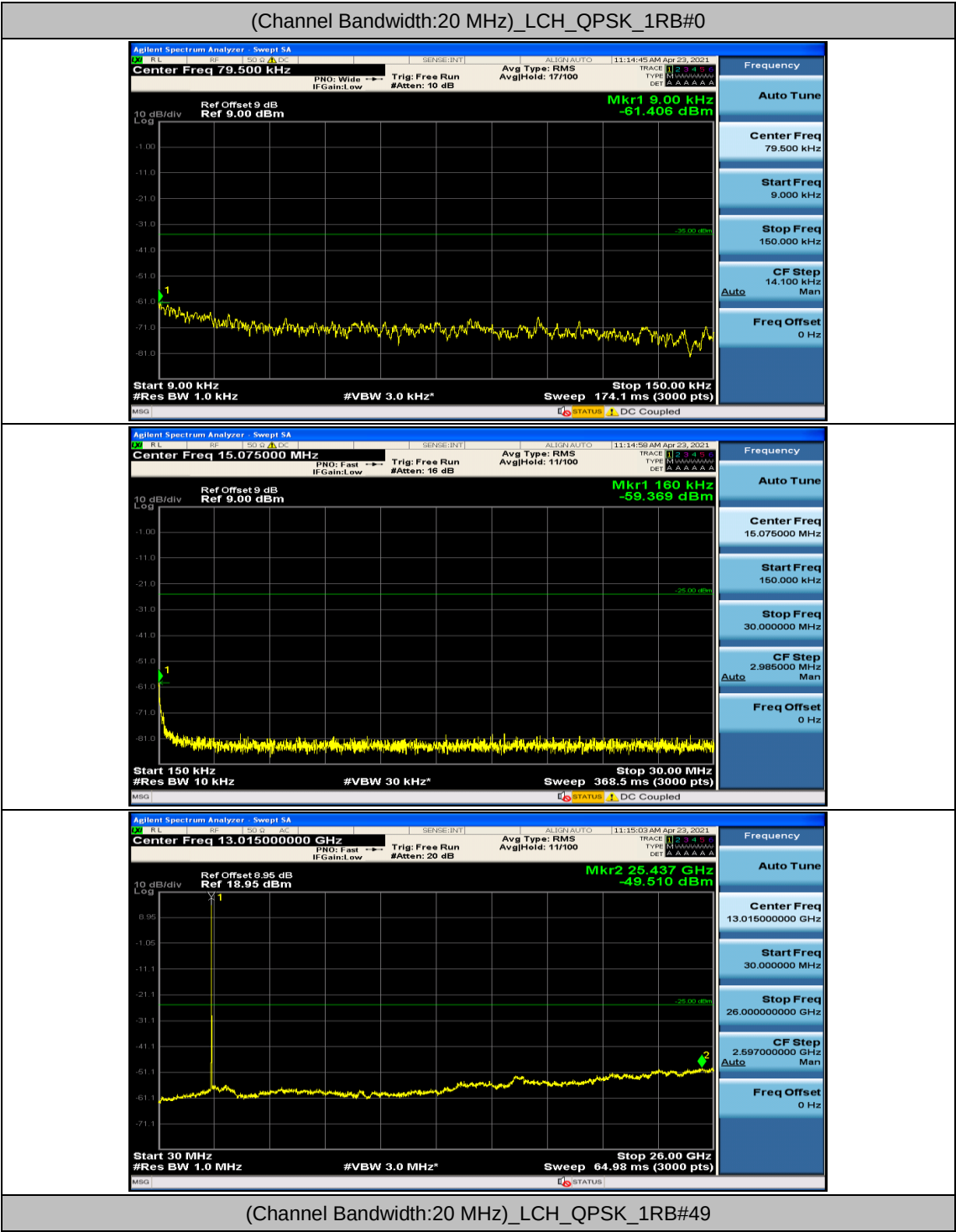


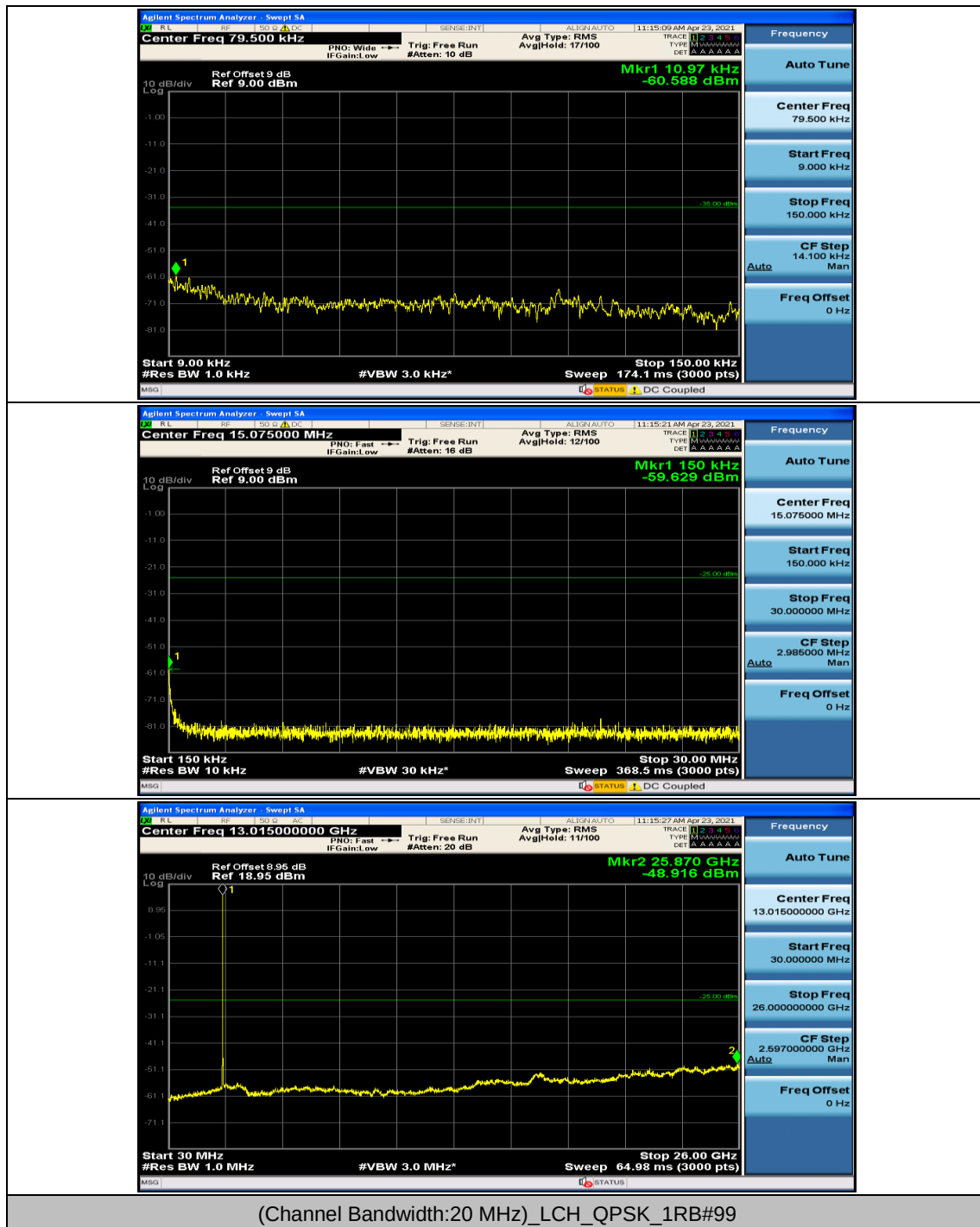


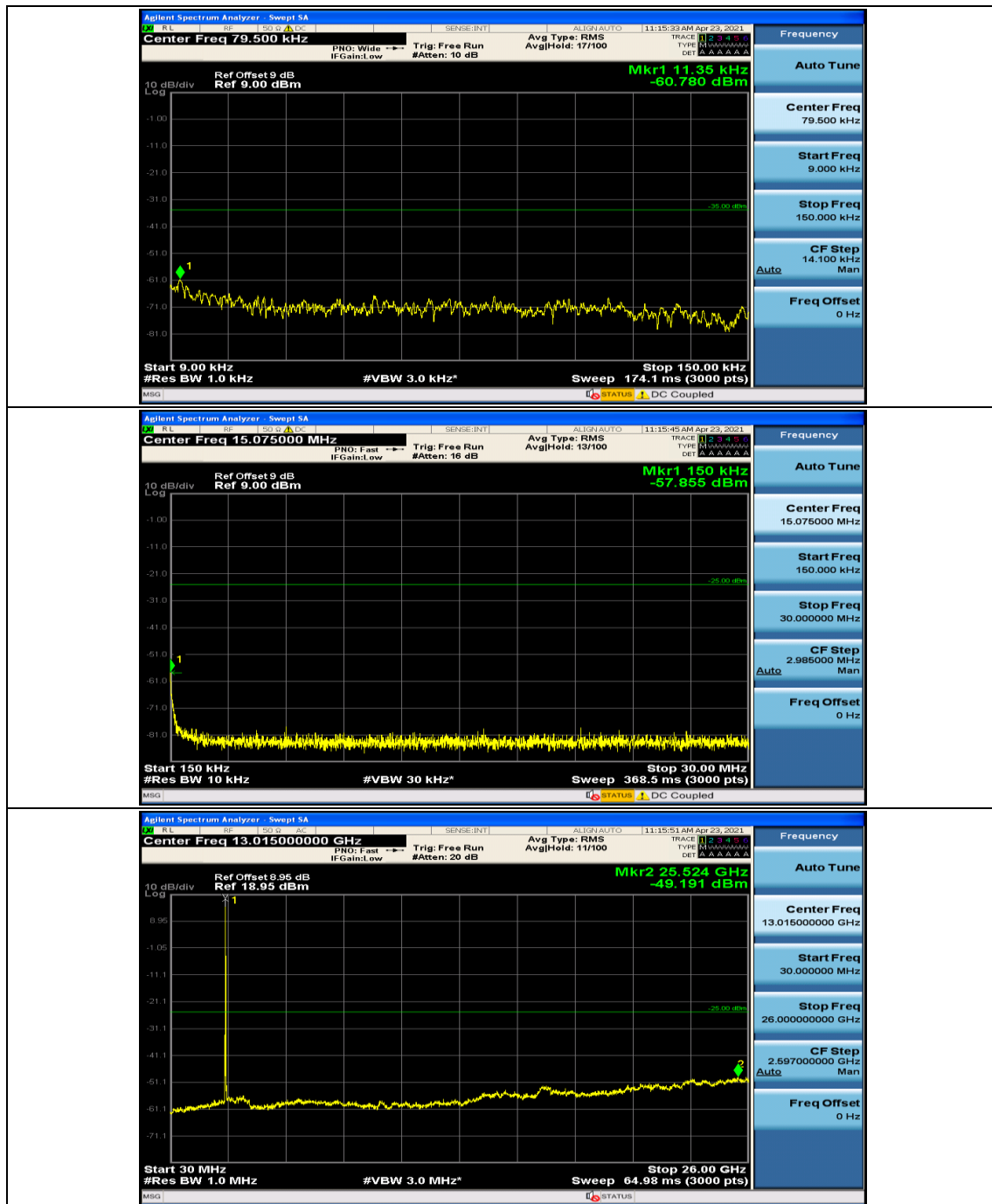


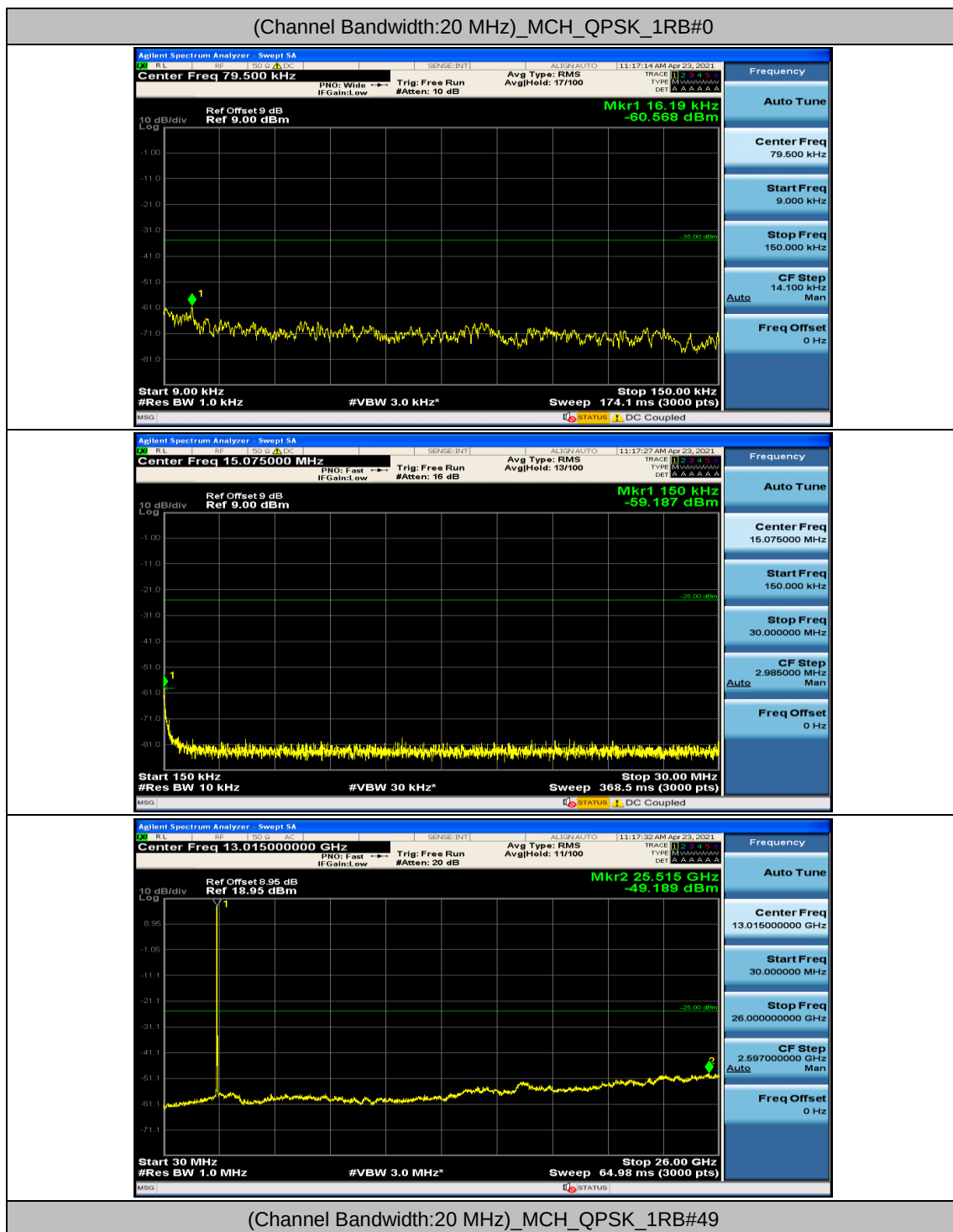


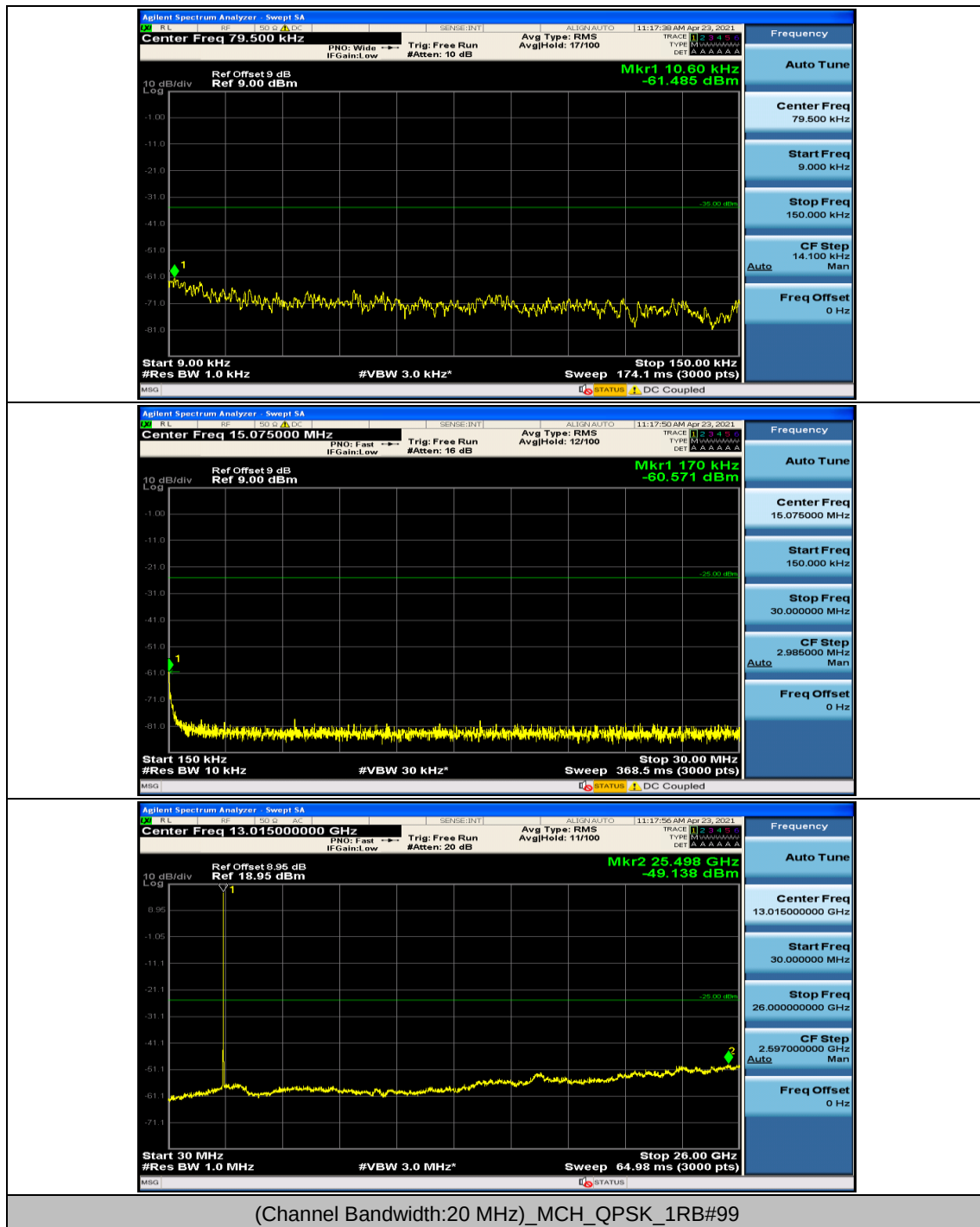
Channel Bandwidth: 20 MHz

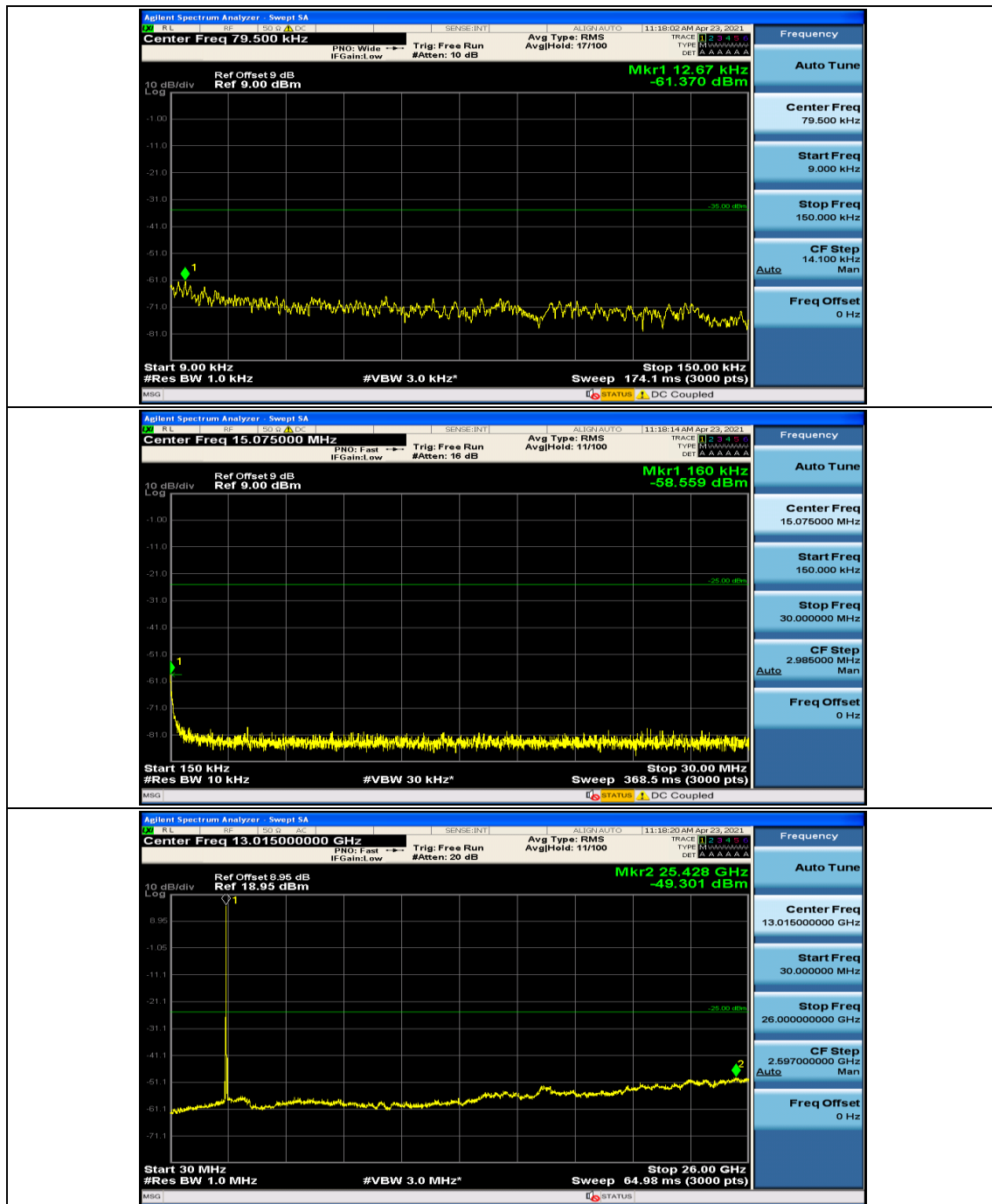


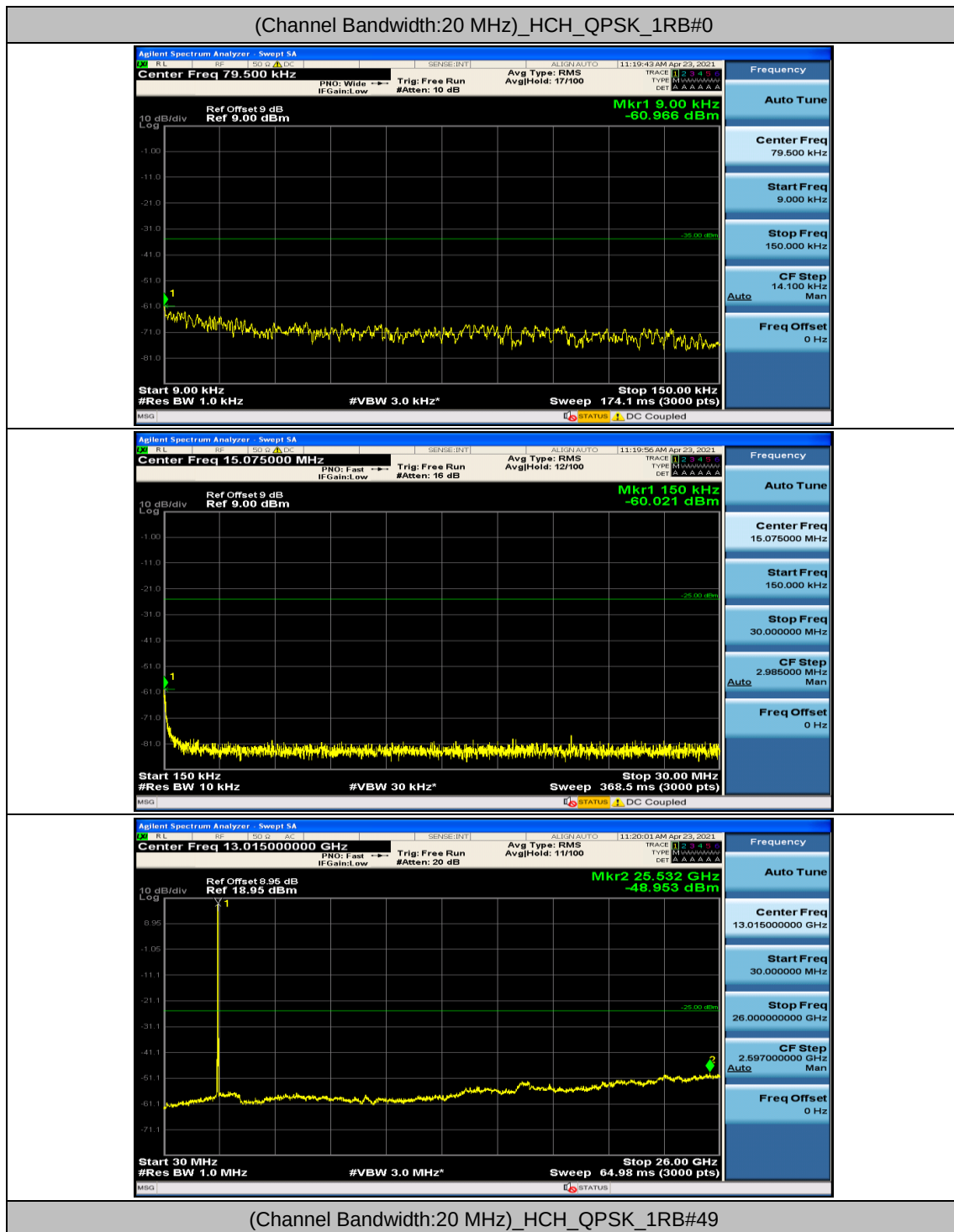


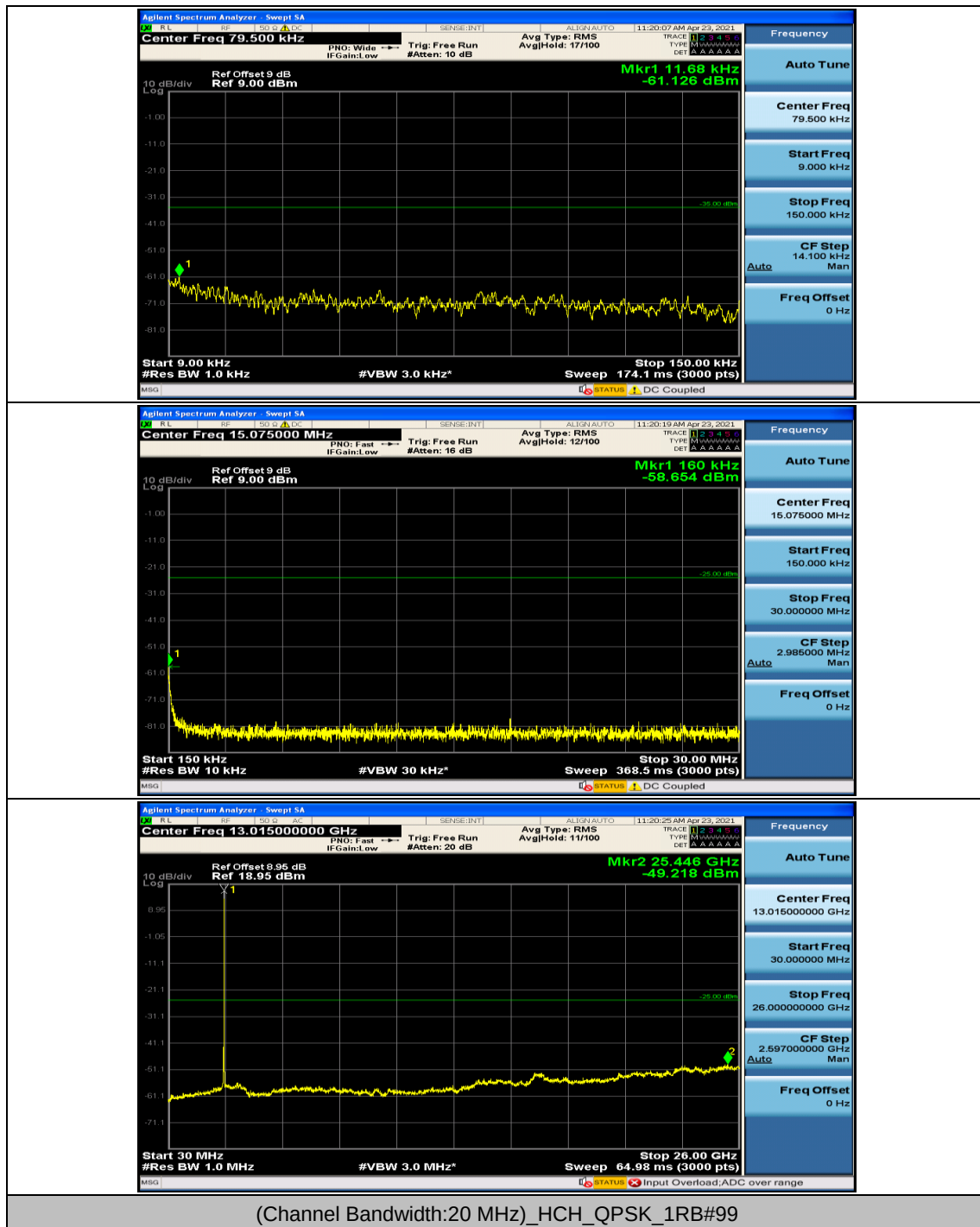


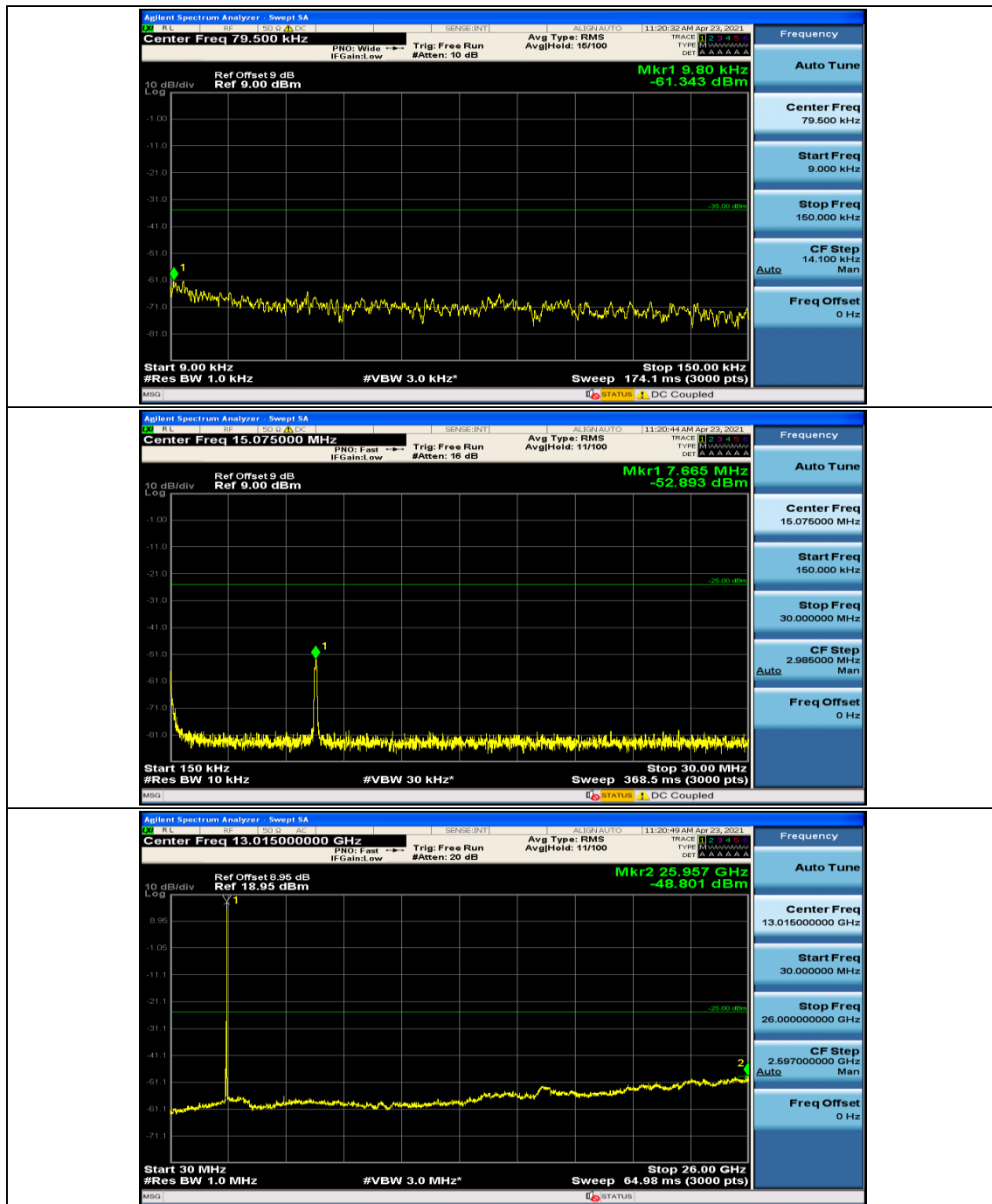


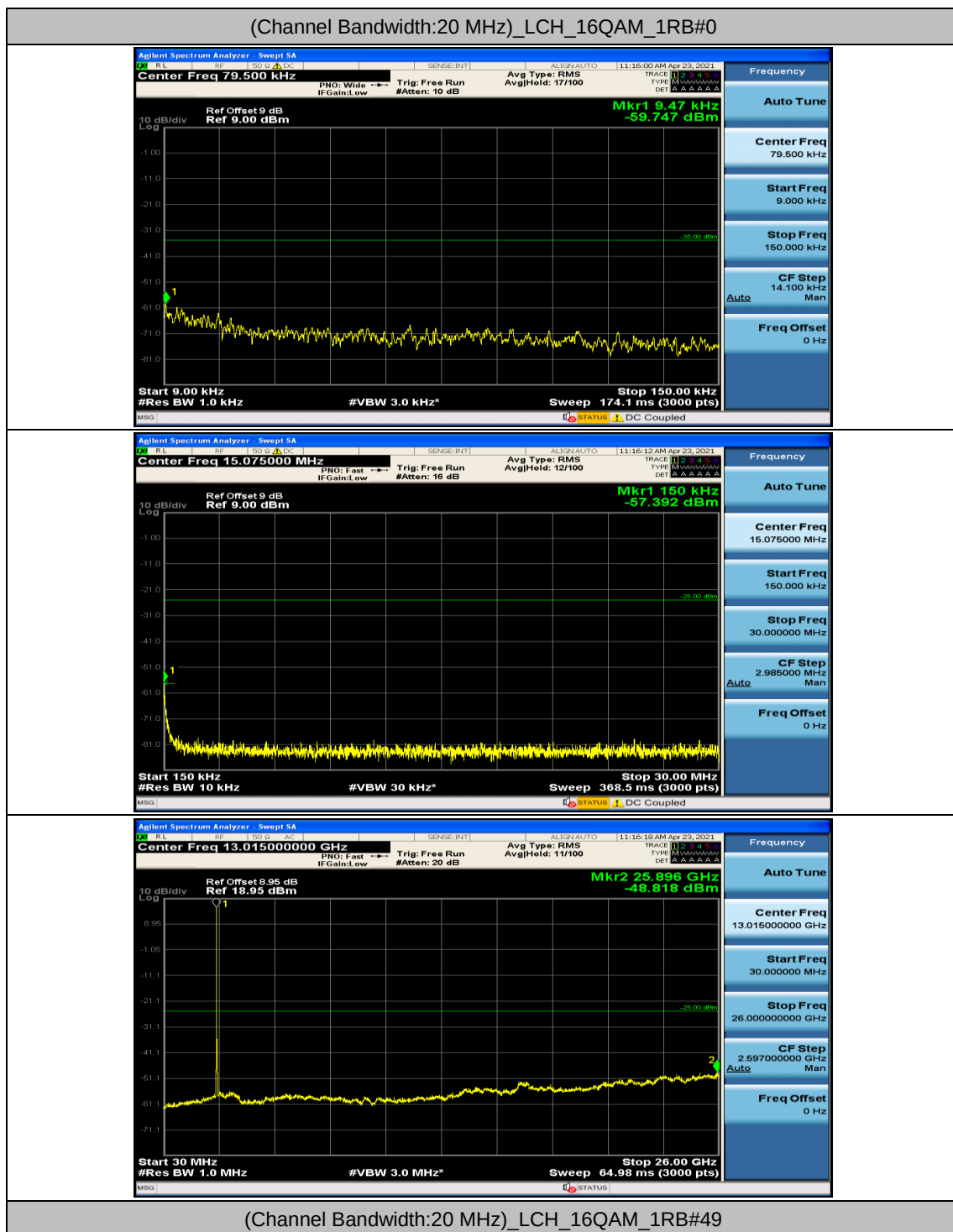


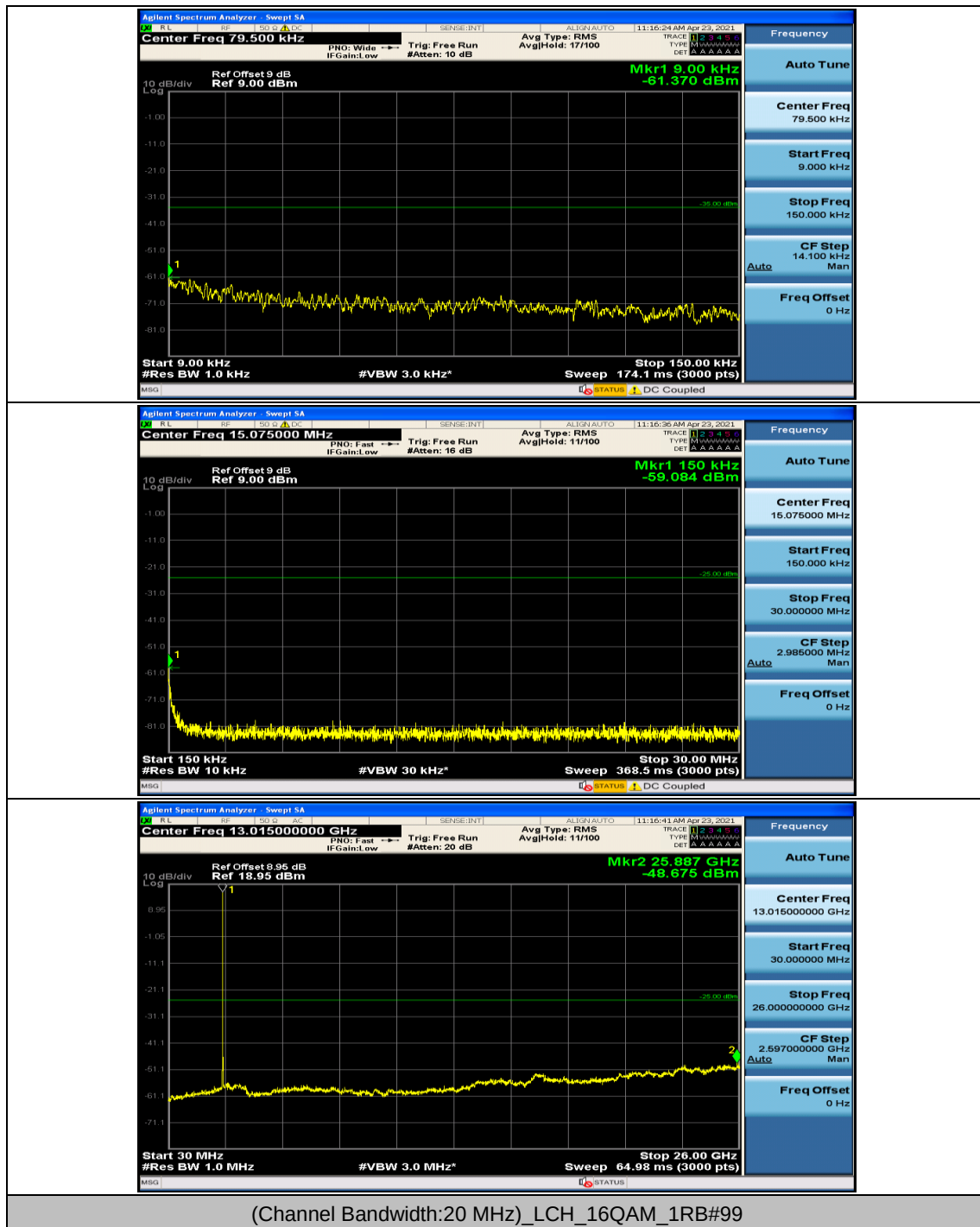


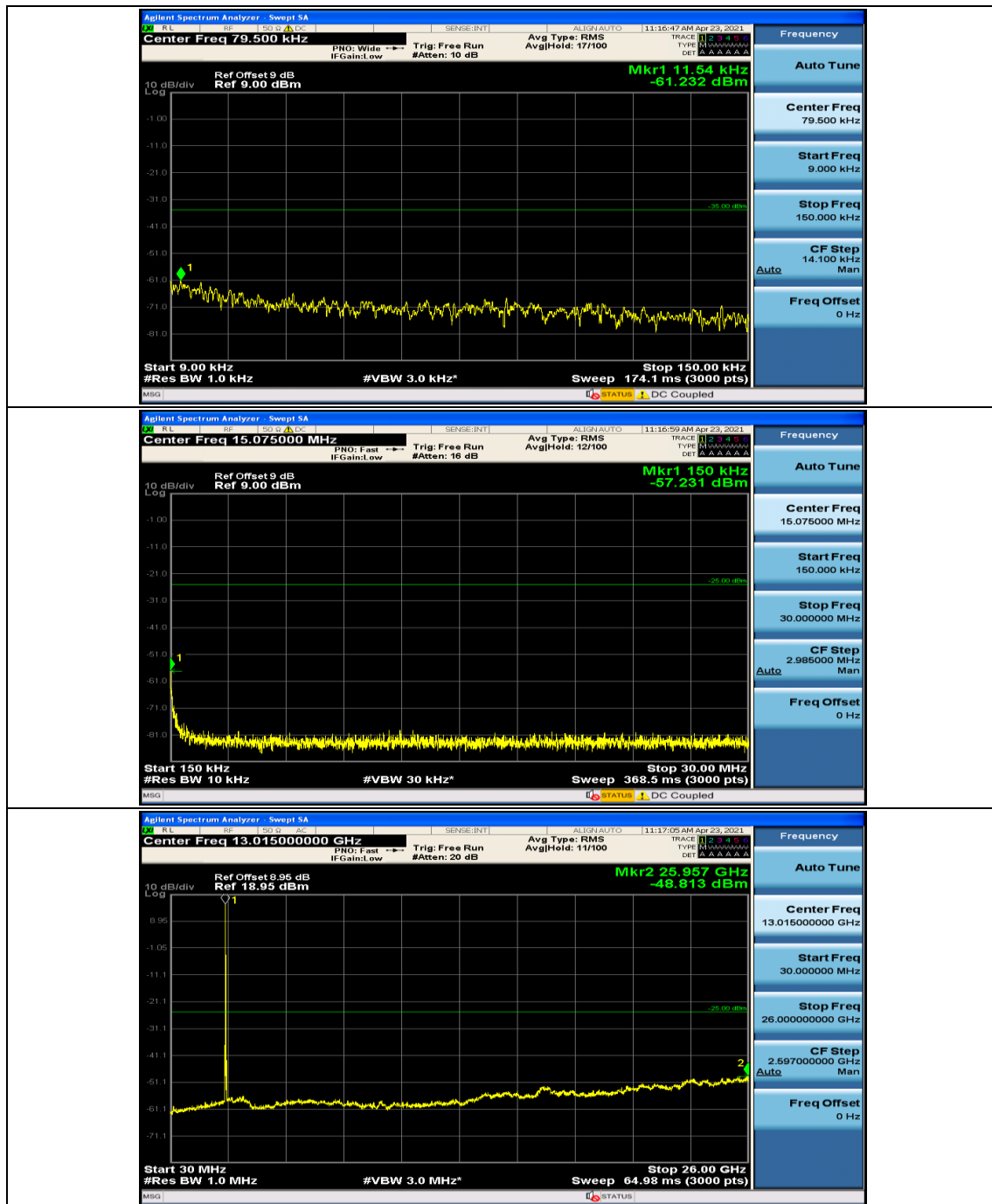


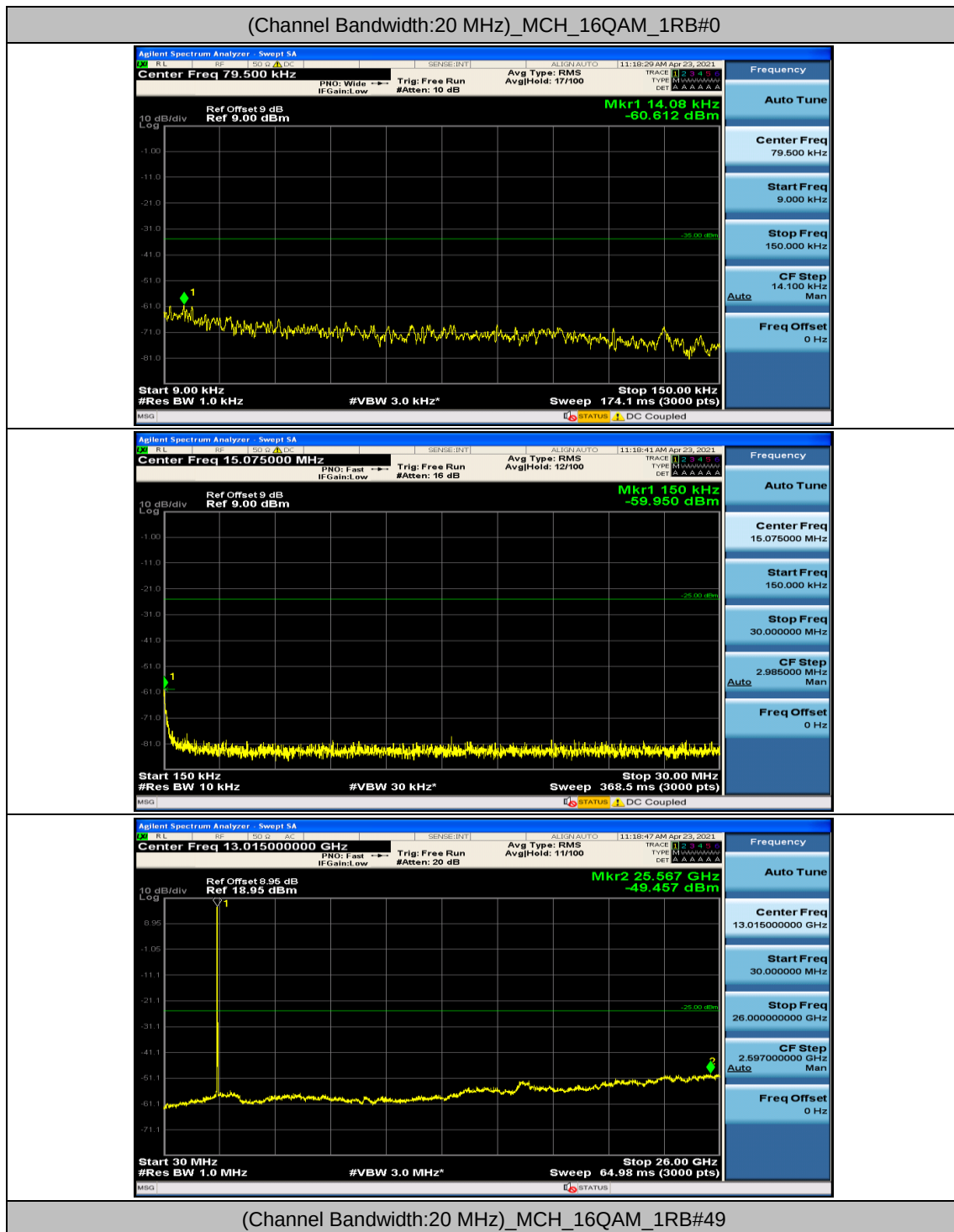


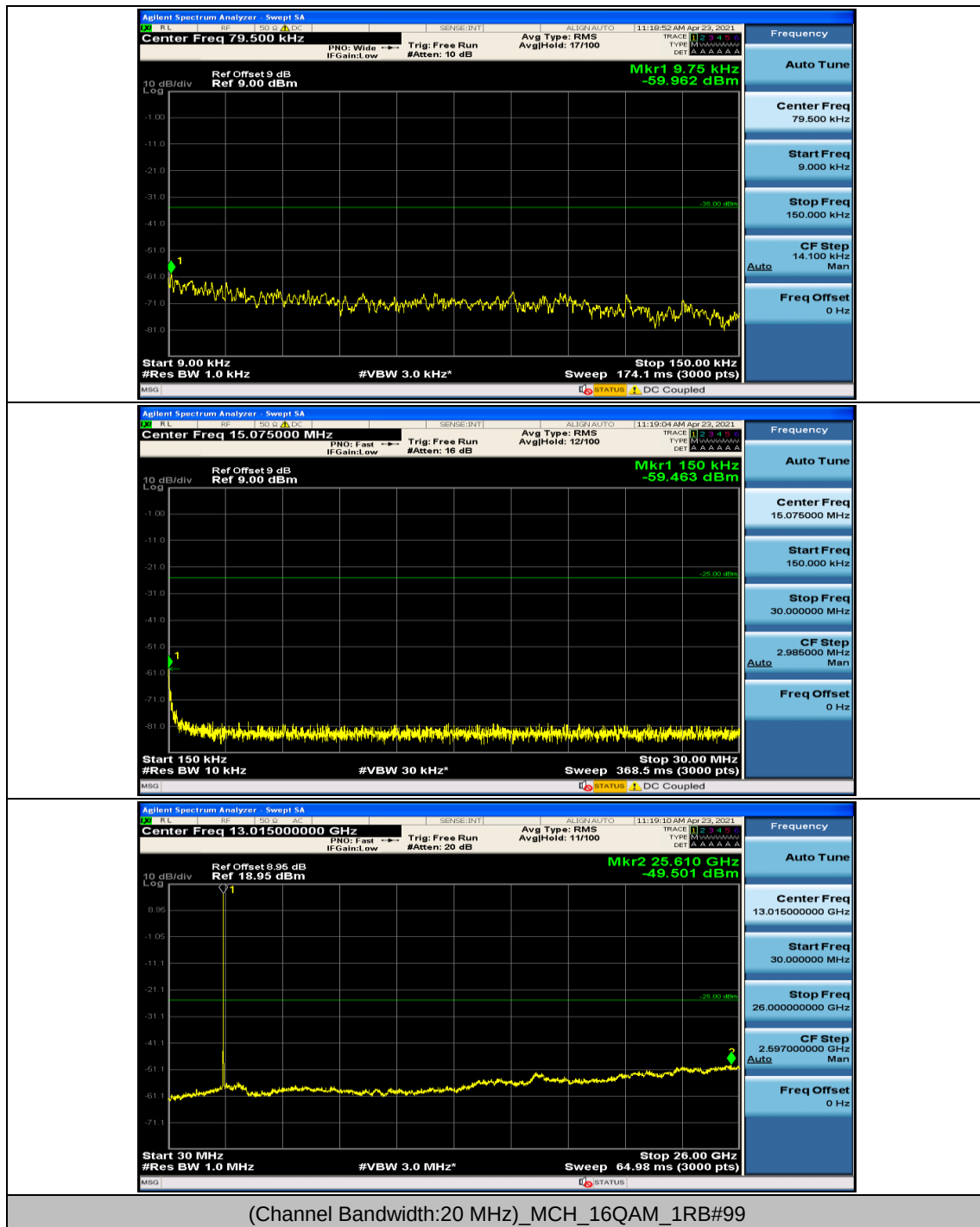


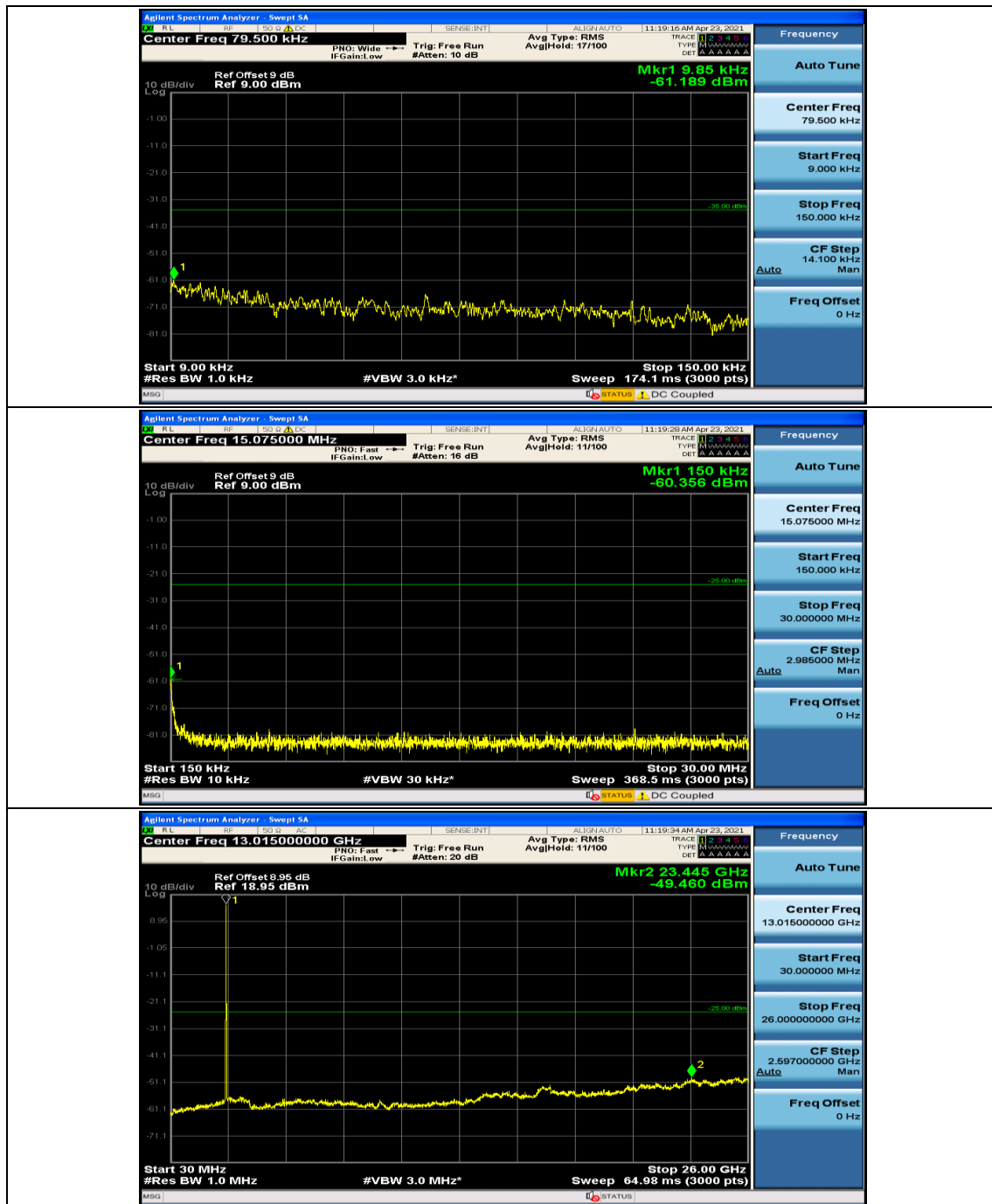


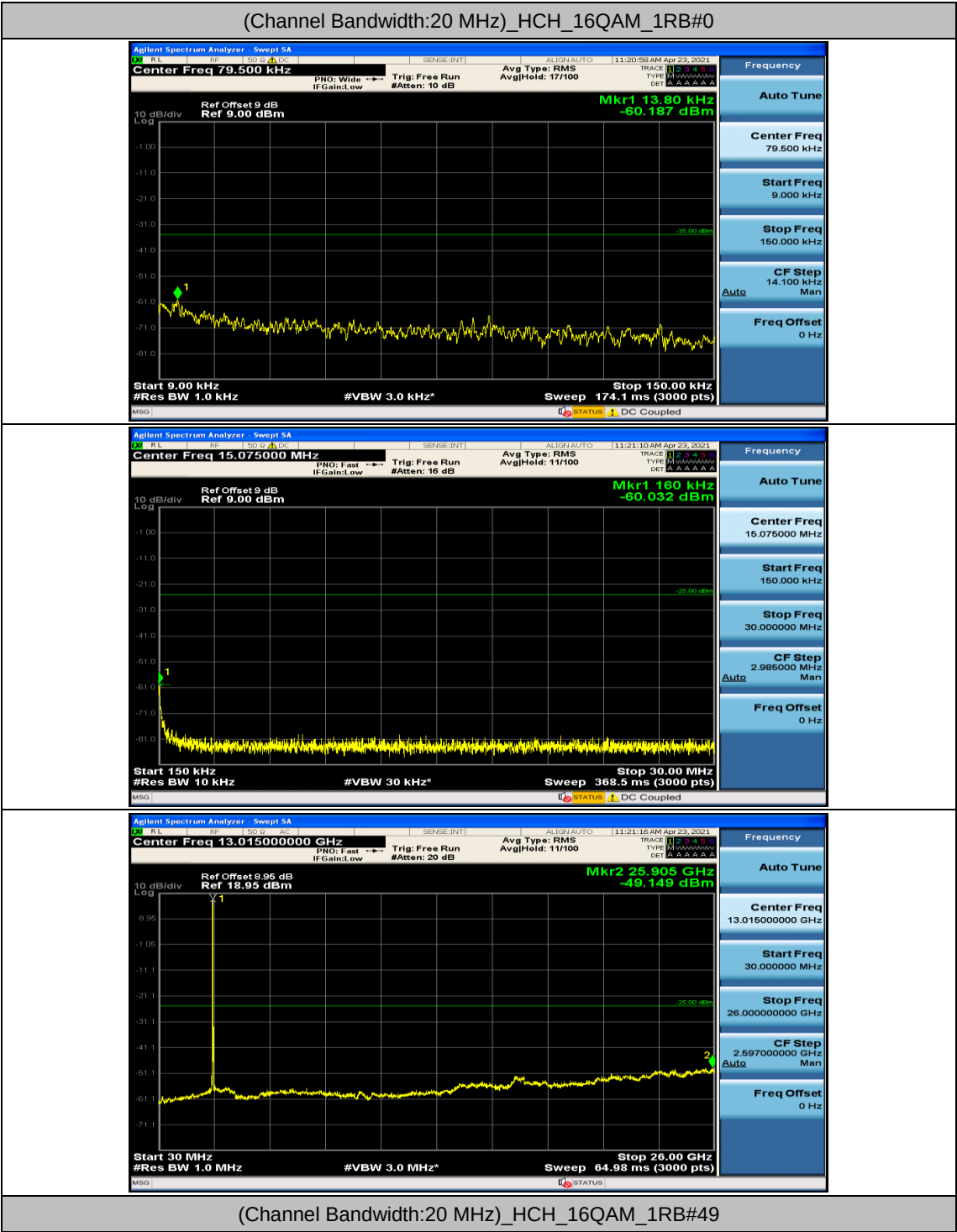


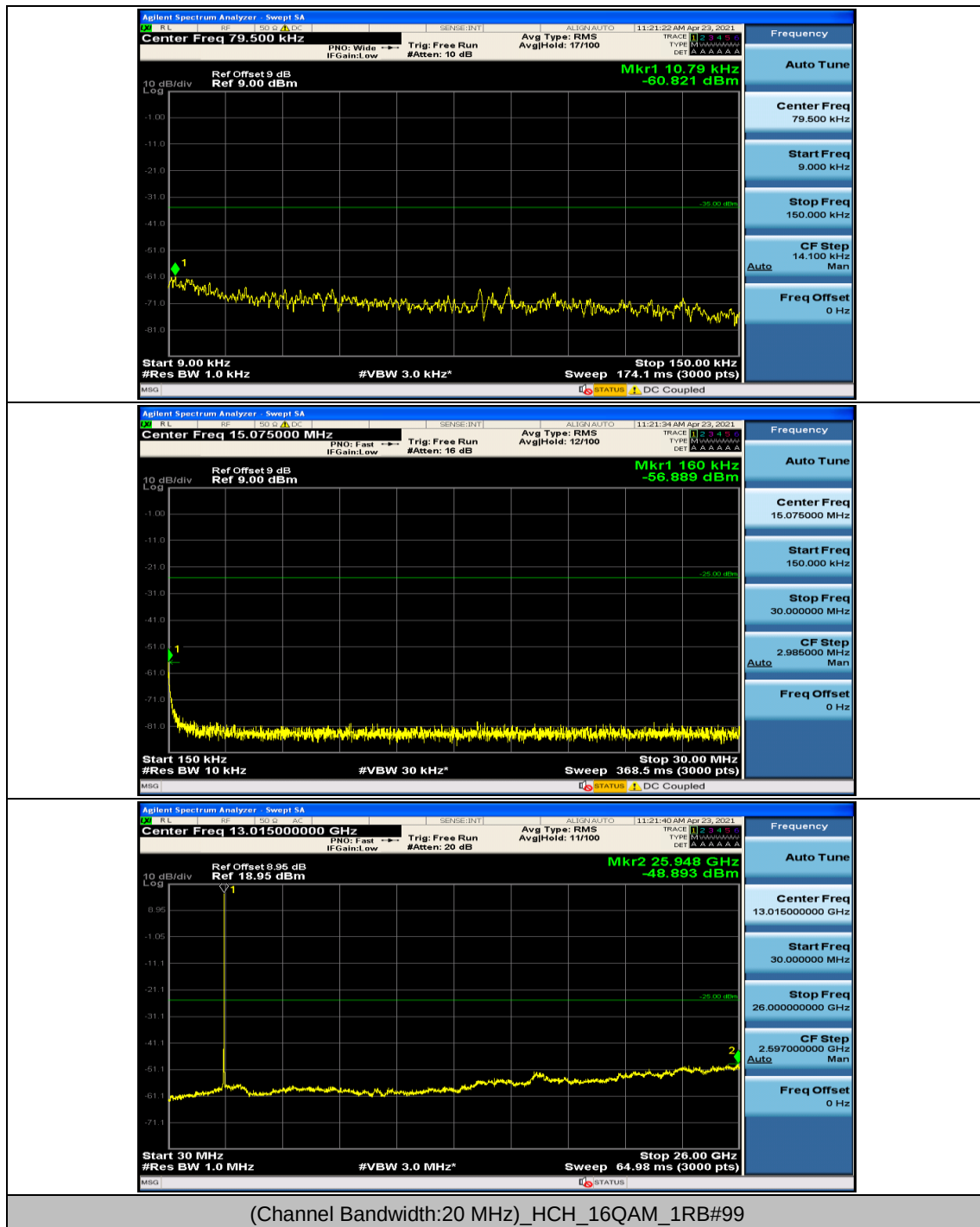


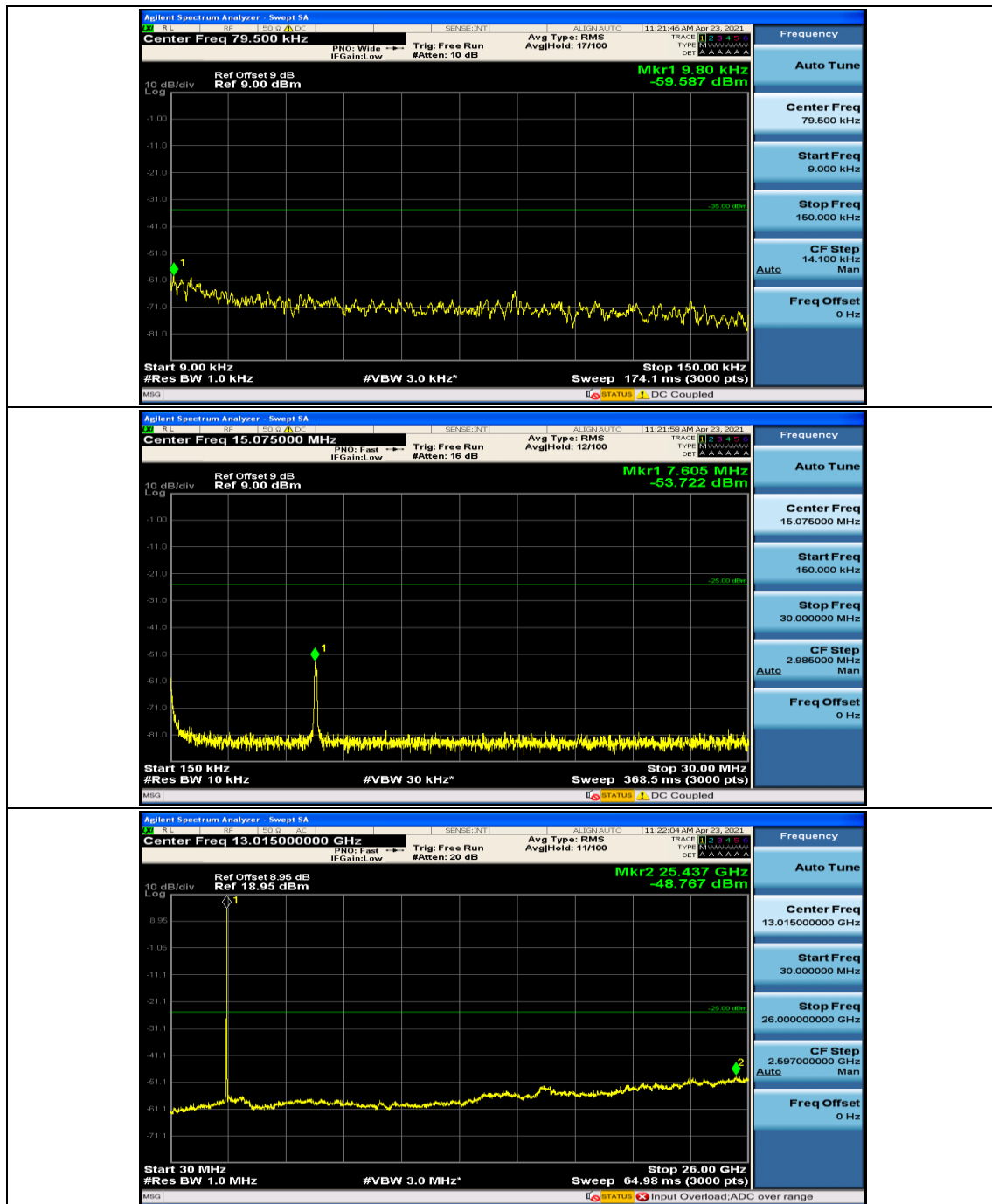












Appendix F: Frequency Stability

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	4.92	0.001966	± 2.5	PASS
		VN	TN	1	0.000400	± 2.5	PASS
		VH	TN	3.06	0.001223	± 2.5	PASS
	MCH	VL	TN	-0.89	-0.000351	± 2.5	PASS
		VN	TN	4.86	0.001917	± 2.5	PASS
		VH	TN	1.52	0.000600	± 2.5	PASS
	HCH	VL	TN	4.44	0.001729	± 2.5	PASS
		VN	TN	0.24	0.000093	± 2.5	PASS
		VH	TN	-0.12	-0.000047	± 2.5	PASS
16QAM	LCH	VL	TN	2.28	0.000911	± 2.5	PASS
		VN	TN	4.02	0.001606	± 2.5	PASS
		VH	TN	2.79	0.001115	± 2.5	PASS
	MCH	VL	TN	4.5	0.001775	± 2.5	PASS
		VN	TN	3.11	0.001227	± 2.5	PASS
		VH	TN	2.82	0.001112	± 2.5	PASS
	HCH	VL	TN	0.78	0.000304	± 2.5	PASS
		VN	TN	-0.48	-0.000187	± 2.5	PASS
		VH	TN	1.32	0.000514	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.02	-0.000008	± 2.5	PASS
		VN	-20	4.22	0.001686	± 2.5	PASS
		VN	-10	0.44	0.000176	± 2.5	PASS
		VN	0	3.32	0.001327	± 2.5	PASS
		VN	10	-0.17	-0.000068	± 2.5	PASS
		VN	20	3.27	0.001307	± 2.5	PASS
		VN	30	1.92	0.000767	± 2.5	PASS
		VN	40	-0.01	-0.000004	± 2.5	PASS
		VN	50	-0.85	-0.000340	± 2.5	PASS

	MCH	VN	-30	3.48	0.001373	± 2.5	PASS
		VN	-20	4.48	0.001767	± 2.5	PASS
		VN	-10	3.71	0.001464	± 2.5	PASS
		VN	0	1.9	0.000750	± 2.5	PASS
		VN	10	0.13	0.000051	± 2.5	PASS
		VN	20	4.28	0.001688	± 2.5	PASS
		VN	30	1.9	0.000750	± 2.5	PASS
		VN	40	0.15	0.000059	± 2.5	PASS
		VN	50	3.67	0.001448	± 2.5	PASS
	HCH	VN	-30	-1.32	-0.000514	± 2.5	PASS
		VN	-20	4.66	0.001815	± 2.5	PASS
		VN	-10	1.54	0.000600	± 2.5	PASS
		VN	0	3.83	0.001492	± 2.5	PASS
		VN	10	2.85	0.001110	± 2.5	PASS
		VN	20	0.24	0.000093	± 2.5	PASS
		VN	30	4.27	0.001663	± 2.5	PASS
		VN	40	2.56	0.000997	± 2.5	PASS
		VN	50	1.3	0.000506	± 2.5	PASS
16QAM	LCH	VN	-30	1.05	0.000420	± 2.5	PASS
		VN	-20	2.73	0.001091	± 2.5	PASS
		VN	-10	0.15	0.000060	± 2.5	PASS
		VN	0	1.71	0.000683	± 2.5	PASS
		VN	10	3.79	0.001514	± 2.5	PASS
		VN	20	0.32	0.000128	± 2.5	PASS
		VN	30	3.22	0.001287	± 2.5	PASS
		VN	40	4.44	0.001774	± 2.5	PASS
		VN	50	4.98	0.001990	± 2.5	PASS
	MCH	VN	-30	-0.83	-0.000327	± 2.5	PASS
		VN	-20	4.12	0.001625	± 2.5	PASS
		VN	-10	3.31	0.001306	± 2.5	PASS
		VN	0	-0.94	-0.000371	± 2.5	PASS
		VN	10	3.92	0.001546	± 2.5	PASS
		VN	20	2.14	0.000844	± 2.5	PASS
		VN	30	-0.02	-0.000008	± 2.5	PASS
		VN	40	0.55	0.000217	± 2.5	PASS
		VN	50	0.71	0.000280	± 2.5	PASS
	HCH	VN	-30	1.67	0.000650	± 2.5	PASS
		VN	-20	3.26	0.001270	± 2.5	PASS
		VN	-10	0.1	0.000039	± 2.5	PASS
		VN	0	1.75	0.000682	± 2.5	PASS
		VN	10	3.46	0.001348	± 2.5	PASS

		VN	20	4.85	0.001889	± 2.5	PASS
		VN	30	-1.67	-0.000650	± 2.5	PASS
		VN	40	-1.03	-0.000401	± 2.5	PASS
		VN	50	0.73	0.000284	± 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	-0.03	-0.000012	± 2.5	PASS
		VN	TN	2.97	0.001186	± 2.5	PASS
		VH	TN	-1.26	-0.000503	± 2.5	PASS
	MCH	VL	TN	4.36	0.001720	± 2.5	PASS
		VN	TN	3.79	0.001495	± 2.5	PASS
		VH	TN	-0.59	-0.000233	± 2.5	PASS
	HCH	VL	TN	3.24	0.001263	± 2.5	PASS
		VN	TN	0.2	0.000078	± 2.5	PASS
		VH	TN	1.53	0.000596	± 2.5	PASS
16QAM	LCH	VL	TN	-0.08	-0.000032	± 2.5	PASS
		VN	TN	-0.36	-0.000144	± 2.5	PASS
		VH	TN	1.83	0.000731	± 2.5	PASS
	MCH	VL	TN	0.91	0.000359	± 2.5	PASS
		VN	TN	2.14	0.000844	± 2.5	PASS
		VH	TN	0.2	0.000079	± 2.5	PASS
	HCH	VL	TN	3.49	0.001361	± 2.5	PASS
		VN	TN	0.53	0.000207	± 2.5	PASS
		VH	TN	-1.61	-0.000628	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.72	0.000287	± 2.5	PASS
		VN	-20	-1.27	-0.000507	± 2.5	PASS
		VN	-10	2.88	0.001150	± 2.5	PASS
		VN	0	-1.92	-0.000766	± 2.5	PASS
		VN	10	-0.9	-0.000359	± 2.5	PASS
		VN	20	3.09	0.001234	± 2.5	PASS
		VN	30	2.48	0.000990	± 2.5	PASS
		VN	40	4.37	0.001745	± 2.5	PASS
		VN	50	0.15	0.000060	± 2.5	PASS
	MCH	VN	-30	-0.38	-0.000150	± 2.5	PASS

		VN	-20	1.17	0.000462	± 2.5	PASS
		VN	-10	-0.62	-0.000245	± 2.5	PASS
		VN	0	4.85	0.001913	± 2.5	PASS
		VN	10	3.71	0.001464	± 2.5	PASS
		VN	20	2.34	0.000923	± 2.5	PASS
		VN	30	1.62	0.000639	± 2.5	PASS
		VN	40	3.44	0.001357	± 2.5	PASS
		VN	50	3.9	0.001538	± 2.5	PASS
	HCH	VN	-30	2.83	0.001103	± 2.5	PASS
		VN	-20	0.44	0.000172	± 2.5	PASS
		VN	-10	4.6	0.001793	± 2.5	PASS
		VN	0	0.9	0.000351	± 2.5	PASS
		VN	10	-1.54	-0.000600	± 2.5	PASS
		VN	20	0.92	0.000359	± 2.5	PASS
		VN	30	4.8	0.001871	± 2.5	PASS
		VN	40	0.98	0.000382	± 2.5	PASS
		VN	50	3.33	0.001298	± 2.5	PASS
16QAM	LCH	VN	-30	1.02	0.000407	± 2.5	PASS
		VN	-20	3.06	0.001222	± 2.5	PASS
		VN	-10	-1.03	-0.000411	± 2.5	PASS
		VN	0	-1.59	-0.000635	± 2.5	PASS
		VN	10	-0.91	-0.000363	± 2.5	PASS
		VN	20	3.98	0.001589	± 2.5	PASS
		VN	30	0.84	0.000335	± 2.5	PASS
		VN	40	4.77	0.001904	± 2.5	PASS
		VN	50	1.74	0.000695	± 2.5	PASS
	MCH	VN	-30	-1.22	-0.000481	± 2.5	PASS
		VN	-20	2.13	0.000840	± 2.5	PASS
		VN	-10	1.2	0.000473	± 2.5	PASS
		VN	0	4.24	0.001673	± 2.5	PASS
		VN	10	4.62	0.001822	± 2.5	PASS
		VN	20	-1.47	-0.000580	± 2.5	PASS
		VN	30	1.63	0.000643	± 2.5	PASS
		VN	40	4.58	0.001807	± 2.5	PASS
		VN	50	3.61	0.001424	± 2.5	PASS
	HCH	VN	-30	2.74	0.001068	± 2.5	PASS
		VN	-20	4.2	0.001637	± 2.5	PASS
		VN	-10	-1.06	-0.000413	± 2.5	PASS
		VN	0	3.93	0.001532	± 2.5	PASS
		VN	10	0.67	0.000261	± 2.5	PASS
		VN	20	0.86	0.000335	± 2.5	PASS

		VN	30	4.34	0.001692	± 2.5	PASS
		VN	40	-1.26	-0.000491	± 2.5	PASS
		VN	50	-1.37	-0.000534	± 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	0.26	0.000104	± 2.5	PASS
		VN	TN	0.85	0.000339	± 2.5	PASS
		VH	TN	-0.36	-0.000144	± 2.5	PASS
	MCH	VL	TN	2.15	0.000848	± 2.5	PASS
		VN	TN	-1.84	-0.000726	± 2.5	PASS
		VH	TN	3.43	0.001353	± 2.5	PASS
	HCH	VL	TN	1.89	0.000738	± 2.5	PASS
		VN	TN	2.86	0.001116	± 2.5	PASS
		VH	TN	0.58	0.000226	± 2.5	PASS
16QAM	LCH	VL	TN	0.26	0.000104	± 2.5	PASS
		VN	TN	0.26	0.000104	± 2.5	PASS
		VH	TN	4.82	0.001922	± 2.5	PASS
	MCH	VL	TN	-0.61	-0.000241	± 2.5	PASS
		VN	TN	4.87	0.001921	± 2.5	PASS
		VH	TN	-1.31	-0.000517	± 2.5	PASS
	HCH	VL	TN	-1.02	-0.000398	± 2.5	PASS
		VN	TN	-1.98	-0.000773	± 2.5	PASS
		VH	TN	2.86	0.001116	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.91	0.001559	± 2.5	PASS
		VN	-20	-1.93	-0.000770	± 2.5	PASS
		VN	-10	-1.02	-0.000407	± 2.5	PASS
		VN	0	4.33	0.001727	± 2.5	PASS
		VN	10	-0.17	-0.000068	± 2.5	PASS
		VN	20	3.36	0.001340	± 2.5	PASS
		VN	30	2.64	0.001053	± 2.5	PASS
		VN	40	1.08	0.000431	± 2.5	PASS
		VN	50	2.07	0.000826	± 2.5	PASS
	MCH	VN	-30	1.42	0.000560	± 2.5	PASS
		VN	-20	0.09	0.000036	± 2.5	PASS

		VN	-10	-1.72	-0.000679	± 2.5	PASS
		VN	0	4.39	0.001732	± 2.5	PASS
		VN	10	1.57	0.000619	± 2.5	PASS
		VN	20	2.45	0.000966	± 2.5	PASS
		VN	30	4.98	0.001964	± 2.5	PASS
		VN	40	3.44	0.001357	± 2.5	PASS
		VN	50	2.42	0.000955	± 2.5	PASS
	HCH	VN	-30	-1.61	-0.000628	± 2.5	PASS
		VN	-20	1.7	0.000663	± 2.5	PASS
		VN	-10	-1.84	-0.000718	± 2.5	PASS
		VN	0	4.89	0.001908	± 2.5	PASS
		VN	10	-1.86	-0.000726	± 2.5	PASS
		VN	20	-0.6	-0.000234	± 2.5	PASS
		VN	30	4.5	0.001756	± 2.5	PASS
		VN	40	4.6	0.001795	± 2.5	PASS
	VN	50	0.1	0.000039	± 2.5	PASS	
16QAM	LCH	VN	-30	4.96	0.001978	± 2.5	PASS
		VN	-20	4.8	0.001914	± 2.5	PASS
		VN	-10	4.35	0.001735	± 2.5	PASS
		VN	0	-1.53	-0.000610	± 2.5	PASS
		VN	10	-0.41	-0.000164	± 2.5	PASS
		VN	20	2.11	0.000841	± 2.5	PASS
		VN	30	-0.35	-0.000140	± 2.5	PASS
		VN	40	4.1	0.001635	± 2.5	PASS
		VN	50	1.93	0.000770	± 2.5	PASS
	MCH	VN	-30	1.69	0.000667	± 2.5	PASS
		VN	-20	-1.92	-0.000757	± 2.5	PASS
		VN	-10	-0.53	-0.000209	± 2.5	PASS
		VN	0	0.84	0.000331	± 2.5	PASS
		VN	10	4.86	0.001917	± 2.5	PASS
		VN	20	3.26	0.001286	± 2.5	PASS
		VN	30	1.19	0.000469	± 2.5	PASS
		VN	40	0.3	0.000118	± 2.5	PASS
		VN	50	-0.07	-0.000028	± 2.5	PASS
	HCH	VN	-30	-0.4	-0.000156	± 2.5	PASS
		VN	-20	4.4	0.001717	± 2.5	PASS
		VN	-10	2.21	0.000862	± 2.5	PASS
		VN	0	3.83	0.001495	± 2.5	PASS
		VN	10	3.19	0.001245	± 2.5	PASS
		VN	20	0.54	0.000211	± 2.5	PASS
VN		30	3.57	0.001393	± 2.5	PASS	

		VN	40	4.28	0.001670	± 2.5	PASS
		VN	50	2.51	0.000980	± 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	1.16	0.000462	± 2.5	PASS
		VN	TN	-1.31	-0.000522	± 2.5	PASS
		VH	TN	1.64	0.000653	± 2.5	PASS
	MCH	VL	TN	3.55	0.001400	± 2.5	PASS
		VN	TN	-1.53	-0.000604	± 2.5	PASS
		VH	TN	-0.45	-0.000178	± 2.5	PASS
	HCH	VL	TN	3.93	0.001535	± 2.5	PASS
		VN	TN	0.98	0.000383	± 2.5	PASS
		VH	TN	2.1	0.000820	± 2.5	PASS
16QAM	LCH	VL	TN	-0.62	-0.000247	± 2.5	PASS
		VN	TN	1.56	0.000622	± 2.5	PASS
		VH	TN	3.28	0.001307	± 2.5	PASS
	MCH	VL	TN	3.62	0.001428	± 2.5	PASS
		VN	TN	1.42	0.000560	± 2.5	PASS
		VH	TN	0.99	0.000391	± 2.5	PASS
	HCH	VL	TN	0.61	0.000238	± 2.5	PASS
		VN	TN	0.3	0.000117	± 2.5	PASS
		VH	TN	1.93	0.000754	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.75	0.000697	± 2.5	PASS
		VN	-20	-1.58	-0.000629	± 2.5	PASS
		VN	-10	0.79	0.000315	± 2.5	PASS
		VN	0	1.84	0.000733	± 2.5	PASS
		VN	10	-0.9	-0.000359	± 2.5	PASS
		VN	20	-0.52	-0.000207	± 2.5	PASS
		VN	30	1.67	0.000665	± 2.5	PASS
		VN	40	-1.5	-0.000598	± 2.5	PASS
		VN	50	2.76	0.001100	± 2.5	PASS
	MCH	VN	-30	2.17	0.000856	± 2.5	PASS
		VN	-20	3.36	0.001325	± 2.5	PASS
		VN	-10	4.6	0.001815	± 2.5	PASS

		VN	0	-1.16	-0.000458	± 2.5	PASS
		VN	10	-0.85	-0.000335	± 2.5	PASS
		VN	20	0.57	0.000225	± 2.5	PASS
		VN	30	1.62	0.000639	± 2.5	PASS
		VN	40	1.96	0.000773	± 2.5	PASS
		VN	50	-1.16	-0.000458	± 2.5	PASS
	HCH	VN	-30	4.13	0.001613	± 2.5	PASS
		VN	-20	-1.12	-0.000438	± 2.5	PASS
		VN	-10	2.84	0.001109	± 2.5	PASS
		VN	0	3.3	0.001289	± 2.5	PASS
		VN	10	2.71	0.001059	± 2.5	PASS
		VN	20	1.5	0.000586	± 2.5	PASS
		VN	30	3.05	0.001191	± 2.5	PASS
		VN	40	-1.92	-0.000750	± 2.5	PASS
		VN	50	4.11	0.001605	± 2.5	PASS
16QAM	LCH	VN	-30	-0.99	-0.000394	± 2.5	PASS
		VN	-20	2.03	0.000809	± 2.5	PASS
		VN	-10	3.65	0.001454	± 2.5	PASS
		VN	0	1.82	0.000725	± 2.5	PASS
		VN	10	4.83	0.001924	± 2.5	PASS
		VN	20	0.27	0.000108	± 2.5	PASS
		VN	30	4.93	0.001964	± 2.5	PASS
		VN	40	-0.85	-0.000339	± 2.5	PASS
		VN	50	3.67	0.001462	± 2.5	PASS
	MCH	VN	-30	3.41	0.001345	± 2.5	PASS
		VN	-20	0.77	0.000304	± 2.5	PASS
		VN	-10	3.5	0.001381	± 2.5	PASS
		VN	0	3.02	0.001191	± 2.5	PASS
		VN	10	0.78	0.000308	± 2.5	PASS
		VN	20	-0.35	-0.000138	± 2.5	PASS
		VN	30	-0.74	-0.000292	± 2.5	PASS
		VN	40	4.46	0.001759	± 2.5	PASS
		VN	50	2.58	0.001018	± 2.5	PASS
	HCH	VN	-30	2.6	0.001016	± 2.5	PASS
		VN	-20	3.81	0.001488	± 2.5	PASS
		VN	-10	4.99	0.001949	± 2.5	PASS
		VN	0	4.63	0.001809	± 2.5	PASS
		VN	10	-0.74	-0.000289	± 2.5	PASS
		VN	20	4.09	0.001598	± 2.5	PASS
		VN	30	3.59	0.001402	± 2.5	PASS
		VN	40	1.39	0.000543	± 2.5	PASS

		VN	50	4.09	0.001598	± 2.5	PASS
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