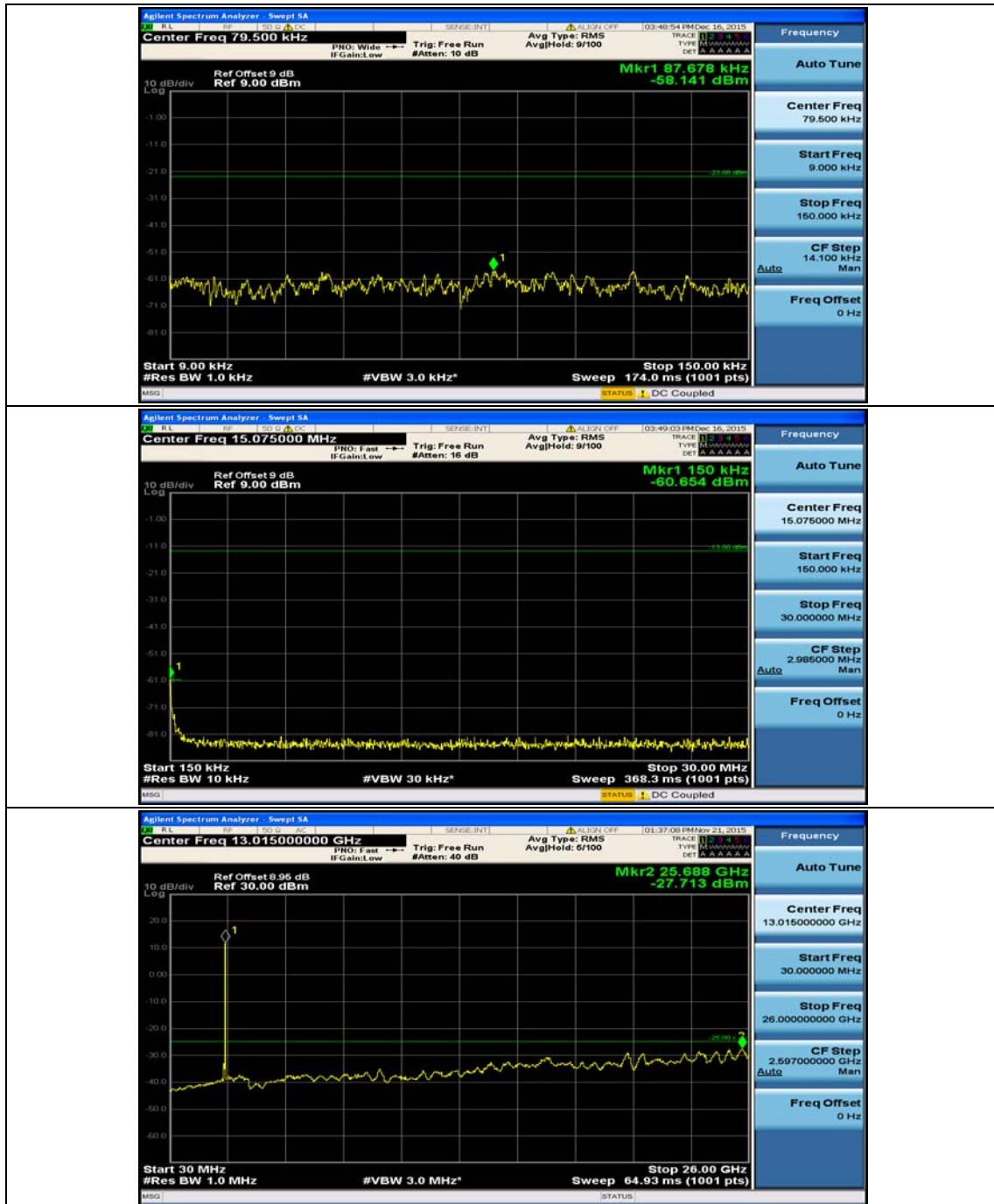
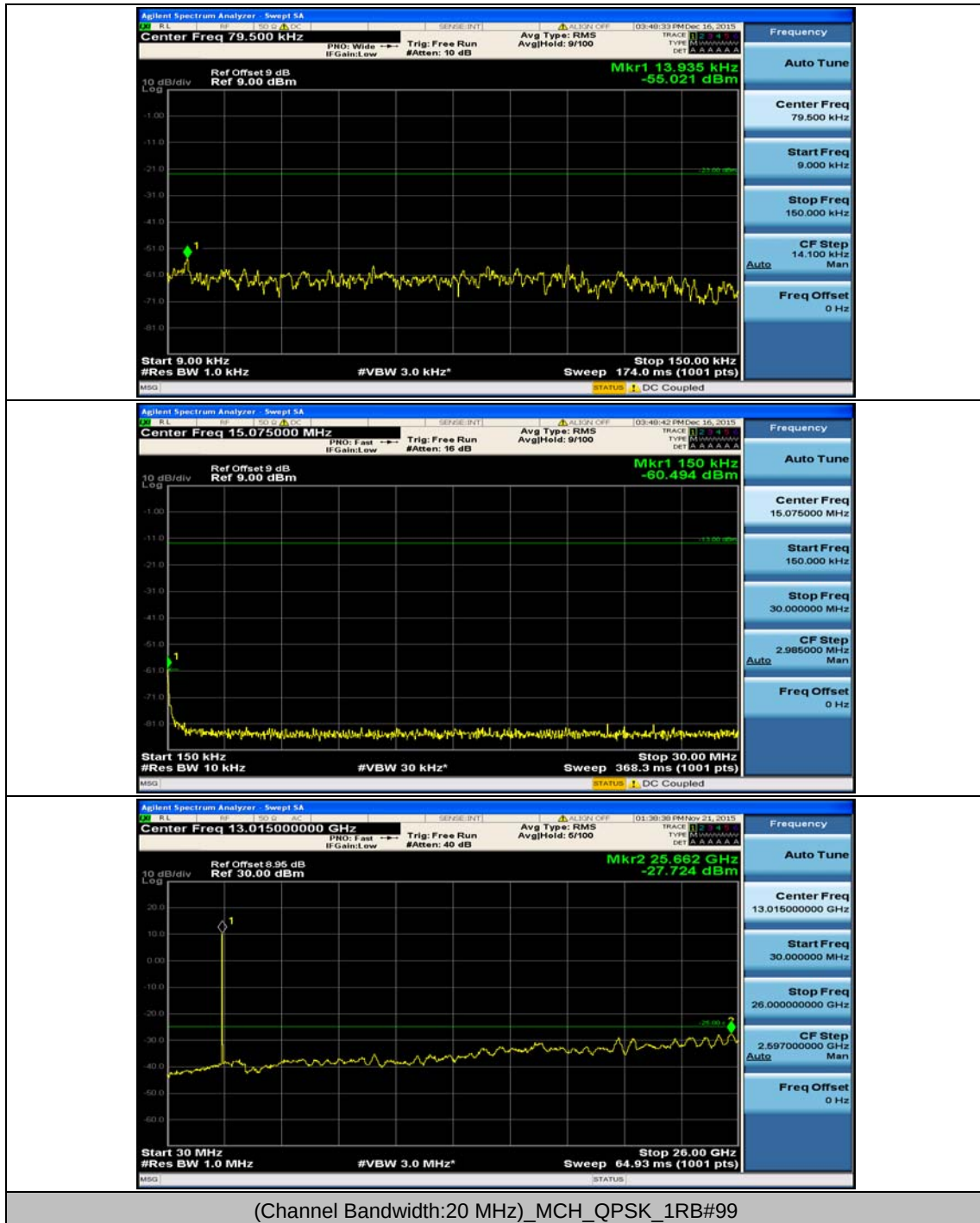


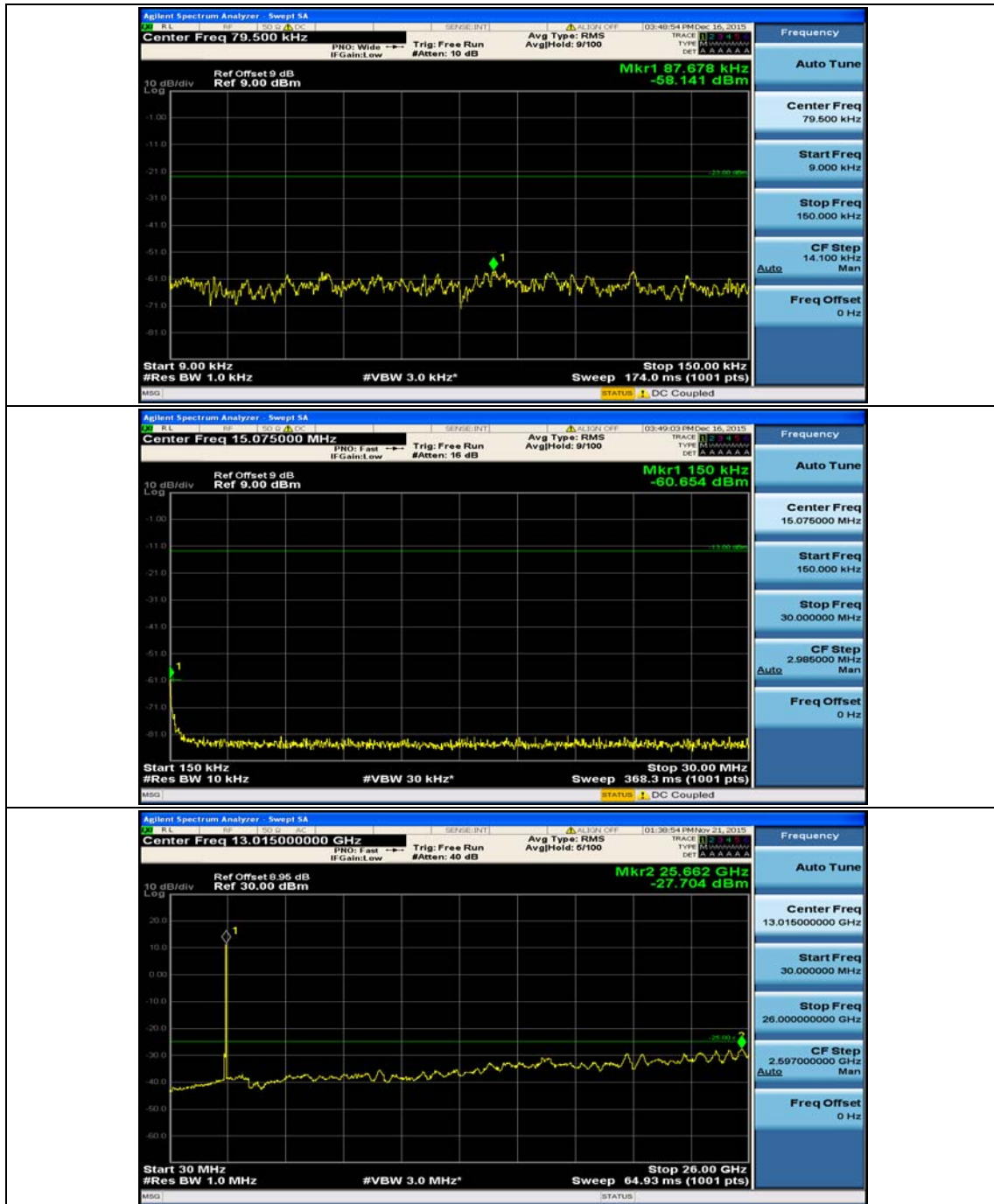


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

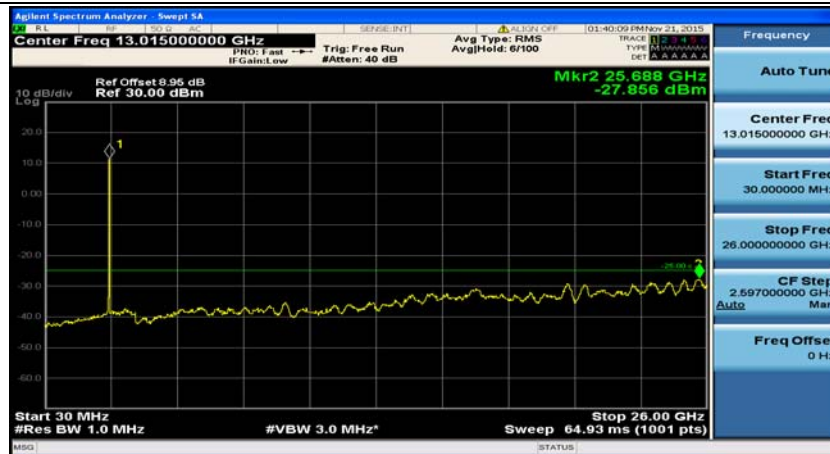


(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

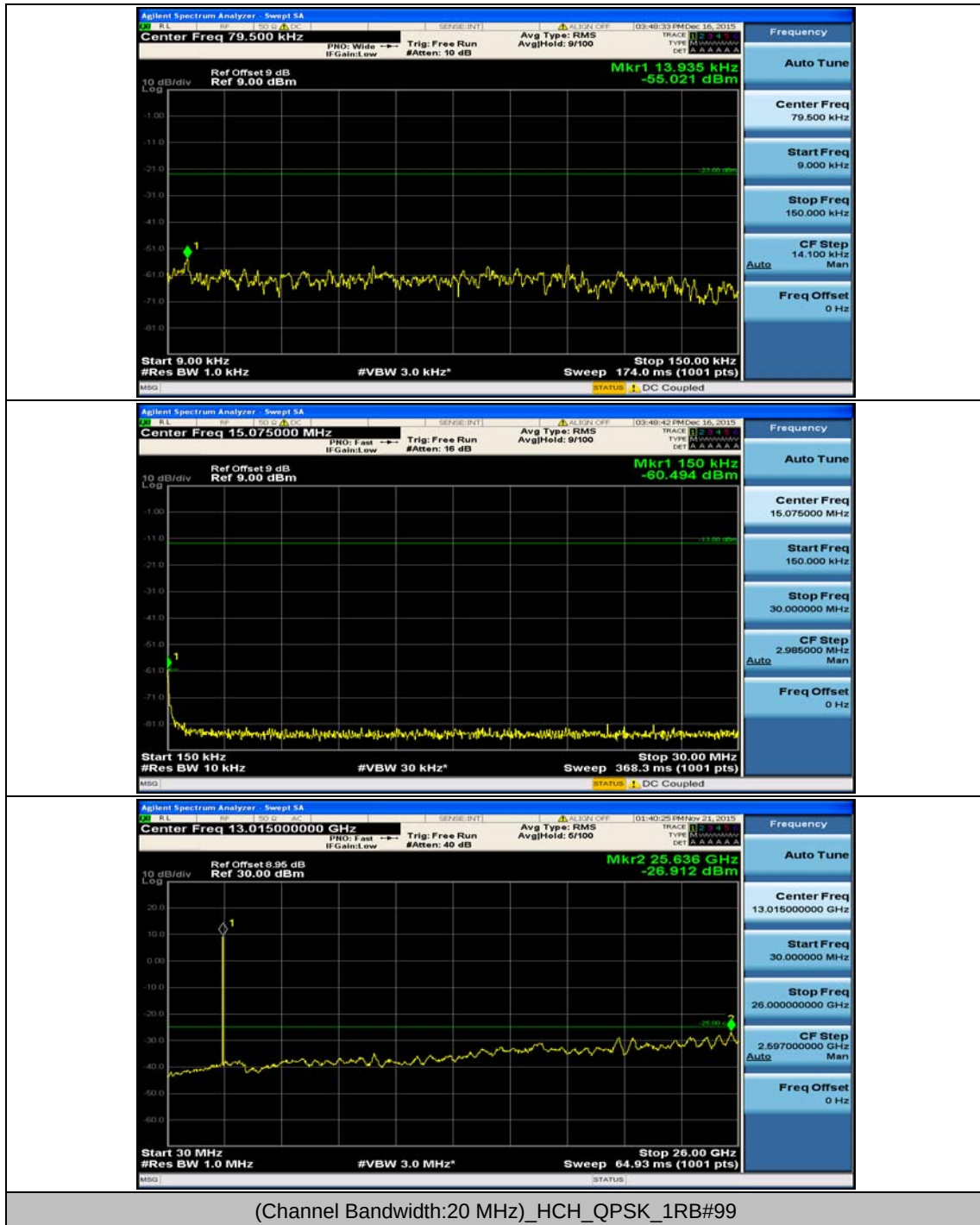


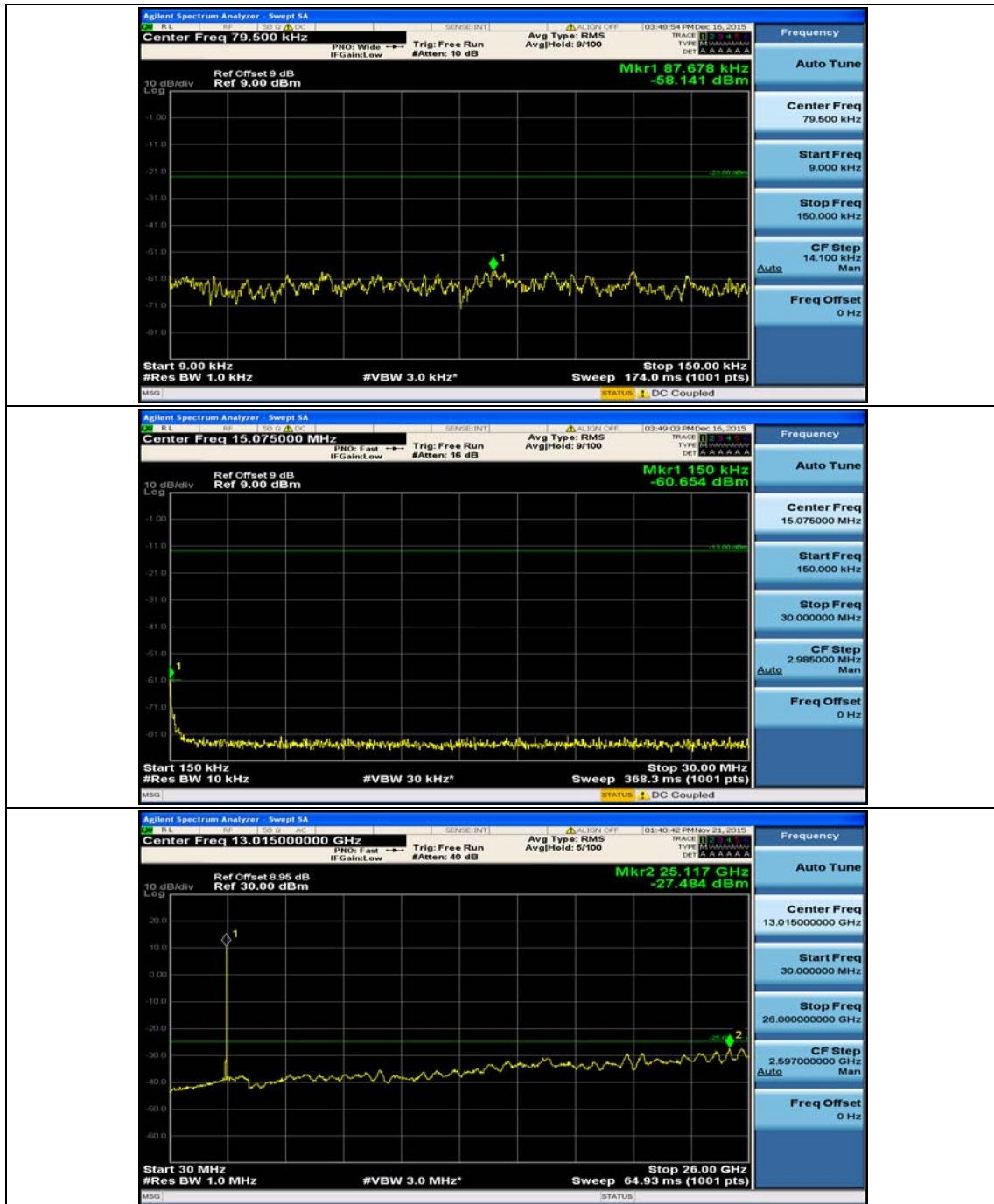


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

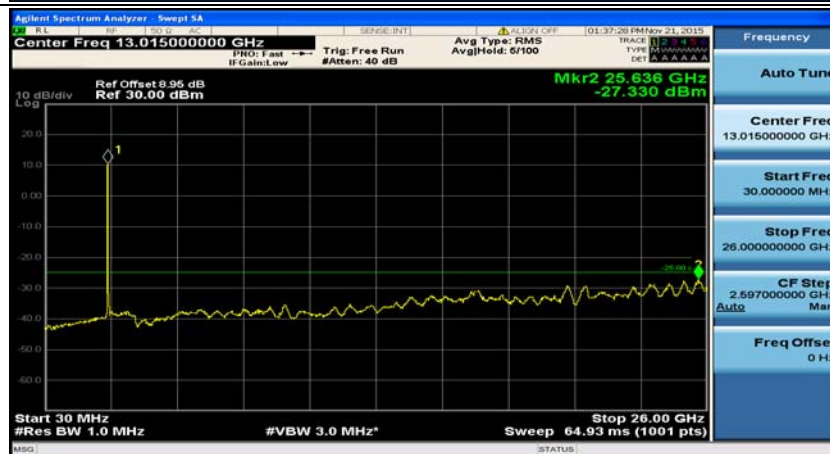


(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

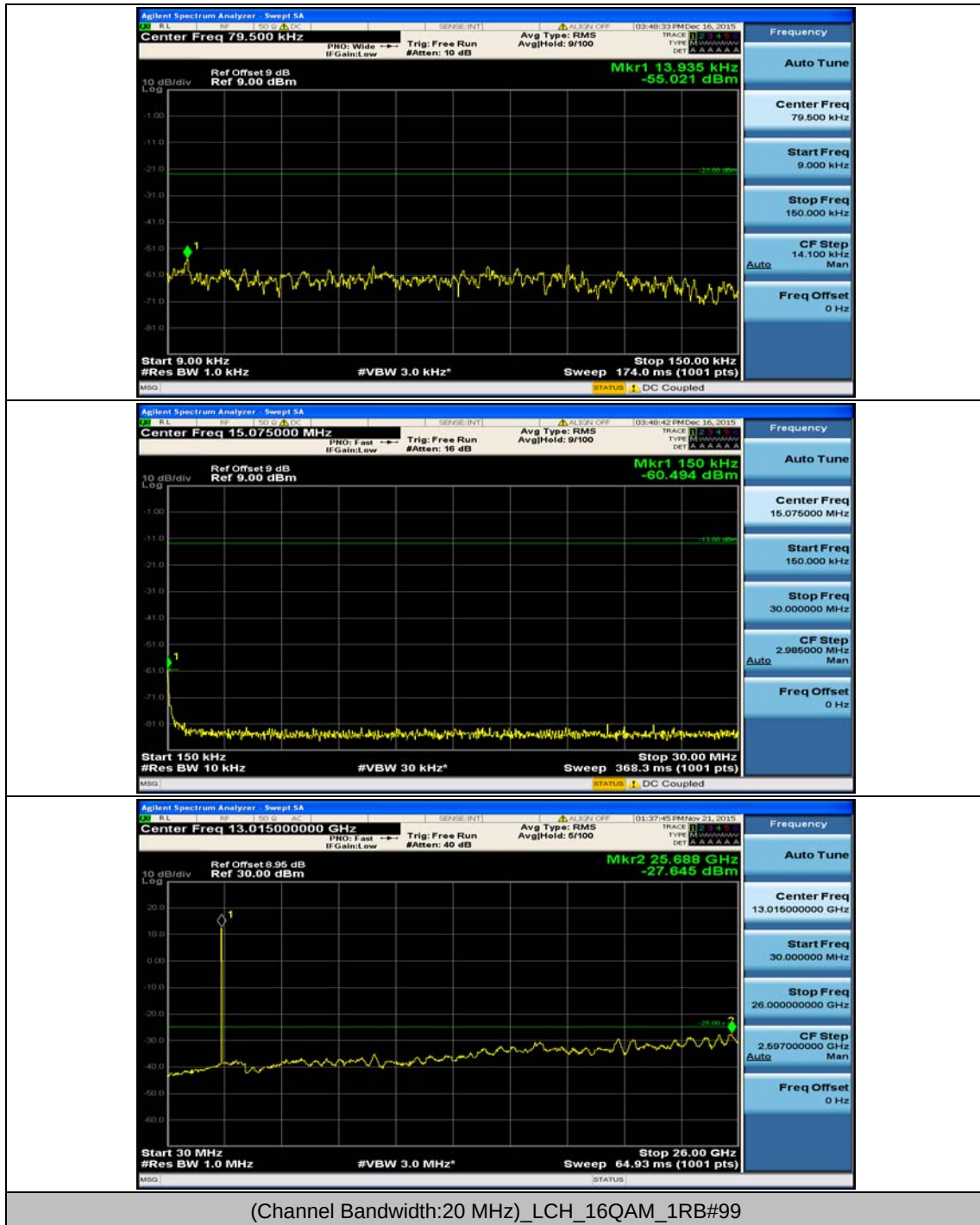


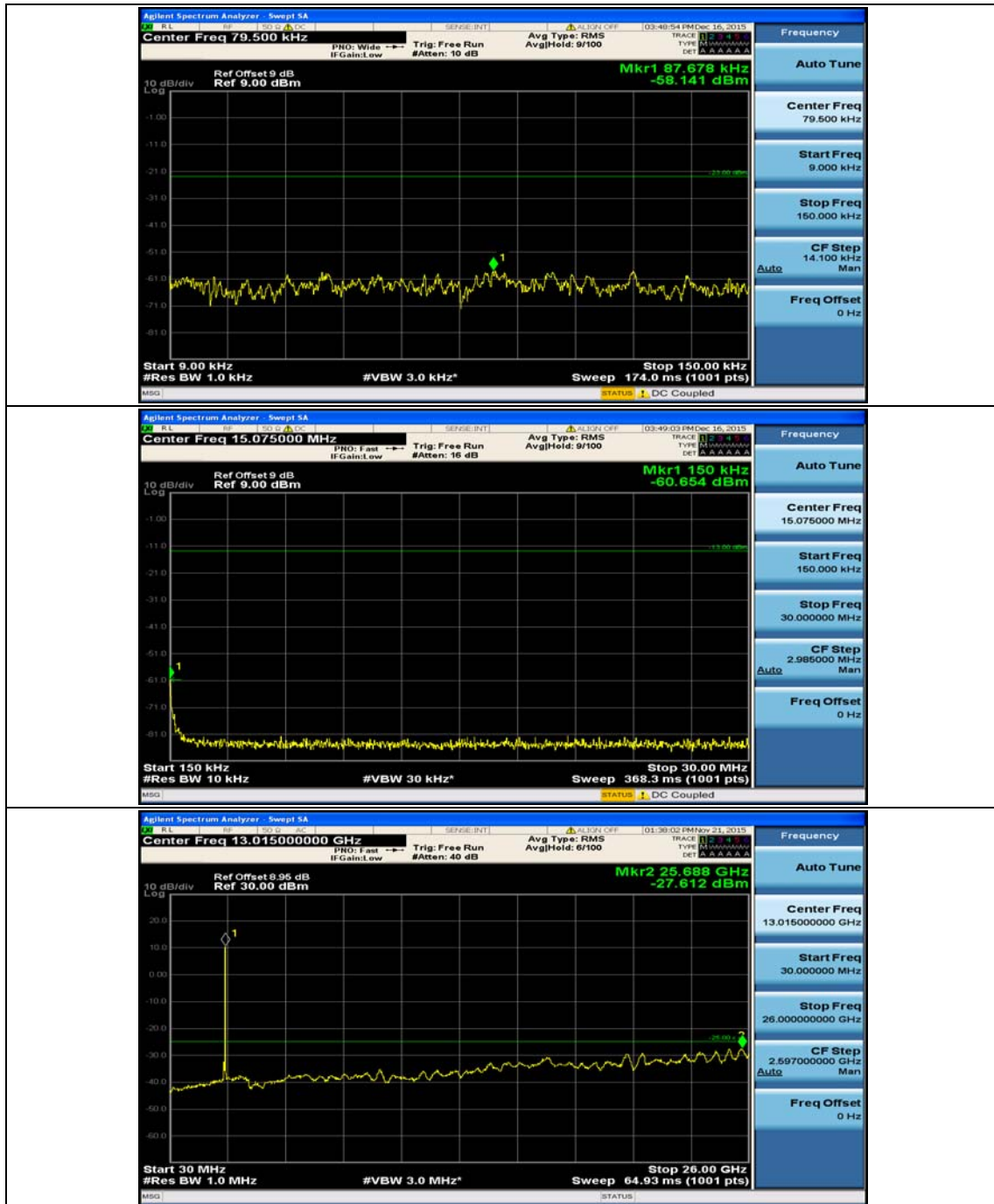


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

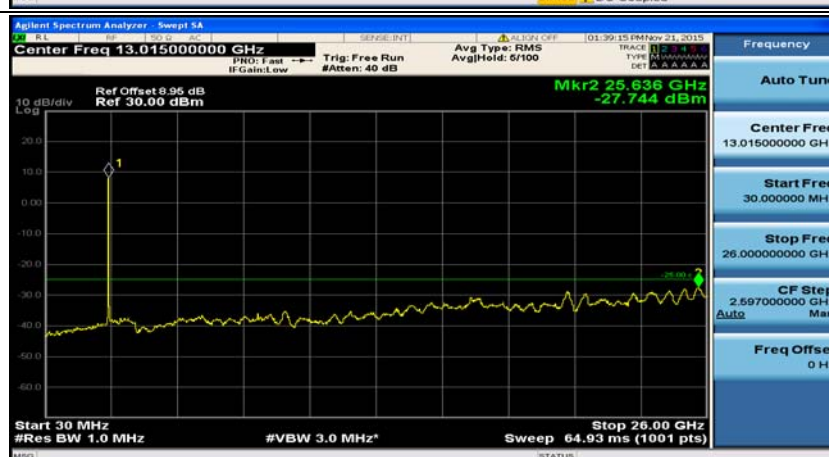
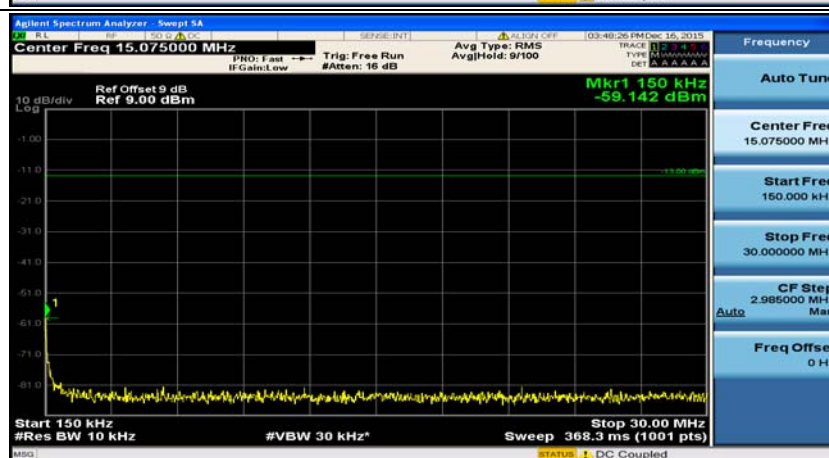
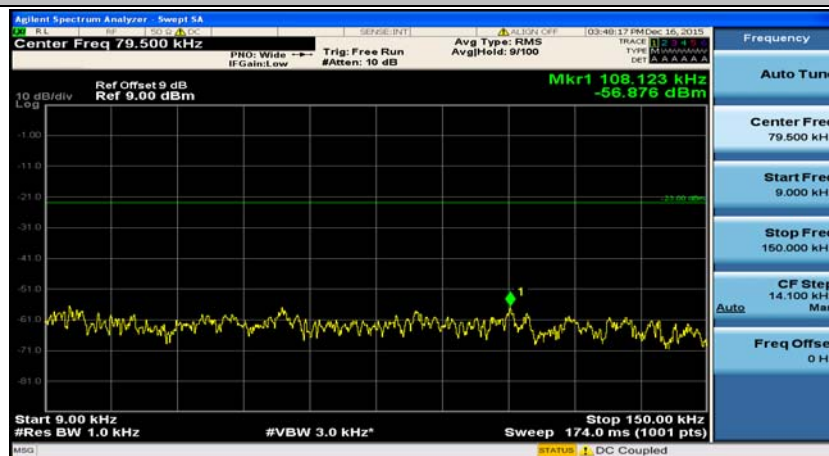


(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

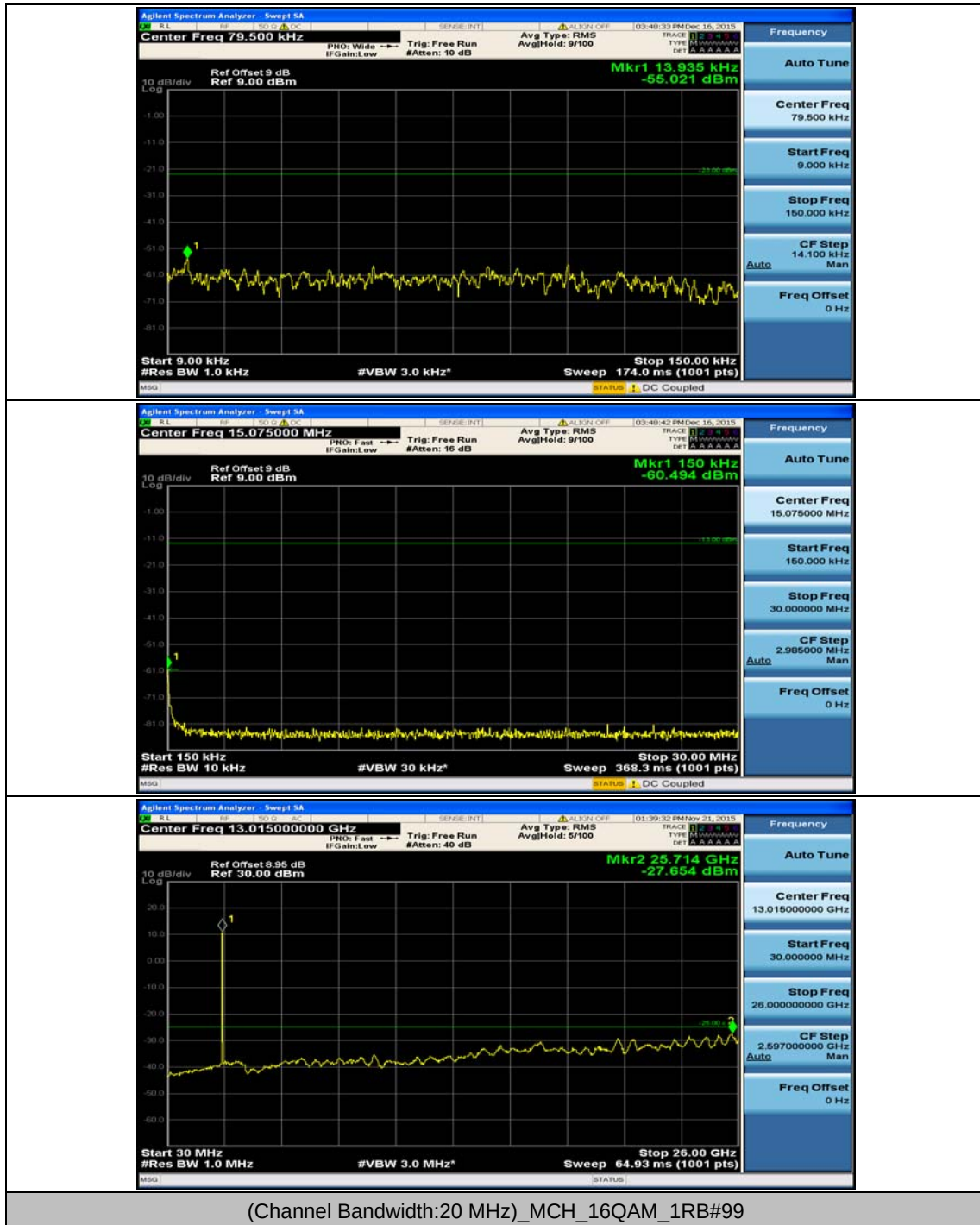


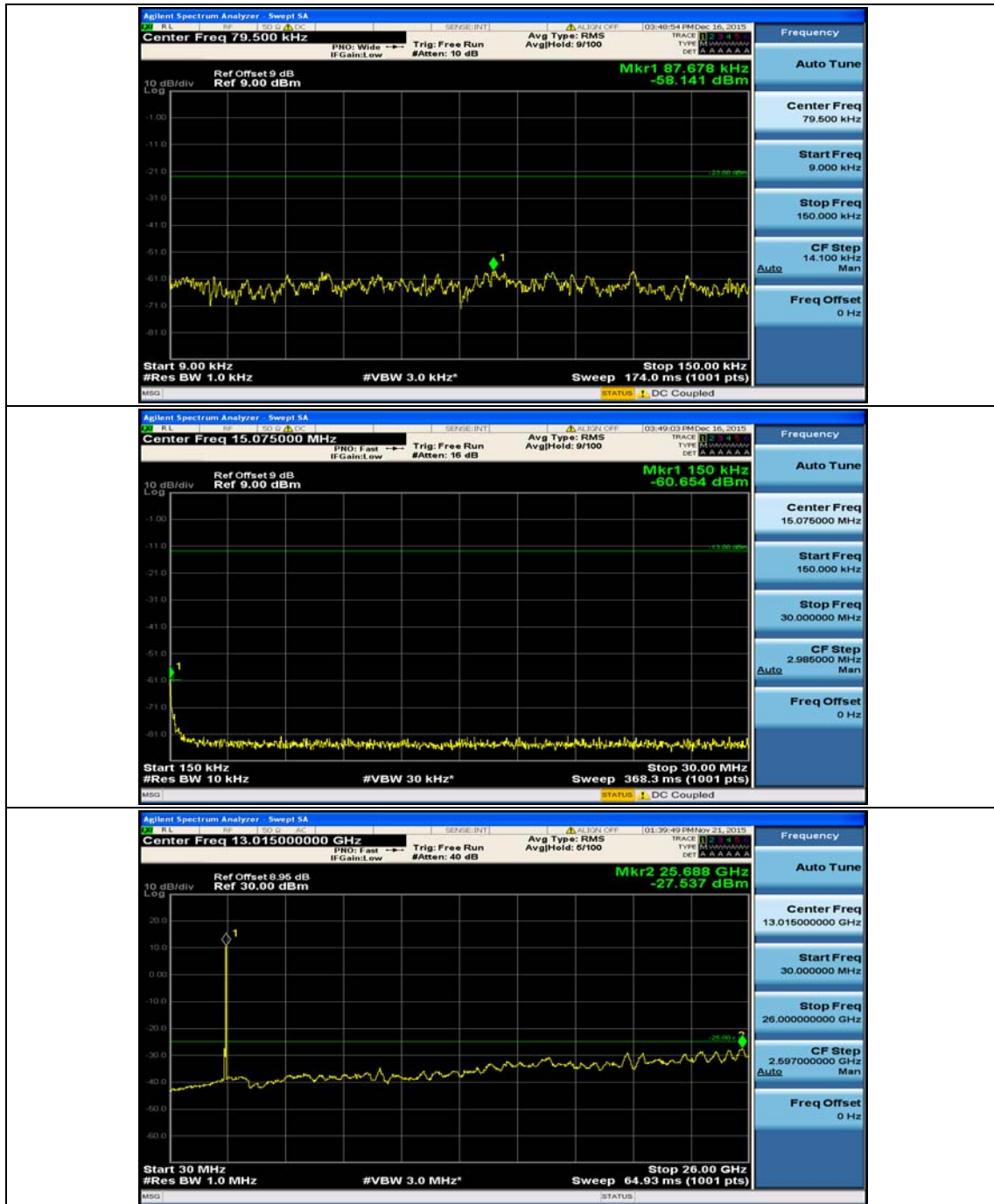


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

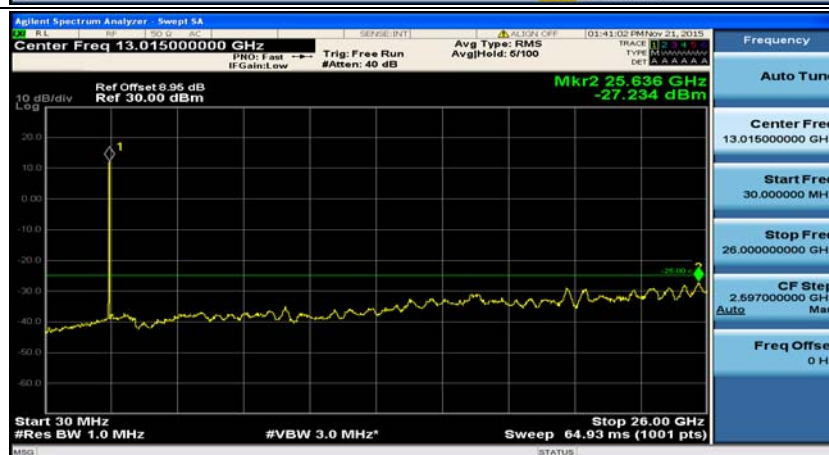
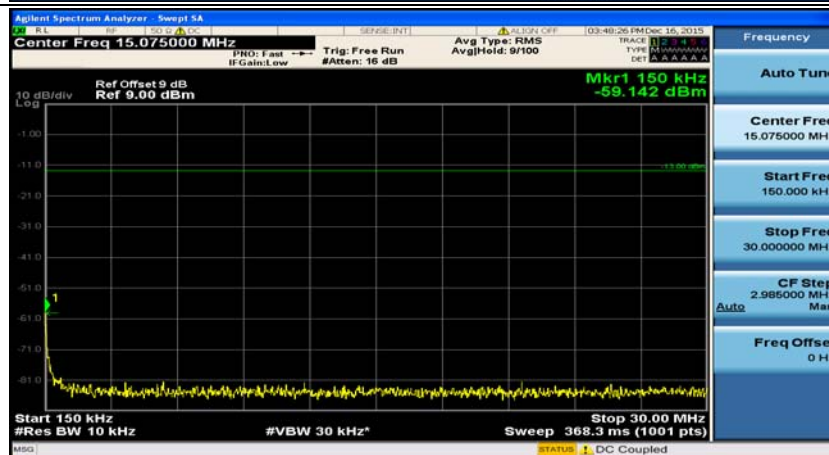


(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

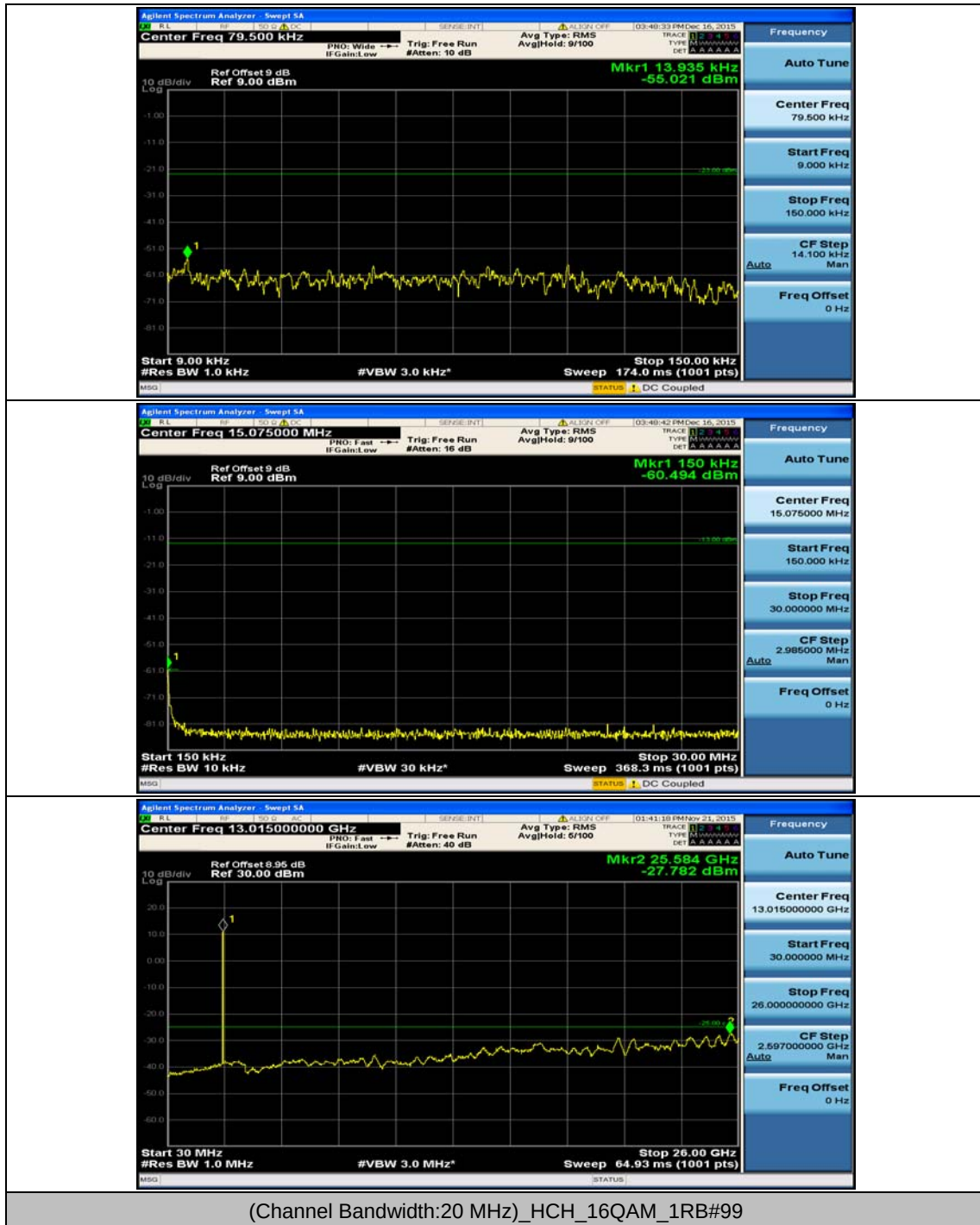


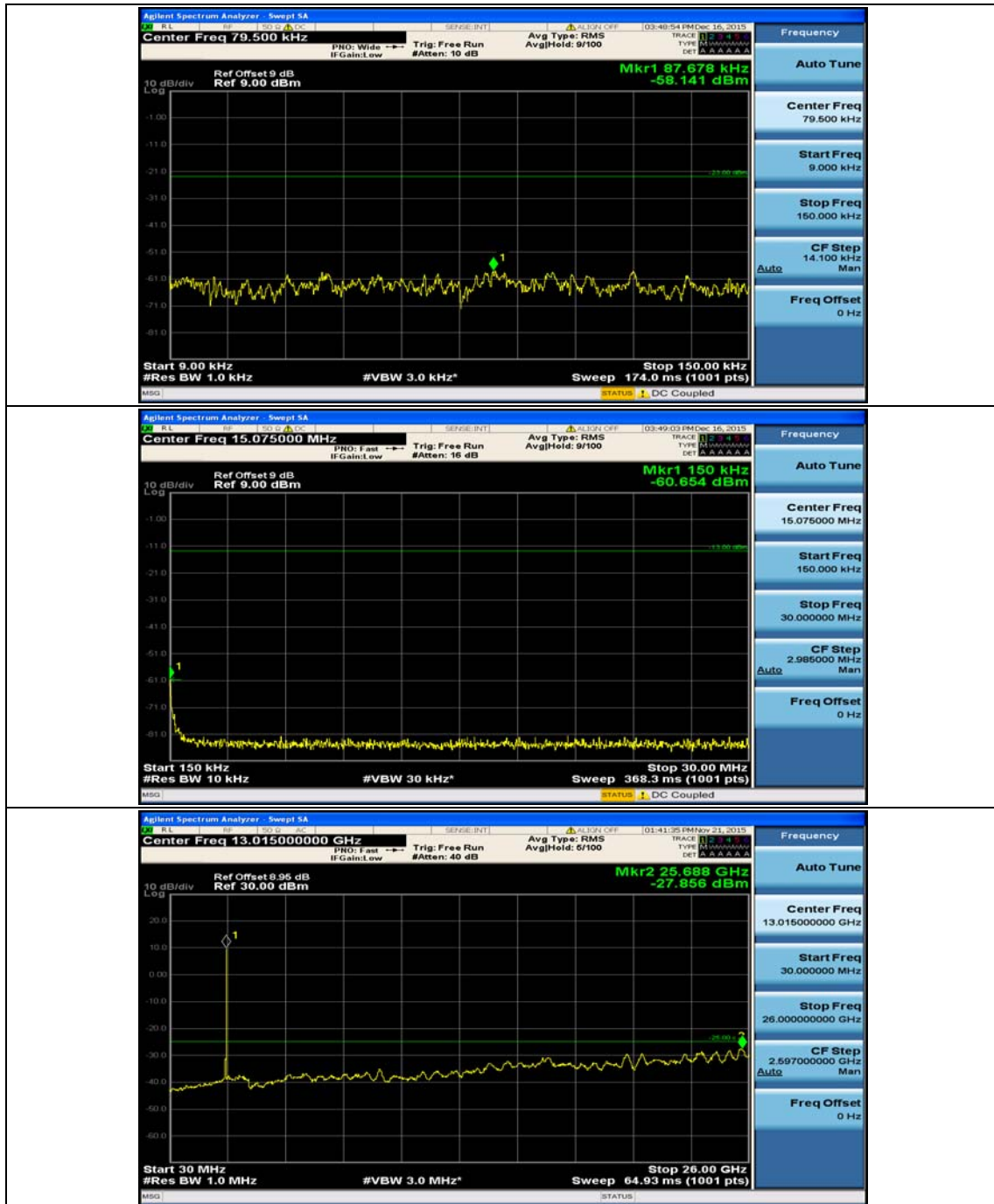


(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(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	1.50	0.000600	± 2.5	PASS
		VN	TN	1.50	0.000600	± 2.5	PASS
		VH	TN	1.50	0.000600	± 2.5	PASS
	MCH	VL	TN	1.50	0.000600	± 2.5	PASS
		VN	TN	1.73	0.000683	± 2.5	PASS
		VH	TN	1.73	0.000683	± 2.5	PASS
	HCH	VL	TN	1.73	0.000683	± 2.5	PASS
		VN	TN	0.73	0.000284	± 2.5	PASS
		VH	TN	0.73	0.000284	± 2.5	PASS
16QAM	LCH	VL	TN	1.76	0.000703	± 2.5	PASS
		VN	TN	1.76	0.000703	± 2.5	PASS
		VH	TN	0.87	0.000344	± 2.5	PASS
	MCH	VL	TN	0.87	0.000344	± 2.5	PASS
		VN	TN	0.87	0.000344	± 2.5	PASS
		VH	TN	0.87	0.000344	± 2.5	PASS
	HCH	VL	TN	0.03	0.000011	± 2.5	PASS
		VN	TN	0.03	0.000011	± 2.5	PASS
		VH	TN	0.03	0.000011	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.32	0.001326	± 2.5	PASS
		VN	-20	3.32	0.001326	± 2.5	PASS
		VN	-10	3.32	0.001326	± 2.5	PASS
		VN	0	3.32	0.001326	± 2.5	PASS
		VN	10	3.32	0.001326	± 2.5	PASS
		VN	20	3.32	0.001326	± 2.5	PASS
		VN	30	1.85	0.000737	± 2.5	PASS
		VN	40	-0.33	-0.000131	± 2.5	PASS
		VN	50	2.49	0.000995	± 2.5	PASS
	MCH	VN	-30	2.49	0.000995	± 2.5	PASS
		VN	-20	2.49	0.000995	± 2.5	PASS
		VN	-10	2.49	0.000995	± 2.5	PASS
		VN	0	2.49	0.000995	± 2.5	PASS

		VN	10	1.43	0.000564	± 2.5	PASS
		VN	20	1.43	0.000564	± 2.5	PASS
		VN	30	0.29	0.000113	± 2.5	PASS
		VN	40	2.12	0.000835	± 2.5	PASS
		VN	50	0.27	0.000107	± 2.5	PASS
	HCH	VN	-30	0.27	0.000107	± 2.5	PASS
		VN	-20	0.27	0.000107	± 2.5	PASS
		VN	-10	0.27	0.000107	± 2.5	PASS
		VN	0	-0.21	-0.000084	± 2.5	PASS
		VN	10	-0.21	-0.000084	± 2.5	PASS
		VN	20	-0.21	-0.000084	± 2.5	PASS
		VN	30	-0.17	-0.000067	± 2.5	PASS
		VN	40	1.56	0.000607	± 2.5	PASS
		VN	50	0.16	0.000061	± 2.5	PASS
16QAM	LCH	VN	-30	0.16	0.000061	± 2.5	PASS
		VN	-20	0.16	0.000061	± 2.5	PASS
		VN	-10	0.16	0.000061	± 2.5	PASS
		VN	0	0.16	0.000061	± 2.5	PASS
		VN	10	0.16	0.000061	± 2.5	PASS
		VN	20	0.64	0.000257	± 2.5	PASS
		VN	30	2.22	0.000886	± 2.5	PASS
		VN	40	-1.16	-0.000463	± 2.5	PASS
		VN	50	0.47	0.000189	± 2.5	PASS
	MCH	VN	-30	0.47	0.000189	± 2.5	PASS
		VN	-20	0.47	0.000189	± 2.5	PASS
		VN	-10	0.47	0.000189	± 2.5	PASS
		VN	0	0.47	0.000189	± 2.5	PASS
		VN	10	0.47	0.000189	± 2.5	PASS
		VN	20	1.36	0.000536	± 2.5	PASS
		VN	30	0.73	0.000288	± 2.5	PASS
		VN	40	-0.43	-0.000169	± 2.5	PASS
		VN	50	3.50	0.001383	± 2.5	PASS
	HCH	VN	-30	3.50	0.001383	± 2.5	PASS
		VN	-20	3.50	0.001383	± 2.5	PASS
		VN	-10	3.50	0.001383	± 2.5	PASS
		VN	0	3.50	0.001383	± 2.5	PASS
		VN	10	-0.44	-0.000173	± 2.5	PASS
		VN	20	-0.44	-0.000173	± 2.5	PASS
		VN	30	0.31	0.000123	± 2.5	PASS
		VN	40	0.86	0.000334	± 2.5	PASS
		VN	50	1.37	0.000535	± 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	1.59	0.000634	± 2.5	PASS

		VN	TN	1.59	0.000634	± 2.5	PASS
		VH	TN	1.66	0.000655	± 2.5	PASS
	MCH	VL	TN	1.66	0.000655	± 2.5	PASS
		VN	TN	1.66	0.000655	± 2.5	PASS
		VH	TN	1.66	0.000655	± 2.5	PASS
	HCH	VL	TN	1.66	0.000655	± 2.5	PASS
		VN	TN	1.65	0.000641	± 2.5	PASS
		VH	TN	1.65	0.000641	± 2.5	PASS
16QAM	LCH	VL	TN	1.65	0.000641	± 2.5	PASS
		VN	TN	-0.59	-0.000234	± 2.5	PASS
		VH	TN	-0.59	-0.000234	± 2.5	PASS
	MCH	VL	TN	-0.59	-0.000234	± 2.5	PASS
		VN	TN	1.16	0.000457	± 2.5	PASS
		VH	TN	1.16	0.000457	± 2.5	PASS
	HCH	VL	TN	1.16	0.000457	± 2.5	PASS
		VN	TN	4.32	0.001684	± 2.5	PASS
VH		TN	4.32	0.001684	± 2.5	PASS	
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	4.32	0.001684	± 2.5	PASS
		VN	-20	4.32	0.001684	± 2.5	PASS
		VN	-10	4.32	0.001684	± 2.5	PASS
		VN	0	4.32	0.001684	± 2.5	PASS
		VN	10	4.32	0.001684	± 2.5	PASS
		VN	20	2.56	0.001022	± 2.5	PASS
		VN	30	2.73	0.001091	± 2.5	PASS
		VN	40	1.16	0.000463	± 2.5	PASS
		VN	50	2.17	0.000868	± 2.5	PASS
	MCH	VN	-30	2.17	0.000868	± 2.5	PASS
		VN	-20	2.17	0.000868	± 2.5	PASS
		VN	-10	2.17	0.000868	± 2.5	PASS
		VN	0	2.17	0.000868	± 2.5	PASS
		VN	10	1.86	0.000734	± 2.5	PASS
		VN	20	1.86	0.000734	± 2.5	PASS
		VN	30	1.04	0.000412	± 2.5	PASS
		VN	40	0.94	0.000372	± 2.5	PASS
		VN	50	0.73	0.000288	± 2.5	PASS
	HCH	VN	-30	0.73	0.000288	± 2.5	PASS
		VN	-20	0.73	0.000288	± 2.5	PASS
		VN	-10	0.73	0.000288	± 2.5	PASS
		VN	0	0.73	0.000288	± 2.5	PASS
		VN	10	2.75	0.001071	± 2.5	PASS
		VN	20	2.75	0.001071	± 2.5	PASS
		VN	30	3.49	0.001361	± 2.5	PASS
		VN	40	2.95	0.001149	± 2.5	PASS
		VN	50	2.39	0.000931	± 2.5	PASS
QPSK	LCH	VN	-30	2.39	0.000931	± 2.5	PASS
		VN	-20	2.39	0.000931	± 2.5	PASS
		VN	-10	2.39	0.000931	± 2.5	PASS

		VN	0	2.39	0.000931	± 2.5	PASS
		VN	10	0.29	0.000114	± 2.5	PASS
		VN	20	0.29	0.000114	± 2.5	PASS
		VN	30	0.86	0.000343	± 2.5	PASS
		VN	40	1.87	0.000748	± 2.5	PASS
		VN	50	0.17	0.000069	± 2.5	PASS
	MCH	VN	-30	0.17	0.000069	± 2.5	PASS
		VN	-20	0.17	0.000069	± 2.5	PASS
		VN	-10	0.17	0.000069	± 2.5	PASS
		VN	0	0.17	0.000069	± 2.5	PASS
		VN	10	2.02	0.000796	± 2.5	PASS
		VN	20	2.02	0.000796	± 2.5	PASS
		VN	30	0.31	0.000124	± 2.5	PASS
		VN	40	-0.43	-0.000169	± 2.5	PASS
		VN	50	-0.07	-0.000028	± 2.5	PASS
	HCH	VN	-30	-0.07	-0.000028	± 2.5	PASS
		VN	-20	-0.07	-0.000028	± 2.5	PASS
		VN	-10	-0.07	-0.000028	± 2.5	PASS
		VN	0	-0.07	-0.000028	± 2.5	PASS
		VN	10	-0.07	-0.000028	± 2.5	PASS
		VN	20	1.82	0.000708	± 2.5	PASS
		VN	30	2.90	0.001132	± 2.5	PASS
		VN	40	1.16	0.000452	± 2.5	PASS
		VN	50	3.22	0.001255	± 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	-0.13	-0.000051	± 2.5	PASS
		VN	TN	-0.13	-0.000051	± 2.5	PASS
		VH	TN	-0.13	-0.000051	± 2.5	PASS
	MCH	VL	TN	-0.13	-0.000051	± 2.5	PASS
		VN	TN	0.39	0.000152	± 2.5	PASS
		VH	TN	0.39	0.000152	± 2.5	PASS
	HCH	VL	TN	0.39	0.000152	± 2.5	PASS
		VN	TN	2.25	0.000876	± 2.5	PASS
		VH	TN	2.25	0.000876	± 2.5	PASS
16QAM	LCH	VL	TN	2.25	0.000876	± 2.5	PASS
		VN	TN	0.21	0.000086	± 2.5	PASS
		VH	TN	0.21	0.000086	± 2.5	PASS
	MCH	VL	TN	0.21	0.000086	± 2.5	PASS
		VN	TN	-0.16	-0.000062	± 2.5	PASS
		VH	TN	-0.16	-0.000062	± 2.5	PASS
	HCH	VL	TN	-0.16	-0.000062	± 2.5	PASS
		VN	TN	1.60	0.000625	± 2.5	PASS
		VH	TN	1.60	0.000625	± 2.5	PASS

Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.89	0.000354	± 2.5	PASS
		VN	-20	0.89	0.000354	± 2.5	PASS
		VN	-10	0.89	0.000354	± 2.5	PASS
		VN	0	0.89	0.000354	± 2.5	PASS
		VN	10	0.89	0.000354	± 2.5	PASS
		VN	20	0.89	0.000354	± 2.5	PASS
		VN	30	0.37	0.000148	± 2.5	PASS
		VN	40	-0.20	-0.000080	± 2.5	PASS
		VN	50	1.37	0.000548	± 2.5	PASS
	MCH	VN	-30	1.37	0.000548	± 2.5	PASS
		VN	-20	1.37	0.000548	± 2.5	PASS
		VN	-10	1.37	0.000548	± 2.5	PASS
		VN	0	1.37	0.000548	± 2.5	PASS
		VN	10	1.47	0.000581	± 2.5	PASS
		VN	20	1.47	0.000581	± 2.5	PASS
		VN	30	2.15	0.000846	± 2.5	PASS
		VN	40	0.47	0.000186	± 2.5	PASS
		VN	50	0.89	0.000350	± 2.5	PASS
	HCH	VN	-30	0.89	0.000350	± 2.5	PASS
		VN	-20	0.89	0.000350	± 2.5	PASS
		VN	-10	0.89	0.000350	± 2.5	PASS
		VN	0	1.44	0.000564	± 2.5	PASS
		VN	10	1.44	0.000564	± 2.5	PASS
		VN	20	1.44	0.000564	± 2.5	PASS
		VN	30	1.24	0.000486	± 2.5	PASS
		VN	40	0.93	0.000363	± 2.5	PASS
		VN	50	3.02	0.001178	± 2.5	PASS
QPSK	LCH	VN	-30	3.02	0.001178	± 2.5	PASS
		VN	-20	3.02	0.001178	± 2.5	PASS
		VN	-10	3.02	0.001178	± 2.5	PASS
		VN	0	0.79	0.000314	± 2.5	PASS
		VN	10	0.79	0.000314	± 2.5	PASS
		VN	20	0.79	0.000314	± 2.5	PASS
		VN	30	0.31	0.000126	± 2.5	PASS
		VN	40	1.03	0.000411	± 2.5	PASS
		VN	50	0.23	0.000091	± 2.5	PASS
	MCH	VN	-30	0.23	0.000091	± 2.5	PASS
		VN	-20	0.23	0.000091	± 2.5	PASS
		VN	-10	0.23	0.000091	± 2.5	PASS
		VN	0	0.23	0.000091	± 2.5	PASS
		VN	10	1.00	0.000395	± 2.5	PASS
		VN	20	1.00	0.000395	± 2.5	PASS
		VN	30	0.53	0.000209	± 2.5	PASS
		VN	40	0.66	0.000260	± 2.5	PASS
		VN	50	0.76	0.000299	± 2.5	PASS
	HCH	VN	-30	0.76	0.000299	± 2.5	PASS
		VN	-20	0.76	0.000299	± 2.5	PASS

		VN	-10	0.76	0.000299	± 2.5	PASS
		VN	0	1.20	0.000469	± 2.5	PASS
		VN	10	1.20	0.000469	± 2.5	PASS
		VN	20	1.20	0.000469	± 2.5	PASS
		VN	30	1.06	0.000413	± 2.5	PASS
		VN	40	2.30	0.000899	± 2.5	PASS
		VN	50	1.83	0.000715	± 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	2.66	0.001060	± 2.5	PASS
		VN	TN	2.66	0.001060	± 2.5	PASS
		VH	TN	2.66	0.001060	± 2.5	PASS
	MCH	VL	TN	0.51	0.000203	± 2.5	PASS
		VN	TN	0.51	0.000203	± 2.5	PASS
		VH	TN	0.51	0.000203	± 2.5	PASS
	HCH	VL	TN	1.27	0.000497	± 2.5	PASS
		VN	TN	1.27	0.000497	± 2.5	PASS
		VH	TN	1.27	0.000497	± 2.5	PASS
16QAM	LCH	VL	TN	3.36	0.001339	± 2.5	PASS
		VN	TN	3.36	0.001339	± 2.5	PASS
		VH	TN	3.36	0.001339	± 2.5	PASS
	MCH	VL	TN	1.42	0.000559	± 2.5	PASS
		VN	TN	1.42	0.000559	± 2.5	PASS
		VH	TN	1.42	0.000559	± 2.5	PASS
	HCH	VL	TN	1.42	0.000559	± 2.5	PASS
		VN	TN	1.42	0.000559	± 2.5	PASS
		VH	TN	1.42	0.000559	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.98	0.001185	± 2.5	PASS
		VN	-20	2.98	0.001185	± 2.5	PASS
		VN	-10	2.98	0.001185	± 2.5	PASS
		VN	0	2.98	0.001185	± 2.5	PASS
		VN	10	2.98	0.001185	± 2.5	PASS
		VN	20	2.98	0.001185	± 2.5	PASS
		VN	30	2.32	0.000923	± 2.5	PASS
		VN	40	2.68	0.001066	± 2.5	PASS
		VN	50	3.29	0.001311	± 2.5	PASS
	MCH	VN	-30	3.29	0.001311	± 2.5	PASS
		VN	-20	3.29	0.001311	± 2.5	PASS
		VN	-10	3.29	0.001311	± 2.5	PASS
		VN	0	3.29	0.001311	± 2.5	PASS
		VN	10	3.29	0.001311	± 2.5	PASS

		VN	20	0.34	0.000135	± 2.5	PASS
		VN	30	0.11	0.000045	± 2.5	PASS
		VN	40	1.09	0.000429	± 2.5	PASS
		VN	50	0.77	0.000305	± 2.5	PASS
	HCH	VN	-30	0.77	0.000305	± 2.5	PASS
		VN	-20	0.77	0.000305	± 2.5	PASS
		VN	-10	0.77	0.000305	± 2.5	PASS
		VN	0	0.77	0.000305	± 2.5	PASS
		VN	10	0.97	0.000380	± 2.5	PASS
		VN	20	0.97	0.000380	± 2.5	PASS
		VN	30	1.26	0.000492	± 2.5	PASS
		VN	40	0.70	0.000274	± 2.5	PASS
		VN	50	1.60	0.000626	± 2.5	PASS
		VN	-30	1.60	0.000626	± 2.5	PASS
		VN	-20	1.60	0.000626	± 2.5	PASS
		VN	-10	1.60	0.000626	± 2.5	PASS
QPSK	LCH	VN	0	3.39	0.001351	± 2.5	PASS
		VN	10	3.39	0.001351	± 2.5	PASS
		VN	20	3.39	0.001351	± 2.5	PASS
		VN	30	1.86	0.000741	± 2.5	PASS
		VN	40	2.85	0.001134	± 2.5	PASS
		VN	50	2.46	0.000980	± 2.5	PASS
	MCH	VN	-30	2.46	0.000980	± 2.5	PASS
		VN	-20	2.46	0.000980	± 2.5	PASS
		VN	-10	2.46	0.000980	± 2.5	PASS
		VN	0	0.92	0.000361	± 2.5	PASS
		VN	10	0.92	0.000361	± 2.5	PASS
		VN	20	0.92	0.000361	± 2.5	PASS
		VN	30	1.04	0.000412	± 2.5	PASS
		VN	40	1.69	0.000666	± 2.5	PASS
		VN	50	1.23	0.000485	± 2.5	PASS
	HCH	VN	-30	1.23	0.000485	± 2.5	PASS
		VN	-20	1.23	0.000485	± 2.5	PASS
		VN	-10	1.23	0.000485	± 2.5	PASS
		VN	0	1.02	0.000397	± 2.5	PASS
		VN	10	1.02	0.000397	± 2.5	PASS
		VN	20	1.02	0.000397	± 2.5	PASS
		VN	30	-0.04	-0.000017	± 2.5	PASS
		VN	40	0.89	0.000346	± 2.5	PASS
		VN	50	0.11	0.000045	± 2.5	PASS