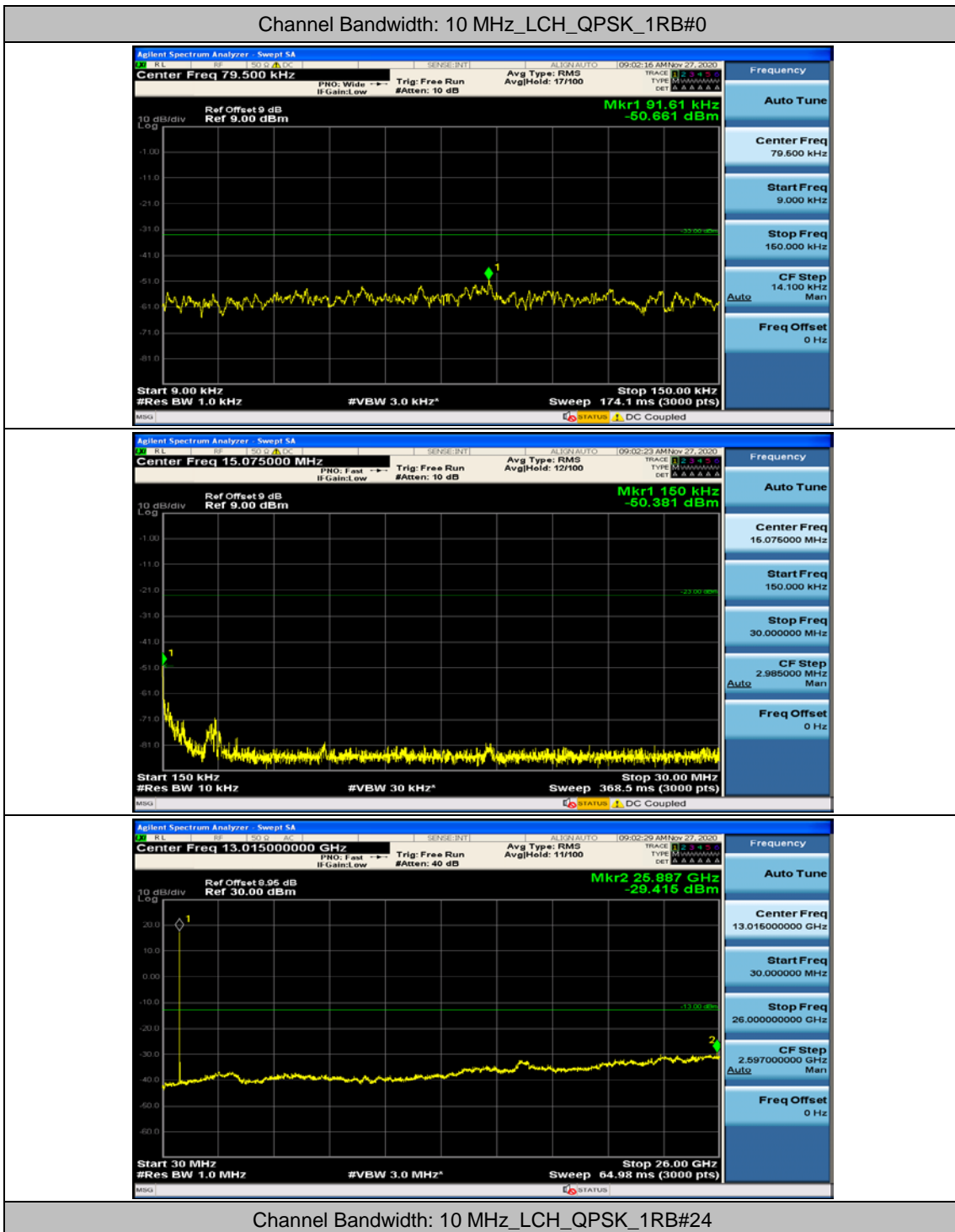
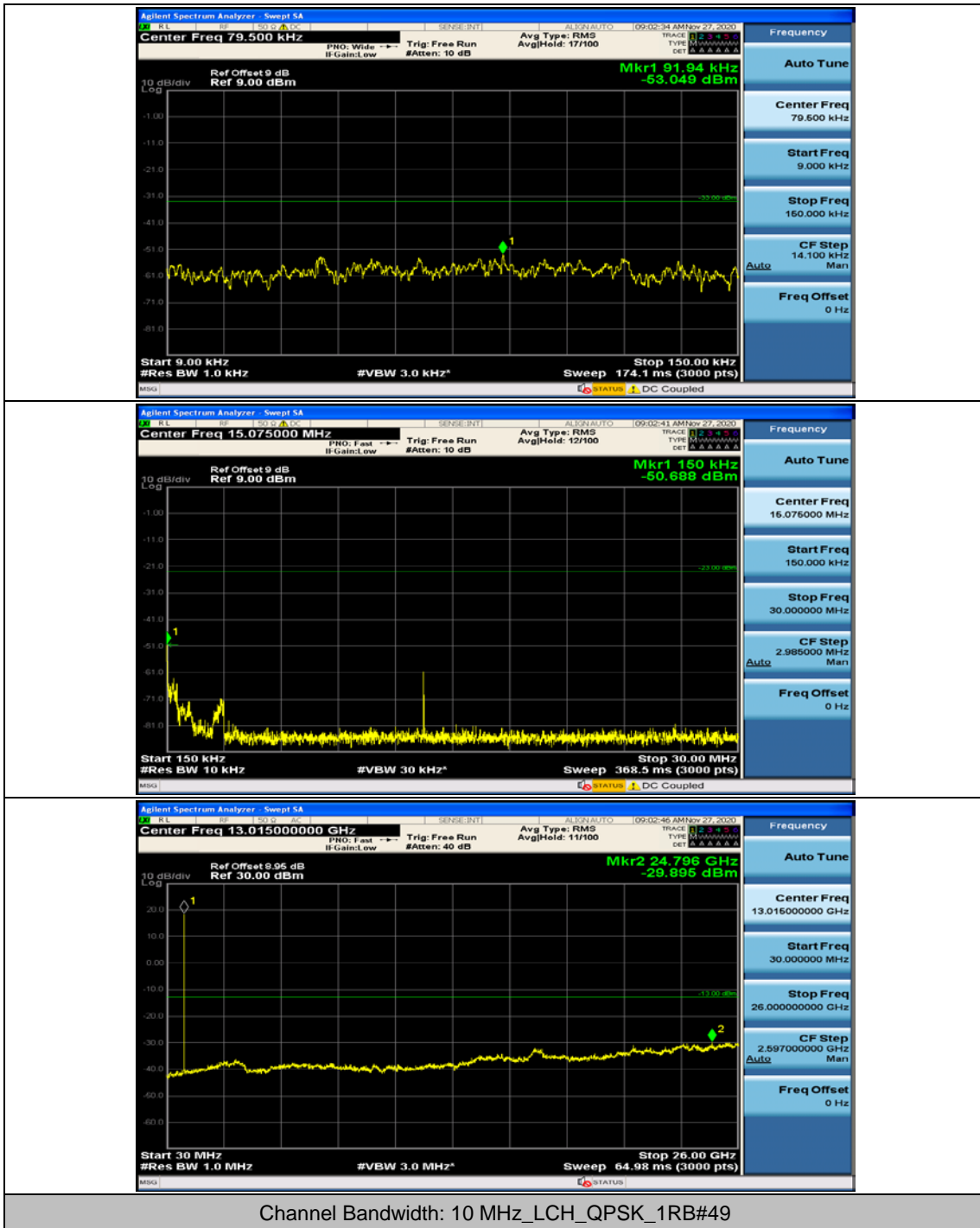
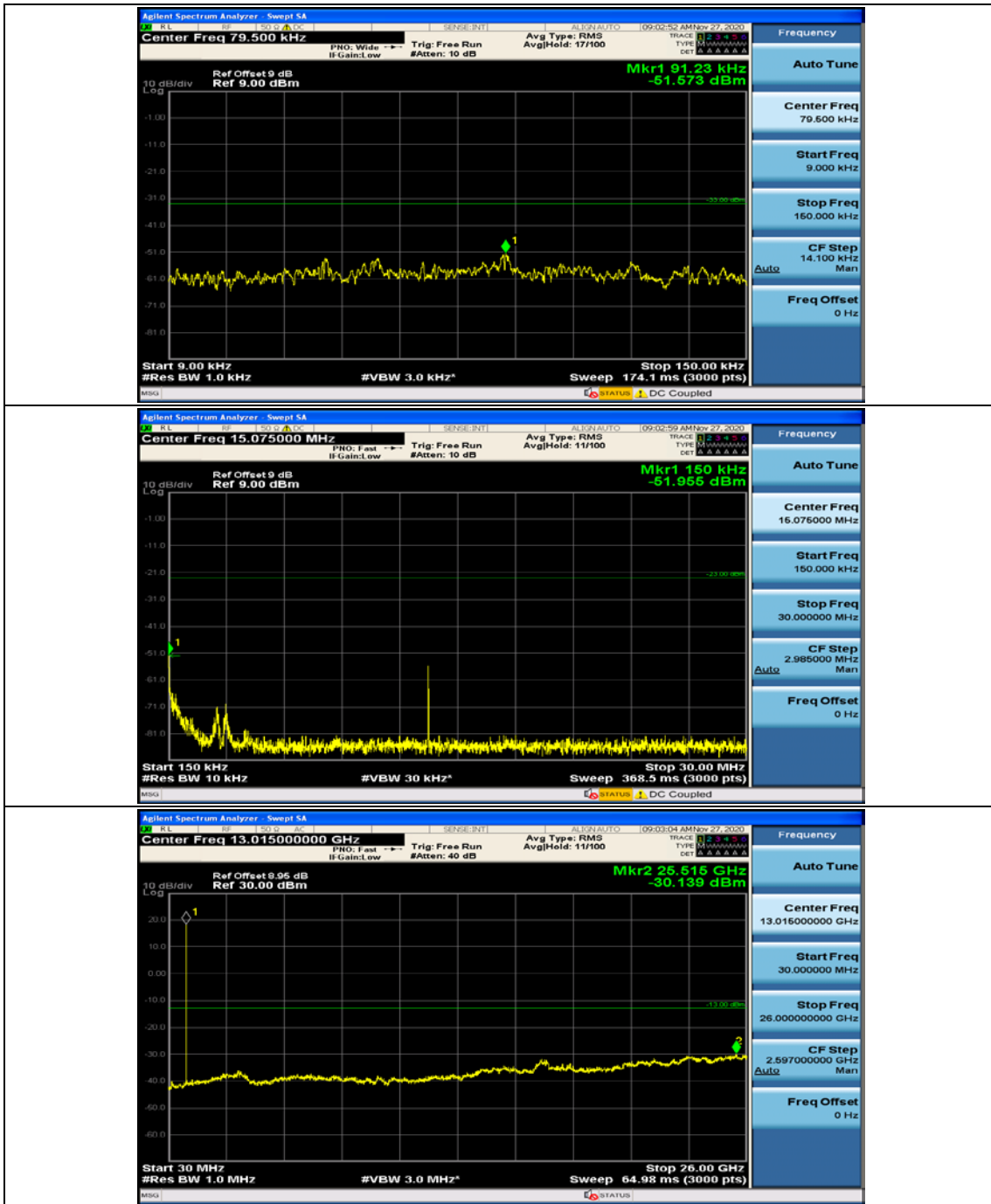
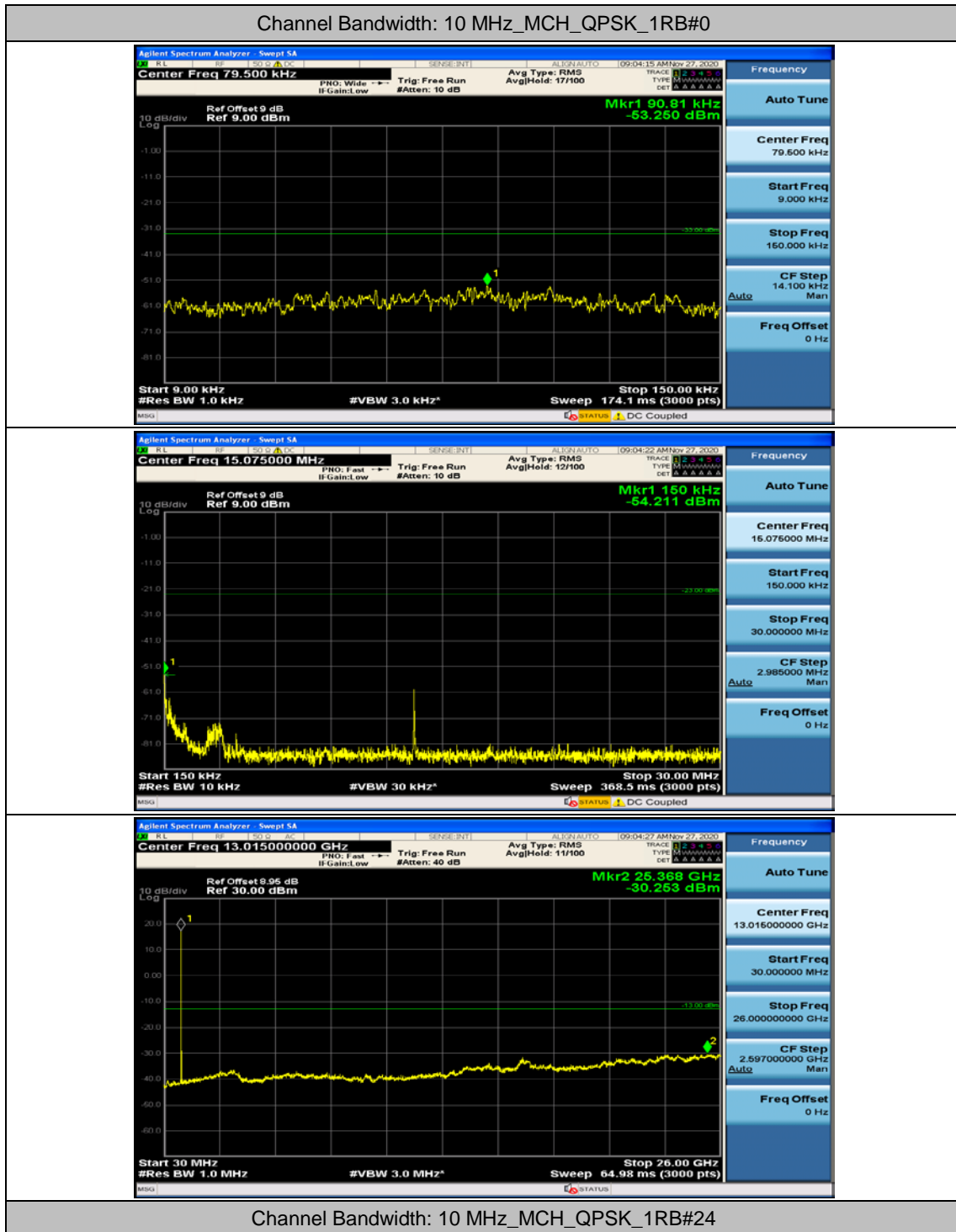


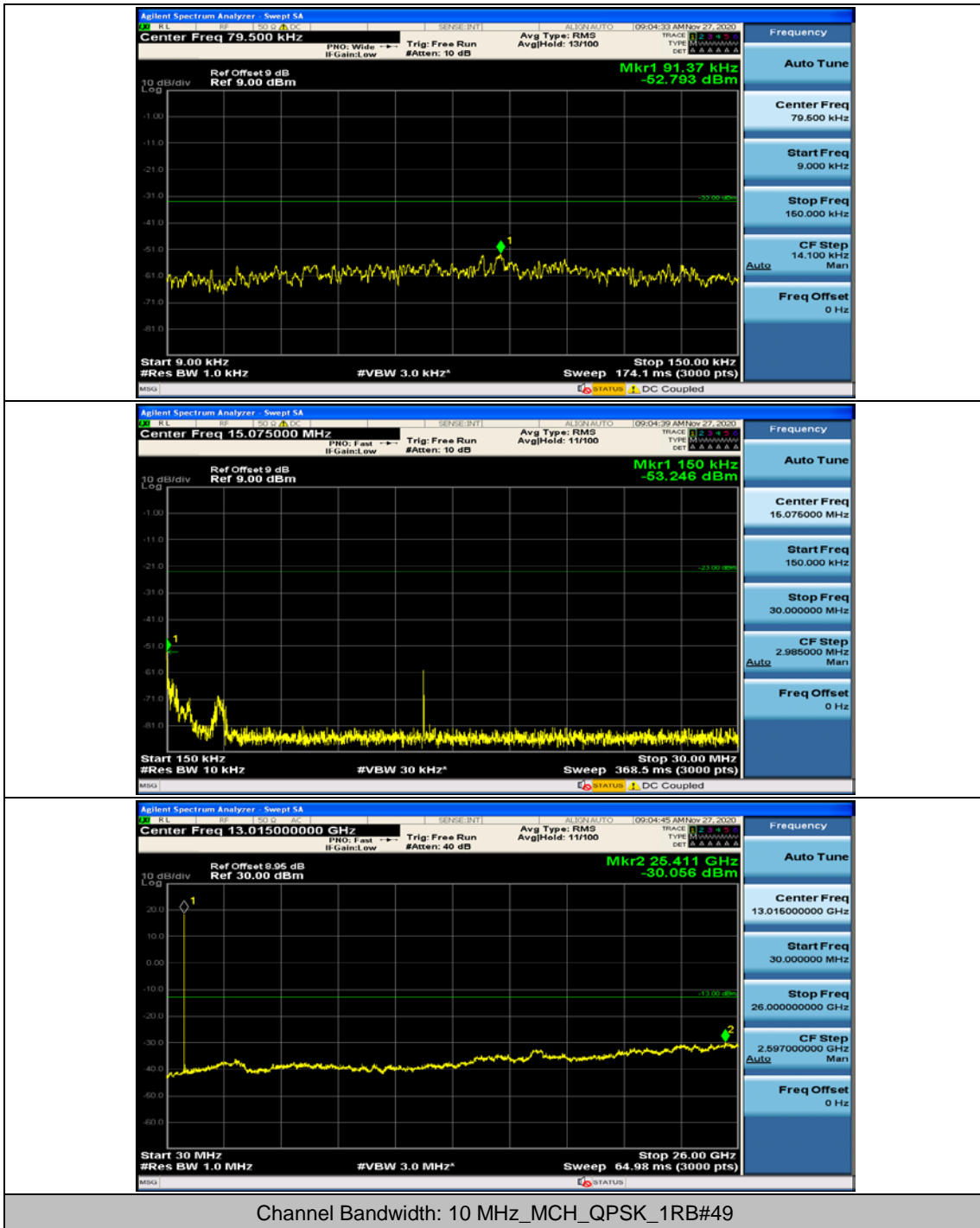
Channel Bandwidth: 10 MHz

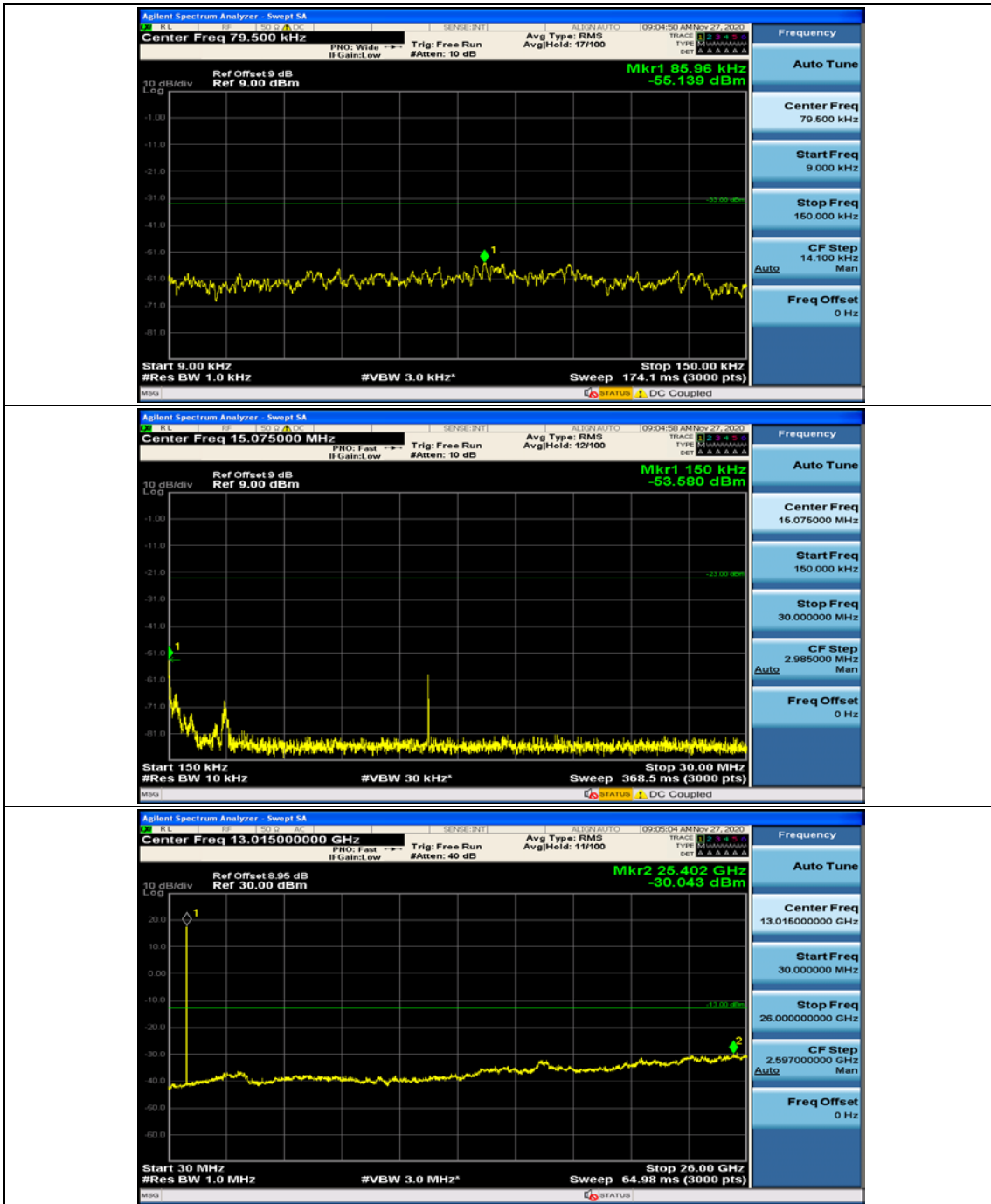


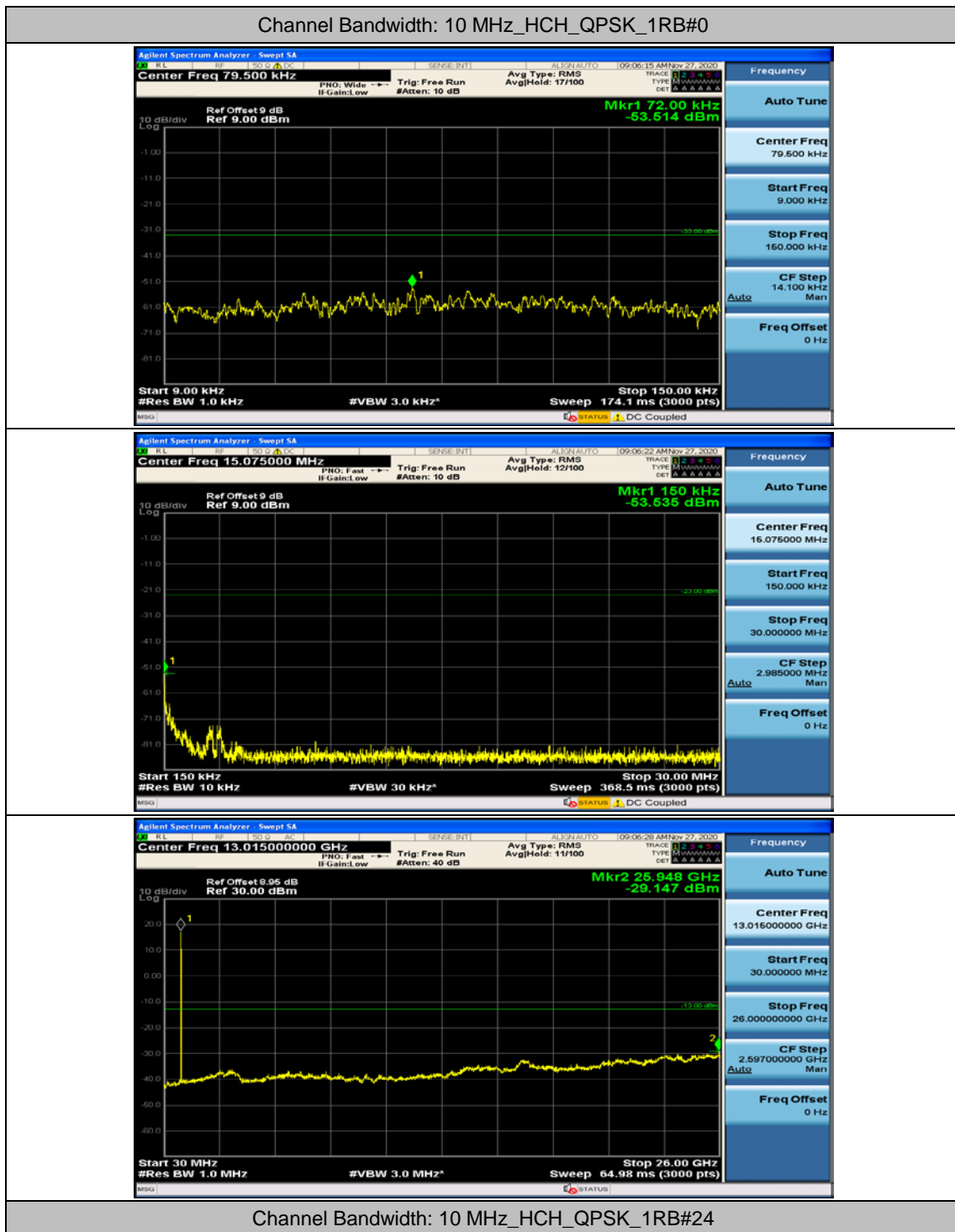


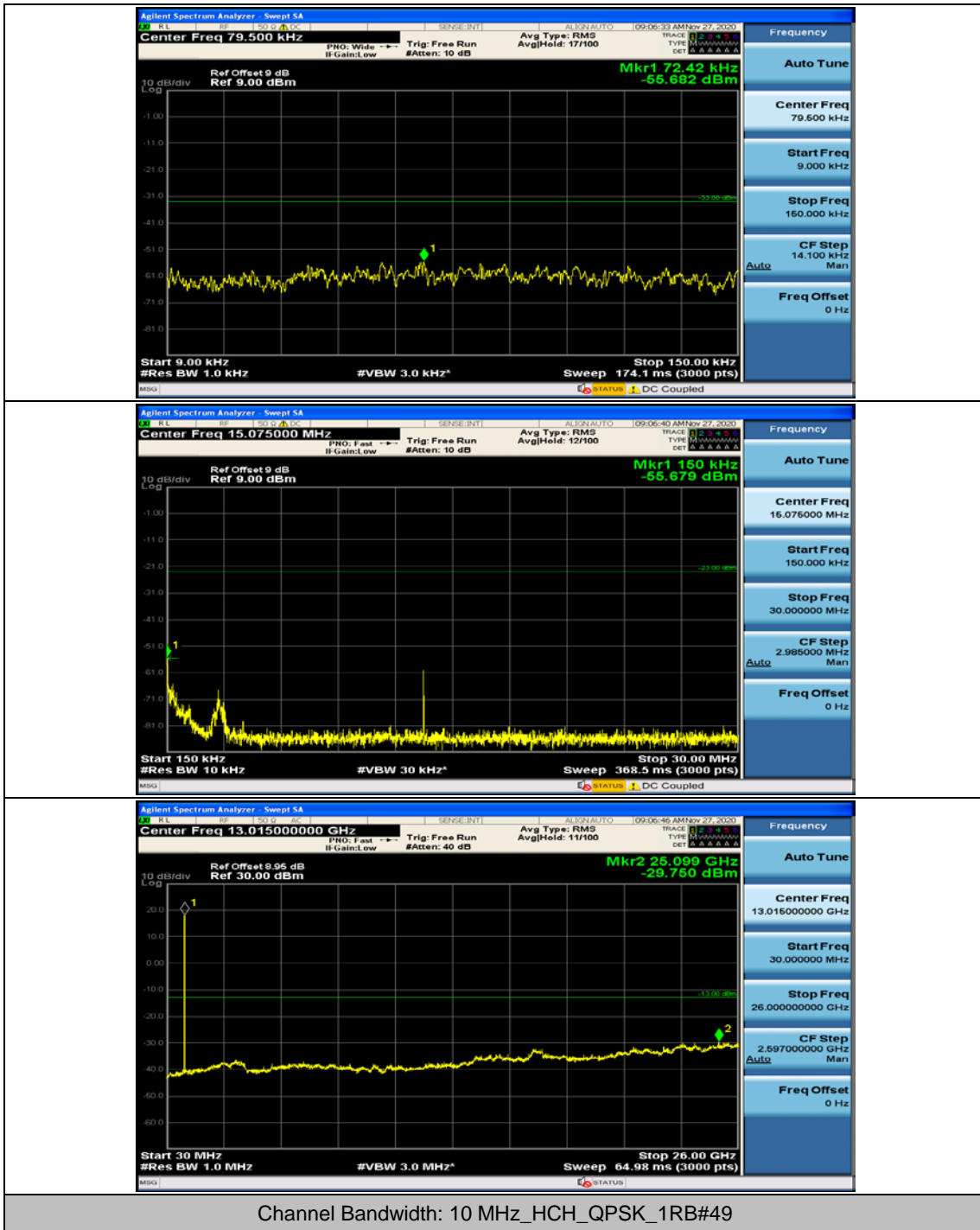


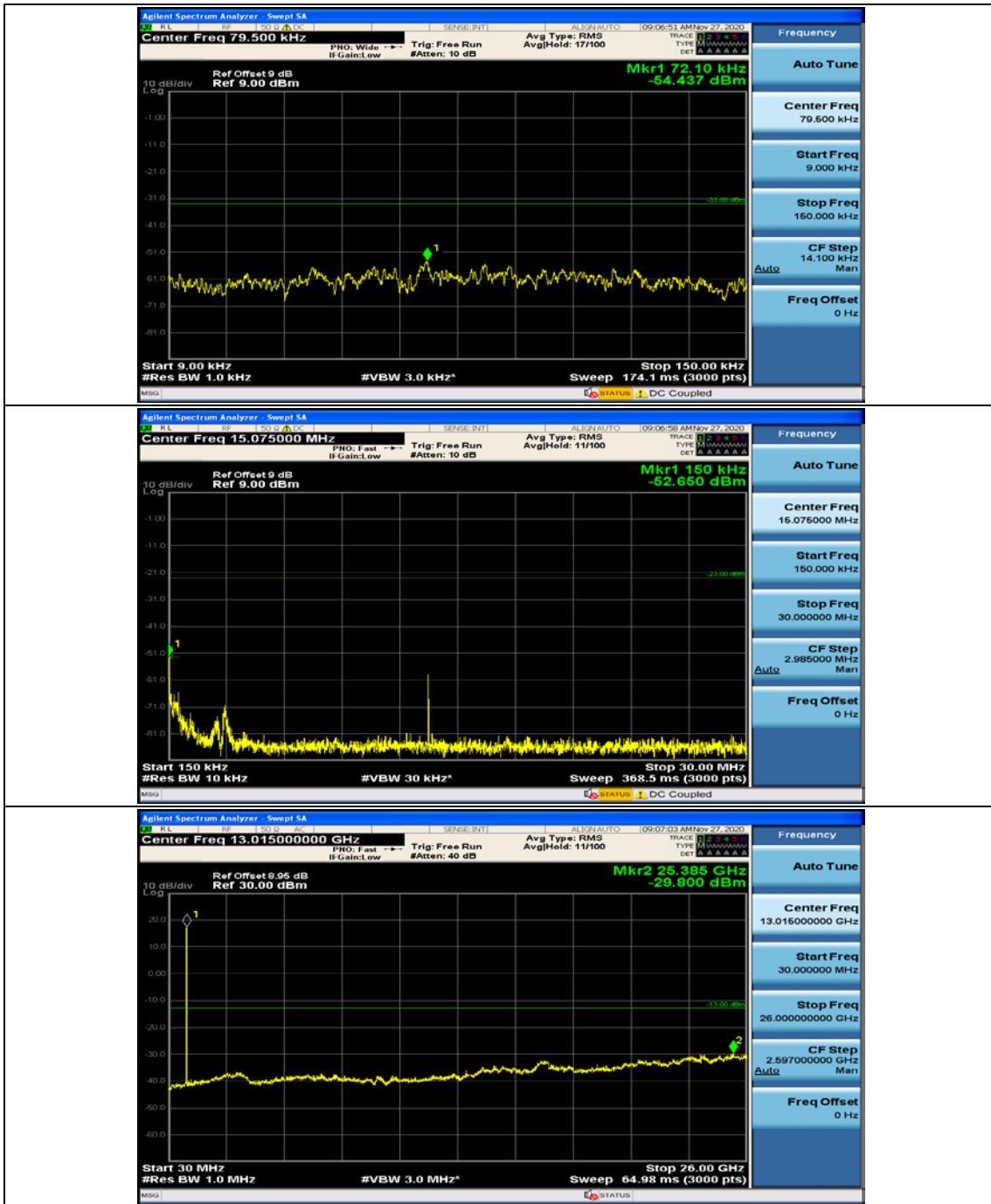


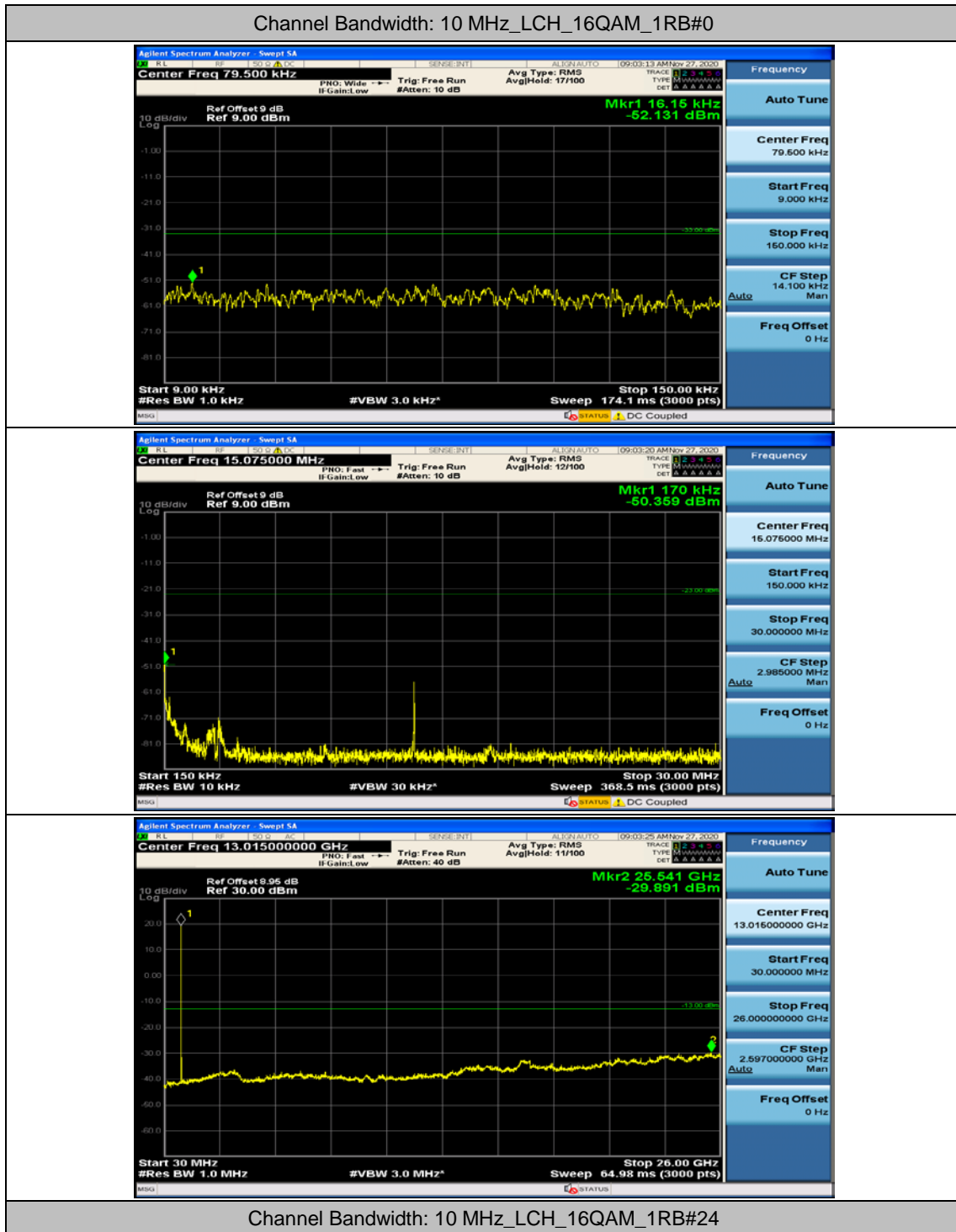


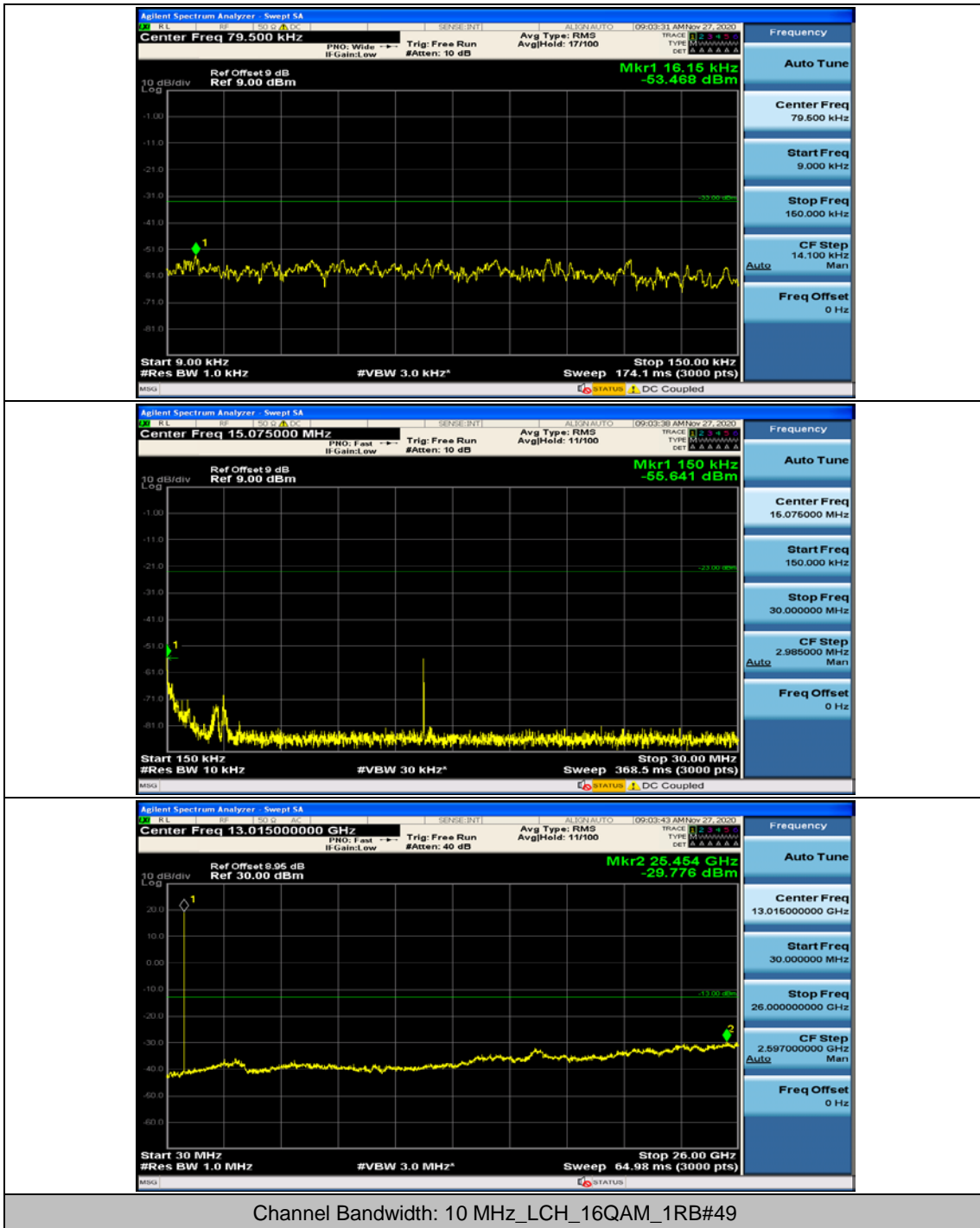


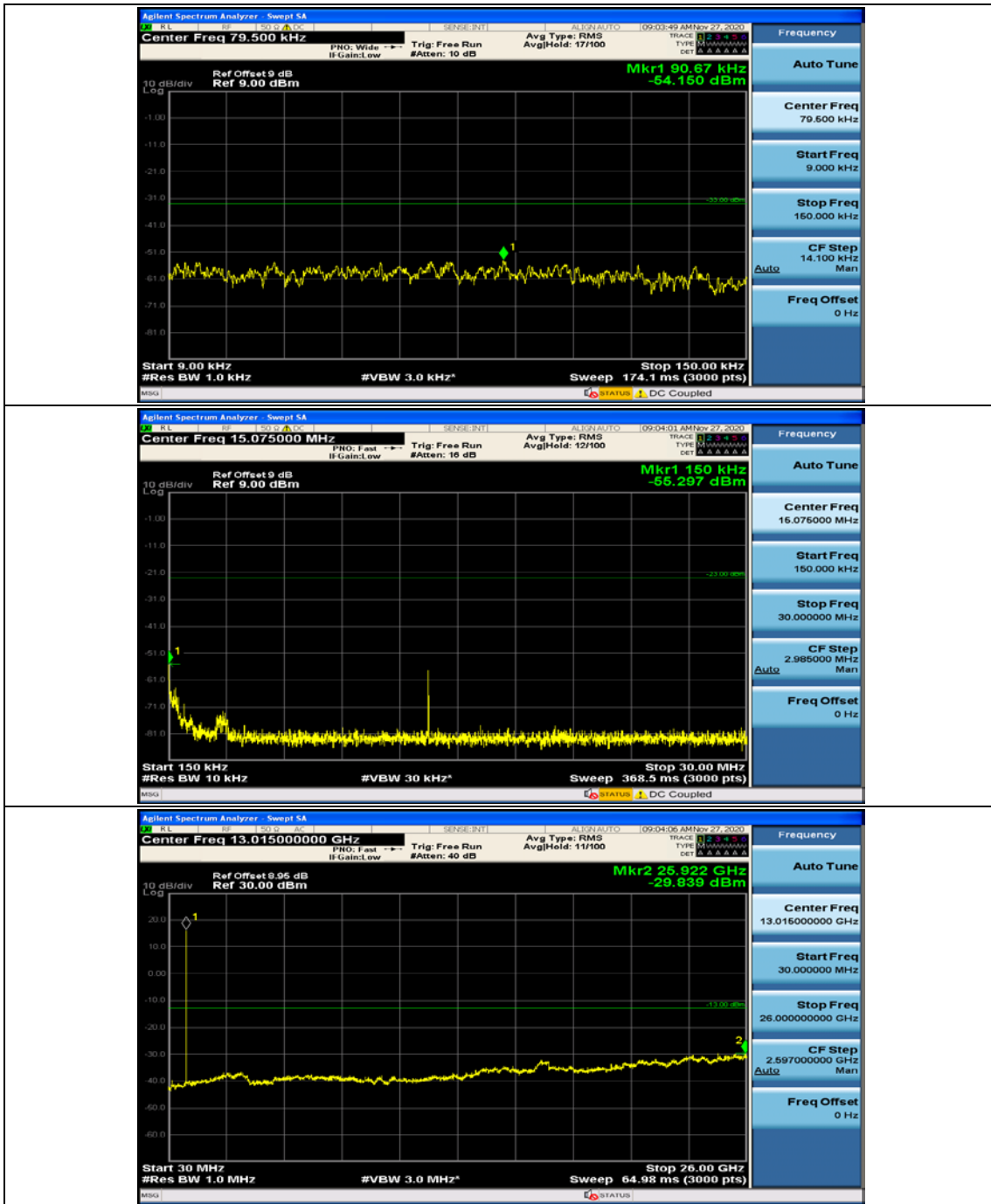


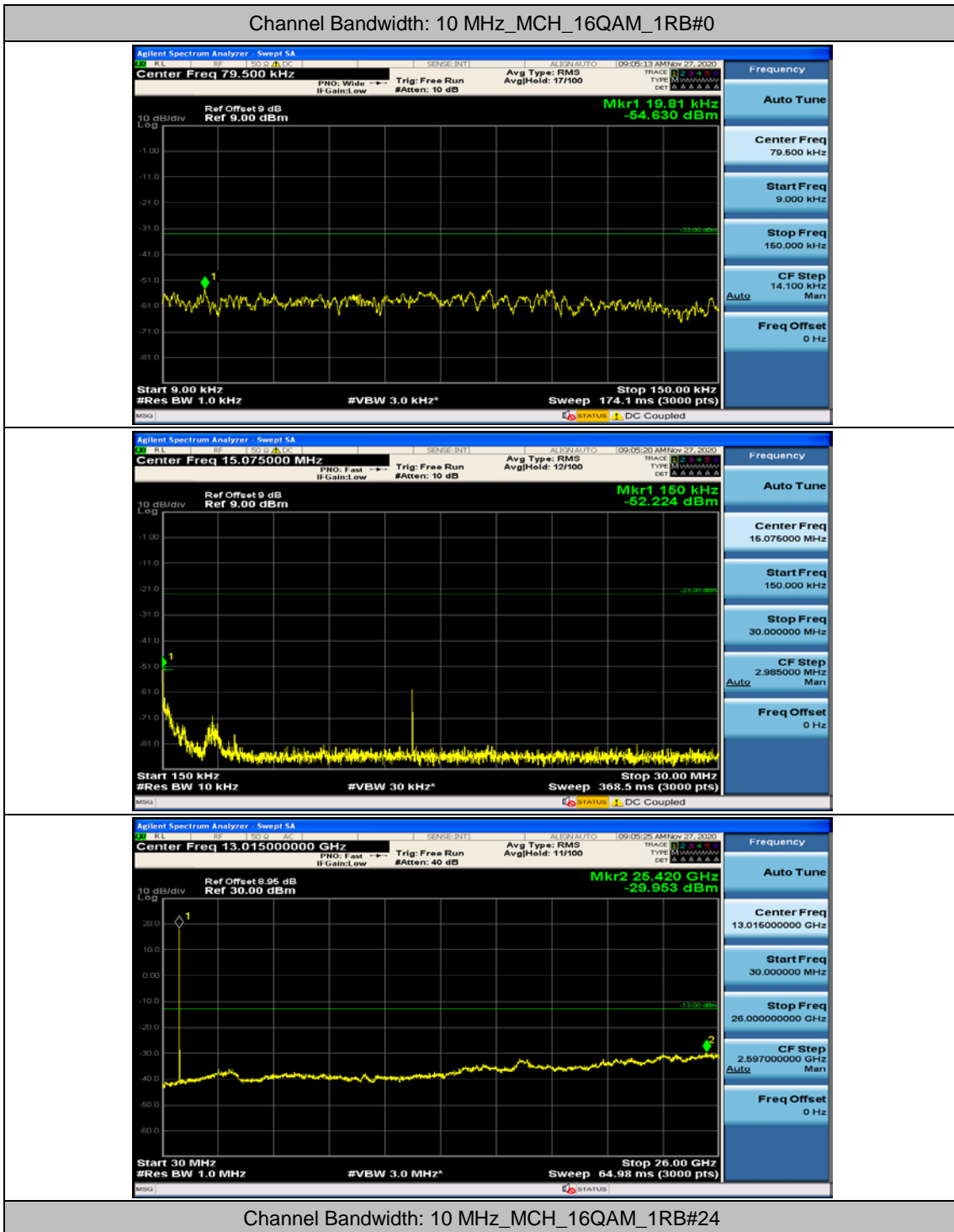


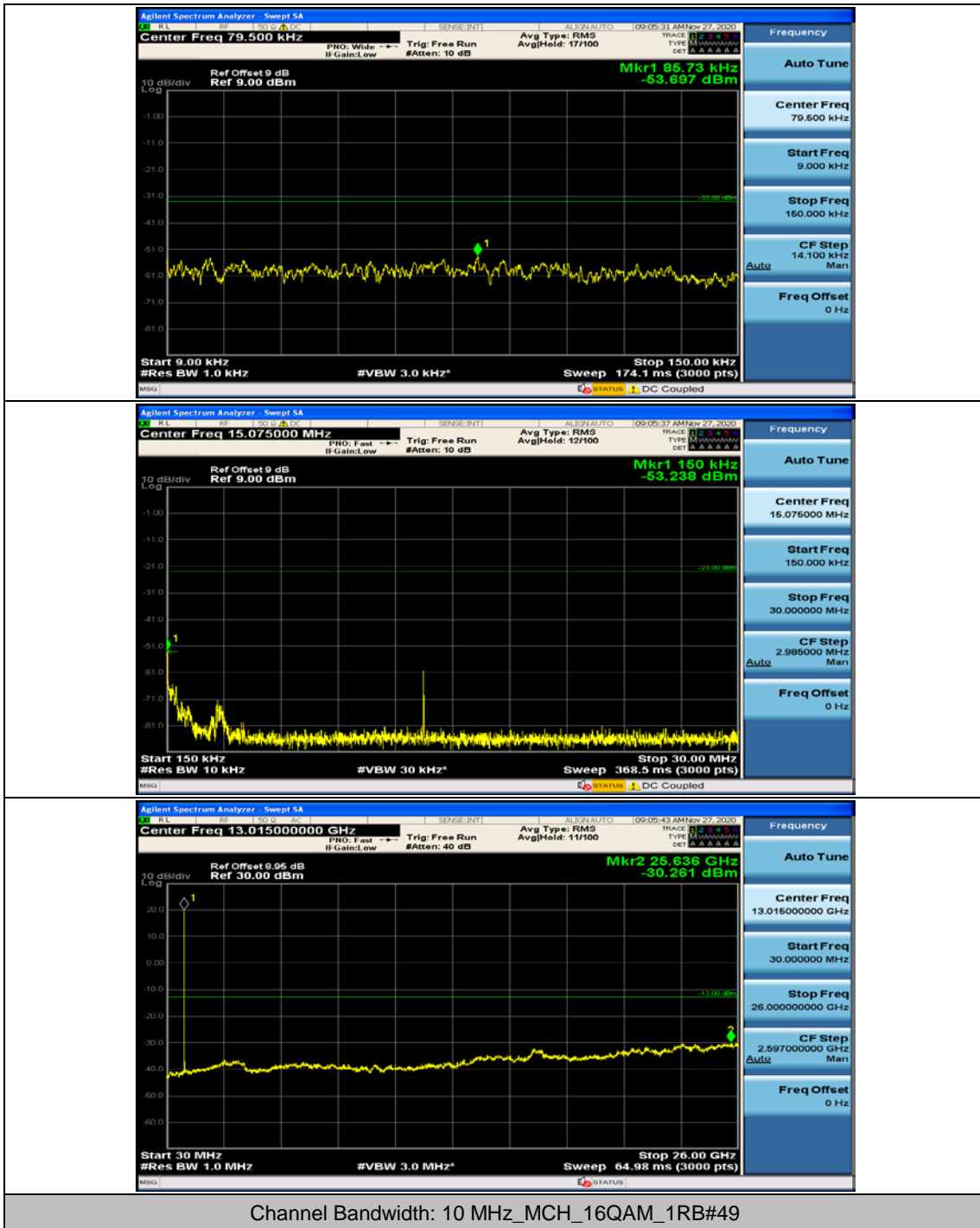


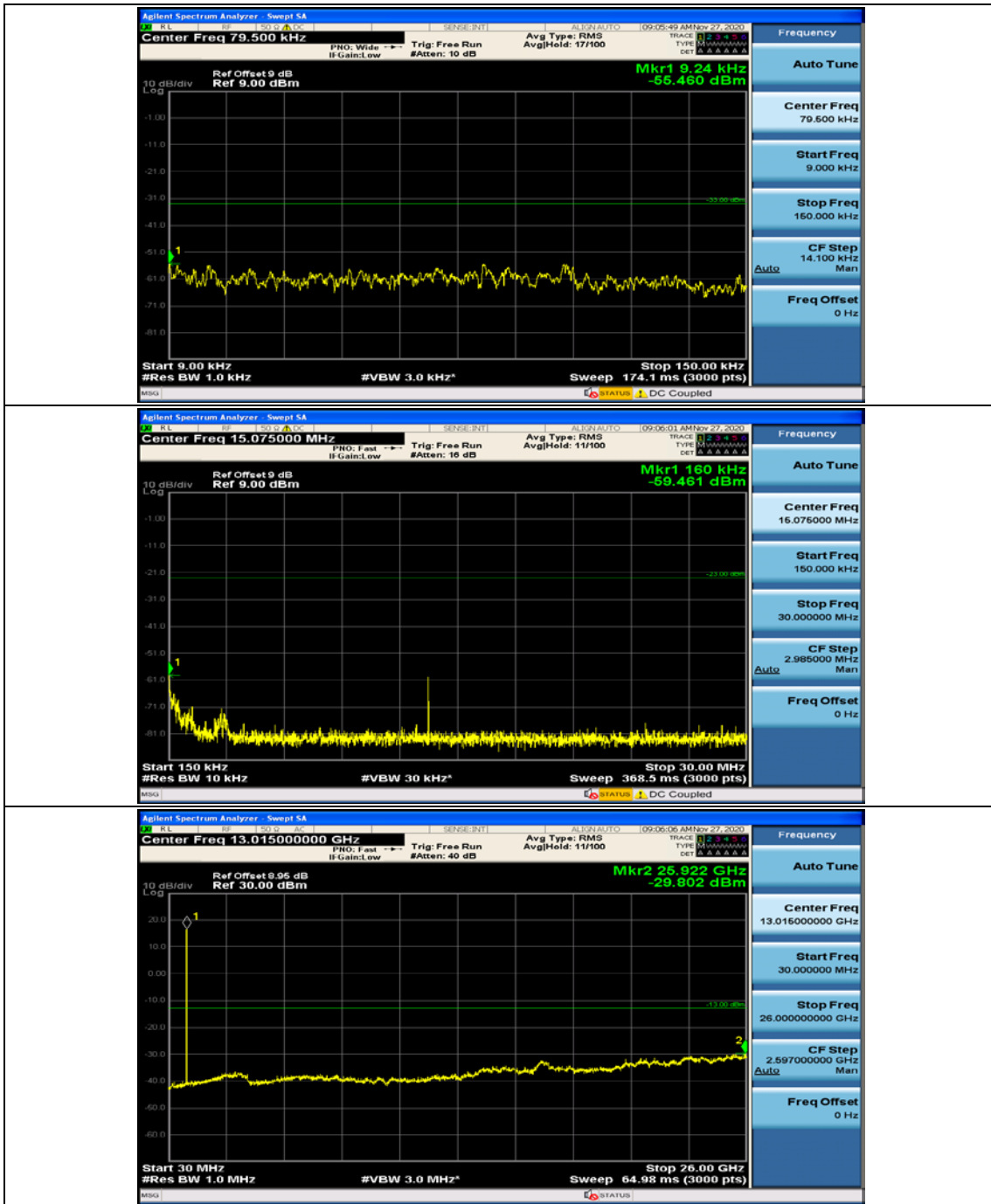


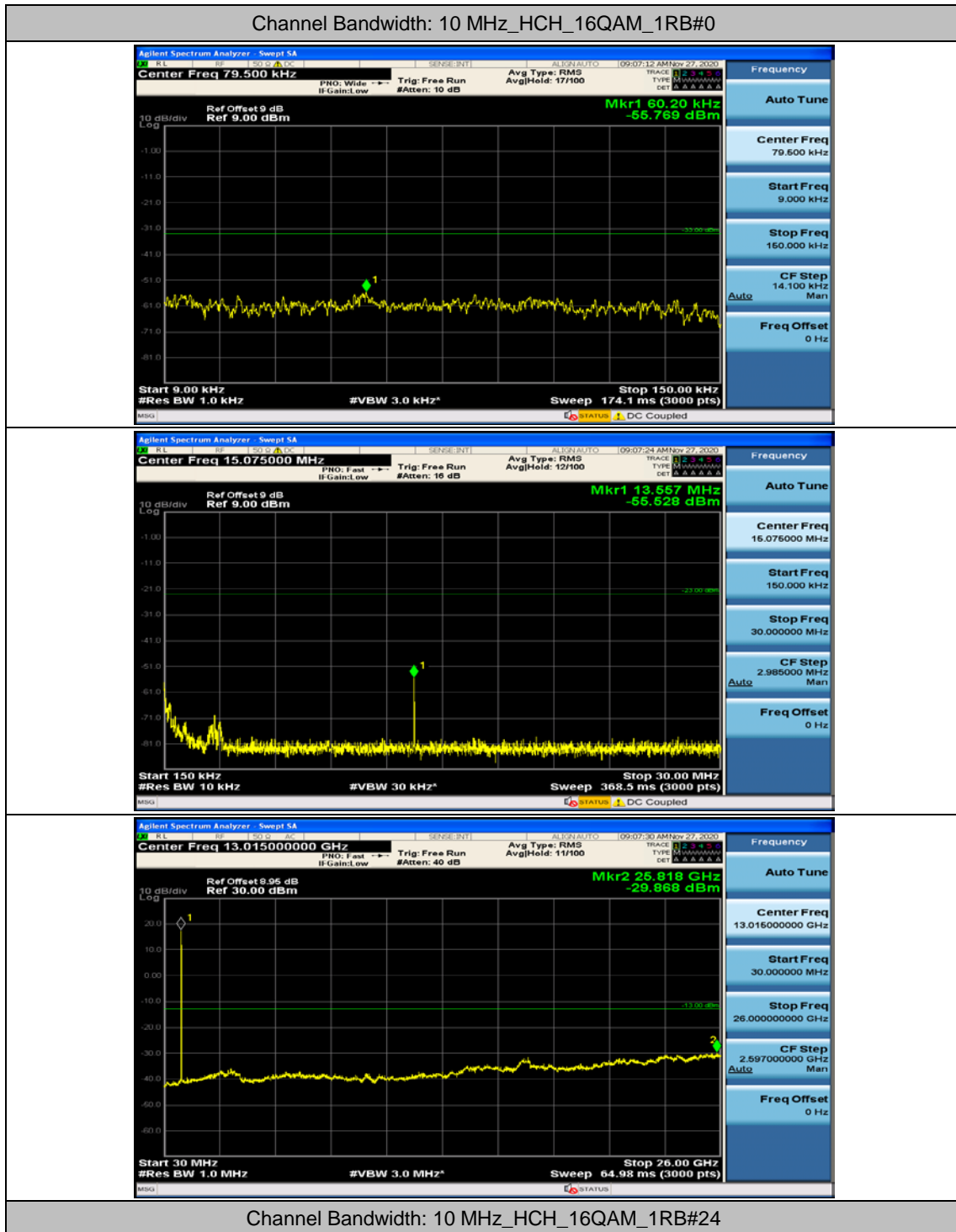


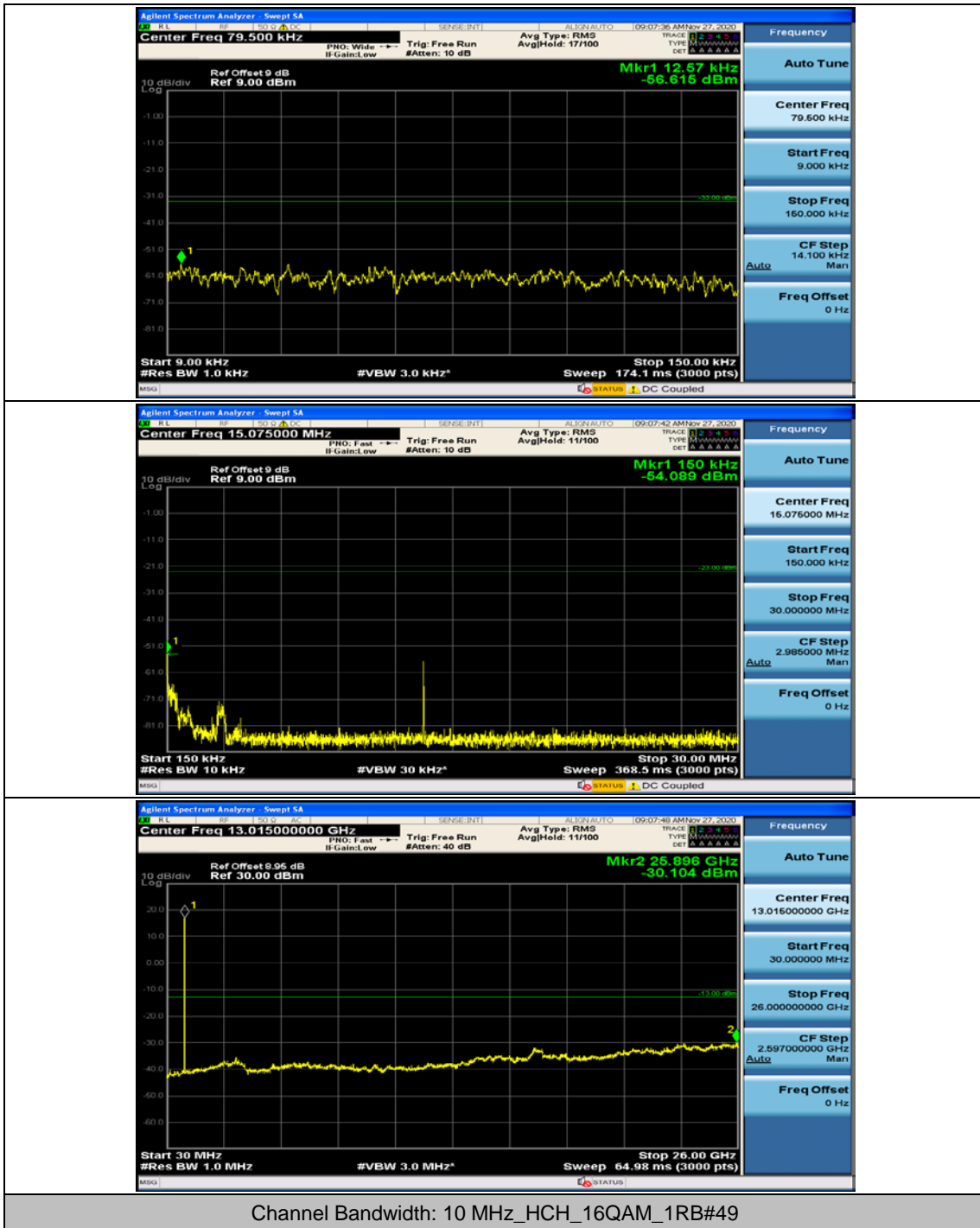


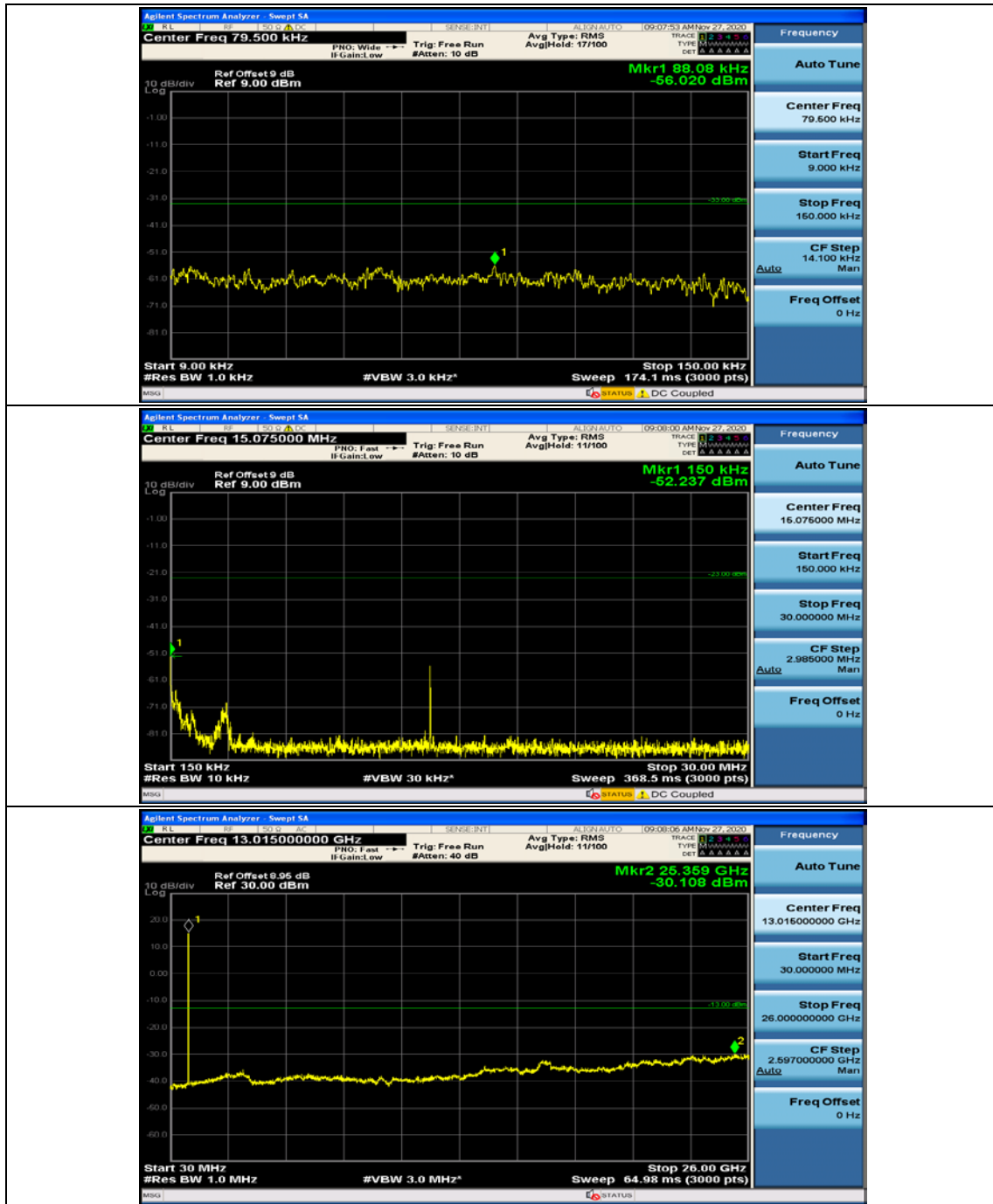












Appendix F: Frequency Stability

Test Result

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	2.77	0.003359	± 2.5	PASS
		VN	TN	0.42	0.000509	± 2.5	PASS
		VH	TN	3.02	0.003662	± 2.5	PASS
	MCH	VL	TN	-1.44	-0.001721	± 2.5	PASS
		VN	TN	3.29	0.003933	± 2.5	PASS
		VH	TN	-0.07	-0.000084	± 2.5	PASS
	HCH	VL	TN	3.32	0.003914	± 2.5	PASS
		VN	TN	0.67	0.000790	± 2.5	PASS
		VH	TN	4.89	0.005764	± 2.5	PASS
16QAM	LCH	VL	TN	1.06	0.001285	± 2.5	PASS
		VN	TN	-0.48	-0.000582	± 2.5	PASS
		VH	TN	3.03	0.003674	± 2.5	PASS
	MCH	VL	TN	1.39	0.001662	± 2.5	PASS
		VN	TN	-1.45	-0.001733	± 2.5	PASS
		VH	TN	-1.88	-0.002247	± 2.5	PASS
	HCH	VL	TN	-0.34	-0.000401	± 2.5	PASS
		VN	TN	1.42	0.001674	± 2.5	PASS
		VH	TN	4.15	0.004892	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.04	0.001261	± 2.5	PASS
		VN	-20	2.5	0.003031	± 2.5	PASS
		VN	-10	-0.84	-0.001019	± 2.5	PASS
		VN	0	4.4	0.005335	± 2.5	PASS
		VN	10	3.05	0.003698	± 2.5	PASS
		VN	20	-1.55	-0.001879	± 2.5	PASS
		VN	30	-1.45	-0.001758	± 2.5	PASS
		VN	40	-1.32	-0.001601	± 2.5	PASS
		VN	50	-0.81	-0.000982	± 2.5	PASS

	MCH	VN	-30	4.76	0.005690	± 2.5	PASS
		VN	-20	4.13	0.004937	± 2.5	PASS
		VN	-10	-1.33	-0.001590	± 2.5	PASS
		VN	0	-0.22	-0.000263	± 2.5	PASS
		VN	10	2.94	0.003515	± 2.5	PASS
		VN	20	4.05	0.004842	± 2.5	PASS
		VN	30	-1.45	-0.001733	± 2.5	PASS
		VN	40	1.48	0.001769	± 2.5	PASS
		VN	50	2.7	0.003228	± 2.5	PASS
	HCH	VN	-30	-0.68	-0.000802	± 2.5	PASS
		VN	-20	4.91	0.005788	± 2.5	PASS
		VN	-10	4.88	0.005753	± 2.5	PASS
		VN	0	1.78	0.002098	± 2.5	PASS
		VN	10	2.36	0.002782	± 2.5	PASS
		VN	20	1.42	0.001674	± 2.5	PASS
		VN	30	2.58	0.003041	± 2.5	PASS
		VN	40	1.29	0.001521	± 2.5	PASS
		VN	50	-1.51	-0.001780	± 2.5	PASS
16QAM	LCH	VN	-30	0.39	0.000473	± 2.5	PASS
		VN	-20	0.59	0.000715	± 2.5	PASS
		VN	-10	4.49	0.005444	± 2.5	PASS
		VN	0	4.5	0.005457	± 2.5	PASS
		VN	10	2.3	0.002789	± 2.5	PASS
		VN	20	-1.4	-0.001698	± 2.5	PASS
		VN	30	1.99	0.002413	± 2.5	PASS
		VN	40	1.8	0.002183	± 2.5	PASS
		VN	50	2.18	0.002643	± 2.5	PASS
	MCH	VN	-30	3.58	0.004220	± 2.5	PASS
		VN	-20	-1.53	-0.001804	± 2.5	PASS
		VN	-10	2.66	0.003136	± 2.5	PASS
		VN	0	-1.16	-0.001367	± 2.5	PASS
		VN	10	3.24	0.003819	± 2.5	PASS
		VN	20	-1.68	-0.001980	± 2.5	PASS
		VN	30	-1.59	-0.001874	± 2.5	PASS
		VN	40	0.21	0.000248	± 2.5	PASS
		VN	50	1.96	0.002311	± 2.5	PASS
	HCH	VN	-30	3.52	0.004149	± 2.5	PASS
		VN	-20	0.21	0.000248	± 2.5	PASS
		VN	-10	-0.25	-0.000295	± 2.5	PASS
		VN	0	-0.77	-0.000908	± 2.5	PASS
		VN	10	0.05	0.000059	± 2.5	PASS

		VN	20	2.25	0.002652	± 2.5	PASS
		VN	30	3.32	0.003914	± 2.5	PASS
		VN	40	-1.02	-0.001202	± 2.5	PASS
		VN	50	2.6	0.003065	± 2.5	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz+							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	2.77	0.003356	± 2.5	PASS
		VN	TN	4.21	0.005100	± 2.5	PASS
		VH	TN	3.71	0.004494	± 2.5	PASS
	MCH	VL	TN	-0.76	-0.000909	± 2.5	PASS
		VN	TN	3.07	0.003670	± 2.5	PASS
		VH	TN	2.11	0.002522	± 2.5	PASS
	HCH	VL	TN	-1.65	-0.001947	± 2.5	PASS
		VN	TN	2.09	0.002466	± 2.5	PASS
		VH	TN	3.9	0.004602	± 2.5	PASS
16QAM	LCH	VL	TN	1.07	0.001296	± 2.5	PASS
		VN	TN	4.87	0.005899	± 2.5	PASS
		VH	TN	2.53	0.003065	± 2.5	PASS
	MCH	VL	TN	4.68	0.005595	± 2.5	PASS
		VN	TN	-1.05	-0.001255	± 2.5	PASS
		VH	TN	-1.21	-0.001447	± 2.5	PASS
	HCH	VL	TN	-0.55	-0.000649	± 2.5	PASS
		VN	TN	1.71	0.002018	± 2.5	PASS
		VH	TN	4.66	0.005499	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	4.9	0.005936	± 2.5	PASS
		VN	-20	1.53	0.001853	± 2.5	PASS
		VN	-10	0.56	0.000678	± 2.5	PASS
		VN	0	1.42	0.001720	± 2.5	PASS
		VN	10	4.35	0.005270	± 2.5	PASS
		VN	20	-0.39	-0.000472	± 2.5	PASS
		VN	30	2.32	0.002810	± 2.5	PASS
		VN	40	3.83	0.004640	± 2.5	PASS
		VN	50	1.01	0.001224	± 2.5	PASS
	MCH	VN	-30	4.36	0.005212	± 2.5	PASS

	VN	VN	-20	2.09	0.002499	± 2.5	PASS
		VN	-10	2.37	0.002833	± 2.5	PASS
		VN	0	-0.26	-0.000311	± 2.5	PASS
		VN	10	-0.16	-0.000191	± 2.5	PASS
		VN	20	3.1	0.003706	± 2.5	PASS
		VN	30	-0.18	-0.000215	± 2.5	PASS
		VN	40	0.48	0.000574	± 2.5	PASS
		VN	50	1.03	0.001231	± 2.5	PASS
	HCH	VN	-30	2.17	0.002560	± 2.5	PASS
		VN	-20	3.92	0.004625	± 2.5	PASS
		VN	-10	-1.34	-0.001581	± 2.5	PASS
		VN	0	-1.66	-0.001959	± 2.5	PASS
		VN	10	-0.24	-0.000283	± 2.5	PASS
		VN	20	2.77	0.003268	± 2.5	PASS
		VN	30	3.3	0.003894	± 2.5	PASS
		VN	40	4.14	0.004885	± 2.5	PASS
		VN	50	4.53	0.005345	± 2.5	PASS
		16QAM	LCH	VN	-30	4.69	0.005607
VN	-20			2.16	0.002582	± 2.5	PASS
VN	-10			1.53	0.001829	± 2.5	PASS
VN	0			0.04	0.000048	± 2.5	PASS
VN	10			4.18	0.004997	± 2.5	PASS
VN	20			-0.27	-0.000323	± 2.5	PASS
VN	30			1.9	0.002271	± 2.5	PASS
VN	40			2.96	0.003539	± 2.5	PASS
VN	50			1.44	0.001721	± 2.5	PASS
MCH	VN		-30	2.65	0.003127	± 2.5	PASS
	VN		-20	2.51	0.002962	± 2.5	PASS
	VN		-10	2.75	0.003245	± 2.5	PASS
	VN		0	-1.79	-0.002112	± 2.5	PASS
	VN		10	0.98	0.001156	± 2.5	PASS
	VN		20	-1.21	-0.001428	± 2.5	PASS
	VN		30	0.57	0.000673	± 2.5	PASS
	VN		40	4.39	0.005180	± 2.5	PASS
	VN		50	3.01	0.003552	± 2.5	PASS
HCH	VN		-30	3.48	0.004106	± 2.5	PASS
	VN		-20	-1.82	-0.002147	± 2.5	PASS
	VN		-10	-0.66	-0.000779	± 2.5	PASS
	VN		0	3.66	0.004319	± 2.5	PASS
	VN		10	1.96	0.002313	± 2.5	PASS
	VN		20	2.79	0.003292	± 2.5	PASS

		VN	30	-0.45	-0.000531	± 2.5	PASS
		VN	40	2.48	0.002926	± 2.5	PASS
		VN	50	4.08	0.004814	± 2.5	PASS

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	2.77	0.003351	± 2.5	PASS
		VN	TN	1.48	0.001791	± 2.5	PASS
		VH	TN	2.44	0.002952	± 2.5	PASS
	MCH	VL	TN	4.25	0.005081	± 2.5	PASS
		VN	TN	-0.76	-0.000909	± 2.5	PASS
		VH	TN	1.66	0.001984	± 2.5	PASS
	HCH	VL	TN	1.09	0.001288	± 2.5	PASS
		VN	TN	3.1	0.003662	± 2.5	PASS
		VH	TN	1.24	0.001465	± 2.5	PASS
16QAM	LCH	VL	TN	3.73	0.004513	± 2.5	PASS
		VN	TN	0.42	0.000508	± 2.5	PASS
		VH	TN	2.01	0.002432	± 2.5	PASS
	MCH	VL	TN	4.13	0.004937	± 2.5	PASS
		VN	TN	2.77	0.003311	± 2.5	PASS
		VH	TN	2.97	0.003551	± 2.5	PASS
	HCH	VL	TN	4.85	0.005729	± 2.5	PASS
		VN	TN	4.17	0.004926	± 2.5	PASS
		VH	TN	1.58	0.001867	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.67	0.003230	± 2.5	PASS
		VN	-20	4.97	0.006013	± 2.5	PASS
		VN	-10	0.91	0.001101	± 2.5	PASS
		VN	0	0.82	0.000992	± 2.5	PASS
		VN	10	1.03	0.001246	± 2.5	PASS
		VN	20	-0.12	-0.000145	± 2.5	PASS
		VN	30	1.79	0.002166	± 2.5	PASS
		VN	40	4.21	0.005094	± 2.5	PASS
		VN	50	0.06	0.000073	± 2.5	PASS
	MCH	VN	-30	1.51	0.001805	± 2.5	PASS
		VN	-20	-1.2	-0.001435	± 2.5	PASS

		VN	-10	-0.64	-0.000765	± 2.5	PASS		
		VN	0	0.43	0.000514	± 2.5	PASS		
		VN	10	3.47	0.004148	± 2.5	PASS		
		VN	20	4.92	0.005882	± 2.5	PASS		
		VN	30	3.54	0.004232	± 2.5	PASS		
		VN	40	4.57	0.005463	± 2.5	PASS		
		VN	50	4.36	0.005212	± 2.5	PASS		
	HCH	VN	-30	-1.05	-0.001240	± 2.5	PASS		
		VN	-20	2.16	0.002552	± 2.5	PASS		
		VN	-10	4.1	0.004843	± 2.5	PASS		
		VN	0	4.23	0.004997	± 2.5	PASS		
		VN	10	2.7	0.003190	± 2.5	PASS		
		VN	20	4.37	0.005162	± 2.5	PASS		
		VN	30	4.55	0.005375	± 2.5	PASS		
		VN	40	-0.34	-0.000402	± 2.5	PASS		
		VN	50	4.69	0.005540	± 2.5	PASS		
		16QAM	LCH	VN	-30	-1.4	-0.001674	± 2.5	PASS
				VN	-20	3.57	0.004268	± 2.5	PASS
VN	-10			4.43	0.005296	± 2.5	PASS		
VN	0			3.43	0.004100	± 2.5	PASS		
VN	10			2.12	0.002534	± 2.5	PASS		
VN	20			-0.57	-0.000681	± 2.5	PASS		
VN	30			0.4	0.000478	± 2.5	PASS		
VN	40			3.66	0.004375	± 2.5	PASS		
VN	50			3.75	0.004483	± 2.5	PASS		
MCH	VN		-30	0.14	0.000165	± 2.5	PASS		
	VN		-20	0.05	0.000059	± 2.5	PASS		
	VN		-10	-1.09	-0.001288	± 2.5	PASS		
	VN		0	-1.14	-0.001347	± 2.5	PASS		
	VN		10	4.83	0.005706	± 2.5	PASS		
	VN		20	4.93	0.005824	± 2.5	PASS		
	VN		30	-1.84	-0.002174	± 2.5	PASS		
	VN		40	1.11	0.001311	± 2.5	PASS		
	VN		50	4.4	0.005198	± 2.5	PASS		
HCH	VN		-30	3.31	0.003910	± 2.5	PASS		
	VN		-20	-1.42	-0.001677	± 2.5	PASS		
	VN		-10	0.22	0.000260	± 2.5	PASS		
	VN		0	-0.02	-0.000024	± 2.5	PASS		
	VN		10	-1.03	-0.001217	± 2.5	PASS		
	VN		20	1.41	0.001666	± 2.5	PASS		
	VN		30	3.54	0.004182	± 2.5	PASS		

		VN	40	-1.72	-0.002032	± 2.5	PASS
		VN	50	4.91	0.005800	± 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	2.77	0.003341	± 2.5	PASS
		VN	TN	2.68	0.003233	± 2.5	PASS
		VH	TN	-0.97	-0.001170	± 2.5	PASS
	MCH	VL	TN	2.47	0.002953	± 2.5	PASS
		VN	TN	1.56	0.001865	± 2.5	PASS
		VH	TN	2.46	0.002941	± 2.5	PASS
	HCH	VL	TN	2.07	0.002453	± 2.5	PASS
		VN	TN	4.54	0.005379	± 2.5	PASS
		VH	TN	2.65	0.003140	± 2.5	PASS
16QAM	LCH	VL	TN	3.02	0.003643	± 2.5	PASS
		VN	TN	1.98	0.002388	± 2.5	PASS
		VH	TN	3.57	0.004306	± 2.5	PASS
	MCH	VL	TN	-0.94	-0.001124	± 2.5	PASS
		VN	TN	3.03	0.003622	± 2.5	PASS
		VH	TN	-0.7	-0.000837	± 2.5	PASS
	HCH	VL	TN	-0.15	-0.000178	± 2.5	PASS
		VN	TN	3.31	0.003922	± 2.5	PASS
		VH	TN	-1.68	-0.001991	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.12	-0.000145	± 2.5	PASS
		VN	-20	1.42	0.001713	± 2.5	PASS
		VN	-10	2.72	0.003281	± 2.5	PASS
		VN	0	2.32	0.002799	± 2.5	PASS
		VN	10	4.98	0.006007	± 2.5	PASS
		VN	20	4.65	0.005609	± 2.5	PASS
		VN	30	-0.92	-0.001110	± 2.5	PASS
		VN	40	-1.87	-0.002256	± 2.5	PASS
		VN	50	3.47	0.004186	± 2.5	PASS
	MCH	VN	-30	2.36	0.002821	± 2.5	PASS
		VN	-20	2.54	0.003036	± 2.5	PASS
		VN	-10	1.45	0.001733	± 2.5	PASS

		VN	0	-1.61	-0.001925	± 2.5	PASS		
		VN	10	2.09	0.002499	± 2.5	PASS		
		VN	20	-0.32	-0.000383	± 2.5	PASS		
		VN	30	-0.44	-0.000526	± 2.5	PASS		
		VN	40	4.39	0.005248	± 2.5	PASS		
		VN	50	2.58	0.003084	± 2.5	PASS		
	HCH	VN	-30	0.81	0.000960	± 2.5	PASS		
		VN	-20	0.56	0.000664	± 2.5	PASS		
		VN	-10	4.98	0.005900	± 2.5	PASS		
		VN	0	0.17	0.000201	± 2.5	PASS		
		VN	10	1.38	0.001635	± 2.5	PASS		
		VN	20	4.23	0.005012	± 2.5	PASS		
		VN	30	-1.08	-0.001280	± 2.5	PASS		
		VN	40	0.7	0.000829	± 2.5	PASS		
		VN	50	-0.81	-0.000960	± 2.5	PASS		
		16QAM	LCH	VN	-30	1.04	0.001243	± 2.5	PASS
				VN	-20	1.01	0.001207	± 2.5	PASS
				VN	-10	0.02	0.000024	± 2.5	PASS
VN	0			2.5	0.002989	± 2.5	PASS		
VN	10			4.51	0.005392	± 2.5	PASS		
VN	20			3.6	0.004304	± 2.5	PASS		
VN	30			1.97	0.002355	± 2.5	PASS		
VN	40			-1.62	-0.001937	± 2.5	PASS		
VN	50			0.18	0.000215	± 2.5	PASS		
MCH	VN		-30	0.08	0.000095	± 2.5	PASS		
	VN		-20	-1.99	-0.002358	± 2.5	PASS		
	VN		-10	0.54	0.000640	± 2.5	PASS		
	VN		0	4.96	0.005877	± 2.5	PASS		
	VN		10	3.08	0.003649	± 2.5	PASS		
	VN		20	0.63	0.000746	± 2.5	PASS		
	VN		30	4.7	0.005569	± 2.5	PASS		
	VN		40	-1.19	-0.001410	± 2.5	PASS		
	VN		50	4.42	0.005237	± 2.5	PASS		
HCH	VN	-30	-0.19	-0.000225	± 2.5	PASS			
	VN	-20	-0.92	-0.001090	± 2.5	PASS			
	VN	-10	-1.65	-0.001955	± 2.5	PASS			
	VN	0	0.76	0.000900	± 2.5	PASS			
	VN	10	-0.71	-0.000841	± 2.5	PASS			
	VN	20	2.9	0.003436	± 2.5	PASS			
	VN	30	4.77	0.005652	± 2.5	PASS			
	VN	40	2.65	0.003140	± 2.5	PASS			

		VN	50	3.16	0.003744	± 2.5	PASS
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