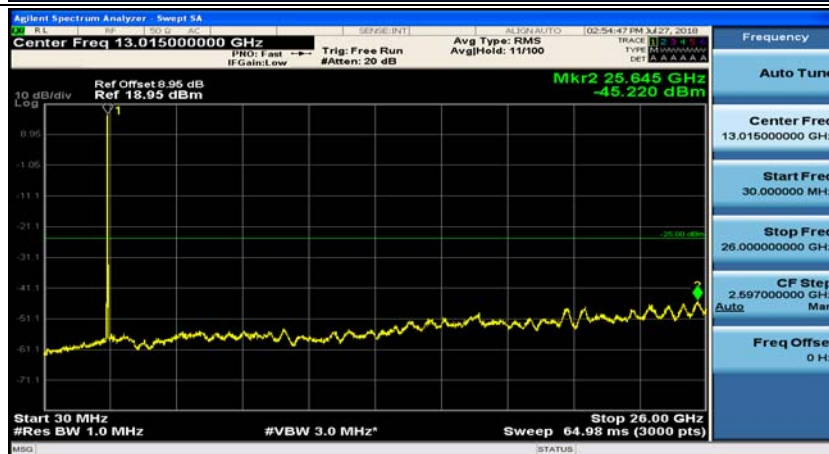
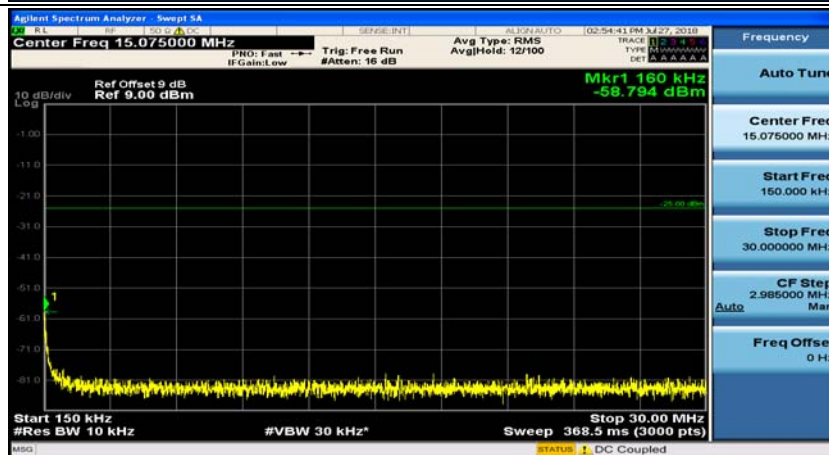
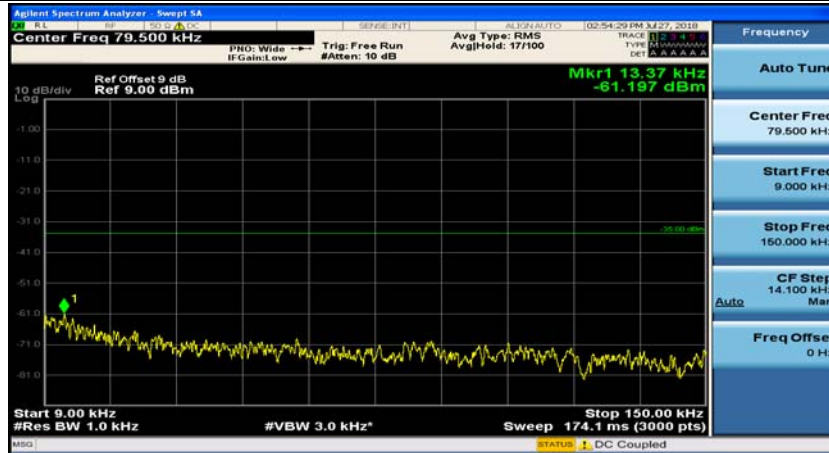
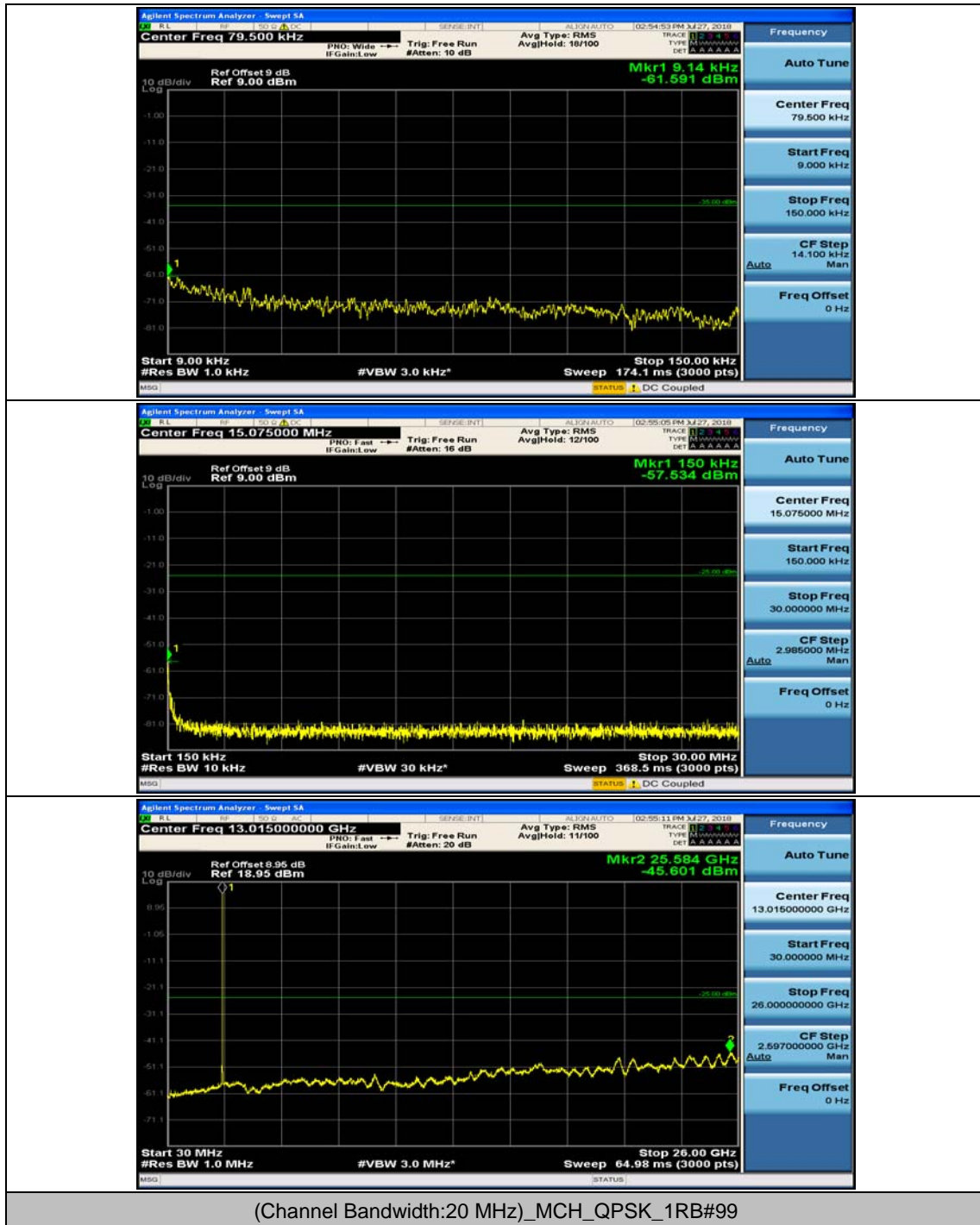
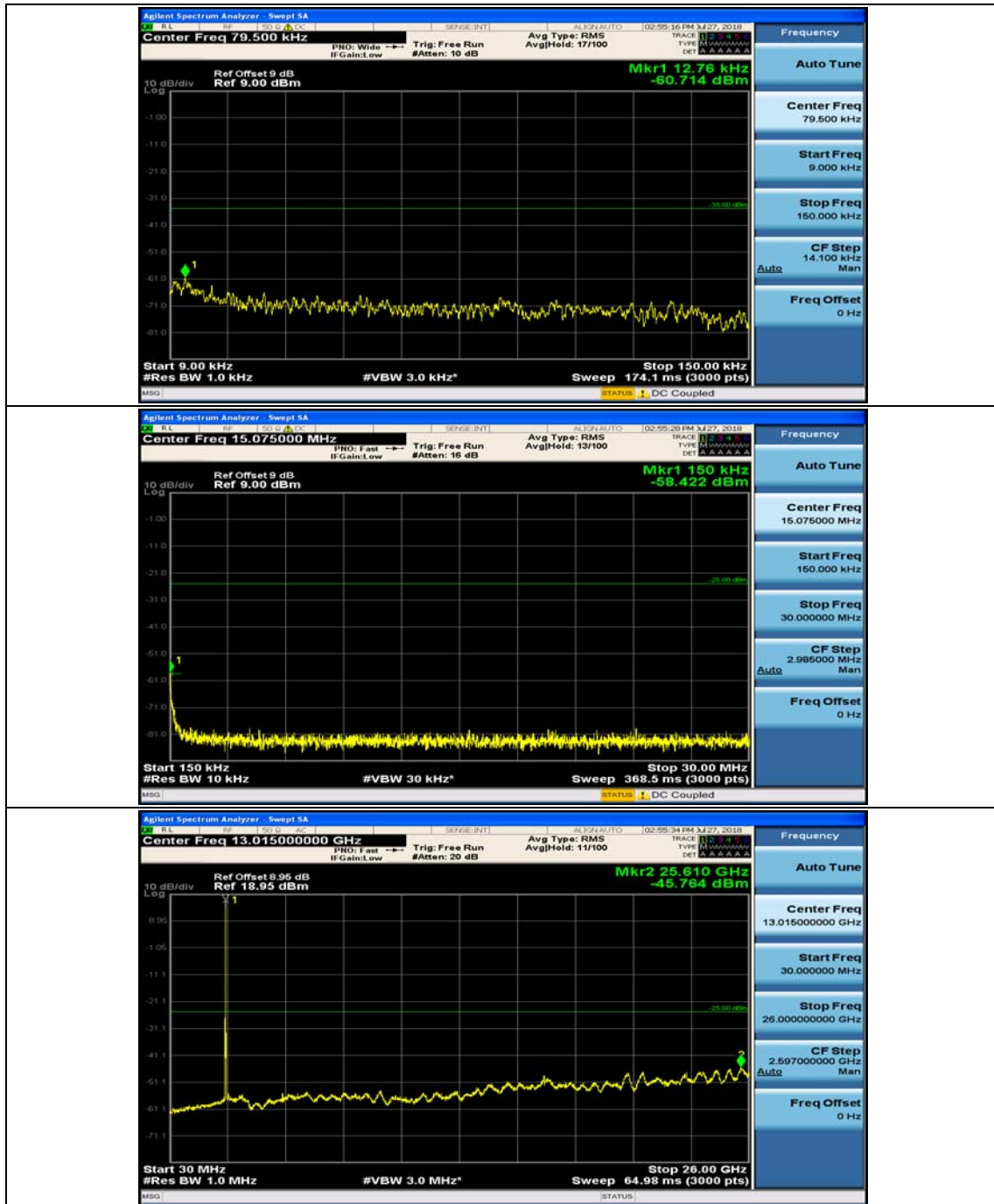


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

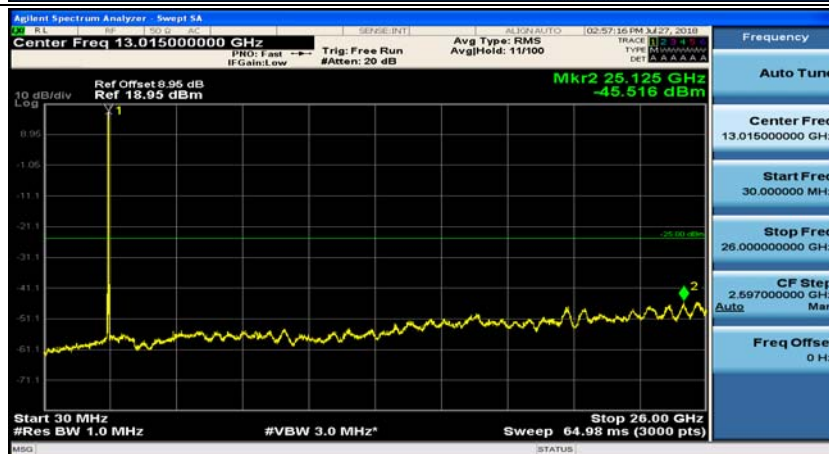
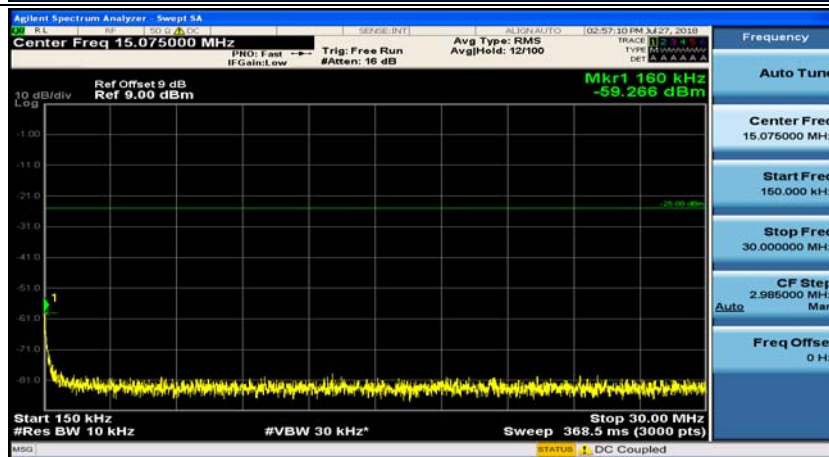
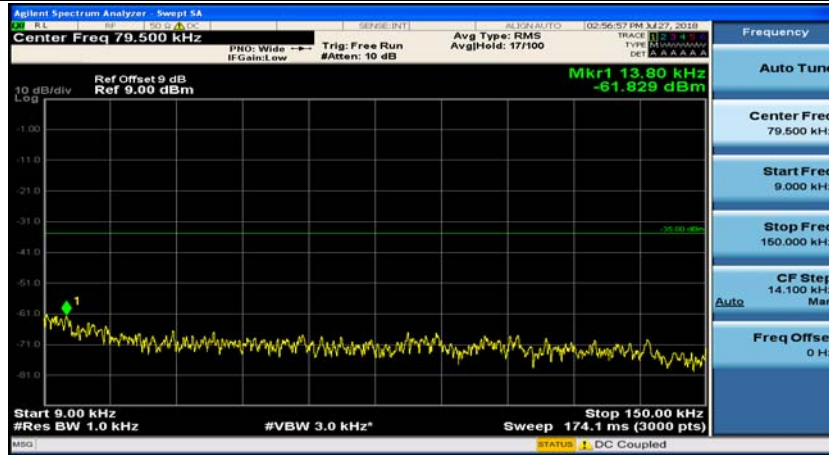


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

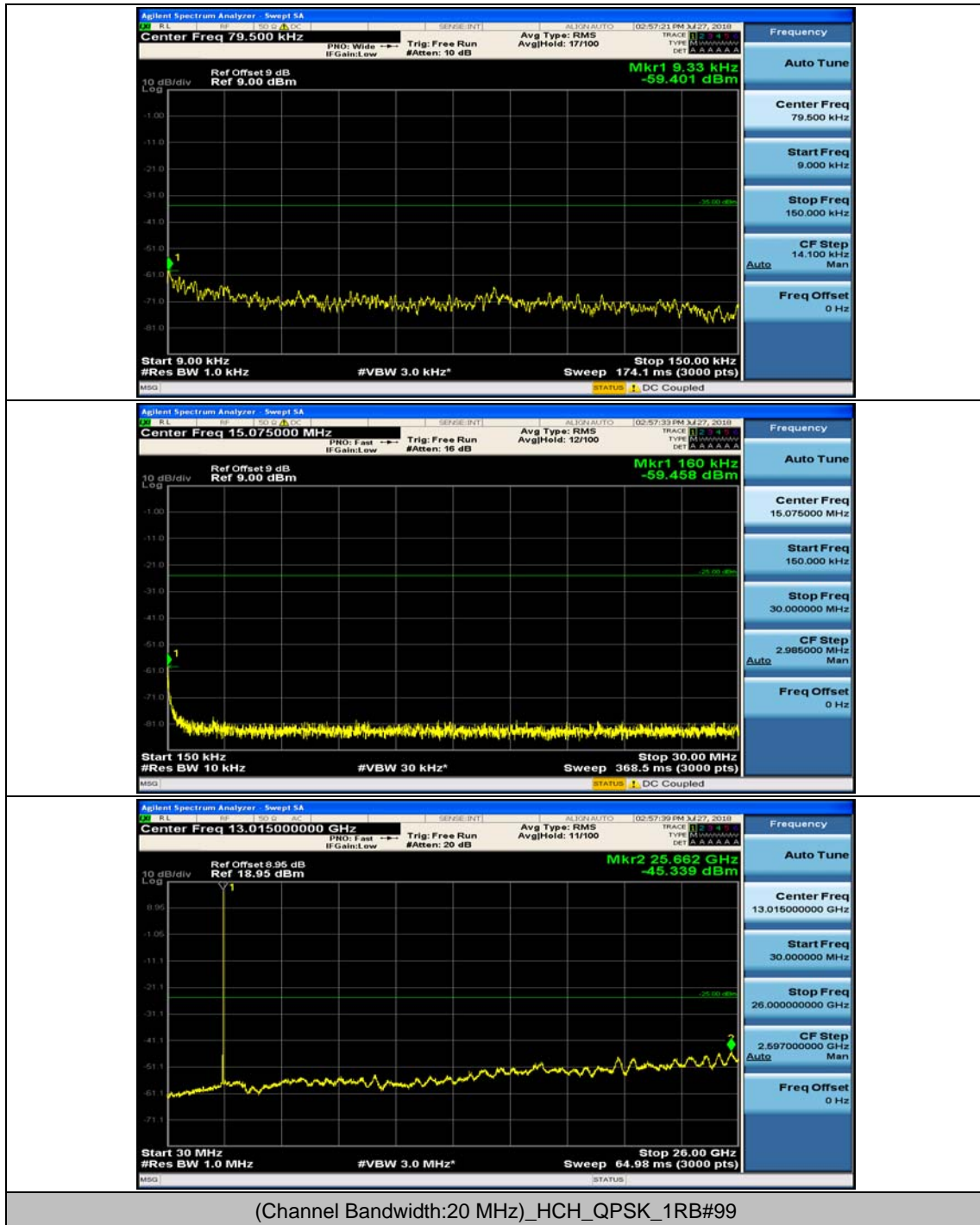


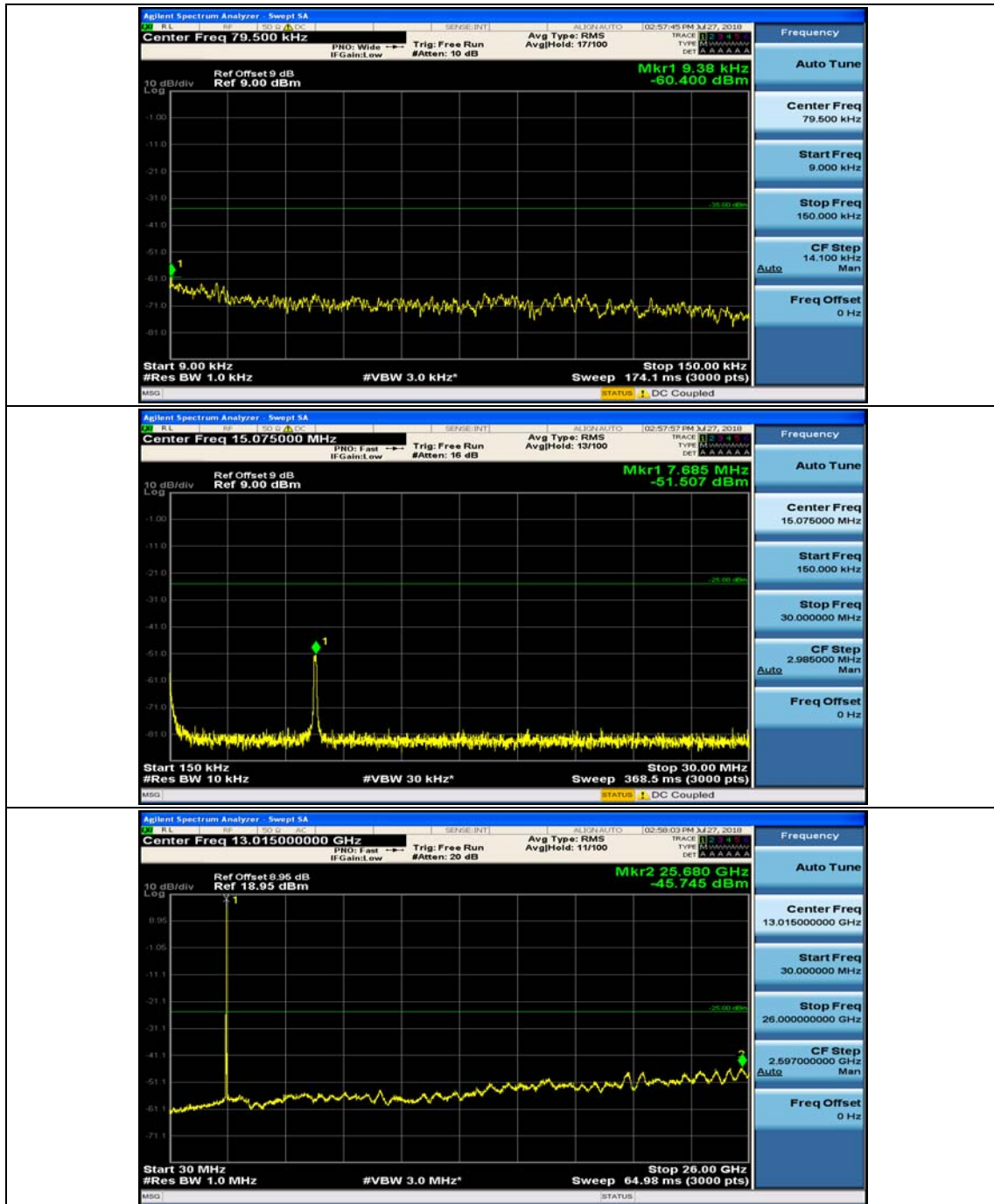


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

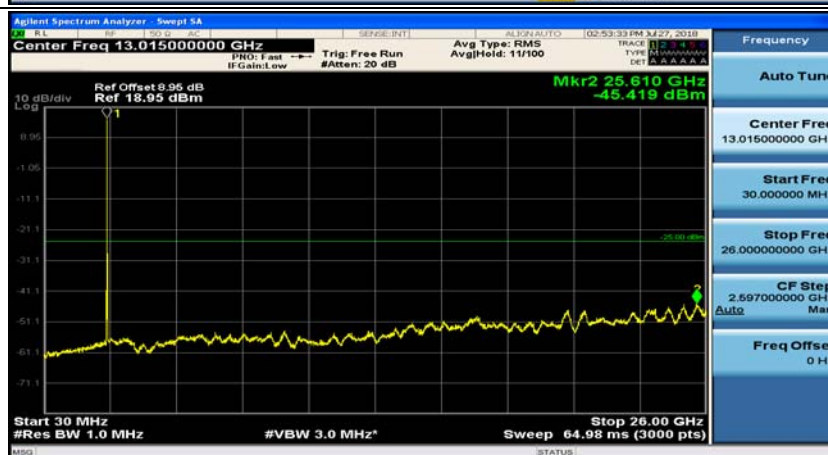
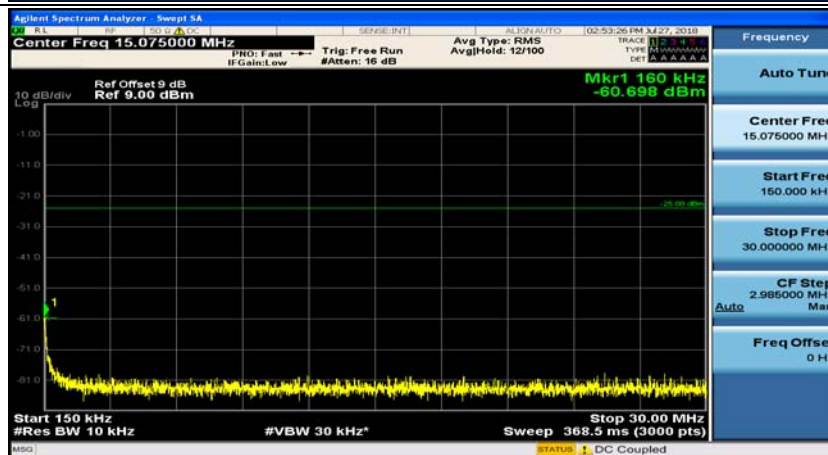
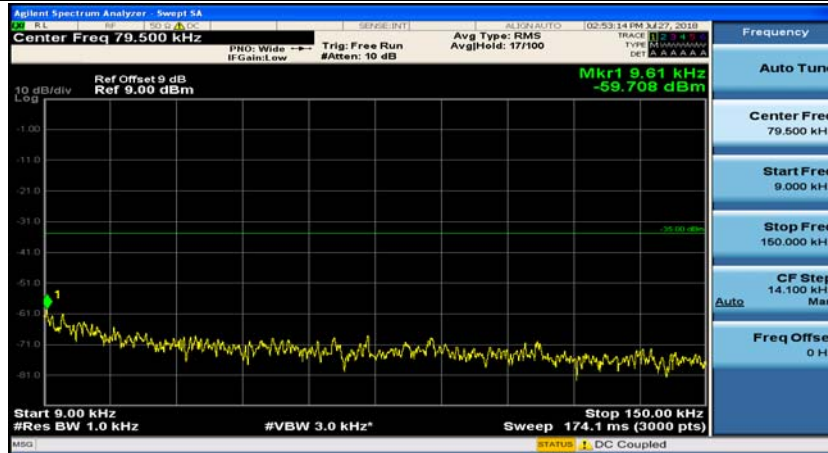


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

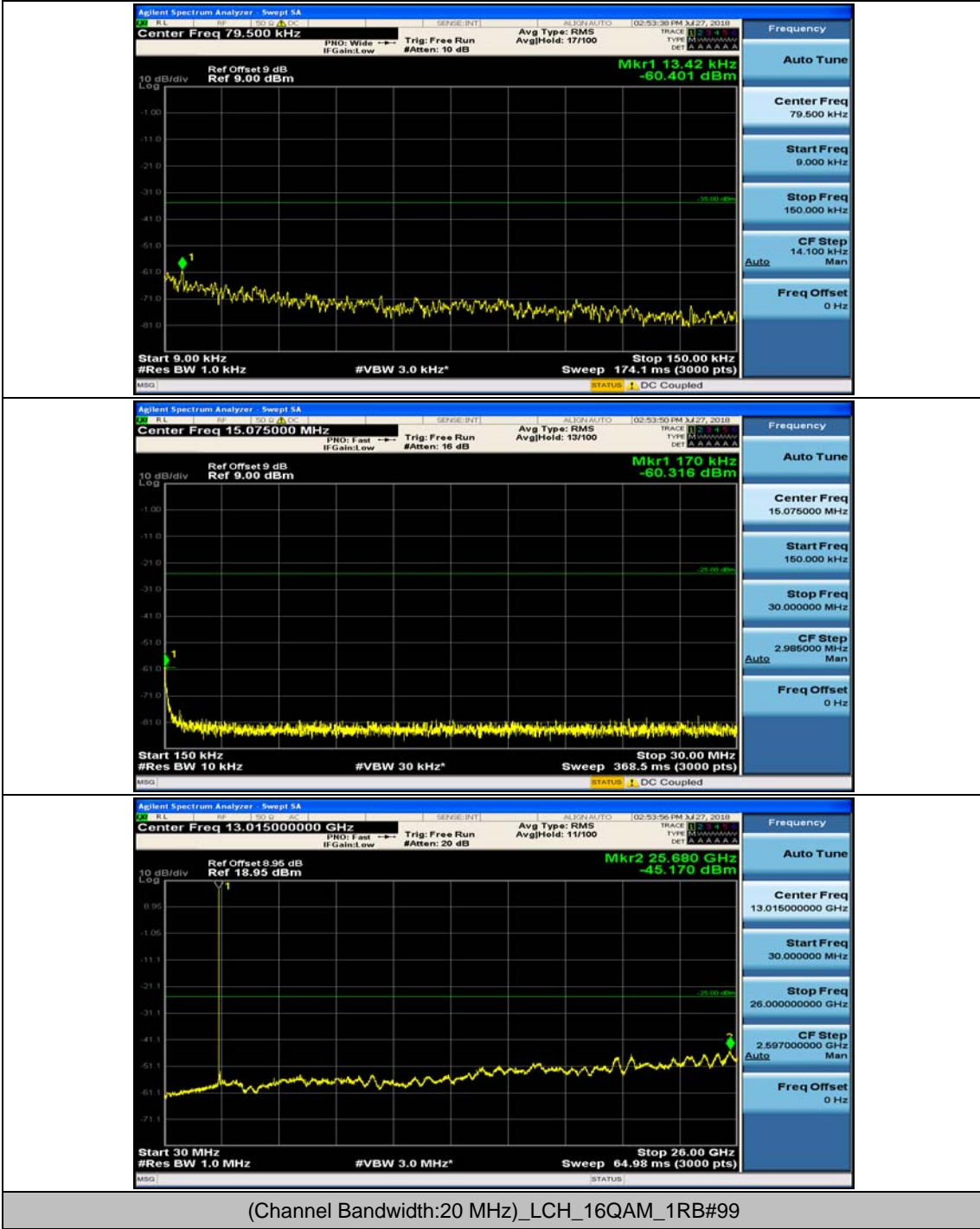


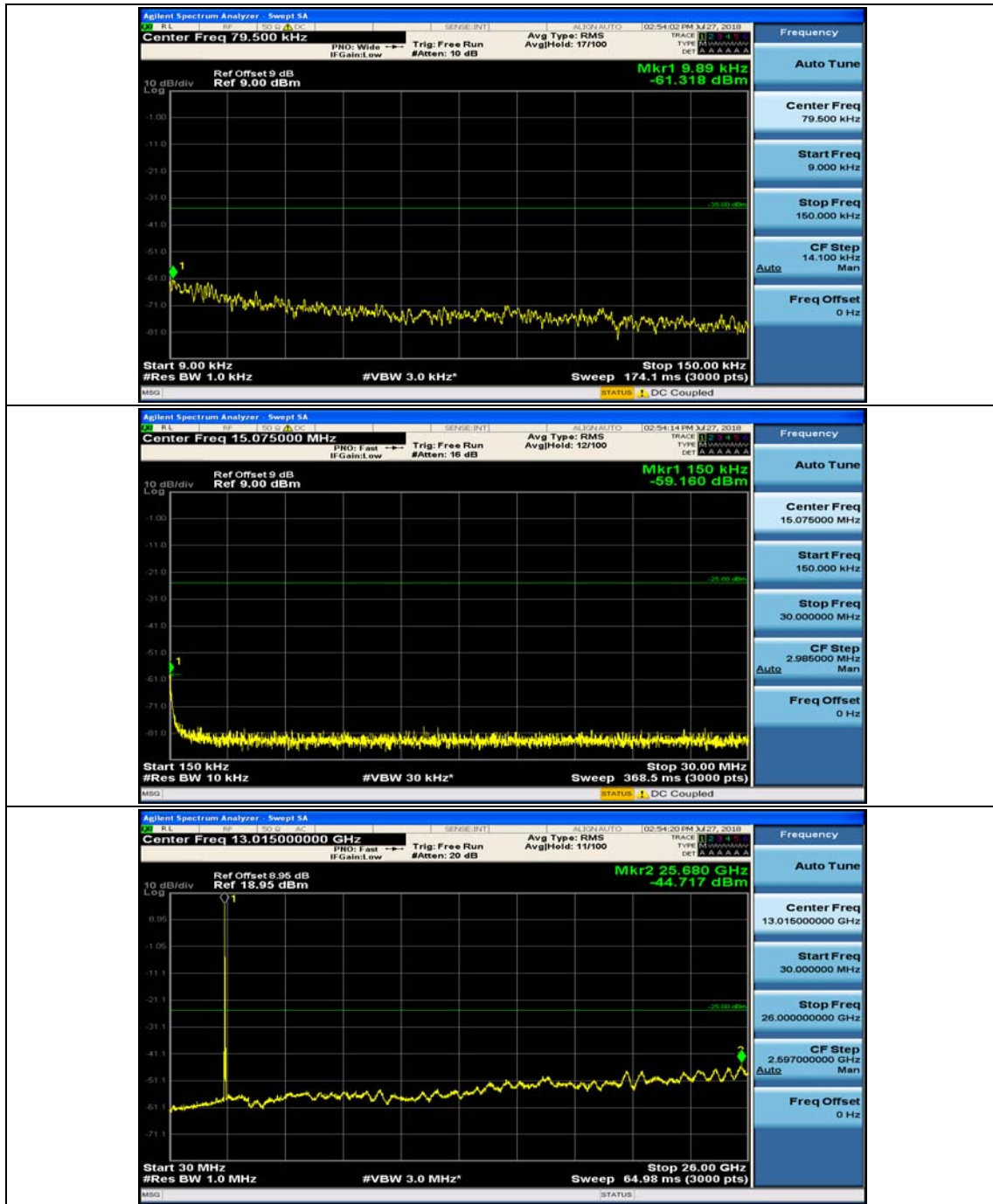


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

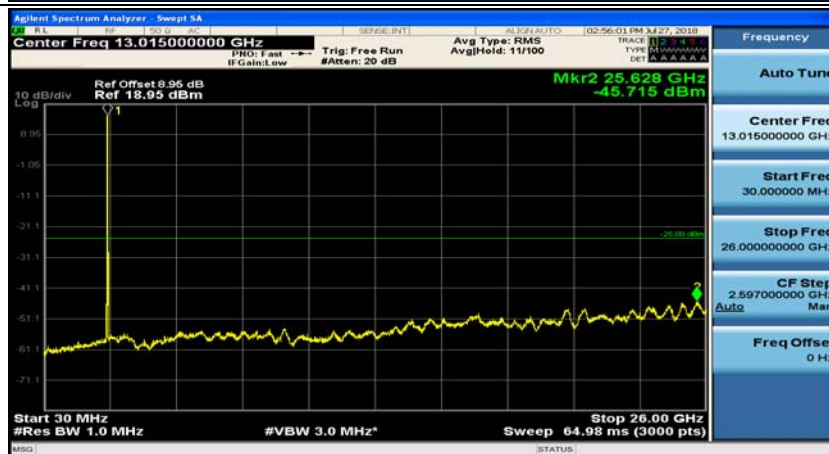
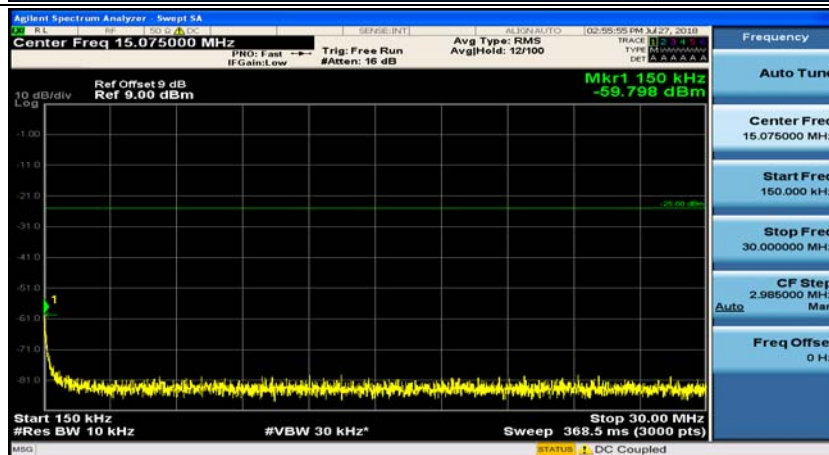
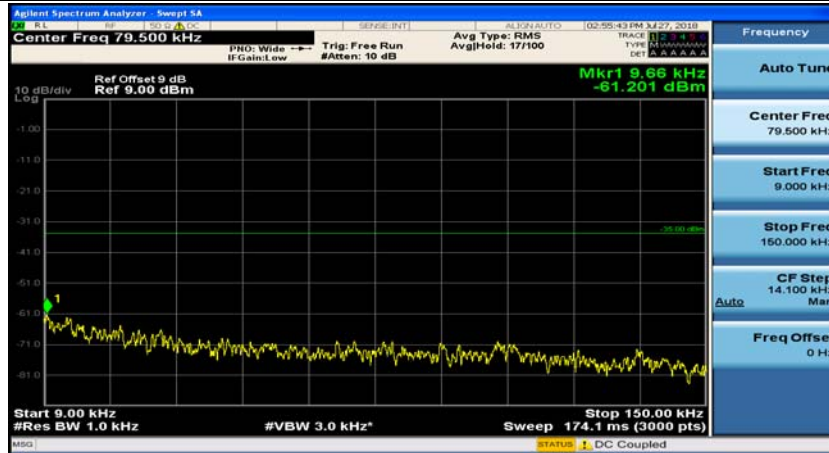


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

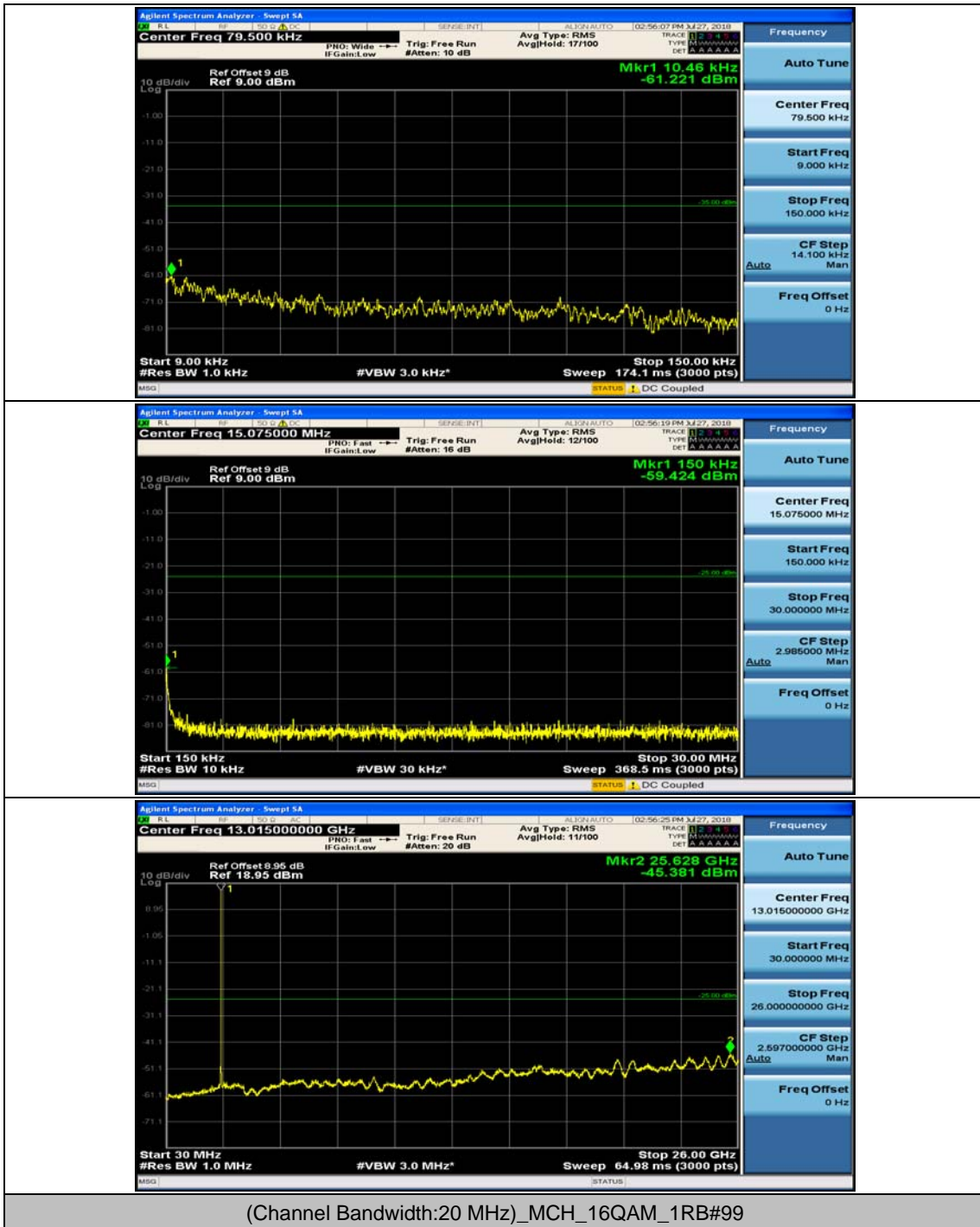


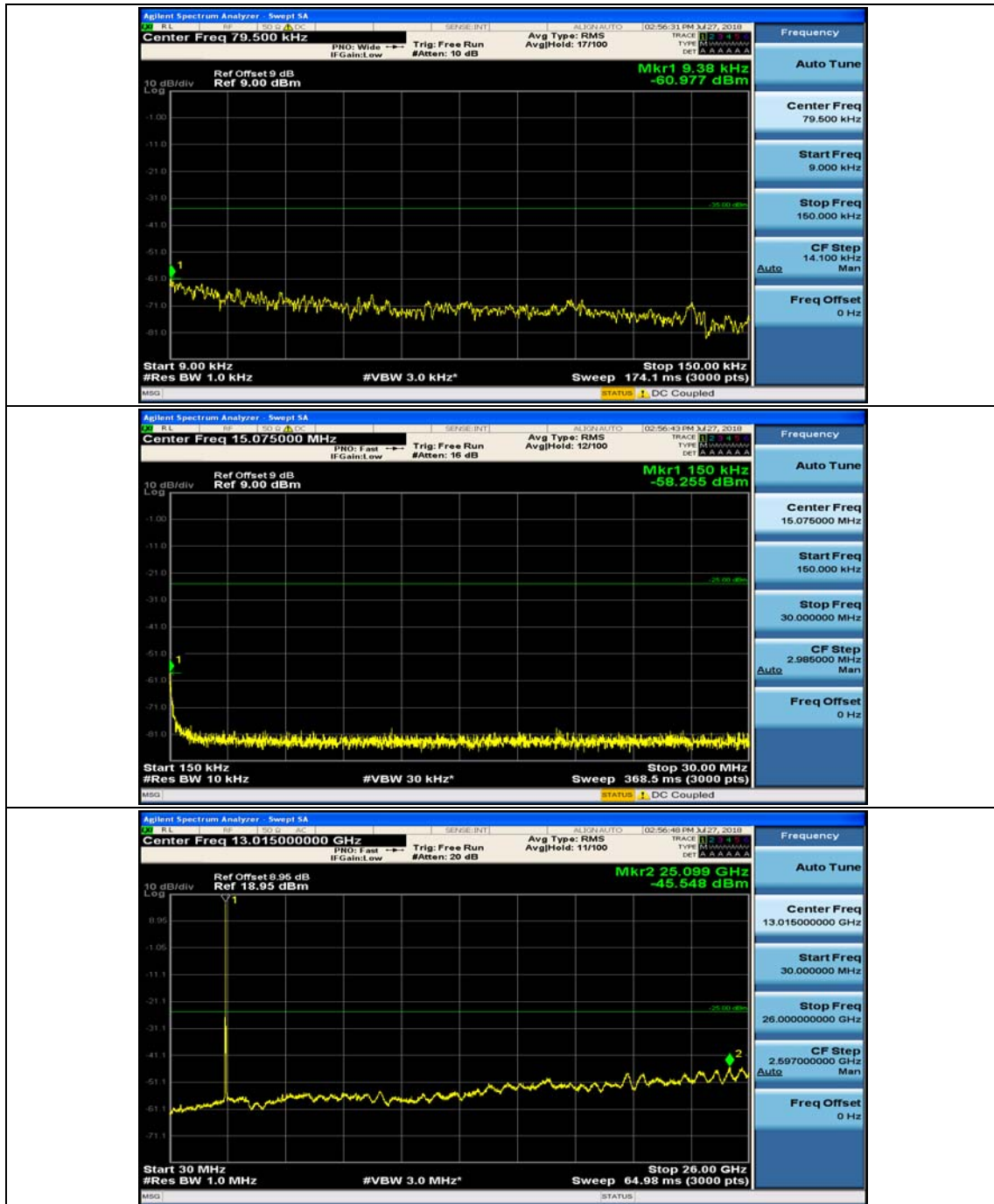


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

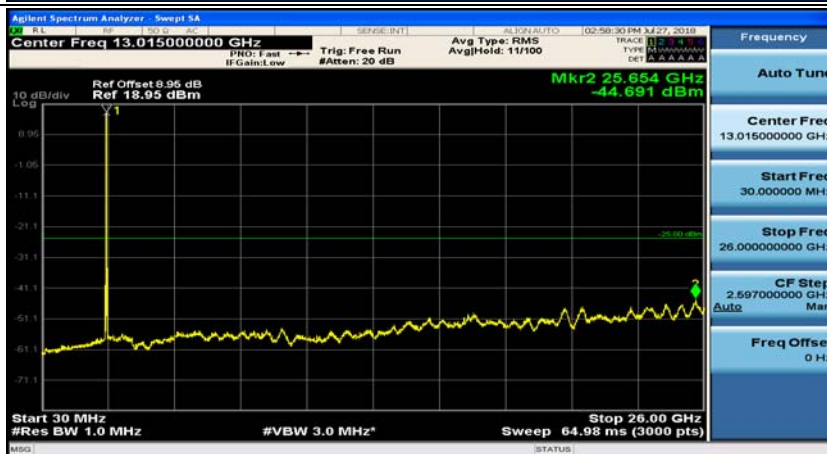
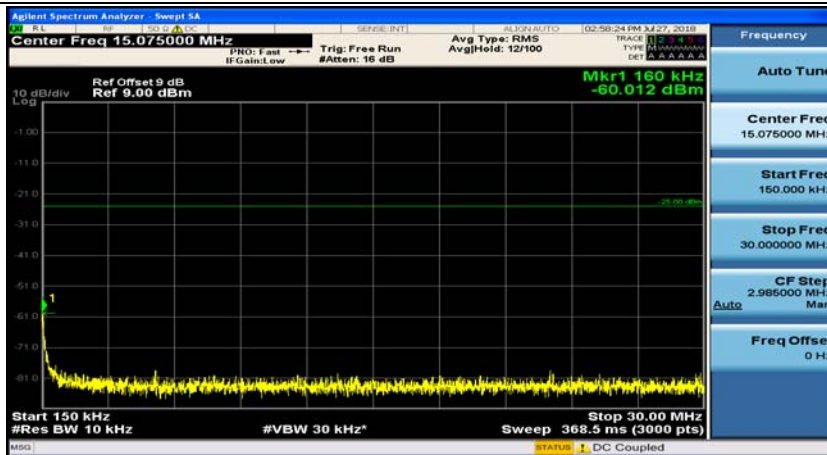
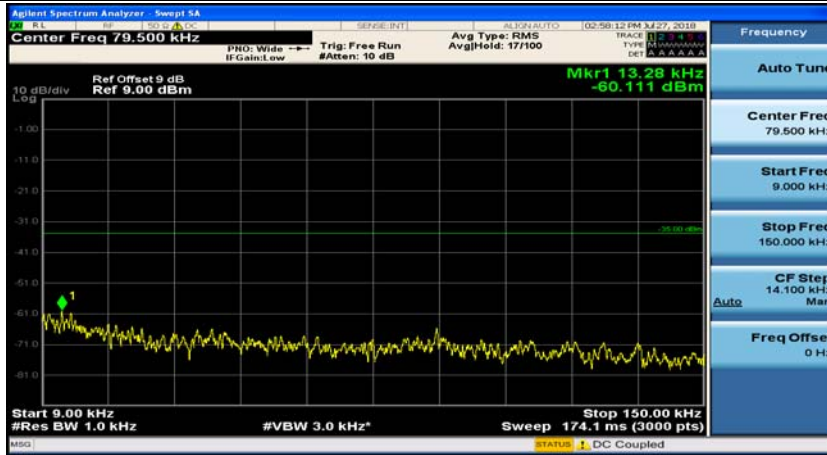


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

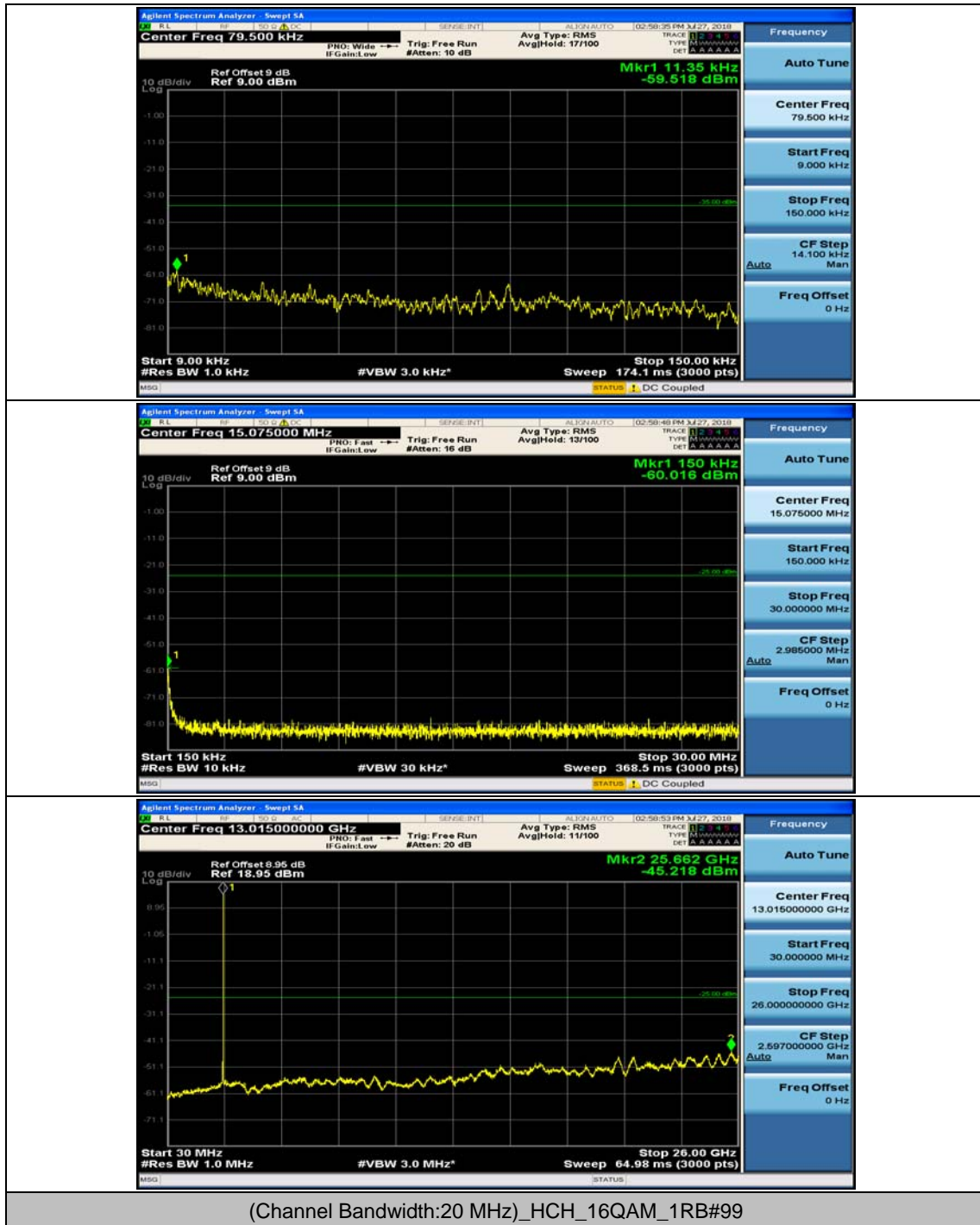


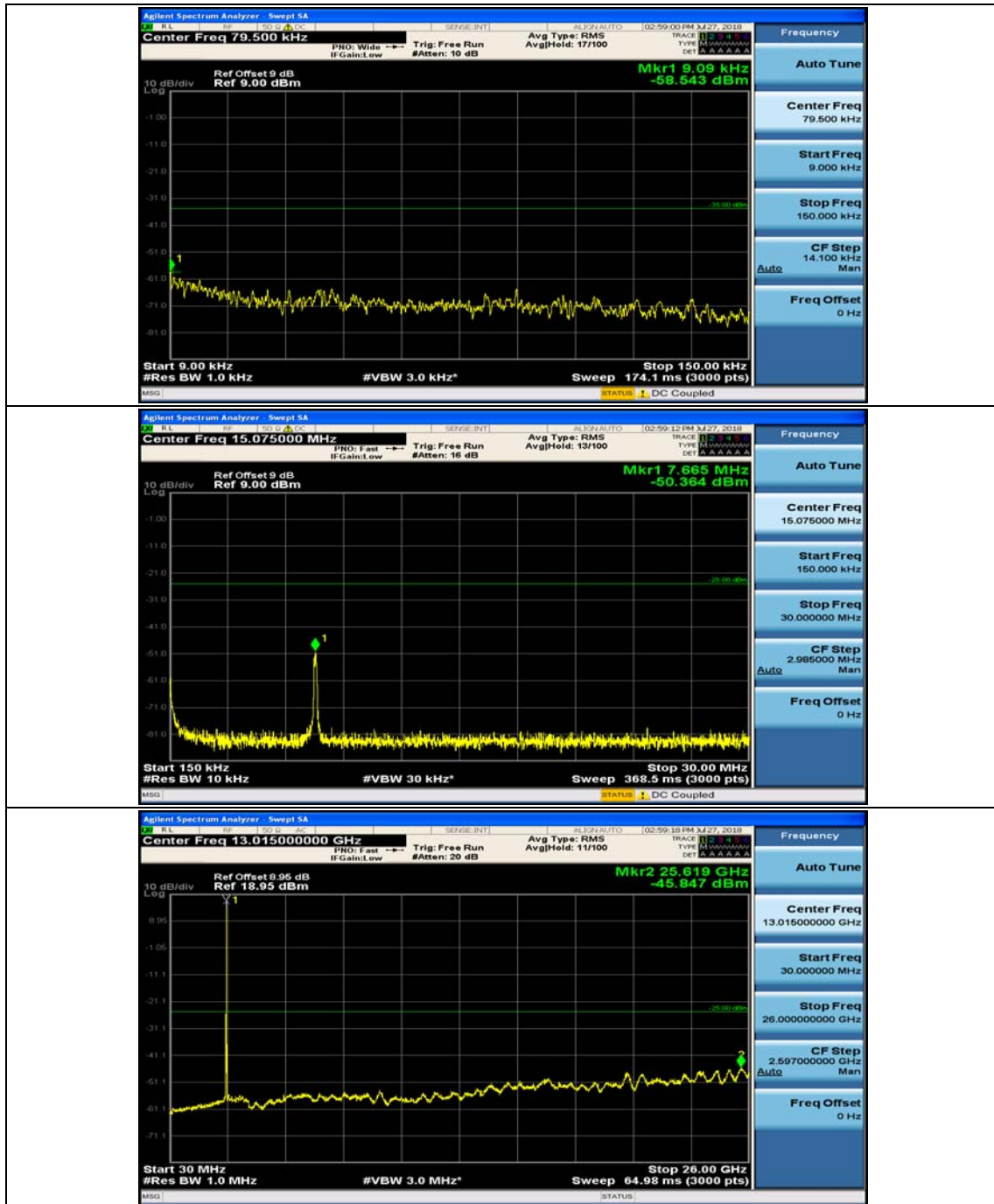


(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49





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	3.19	0.001275	± 2.5	PASS
		VN	TN	1.44	0.000575	± 2.5	PASS
		VH	TN	-0.94	-0.000376	± 2.5	PASS
	MCH	VL	TN	-1.64	-0.000647	± 2.5	PASS
		VN	TN	4.55	0.001795	± 2.5	PASS
		VH	TN	1.45	0.000572	± 2.5	PASS
	HCH	VL	TN	1.36	0.000530	± 2.5	PASS
		VN	TN	4.27	0.001663	± 2.5	PASS
		VH	TN	-0.66	-0.000257	± 2.5	PASS
16QAM	LCH	VL	TN	4.05	0.001618	± 2.5	PASS
		VN	TN	-1.71	-0.000683	± 2.5	PASS
		VH	TN	4.36	0.001742	± 2.5	PASS
	MCH	VL	TN	-1.23	-0.000485	± 2.5	PASS
		VN	TN	2.82	0.001112	± 2.5	PASS
		VH	TN	4.52	0.001783	± 2.5	PASS
	HCH	VL	TN	2.44	0.000950	± 2.5	PASS
		VN	TN	-0.66	-0.000257	± 2.5	PASS
		VH	TN	-1.42	-0.000553	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.82	0.001127	± 2.5	PASS
		VN	-20	2.08	0.000831	± 2.5	PASS
		VN	-10	3.83	0.001530	± 2.5	PASS
		VN	0	2.93	0.001171	± 2.5	PASS
		VN	10	-0.14	-0.000056	± 2.5	PASS
		VN	20	1.36	0.000543	± 2.5	PASS
		VN	30	-0.78	-0.000312	± 2.5	PASS
		VN	40	-1.47	-0.000587	± 2.5	PASS
		VN	50	-1.83	-0.000731	± 2.5	PASS
	MCH	VN	-30	3.82	0.001507	± 2.5	PASS

		VN	-20	3.19	0.001258	± 2.5	PASS
		VN	-10	-1.11	-0.000438	± 2.5	PASS
		VN	0	4.22	0.001665	± 2.5	PASS
		VN	10	0.57	0.000225	± 2.5	PASS
		VN	20	1.92	0.000757	± 2.5	PASS
		VN	30	0.72	0.000284	± 2.5	PASS
		VN	40	-1.96	-0.000773	± 2.5	PASS
		VN	50	4.72	0.001862	± 2.5	PASS
	HCH	VN	-30	-0.28	-0.000109	± 2.5	PASS
		VN	-20	4.76	0.001854	± 2.5	PASS
		VN	-10	0.56	0.000218	± 2.5	PASS
		VN	0	0.59	0.000230	± 2.5	PASS
		VN	10	3.24	0.001262	± 2.5	PASS
		VN	20	-1.9	-0.000740	± 2.5	PASS
		VN	30	1.05	0.000409	± 2.5	PASS
		VN	40	3.21	0.001250	± 2.5	PASS
		VN	50	0.41	0.000160	± 2.5	PASS
		16QAM	LCH	VN	-30	4.77	0.001906
VN	-20			-1.35	-0.000539	± 2.5	PASS
VN	-10			-1.53	-0.000611	± 2.5	PASS
VN	0			1.26	0.000503	± 2.5	PASS
VN	10			3.12	0.001247	± 2.5	PASS
VN	20			-1.46	-0.000583	± 2.5	PASS
VN	30			2.74	0.001095	± 2.5	PASS
VN	40			-0.37	-0.000148	± 2.5	PASS
VN	50			3.41	0.001363	± 2.5	PASS
MCH	VN		-30	0.51	0.000201	± 2.5	PASS
	VN		-20	3.75	0.001479	± 2.5	PASS
	VN		-10	3.73	0.001471	± 2.5	PASS
	VN		0	-0.05	-0.000020	± 2.5	PASS
	VN		10	-1	-0.000394	± 2.5	PASS
	VN		20	0.31	0.000122	± 2.5	PASS
	VN		30	-1.1	-0.000434	± 2.5	PASS
	VN		40	-1.29	-0.000509	± 2.5	PASS
	VN		50	-0.32	-0.000126	± 2.5	PASS
HCH	VN		-30	-1.28	-0.000499	± 2.5	PASS
	VN		-20	4.55	0.001772	± 2.5	PASS
	VN		-10	4.45	0.001733	± 2.5	PASS
	VN		0	-1.87	-0.000728	± 2.5	PASS
	VN		10	1.43	0.000557	± 2.5	PASS
	VN		20	1.61	0.000627	± 2.5	PASS

		VN	30	-1.19	-0.000463	± 2.5	PASS
		VN	40	-1.99	-0.000775	± 2.5	PASS
		VN	50	-0.59	-0.000230	± 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	4.16	0.001661	± 2.5	PASS
		VN	TN	0.12	0.000048	± 2.5	PASS
		VH	TN	-1.88	-0.000750	± 2.5	PASS
	MCH	VL	TN	1.59	0.000627	± 2.5	PASS
		VN	TN	2.22	0.000876	± 2.5	PASS
		VH	TN	0.93	0.000367	± 2.5	PASS
	HCH	VL	TN	4.34	0.001692	± 2.5	PASS
		VN	TN	2.43	0.000947	± 2.5	PASS
		VH	TN	4.75	0.001852	± 2.5	PASS
16QAM	LCH	VL	TN	-0.92	-0.000367	± 2.5	PASS
		VN	TN	-1.16	-0.000463	± 2.5	PASS
		VH	TN	4.73	0.001888	± 2.5	PASS
	MCH	VL	TN	-1.2	-0.000473	± 2.5	PASS
		VN	TN	4.77	0.001882	± 2.5	PASS
		VH	TN	0.82	0.000323	± 2.5	PASS
	HCH	VL	TN	4.15	0.001618	± 2.5	PASS
		VN	TN	4.21	0.001641	± 2.5	PASS
		VH	TN	0.42	0.000164	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	0.43	0.000172	± 2.5	PASS
		VN	-20	3.48	0.001389	± 2.5	PASS
		VN	-10	0.73	0.000291	± 2.5	PASS
		VN	0	-0.4	-0.000160	± 2.5	PASS
		VN	10	0.78	0.000311	± 2.5	PASS
		VN	20	-0.38	-0.000152	± 2.5	PASS
		VN	30	0.29	0.000116	± 2.5	PASS
		VN	40	2.16	0.000862	± 2.5	PASS
		VN	50	-0.56	-0.000224	± 2.5	PASS
	MCH	VN	-30	-0.56	-0.000221	± 2.5	PASS
		VN	-20	-1.38	-0.000544	± 2.5	PASS

		VN	-10	-1.69	-0.000667	± 2.5	PASS	
		VN	0	-1.82	-0.000718	± 2.5	PASS	
		VN	10	2.9	0.001144	± 2.5	PASS	
		VN	20	1.96	0.000773	± 2.5	PASS	
		VN	30	-1.96	-0.000773	± 2.5	PASS	
		VN	40	3.94	0.001554	± 2.5	PASS	
		VN	50	2.89	0.001140	± 2.5	PASS	
	HCH	VN	-30	-1.71	-0.000667	± 2.5	PASS	
		VN	-20	1.69	0.000659	± 2.5	PASS	
		VN	-10	-0.22	-0.000086	± 2.5	PASS	
		VN	0	3.65	0.001423	± 2.5	PASS	
		VN	10	-1.7	-0.000663	± 2.5	PASS	
		VN	20	4.2	0.001637	± 2.5	PASS	
		VN	30	3.07	0.001197	± 2.5	PASS	
	QPSK	LCH	VN	40	-0.89	-0.000347	± 2.5	PASS
			VN	50	0.65	0.000253	± 2.5	PASS
			VN	-30	-1.3	-0.000519	± 2.5	PASS
			VN	-20	-0.21	-0.000084	± 2.5	PASS
VN			-10	-0.37	-0.000148	± 2.5	PASS	
VN			0	-1.23	-0.000491	± 2.5	PASS	
VN			10	1.89	0.000754	± 2.5	PASS	
VN			20	3.05	0.001218	± 2.5	PASS	
VN			30	-0.2	-0.000080	± 2.5	PASS	
MCH		VN	40	1.34	0.000535	± 2.5	PASS	
		VN	50	0.31	0.000124	± 2.5	PASS	
		VN	-30	4.41	0.001740	± 2.5	PASS	
		VN	-20	4.16	0.001641	± 2.5	PASS	
		VN	-10	-0.05	-0.000020	± 2.5	PASS	
		VN	0	-0.52	-0.000205	± 2.5	PASS	
		VN	10	-0.74	-0.000292	± 2.5	PASS	
		VN	20	0.8	0.000316	± 2.5	PASS	
		VN	30	3.97	0.001566	± 2.5	PASS	
HCH	VN	40	4.75	0.001874	± 2.5	PASS		
	VN	50	3.63	0.001432	± 2.5	PASS		
	VN	-30	0.44	0.000172	± 2.5	PASS		
	VN	-20	-1.22	-0.000476	± 2.5	PASS		
	VN	-10	3.43	0.001337	± 2.5	PASS		
	VN	0	1.78	0.000694	± 2.5	PASS		
	VN	10	3.52	0.001372	± 2.5	PASS		
VN	20	0.09	0.000035	± 2.5	PASS			
VN	30	1.53	0.000596	± 2.5	PASS			

		VN	40	1.52	0.000593	± 2.5	PASS
		VN	50	2.97	0.001158	± 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	-1.01	-0.000403	± 2.5	PASS
		VN	TN	4.5	0.001795	± 2.5	PASS
		VH	TN	1.66	0.000662	± 2.5	PASS
	MCH	VL	TN	4.3	0.001696	± 2.5	PASS
		VN	TN	-0.93	-0.000367	± 2.5	PASS
		VH	TN	2.57	0.001014	± 2.5	PASS
	HCH	VL	TN	2.42	0.000944	± 2.5	PASS
		VN	TN	4.87	0.001900	± 2.5	PASS
		VH	TN	1.32	0.000515	± 2.5	PASS
16QAM	LCH	VL	TN	-1.46	-0.000582	± 2.5	PASS
		VN	TN	-0.83	-0.000331	± 2.5	PASS
		VH	TN	0.3	0.000120	± 2.5	PASS
	MCH	VL	TN	0.58	0.000229	± 2.5	PASS
		VN	TN	1.46	0.000576	± 2.5	PASS
		VH	TN	2.3	0.000907	± 2.5	PASS
	HCH	VL	TN	1.46	0.000570	± 2.5	PASS
		VN	TN	4.47	0.001744	± 2.5	PASS
		VH	TN	4.78	0.001865	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.77	0.000307	± 2.5	PASS
		VN	-20	2.89	0.001153	± 2.5	PASS
		VN	-10	2.54	0.001013	± 2.5	PASS
		VN	0	-1.11	-0.000443	± 2.5	PASS
		VN	10	2.26	0.000901	± 2.5	PASS
		VN	20	-1.13	-0.000451	± 2.5	PASS
		VN	30	-0.39	-0.000156	± 2.5	PASS
		VN	40	-1.47	-0.000586	± 2.5	PASS
		VN	50	3.13	0.001248	± 2.5	PASS
	MCH	VN	-30	-1.55	-0.000611	± 2.5	PASS
		VN	-20	2.59	0.001022	± 2.5	PASS
		VN	-10	0.44	0.000174	± 2.5	PASS

		VN	0	4.15	0.001637	± 2.5	PASS		
		VN	10	2.16	0.000852	± 2.5	PASS		
		VN	20	3.18	0.001254	± 2.5	PASS		
		VN	30	4.75	0.001874	± 2.5	PASS		
		VN	40	2.4	0.000947	± 2.5	PASS		
		VN	50	-1.11	-0.000438	± 2.5	PASS		
	HCH	VN	-30	-0.78	-0.000304	± 2.5	PASS		
		VN	-20	2.31	0.000901	± 2.5	PASS		
		VN	-10	4.66	0.001819	± 2.5	PASS		
		VN	0	0.6	0.000234	± 2.5	PASS		
		VN	10	3.67	0.001432	± 2.5	PASS		
		VN	20	0.37	0.000144	± 2.5	PASS		
		VN	30	-0.32	-0.000125	± 2.5	PASS		
		VN	40	2.85	0.001112	± 2.5	PASS		
		VN	50	-1.08	-0.000421	± 2.5	PASS		
		QPSK	LCH	VN	-30	0.51	0.000203	± 2.5	PASS
				VN	-20	3.01	0.001200	± 2.5	PASS
				VN	-10	0	0.000000	± 2.5	PASS
VN	0			0.72	0.000287	± 2.5	PASS		
VN	10			2.57	0.001025	± 2.5	PASS		
VN	20			3.09	0.001232	± 2.5	PASS		
VN	30			-0.52	-0.000207	± 2.5	PASS		
VN	40			0.33	0.000132	± 2.5	PASS		
VN	50			1.36	0.000542	± 2.5	PASS		
MCH	VN		-30	-1.93	-0.000761	± 2.5	PASS		
	VN		-20	2.99	0.001179	± 2.5	PASS		
	VN		-10	0.92	0.000363	± 2.5	PASS		
	VN		0	4.63	0.001826	± 2.5	PASS		
	VN		10	1.59	0.000627	± 2.5	PASS		
	VN		20	4.24	0.001673	± 2.5	PASS		
	VN		30	-1.22	-0.000481	± 2.5	PASS		
	VN		40	-1.38	-0.000544	± 2.5	PASS		
	VN		50	3.39	0.001337	± 2.5	PASS		
HCH	VN		-30	4.18	0.001631	± 2.5	PASS		
	VN		-20	2.27	0.000886	± 2.5	PASS		
	VN		-10	-1.53	-0.000597	± 2.5	PASS		
	VN		0	-1.42	-0.000554	± 2.5	PASS		
	VN		10	0.12	0.000047	± 2.5	PASS		
	VN		20	3.17	0.001237	± 2.5	PASS		
	VN		30	2.11	0.000823	± 2.5	PASS		
	VN		40	-1.31	-0.000511	± 2.5	PASS		

		VN	50	0.13	0.000051	± 2.5	PASS
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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	3.97	0.001582	± 2.5	PASS
		VN	TN	1.05	0.000418	± 2.5	PASS
		VH	TN	-0.81	-0.000323	± 2.5	PASS
	MCH	VL	TN	-0.59	-0.000233	± 2.5	PASS
		VN	TN	3.39	0.001337	± 2.5	PASS
		VH	TN	4.09	0.001613	± 2.5	PASS
	HCH	VL	TN	4.17	0.001629	± 2.5	PASS
		VN	TN	0.89	0.000348	± 2.5	PASS
		VH	TN	3.53	0.001379	± 2.5	PASS
16QAM	LCH	VL	TN	1.15	0.000458	± 2.5	PASS
		VN	TN	2.75	0.001096	± 2.5	PASS
		VH	TN	4.86	0.001936	± 2.5	PASS
	MCH	VL	TN	-0.78	-0.000308	± 2.5	PASS
		VN	TN	4.73	0.001866	± 2.5	PASS
		VH	TN	2.34	0.000923	± 2.5	PASS
	HCH	VL	TN	-1.93	-0.000754	± 2.5	PASS
		VN	TN	-0.83	-0.000324	± 2.5	PASS
		VH	TN	2.16	0.000844	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.07	0.000825	± 2.5	PASS
		VN	-20	-1.48	-0.000590	± 2.5	PASS
		VN	-10	2.55	0.001016	± 2.5	PASS
		VN	0	0.75	0.000299	± 2.5	PASS
		VN	10	-0.43	-0.000171	± 2.5	PASS
		VN	20	1	0.000398	± 2.5	PASS
		VN	30	3.92	0.001562	± 2.5	PASS
		VN	40	3.4	0.001355	± 2.5	PASS
		VN	50	3.52	0.001402	± 2.5	PASS
	MCH	VN	-30	0.69	0.000272	± 2.5	PASS
		VN	-20	1.76	0.000694	± 2.5	PASS
		VN	-10	1.75	0.000690	± 2.5	PASS
		VN	0	-0.14	-0.000055	± 2.5	PASS

		VN	10	3.52	0.001389	± 2.5	PASS
		VN	20	2.25	0.000888	± 2.5	PASS
		VN	30	0.43	0.000170	± 2.5	PASS
		VN	40	-1.99	-0.000785	± 2.5	PASS
		VN	50	1.4	0.000552	± 2.5	PASS
	HCH	VN	-30	4.57	0.001785	± 2.5	PASS
		VN	-20	4.89	0.001910	± 2.5	PASS
		VN	-10	3.97	0.001551	± 2.5	PASS
		VN	0	-0.5	-0.000195	± 2.5	PASS
		VN	10	2.19	0.000855	± 2.5	PASS
		VN	20	2.05	0.000801	± 2.5	PASS
		VN	30	1.42	0.000555	± 2.5	PASS
		VN	40	2.26	0.000883	± 2.5	PASS
		VN	50	3.44	0.001344	± 2.5	PASS
		QPSK	LCH	VN	-30	-0.12	-0.000048
VN	-20			-1.31	-0.000522	± 2.5	PASS
VN	-10			0.96	0.000382	± 2.5	PASS
VN	0			4.05	0.001614	± 2.5	PASS
VN	10			4.34	0.001729	± 2.5	PASS
VN	20			1.22	0.000486	± 2.5	PASS
VN	30			1.7	0.000677	± 2.5	PASS
VN	40			-0.92	-0.000367	± 2.5	PASS
VN	50			4.49	0.001789	± 2.5	PASS
MCH	VN		-30	3.33	0.001314	± 2.5	PASS
	VN		-20	0.44	0.000174	± 2.5	PASS
	VN		-10	3.28	0.001294	± 2.5	PASS
	VN		0	-1.46	-0.000576	± 2.5	PASS
	VN		10	3.73	0.001471	± 2.5	PASS
	VN		20	0.4	0.000158	± 2.5	PASS
	VN		30	2.78	0.001097	± 2.5	PASS
	VN		40	2.73	0.001077	± 2.5	PASS
	VN		50	2.77	0.001093	± 2.5	PASS
HCH	VN		-30	1.49	0.000582	± 2.5	PASS
	VN		-20	3.68	0.001438	± 2.5	PASS
	VN		-10	1.14	0.000445	± 2.5	PASS
	VN		0	4.98	0.001945	± 2.5	PASS
	VN		10	2.32	0.000906	± 2.5	PASS
	VN		20	-0.13	-0.000051	± 2.5	PASS
	VN		30	2.99	0.001168	± 2.5	PASS
	VN		40	3.39	0.001324	± 2.5	PASS
	VN		50	-1.51	-0.000590	± 2.5	PASS