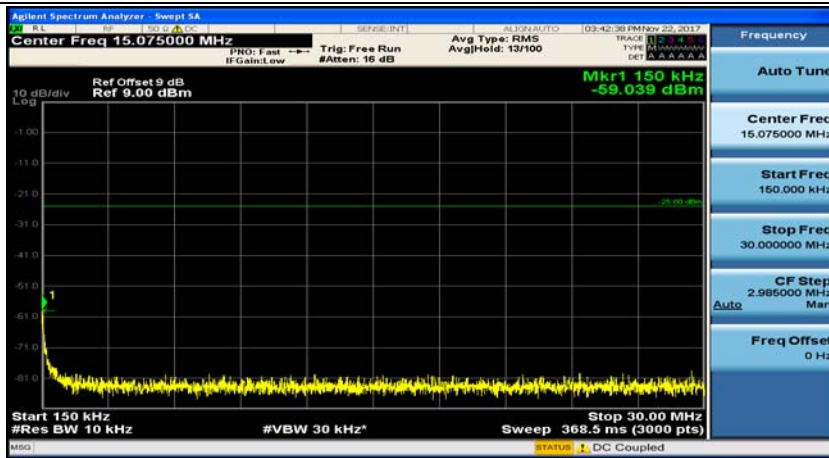
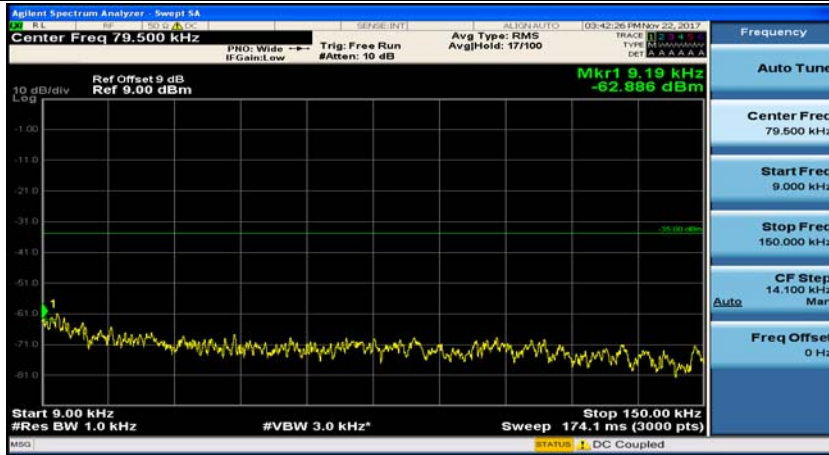
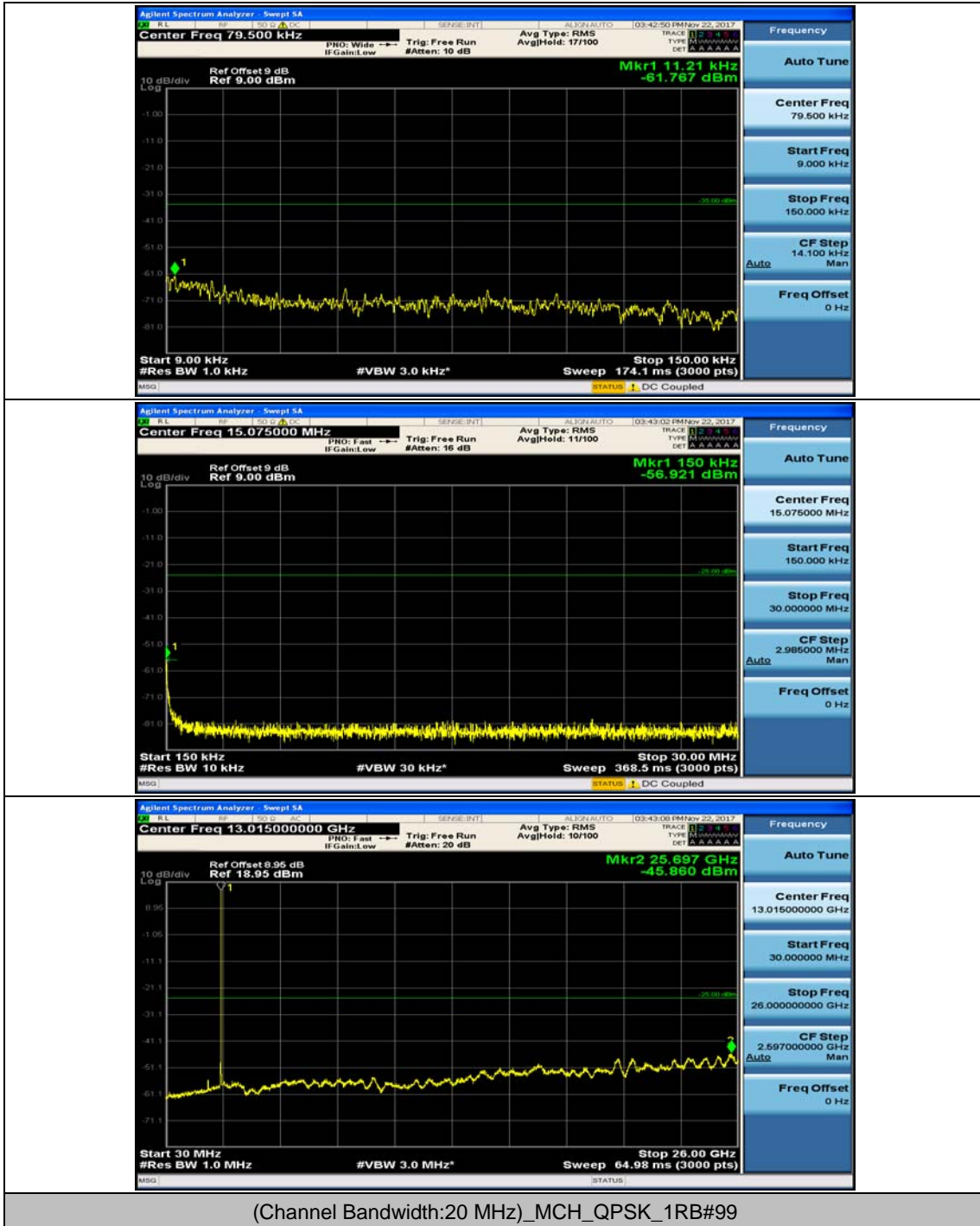
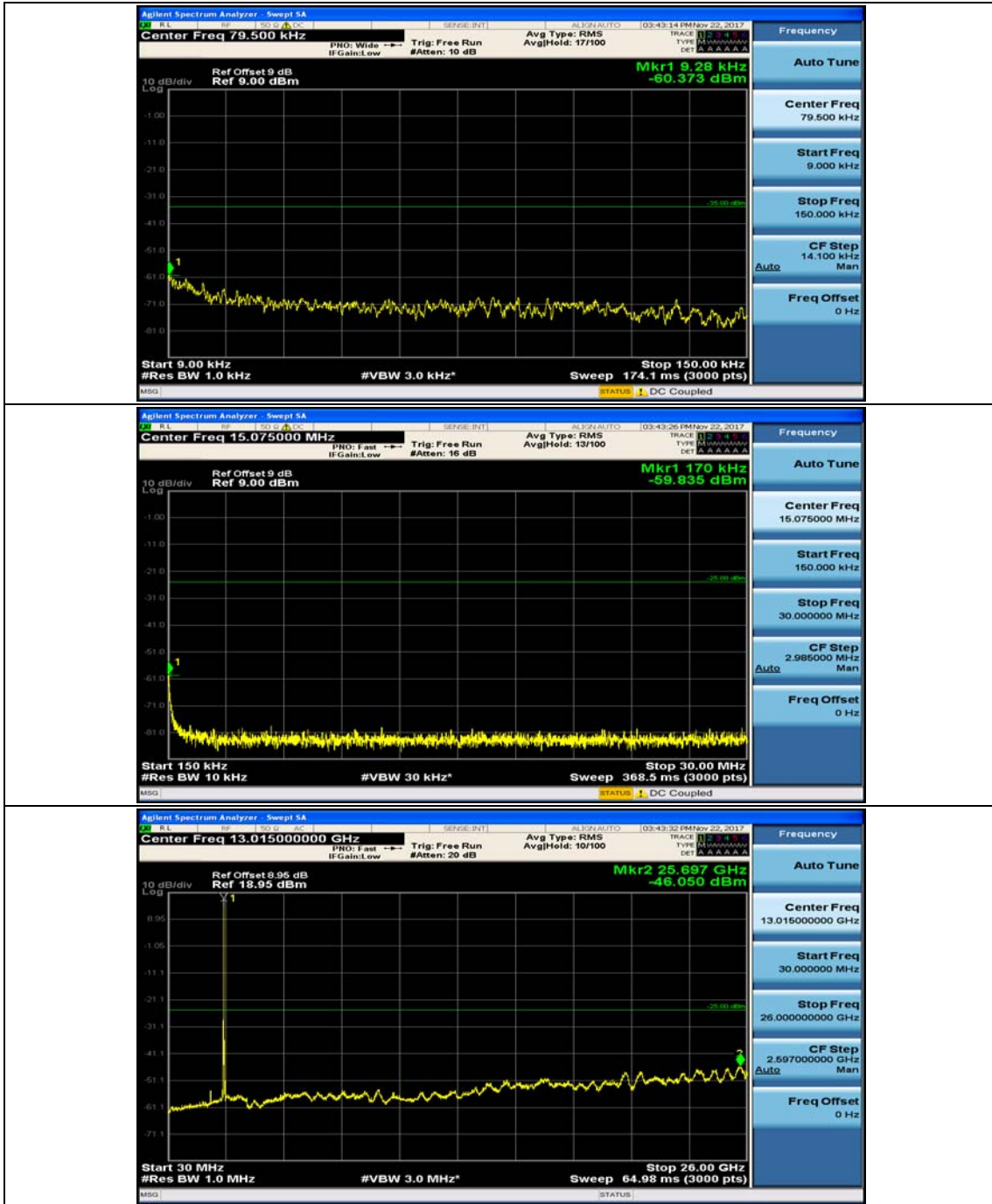


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

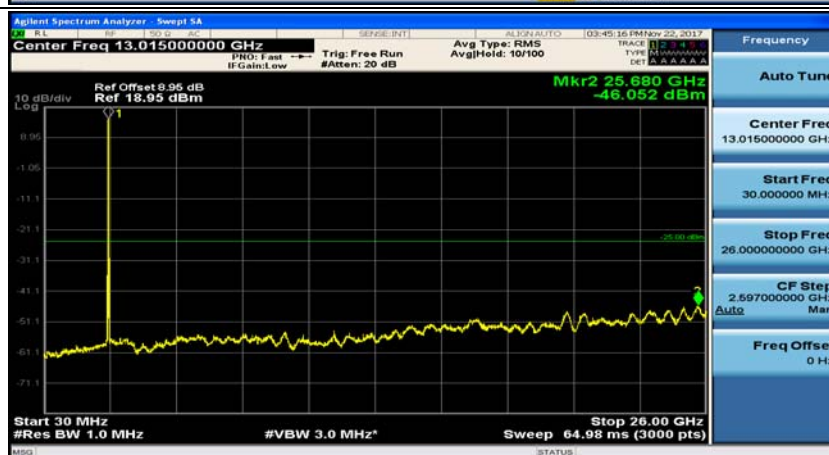
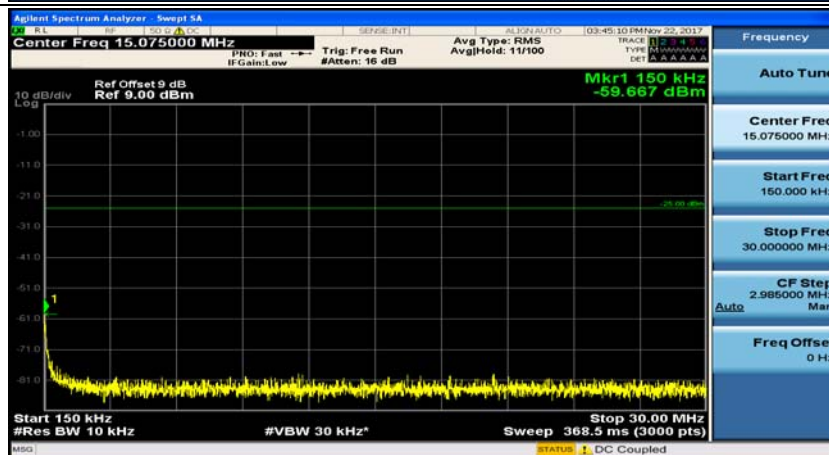
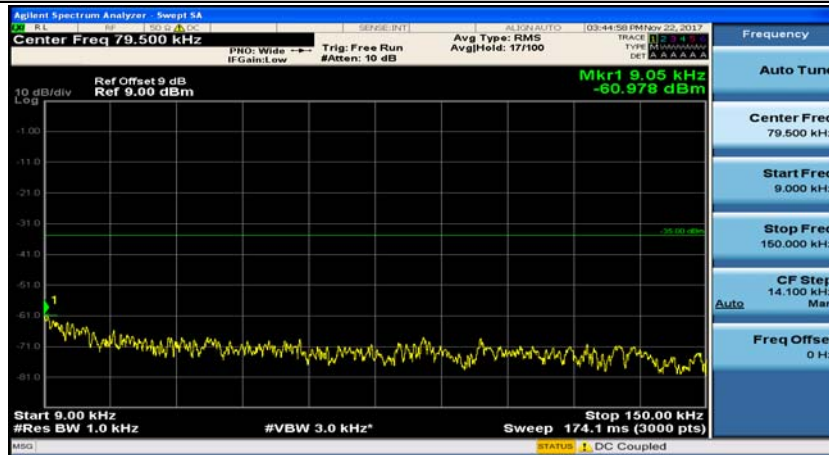


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

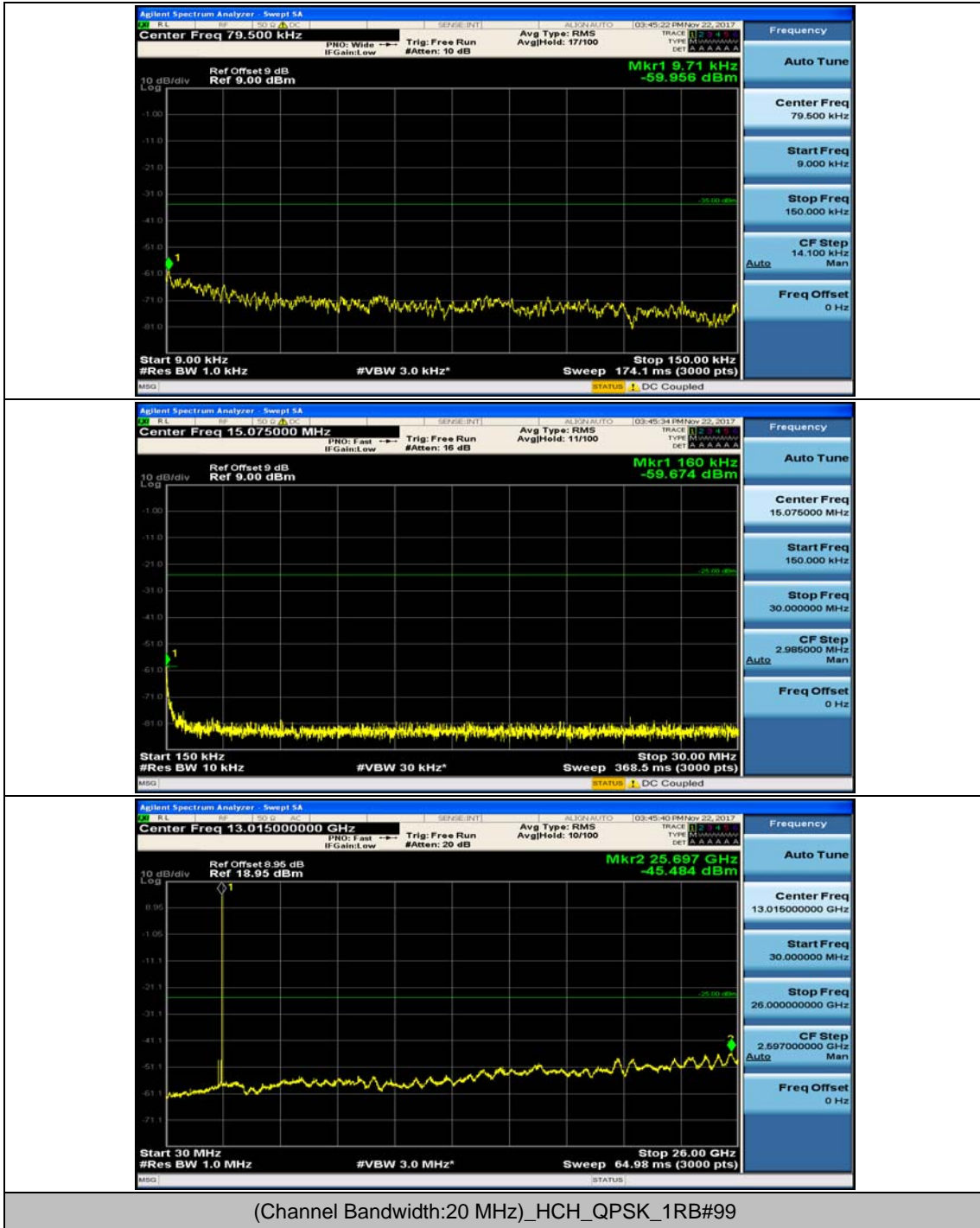


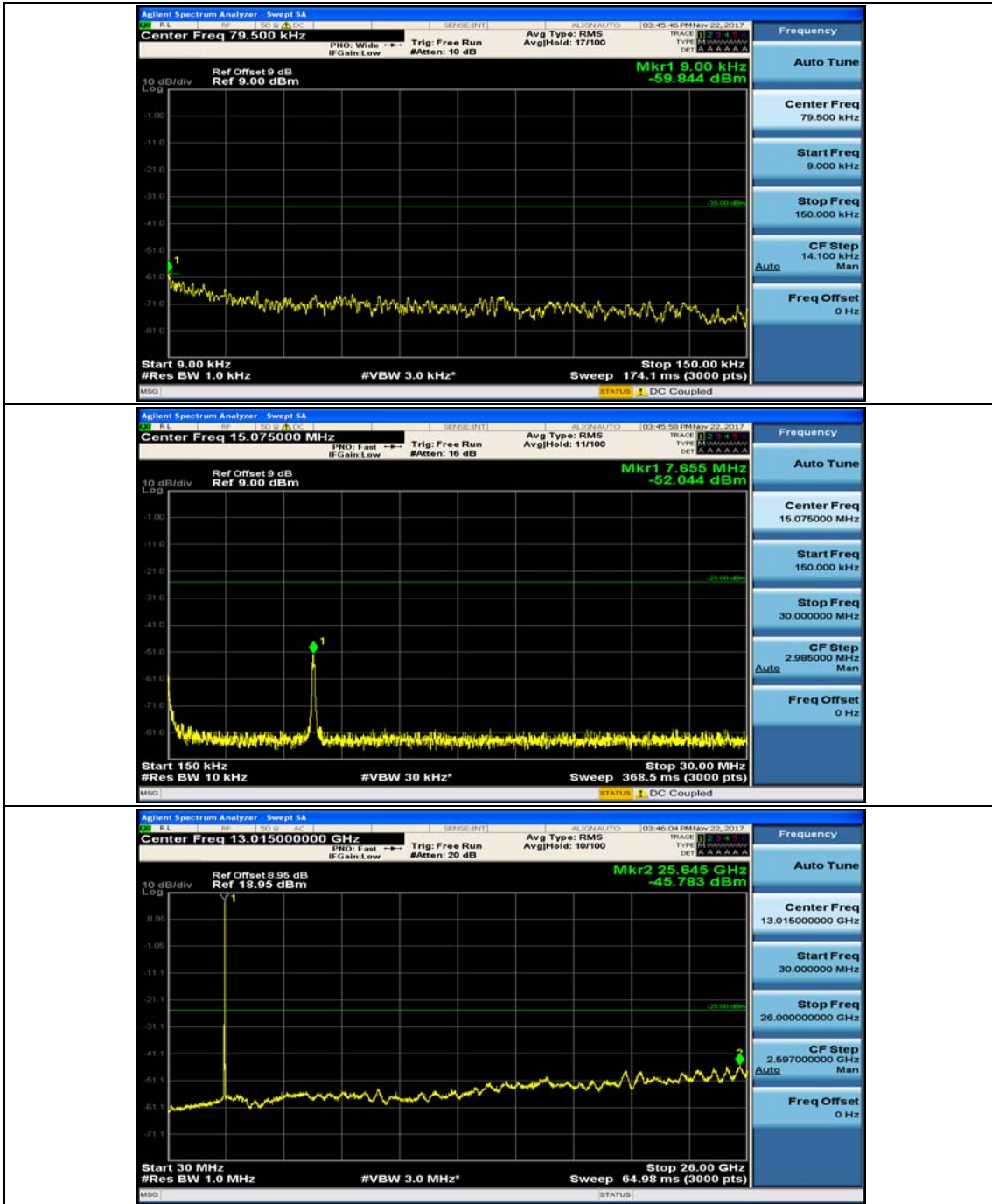


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

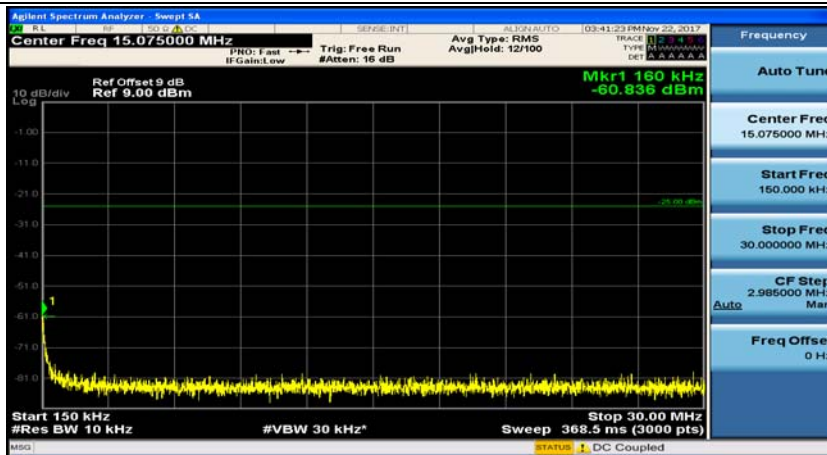
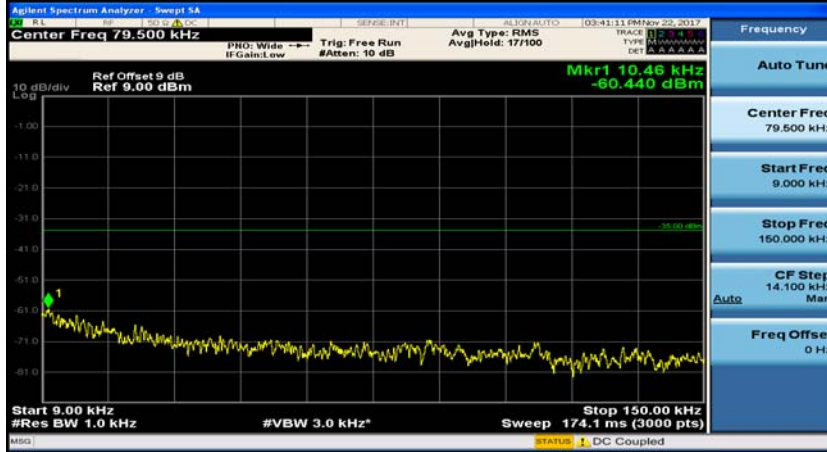


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

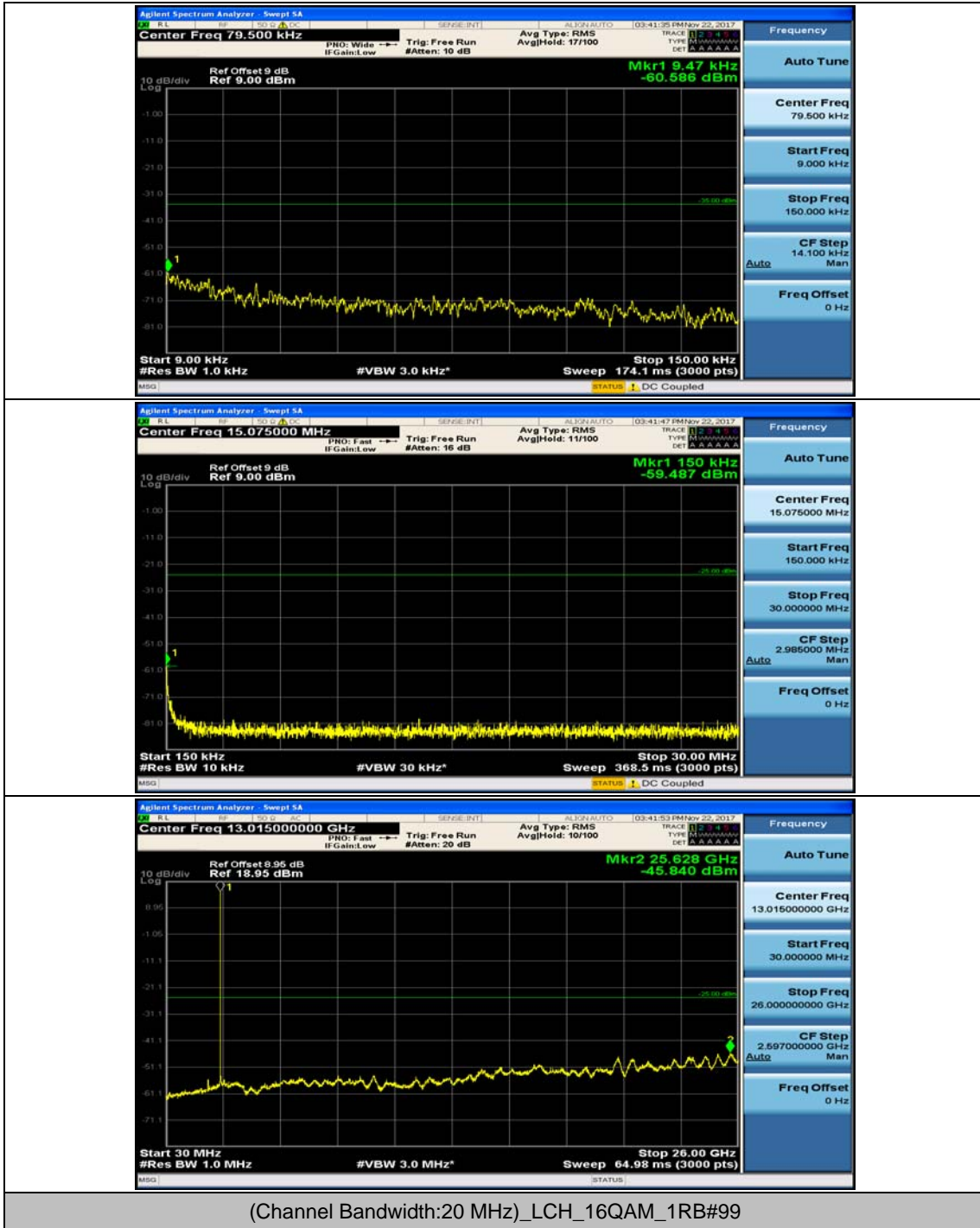


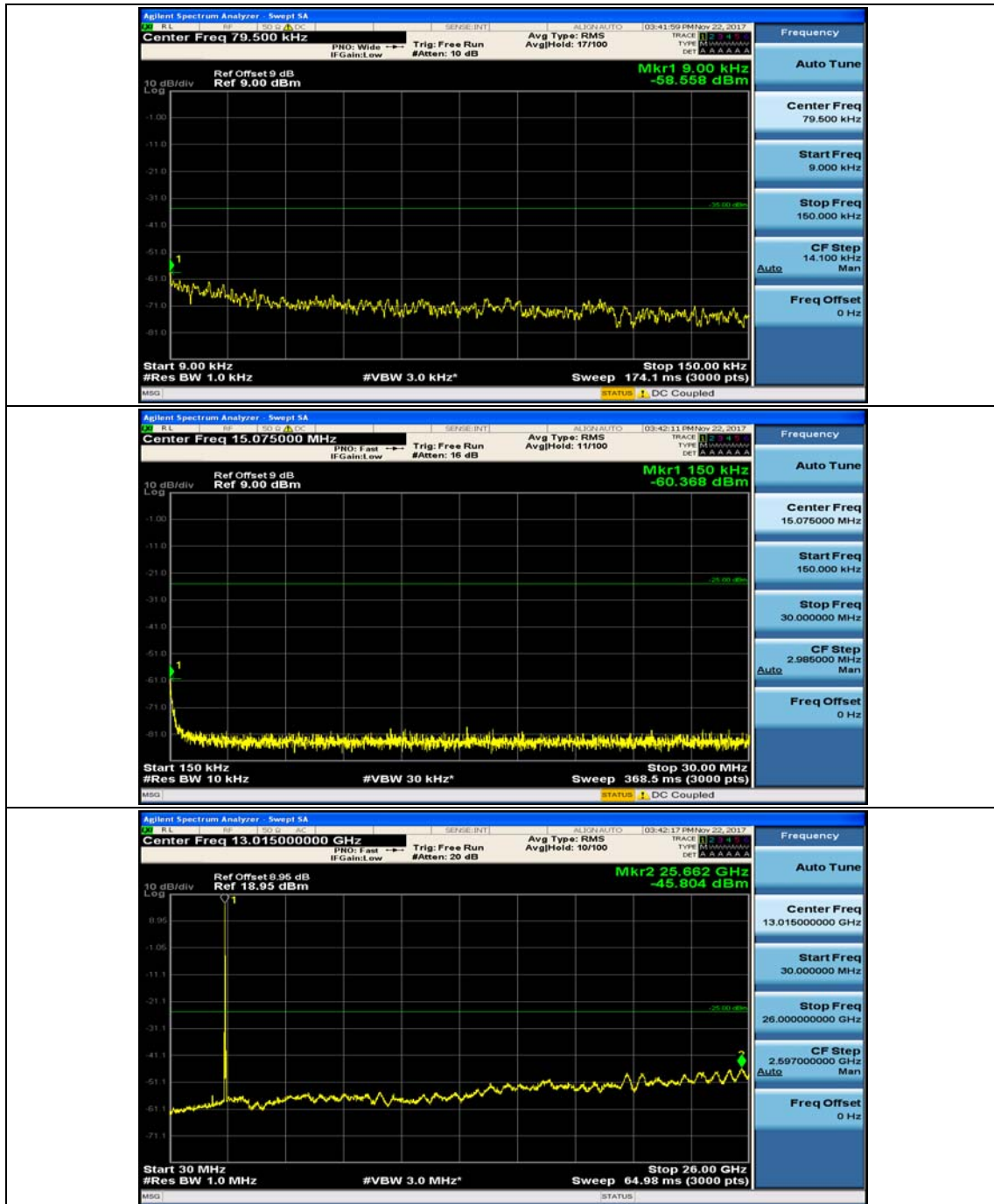


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

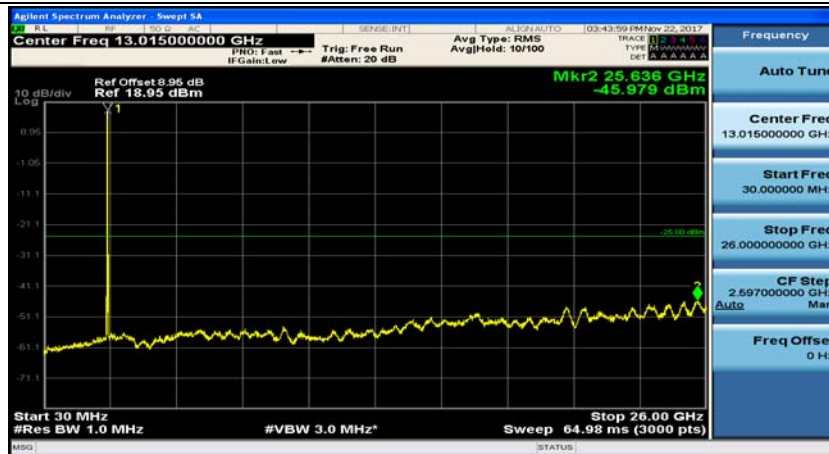
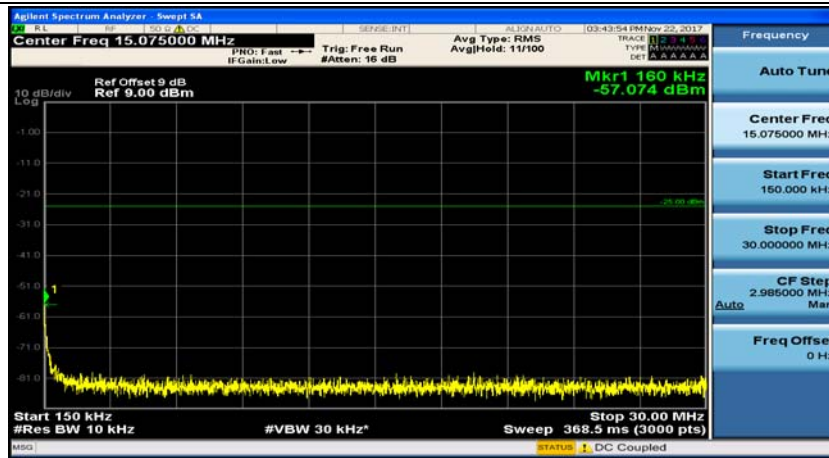
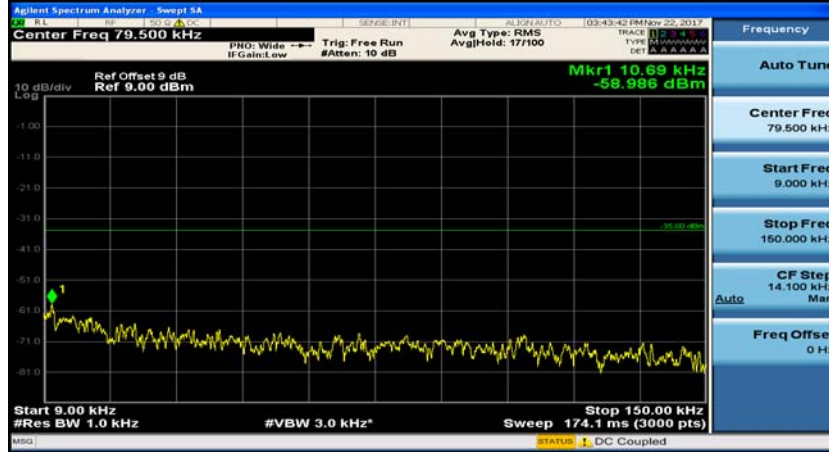


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

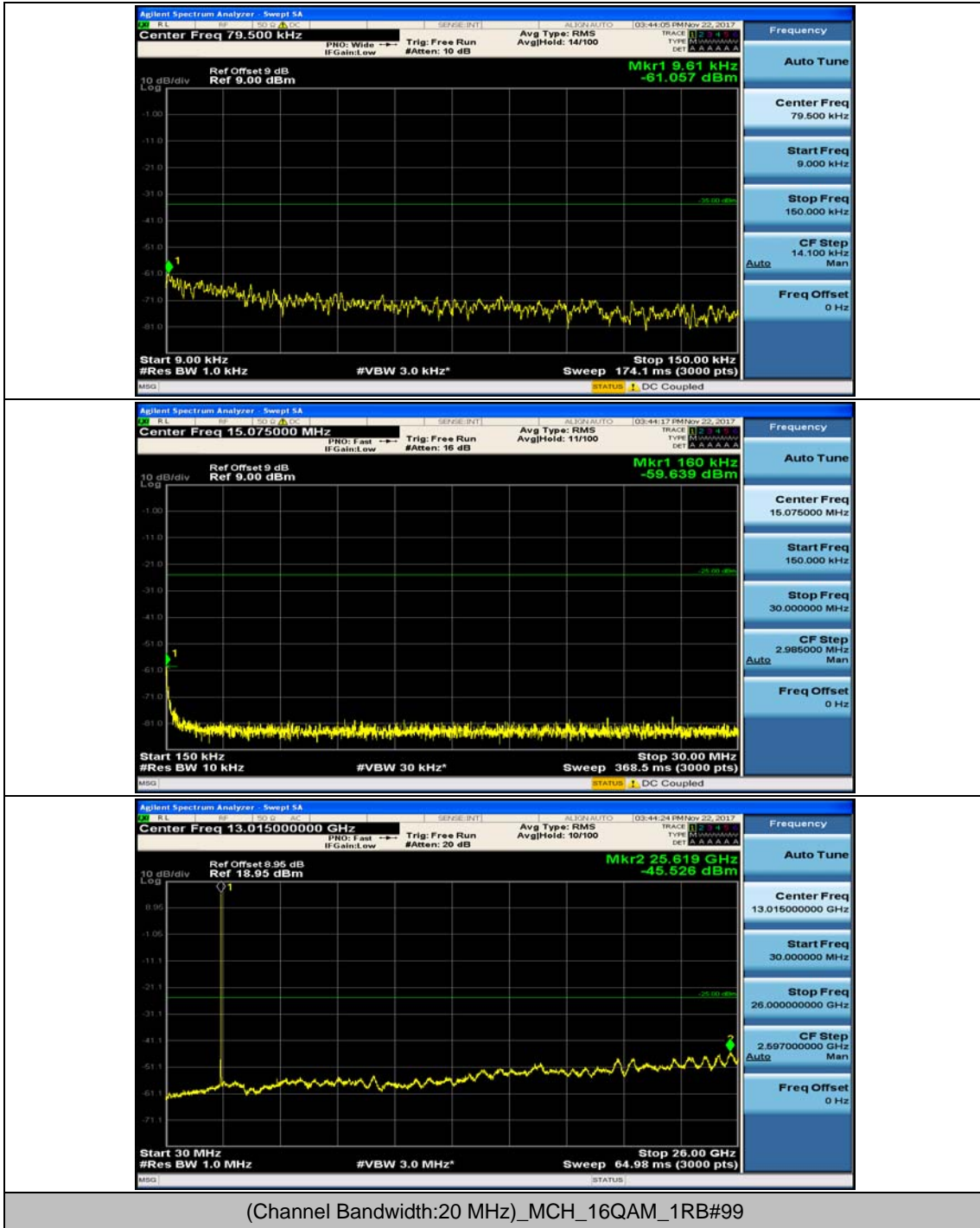


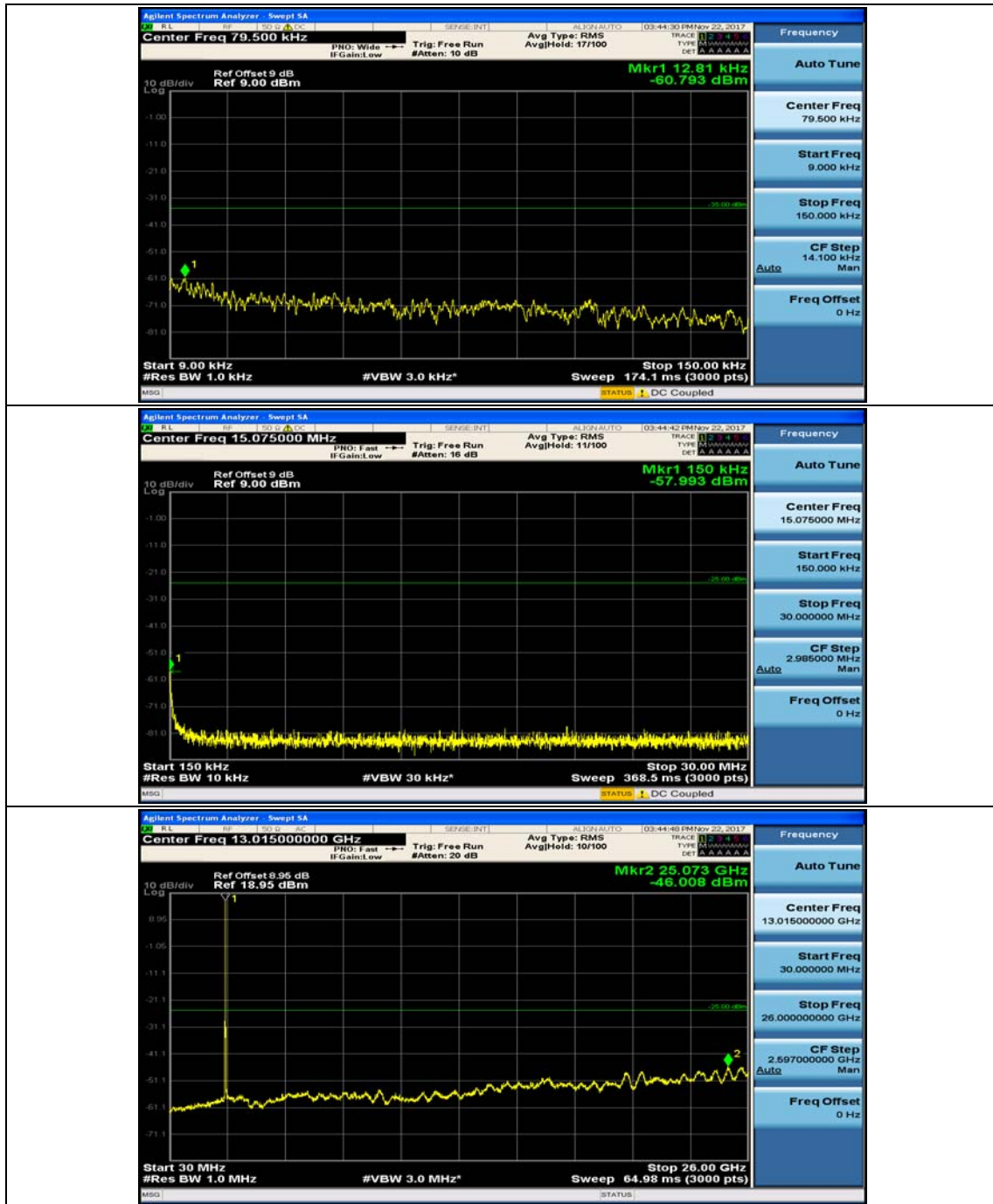


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

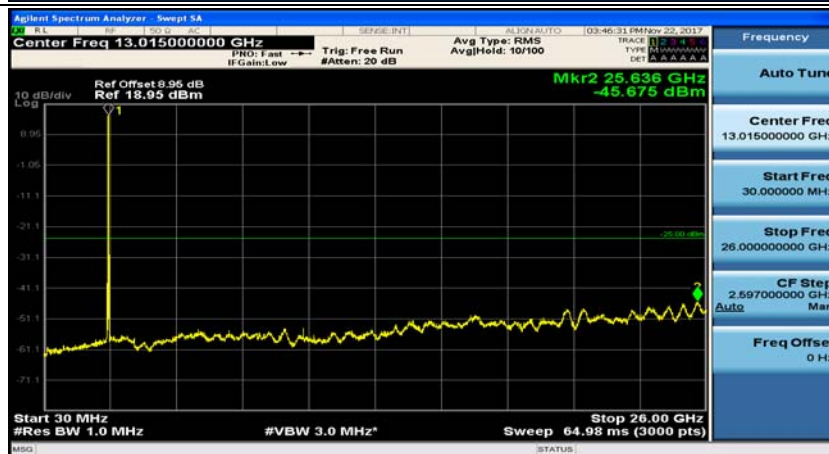
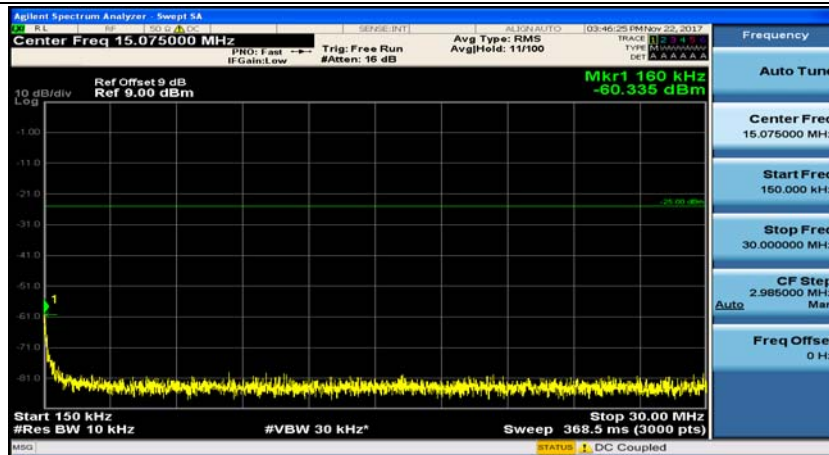
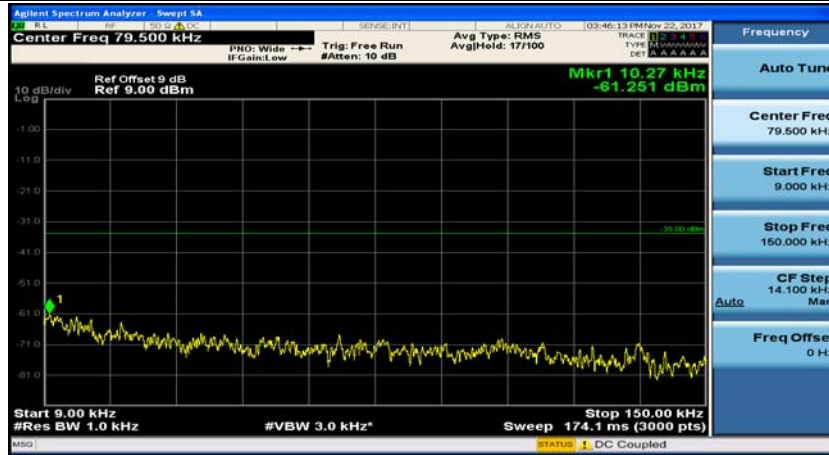


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

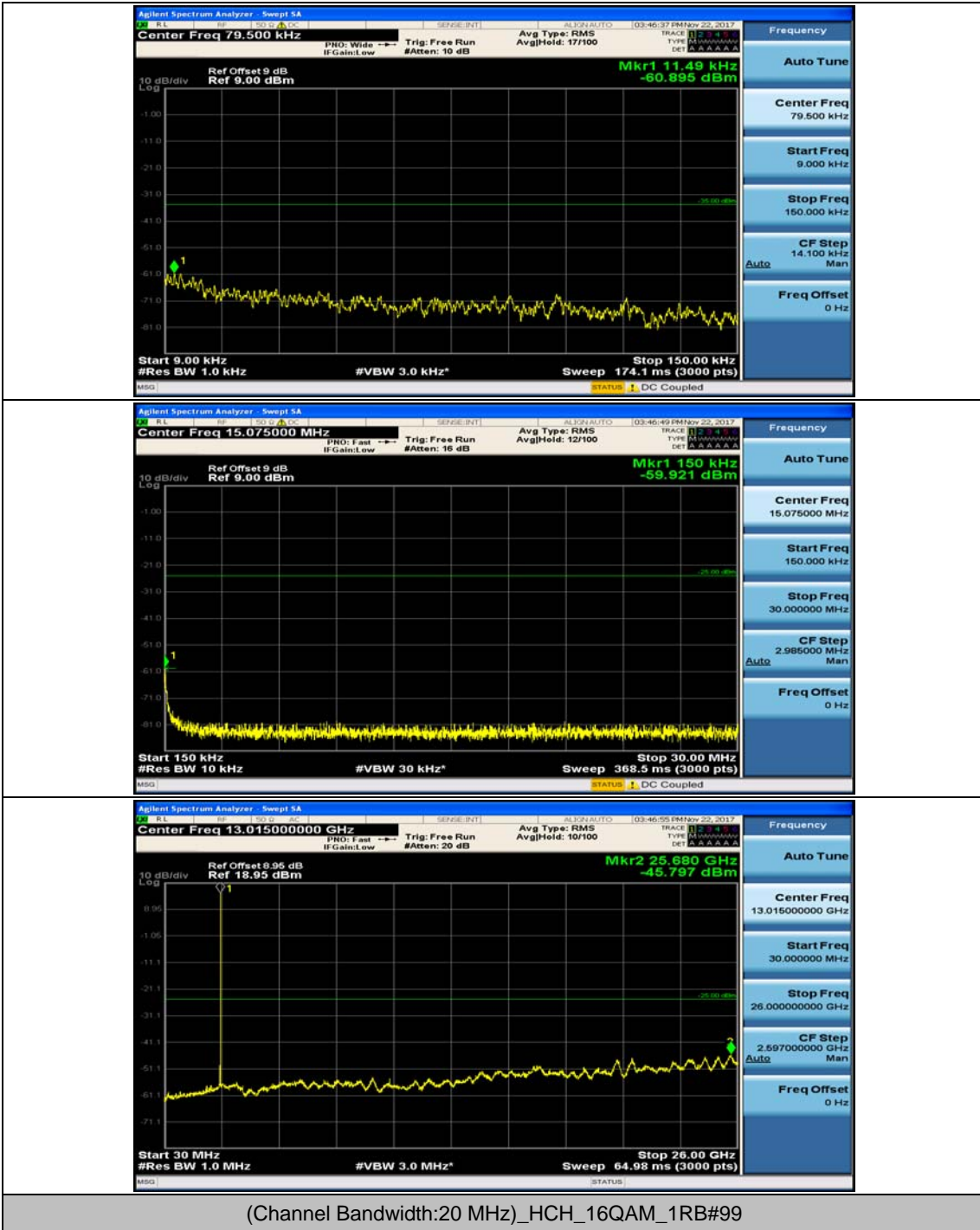


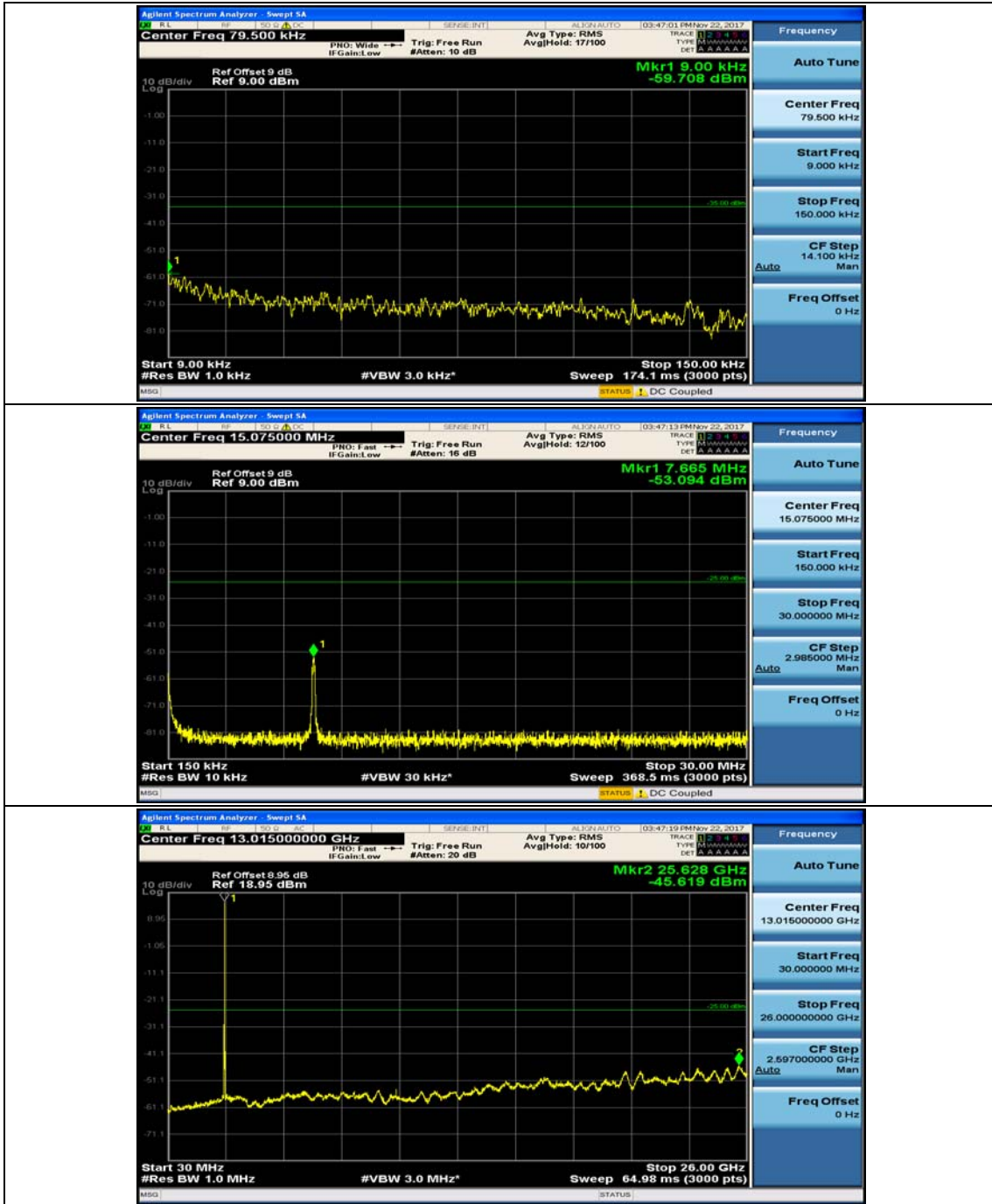


(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(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	1.42	0.000567	± 2.5	PASS
		VN	TN	1.05	0.000420	± 2.5	PASS
		VH	TN	0.21	0.000084	± 2.5	PASS
	MCH	VL	TN	2.6	0.001026	± 2.5	PASS
		VN	TN	3.92	0.001546	± 2.5	PASS
		VH	TN	-0.87	-0.000343	± 2.5	PASS
	HCH	VL	TN	0.27	0.000105	± 2.5	PASS
		VN	TN	2.79	0.001087	± 2.5	PASS
		VH	TN	-1.11	-0.000432	± 2.5	PASS
16QAM	LCH	VL	TN	0.69	0.000276	± 2.5	PASS
		VN	TN	-0.19	-0.000076	± 2.5	PASS
		VH	TN	1.3	0.000519	± 2.5	PASS
	MCH	VL	TN	-1.69	-0.000667	± 2.5	PASS
		VN	TN	3.84	0.001515	± 2.5	PASS
		VH	TN	4.16	0.001641	± 2.5	PASS
	HCH	VL	TN	1.14	0.000444	± 2.5	PASS
		VN	TN	4.68	0.001823	± 2.5	PASS
		VH	TN	1.45	0.000565	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.8	0.000320	± 2.5	PASS
		VN	-20	1.36	0.000543	± 2.5	PASS
		VN	-10	0.2	0.000080	± 2.5	PASS
		VN	0	0.51	0.000204	± 2.5	PASS
		VN	10	-0.19	-0.000076	± 2.5	PASS
		VN	20	4.15	0.001658	± 2.5	PASS
		VN	30	-1.94	-0.000775	± 2.5	PASS
		VN	40	1.79	0.000715	± 2.5	PASS
		VN	50	4.88	0.001950	± 2.5	PASS
	MCH	VN	-30	-0.4	-0.000158	± 2.5	PASS
		VN	-20	4.02	0.001586	± 2.5	PASS
		VN	-10	0.5	0.000197	± 2.5	PASS

		VN	0	2.26	0.000892	± 2.5	PASS		
		VN	10	2.08	0.000821	± 2.5	PASS		
		VN	20	3.82	0.001507	± 2.5	PASS		
		VN	30	1.2	0.000473	± 2.5	PASS		
		VN	40	2.42	0.000955	± 2.5	PASS		
		VN	50	-1.42	-0.000560	± 2.5	PASS		
	HCH	VN	-30	-0.87	-0.000339	± 2.5	PASS		
		VN	-20	2.94	0.001145	± 2.5	PASS		
		VN	-10	-0.75	-0.000292	± 2.5	PASS		
		VN	0	-0.36	-0.000140	± 2.5	PASS		
		VN	10	3.24	0.001262	± 2.5	PASS		
		VN	20	-1.74	-0.000678	± 2.5	PASS		
		VN	30	-1.98	-0.000771	± 2.5	PASS		
		VN	40	4.36	0.001698	± 2.5	PASS		
		VN	50	-1.94	-0.000756	± 2.5	PASS		
		16QAM	LCH	VN	-30	4.39	0.001754	± 2.5	PASS
				VN	-20	3.69	0.001475	± 2.5	PASS
				VN	-10	-0.03	-0.000012	± 2.5	PASS
VN	0			3.8	0.001518	± 2.5	PASS		
VN	10			4.18	0.001670	± 2.5	PASS		
VN	20			4	0.001598	± 2.5	PASS		
VN	30			-1.94	-0.000775	± 2.5	PASS		
VN	40			3.88	0.001550	± 2.5	PASS		
VN	50			1.61	0.000643	± 2.5	PASS		
MCH	VN		-30	0.21	0.000083	± 2.5	PASS		
	VN		-20	-0.97	-0.000383	± 2.5	PASS		
	VN		-10	3.55	0.001400	± 2.5	PASS		
	VN		0	0.95	0.000375	± 2.5	PASS		
	VN		10	1.76	0.000694	± 2.5	PASS		
	VN		20	2.38	0.000939	± 2.5	PASS		
	VN		30	4.78	0.001886	± 2.5	PASS		
	VN		40	1.15	0.000454	± 2.5	PASS		
	VN		50	-0.41	-0.000162	± 2.5	PASS		
HCH	VN		-30	1.19	0.000463	± 2.5	PASS		
	VN		-20	2.1	0.000818	± 2.5	PASS		
	VN		-10	-0.07	-0.000027	± 2.5	PASS		
	VN		0	1.91	0.000744	± 2.5	PASS		
	VN		10	-0.64	-0.000249	± 2.5	PASS		
	VN		20	-0.71	-0.000277	± 2.5	PASS		
	VN		30	3.39	0.001320	± 2.5	PASS		
	VN		40	-1.08	-0.000421	± 2.5	PASS		

		VN	50	-0.15	-0.000058	± 2.5	PASS
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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	2.29	0.000914	± 2.5	PASS
		VN	TN	0.97	0.000387	± 2.5	PASS
		VH	TN	1.79	0.000715	± 2.5	PASS
	MCH	VL	TN	-0.68	-0.000268	± 2.5	PASS
		VN	TN	-0.78	-0.000308	± 2.5	PASS
		VH	TN	-1.26	-0.000497	± 2.5	PASS
	HCH	VL	TN	-0.96	-0.000374	± 2.5	PASS
		VN	TN	0.83	0.000324	± 2.5	PASS
		VH	TN	0.46	0.000179	± 2.5	PASS
16QAM	LCH	VL	TN	0.06	0.000024	± 2.5	PASS
		VN	TN	0.58	0.000232	± 2.5	PASS
		VH	TN	3.68	0.001469	± 2.5	PASS
	MCH	VL	TN	2.56	0.001010	± 2.5	PASS
		VN	TN	3.18	0.001254	± 2.5	PASS
		VH	TN	-0.89	-0.000351	± 2.5	PASS
	HCH	VL	TN	-1.74	-0.000678	± 2.5	PASS
		VN	TN	1.75	0.000682	± 2.5	PASS
		VH	TN	-1.17	-0.000456	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.44	0.000974	± 2.5	PASS
		VN	-20	3.24	0.001293	± 2.5	PASS
		VN	-10	4.06	0.001621	± 2.5	PASS
		VN	0	4.66	0.001860	± 2.5	PASS
		VN	10	3.72	0.001485	± 2.5	PASS
		VN	20	4.97	0.001984	± 2.5	PASS
		VN	30	2.08	0.000830	± 2.5	PASS
		VN	40	2.53	0.001010	± 2.5	PASS
		VN	50	-0.26	-0.000104	± 2.5	PASS
	MCH	VN	-30	-1.67	-0.000659	± 2.5	PASS
		VN	-20	2.13	0.000840	± 2.5	PASS
		VN	-10	0.63	0.000249	± 2.5	PASS
		VN	0	1.34	0.000529	± 2.5	PASS

		VN	10	2.26	0.000892	± 2.5	PASS
		VN	20	3.02	0.001191	± 2.5	PASS
		VN	30	-1.71	-0.000675	± 2.5	PASS
		VN	40	1.44	0.000568	± 2.5	PASS
		VN	50	4.96	0.001957	± 2.5	PASS
	HCH	VN	-30	-0.4	-0.000156	± 2.5	PASS
		VN	-20	2.79	0.001088	± 2.5	PASS
		VN	-10	-0.95	-0.000370	± 2.5	PASS
		VN	0	4.06	0.001583	± 2.5	PASS
		VN	10	0.81	0.000316	± 2.5	PASS
		VN	20	0.89	0.000347	± 2.5	PASS
		VN	30	1.28	0.000499	± 2.5	PASS
		VN	40	2.37	0.000924	± 2.5	PASS
		VN	50	-0.26	-0.000101	± 2.5	PASS
		16QAM	LCH	VN	-30	3.81	0.001521
VN	-20			-0.35	-0.000140	± 2.5	PASS
VN	-10			0.5	0.000200	± 2.5	PASS
VN	0			1.9	0.000758	± 2.5	PASS
VN	10			1.81	0.000723	± 2.5	PASS
VN	20			-0.31	-0.000124	± 2.5	PASS
VN	30			-1.13	-0.000451	± 2.5	PASS
VN	40			1.09	0.000435	± 2.5	PASS
VN	50			-1.44	-0.000575	± 2.5	PASS
MCH	VN		-30	1.9	0.000750	± 2.5	PASS
	VN		-20	0.58	0.000229	± 2.5	PASS
	VN		-10	1.2	0.000473	± 2.5	PASS
	VN		0	3.28	0.001294	± 2.5	PASS
	VN		10	2.33	0.000919	± 2.5	PASS
	VN		20	3.22	0.001270	± 2.5	PASS
	VN		30	0.79	0.000312	± 2.5	PASS
	VN		40	4.15	0.001637	± 2.5	PASS
	VN		50	2.74	0.001081	± 2.5	PASS
HCH	VN		-30	-1.12	-0.000437	± 2.5	PASS
	VN		-20	0.44	0.000172	± 2.5	PASS
	VN		-10	-1.57	-0.000612	± 2.5	PASS
	VN		0	3.72	0.001450	± 2.5	PASS
	VN		10	0.93	0.000363	± 2.5	PASS
	VN		20	4.06	0.001583	± 2.5	PASS
	VN		30	0.05	0.000019	± 2.5	PASS
	VN		40	4.84	0.001887	± 2.5	PASS
	VN		50	-1.33	-0.000519	± 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	1.65	0.000658	± 2.5	PASS
		VN	TN	-1.81	-0.000722	± 2.5	PASS
		VH	TN	4.76	0.001898	± 2.5	PASS
	MCH	VL	TN	3.25	0.001282	± 2.5	PASS
		VN	TN	1.03	0.000406	± 2.5	PASS
		VH	TN	-0.9	-0.000355	± 2.5	PASS
	HCH	VL	TN	2.08	0.000812	± 2.5	PASS
		VN	TN	3.74	0.001460	± 2.5	PASS
		VH	TN	-1.87	-0.000730	± 2.5	PASS
16QAM	LCH	VL	TN	4.55	0.001815	± 2.5	PASS
		VN	TN	3.98	0.001587	± 2.5	PASS
		VH	TN	-1.92	-0.000766	± 2.5	PASS
	MCH	VL	TN	2.75	0.001085	± 2.5	PASS
		VN	TN	-0.07	-0.000028	± 2.5	PASS
		VH	TN	1.73	0.000682	± 2.5	PASS
	HCH	VL	TN	3.61	0.001409	± 2.5	PASS
		VN	TN	-1.71	-0.000667	± 2.5	PASS
		VH	TN	-1.27	-0.000496	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.17	0.000865	± 2.5	PASS
		VN	-20	2.13	0.000849	± 2.5	PASS
		VN	-10	0.21	0.000084	± 2.5	PASS
		VN	0	-0.65	-0.000259	± 2.5	PASS
		VN	10	1.64	0.000654	± 2.5	PASS
		VN	20	1.09	0.000435	± 2.5	PASS
		VN	30	1.9	0.000758	± 2.5	PASS
		VN	40	-1.45	-0.000578	± 2.5	PASS
		VN	50	3.04	0.001212	± 2.5	PASS
	MCH	VN	-30	3.96	0.001562	± 2.5	PASS
		VN	-20	4.06	0.001602	± 2.5	PASS
		VN	-10	4.1	0.001617	± 2.5	PASS
		VN	0	1.69	0.000667	± 2.5	PASS
		VN	10	3.85	0.001519	± 2.5	PASS
		VN	20	-1.7	-0.000671	± 2.5	PASS

		VN	30	1.55	0.000611	± 2.5	PASS
		VN	40	2.52	0.000994	± 2.5	PASS
		VN	50	4.01	0.001582	± 2.5	PASS
	HCH	VN	-30	-1.91	-0.000745	± 2.5	PASS
		VN	-20	1.62	0.000632	± 2.5	PASS
		VN	-10	3.39	0.001323	± 2.5	PASS
		VN	0	2.4	0.000937	± 2.5	PASS
		VN	10	3.63	0.001417	± 2.5	PASS
		VN	20	-1.95	-0.000761	± 2.5	PASS
		VN	30	-0.79	-0.000308	± 2.5	PASS
		VN	40	-0.61	-0.000238	± 2.5	PASS
		VN	50	1.15	0.000449	± 2.5	PASS
16QAM	LCH	VN	-30	-0.67	-0.000267	± 2.5	PASS
		VN	-20	-0.37	-0.000148	± 2.5	PASS
		VN	-10	-1.19	-0.000475	± 2.5	PASS
		VN	0	0.59	0.000235	± 2.5	PASS
		VN	10	1.96	0.000782	± 2.5	PASS
		VN	20	2.27	0.000905	± 2.5	PASS
		VN	30	-1.62	-0.000646	± 2.5	PASS
		VN	40	4.47	0.001783	± 2.5	PASS
		VN	50	-0.07	-0.000028	± 2.5	PASS
	MCH	VN	-30	-0.45	-0.000178	± 2.5	PASS
		VN	-20	-1.65	-0.000651	± 2.5	PASS
		VN	-10	3.88	0.001531	± 2.5	PASS
		VN	0	-0.87	-0.000343	± 2.5	PASS
		VN	10	-0.35	-0.000138	± 2.5	PASS
		VN	20	-0.73	-0.000288	± 2.5	PASS
		VN	30	2.01	0.000793	± 2.5	PASS
		VN	40	2.67	0.001053	± 2.5	PASS
		VN	50	4.53	0.001787	± 2.5	PASS
	HCH	VN	-30	4.28	0.001670	± 2.5	PASS
		VN	-20	-1.89	-0.000738	± 2.5	PASS
		VN	-10	0.16	0.000062	± 2.5	PASS
		VN	0	-0.85	-0.000332	± 2.5	PASS
		VN	10	1.39	0.000542	± 2.5	PASS
		VN	20	4.29	0.001674	± 2.5	PASS
		VN	30	4.07	0.001588	± 2.5	PASS
		VN	40	1.1	0.000429	± 2.5	PASS
		VN	50	1.43	0.000558	± 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	-0.24	-0.000096	± 2.5	PASS
		VN	TN	2.17	0.000865	± 2.5	PASS
		VH	TN	2.61	0.001040	± 2.5	PASS
	MCH	VL	TN	0.37	0.000146	± 2.5	PASS
		VN	TN	-0.57	-0.000225	± 2.5	PASS
		VH	TN	2.66	0.001049	± 2.5	PASS
	HCH	VL	TN	0.27	0.000105	± 2.5	PASS
		VN	TN	-0.96	-0.000375	± 2.5	PASS
		VH	TN	0.74	0.000289	± 2.5	PASS
16QAM	LCH	VL	TN	-0.66	-0.000263	± 2.5	PASS
		VN	TN	4.58	0.001825	± 2.5	PASS
		VH	TN	4.75	0.001892	± 2.5	PASS
	MCH	VL	TN	-0.07	-0.000028	± 2.5	PASS
		VN	TN	-1.12	-0.000442	± 2.5	PASS
		VH	TN	4.92	0.001941	± 2.5	PASS
	HCH	VL	TN	3.43	0.001340	± 2.5	PASS
		VN	TN	0.61	0.000238	± 2.5	PASS
		VH	TN	-0.82	-0.000320	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.59	0.001430	± 2.5	PASS
		VN	-20	-1.63	-0.000649	± 2.5	PASS
		VN	-10	-0.26	-0.000104	± 2.5	PASS
		VN	0	3.37	0.001343	± 2.5	PASS
		VN	10	0.36	0.000143	± 2.5	PASS
		VN	20	0.11	0.000044	± 2.5	PASS
		VN	30	4.8	0.001912	± 2.5	PASS
		VN	40	3.56	0.001418	± 2.5	PASS
		VN	50	-1.97	-0.000785	± 2.5	PASS
	MCH	VN	-30	1.95	0.000769	± 2.5	PASS
		VN	-20	-0.78	-0.000308	± 2.5	PASS
		VN	-10	-0.61	-0.000241	± 2.5	PASS
		VN	0	-1.61	-0.000635	± 2.5	PASS
		VN	10	-0.98	-0.000387	± 2.5	PASS
		VN	20	-0.96	-0.000379	± 2.5	PASS

		VN	30	2.29	0.000903	± 2.5	PASS
		VN	40	2.3	0.000907	± 2.5	PASS
		VN	50	-0.28	-0.000110	± 2.5	PASS
	HCH	VN	-30	1.53	0.000598	± 2.5	PASS
		VN	-20	-0.75	-0.000293	± 2.5	PASS
		VN	-10	0.24	0.000094	± 2.5	PASS
		VN	0	4.81	0.001879	± 2.5	PASS
		VN	10	4.36	0.001703	± 2.5	PASS
		VN	20	3.49	0.001363	± 2.5	PASS
		VN	30	1.39	0.000543	± 2.5	PASS
		VN	40	4.84	0.001891	± 2.5	PASS
		VN	50	-1.71	-0.000668	± 2.5	PASS
16QAM	LCH	VN	-30	-1.51	-0.000602	± 2.5	PASS
		VN	-20	2.69	0.001072	± 2.5	PASS
		VN	-10	1.01	0.000402	± 2.5	PASS
		VN	0	-1.79	-0.000713	± 2.5	PASS
		VN	10	0.82	0.000327	± 2.5	PASS
		VN	20	3.78	0.001506	± 2.5	PASS
		VN	30	0.07	0.000028	± 2.5	PASS
		VN	40	3.04	0.001211	± 2.5	PASS
		VN	50	-1	-0.000398	± 2.5	PASS
	MCH	VN	-30	1.82	0.000718	± 2.5	PASS
		VN	-20	1.02	0.000402	± 2.5	PASS
		VN	-10	3.59	0.001416	± 2.5	PASS
		VN	0	3.22	0.001270	± 2.5	PASS
		VN	10	2.61	0.001030	± 2.5	PASS
		VN	20	1.79	0.000706	± 2.5	PASS
		VN	30	-1.4	-0.000552	± 2.5	PASS
		VN	40	-0.09	-0.000036	± 2.5	PASS
		VN	50	3.15	0.001243	± 2.5	PASS
	HCH	VN	-30	0.03	0.000012	± 2.5	PASS
		VN	-20	2.34	0.000914	± 2.5	PASS
		VN	-10	0.87	0.000340	± 2.5	PASS
		VN	0	3.56	0.001391	± 2.5	PASS
		VN	10	2.2	0.000859	± 2.5	PASS
		VN	20	-1.65	-0.000645	± 2.5	PASS
		VN	30	0.82	0.000320	± 2.5	PASS
		VN	40	4.78	0.001867	± 2.5	PASS
		VN	50	1.3	0.000508	± 2.5	PASS