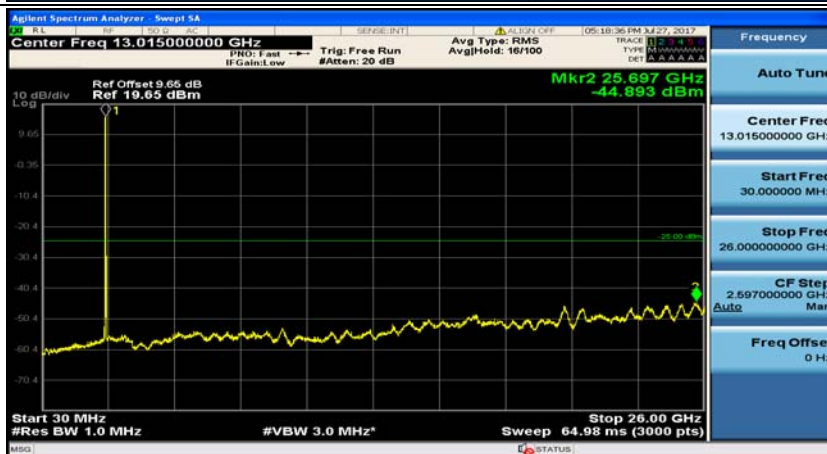
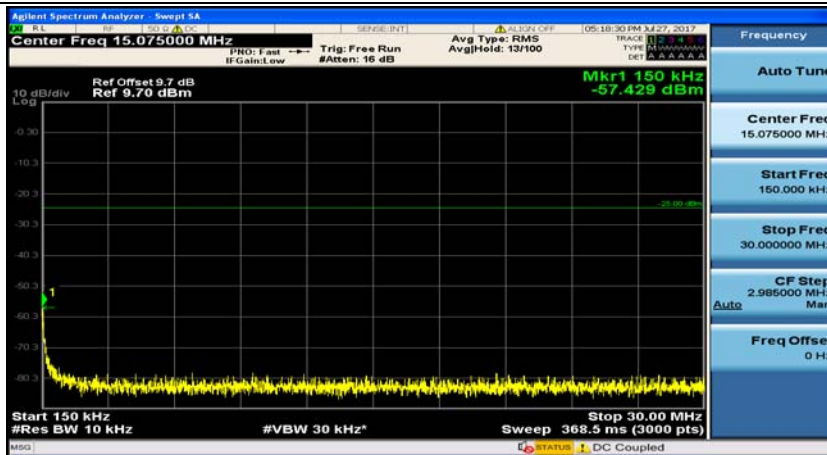
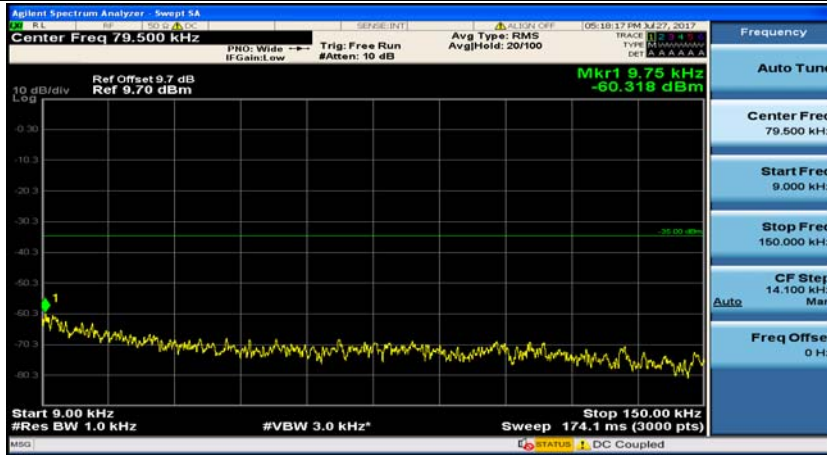
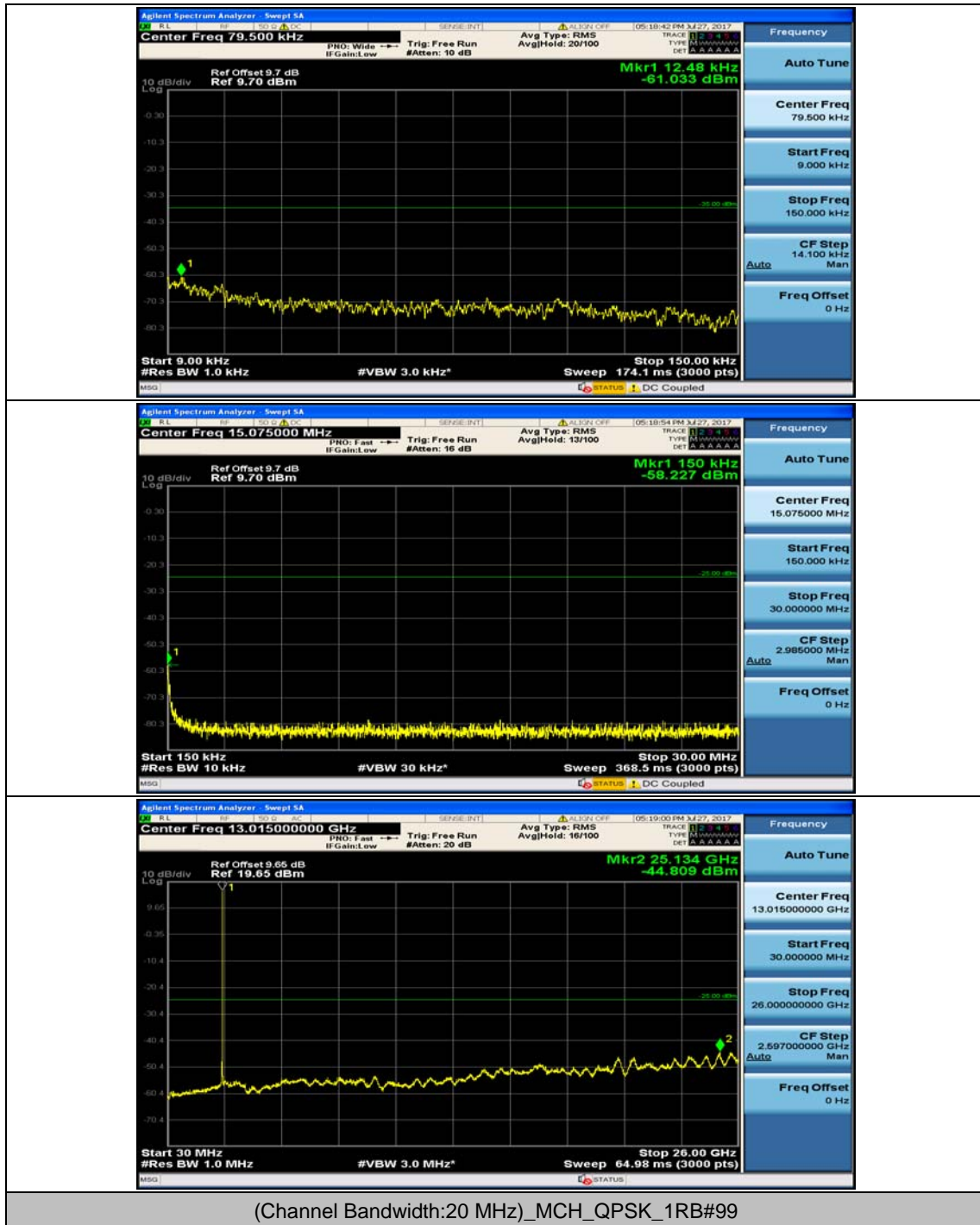
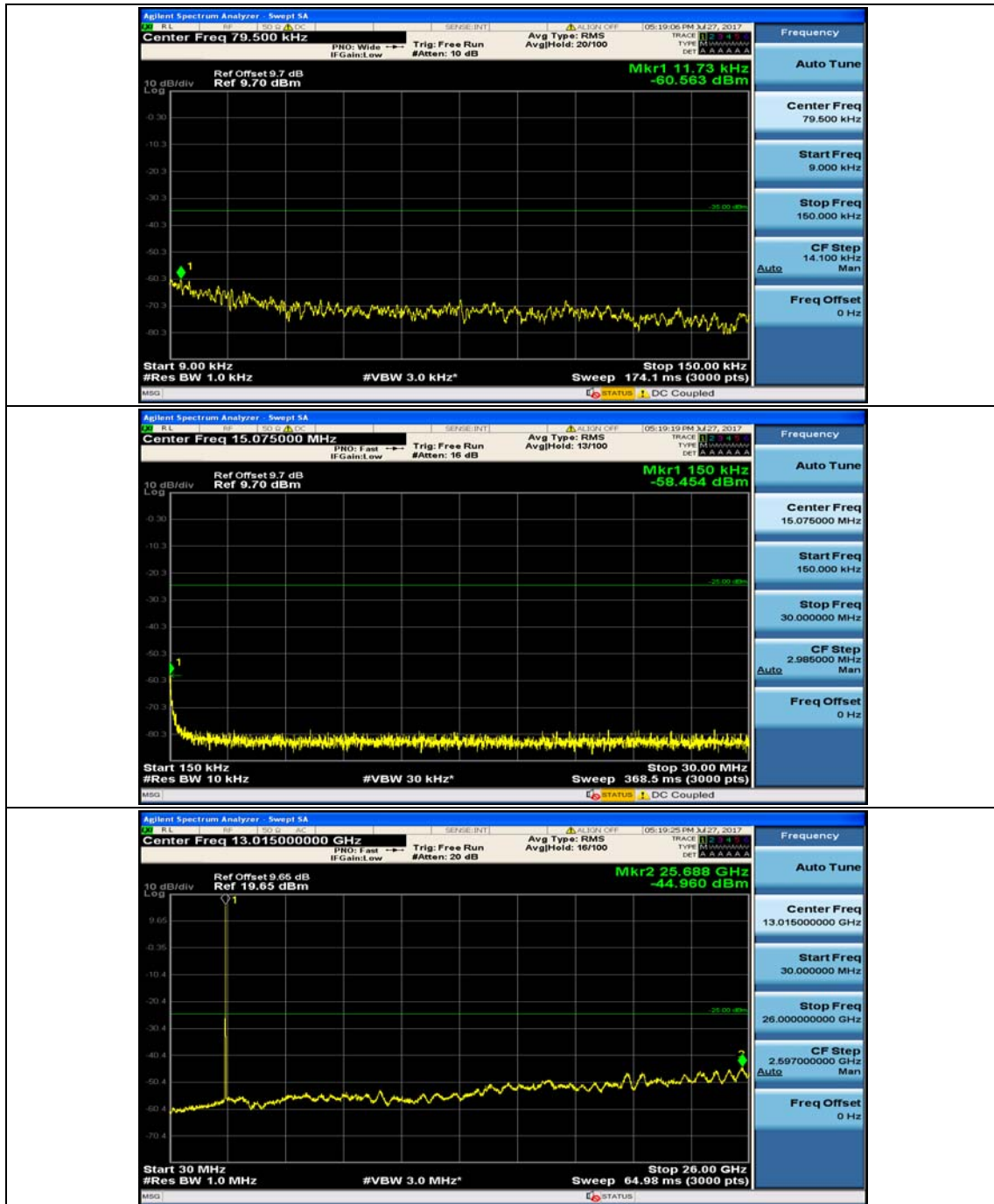


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

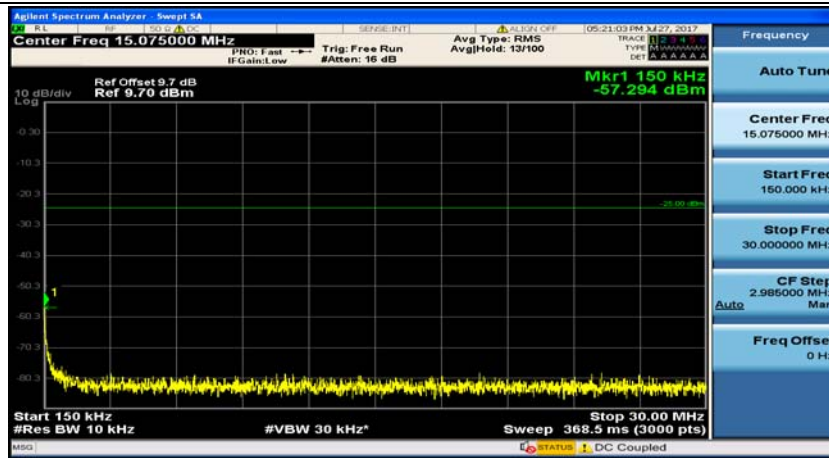
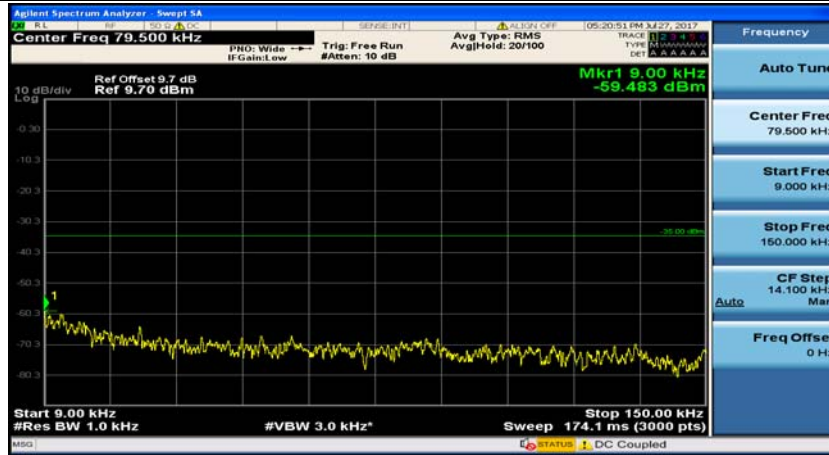


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

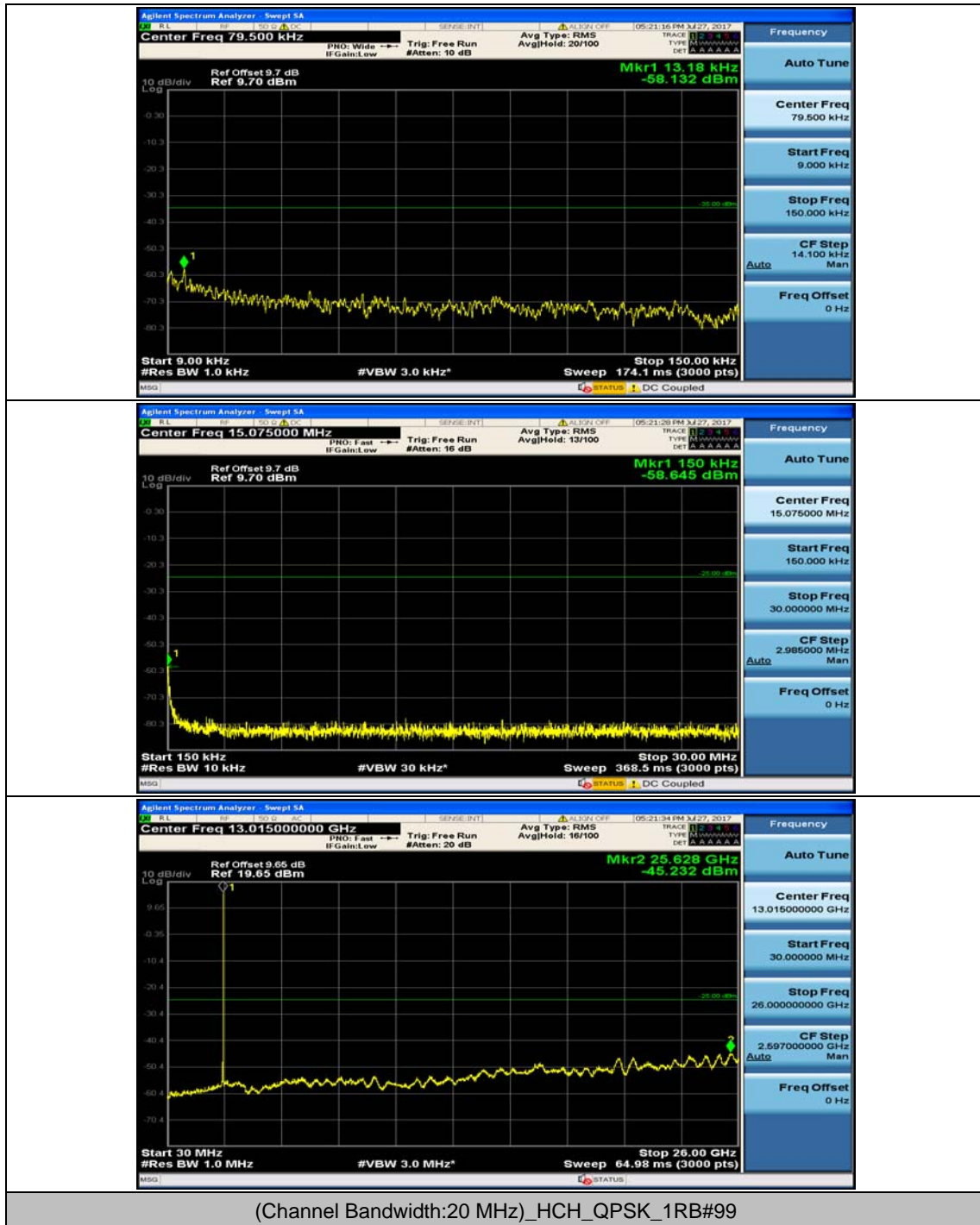


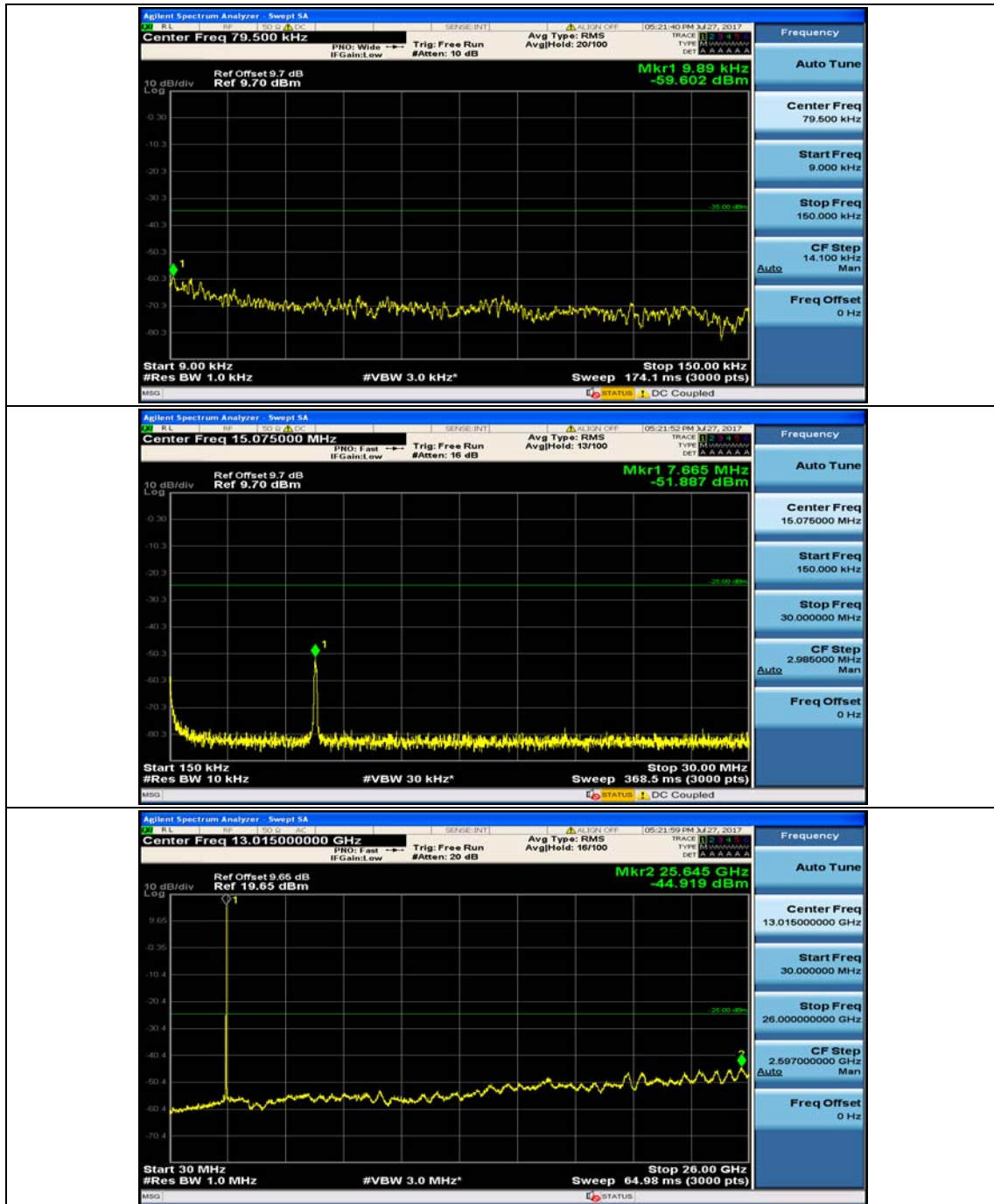


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

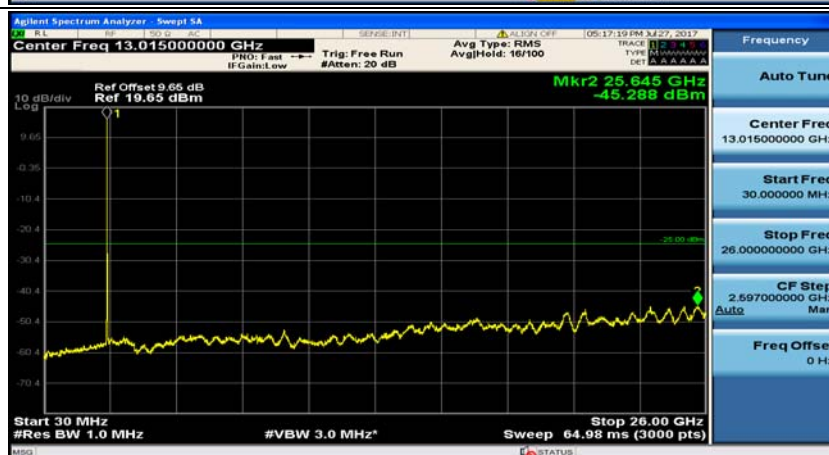
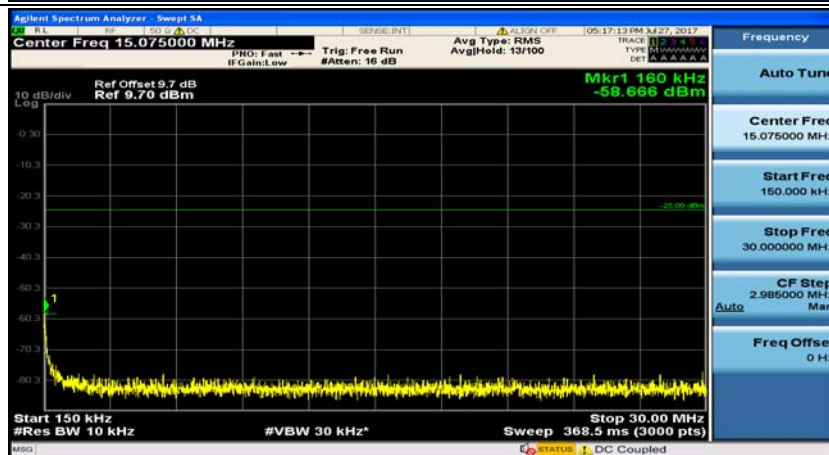
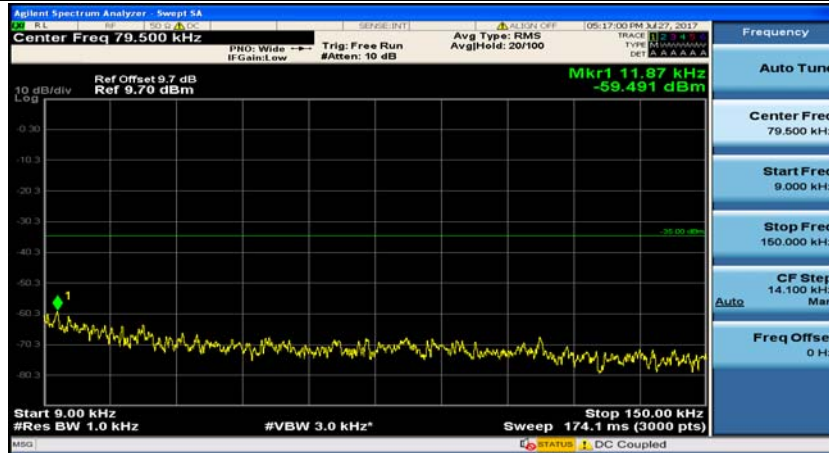


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

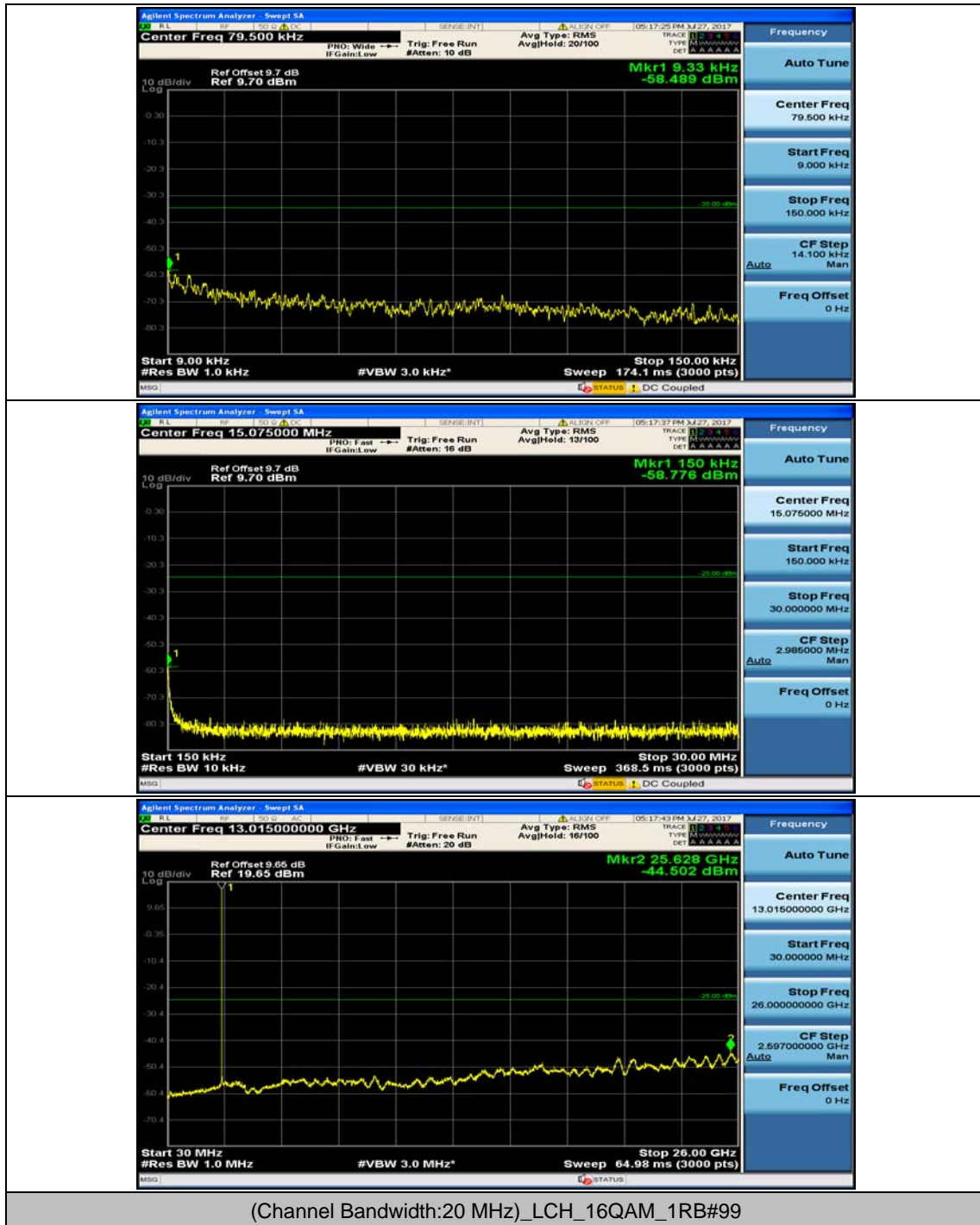


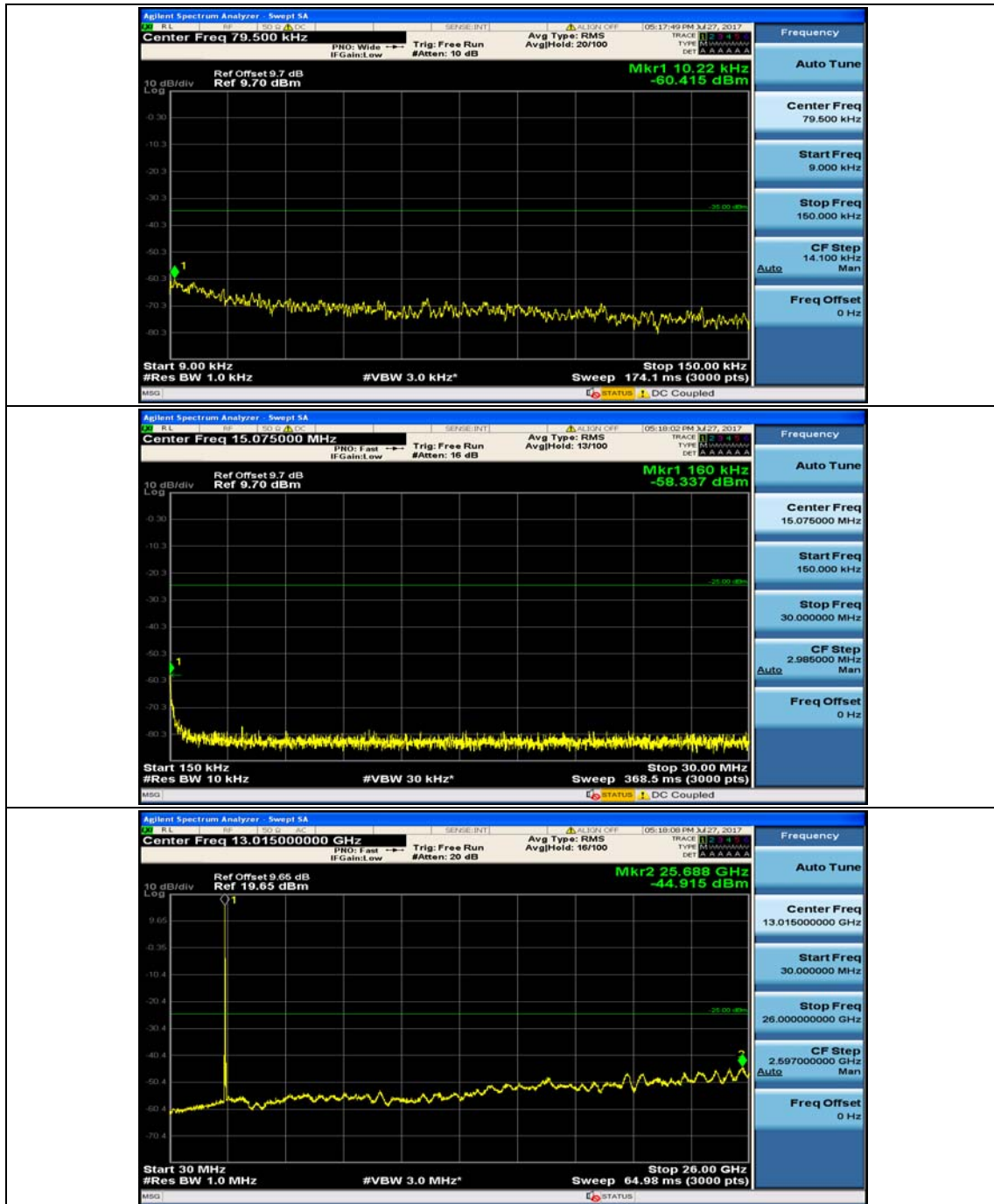


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

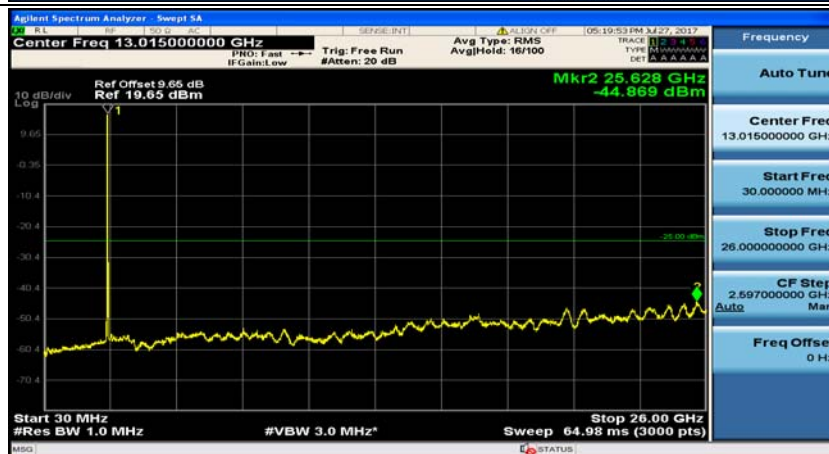
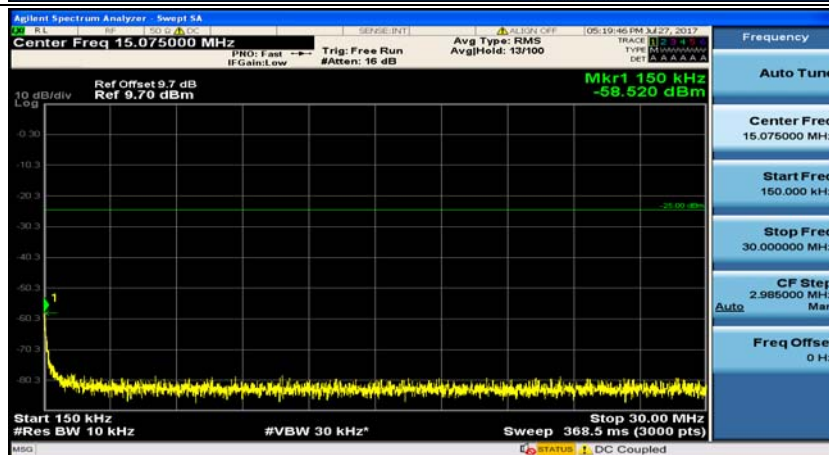
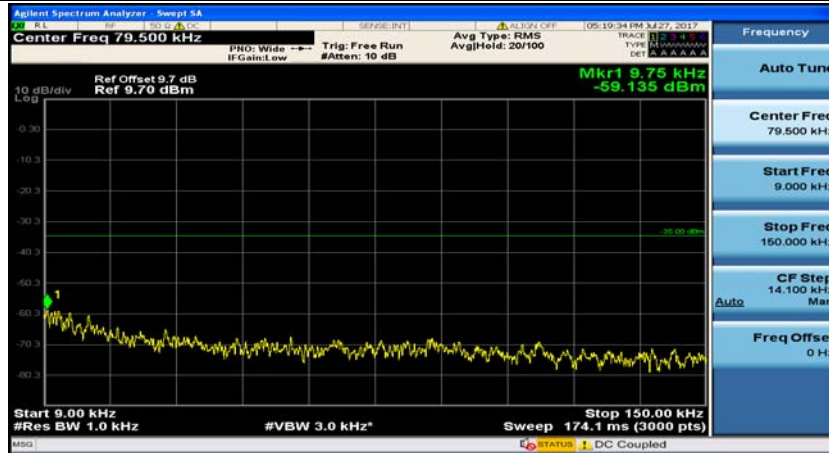


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

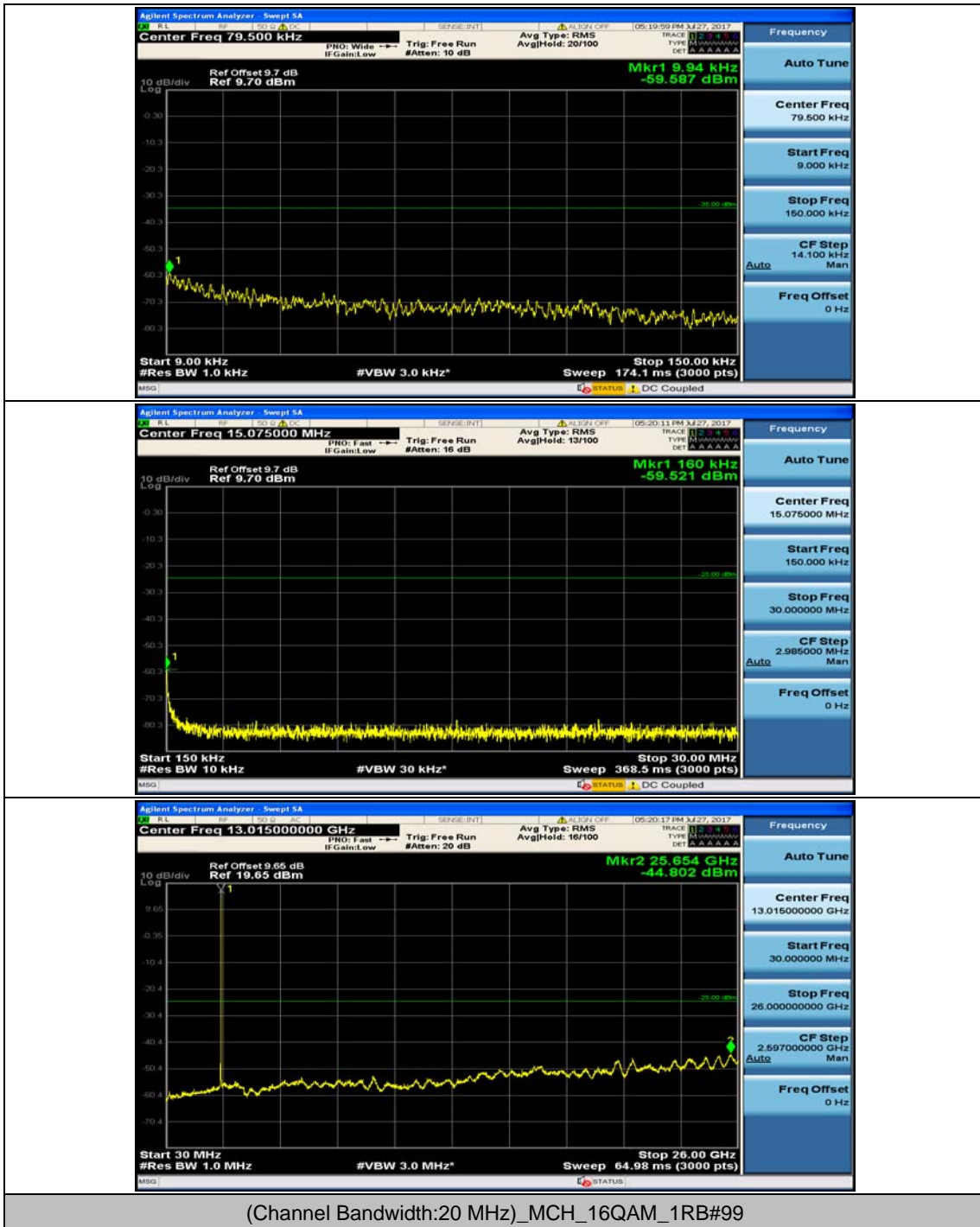


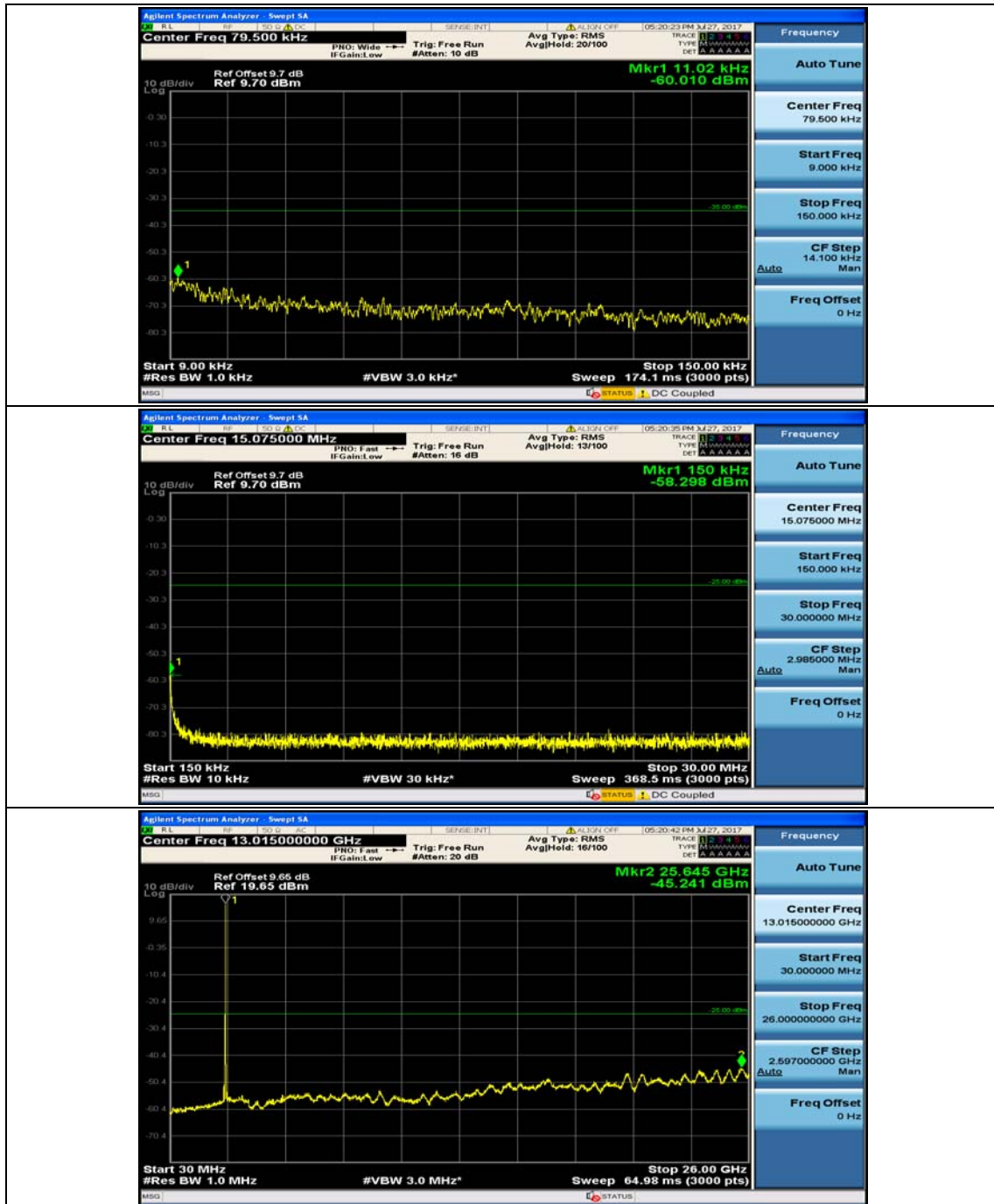


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

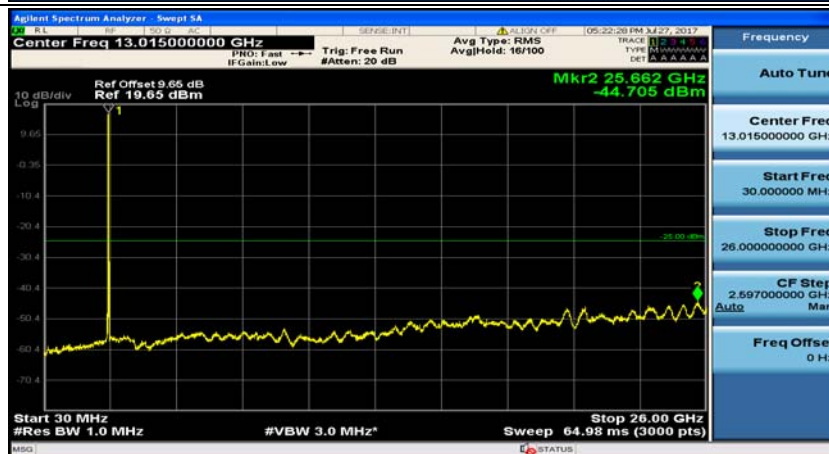
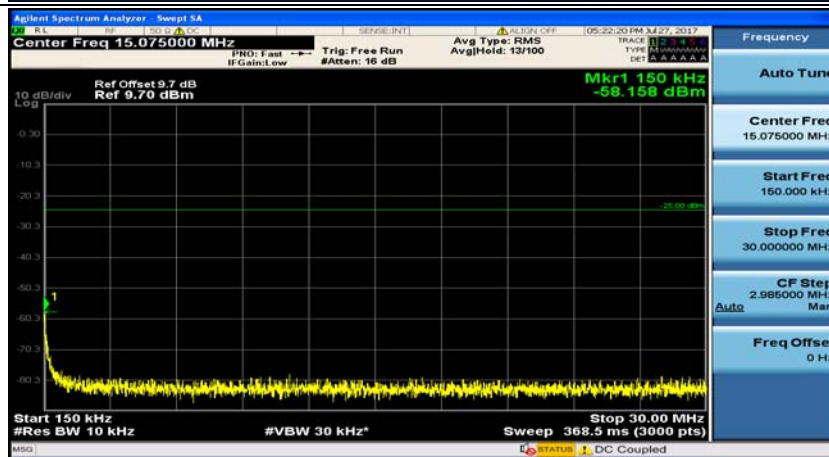
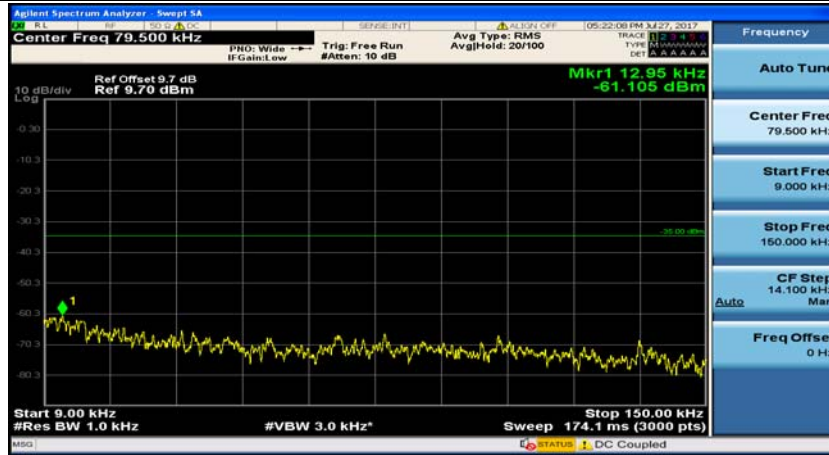


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

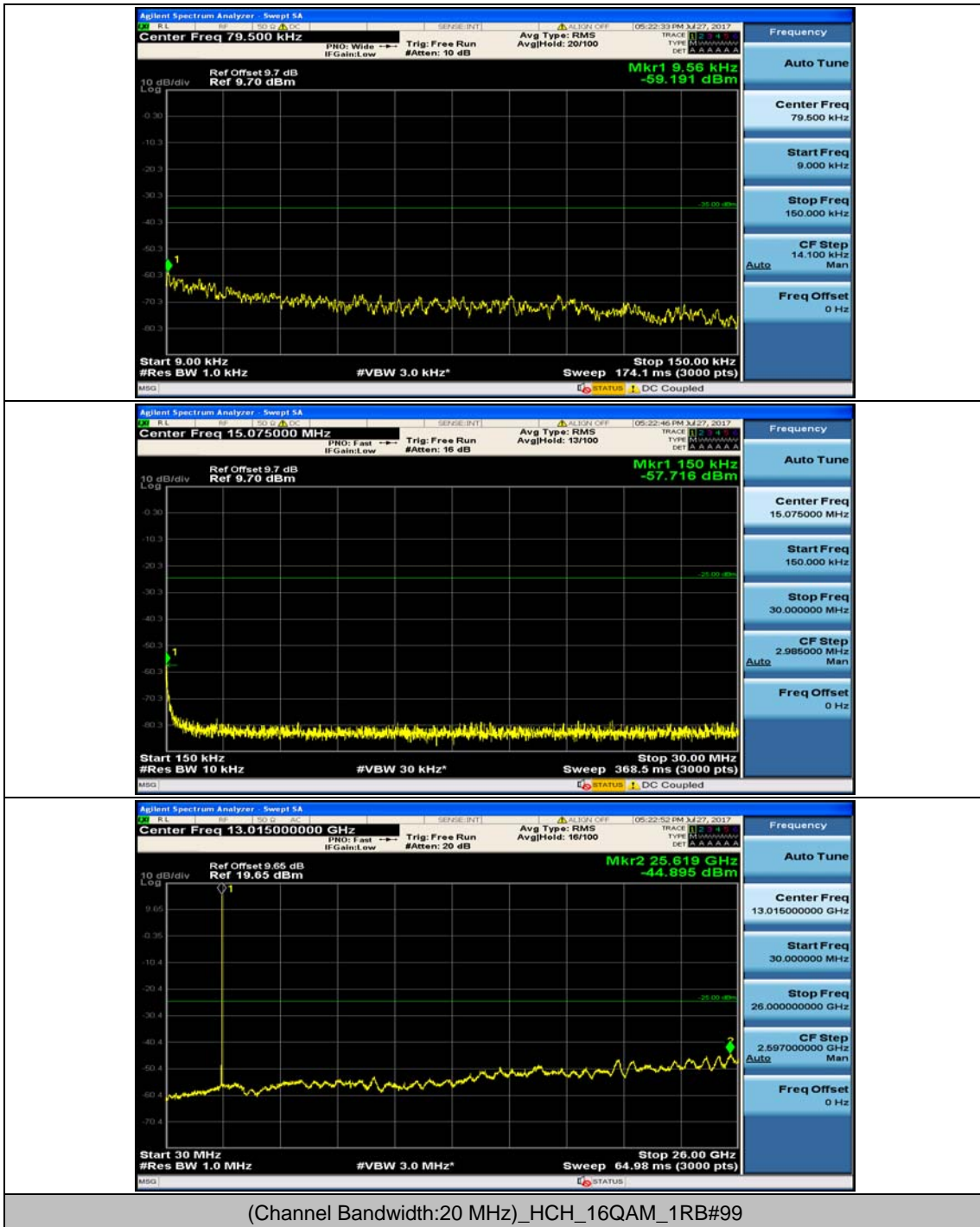


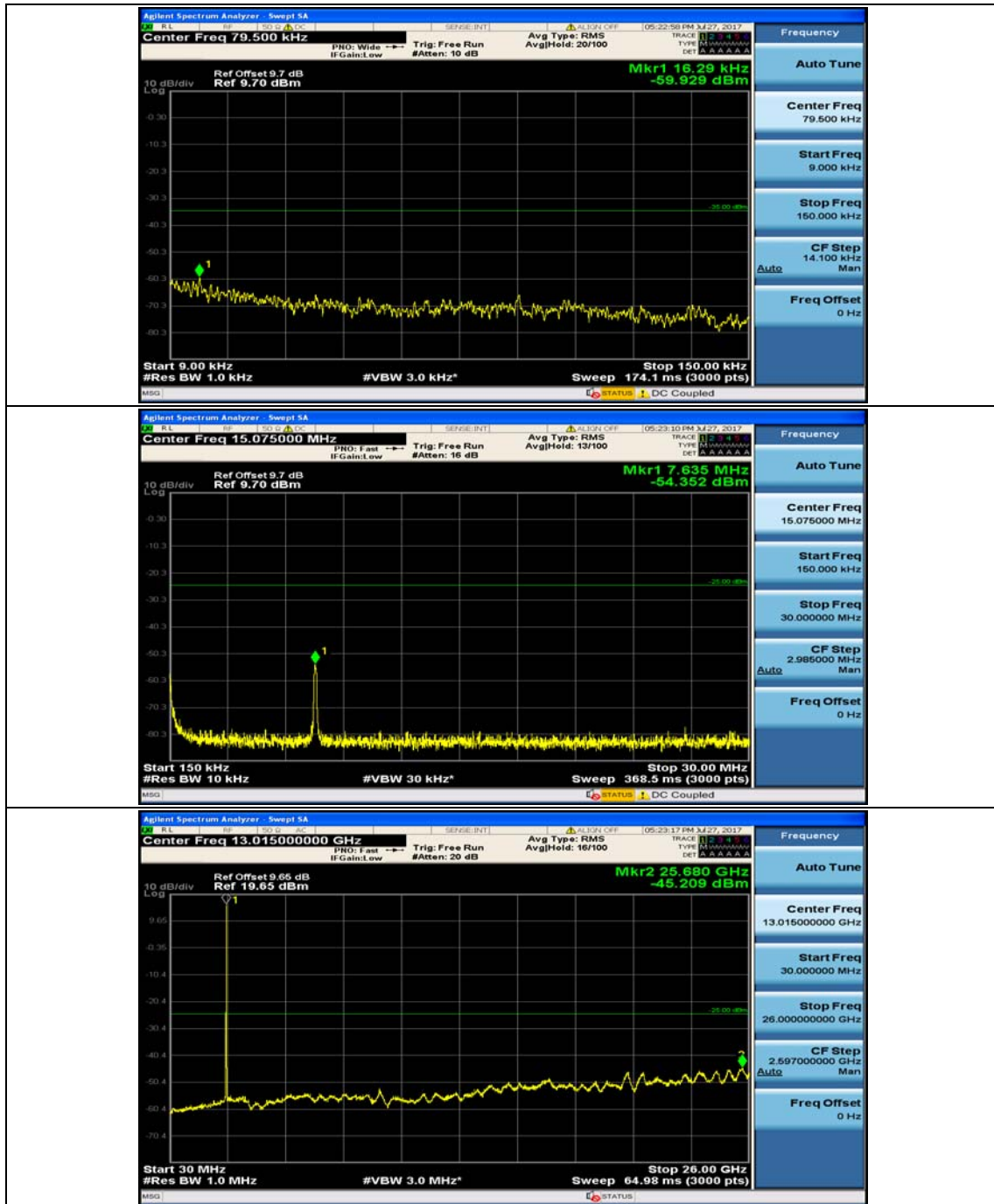


(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(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	2.4	0.000956	± 2.5	PASS
		VN	TN	-0.34	-0.000135	± 2.5	PASS
		VH	TN	4.37	0.001741	± 2.5	PASS
	MCH	VL	TN	-1.45	-0.000572	± 2.5	PASS
		VN	TN	3.36	0.001325	± 2.5	PASS
		VH	TN	-0.74	-0.000292	± 2.5	PASS
	HCH	VL	TN	1.22	0.000477	± 2.5	PASS
		VN	TN	-0.46	-0.000180	± 2.5	PASS
		VH	TN	0.13	0.000051	± 2.5	PASS
16QAM	LCH	VL	TN	4.33	0.001725	± 2.5	PASS
		VN	TN	2.96	0.001179	± 2.5	PASS
		VH	TN	1.38	0.000550	± 2.5	PASS
	MCH	VL	TN	2.96	0.001168	± 2.5	PASS
		VN	TN	4.94	0.001949	± 2.5	PASS
		VH	TN	2.02	0.000797	± 2.5	PASS
	HCH	VL	TN	1.08	0.000422	± 2.5	PASS
		VN	TN	3.6	0.001406	± 2.5	PASS
		VH	TN	3.97	0.001551	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.08	-0.000430	± 2.5	PASS
		VN	-20	2.98	0.001187	± 2.5	PASS
		VN	-10	-1.66	-0.000661	± 2.5	PASS
		VN	0	3.79	0.001510	± 2.5	PASS
		VN	10	2.45	0.000976	± 2.5	PASS
		VN	20	3.72	0.001482	± 2.5	PASS
		VN	30	-1.2	-0.000478	± 2.5	PASS
		VN	40	2.07	0.000825	± 2.5	PASS
		VN	50	0.43	0.000171	± 2.5	PASS
	MCH	VN	-30	2.89	0.001140	± 2.5	PASS

		VN	-20	1.42	0.000560	± 2.5	PASS
		VN	-10	4.75	0.001874	± 2.5	PASS
		VN	0	-0.61	-0.000241	± 2.5	PASS
		VN	10	3.19	0.001258	± 2.5	PASS
		VN	20	-1.64	-0.000647	± 2.5	PASS
		VN	30	3.23	0.001274	± 2.5	PASS
		VN	40	-0.8	-0.000316	± 2.5	PASS
		VN	50	1.47	0.000580	± 2.5	PASS
	HCH	VN	-30	-1.33	-0.000520	± 2.5	PASS
		VN	-20	2.63	0.001027	± 2.5	PASS
		VN	-10	3.83	0.001496	± 2.5	PASS
		VN	0	0.74	0.000289	± 2.5	PASS
		VN	10	-0.51	-0.000199	± 2.5	PASS
		VN	20	4.59	0.001793	± 2.5	PASS
		VN	30	0.01	0.000004	± 2.5	PASS
		VN	40	-1.12	-0.000438	± 2.5	PASS
		VN	50	2.85	0.001113	± 2.5	PASS
		16QAM	LCH	VN	-30	-0.21	-0.000084
VN	-20			4.46	0.001777	± 2.5	PASS
VN	-10			4.5	0.001793	± 2.5	PASS
VN	0			2.76	0.001100	± 2.5	PASS
VN	10			-0.46	-0.000183	± 2.5	PASS
VN	20			1.71	0.000681	± 2.5	PASS
VN	30			-0.29	-0.000116	± 2.5	PASS
VN	40			2.99	0.001191	± 2.5	PASS
VN	50			2.33	0.000928	± 2.5	PASS
MCH	VN		-30	2.48	0.000978	± 2.5	PASS
	VN		-20	4.71	0.001858	± 2.5	PASS
	VN		-10	4.04	0.001594	± 2.5	PASS
	VN		0	0.75	0.000296	± 2.5	PASS
	VN		10	2.74	0.001081	± 2.5	PASS
	VN		20	-0.21	-0.000083	± 2.5	PASS
	VN		30	1.43	0.000564	± 2.5	PASS
	VN		40	3.68	0.001452	± 2.5	PASS
	VN		50	-0.49	-0.000193	± 2.5	PASS
HCH	VN		-30	1.26	0.000492	± 2.5	PASS
	VN		-20	-0.4	-0.000156	± 2.5	PASS
	VN		-10	-1.11	-0.000434	± 2.5	PASS
	VN		0	4.37	0.001707	± 2.5	PASS
	VN		10	-1.84	-0.000719	± 2.5	PASS
	VN		20	2.4	0.000938	± 2.5	PASS

		VN	30	1.7	0.000664	± 2.5	PASS
		VN	40	0.05	0.000020	± 2.5	PASS
		VN	50	3.56	0.001391	± 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	-0.54	-0.000215	± 2.5	PASS
		VN	TN	-1.41	-0.000562	± 2.5	PASS
		VH	TN	3.55	0.001414	± 2.5	PASS
	MCH	VL	TN	2.38	0.000939	± 2.5	PASS
		VN	TN	0.06	0.000024	± 2.5	PASS
		VH	TN	-1.63	-0.000643	± 2.5	PASS
	HCH	VL	TN	2.86	0.001117	± 2.5	PASS
		VN	TN	-1.36	-0.000531	± 2.5	PASS
		VH	TN	1.4	0.000547	± 2.5	PASS
16QAM	LCH	VL	TN	4.95	0.001972	± 2.5	PASS
		VN	TN	4.82	0.001920	± 2.5	PASS
		VH	TN	2.64	0.001052	± 2.5	PASS
	MCH	VL	TN	3.46	0.001365	± 2.5	PASS
		VN	TN	4.11	0.001621	± 2.5	PASS
		VH	TN	1.74	0.000686	± 2.5	PASS
	HCH	VL	TN	4.24	0.001656	± 2.5	PASS
		VN	TN	-0.29	-0.000113	± 2.5	PASS
		VH	TN	-1.26	-0.000492	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	3.88	0.001546	± 2.5	PASS
		VN	-20	-0.97	-0.000383	± 2.5	PASS
		VN	-10	-0.9	-0.000355	± 2.5	PASS
		VN	0	1.17	0.000462	± 2.5	PASS
		VN	10	4.2	0.001641	± 2.5	PASS
		VN	20	3.05	0.001191	± 2.5	PASS
		VN	30	4.34	0.001695	± 2.5	PASS
		VN	40	3.79	0.001510	± 2.5	PASS
		VN	50	1.1	0.000438	± 2.5	PASS
	MCH	VN	-30	4.22	0.001681	± 2.5	PASS
		VN	-20	-1.85	-0.000730	± 2.5	PASS

		VN	-10	0.05	0.000020	± 2.5	PASS	
		VN	0	3.36	0.001325	± 2.5	PASS	
		VN	10	0.83	0.000324	± 2.5	PASS	
		VN	20	4.5	0.001758	± 2.5	PASS	
		VN	30	-0.99	-0.000387	± 2.5	PASS	
		VN	40	-1.66	-0.000661	± 2.5	PASS	
		VN	50	0.2	0.000080	± 2.5	PASS	
	HCH	VN	-30	3.88	0.001546	± 2.5	PASS	
		VN	-20	-0.97	-0.000383	± 2.5	PASS	
		VN	-10	-0.9	-0.000355	± 2.5	PASS	
		VN	0	1.17	0.000462	± 2.5	PASS	
		VN	10	4.2	0.001641	± 2.5	PASS	
		VN	20	3.05	0.001191	± 2.5	PASS	
		VN	30	4.34	0.001695	± 2.5	PASS	
	QPSK	LCH	VN	40	3.79	0.001510	± 2.5	PASS
			VN	50	1.1	0.000438	± 2.5	PASS
			VN	-30	4.22	0.001681	± 2.5	PASS
			VN	-20	-1.85	-0.000730	± 2.5	PASS
VN			-10	0.05	0.000020	± 2.5	PASS	
VN			0	3.36	0.001325	± 2.5	PASS	
VN			10	0.83	0.000324	± 2.5	PASS	
VN			20	4.5	0.001758	± 2.5	PASS	
VN			30	-0.99	-0.000387	± 2.5	PASS	
MCH		VN	40	-1.66	-0.000661	± 2.5	PASS	
		VN	50	0.2	0.000080	± 2.5	PASS	
		VN	-30	3.88	0.001546	± 2.5	PASS	
		VN	-20	-0.97	-0.000383	± 2.5	PASS	
		VN	-10	-0.9	-0.000355	± 2.5	PASS	
		VN	0	1.17	0.000462	± 2.5	PASS	
		VN	10	4.2	0.001641	± 2.5	PASS	
		VN	20	3.05	0.001191	± 2.5	PASS	
		VN	30	4.34	0.001695	± 2.5	PASS	
HCH	VN	40	3.79	0.001510	± 2.5	PASS		
	VN	50	1.1	0.000438	± 2.5	PASS		
	VN	-30	4.22	0.001681	± 2.5	PASS		
	VN	-20	-1.85	-0.000730	± 2.5	PASS		
	VN	-10	0.05	0.000020	± 2.5	PASS		
	VN	0	3.36	0.001325	± 2.5	PASS		
	VN	10	0.83	0.000324	± 2.5	PASS		
		VN	20	4.5	0.001758	± 2.5	PASS	
		VN	30	-0.99	-0.000387	± 2.5	PASS	

		VN	40	-1.66	-0.000661	± 2.5	PASS
		VN	50	0.2	0.000080	± 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	2.97	0.001183	± 2.5	PASS
		VN	TN	2.71	0.001080	± 2.5	PASS
		VH	TN	-0.92	-0.000367	± 2.5	PASS
	MCH	VL	TN	0.39	0.000154	± 2.5	PASS
		VN	TN	-1.38	-0.000544	± 2.5	PASS
		VH	TN	0.2	0.000079	± 2.5	PASS
	HCH	VL	TN	-0.34	-0.000133	± 2.5	PASS
		VN	TN	2.48	0.000969	± 2.5	PASS
		VH	TN	2.09	0.000816	± 2.5	PASS
16QAM	LCH	VL	TN	1.89	0.000753	± 2.5	PASS
		VN	TN	4.43	0.001765	± 2.5	PASS
		VH	TN	3.06	0.001219	± 2.5	PASS
	MCH	VL	TN	-1.75	-0.000690	± 2.5	PASS
		VN	TN	-0.42	-0.000166	± 2.5	PASS
		VH	TN	4.5	0.001775	± 2.5	PASS
	HCH	VL	TN	-1.42	-0.000555	± 2.5	PASS
		VN	TN	-0.62	-0.000242	± 2.5	PASS
		VH	TN	3.34	0.001305	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.25	0.000498	± 2.5	PASS
		VN	-20	0.29	0.000116	± 2.5	PASS
		VN	-10	1.56	0.000622	± 2.5	PASS
		VN	0	-1.27	-0.000506	± 2.5	PASS
		VN	10	3.8	0.001514	± 2.5	PASS
		VN	20	-0.72	-0.000287	± 2.5	PASS
		VN	30	-1.56	-0.000622	± 2.5	PASS
		VN	40	4.39	0.001749	± 2.5	PASS
		VN	50	4.7	0.001873	± 2.5	PASS
	MCH	VN	-30	0.13	0.000051	± 2.5	PASS
		VN	-20	-1.81	-0.000714	± 2.5	PASS
		VN	-10	3.85	0.001519	± 2.5	PASS

		VN	0	4	0.001578	± 2.5	PASS		
		VN	10	1.67	0.000659	± 2.5	PASS		
		VN	20	3.34	0.001318	± 2.5	PASS		
		VN	30	1.19	0.000469	± 2.5	PASS		
		VN	40	4.59	0.001811	± 2.5	PASS		
		VN	50	-0.93	-0.000367	± 2.5	PASS		
	HCH	VN	-30	3.66	0.001430	± 2.5	PASS		
		VN	-20	3.19	0.001246	± 2.5	PASS		
		VN	-10	3	0.001172	± 2.5	PASS		
		VN	0	0.07	0.000027	± 2.5	PASS		
		VN	10	0.68	0.000266	± 2.5	PASS		
		VN	20	-1.04	-0.000406	± 2.5	PASS		
		VN	30	3.83	0.001496	± 2.5	PASS		
		VN	40	0.82	0.000320	± 2.5	PASS		
		VN	50	-0.46	-0.000180	± 2.5	PASS		
		QPSK	LCH	VN	-30	4.6	0.001833	± 2.5	PASS
				VN	-20	1.12	0.000446	± 2.5	PASS
				VN	-10	3.02	0.001203	± 2.5	PASS
VN	0			3.04	0.001211	± 2.5	PASS		
VN	10			1.48	0.000590	± 2.5	PASS		
VN	20			4.86	0.001936	± 2.5	PASS		
VN	30			-1.67	-0.000665	± 2.5	PASS		
VN	40			4.36	0.001737	± 2.5	PASS		
VN	50			4.86	0.001936	± 2.5	PASS		
MCH	VN		-30	-0.71	-0.000280	± 2.5	PASS		
	VN		-20	2.08	0.000821	± 2.5	PASS		
	VN		-10	2.42	0.000955	± 2.5	PASS		
	VN		0	3.36	0.001325	± 2.5	PASS		
	VN		10	1.13	0.000446	± 2.5	PASS		
	VN		20	1.74	0.000686	± 2.5	PASS		
	VN		30	3.99	0.001574	± 2.5	PASS		
	VN		40	-0.23	-0.000091	± 2.5	PASS		
	VN		50	-1.3	-0.000513	± 2.5	PASS		
HCH	VN		-30	-0.1	-0.000039	± 2.5	PASS		
	VN		-20	2.11	0.000824	± 2.5	PASS		
	VN		-10	-0.45	-0.000176	± 2.5	PASS		
	VN		0	-1.28	-0.000500	± 2.5	PASS		
	VN		10	-1.1	-0.000430	± 2.5	PASS		
	VN		20	4.01	0.001566	± 2.5	PASS		
	VN		30	0.05	0.000020	± 2.5	PASS		
	VN		40	-1.46	-0.000570	± 2.5	PASS		

		VN	50	-0.16	-0.000063	± 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	3.83	0.001526	± 2.5	PASS
		VN	TN	-0.92	-0.000367	± 2.5	PASS
		VH	TN	0.35	0.000139	± 2.5	PASS
	MCH	VL	TN	4.07	0.001606	± 2.5	PASS
		VN	TN	-0.12	-0.000047	± 2.5	PASS
		VH	TN	0.21	0.000083	± 2.5	PASS
	HCH	VL	TN	-1.78	-0.000695	± 2.5	PASS
		VN	TN	-1.12	-0.000438	± 2.5	PASS
		VH	TN	0.54	0.000211	± 2.5	PASS
16QAM	LCH	VL	TN	2.03	0.000809	± 2.5	PASS
		VN	TN	-1.95	-0.000777	± 2.5	PASS
		VH	TN	1.02	0.000406	± 2.5	PASS
	MCH	VL	TN	0.44	0.000174	± 2.5	PASS
		VN	TN	2.59	0.001022	± 2.5	PASS
		VH	TN	4.51	0.001779	± 2.5	PASS
	HCH	VL	TN	4.19	0.001637	± 2.5	PASS
		VN	TN	-1.97	-0.000770	± 2.5	PASS
		VH	TN	4.21	0.001645	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.17	0.000466	± 2.5	PASS
		VN	-20	3.79	0.001510	± 2.5	PASS
		VN	-10	4.39	0.001749	± 2.5	PASS
		VN	0	3.18	0.001267	± 2.5	PASS
		VN	10	0.64	0.000255	± 2.5	PASS
		VN	20	4.29	0.001709	± 2.5	PASS
		VN	30	1.36	0.000542	± 2.5	PASS
		VN	40	3.1	0.001235	± 2.5	PASS
		VN	50	-1.08	-0.000430	± 2.5	PASS
	MCH	VN	-30	-0.72	-0.000284	± 2.5	PASS
		VN	-20	2.14	0.000844	± 2.5	PASS
		VN	-10	-0.98	-0.000387	± 2.5	PASS
		VN	0	-0.34	-0.000134	± 2.5	PASS

		VN	10	4.48	0.001767	± 2.5	PASS
		VN	20	3.31	0.001306	± 2.5	PASS
		VN	30	0.85	0.000335	± 2.5	PASS
		VN	40	-0.23	-0.000091	± 2.5	PASS
		VN	50	1.84	0.000726	± 2.5	PASS
	HCH	VN	-30	1.58	0.000617	± 2.5	PASS
		VN	-20	3.97	0.001551	± 2.5	PASS
		VN	-10	2.56	0.001000	± 2.5	PASS
		VN	0	1.75	0.000684	± 2.5	PASS
		VN	10	0.05	0.000020	± 2.5	PASS
		VN	20	2.55	0.000996	± 2.5	PASS
		VN	30	-1.25	-0.000488	± 2.5	PASS
		VN	40	-0.34	-0.000133	± 2.5	PASS
		VN	50	1.12	0.000438	± 2.5	PASS
		QPSK	LCH	VN	-30	1.83	0.000729
VN	-20			3.97	0.001582	± 2.5	PASS
VN	-10			2.54	0.001012	± 2.5	PASS
VN	0			3.1	0.001235	± 2.5	PASS
VN	10			0.96	0.000382	± 2.5	PASS
VN	20			-1.99	-0.000793	± 2.5	PASS
VN	30			4.13	0.001645	± 2.5	PASS
VN	40			2.13	0.000849	± 2.5	PASS
VN	50			1.21	0.000482	± 2.5	PASS
MCH	VN		-30	4.65	0.001834	± 2.5	PASS
	VN		-20	4.24	0.001673	± 2.5	PASS
	VN		-10	3.83	0.001511	± 2.5	PASS
	VN		0	-0.18	-0.000071	± 2.5	PASS
	VN		10	1.76	0.000694	± 2.5	PASS
	VN		20	-1.7	-0.000671	± 2.5	PASS
	VN		30	0.04	0.000016	± 2.5	PASS
	VN		40	3.32	0.001310	± 2.5	PASS
	VN		50	3.47	0.001369	± 2.5	PASS
HCH	VN		-30	-1.39	-0.000543	± 2.5	PASS
	VN		-20	2.51	0.000980	± 2.5	PASS
	VN		-10	0.7	0.000273	± 2.5	PASS
	VN		0	-0.06	-0.000023	± 2.5	PASS
	VN		10	1.07	0.000418	± 2.5	PASS
	VN		20	2.38	0.000930	± 2.5	PASS
	VN		30	3	0.001172	± 2.5	PASS
	VN		40	4.77	0.001863	± 2.5	PASS
	VN		50	0.29	0.000113	± 2.5	PASS