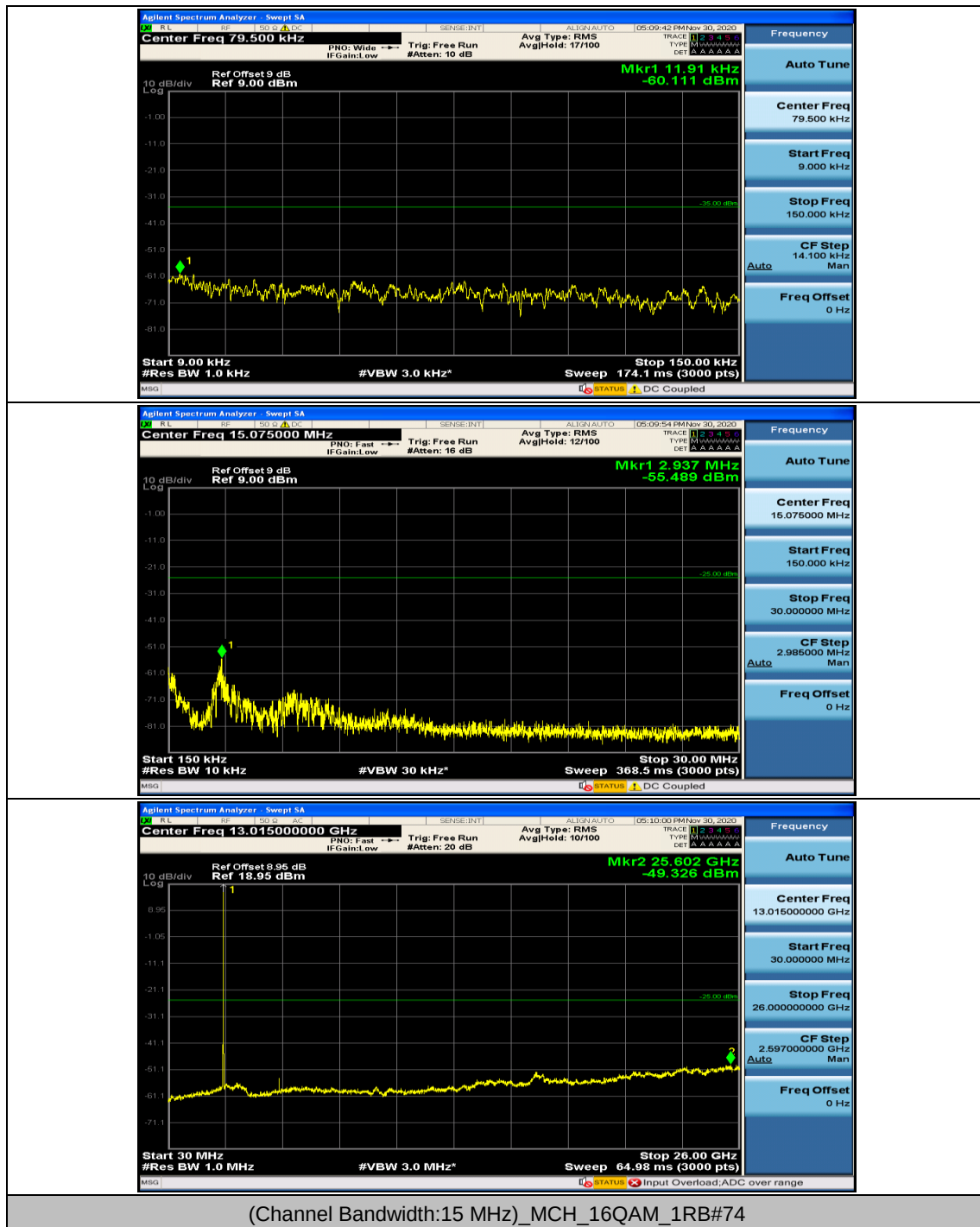
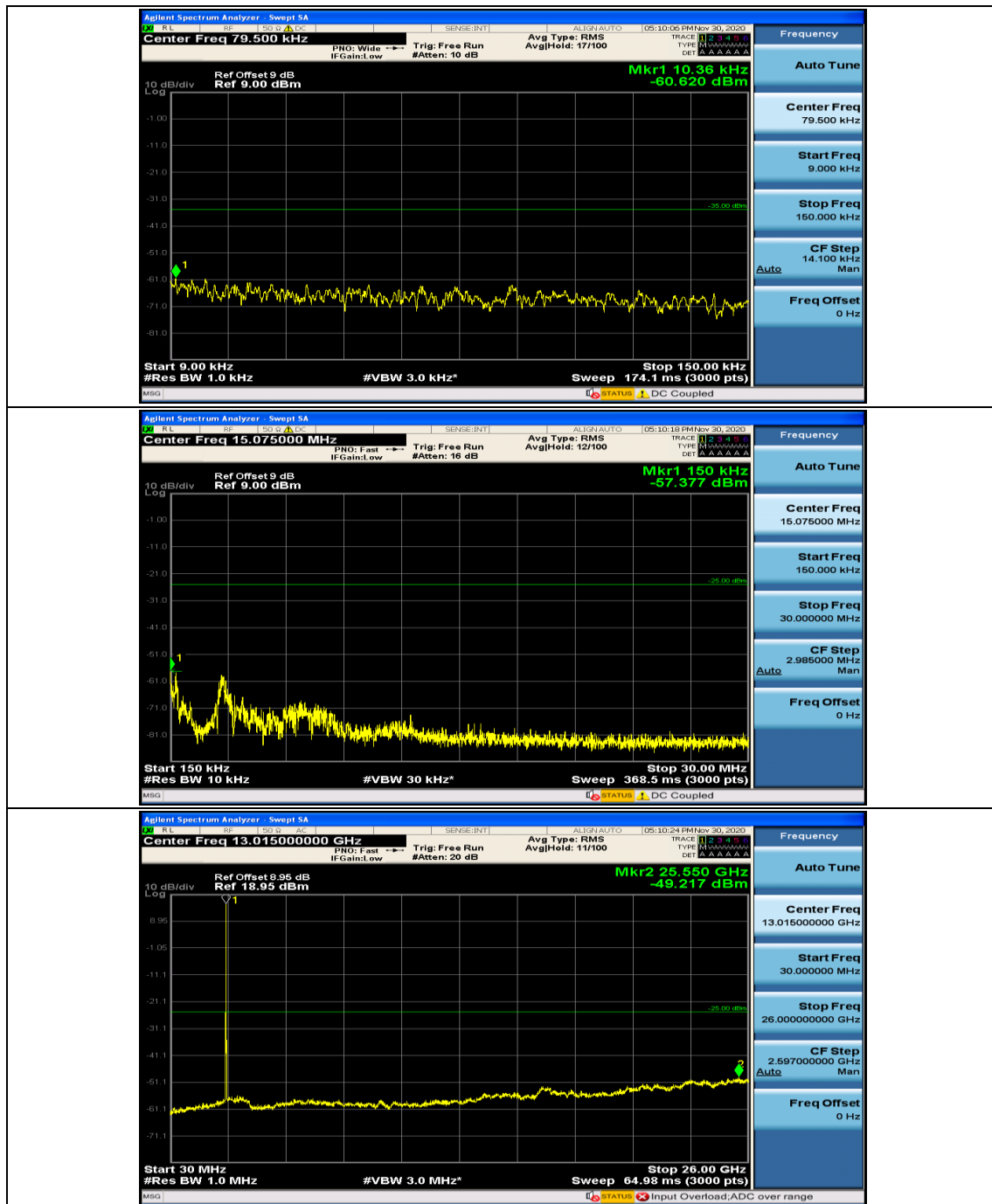
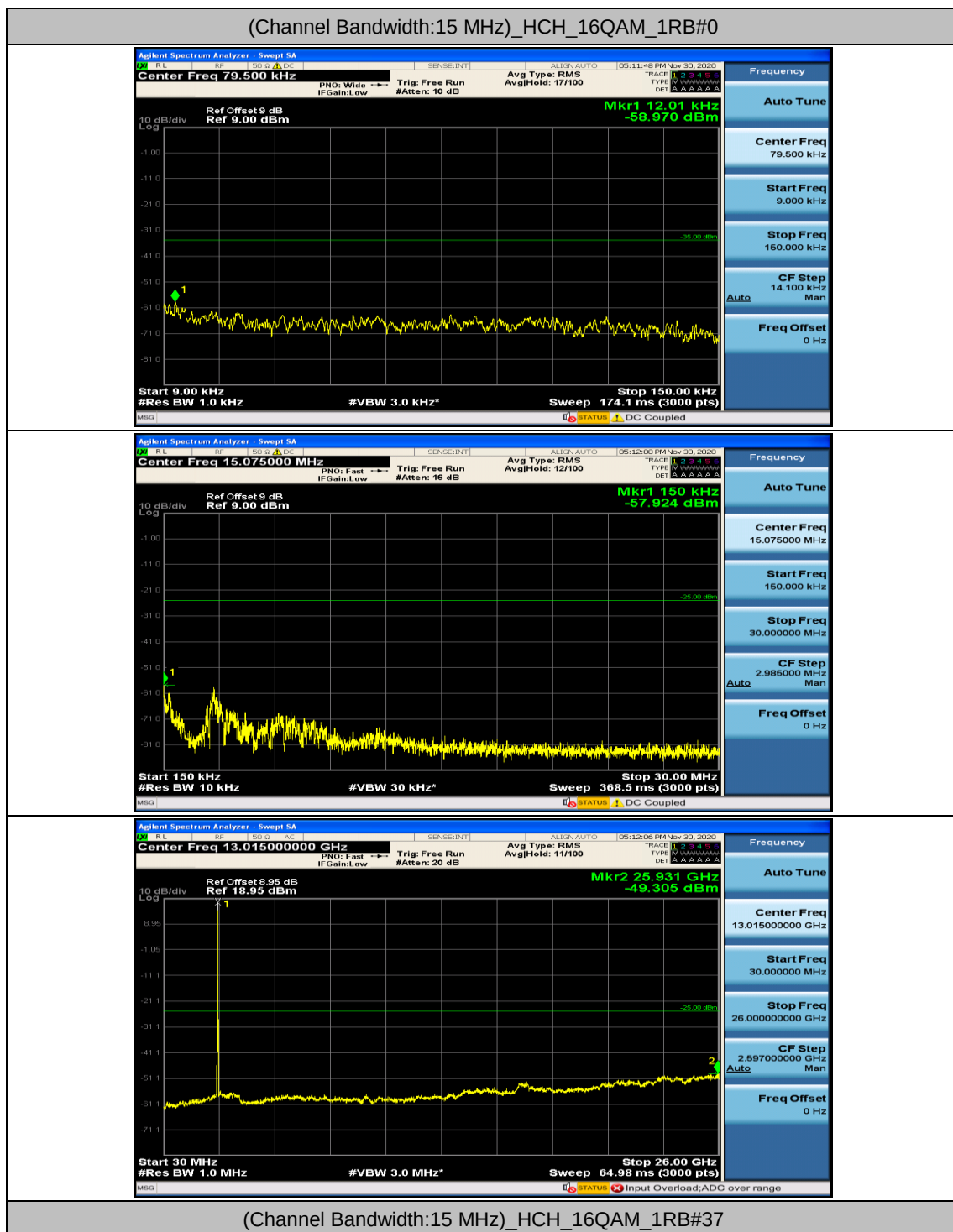
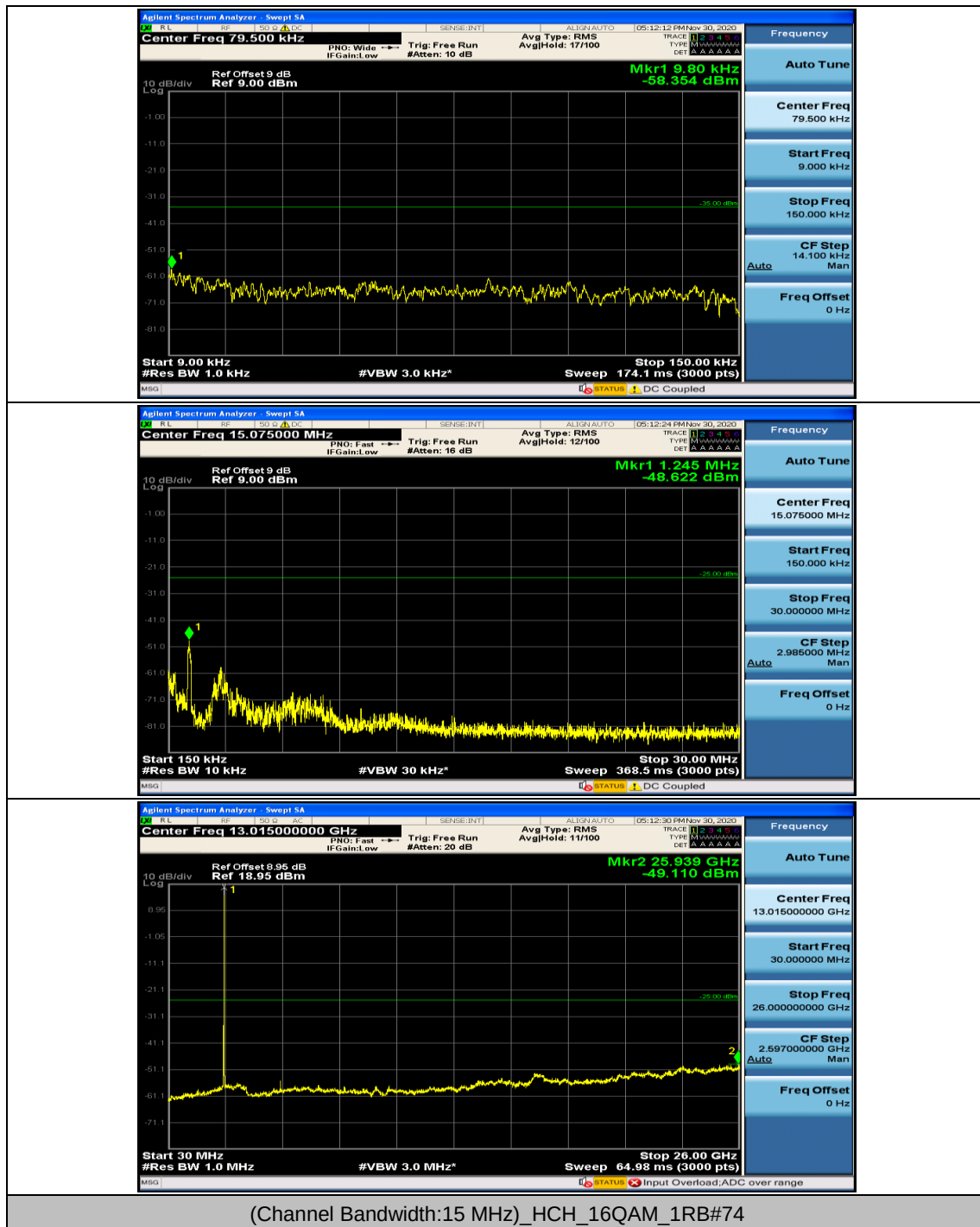
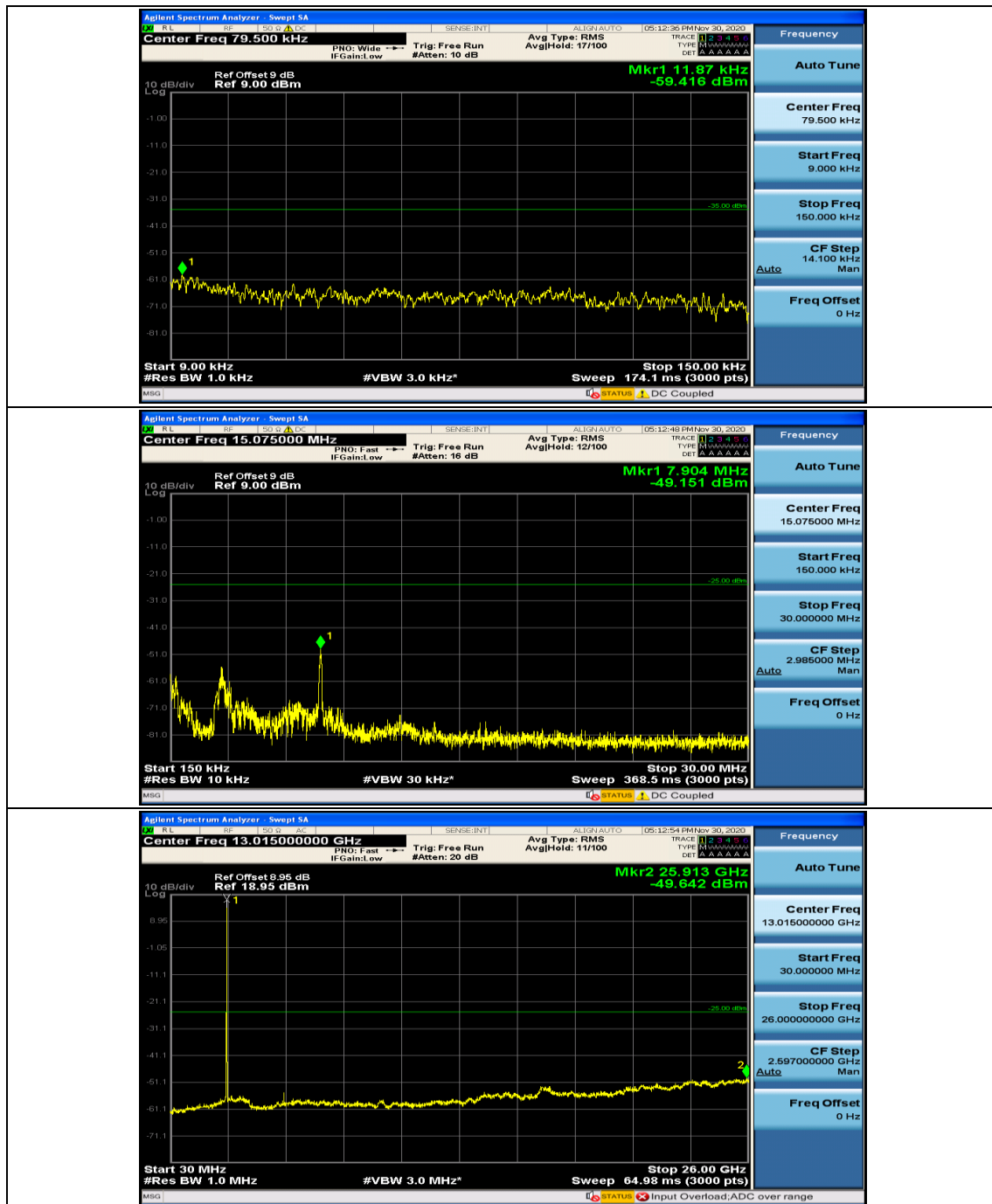




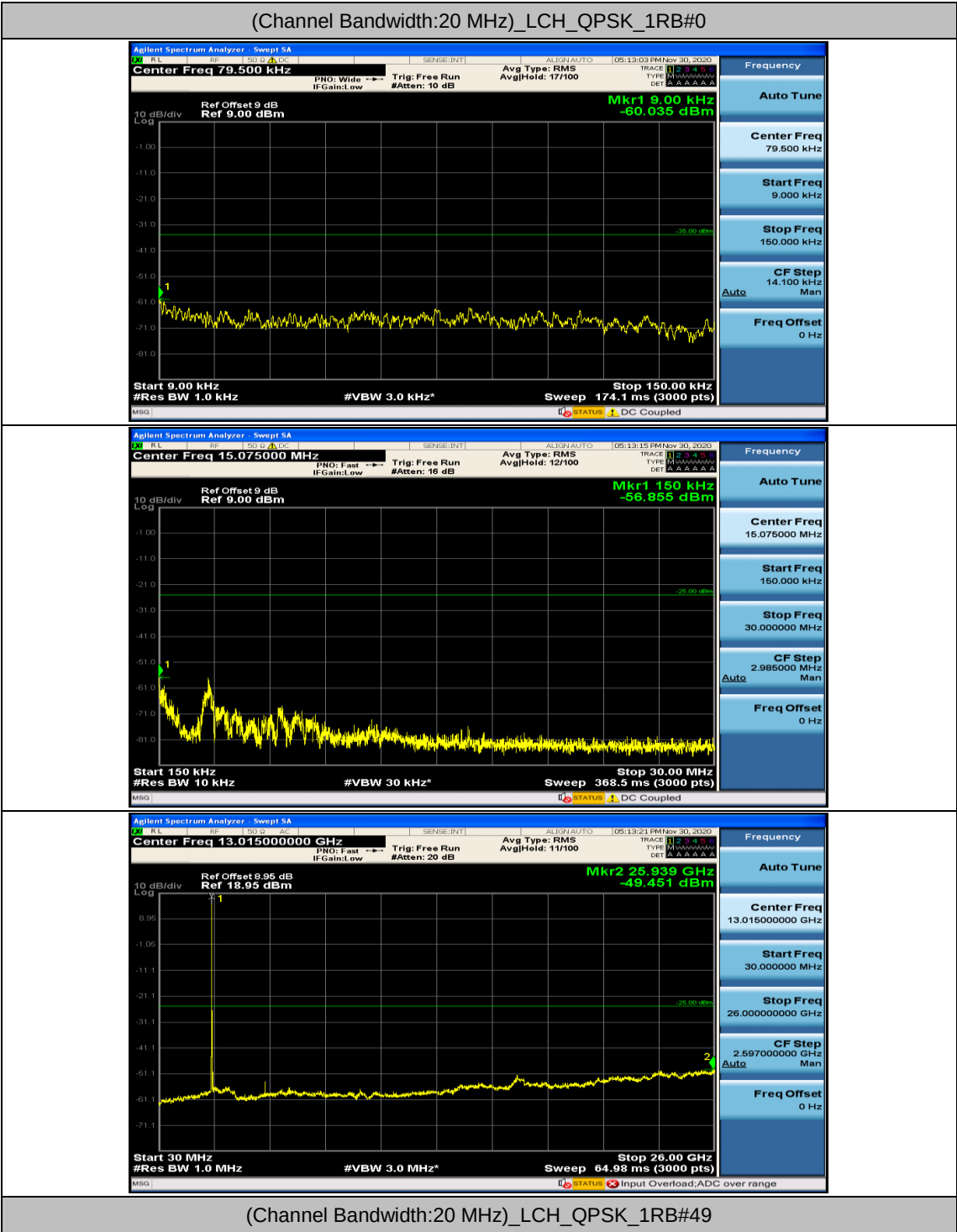


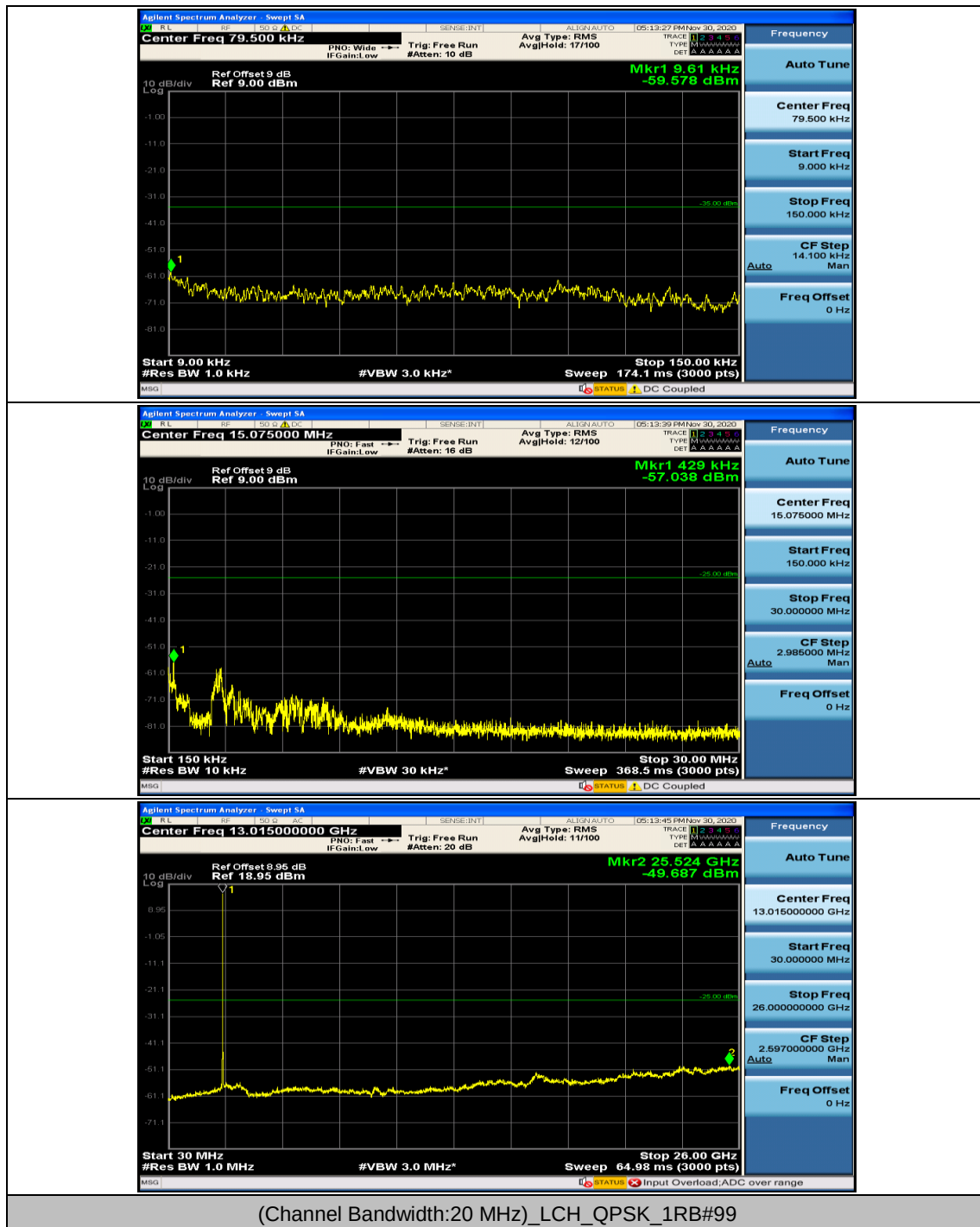


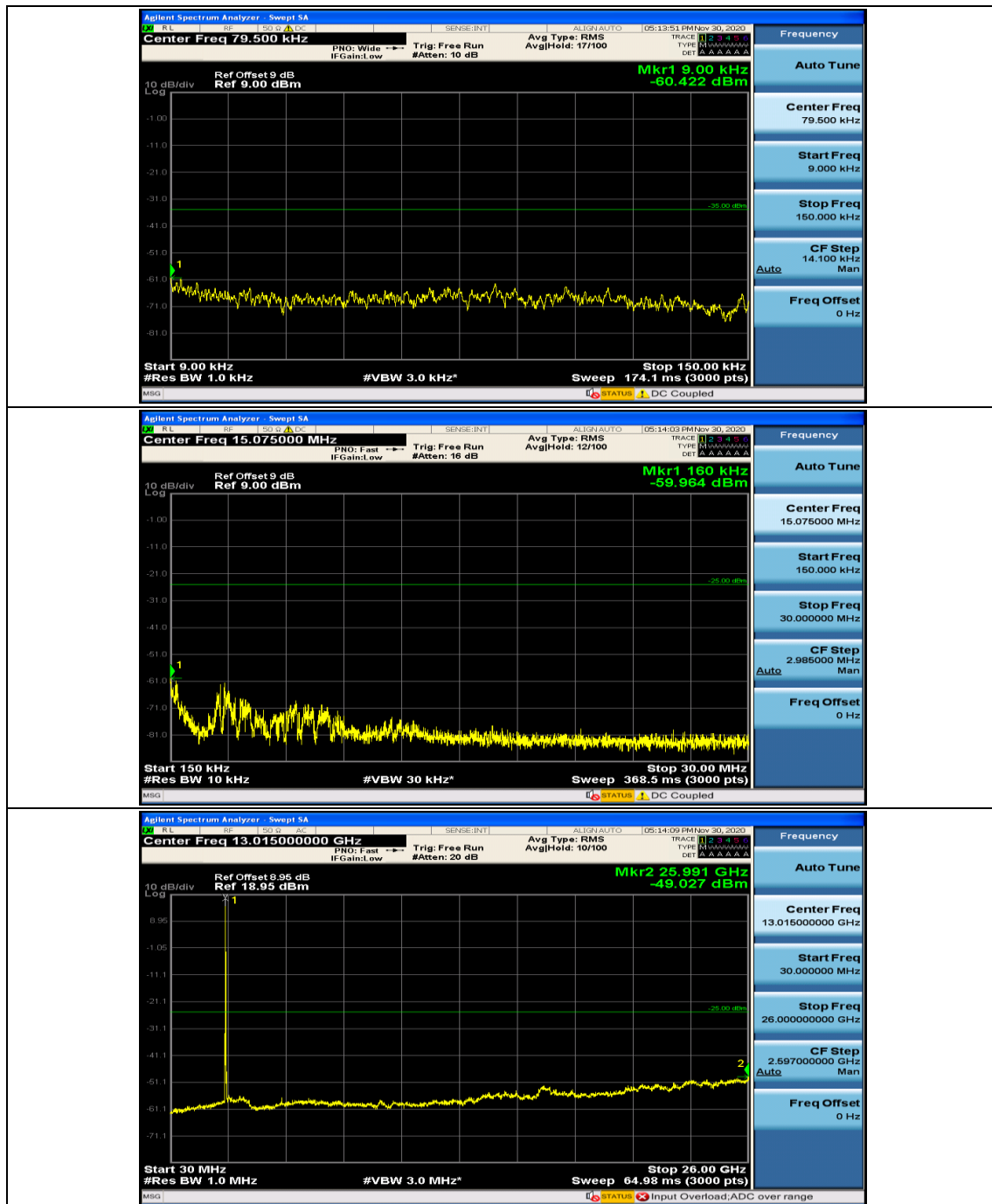


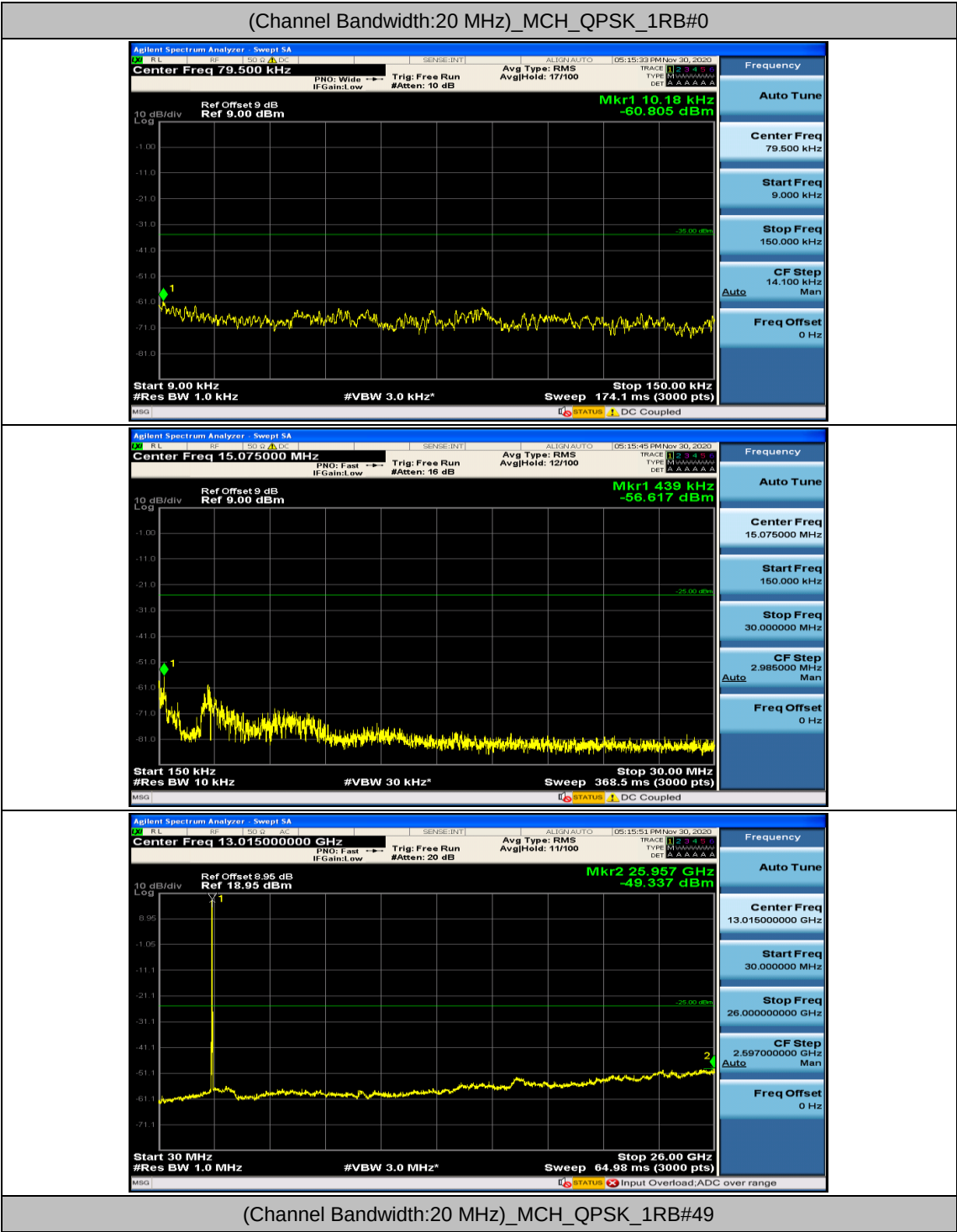


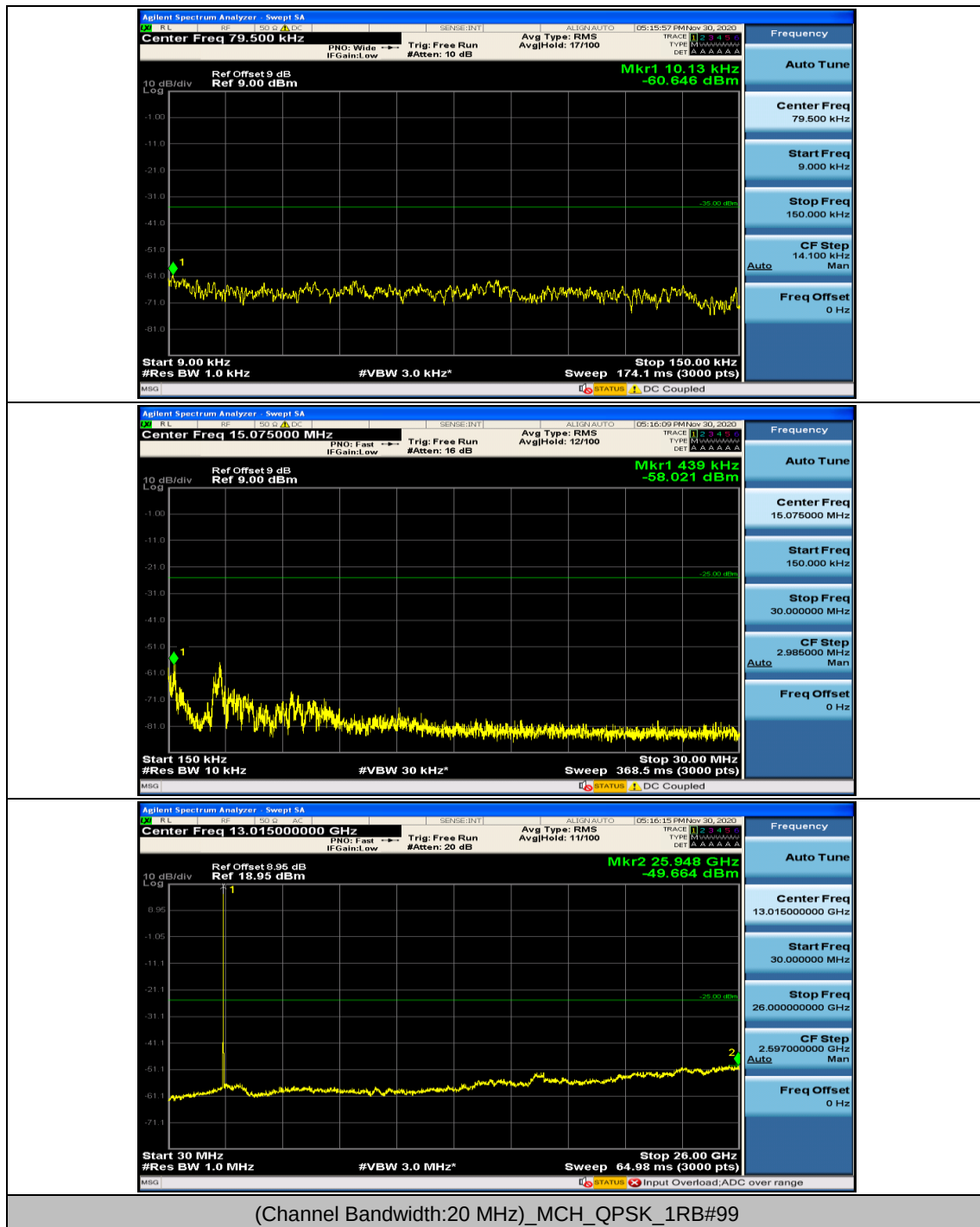
Channel Bandwidth: 20 MHz

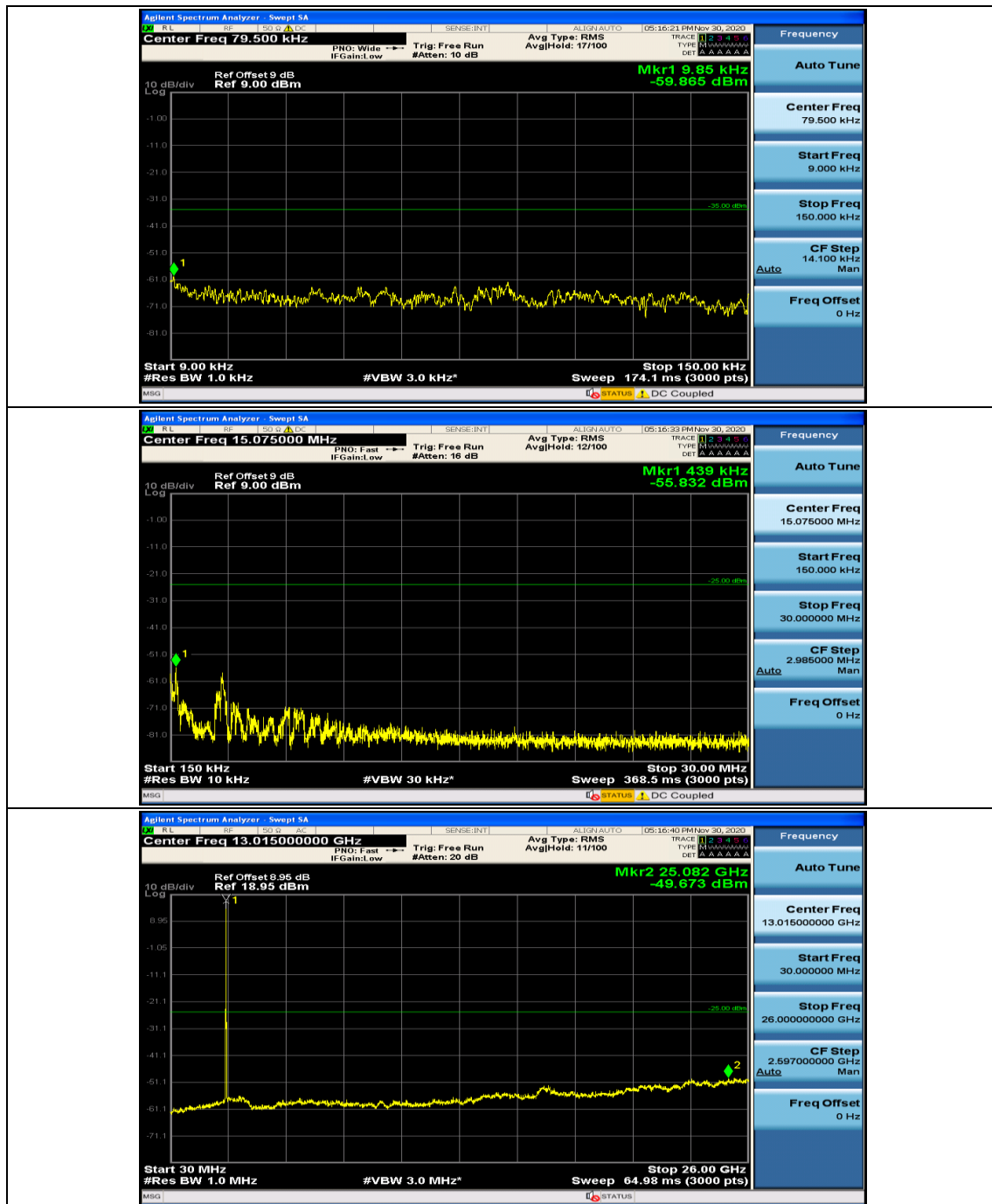


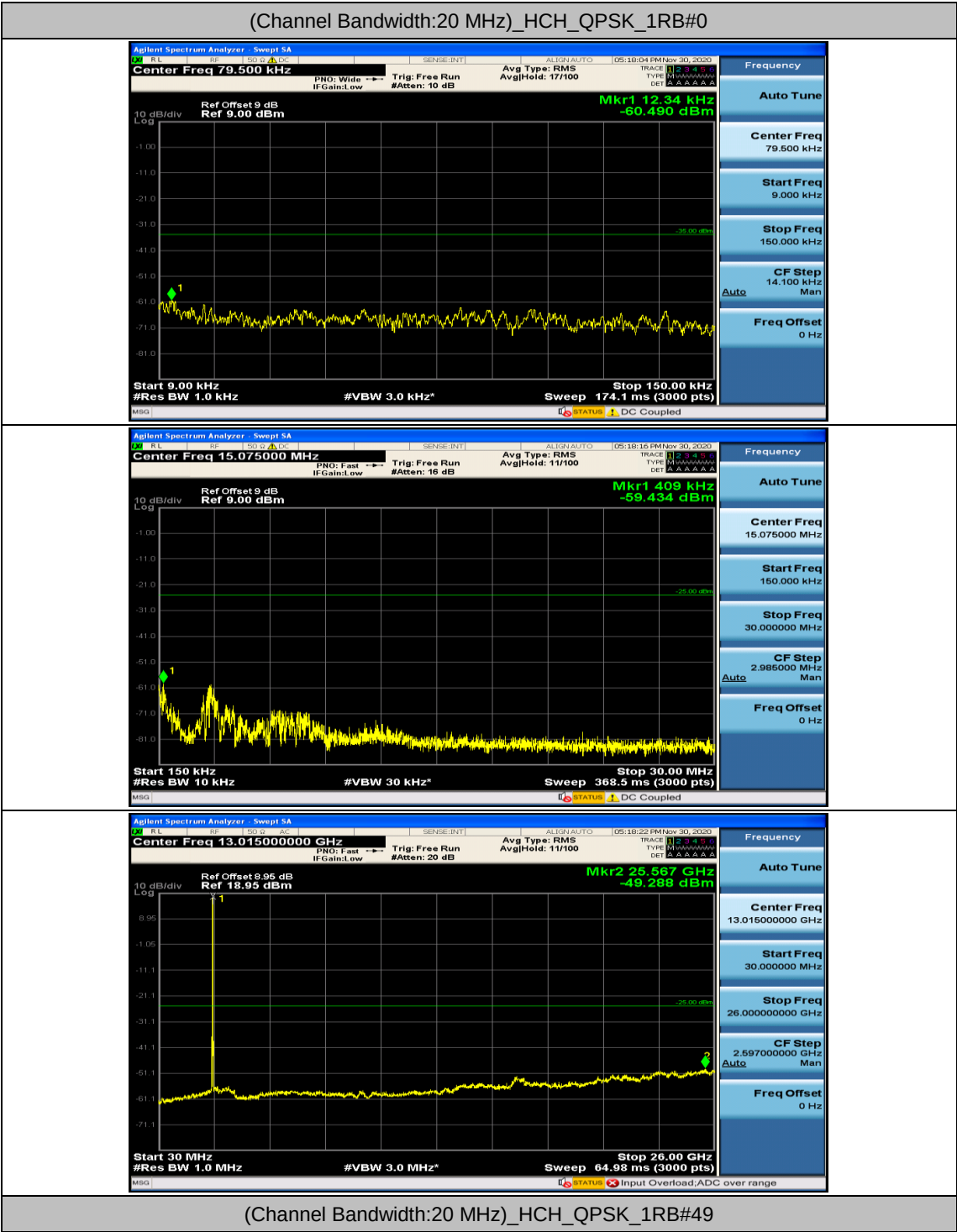


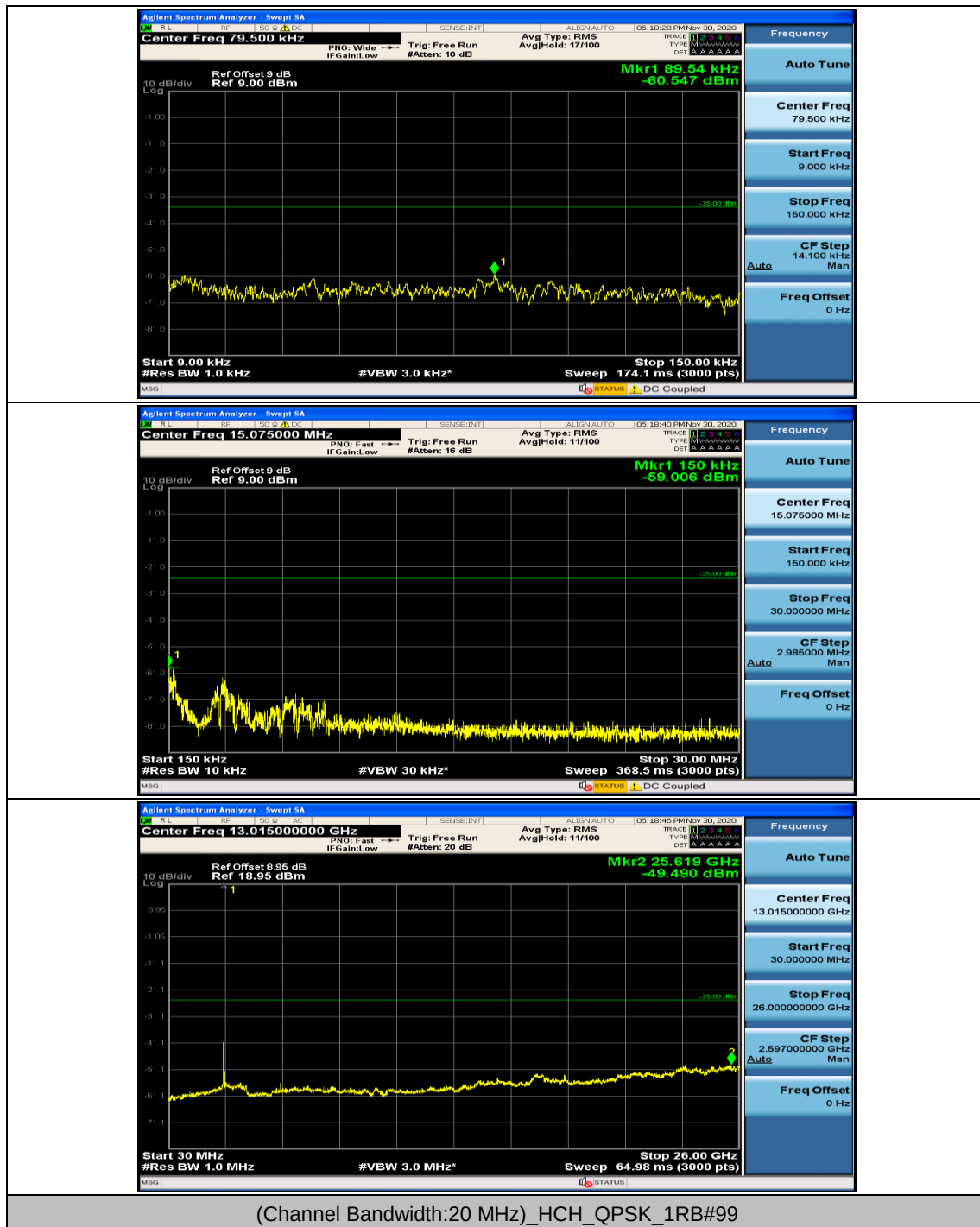


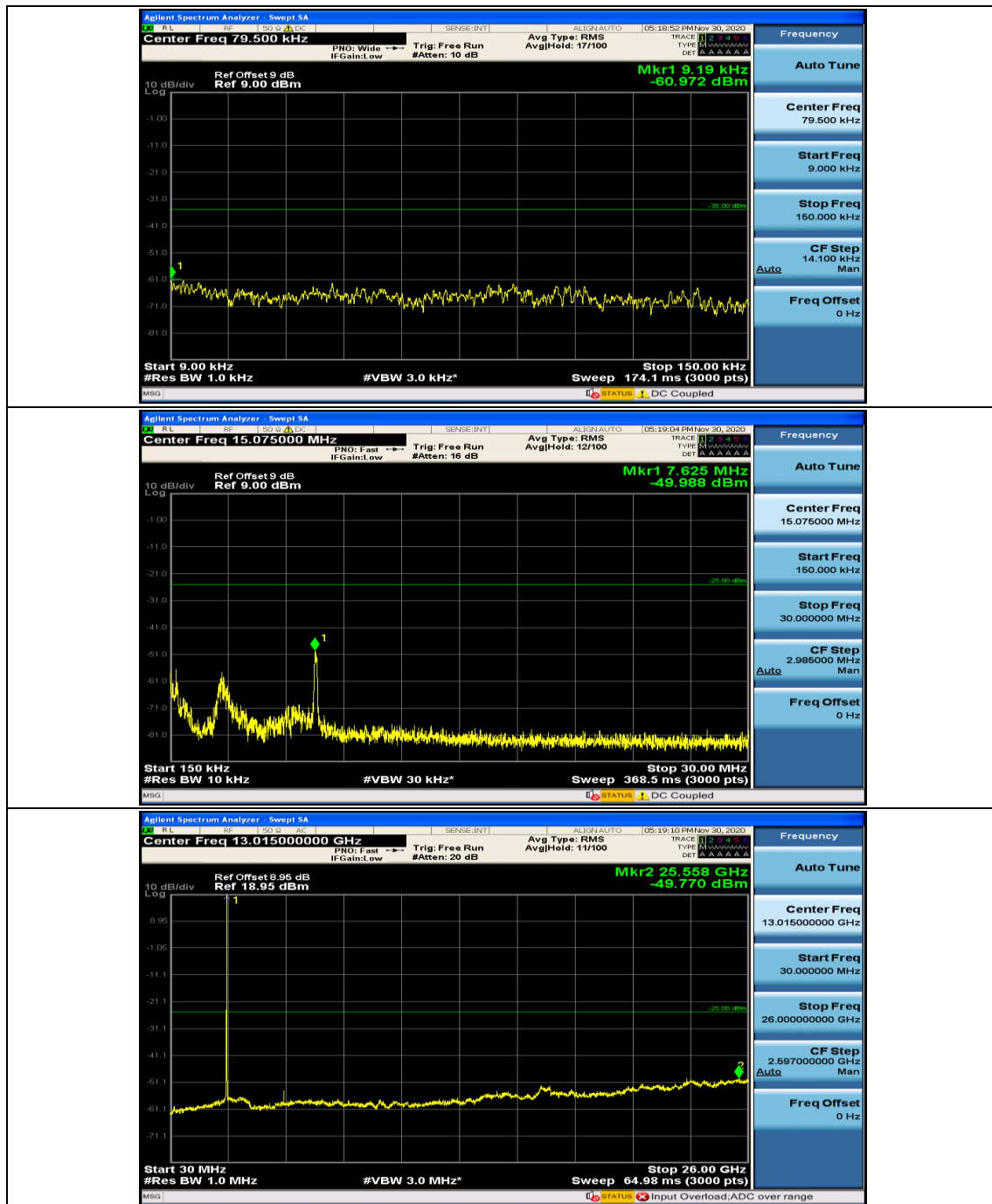


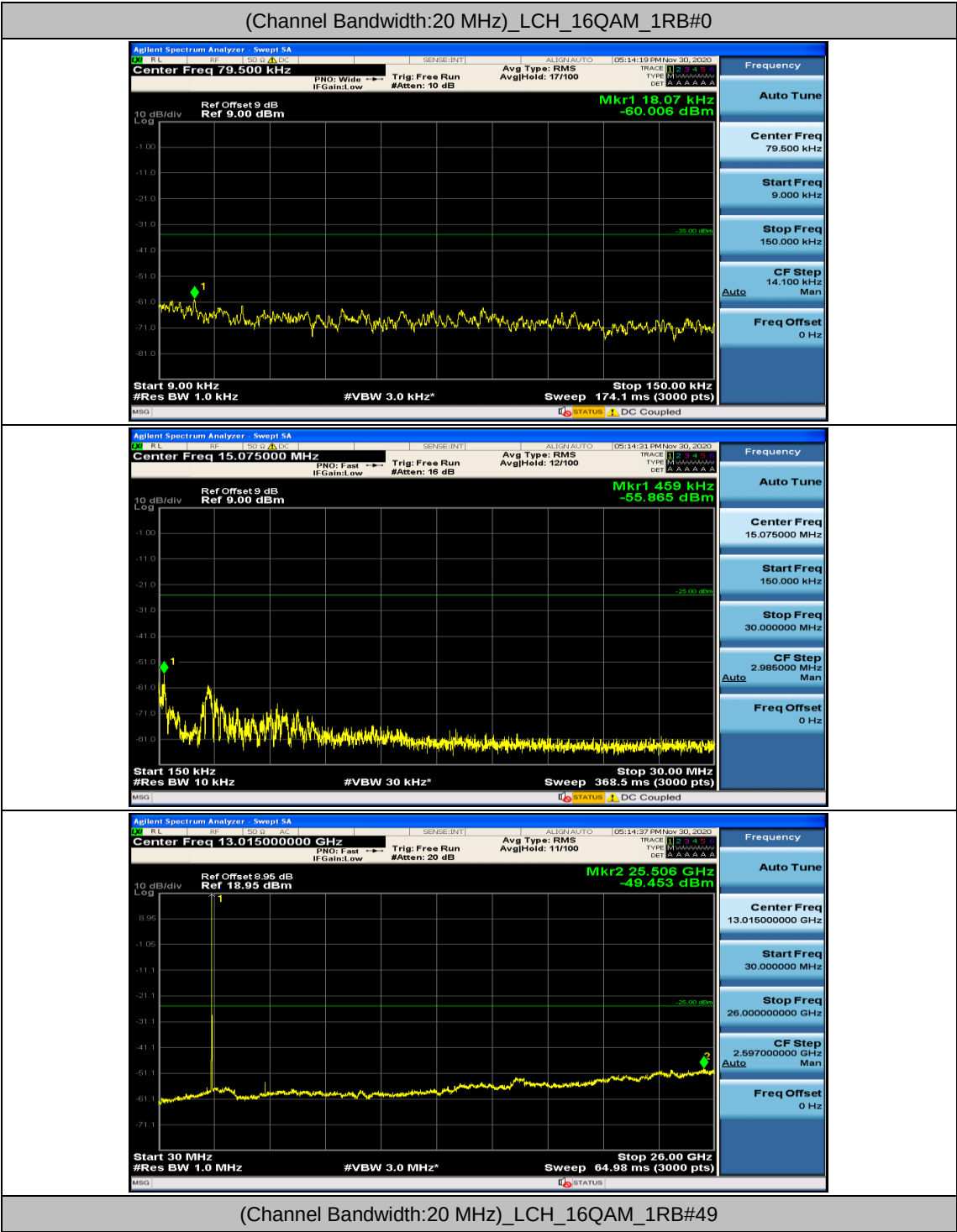


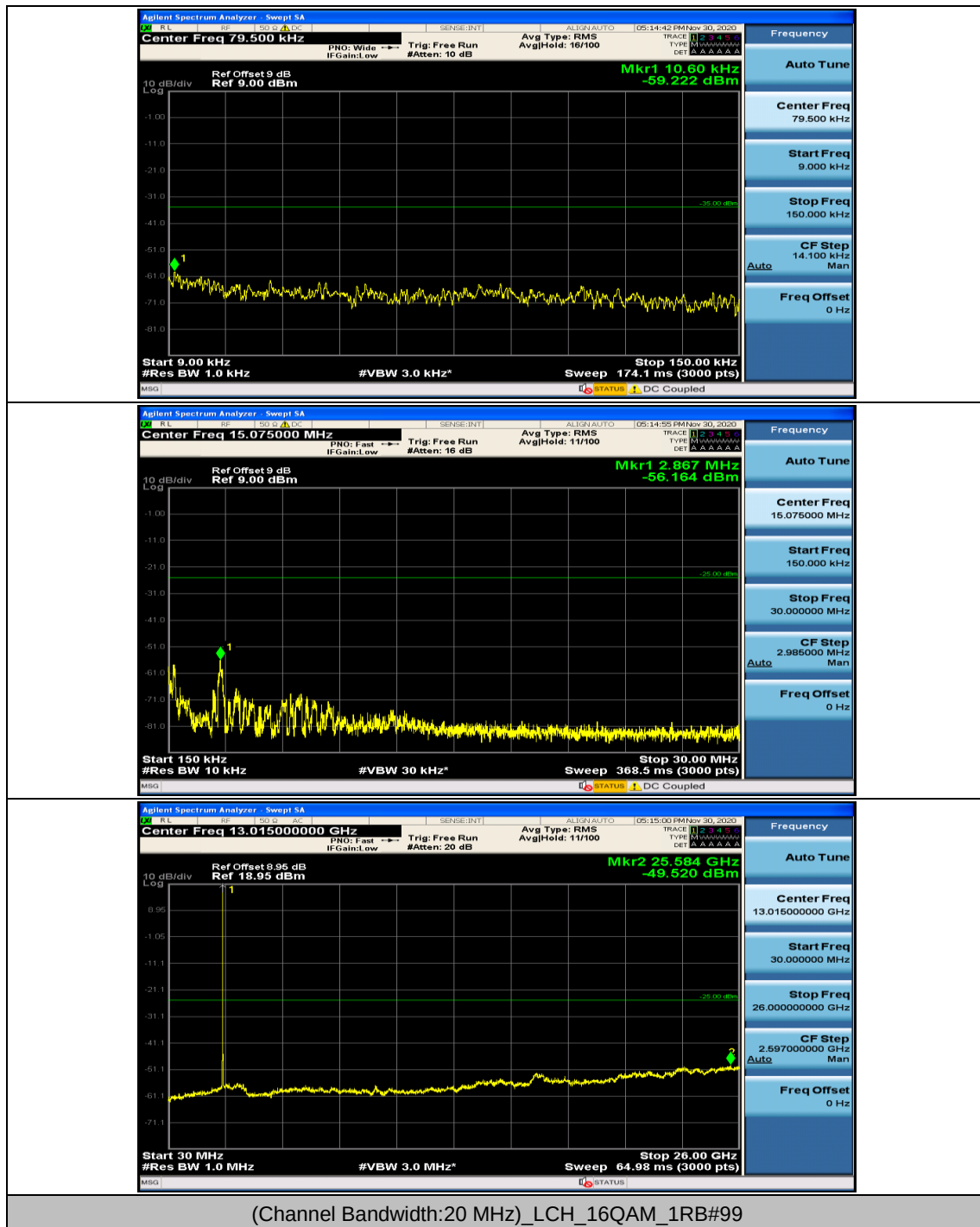


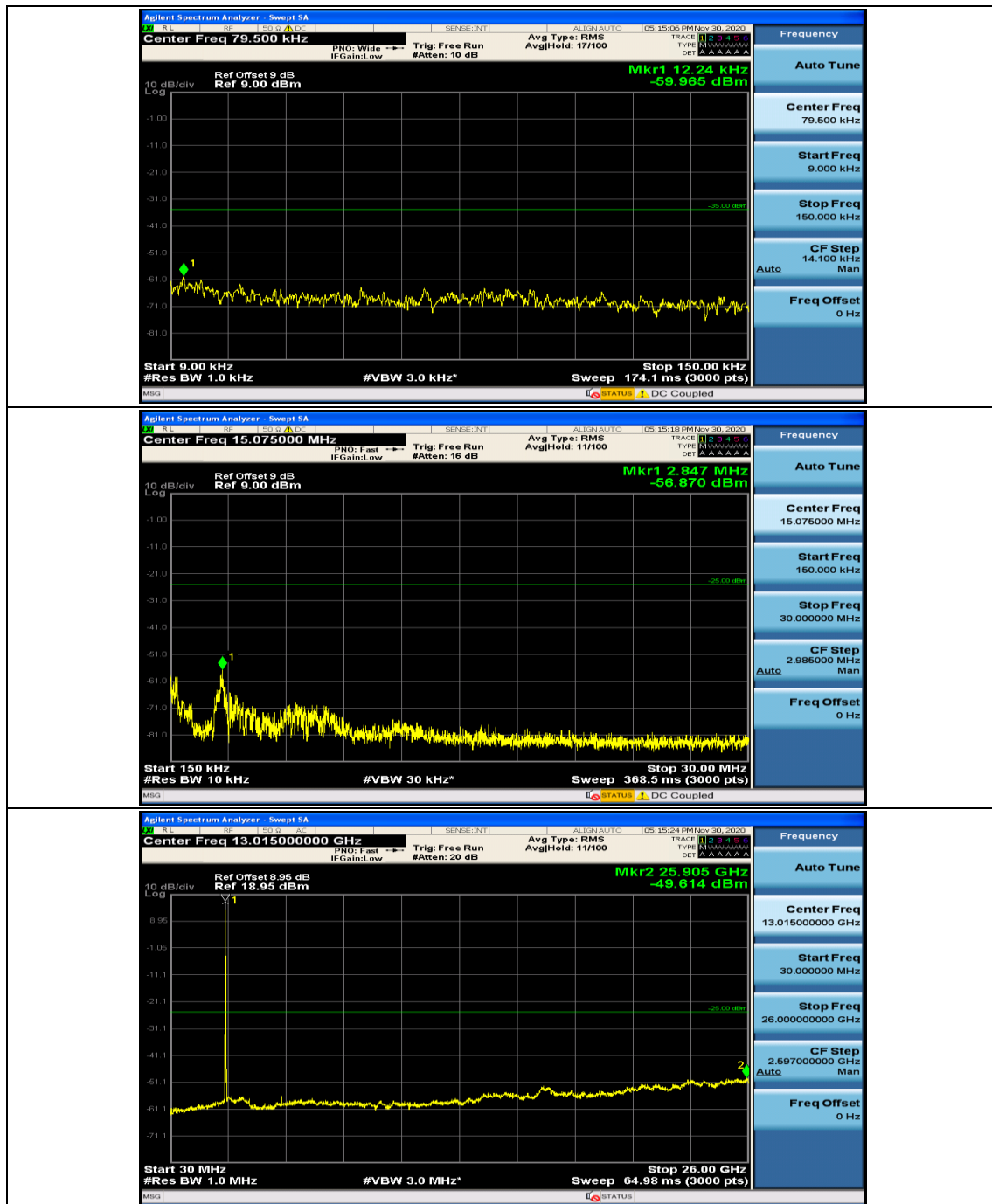


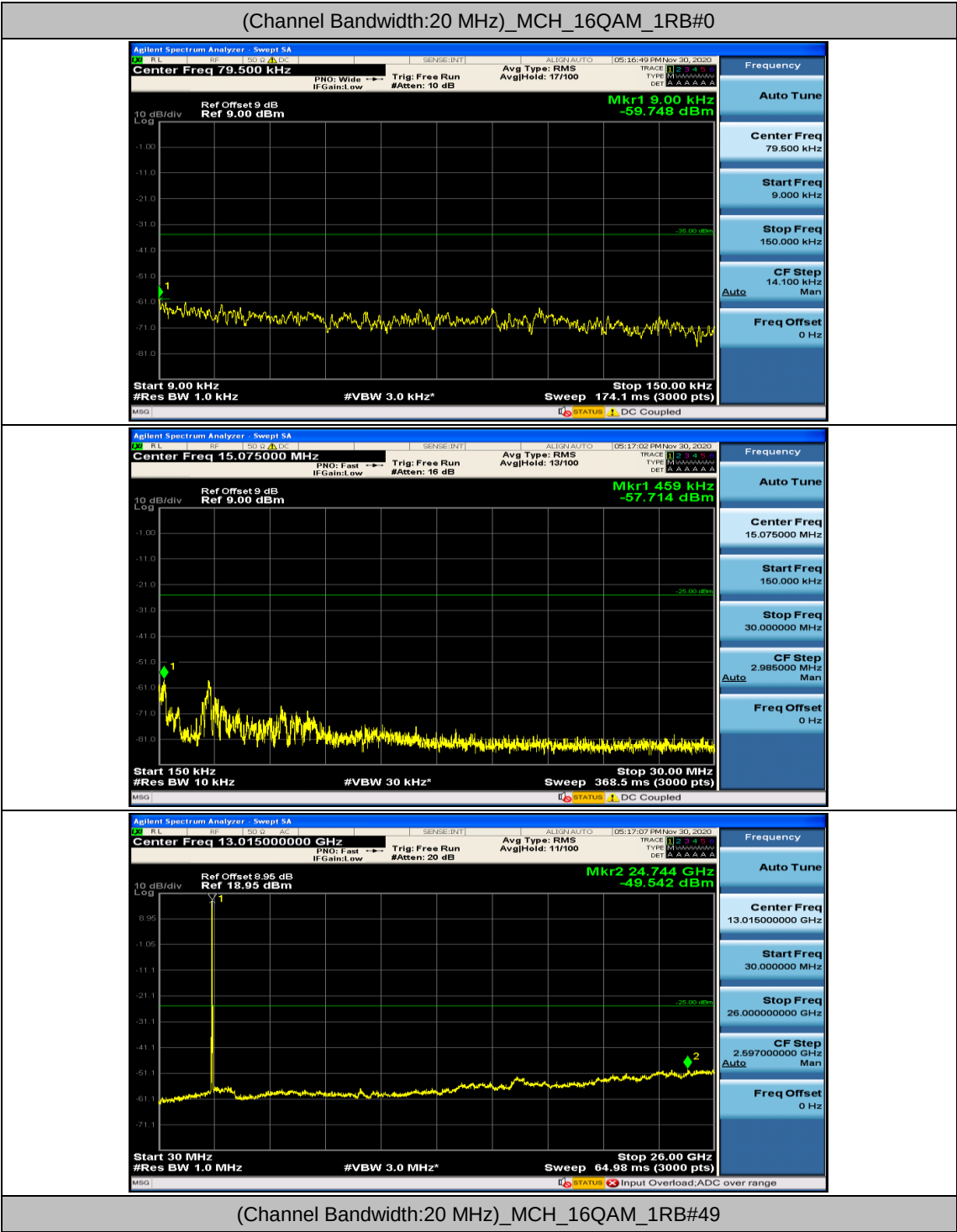


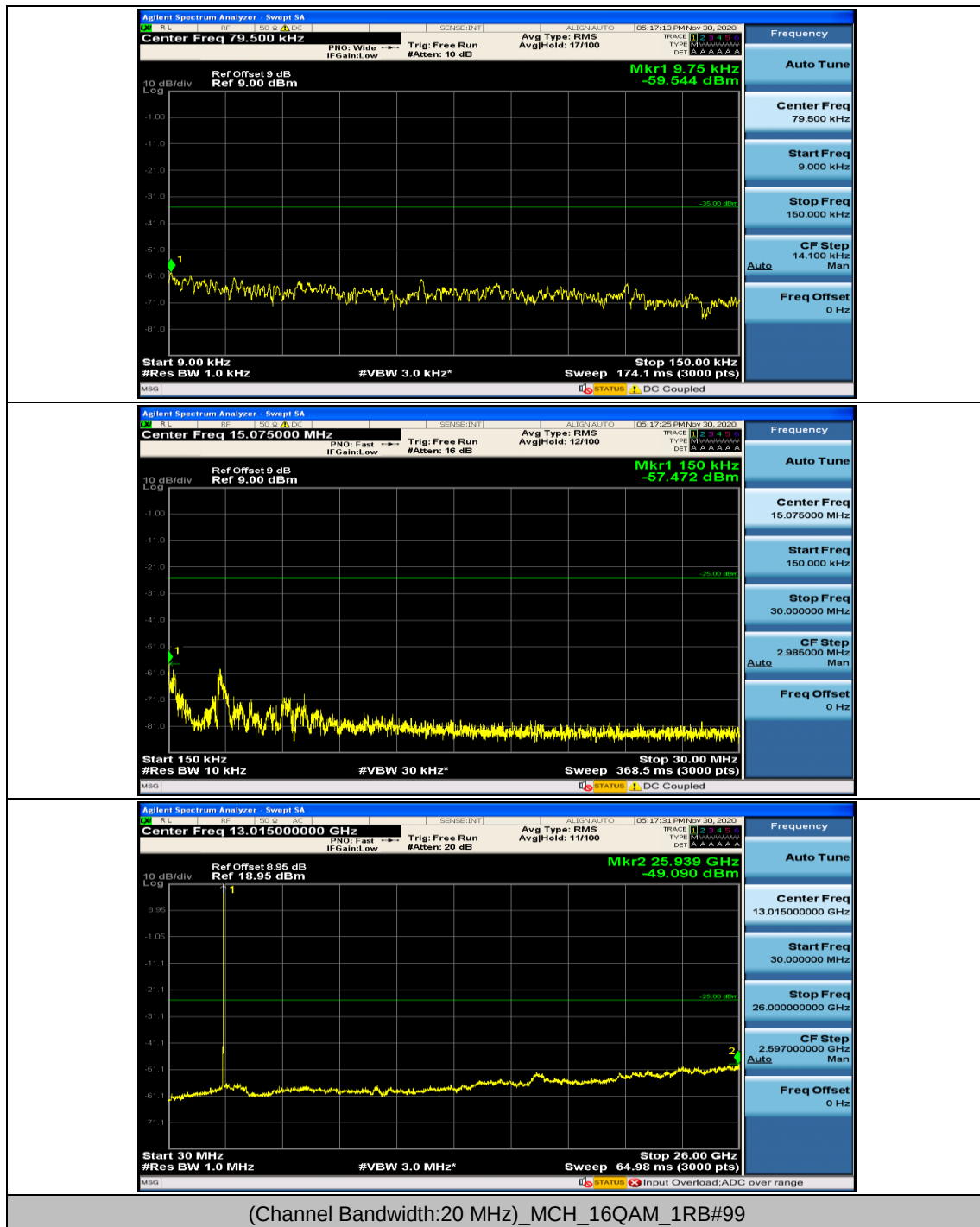


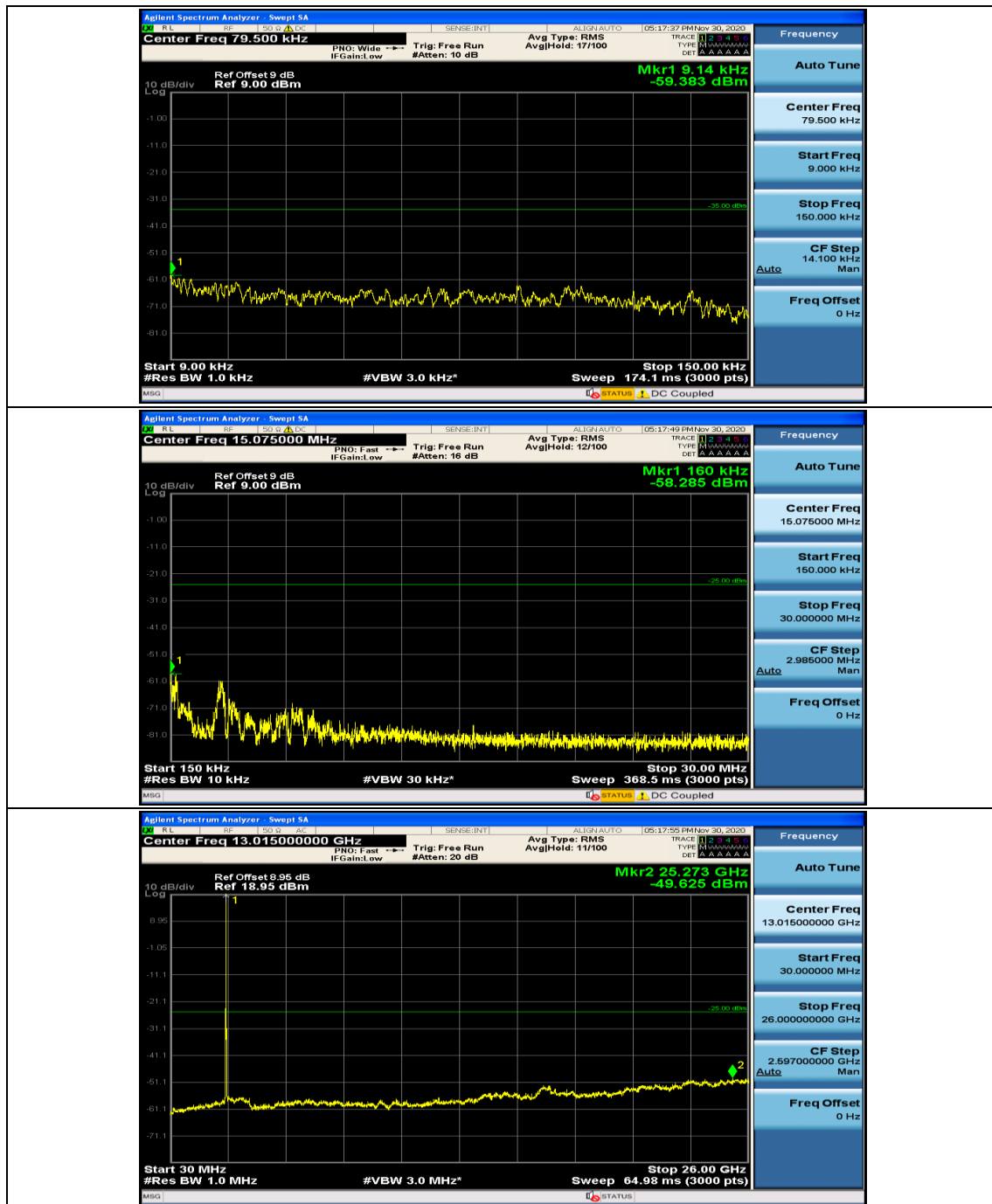


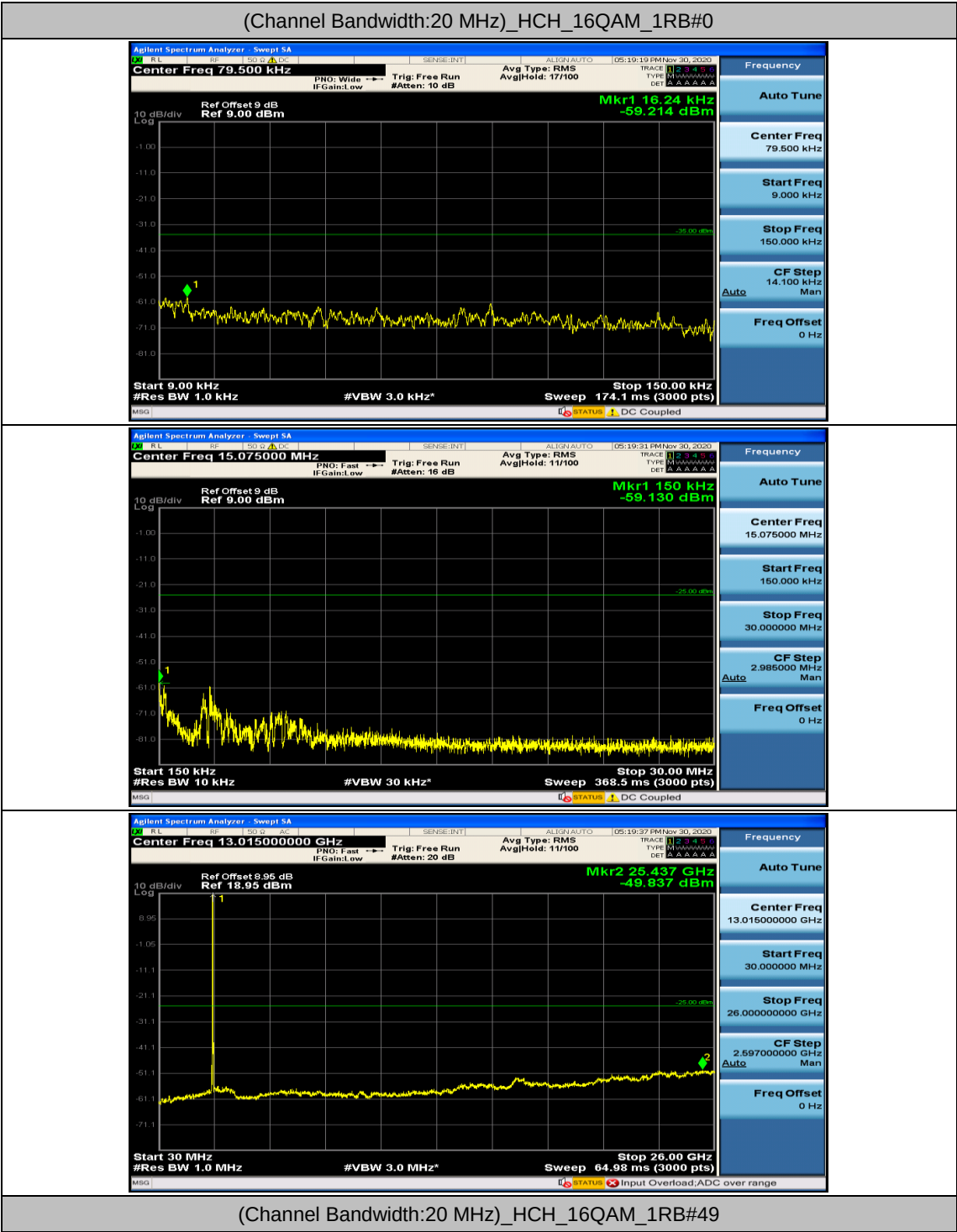


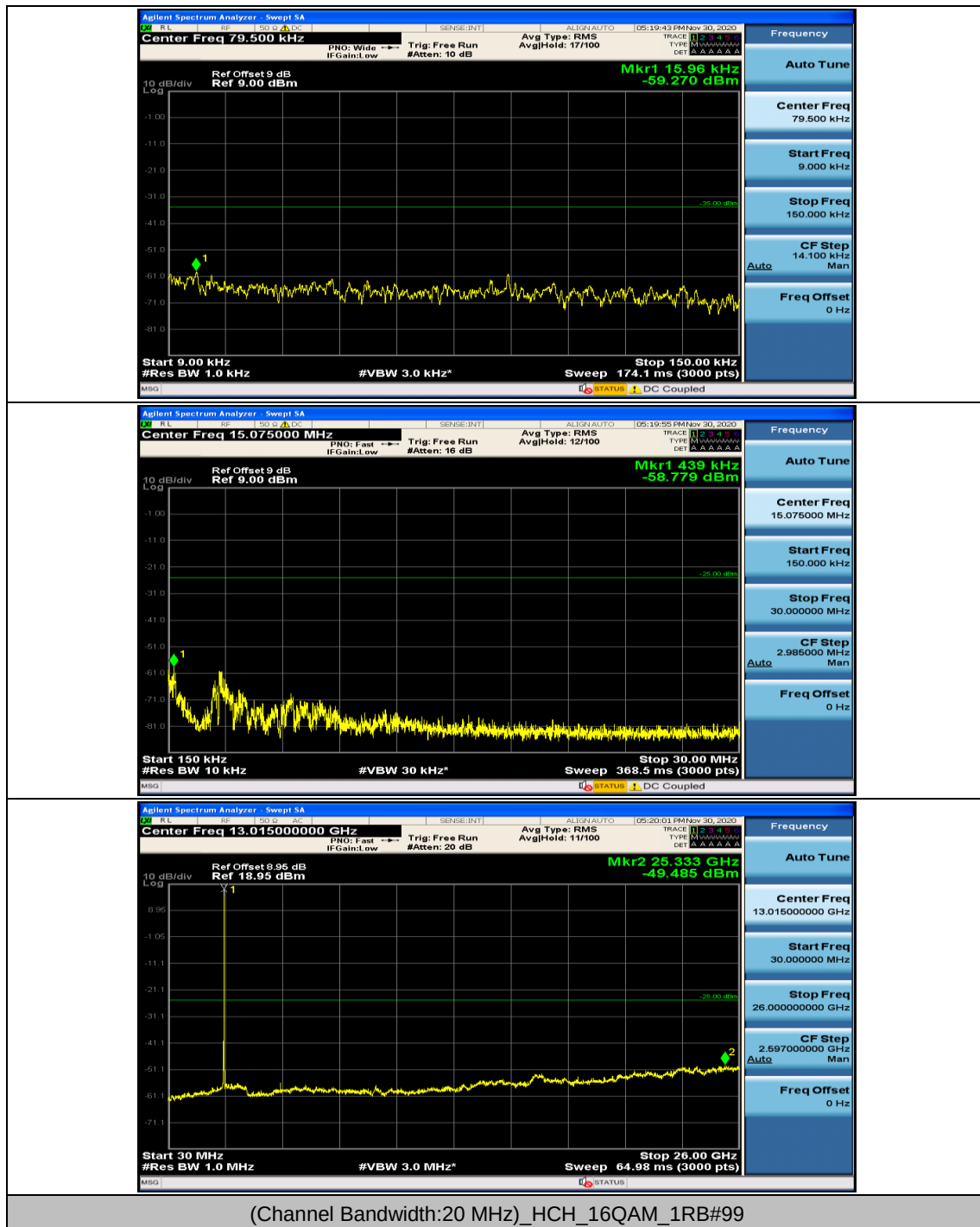


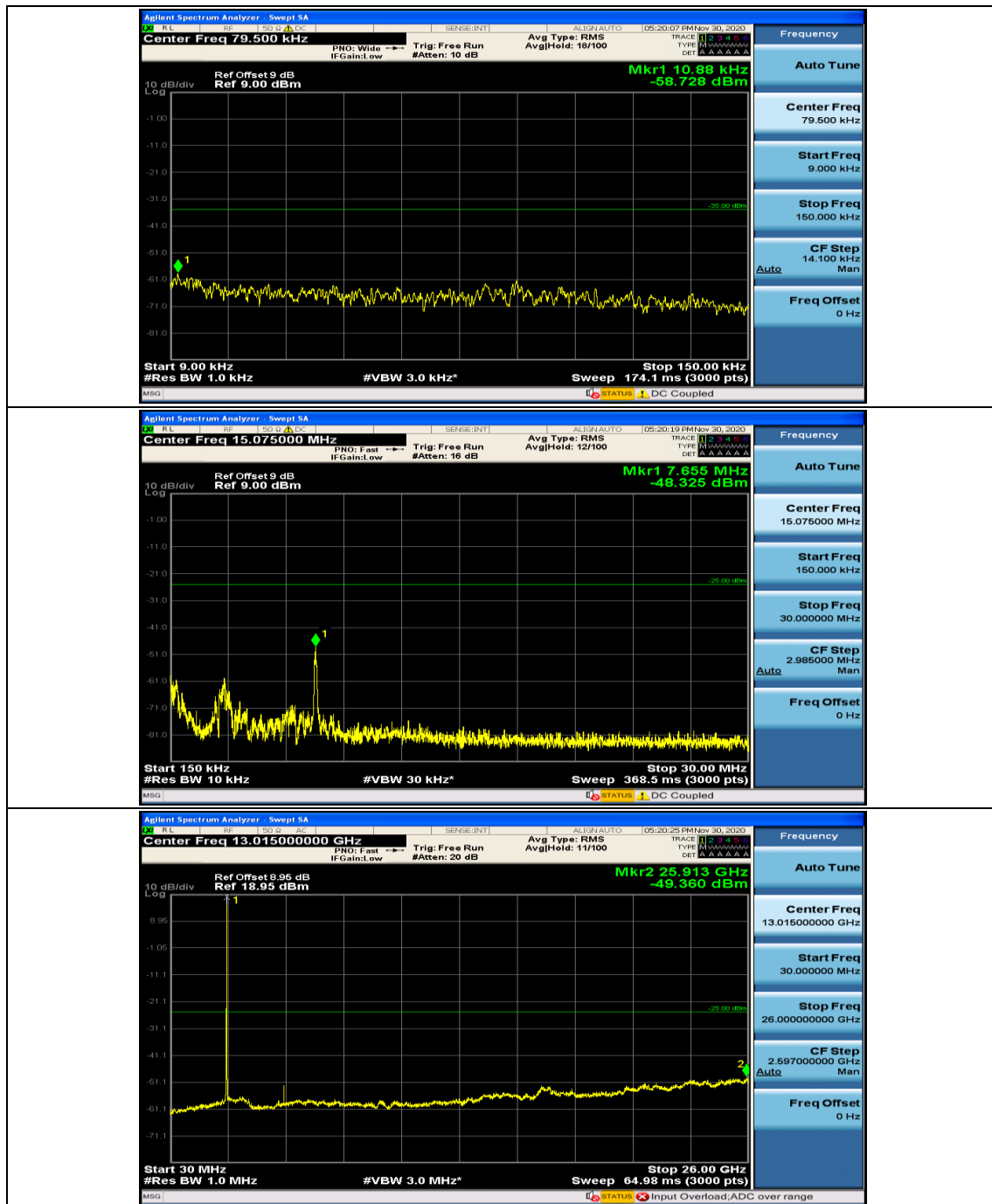












Appendix F: Frequency Stability

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	-0.36	-0.000144	± 2.5	PASS
		VN	TN	-0.77	-0.000308	± 2.5	PASS
		VH	TN	3.5	0.001399	± 2.5	PASS
	MCH	VL	TN	3.15	0.001243	± 2.5	PASS
		VN	TN	4.2	0.001657	± 2.5	PASS
		VH	TN	-0.92	-0.000363	± 2.5	PASS
	HCH	VL	TN	3.23	0.001258	± 2.5	PASS
		VN	TN	-1.43	-0.000557	± 2.5	PASS
		VH	TN	-1.73	-0.000674	± 2.5	PASS
16QAM	LCH	VL	TN	-1.36	-0.000543	± 2.5	PASS
		VN	TN	1.72	0.000687	± 2.5	PASS
		VH	TN	-0.21	-0.000084	± 2.5	PASS
	MCH	VL	TN	0.65	0.000256	± 2.5	PASS
		VN	TN	2.59	0.001022	± 2.5	PASS
		VH	TN	4.88	0.001925	± 2.5	PASS
	HCH	VL	TN	1.64	0.000639	± 2.5	PASS
		VN	TN	2.07	0.000806	± 2.5	PASS
		VH	TN	-0.84	-0.000327	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.22	0.000088	± 2.5	PASS
		VN	-20	0.41	0.000164	± 2.5	PASS
		VN	-10	-0.67	-0.000268	± 2.5	PASS
		VN	0	1.75	0.000699	± 2.5	PASS
		VN	10	3.71	0.001483	± 2.5	PASS
		VN	20	-0.63	-0.000252	± 2.5	PASS
		VN	30	3.11	0.001243	± 2.5	PASS
		VN	40	-0.89	-0.000356	± 2.5	PASS
		VN	50	4.6	0.001838	± 2.5	PASS
	MCH	VN	-30	3.81	0.001503	± 2.5	PASS

		VN	-20	-0.87	-0.000343	± 2.5	PASS
		VN	-10	-0.65	-0.000256	± 2.5	PASS
		VN	0	-0.53	-0.000209	± 2.5	PASS
		VN	10	0.84	0.000331	± 2.5	PASS
		VN	20	-1.74	-0.000686	± 2.5	PASS
		VN	30	1.65	0.000651	± 2.5	PASS
		VN	40	2.03	0.000801	± 2.5	PASS
		VN	50	4.62	0.001822	± 2.5	PASS
	HCH	VN	-30	3.29	0.001281	± 2.5	PASS
		VN	-20	4.8	0.001870	± 2.5	PASS
		VN	-10	-0.84	-0.000327	± 2.5	PASS
		VN	0	2.38	0.000927	± 2.5	PASS
		VN	10	-1.9	-0.000740	± 2.5	PASS
		VN	20	4.06	0.001581	± 2.5	PASS
		VN	30	2.24	0.000872	± 2.5	PASS
		VN	40	3.83	0.001492	± 2.5	PASS
		VN	50	-1.24	-0.000483	± 2.5	PASS
16QAM	LCH	VN	-30	2.89	0.001155	± 2.5	PASS
		VN	-20	1.72	0.000687	± 2.5	PASS
		VN	-10	4.24	0.001694	± 2.5	PASS
		VN	0	3.24	0.001295	± 2.5	PASS
		VN	10	1.86	0.000743	± 2.5	PASS
		VN	20	4.28	0.001710	± 2.5	PASS
		VN	30	4.4	0.001758	± 2.5	PASS
		VN	40	-1.22	-0.000488	± 2.5	PASS
		VN	50	-1.02	-0.000408	± 2.5	PASS
	MCH	VN	-30	1.06	0.000418	± 2.5	PASS
		VN	-20	2.88	0.001136	± 2.5	PASS
		VN	-10	-1.76	-0.000694	± 2.5	PASS
		VN	0	2.34	0.000923	± 2.5	PASS
		VN	10	4.19	0.001653	± 2.5	PASS
		VN	20	1.45	0.000572	± 2.5	PASS
		VN	30	-1.63	-0.000643	± 2.5	PASS
		VN	40	1.59	0.000627	± 2.5	PASS
		VN	50	-0.72	-0.000284	± 2.5	PASS
	HCH	VN	-30	0.26	0.000101	± 2.5	PASS
		VN	-20	3.1	0.001207	± 2.5	PASS
		VN	-10	3.42	0.001332	± 2.5	PASS
		VN	0	2.05	0.000798	± 2.5	PASS
		VN	10	-0.46	-0.000179	± 2.5	PASS
		VN	20	0.27	0.000105	± 2.5	PASS

		VN	30	4.08	0.001589	± 2.5	PASS
		VN	40	-0.79	-0.000308	± 2.5	PASS
		VN	50	-0.41	-0.000160	± 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	3	0.001198	± 2.5	PASS
		VN	TN	2.78	0.001110	± 2.5	PASS
		VH	TN	4.22	0.001685	± 2.5	PASS
	MCH	VL	TN	3.6	0.001420	± 2.5	PASS
		VN	TN	-0.63	-0.000249	± 2.5	PASS
		VH	TN	-1.93	-0.000761	± 2.5	PASS
	HCH	VL	TN	1.07	0.000417	± 2.5	PASS
		VN	TN	-0.47	-0.000183	± 2.5	PASS
		VH	TN	4.06	0.001583	± 2.5	PASS
16QAM	LCH	VL	TN	4.68	0.001868	± 2.5	PASS
		VN	TN	2.95	0.001178	± 2.5	PASS
		VH	TN	-1.52	-0.000607	± 2.5	PASS
	MCH	VL	TN	2.37	0.000935	± 2.5	PASS
		VN	TN	-1.04	-0.000410	± 2.5	PASS
		VH	TN	2.4	0.000947	± 2.5	PASS
	HCH	VL	TN	4.1	0.001598	± 2.5	PASS
		VN	TN	2.2	0.000858	± 2.5	PASS
		VH	TN	1.49	0.000581	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.66	0.001062	± 2.5	PASS
		VN	-20	0.65	0.000259	± 2.5	PASS
		VN	-10	2.16	0.000862	± 2.5	PASS
		VN	0	3.89	0.001553	± 2.5	PASS
		VN	10	2.45	0.000978	± 2.5	PASS
		VN	20	-1.64	-0.000655	± 2.5	PASS
		VN	30	4.56	0.001820	± 2.5	PASS
		VN	40	1.28	0.000511	± 2.5	PASS
		VN	50	-0.1	-0.000040	± 2.5	PASS
	MCH	VN	-30	3.93	0.001550	± 2.5	PASS
		VN	-20	3.91	0.001542	± 2.5	PASS
		VN	-10	2.67	0.001053	± 2.5	PASS

		VN	0	3.62	0.001428	± 2.5	PASS
		VN	10	4.53	0.001787	± 2.5	PASS
		VN	20	3.87	0.001527	± 2.5	PASS
		VN	30	2.71	0.001069	± 2.5	PASS
		VN	40	-1.18	-0.000465	± 2.5	PASS
		VN	50	4.77	0.001882	± 2.5	PASS
	HCH	VN	-30	-0.55	-0.000214	± 2.5	PASS
		VN	-20	2.47	0.000963	± 2.5	PASS
		VN	-10	3.06	0.001193	± 2.5	PASS
		VN	0	2.79	0.001088	± 2.5	PASS
		VN	10	3.89	0.001517	± 2.5	PASS
		VN	20	-0.28	-0.000109	± 2.5	PASS
		VN	30	2.87	0.001119	± 2.5	PASS
		VN	40	-1.19	-0.000464	± 2.5	PASS
		VN	50	-1.16	-0.000452	± 2.5	PASS
16QAM	LCH	VN	-30	-0.98	-0.000391	± 2.5	PASS
		VN	-20	-0.75	-0.000299	± 2.5	PASS
		VN	-10	3.86	0.001541	± 2.5	PASS
		VN	0	4.22	0.001685	± 2.5	PASS
		VN	10	-1.51	-0.000603	± 2.5	PASS
		VN	20	1.45	0.000579	± 2.5	PASS
		VN	30	-0.93	-0.000371	± 2.5	PASS
		VN	40	4.93	0.001968	± 2.5	PASS
		VN	50	0.85	0.000339	± 2.5	PASS
	MCH	VN	-30	1.22	0.000481	± 2.5	PASS
		VN	-20	-1.16	-0.000458	± 2.5	PASS
		VN	-10	0.25	0.000099	± 2.5	PASS
		VN	0	-1.7	-0.000671	± 2.5	PASS
		VN	10	0.81	0.000320	± 2.5	PASS
		VN	20	3.84	0.001515	± 2.5	PASS
		VN	30	1.91	0.000753	± 2.5	PASS
		VN	40	2.22	0.000876	± 2.5	PASS
		VN	50	2.71	0.001069	± 2.5	PASS
	HCH	VN	-30	-0.71	-0.000277	± 2.5	PASS
		VN	-20	-1.85	-0.000721	± 2.5	PASS
		VN	-10	0.69	0.000269	± 2.5	PASS
		VN	0	-0.47	-0.000183	± 2.5	PASS
		VN	10	-0.46	-0.000179	± 2.5	PASS
		VN	20	2.7	0.001053	± 2.5	PASS
		VN	30	-1.29	-0.000503	± 2.5	PASS
		VN	40	2.81	0.001096	± 2.5	PASS

		VN	50	3.74	0.001458	± 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	3.29	0.001312	± 2.5	PASS
		VN	TN	-1.98	-0.000790	± 2.5	PASS
		VH	TN	-2	-0.000798	± 2.5	PASS
	MCH	VL	TN	2.47	0.000974	± 2.5	PASS
		VN	TN	-0.91	-0.000359	± 2.5	PASS
		VH	TN	4.11	0.001621	± 2.5	PASS
	HCH	VL	TN	3.8	0.001483	± 2.5	PASS
		VN	TN	3.88	0.001514	± 2.5	PASS
		VH	TN	-0.32	-0.000125	± 2.5	PASS
16QAM	LCH	VL	TN	1.09	0.000435	± 2.5	PASS
		VN	TN	4.65	0.001854	± 2.5	PASS
		VH	TN	0.14	0.000056	± 2.5	PASS
	MCH	VL	TN	0.16	0.000063	± 2.5	PASS
		VN	TN	2.16	0.000852	± 2.5	PASS
		VH	TN	-0.23	-0.000091	± 2.5	PASS
	HCH	VL	TN	2.17	0.000847	± 2.5	PASS
		VN	TN	2.78	0.001085	± 2.5	PASS
		VH	TN	0.06	0.000023	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.76	0.000702	± 2.5	PASS
		VN	-20	-0.41	-0.000164	± 2.5	PASS
		VN	-10	-0.62	-0.000247	± 2.5	PASS
		VN	0	-0.13	-0.000052	± 2.5	PASS
		VN	10	-1.28	-0.000510	± 2.5	PASS
		VN	20	2.92	0.001165	± 2.5	PASS
		VN	30	1.65	0.000658	± 2.5	PASS
		VN	40	4.51	0.001799	± 2.5	PASS
		VN	50	0.77	0.000307	± 2.5	PASS
	MCH	VN	-30	1.84	0.000726	± 2.5	PASS
		VN	-20	-0.37	-0.000146	± 2.5	PASS
		VN	-10	2.65	0.001045	± 2.5	PASS
		VN	0	2.47	0.000974	± 2.5	PASS

		VN	10	3.19	0.001258	± 2.5	PASS
		VN	20	1.29	0.000509	± 2.5	PASS
		VN	30	1.62	0.000639	± 2.5	PASS
		VN	40	4.49	0.001771	± 2.5	PASS
		VN	50	1.89	0.000746	± 2.5	PASS
	HCH	VN	-30	-1.79	-0.000699	± 2.5	PASS
		VN	-20	0.2	0.000078	± 2.5	PASS
		VN	-10	1.49	0.000581	± 2.5	PASS
		VN	0	1.1	0.000429	± 2.5	PASS
		VN	10	-0.06	-0.000023	± 2.5	PASS
		VN	20	2.81	0.001097	± 2.5	PASS
		VN	30	-1.54	-0.000601	± 2.5	PASS
		VN	40	2.29	0.000894	± 2.5	PASS
		VN	50	2.09	0.000816	± 2.5	PASS
16QAM	LCH	VN	-30	-1.13	-0.000451	± 2.5	PASS
		VN	-20	1.9	0.000758	± 2.5	PASS
		VN	-10	0.74	0.000295	± 2.5	PASS
		VN	0	0.76	0.000303	± 2.5	PASS
		VN	10	0.76	0.000303	± 2.5	PASS
		VN	20	-1.99	-0.000794	± 2.5	PASS
		VN	30	2.18	0.000869	± 2.5	PASS
		VN	40	4.03	0.001607	± 2.5	PASS
		VN	50	1.73	0.000690	± 2.5	PASS
	MCH	VN	-30	4.41	0.001740	± 2.5	PASS
		VN	-20	-0.54	-0.000213	± 2.5	PASS
		VN	-10	3.35	0.001321	± 2.5	PASS
		VN	0	0.55	0.000217	± 2.5	PASS
		VN	10	3.6	0.001420	± 2.5	PASS
		VN	20	-0.65	-0.000256	± 2.5	PASS
		VN	30	-0.44	-0.000174	± 2.5	PASS
		VN	40	3.75	0.001479	± 2.5	PASS
		VN	50	2.1	0.000828	± 2.5	PASS
	HCH	VN	-30	-0.28	-0.000109	± 2.5	PASS
		VN	-20	4.12	0.001608	± 2.5	PASS
		VN	-10	3.37	0.001315	± 2.5	PASS
		VN	0	1.93	0.000753	± 2.5	PASS
		VN	10	-0.53	-0.000207	± 2.5	PASS
		VN	20	4.55	0.001776	± 2.5	PASS
		VN	30	2.07	0.000808	± 2.5	PASS
		VN	40	1.84	0.000718	± 2.5	PASS
		VN	50	4.07	0.001588	± 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	-1.84	-0.000733	± 2.5	PASS
		VN	TN	1.76	0.000701	± 2.5	PASS
		VH	TN	1.93	0.000769	± 2.5	PASS
	MCH	VL	TN	4.74	0.001870	± 2.5	PASS
		VN	TN	0.18	0.000071	± 2.5	PASS
		VH	TN	3.91	0.001542	± 2.5	PASS
	HCH	VL	TN	4.94	0.001930	± 2.5	PASS
		VN	TN	-0.26	-0.000102	± 2.5	PASS
		VH	TN	2.11	0.000824	± 2.5	PASS
16QAM	LCH	VL	TN	3.69	0.001470	± 2.5	PASS
		VN	TN	1.15	0.000458	± 2.5	PASS
		VH	TN	-1.31	-0.000522	± 2.5	PASS
	MCH	VL	TN	0	0.000000	± 2.5	PASS
		VN	TN	-1.92	-0.000757	± 2.5	PASS
		VH	TN	-0.9	-0.000355	± 2.5	PASS
	HCH	VL	TN	2.72	0.001063	± 2.5	PASS
		VN	TN	3.79	0.001480	± 2.5	PASS
		VH	TN	-1.89	-0.000738	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.44	0.000574	± 2.5	PASS
		VN	-20	-0.86	-0.000343	± 2.5	PASS
		VN	-10	-1.65	-0.000657	± 2.5	PASS
		VN	0	0.11	0.000044	± 2.5	PASS
		VN	10	3.15	0.001255	± 2.5	PASS
		VN	20	0.93	0.000371	± 2.5	PASS
		VN	30	2.47	0.000984	± 2.5	PASS
		VN	40	1.35	0.000538	± 2.5	PASS
		VN	50	4.11	0.001637	± 2.5	PASS
	MCH	VN	-30	1.05	0.000414	± 2.5	PASS
		VN	-20	4.65	0.001834	± 2.5	PASS
		VN	-10	-1.4	-0.000552	± 2.5	PASS
		VN	0	1.11	0.000438	± 2.5	PASS
		VN	10	4.45	0.001755	± 2.5	PASS

		VN	20	3.54	0.001396	± 2.5	PASS
		VN	30	3.57	0.001408	± 2.5	PASS
		VN	40	1.93	0.000761	± 2.5	PASS
		VN	50	1.48	0.000584	± 2.5	PASS
	HCH	VN	-30	3.53	0.001379	± 2.5	PASS
		VN	-20	-1.27	-0.000496	± 2.5	PASS
		VN	-10	1.93	0.000754	± 2.5	PASS
		VN	0	4.45	0.001738	± 2.5	PASS
		VN	10	1.16	0.000453	± 2.5	PASS
		VN	20	3.65	0.001426	± 2.5	PASS
		VN	30	1.75	0.000684	± 2.5	PASS
		VN	40	-1.23	-0.000480	± 2.5	PASS
		VN	50	0.79	0.000309	± 2.5	PASS
16QAM	LCH	VN	-30	-0.57	-0.000227	± 2.5	PASS
		VN	-20	-1.4	-0.000558	± 2.5	PASS
		VN	-10	2.63	0.001048	± 2.5	PASS
		VN	0	-1.39	-0.000554	± 2.5	PASS
		VN	10	-0.57	-0.000227	± 2.5	PASS
		VN	20	-0.52	-0.000207	± 2.5	PASS
		VN	30	-0.75	-0.000299	± 2.5	PASS
		VN	40	3.8	0.001514	± 2.5	PASS
		VN	50	2.56	0.001020	± 2.5	PASS
	MCH	VN	-30	-0.04	-0.000016	± 2.5	PASS
		VN	-20	-1.79	-0.000706	± 2.5	PASS
		VN	-10	4.95	0.001953	± 2.5	PASS
		VN	0	1.31	0.000517	± 2.5	PASS
		VN	10	0.47	0.000185	± 2.5	PASS
		VN	20	-0.3	-0.000118	± 2.5	PASS
		VN	30	1.81	0.000714	± 2.5	PASS
		VN	40	3.92	0.001546	± 2.5	PASS
		VN	50	-0.86	-0.000339	± 2.5	PASS
	HCH	VN	-30	3.45	0.001348	± 2.5	PASS
		VN	-20	0.26	0.000102	± 2.5	PASS
		VN	-10	-0.4	-0.000156	± 2.5	PASS
		VN	0	2.91	0.001137	± 2.5	PASS
		VN	10	-1.4	-0.000547	± 2.5	PASS
		VN	20	0.64	0.000250	± 2.5	PASS
		VN	30	0.87	0.000340	± 2.5	PASS
		VN	40	2.59	0.001012	± 2.5	PASS
		VN	50	3.45	0.001348	± 2.5	PASS