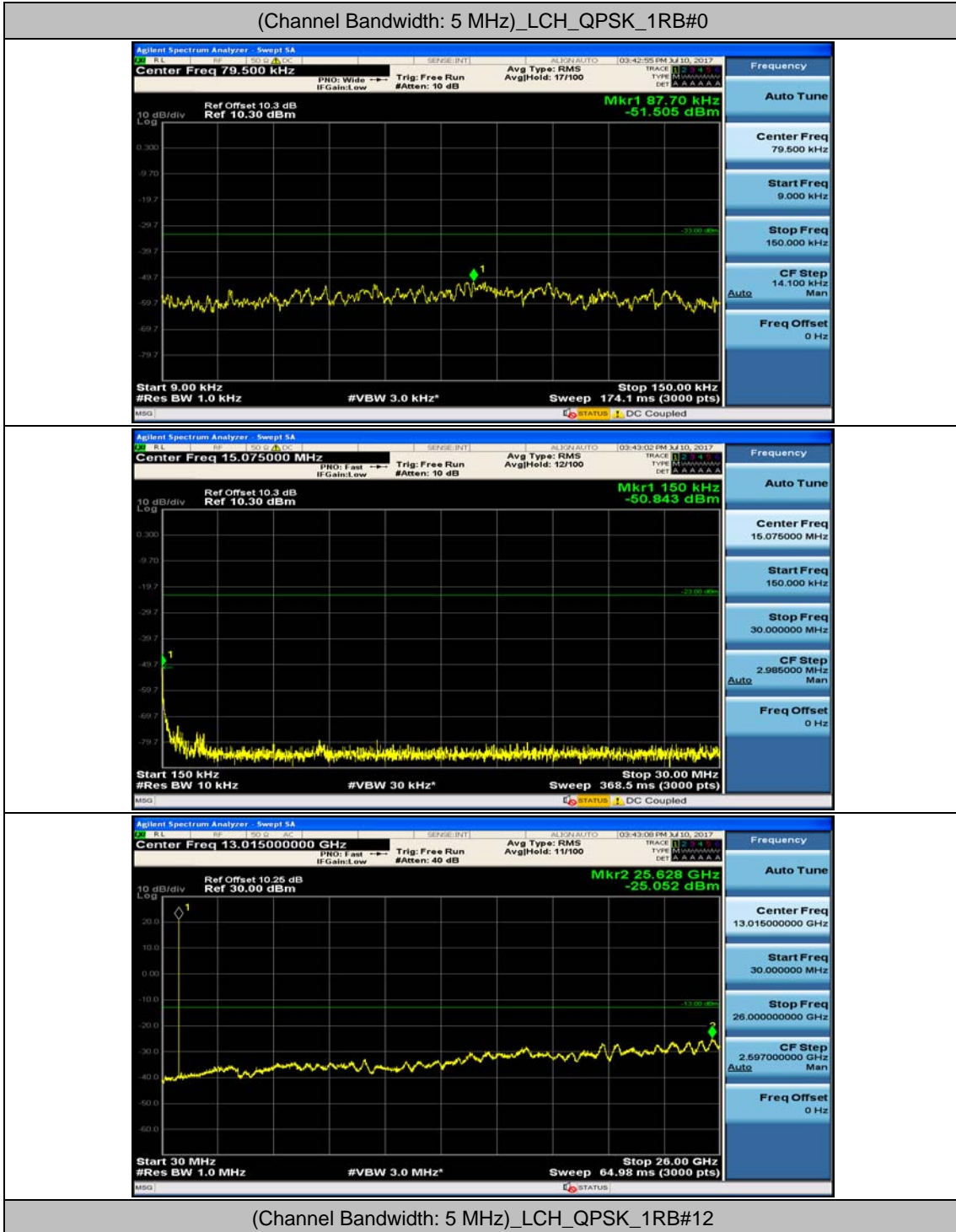
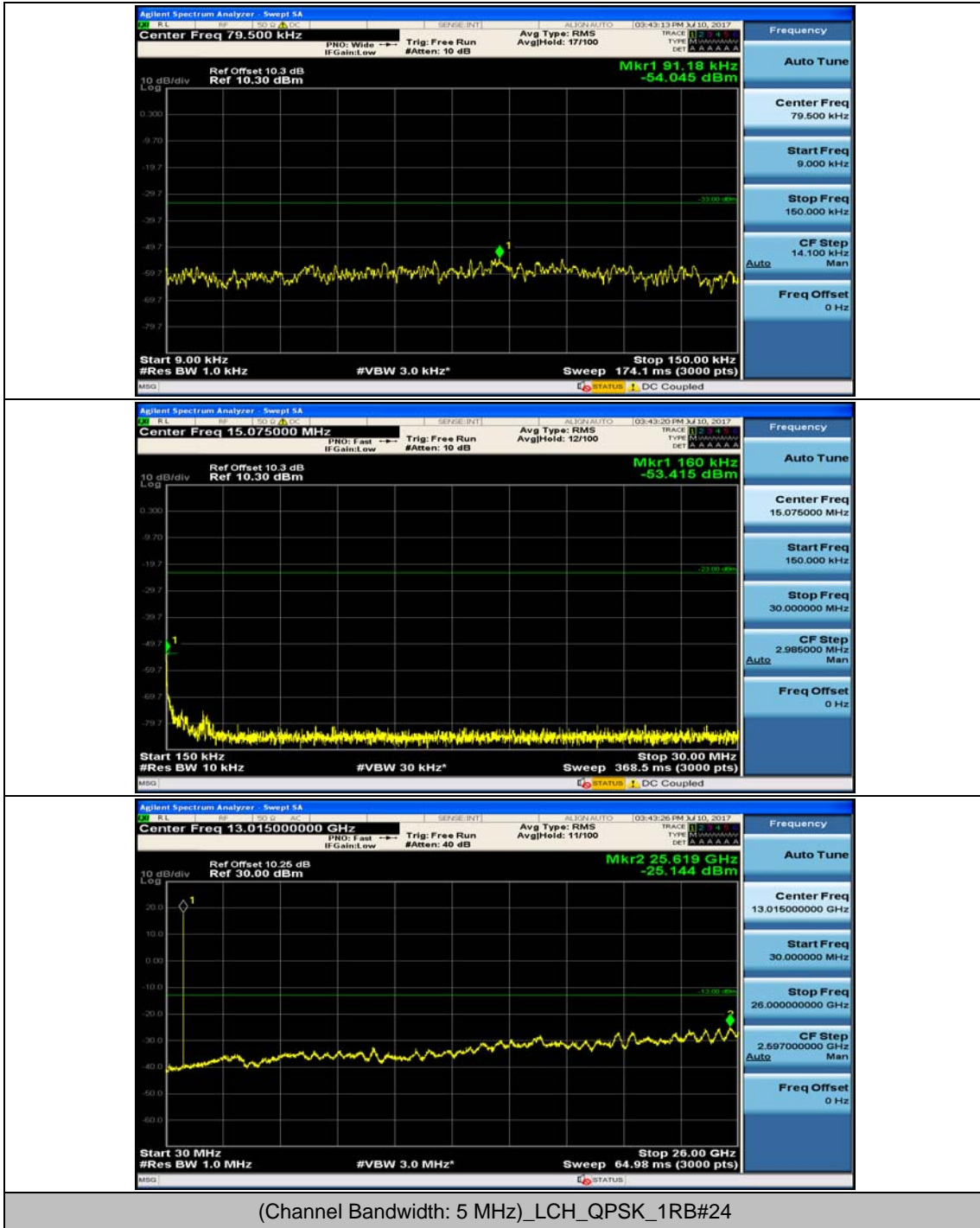
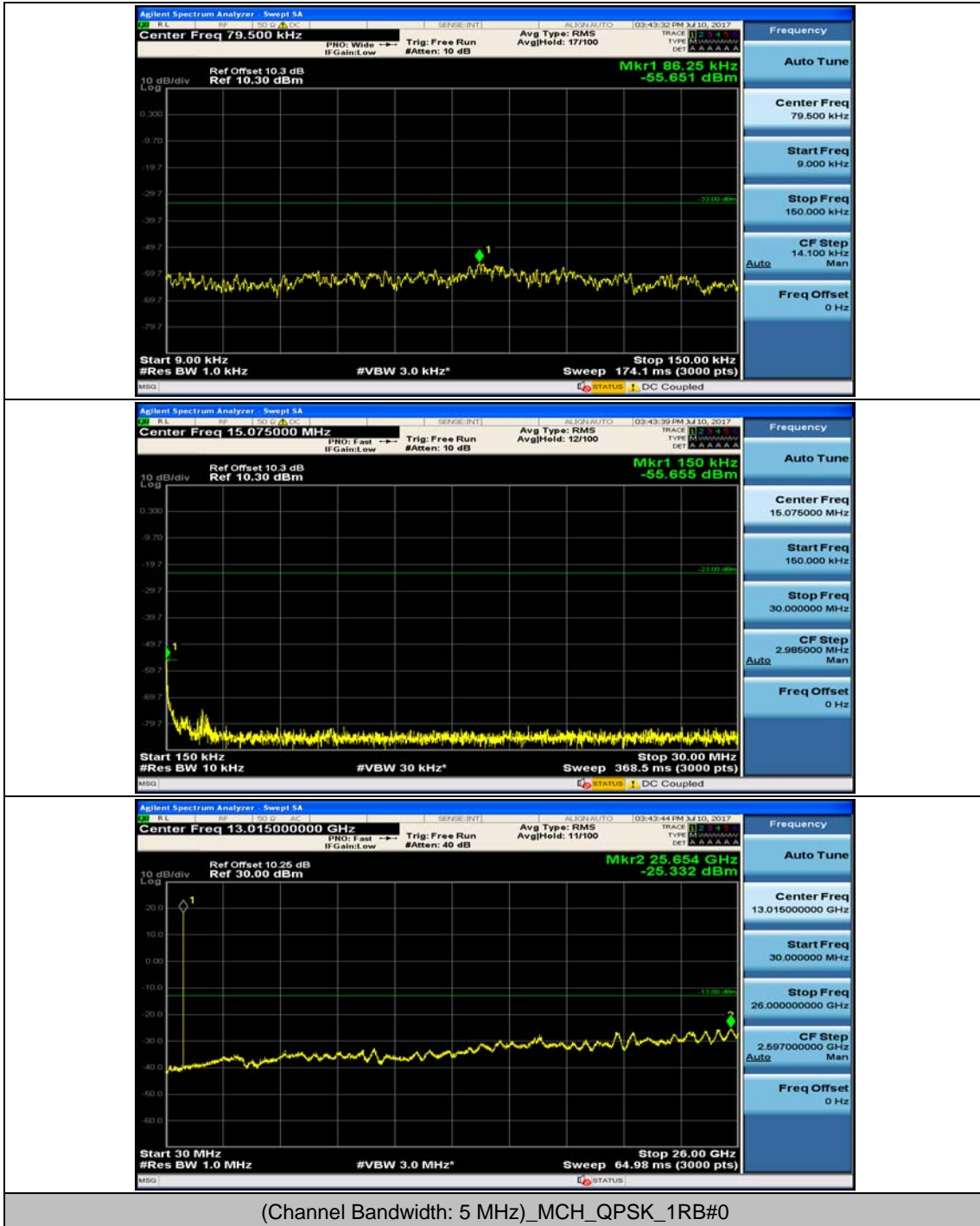


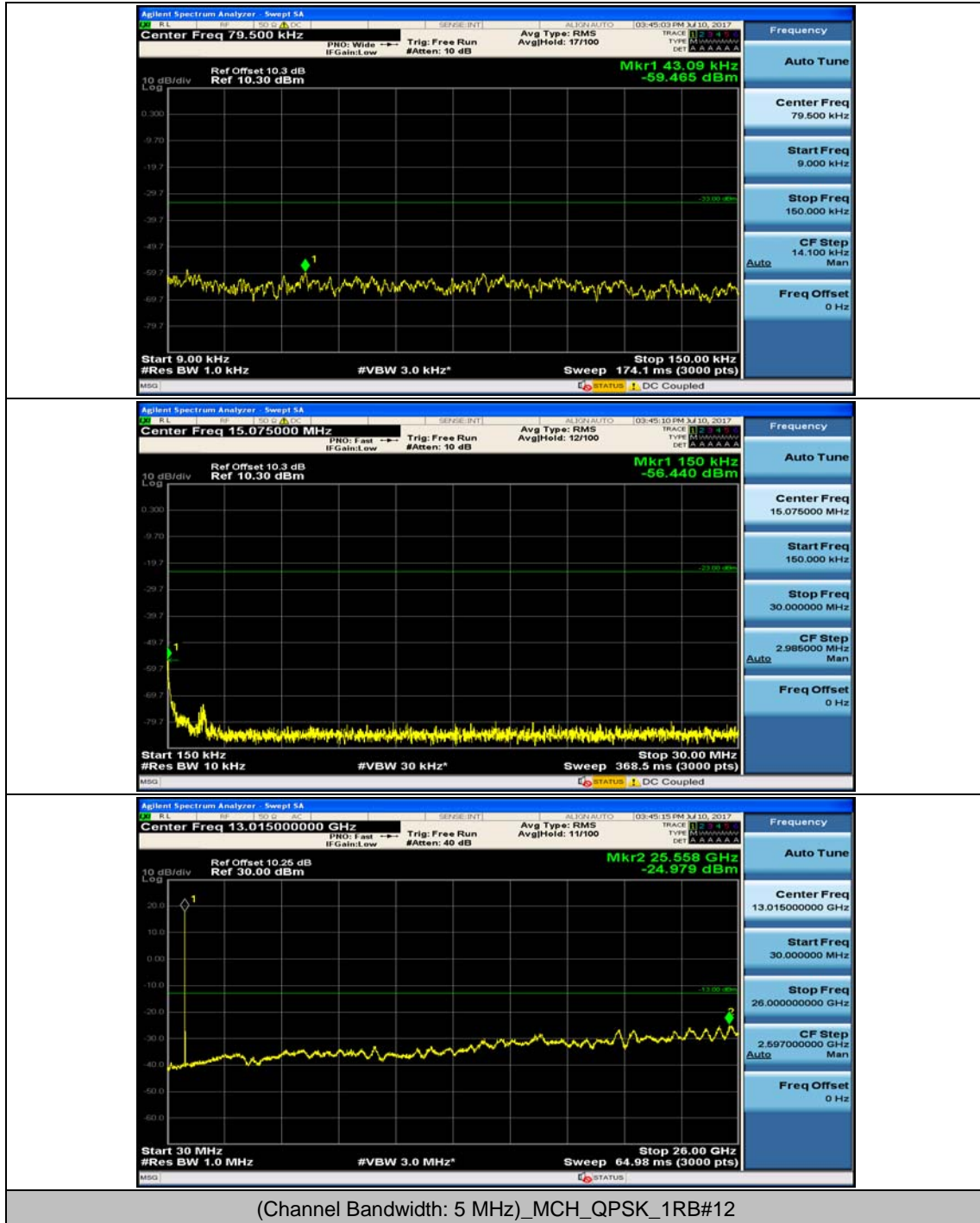
### Channel Bandwidth: 5 MHz

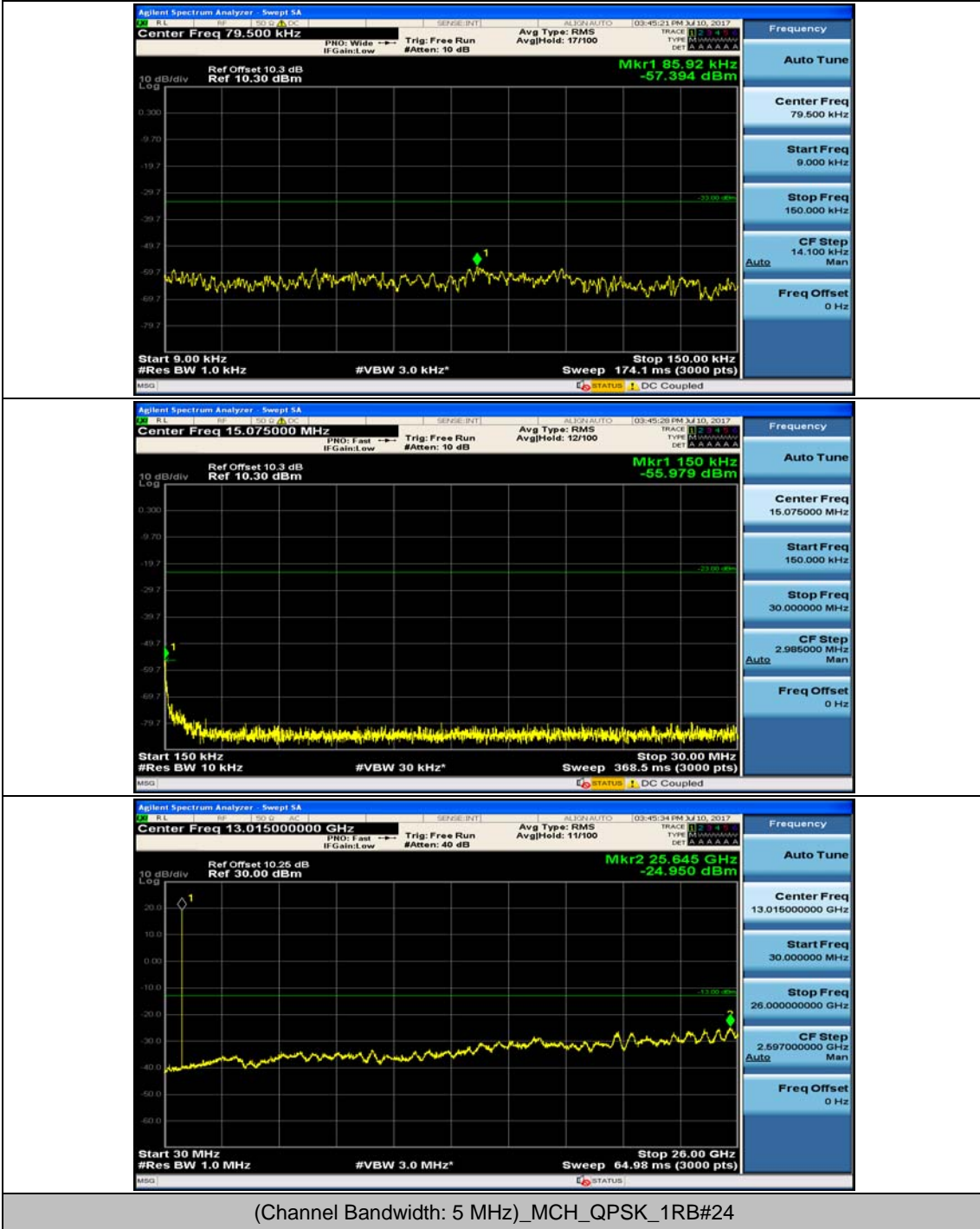


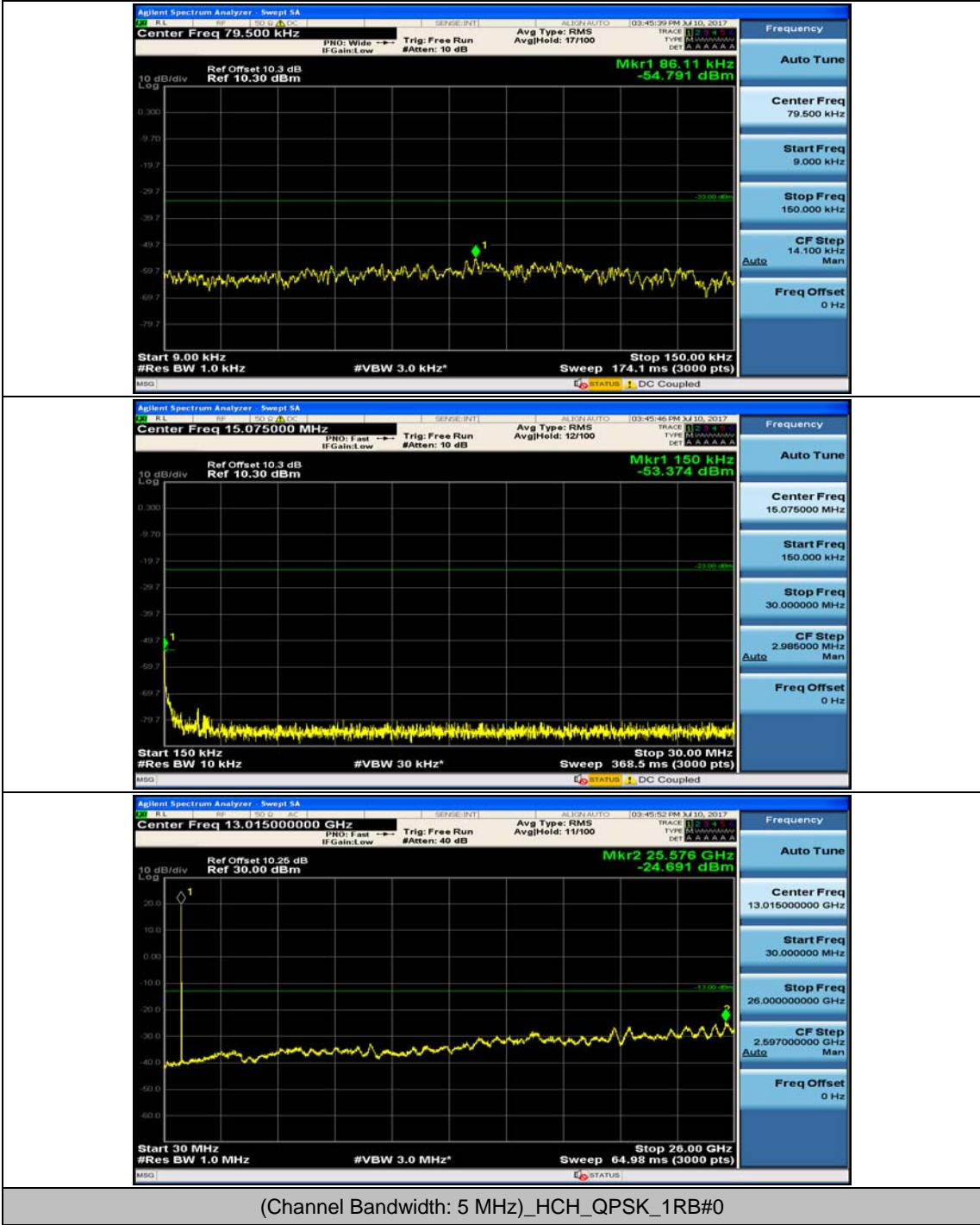


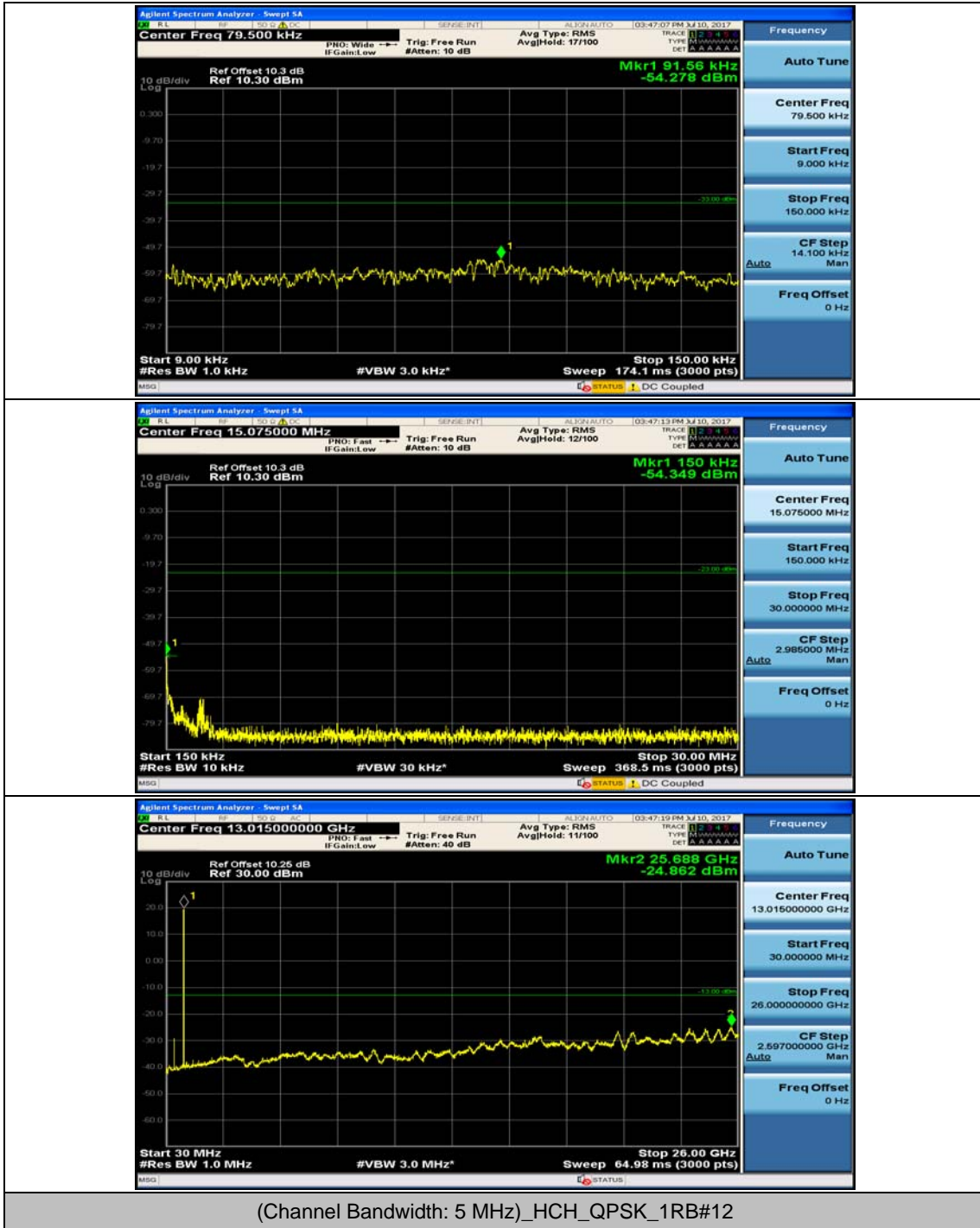


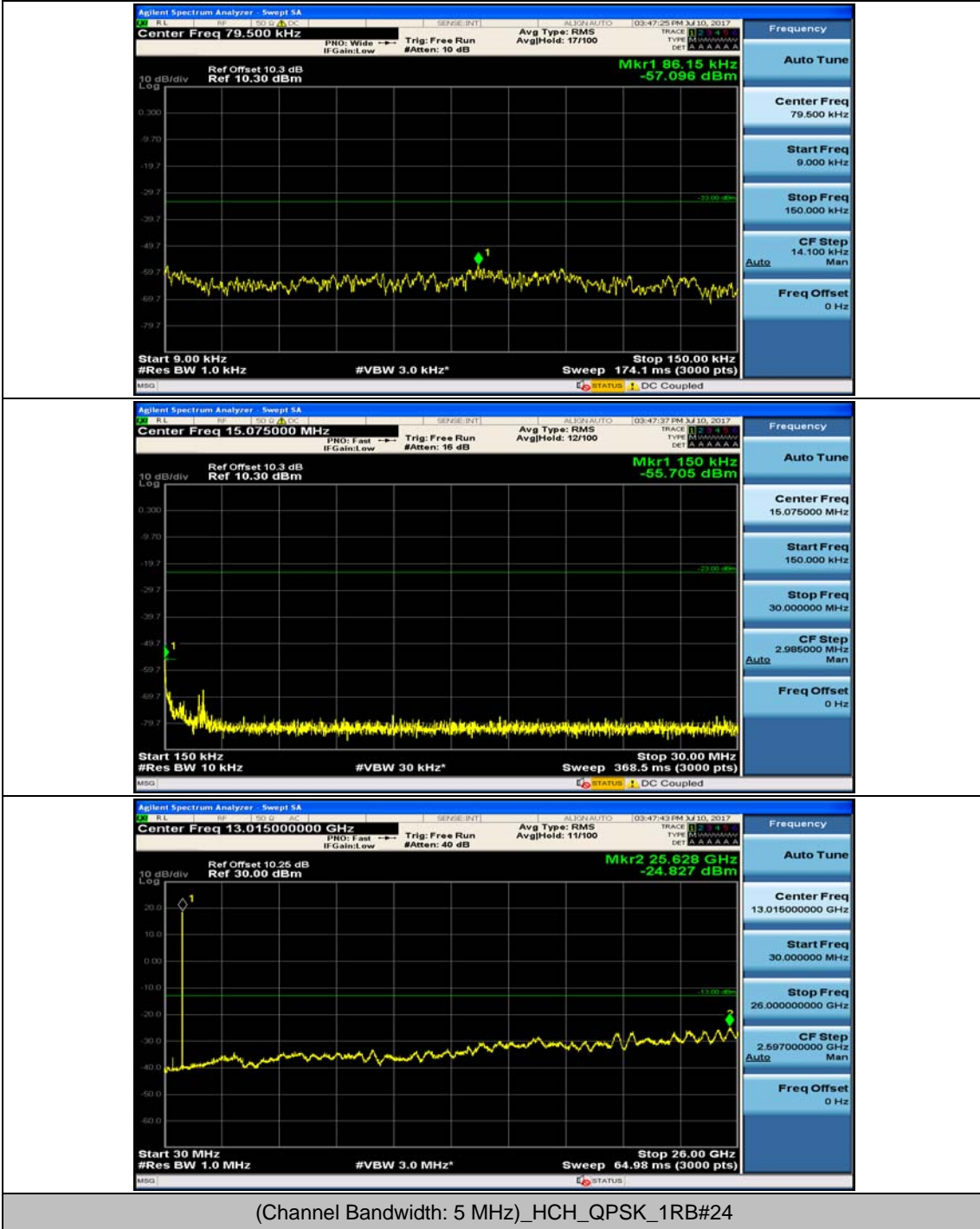


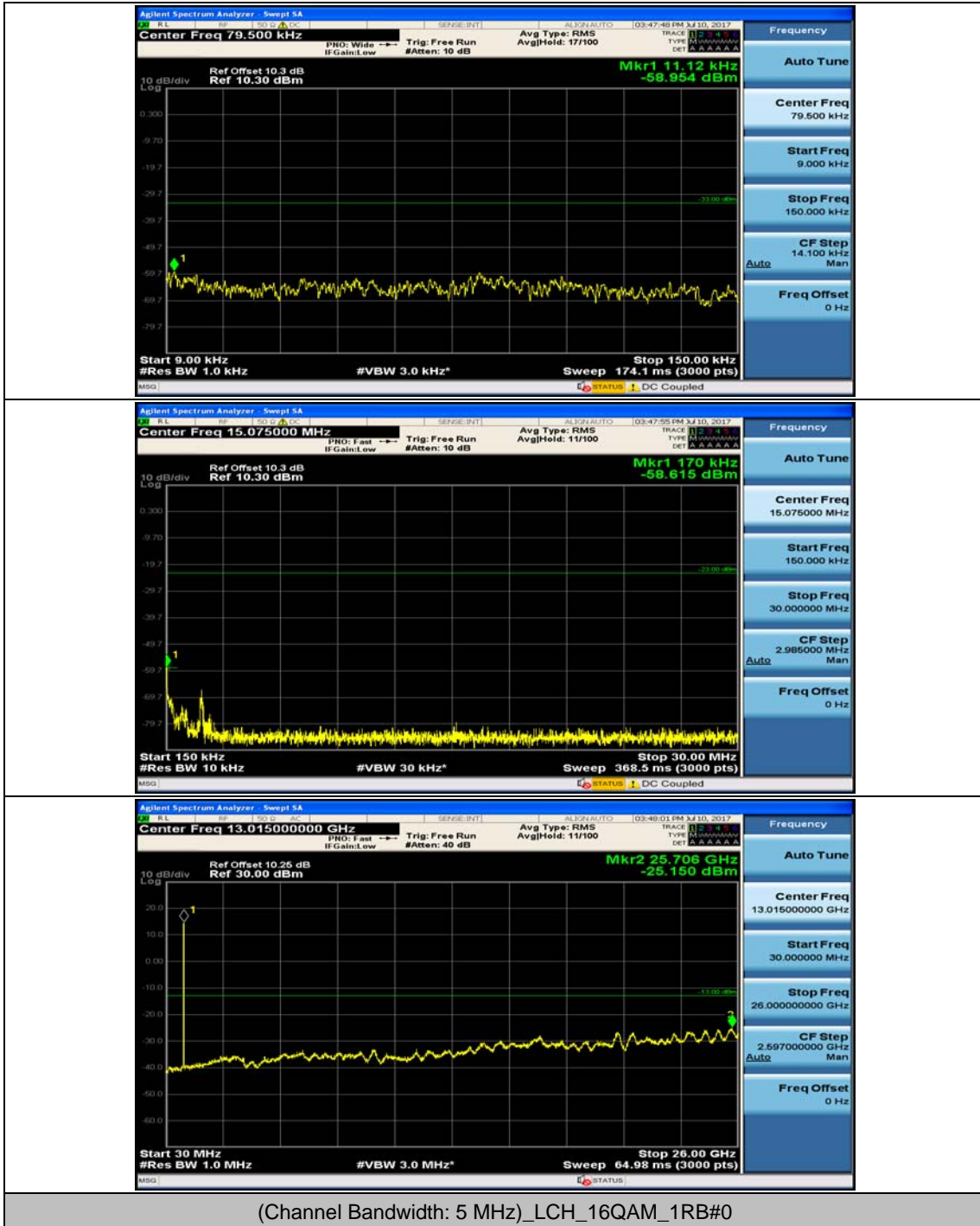


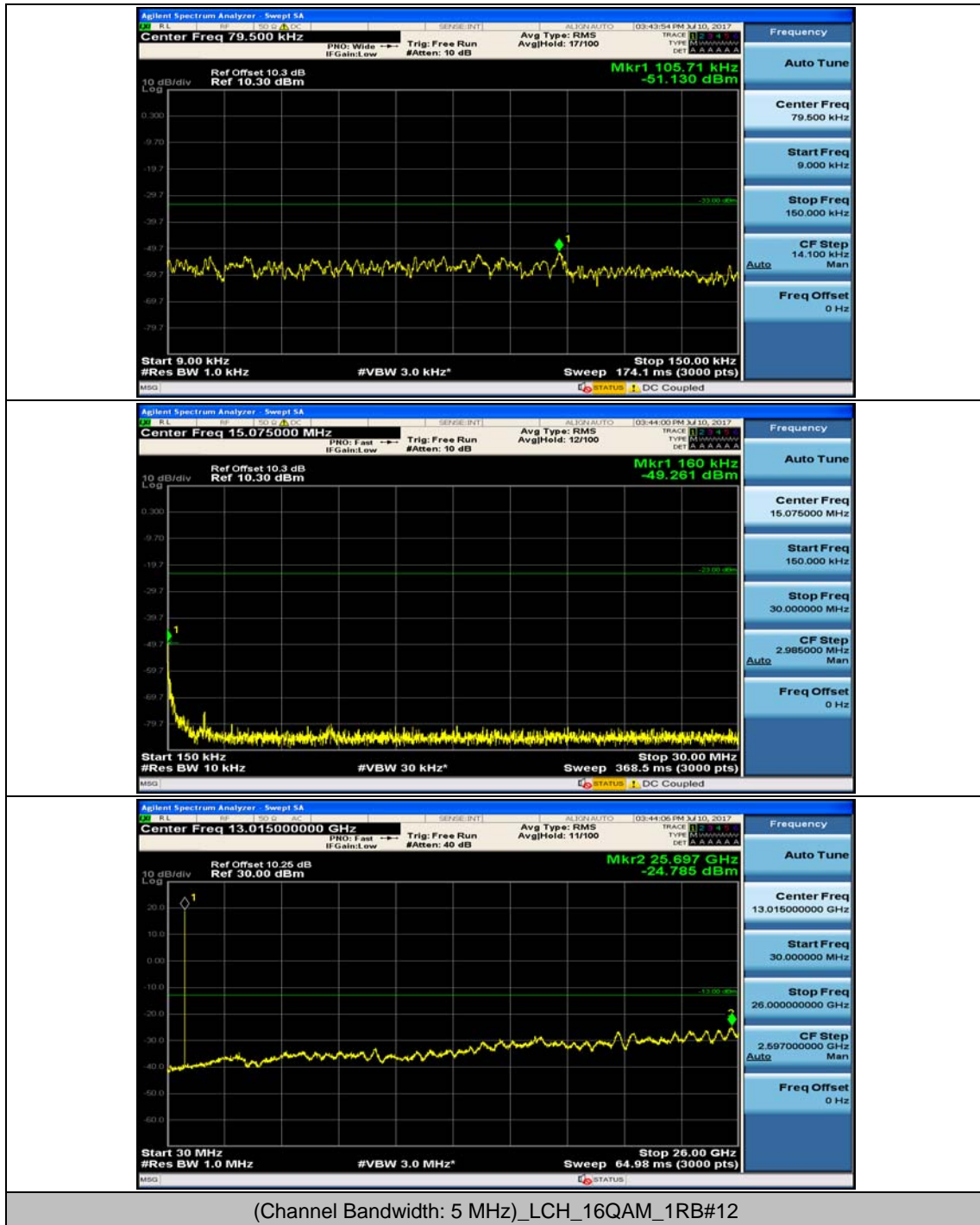


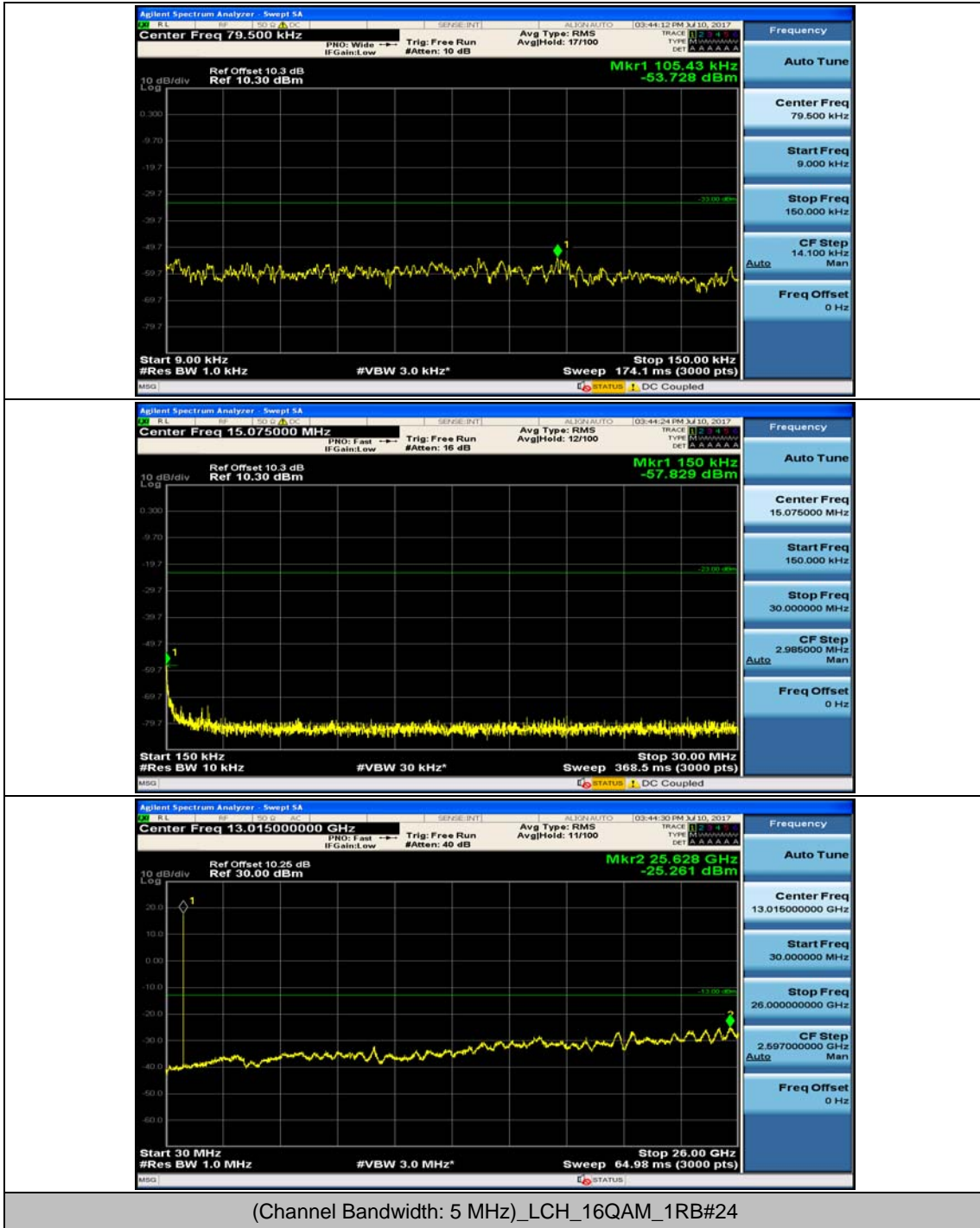




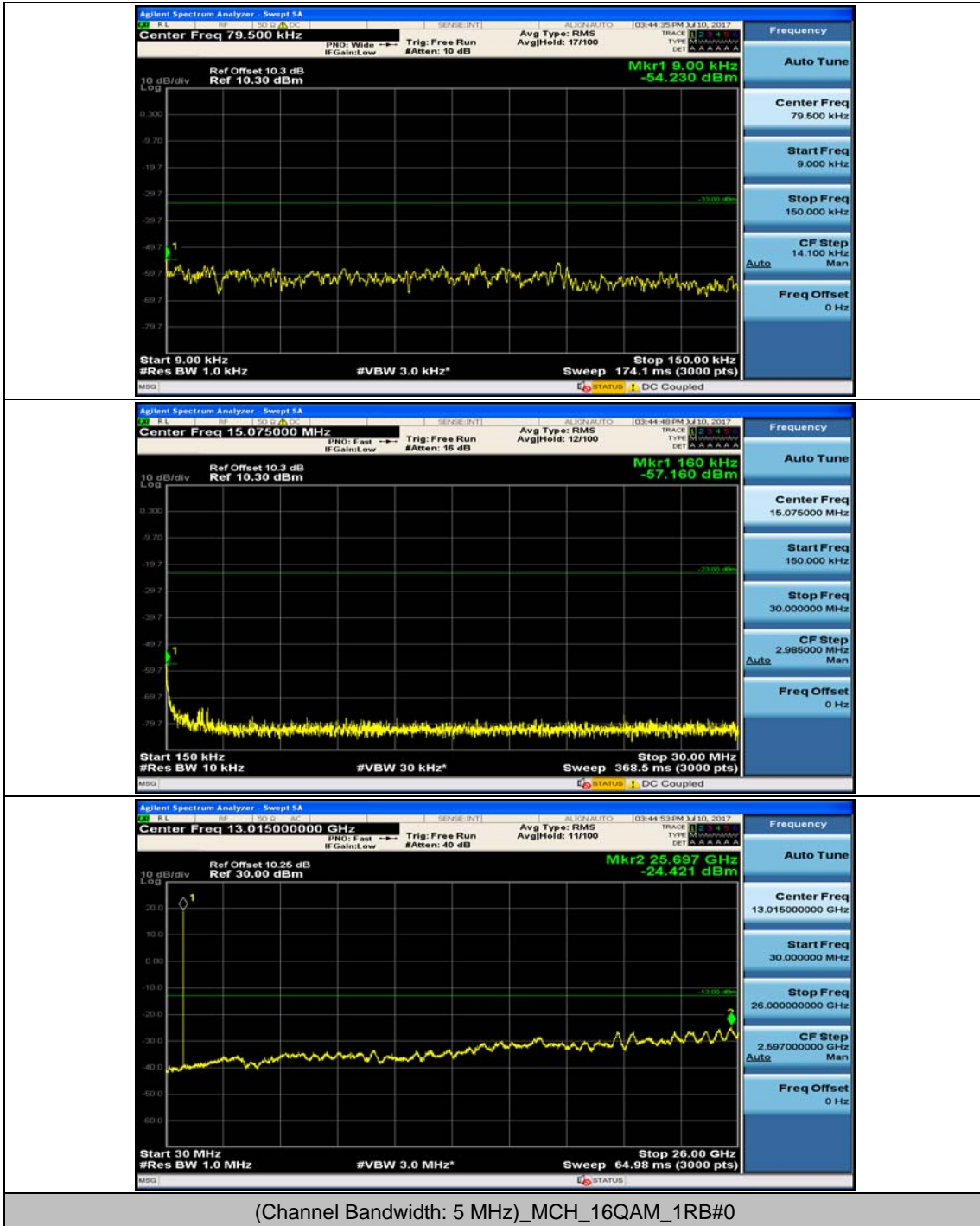


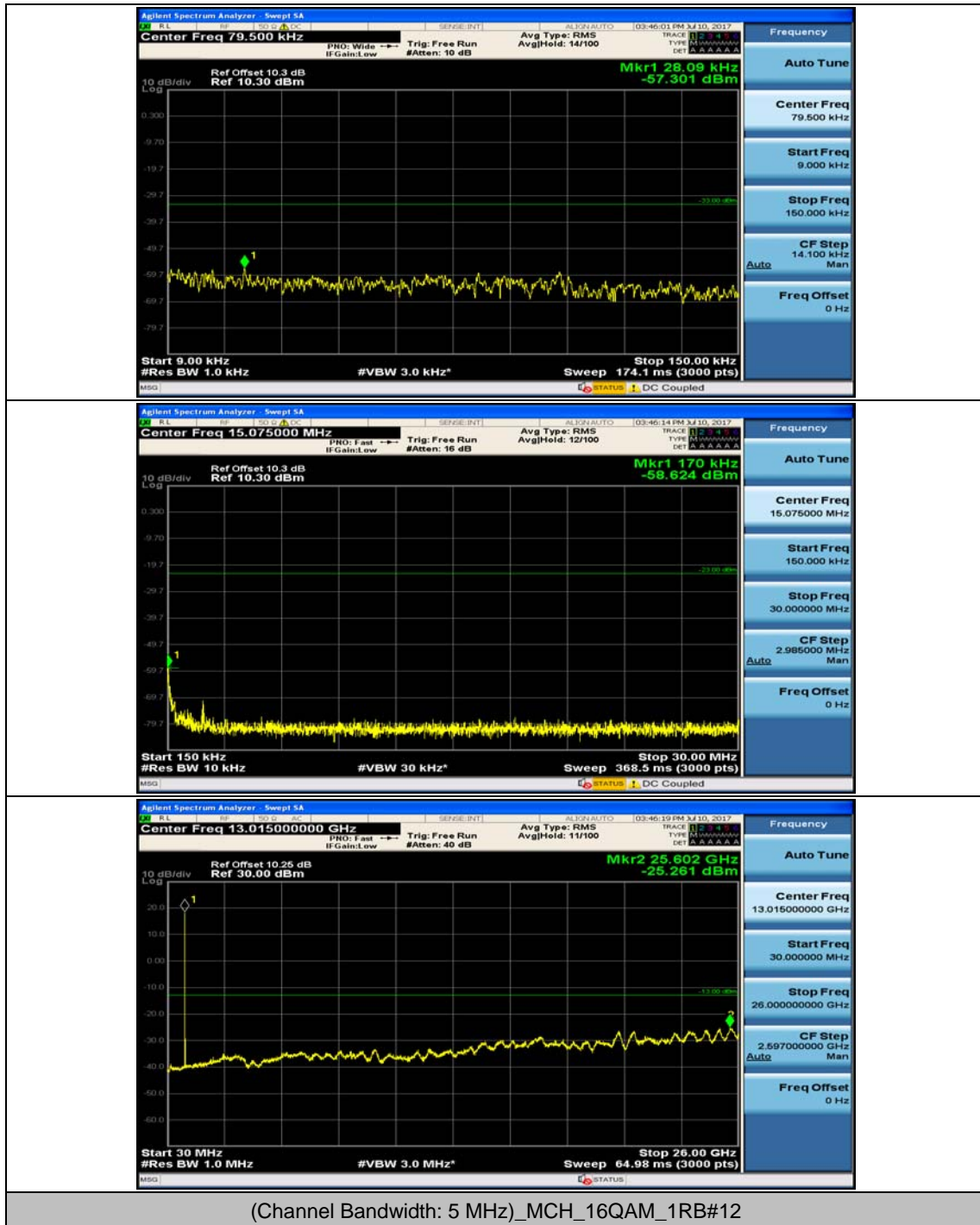


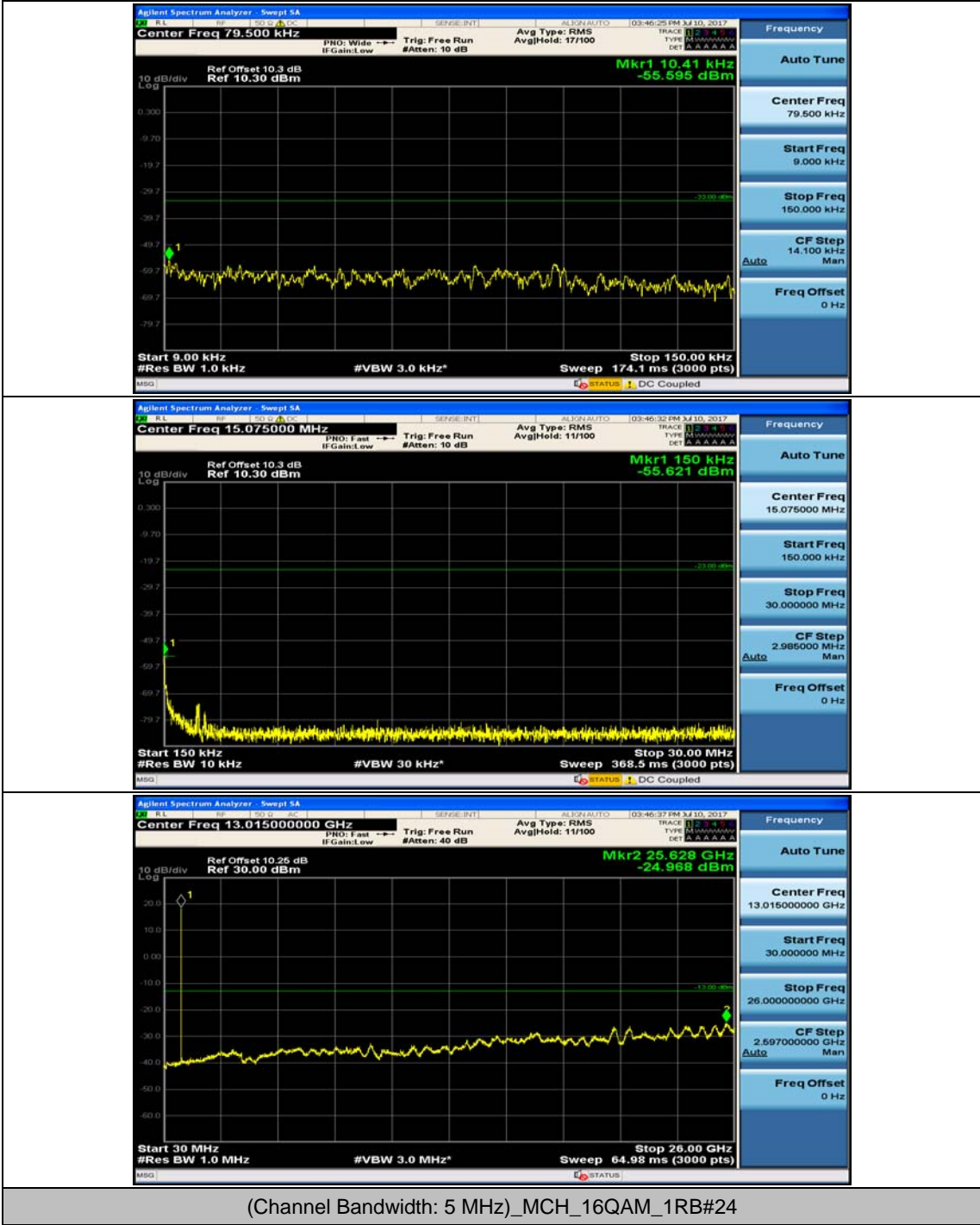


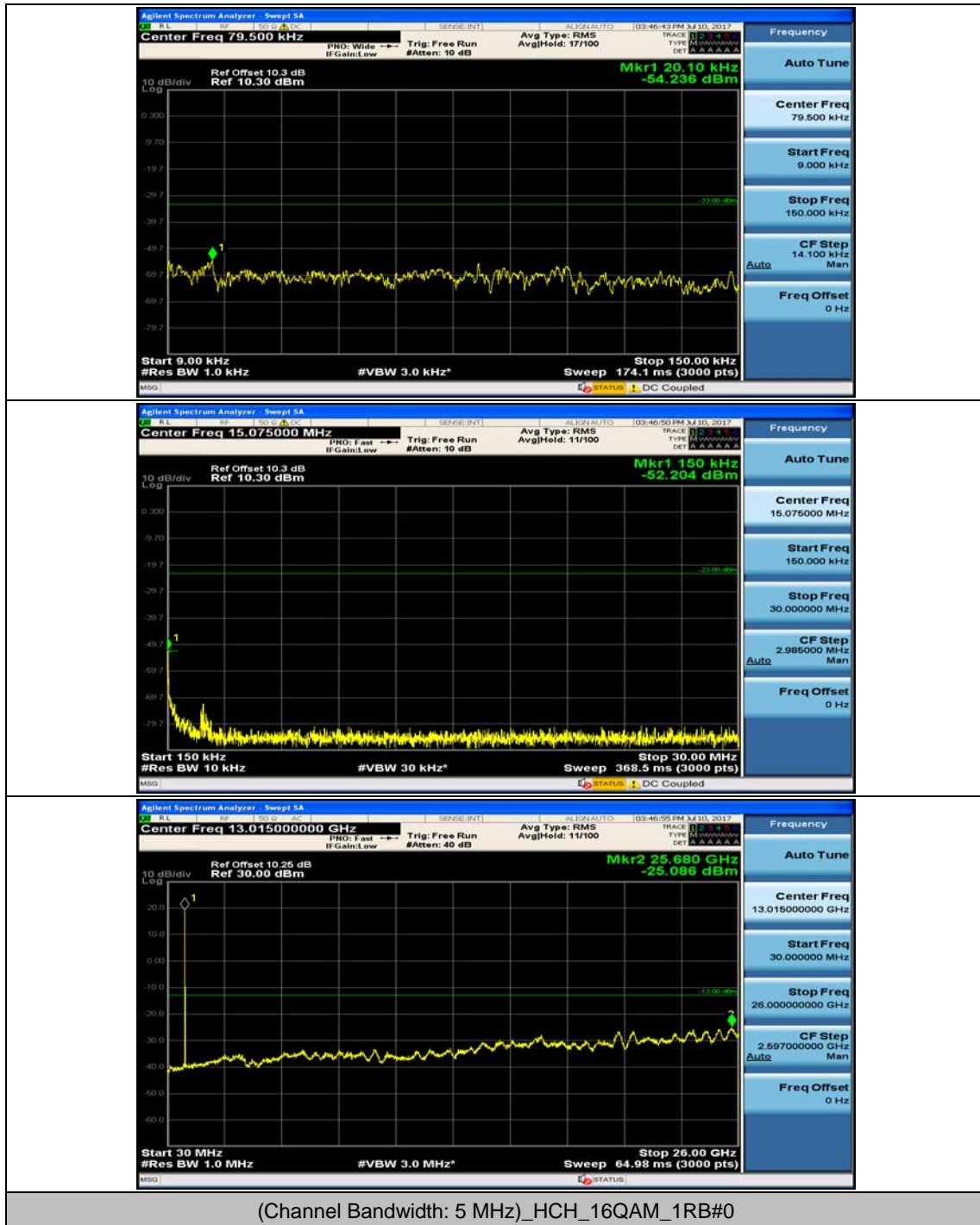


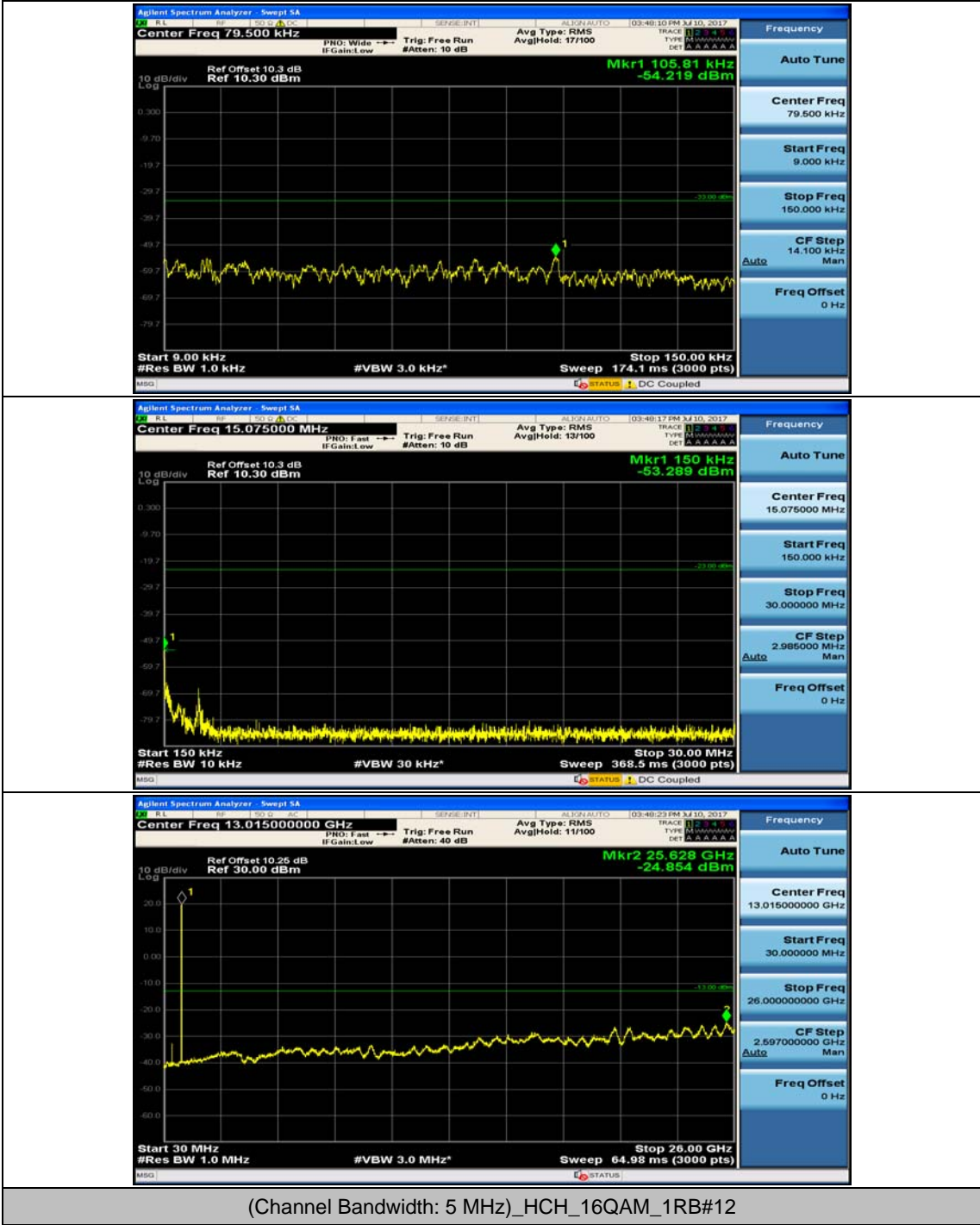


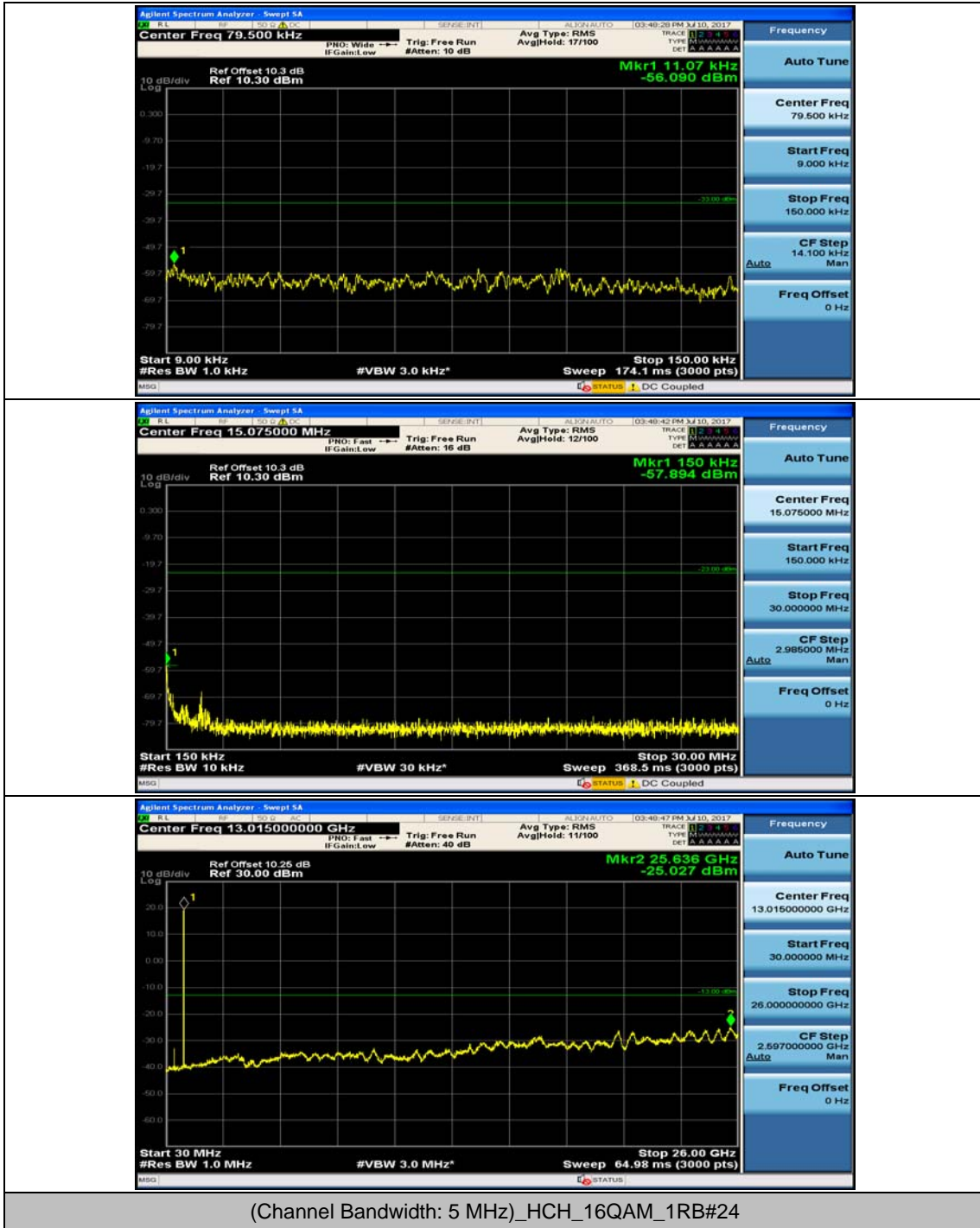


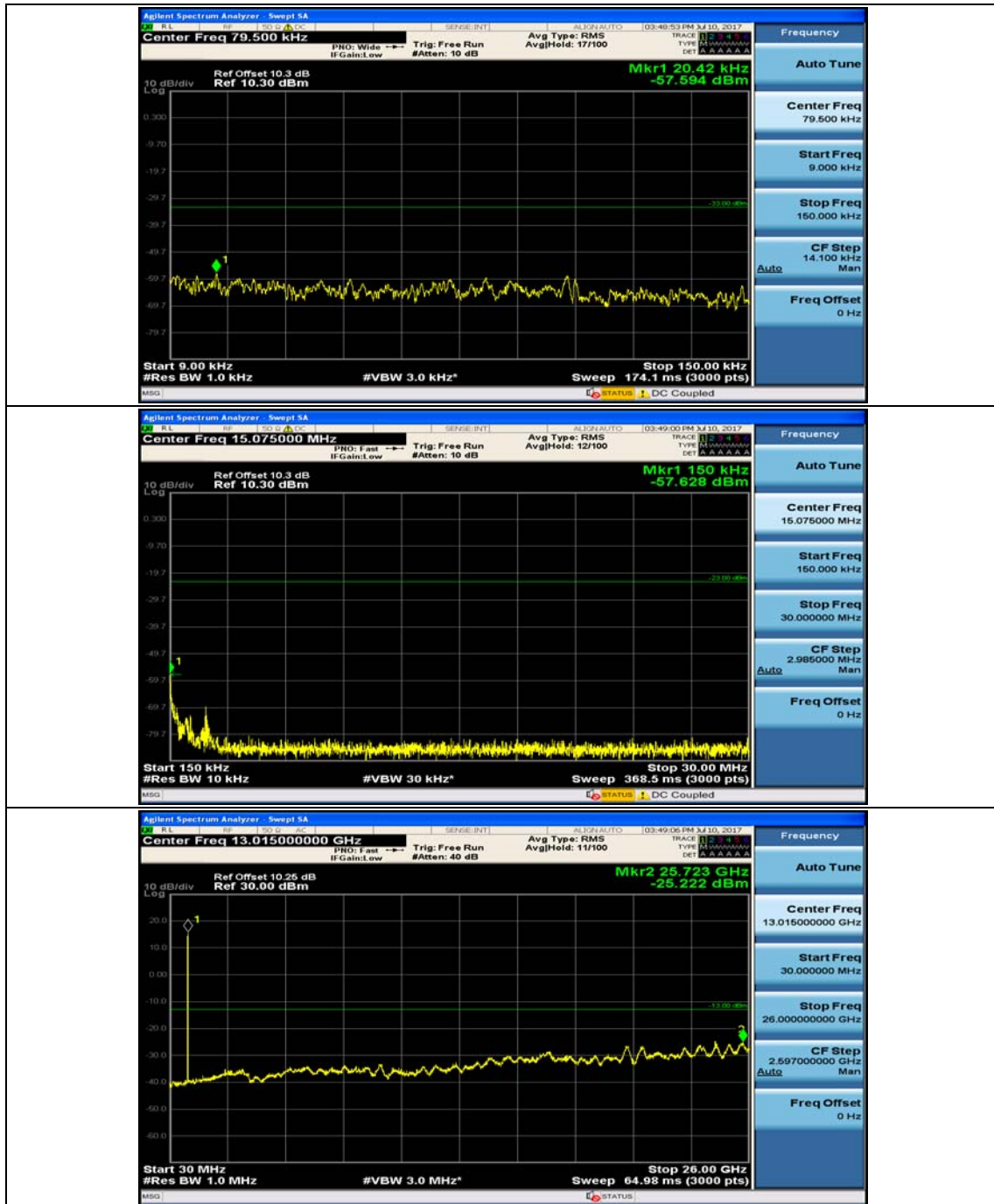




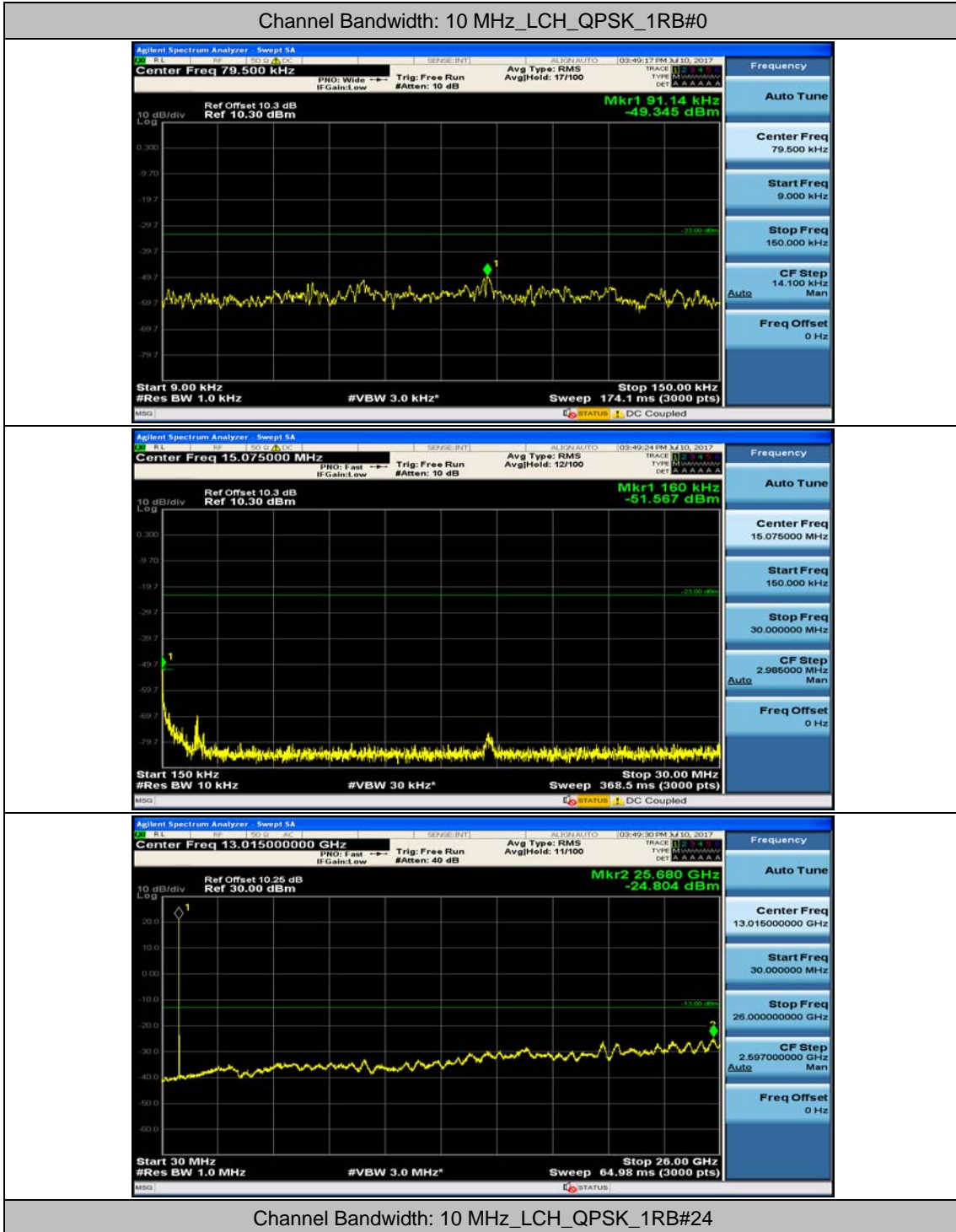




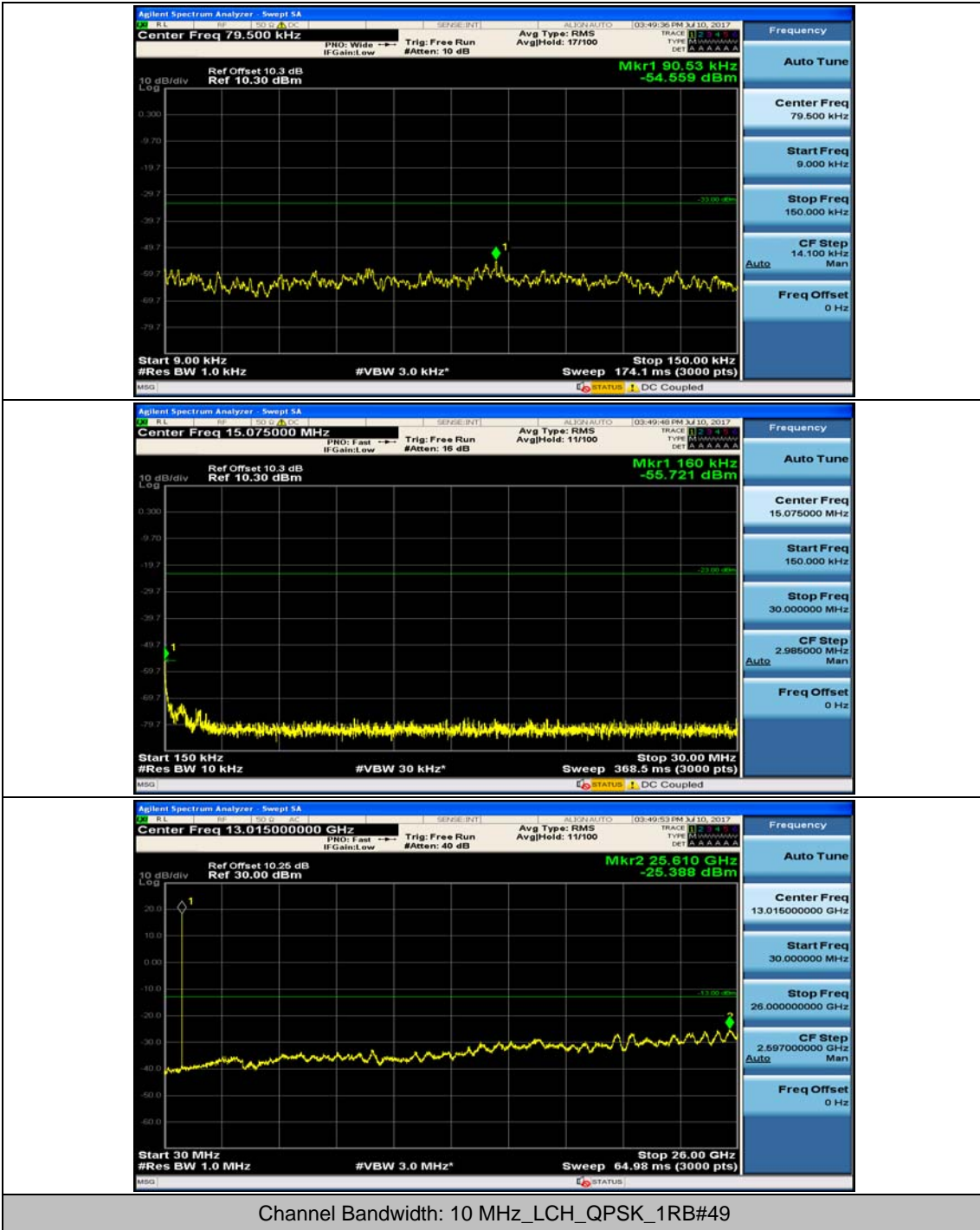


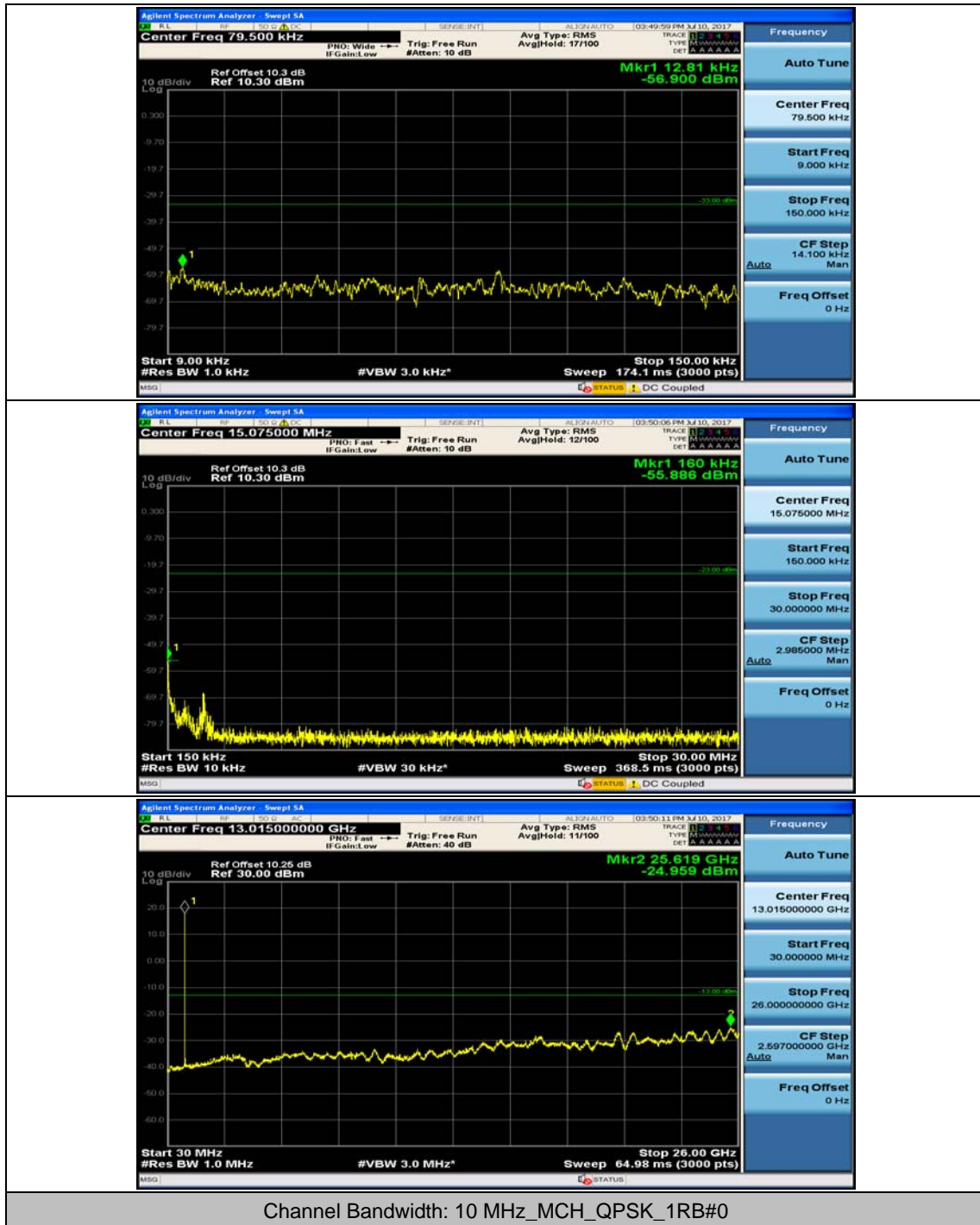


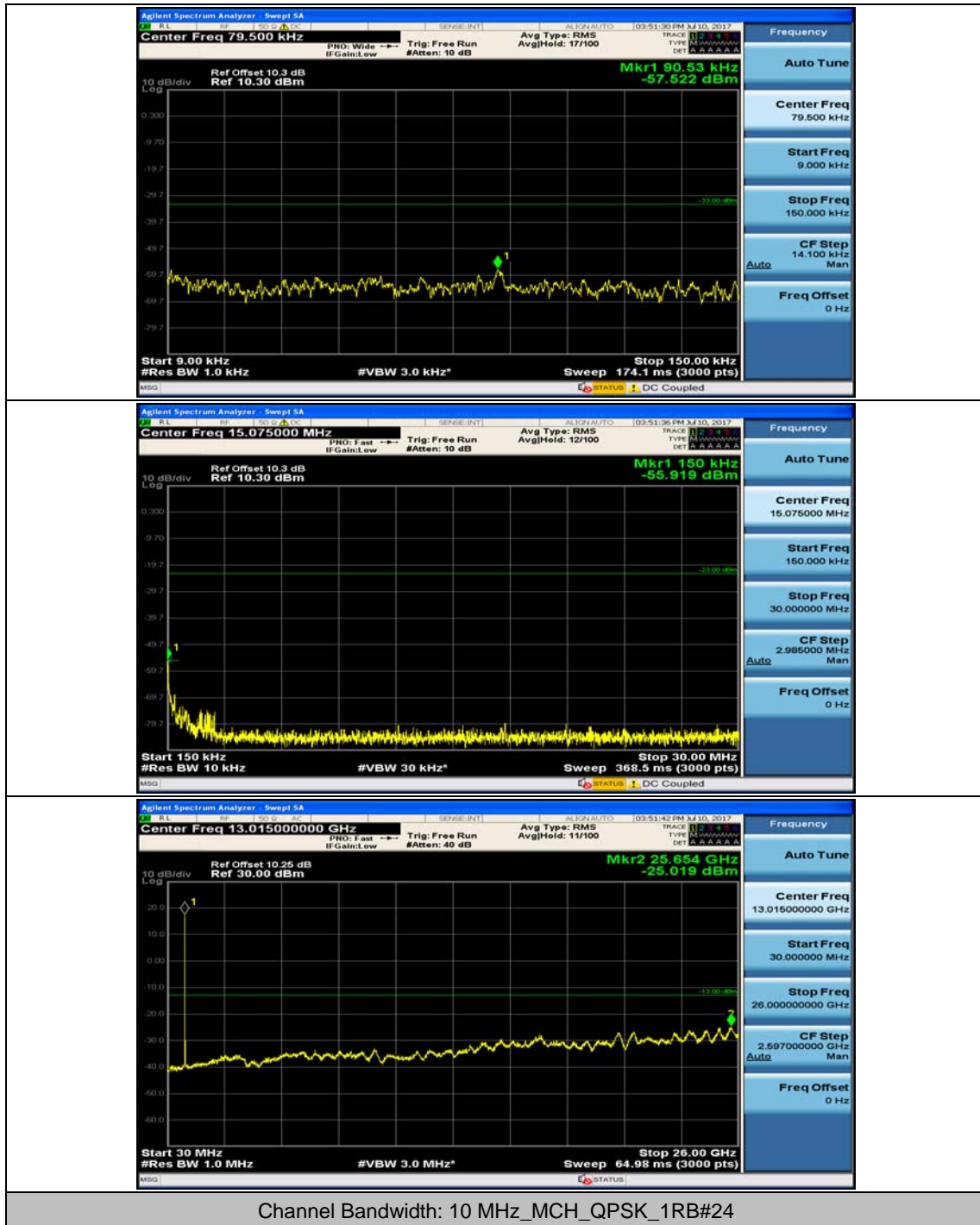
### Channel Bandwidth: 10 MHz

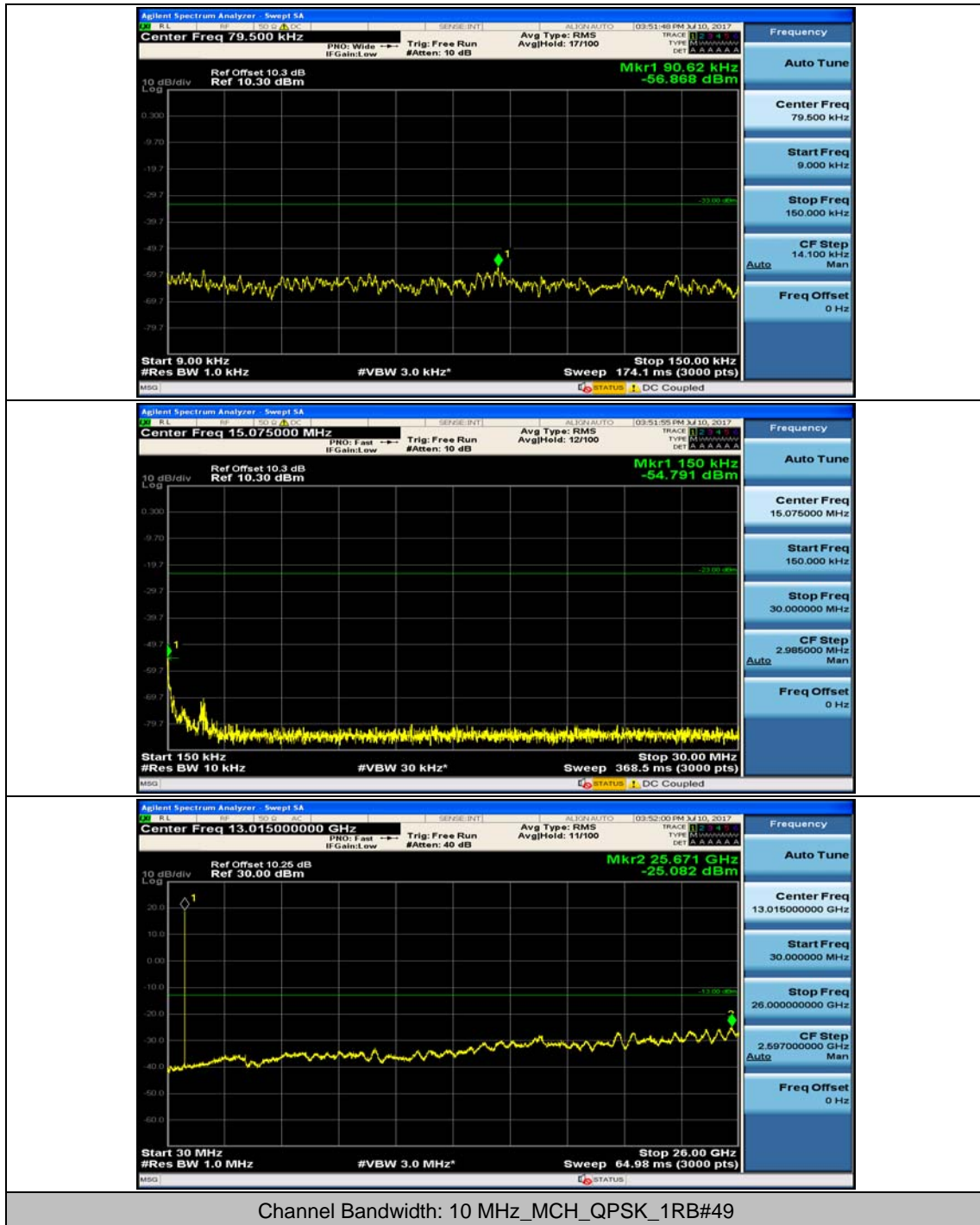


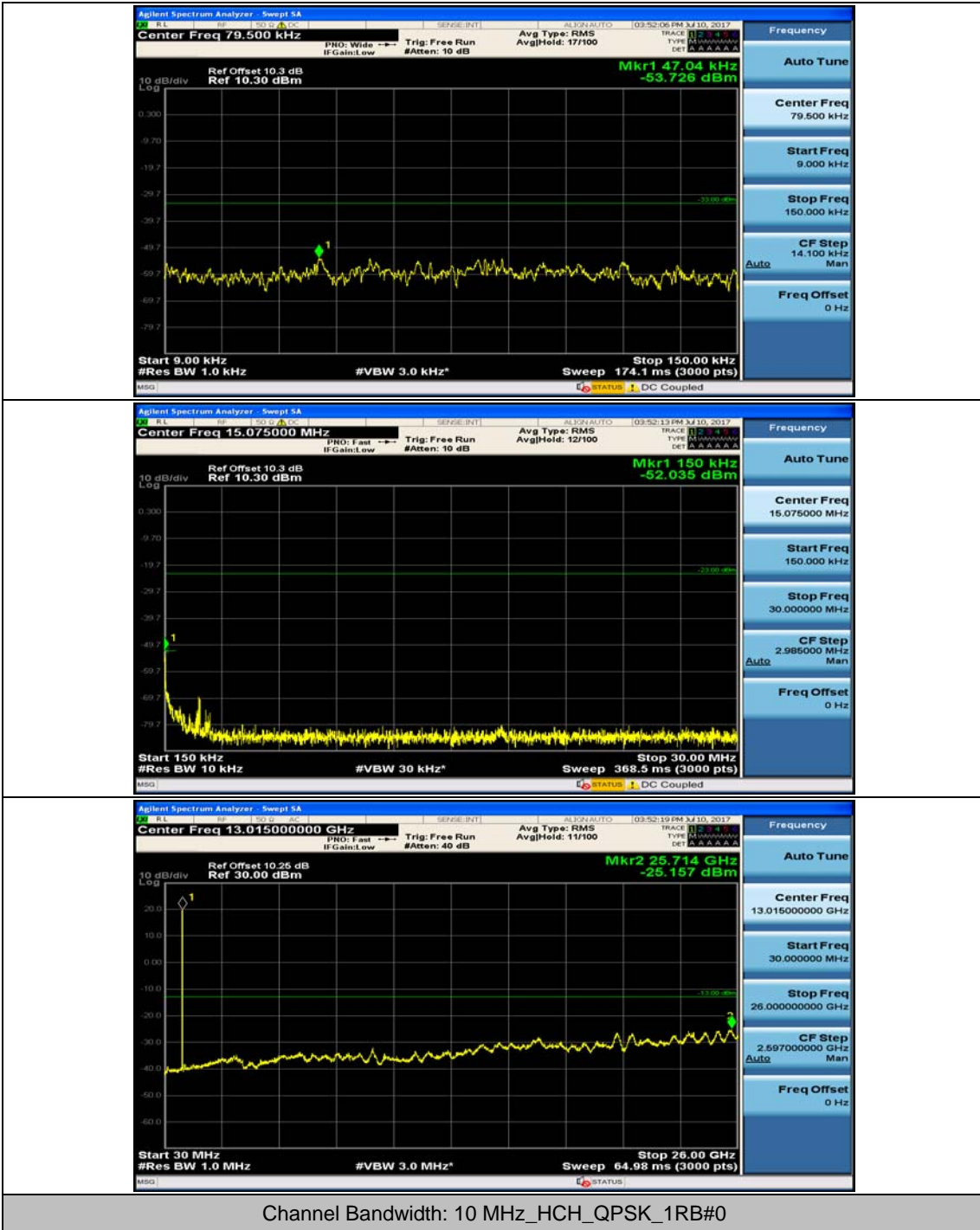


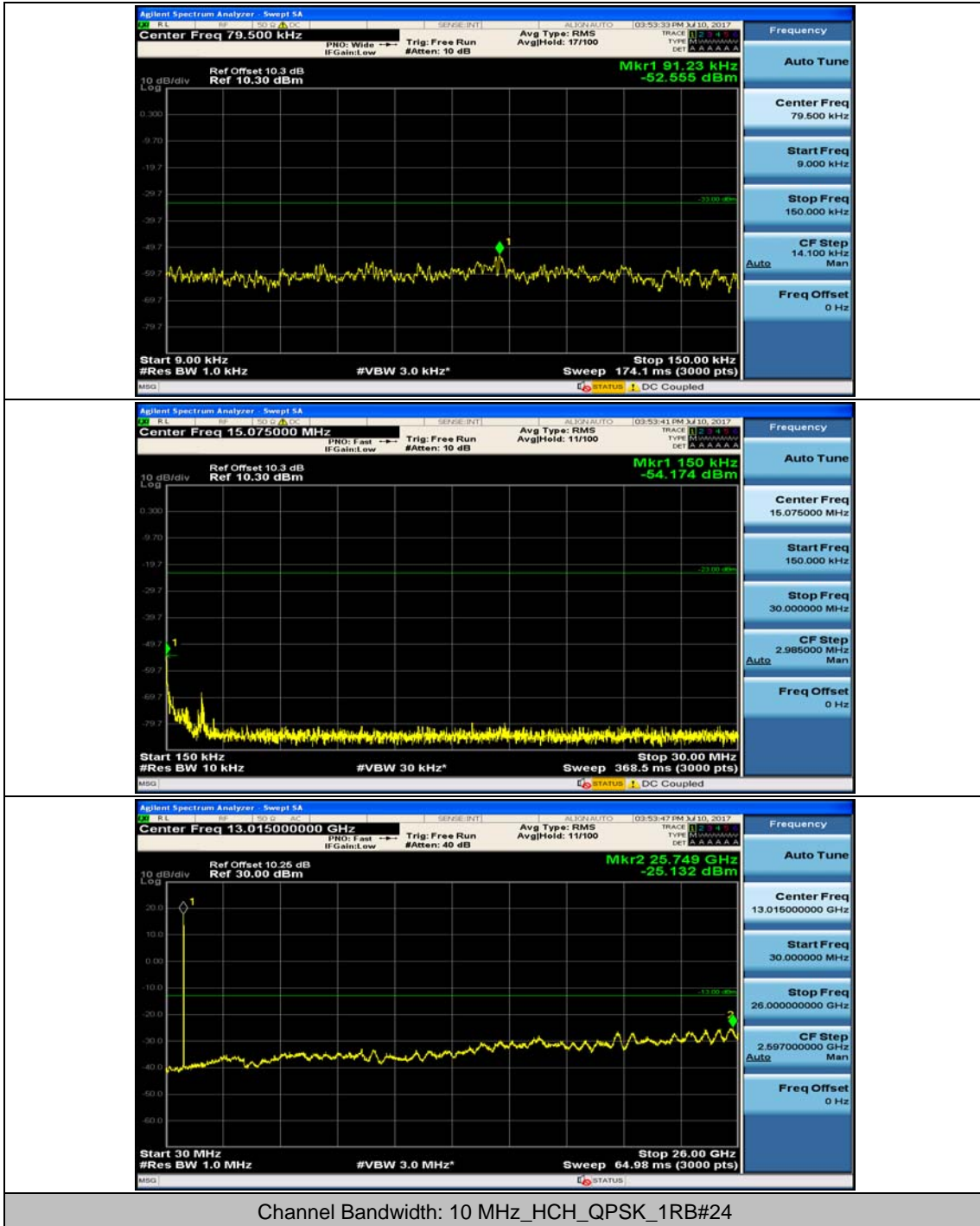


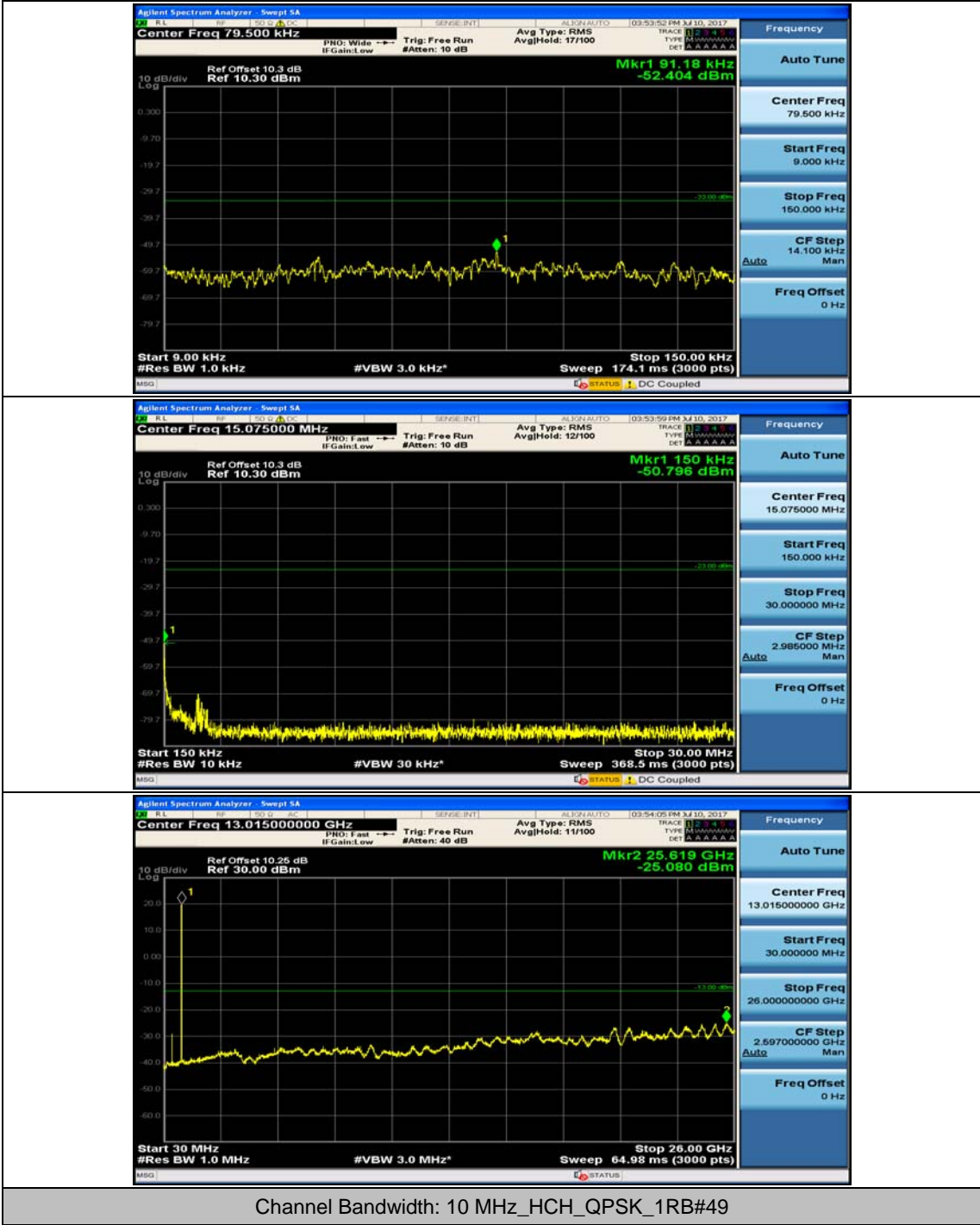


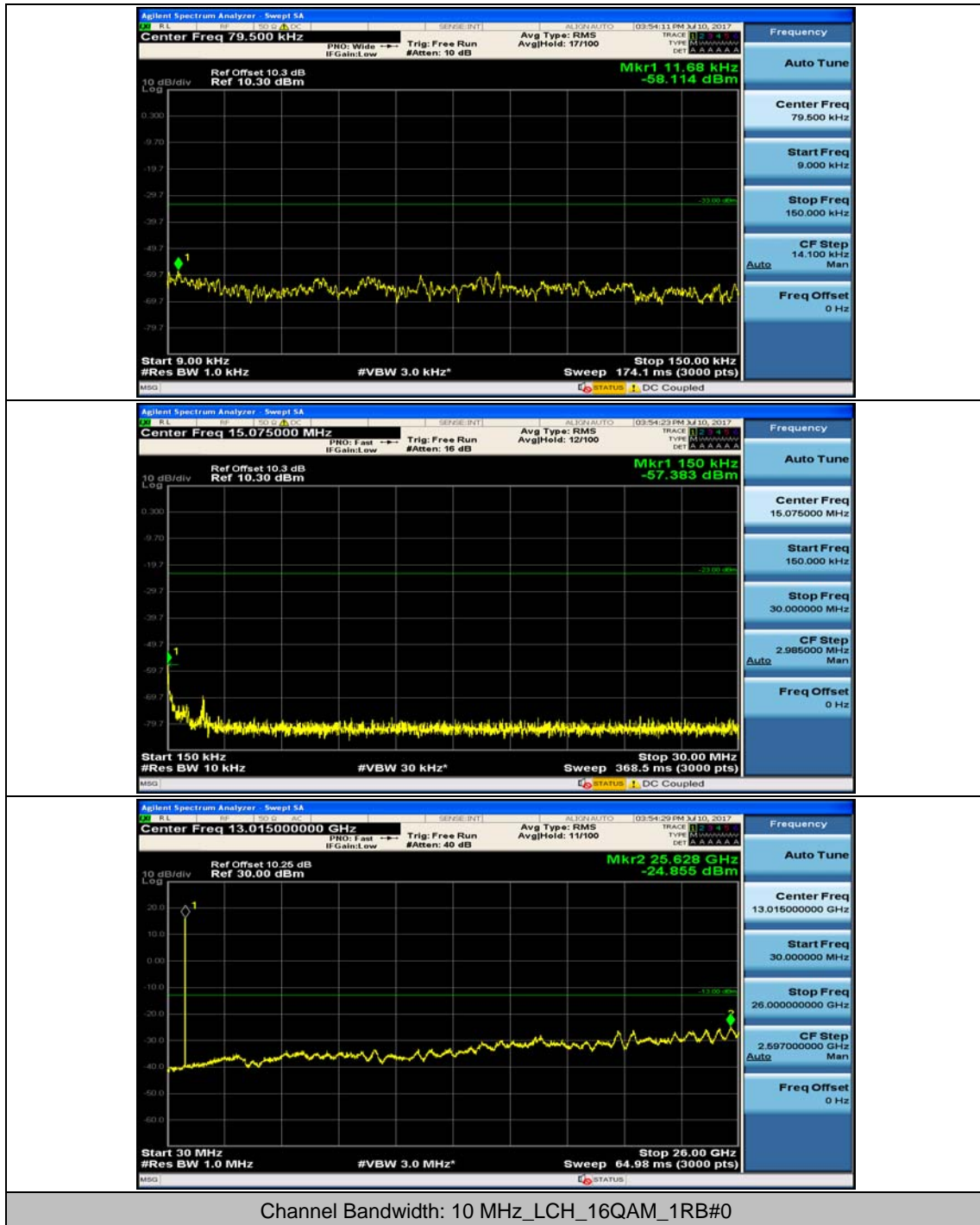




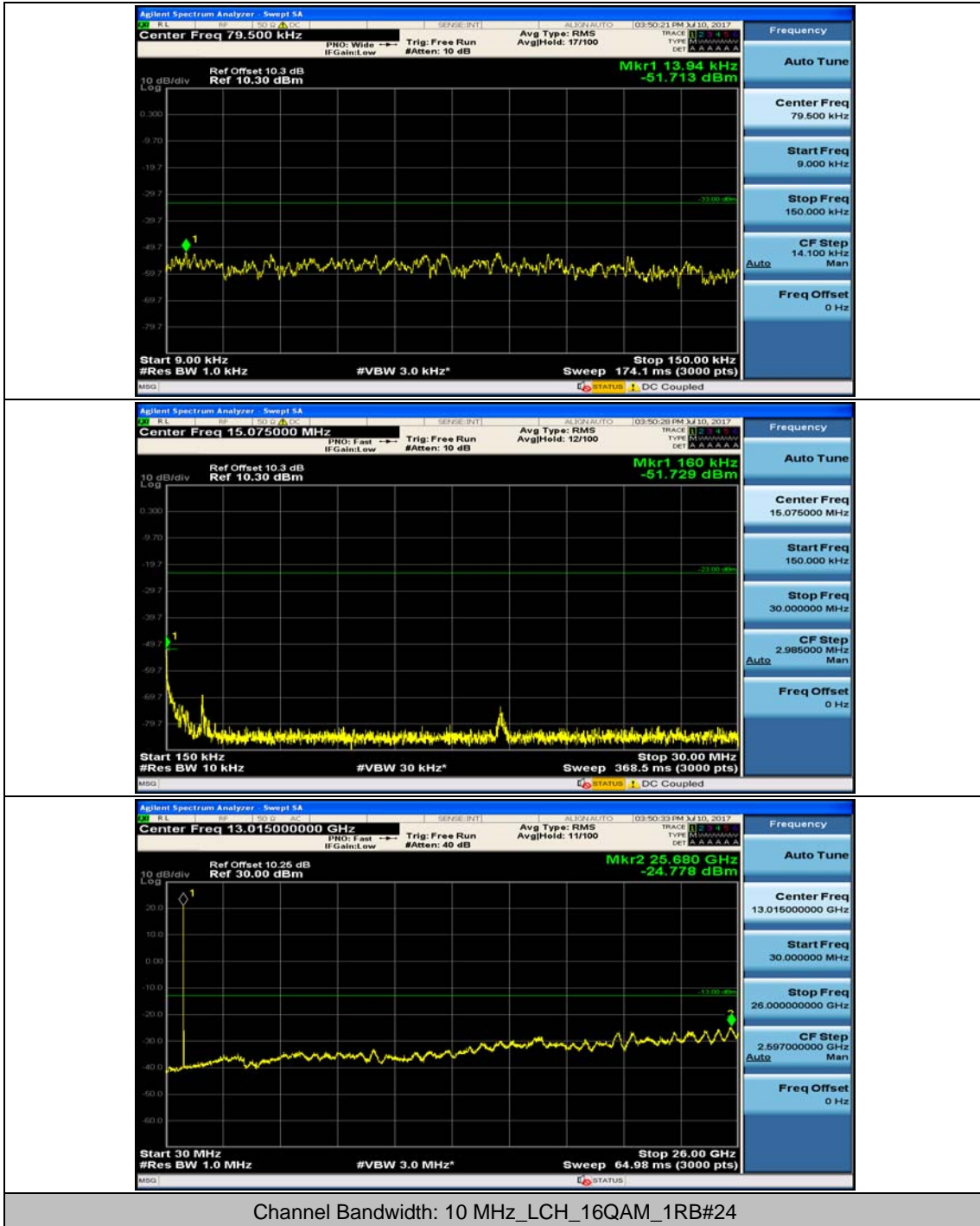


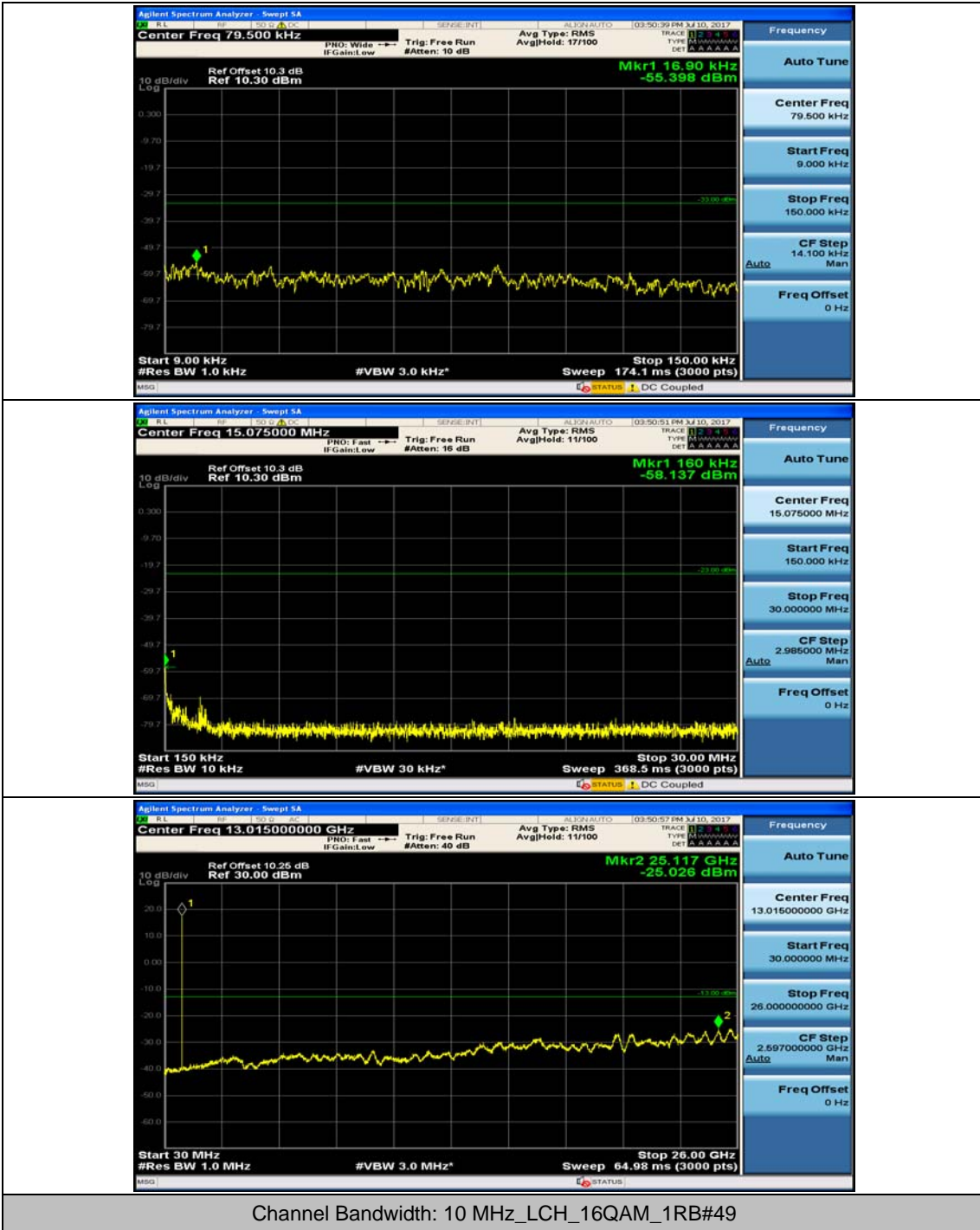


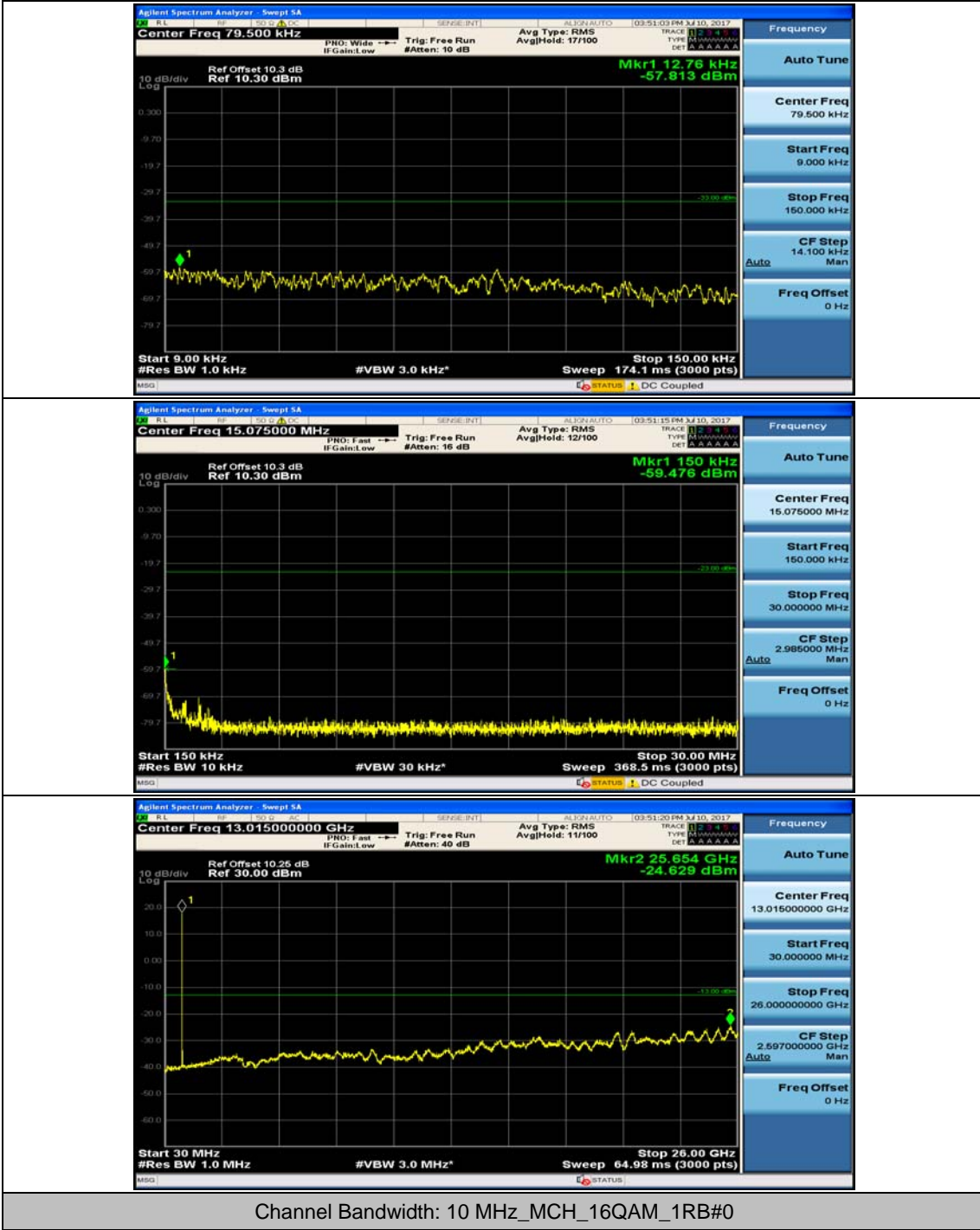


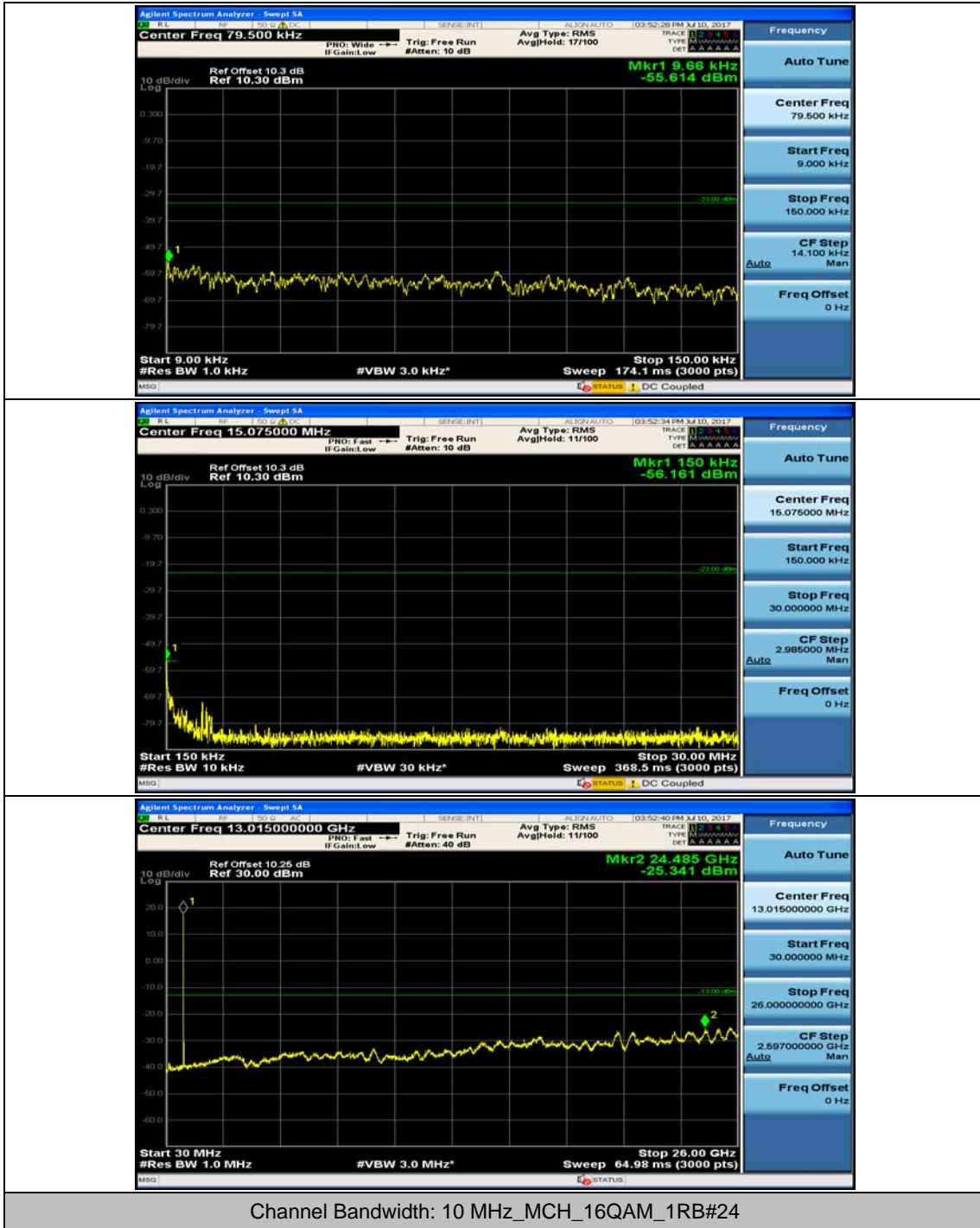


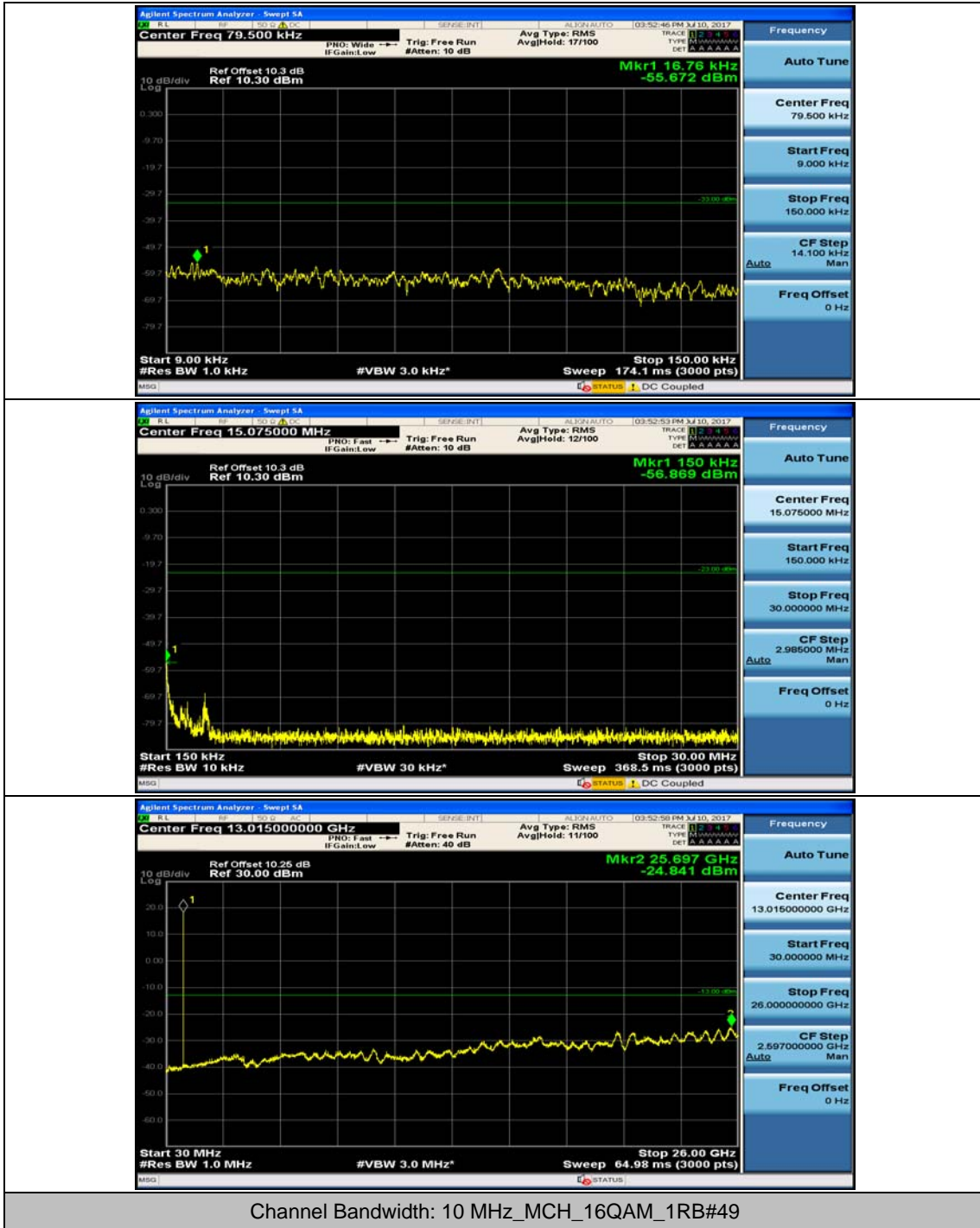


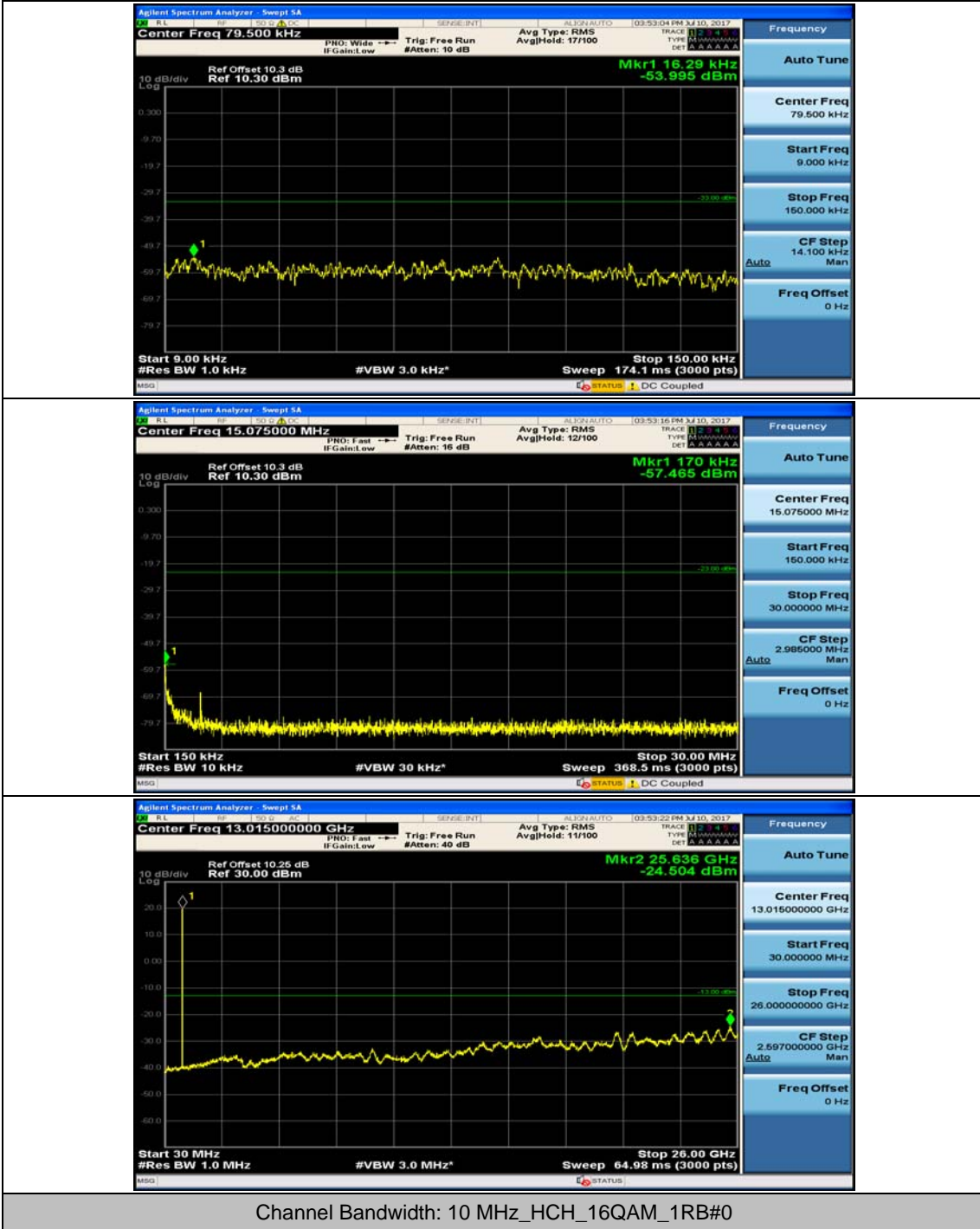


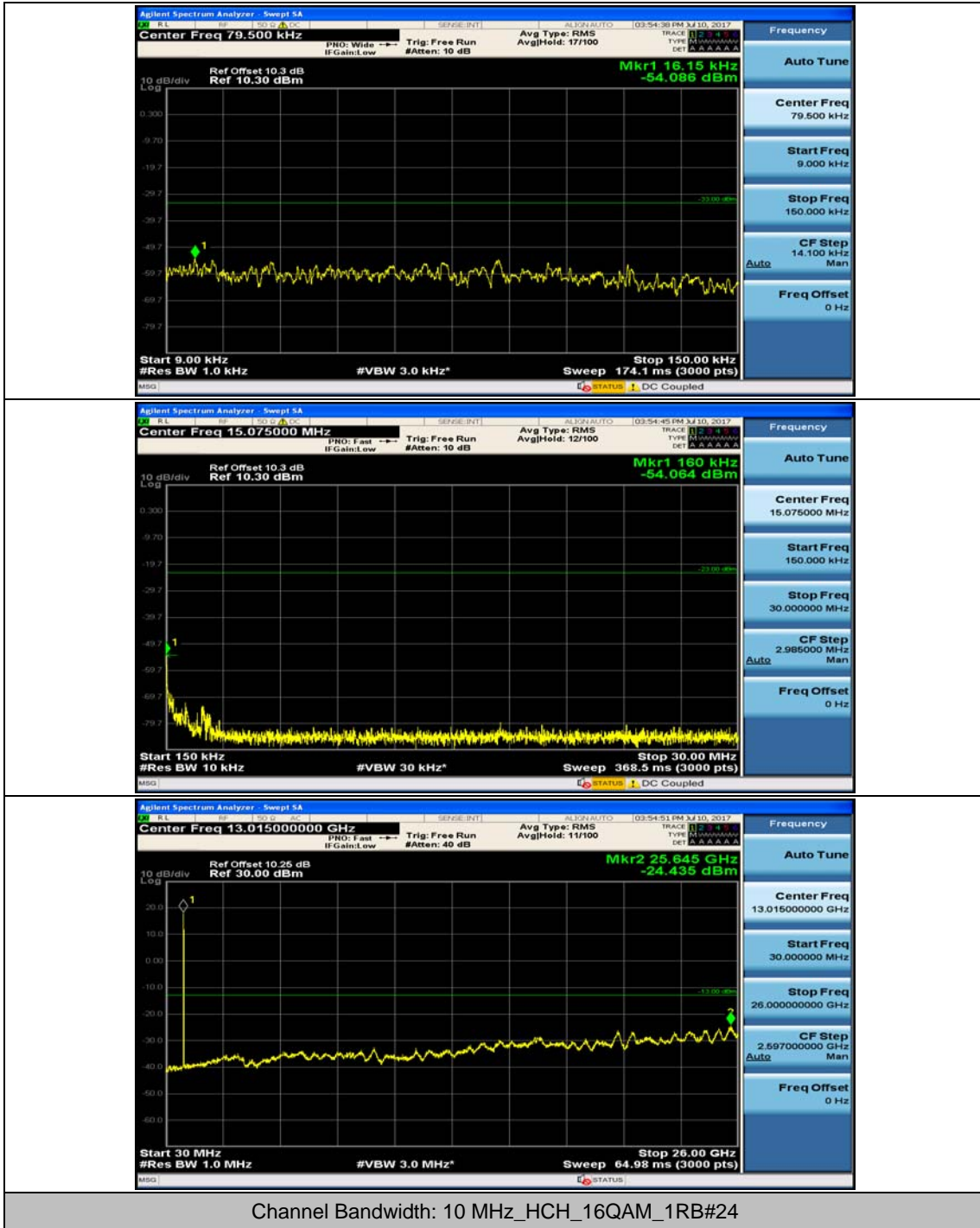


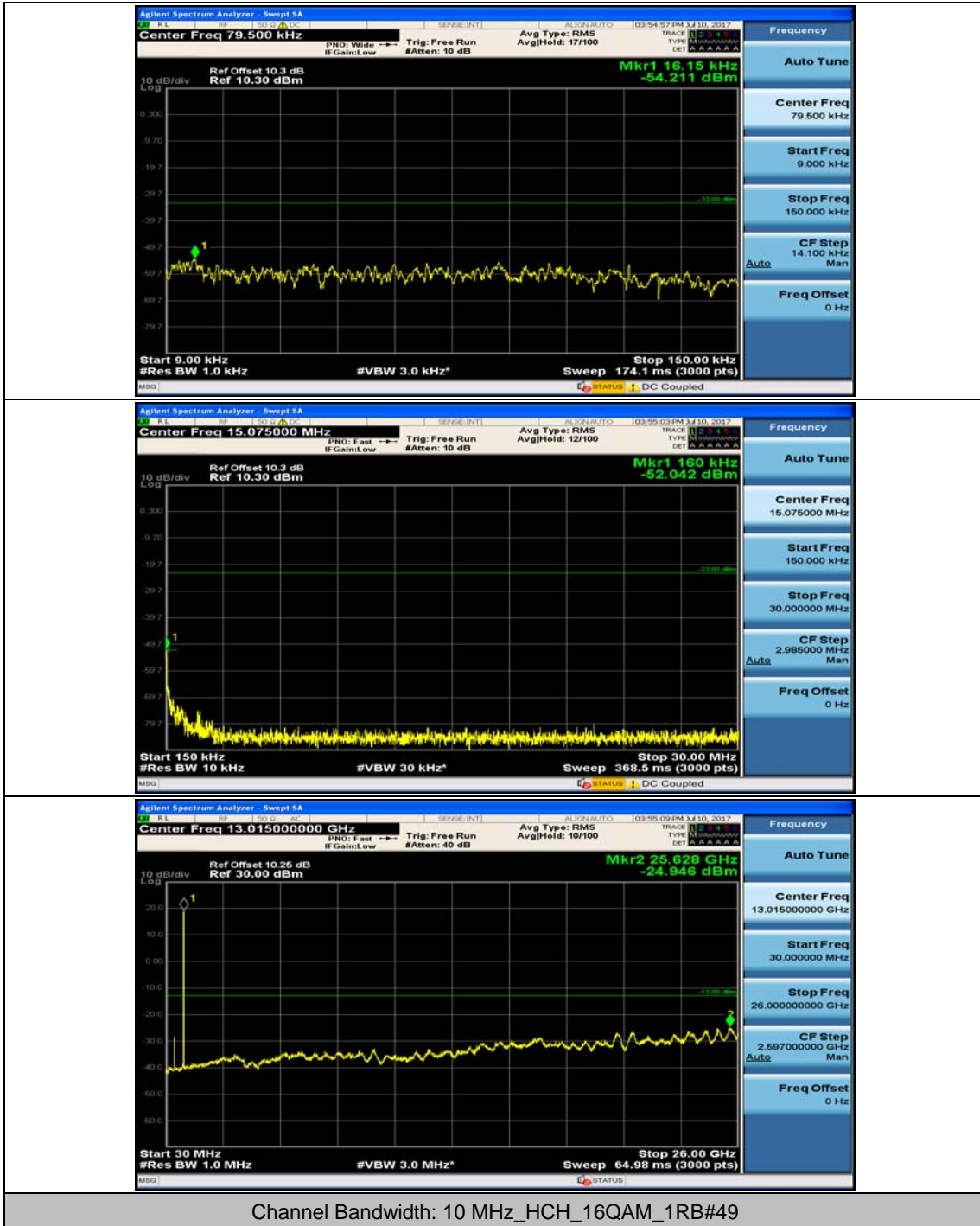




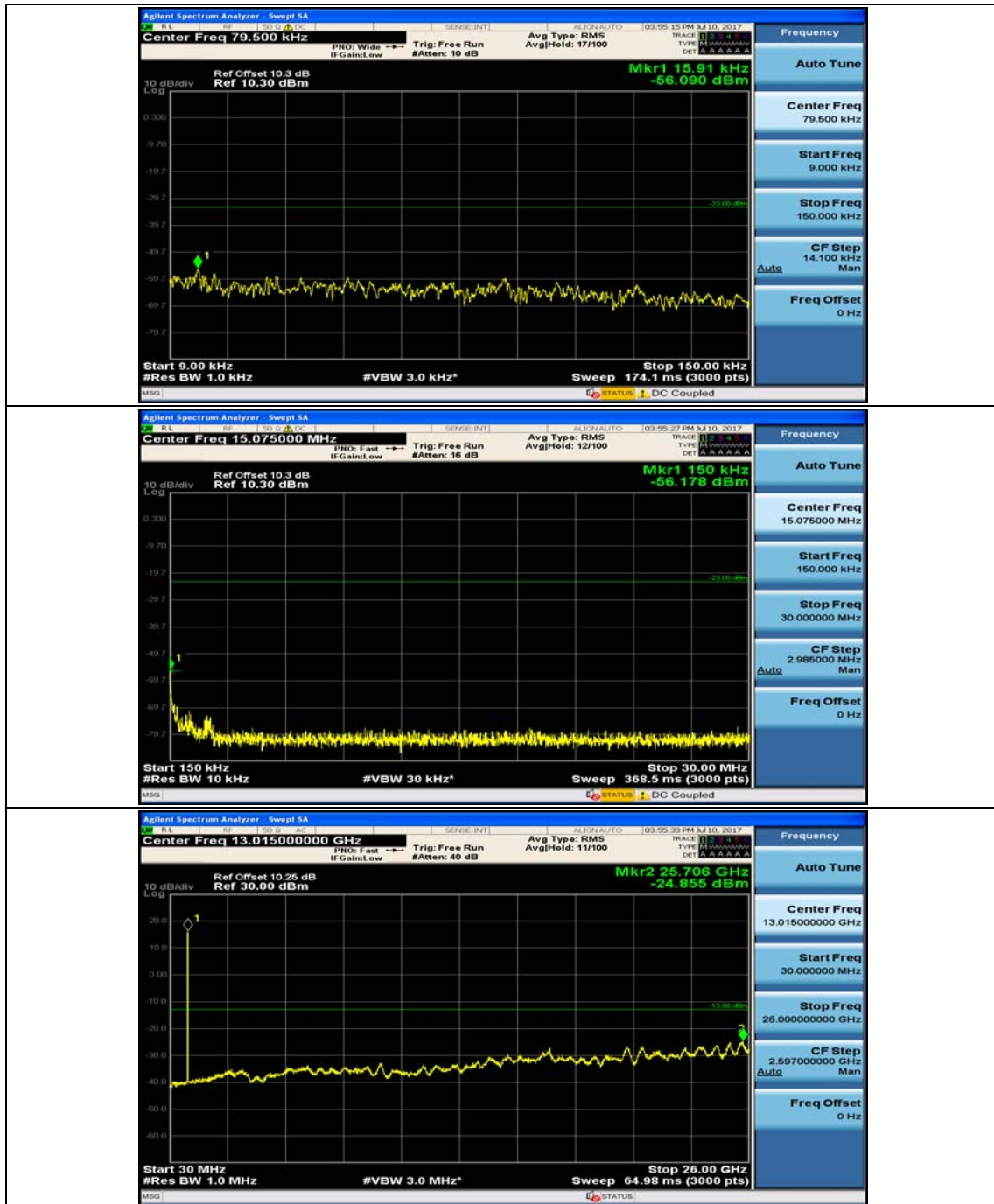












## Appendix F: Frequency Stability

### 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	2.67	0.003238	± 2.5	PASS
		VN	TN	-0.12	-0.000146	± 2.5	PASS
		VH	TN	4.8	0.005820	± 2.5	PASS
	MCH	VL	TN	2.21	0.002642	± 2.5	PASS
		VN	TN	-0.97	-0.001160	± 2.5	PASS
		VH	TN	-1.91	-0.002283	± 2.5	PASS
	HCH	VL	TN	4.77	0.005623	± 2.5	PASS
		VN	TN	0.69	0.000813	± 2.5	PASS
		VH	TN	0.31	0.000365	± 2.5	PASS
16QAM	LCH	VL	TN	1.96	0.002377	± 2.5	PASS
		VN	TN	0.15	0.000182	± 2.5	PASS
		VH	TN	0.16	0.000194	± 2.5	PASS
	MCH	VL	TN	3.33	0.003981	± 2.5	PASS
		VN	TN	-1.14	-0.001363	± 2.5	PASS
		VH	TN	2.92	0.003491	± 2.5	PASS
	HCH	VL	TN	1.02	0.001202	± 2.5	PASS
		VN	TN	0.66	0.000778	± 2.5	PASS
		VH	TN	4.14	0.004880	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.71	0.000861	± 2.5	PASS
		VN	-20	-0.3	-0.000364	± 2.5	PASS
		VN	-10	0.5	0.000606	± 2.5	PASS
		VN	0	3.57	0.004329	± 2.5	PASS
		VN	10	-1.02	-0.001237	± 2.5	PASS
		VN	20	-0.22	-0.000267	± 2.5	PASS
		VN	30	1.6	0.001940	± 2.5	PASS
		VN	40	-1.78	-0.002158	± 2.5	PASS
	MCH	VN	-30	4.35	0.005200	± 2.5	PASS
		VN	-20	4.13	0.004937	± 2.5	PASS

		VN	-10	1.86	0.002224	± 2.5	PASS		
		VN	0	-1.29	-0.001542	± 2.5	PASS		
		VN	10	2.57	0.003072	± 2.5	PASS		
		VN	20	3.05	0.003646	± 2.5	PASS		
		VN	30	3.87	0.004626	± 2.5	PASS		
		VN	40	2.22	0.002654	± 2.5	PASS		
		VN	50	2.42	0.002893	± 2.5	PASS		
	HCH	VN	-30	0.03	0.000035	± 2.5	PASS		
		VN	-20	2.67	0.003147	± 2.5	PASS		
		VN	-10	0.76	0.000896	± 2.5	PASS		
		VN	0	1.86	0.002193	± 2.5	PASS		
		VN	10	1.35	0.001591	± 2.5	PASS		
		VN	20	2.61	0.003077	± 2.5	PASS		
		VN	30	-0.67	-0.000790	± 2.5	PASS		
		VN	40	2.38	0.002806	± 2.5	PASS		
		VN	50	3.32	0.003914	± 2.5	PASS		
		16QAM	LCH	VN	-30	2.91	0.003529	± 2.5	PASS
				VN	-20	-1.06	-0.001285	± 2.5	PASS
VN	-10			4.04	0.004899	± 2.5	PASS		
VN	0			4.88	0.005917	± 2.5	PASS		
VN	10			4.62	0.005602	± 2.5	PASS		
VN	20			2.09	0.002534	± 2.5	PASS		
VN	30			2.47	0.002995	± 2.5	PASS		
VN	40			0.4	0.000485	± 2.5	PASS		
VN	50			0.4	0.000485	± 2.5	PASS		
MCH	VN		-30	-0.37	-0.000436	± 2.5	PASS		
	VN		-20	1.05	0.001238	± 2.5	PASS		
	VN		-10	-0.96	-0.001132	± 2.5	PASS		
	VN		0	-1.75	-0.002063	± 2.5	PASS		
	VN		10	3.96	0.004668	± 2.5	PASS		
	VN		20	-0.04	-0.000047	± 2.5	PASS		
	VN		30	-0.5	-0.000589	± 2.5	PASS		
	VN		40	2.77	0.003265	± 2.5	PASS		
	VN		50	-0.71	-0.000837	± 2.5	PASS		
HCH	VN		-30	-0.14	-0.000165	± 2.5	PASS		
	VN		-20	4.6	0.005423	± 2.5	PASS		
	VN		-10	3.06	0.003607	± 2.5	PASS		
	VN		0	3.74	0.004409	± 2.5	PASS		
	VN		10	-1.36	-0.001603	± 2.5	PASS		
	VN		20	0.53	0.000625	± 2.5	PASS		
	VN		30	0.96	0.001132	± 2.5	PASS		

		VN	40	4.69	0.005529	± 2.5	PASS
		VN	50	-1.45	-0.001709	± 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	-1.96	-0.002374	± 2.5	PASS
		VN	TN	-0.03	-0.000036	± 2.5	PASS
		VH	TN	4.9	0.005936	± 2.5	PASS
	MCH	VL	TN	3.82	0.004567	± 2.5	PASS
		VN	TN	3.33	0.003981	± 2.5	PASS
		VH	TN	2.22	0.002654	± 2.5	PASS
	HCH	VL	TN	2.94	0.003469	± 2.5	PASS
		VN	TN	0.76	0.000897	± 2.5	PASS
		VH	TN	-0.31	-0.000366	± 2.5	PASS
16QAM	LCH	VL	TN	-0.42	-0.000509	± 2.5	PASS
		VN	TN	-0.8	-0.000969	± 2.5	PASS
		VH	TN	0.28	0.000339	± 2.5	PASS
	MCH	VL	TN	-1.6	-0.001913	± 2.5	PASS
		VN	TN	4.57	0.005463	± 2.5	PASS
		VH	TN	1.86	0.002224	± 2.5	PASS
	HCH	VL	TN	-1.86	-0.002195	± 2.5	PASS
		VN	TN	-0.55	-0.000649	± 2.5	PASS
		VH	TN	1.54	0.001817	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.01	0.002435	± 2.5	PASS
		VN	-20	1.49	0.001805	± 2.5	PASS
		VN	-10	0.68	0.000824	± 2.5	PASS
		VN	0	3.92	0.004749	± 2.5	PASS
		VN	10	1	0.001211	± 2.5	PASS
		VN	20	1.52	0.001841	± 2.5	PASS
		VN	30	-1.51	-0.001829	± 2.5	PASS
		VN	40	4.16	0.005039	± 2.5	PASS
		VN	50	1.54	0.001866	± 2.5	PASS
	MCH	VN	-30	2.56	0.003060	± 2.5	PASS
		VN	-20	2.31	0.002762	± 2.5	PASS
		VN	-10	-0.98	-0.001172	± 2.5	PASS

		VN	0	-1.4	-0.001674	± 2.5	PASS		
		VN	10	1.49	0.001781	± 2.5	PASS		
		VN	20	1.49	0.001781	± 2.5	PASS		
		VN	30	4.04	0.004830	± 2.5	PASS		
		VN	40	1.48	0.001769	± 2.5	PASS		
		VN	50	2.78	0.003323	± 2.5	PASS		
	HCH	VN	-30	-0.91	-0.001074	± 2.5	PASS		
		VN	-20	4.96	0.005853	± 2.5	PASS		
		VN	-10	5	0.005900	± 2.5	PASS		
		VN	0	3.4	0.004012	± 2.5	PASS		
		VN	10	3.78	0.004460	± 2.5	PASS		
		VN	20	3.04	0.003587	± 2.5	PASS		
		VN	30	1.09	0.001286	± 2.5	PASS		
		VN	40	-0.23	-0.000271	± 2.5	PASS		
		VN	50	4.61	0.005440	± 2.5	PASS		
		16QAM	LCH	VN	-30	2.84	0.003395	± 2.5	PASS
				VN	-20	1.74	0.002080	± 2.5	PASS
				VN	-10	3.62	0.004328	± 2.5	PASS
VN	0			-0.33	-0.000395	± 2.5	PASS		
VN	10			4.09	0.004889	± 2.5	PASS		
VN	20			-1.37	-0.001638	± 2.5	PASS		
VN	30			-1.37	-0.001638	± 2.5	PASS		
VN	40			3.38	0.004041	± 2.5	PASS		
VN	50			3.89	0.004650	± 2.5	PASS		
MCH	VN		-30	1.23	0.001451	± 2.5	PASS		
	VN		-20	-0.28	-0.000330	± 2.5	PASS		
	VN		-10	3.47	0.004094	± 2.5	PASS		
	VN		0	2.39	0.002820	± 2.5	PASS		
	VN		10	-1.39	-0.001640	± 2.5	PASS		
	VN		20	-1.28	-0.001510	± 2.5	PASS		
	VN		30	4.98	0.005876	± 2.5	PASS		
	VN		40	3.55	0.004189	± 2.5	PASS		
	VN		50	3.51	0.004142	± 2.5	PASS		
HCH	VN		-30	-0.52	-0.000614	± 2.5	PASS		
	VN		-20	2.12	0.002501	± 2.5	PASS		
	VN		-10	0.13	0.000153	± 2.5	PASS		
	VN		0	0.75	0.000885	± 2.5	PASS		
	VN		10	0.68	0.000802	± 2.5	PASS		
	VN		20	-0.28	-0.000330	± 2.5	PASS		
	VN		30	4.3	0.005074	± 2.5	PASS		
	VN		40	2.3	0.002714	± 2.5	PASS		

		VN	50	3.09	0.003646	± 2.5	PASS
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**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	-1.38	-0.001670	± 2.5	PASS
		VN	TN	-0.52	-0.000629	± 2.5	PASS
		VH	TN	2.73	0.003303	± 2.5	PASS
	MCH	VL	TN	0.9	0.001076	± 2.5	PASS
		VN	TN	4.17	0.004985	± 2.5	PASS
		VH	TN	1.32	0.001578	± 2.5	PASS
	HCH	VL	TN	3.85	0.004548	± 2.5	PASS
		VN	TN	1.37	0.001618	± 2.5	PASS
		VH	TN	3.26	0.003851	± 2.5	PASS
16QAM	LCH	VL	TN	3.22	0.003896	± 2.5	PASS
		VN	TN	2.78	0.003364	± 2.5	PASS
		VH	TN	-1.47	-0.001779	± 2.5	PASS
	MCH	VL	TN	0.5	0.000598	± 2.5	PASS
		VN	TN	3.09	0.003694	± 2.5	PASS
		VH	TN	1.86	0.002224	± 2.5	PASS
	HCH	VL	TN	-0.54	-0.000638	± 2.5	PASS
		VN	TN	-1.38	-0.001630	± 2.5	PASS
		VH	TN	4.39	0.005186	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.5	-0.001815	± 2.5	PASS
		VN	-20	-1.9	-0.002299	± 2.5	PASS
		VN	-10	1.09	0.001319	± 2.5	PASS
		VN	0	-1.7	-0.002057	± 2.5	PASS
		VN	10	-1.94	-0.002347	± 2.5	PASS
		VN	20	3.85	0.004658	± 2.5	PASS
		VN	30	4.43	0.005360	± 2.5	PASS
		VN	40	-0.21	-0.000254	± 2.5	PASS
		VN	50	3.08	0.003727	± 2.5	PASS
	MCH	VN	-30	-0.58	-0.000693	± 2.5	PASS
		VN	-20	0.44	0.000526	± 2.5	PASS
		VN	-10	-0.02	-0.000024	± 2.5	PASS
		VN	0	3.15	0.003766	± 2.5	PASS

		VN	10	-0.39	-0.000466	± 2.5	PASS
		VN	20	1.96	0.002343	± 2.5	PASS
		VN	30	0.35	0.000418	± 2.5	PASS
		VN	40	0.48	0.000574	± 2.5	PASS
		VN	50	3.46	0.004136	± 2.5	PASS
	HCH	VN	-30	2.26	0.002670	± 2.5	PASS
		VN	-20	2.04	0.002410	± 2.5	PASS
		VN	-10	2.7	0.003190	± 2.5	PASS
		VN	0	1.79	0.002115	± 2.5	PASS
		VN	10	-0.11	-0.000130	± 2.5	PASS
		VN	20	2.07	0.002445	± 2.5	PASS
		VN	30	-0.27	-0.000319	± 2.5	PASS
		VN	40	2.01	0.002374	± 2.5	PASS
		VN	50	-0.54	-0.000638	± 2.5	PASS
		16QAM	LCH	VN	-30	4.63	0.005535
VN	-20			1.45	0.001733	± 2.5	PASS
VN	-10			2.9	0.003467	± 2.5	PASS
VN	0			-0.26	-0.000311	± 2.5	PASS
VN	10			-1.21	-0.001447	± 2.5	PASS
VN	20			5	0.005977	± 2.5	PASS
VN	30			-0.11	-0.000132	± 2.5	PASS
VN	40			-0.52	-0.000622	± 2.5	PASS
VN	50			4.9	0.005858	± 2.5	PASS
MCH	VN		-30	-1.21	-0.001429	± 2.5	PASS
	VN		-20	4.78	0.005647	± 2.5	PASS
	VN		-10	-0.26	-0.000307	± 2.5	PASS
	VN		0	-0.27	-0.000319	± 2.5	PASS
	VN		10	0.34	0.000402	± 2.5	PASS
	VN		20	0.84	0.000992	± 2.5	PASS
	VN		30	4.56	0.005387	± 2.5	PASS
	VN		40	4.74	0.005600	± 2.5	PASS
	VN		50	1.71	0.002020	± 2.5	PASS
HCH	VN		-30	2.78	0.003284	± 2.5	PASS
	VN		-20	1.52	0.001796	± 2.5	PASS
	VN		-10	0.49	0.000579	± 2.5	PASS
	VN		0	0.16	0.000189	± 2.5	PASS
	VN		10	1.61	0.001902	± 2.5	PASS
	VN		20	0.05	0.000059	± 2.5	PASS
	VN		30	2.93	0.003461	± 2.5	PASS
	VN		40	3.92	0.004631	± 2.5	PASS
	VN		50	4.89	0.005777	± 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	4.85	0.005850	± 2.5	PASS
		VN	TN	-0.52	-0.000627	± 2.5	PASS
		VH	TN	4.99	0.006019	± 2.5	PASS
	MCH	VL	TN	3.97	0.004746	± 2.5	PASS
		VN	TN	0.89	0.001064	± 2.5	PASS
		VH	TN	4.45	0.005320	± 2.5	PASS
	HCH	VL	TN	4.85	0.005746	± 2.5	PASS
		VN	TN	1.57	0.001860	± 2.5	PASS
		VH	TN	2.41	0.002855	± 2.5	PASS
16QAM	LCH	VL	TN	4.85	0.005850	± 2.5	PASS
		VN	TN	1.28	0.001544	± 2.5	PASS
		VH	TN	1.73	0.002087	± 2.5	PASS
	MCH	VL	TN	4.11	0.004913	± 2.5	PASS
		VN	TN	1.42	0.001698	± 2.5	PASS
		VH	TN	-1.55	-0.001853	± 2.5	PASS
	HCH	VL	TN	0.73	0.000865	± 2.5	PASS
		VN	TN	1.16	0.001374	± 2.5	PASS
		VH	TN	1.87	0.002216	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.71	0.000856	± 2.5	PASS
		VN	-20	0.63	0.000760	± 2.5	PASS
		VN	-10	1.66	0.002002	± 2.5	PASS
		VN	0	0.01	0.000012	± 2.5	PASS
		VN	10	3.16	0.003812	± 2.5	PASS
		VN	20	1.49	0.001797	± 2.5	PASS
		VN	30	2.76	0.003329	± 2.5	PASS
		VN	40	4.26	0.005139	± 2.5	PASS
		VN	50	3.24	0.003908	± 2.5	PASS
	MCH	VN	-30	4.05	0.004842	± 2.5	PASS
		VN	-20	-0.52	-0.000622	± 2.5	PASS
		VN	-10	4.83	0.005774	± 2.5	PASS
		VN	0	4.48	0.005356	± 2.5	PASS
		VN	10	1.19	0.001423	± 2.5	PASS
		VN	20	3.31	0.003957	± 2.5	PASS
VN	30	-0.55	-0.000658	± 2.5	PASS		



		VN	40	3.58	0.004280	± 2.5	PASS
		VN	50	4.1	0.004901	± 2.5	PASS
	HCH	VN	-30	0.83	0.000983	± 2.5	PASS
		VN	-20	3.19	0.003780	± 2.5	PASS
		VN	-10	2.88	0.003412	± 2.5	PASS
		VN	0	4.13	0.004893	± 2.5	PASS
		VN	10	3.27	0.003874	± 2.5	PASS
		VN	20	-0.09	-0.000107	± 2.5	PASS
		VN	30	-0.29	-0.000344	± 2.5	PASS
		VN	40	-1.1	-0.001303	± 2.5	PASS
		VN	50	-1.25	-0.001481	± 2.5	PASS
16QAM	LCH	VN	-30	3.95	0.004722	± 2.5	PASS
		VN	-20	0.48	0.000574	± 2.5	PASS
		VN	-10	-0.54	-0.000646	± 2.5	PASS
		VN	0	1.17	0.001399	± 2.5	PASS
		VN	10	4.58	0.005475	± 2.5	PASS
		VN	20	4.95	0.005918	± 2.5	PASS
		VN	30	0.54	0.000646	± 2.5	PASS
		VN	40	4.13	0.004937	± 2.5	PASS
	MCH	VN	50	2.13	0.002546	± 2.5	PASS
		VN	-30	3.2	0.003791	± 2.5	PASS
		VN	-20	0.49	0.000581	± 2.5	PASS
		VN	-10	-0.32	-0.000379	± 2.5	PASS
		VN	0	2.99	0.003543	± 2.5	PASS
		VN	10	-0.26	-0.000308	± 2.5	PASS
		VN	20	2.24	0.002654	± 2.5	PASS
		VN	30	4.15	0.004917	± 2.5	PASS
	HCH	VN	40	0.64	0.000758	± 2.5	PASS
		VN	50	1.78	0.002109	± 2.5	PASS
		VN	-30	0.15	0.000178	± 2.5	PASS
		VN	-20	2.16	0.002559	± 2.5	PASS
		VN	-10	0.7	0.000829	± 2.5	PASS
		VN	0	1.82	0.002156	± 2.5	PASS
		VN	10	1.87	0.002216	± 2.5	PASS
		VN	20	-0.74	-0.000877	± 2.5	PASS
	VN	30	0.72	0.000853	± 2.5	PASS	
	VN	40	-0.33	-0.000391	± 2.5	PASS	
	VN	50	0.03	0.000036	± 2.5	PASS	