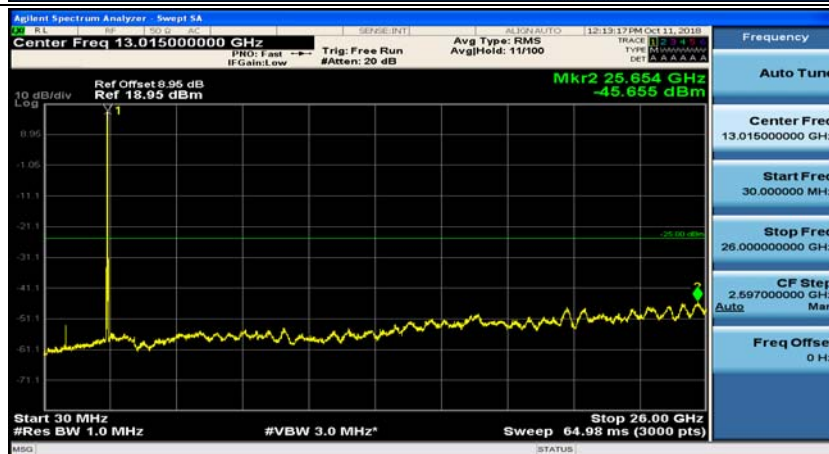
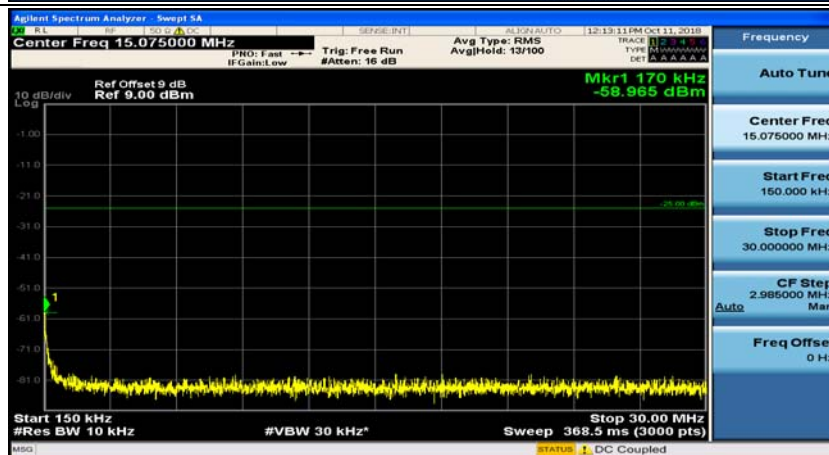
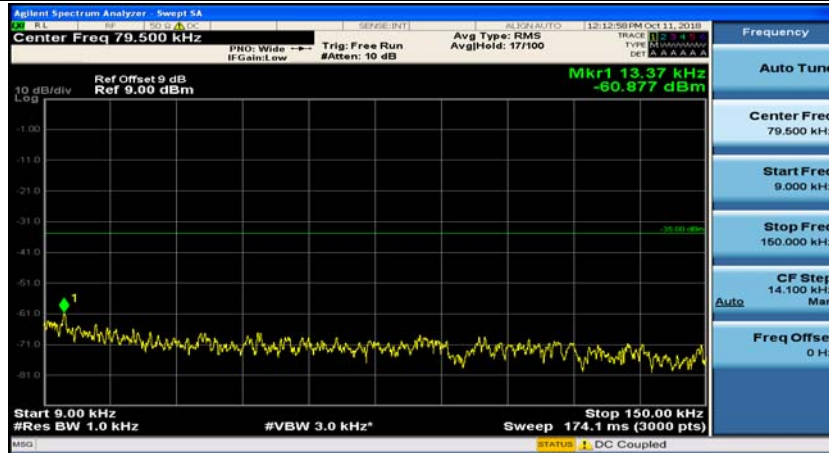
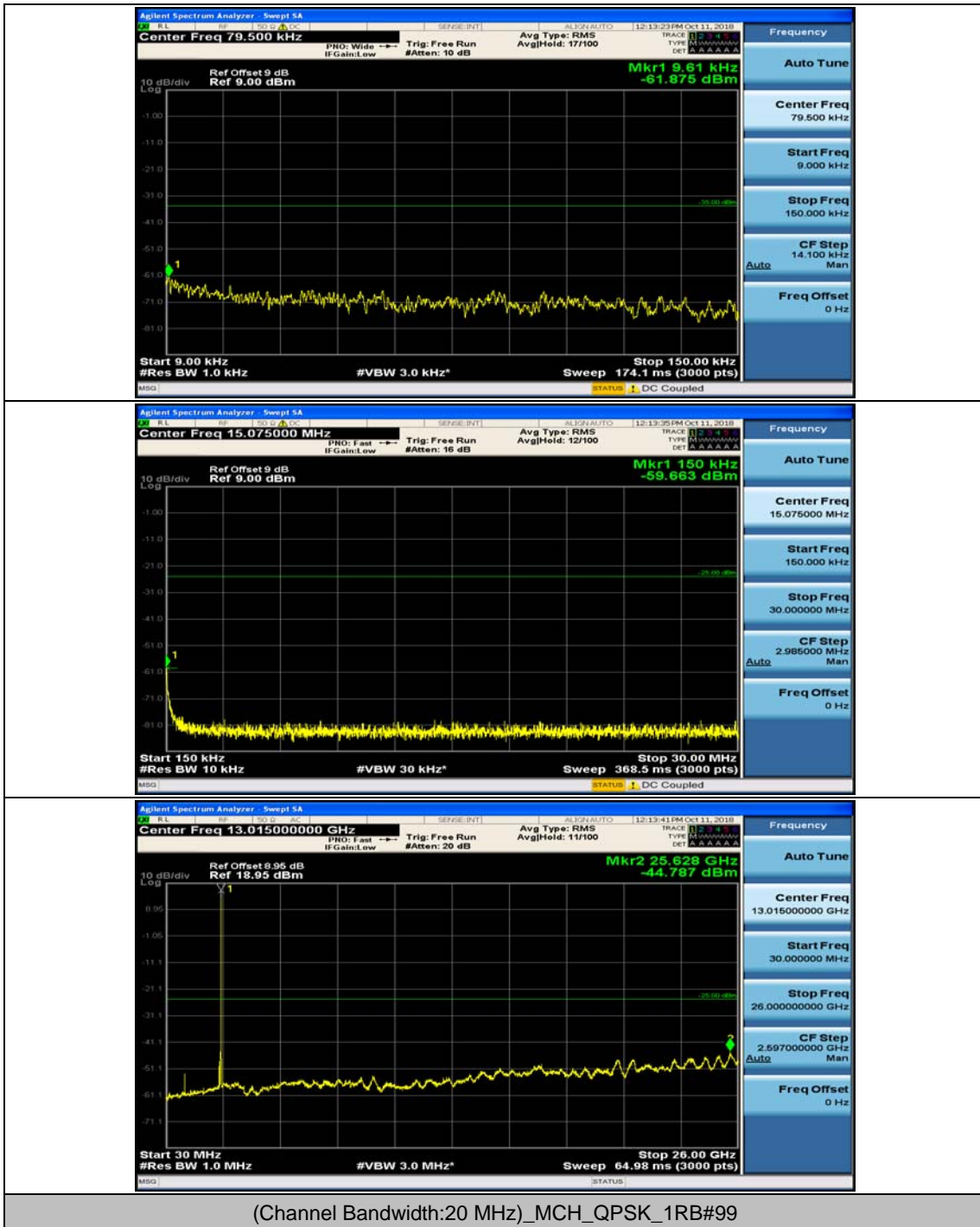
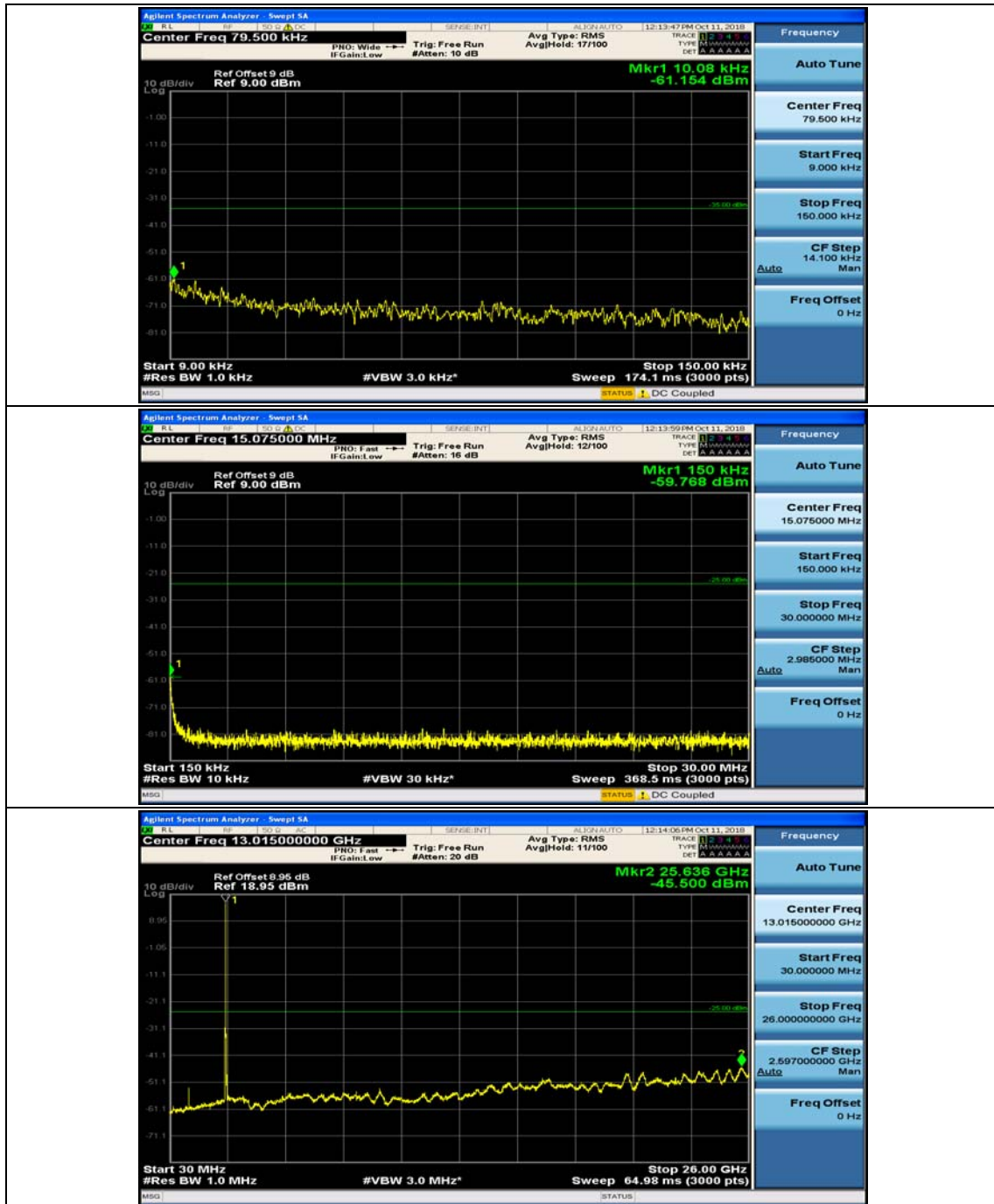


(Channel Bandwidth:20 MHz)\_MCH\_QPSK\_1RB#0

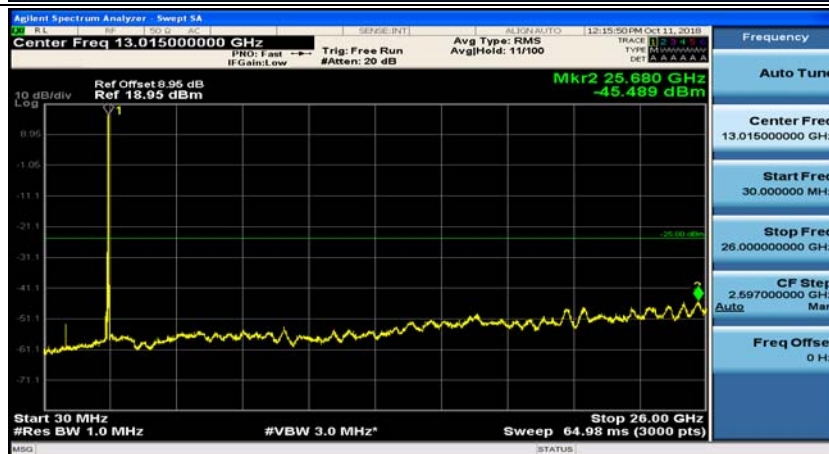
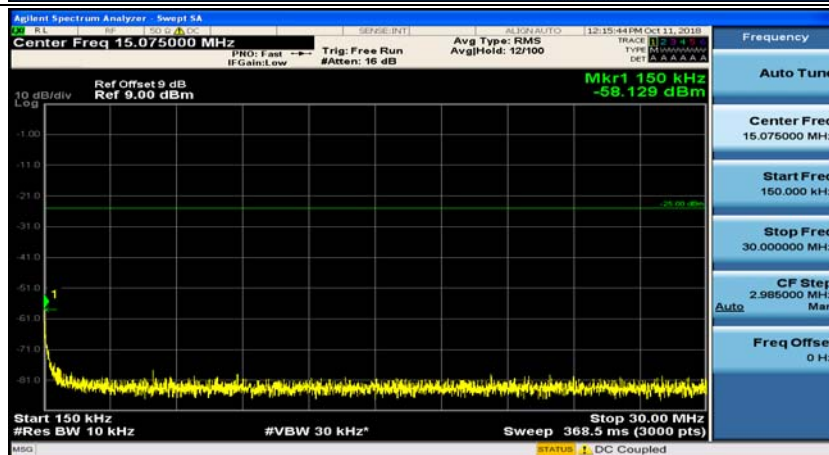
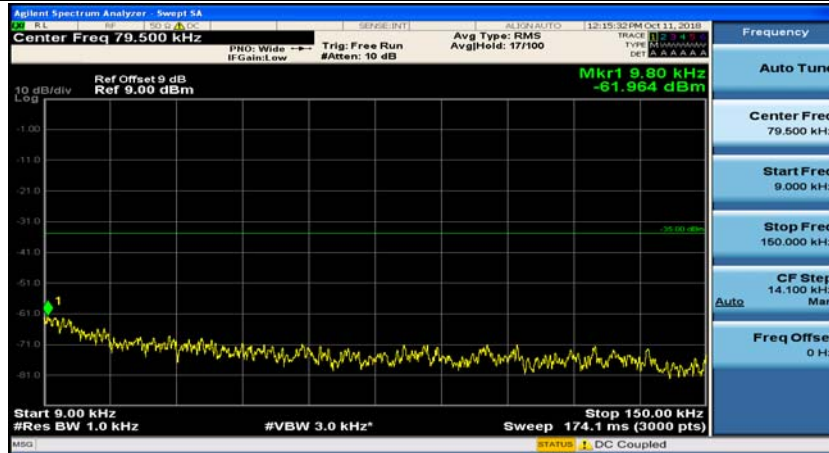


(Channel Bandwidth:20 MHz)\_MCH\_QPSK\_1RB#49

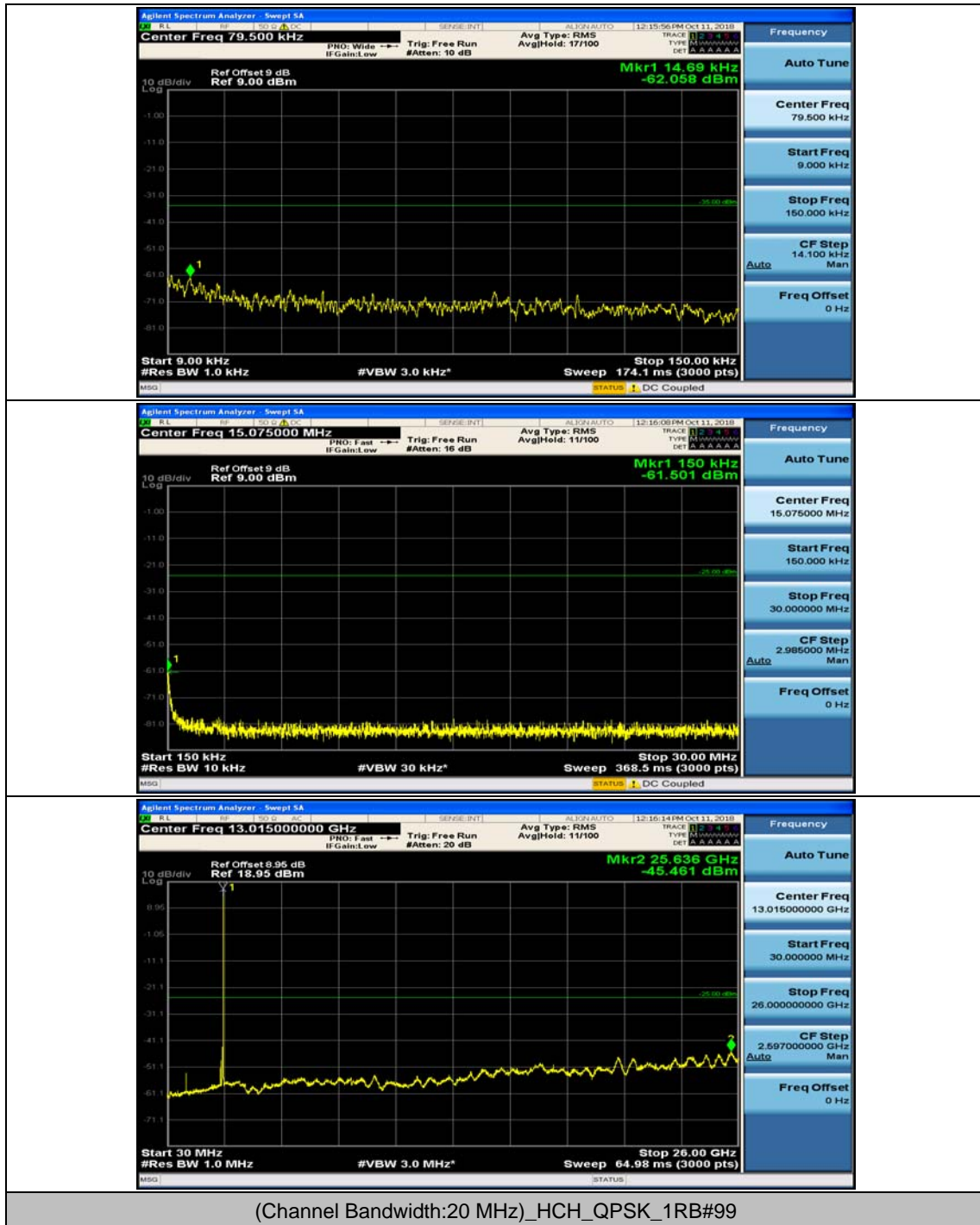


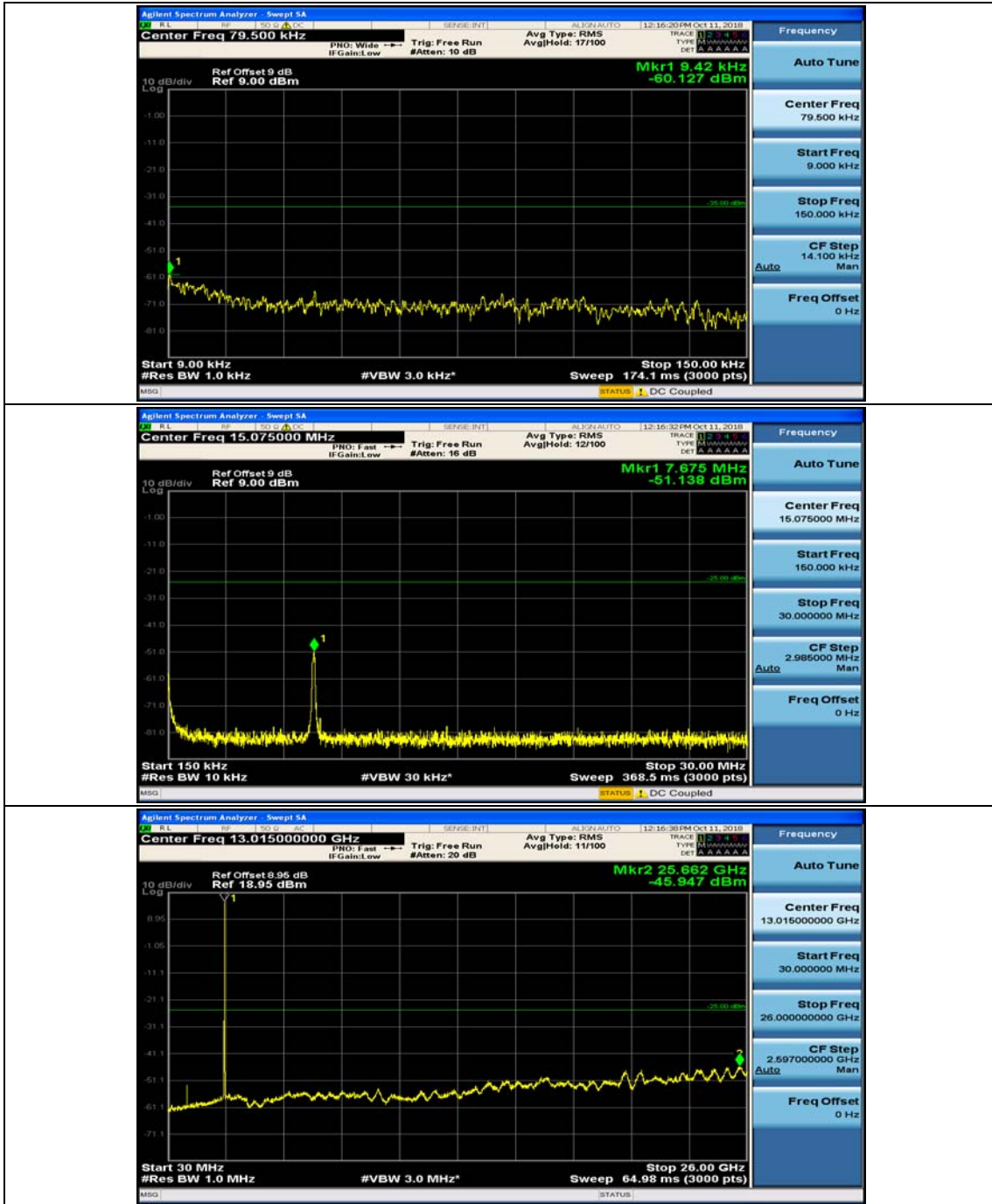


(Channel Bandwidth:20 MHz)\_HCH\_QPSK\_1RB#0

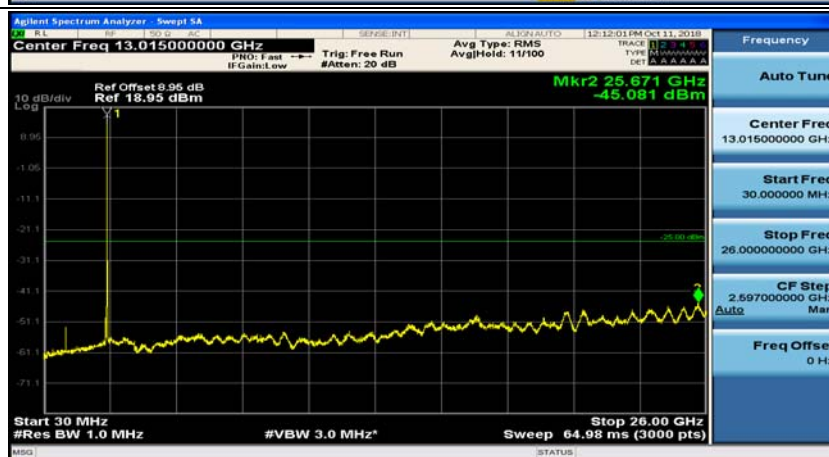
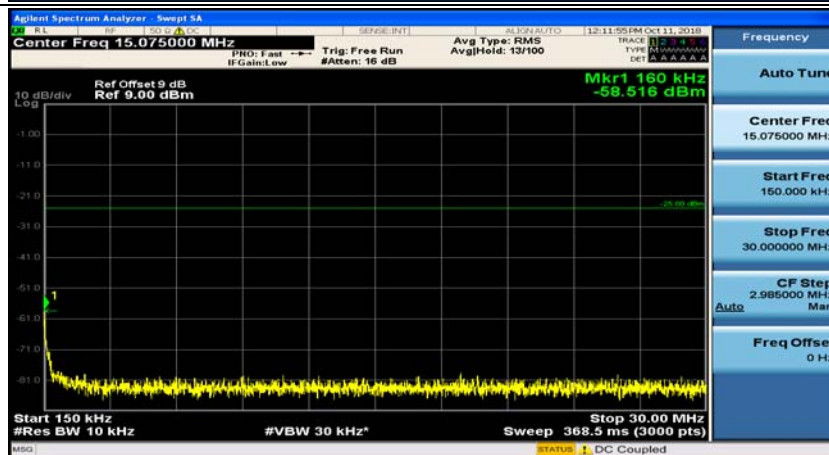
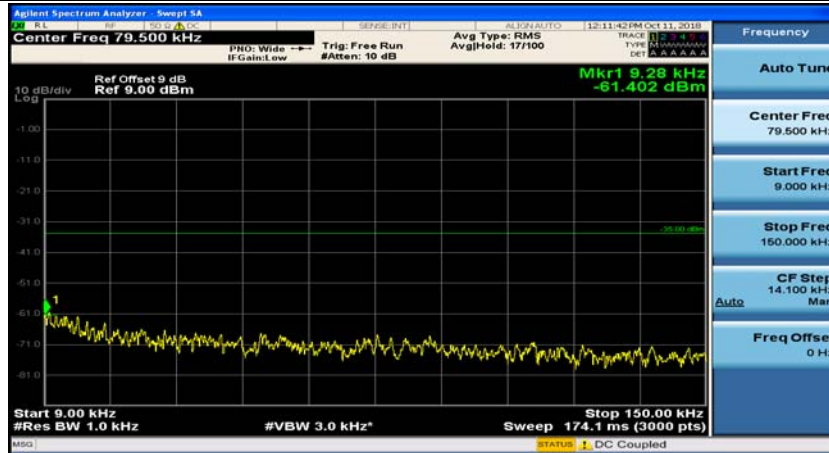


(Channel Bandwidth:20 MHz)\_HCH\_QPSK\_1RB#49



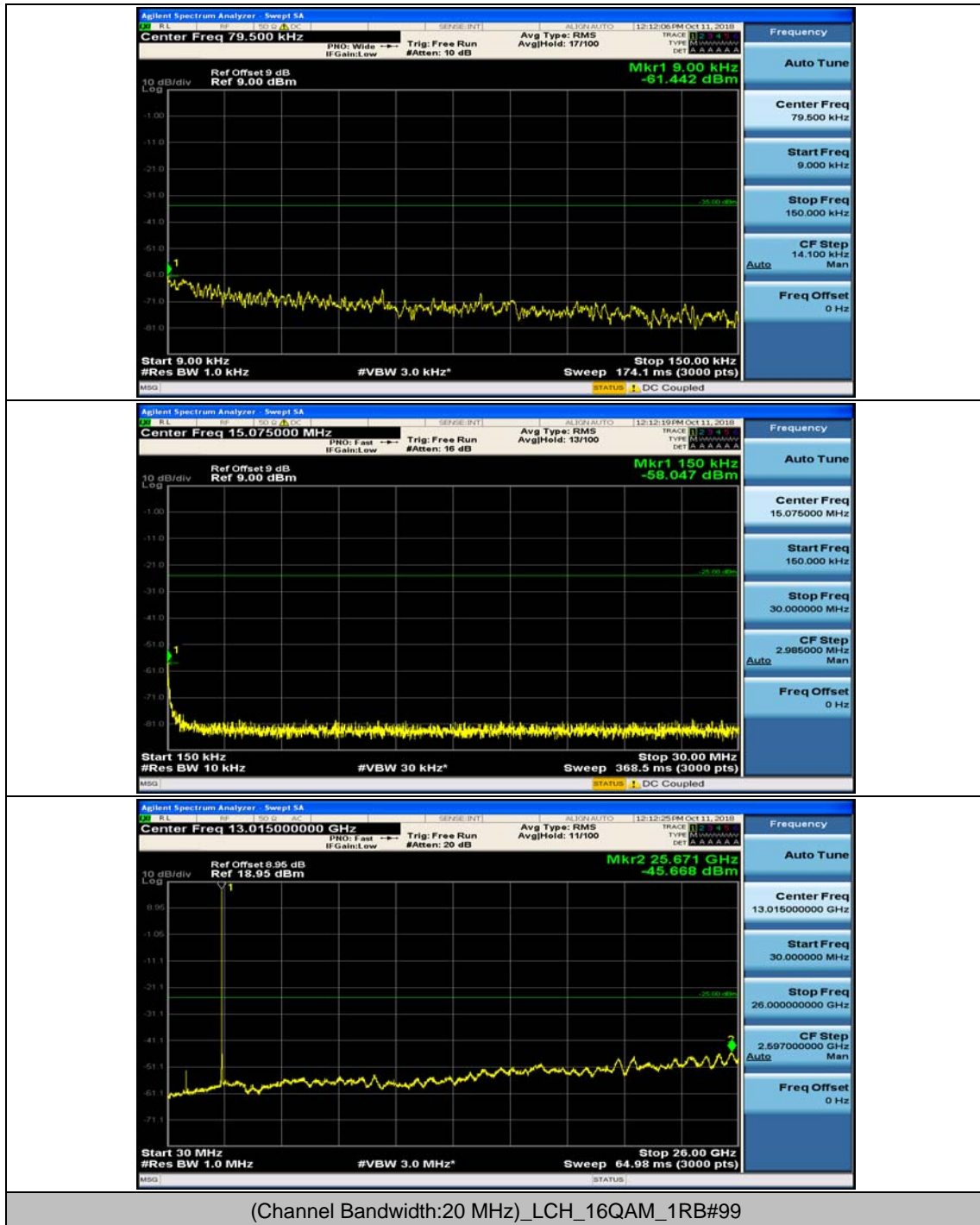


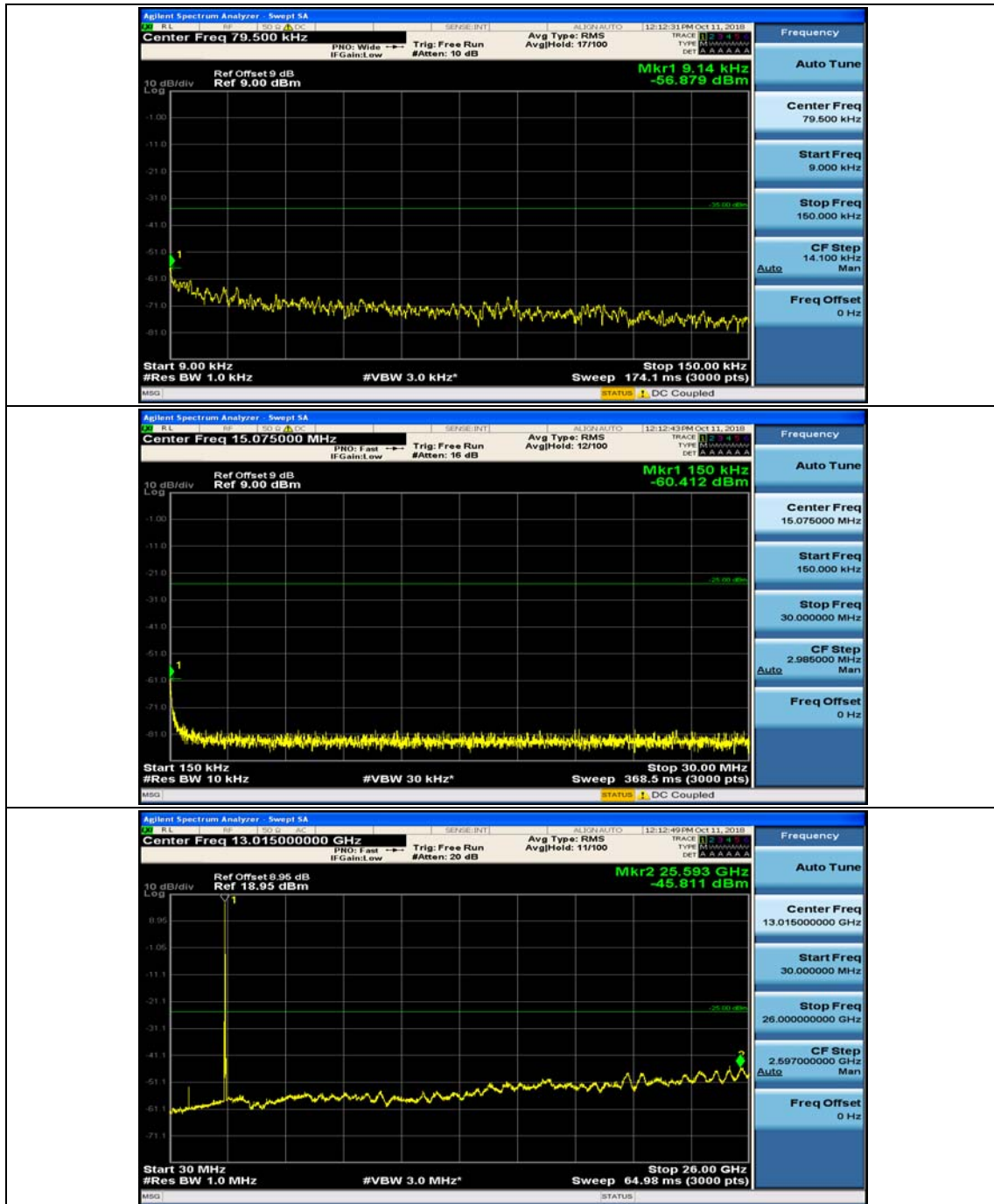
(Channel Bandwidth:20 MHz)\_LCH\_16QAM\_1RB#0



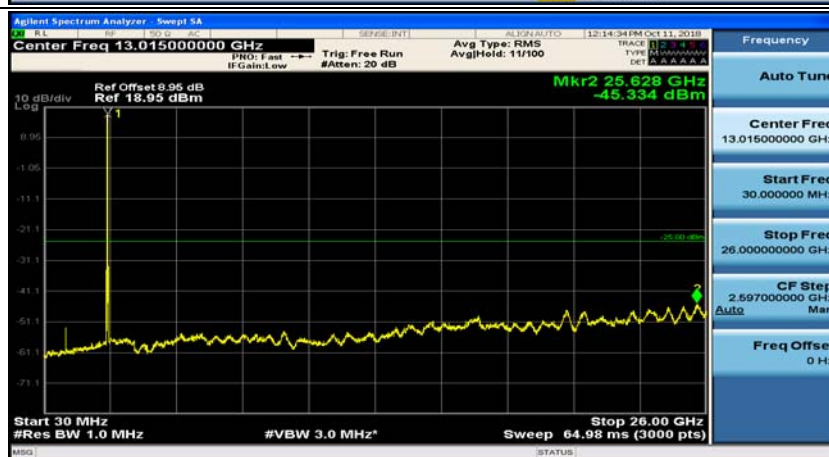
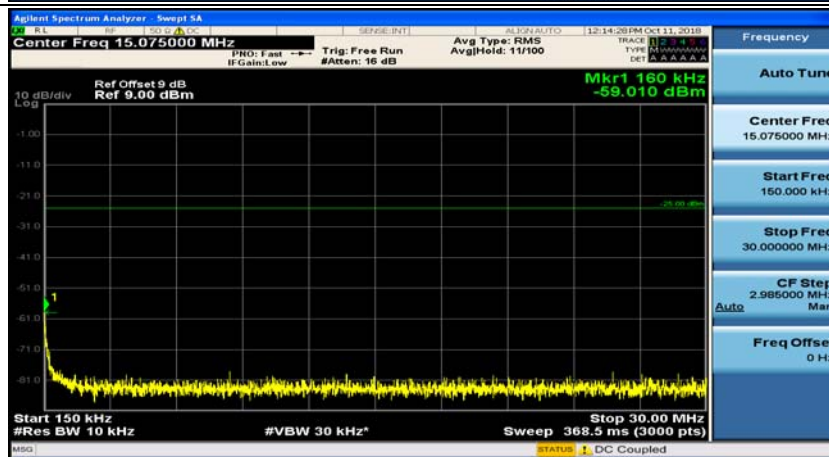
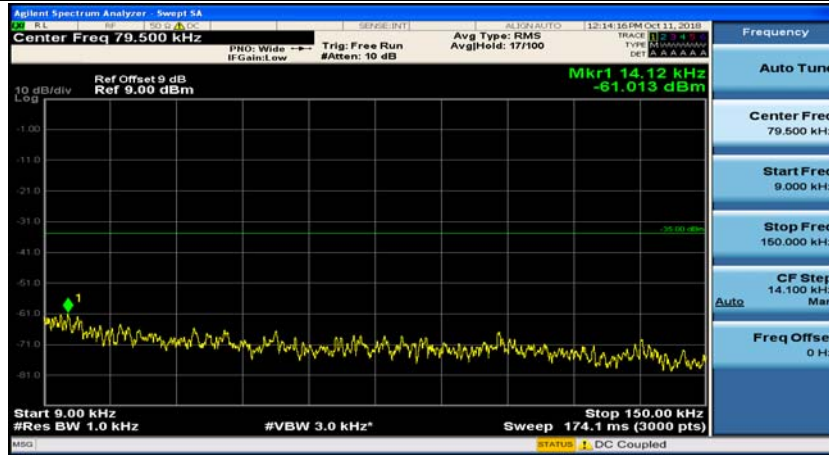
(Channel Bandwidth:20 MHz)\_LCH\_16QAM\_1RB#49



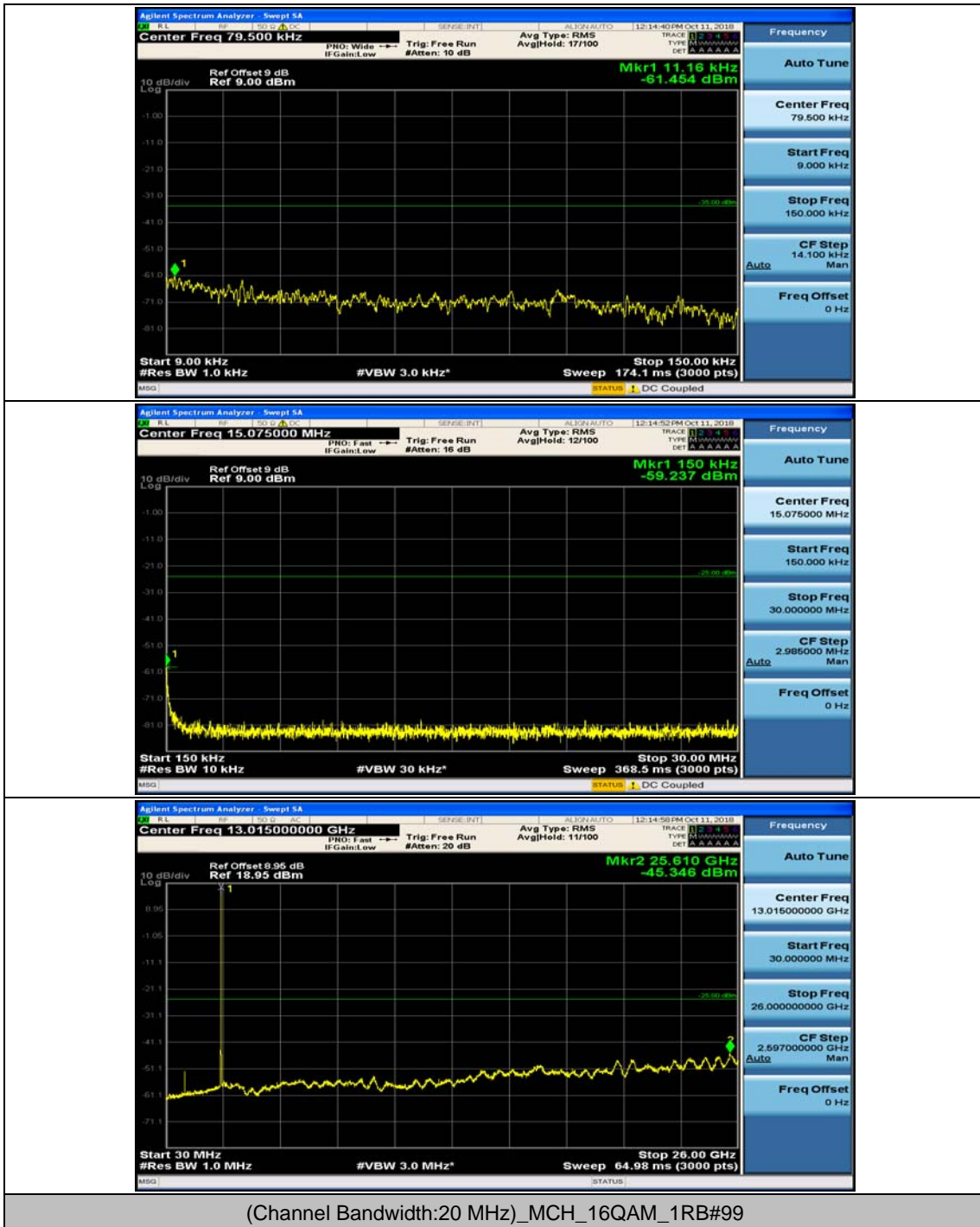


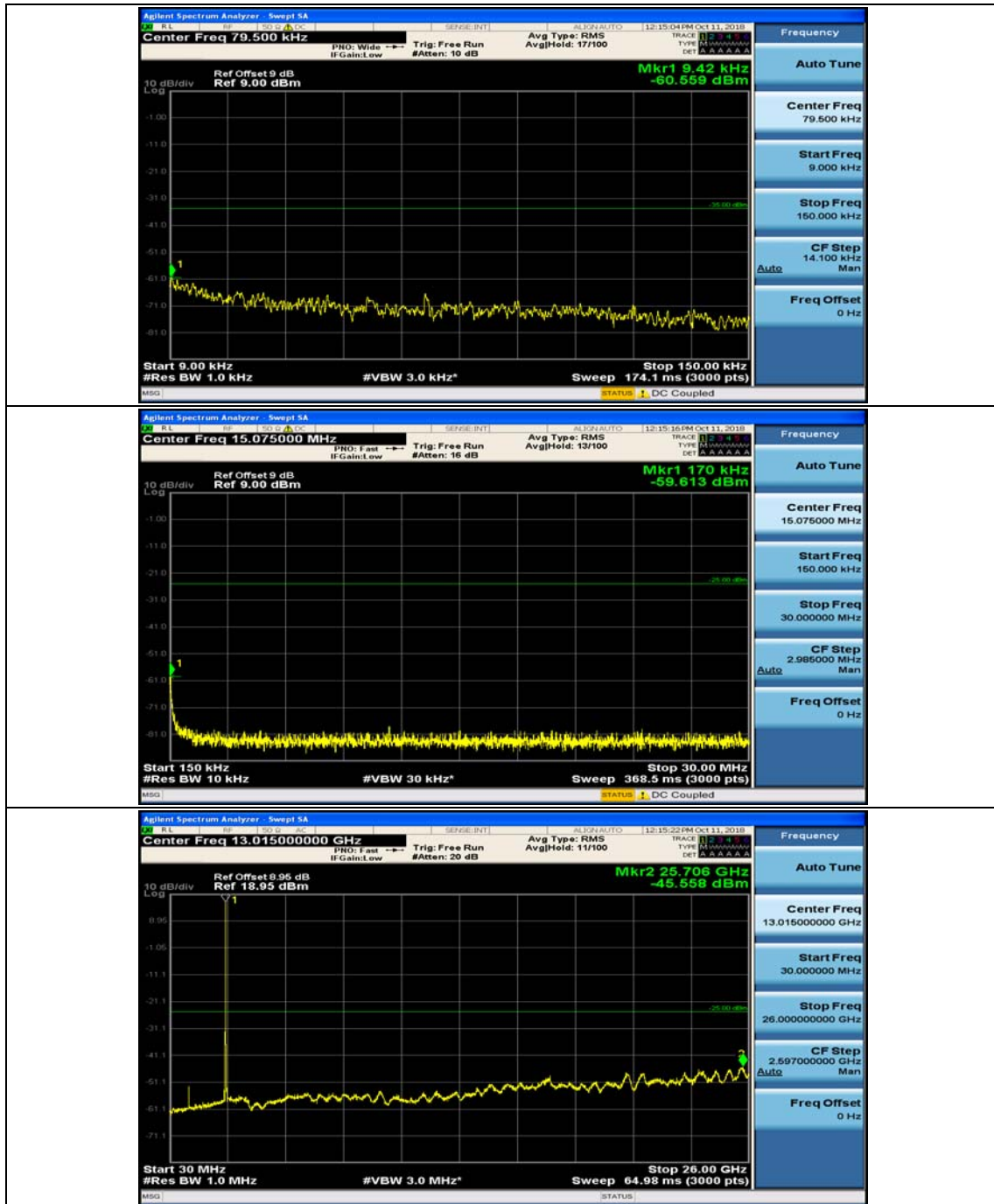


(Channel Bandwidth:20 MHz)\_MCH\_16QAM\_1RB#0

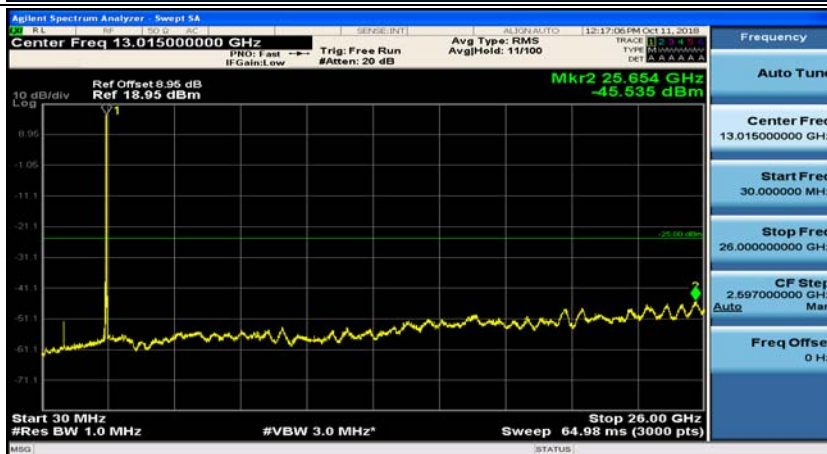
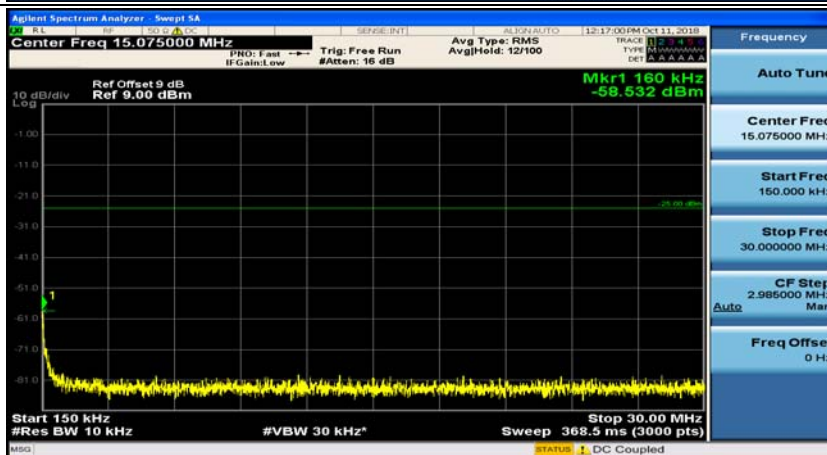
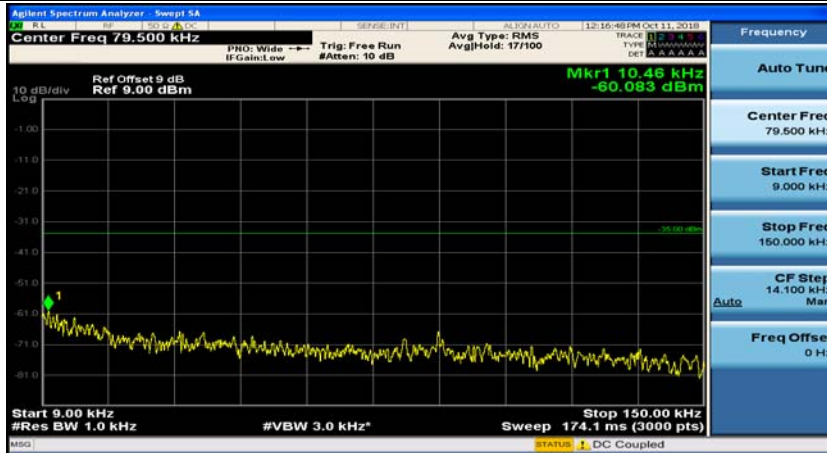


(Channel Bandwidth:20 MHz)\_MCH\_16QAM\_1RB#49

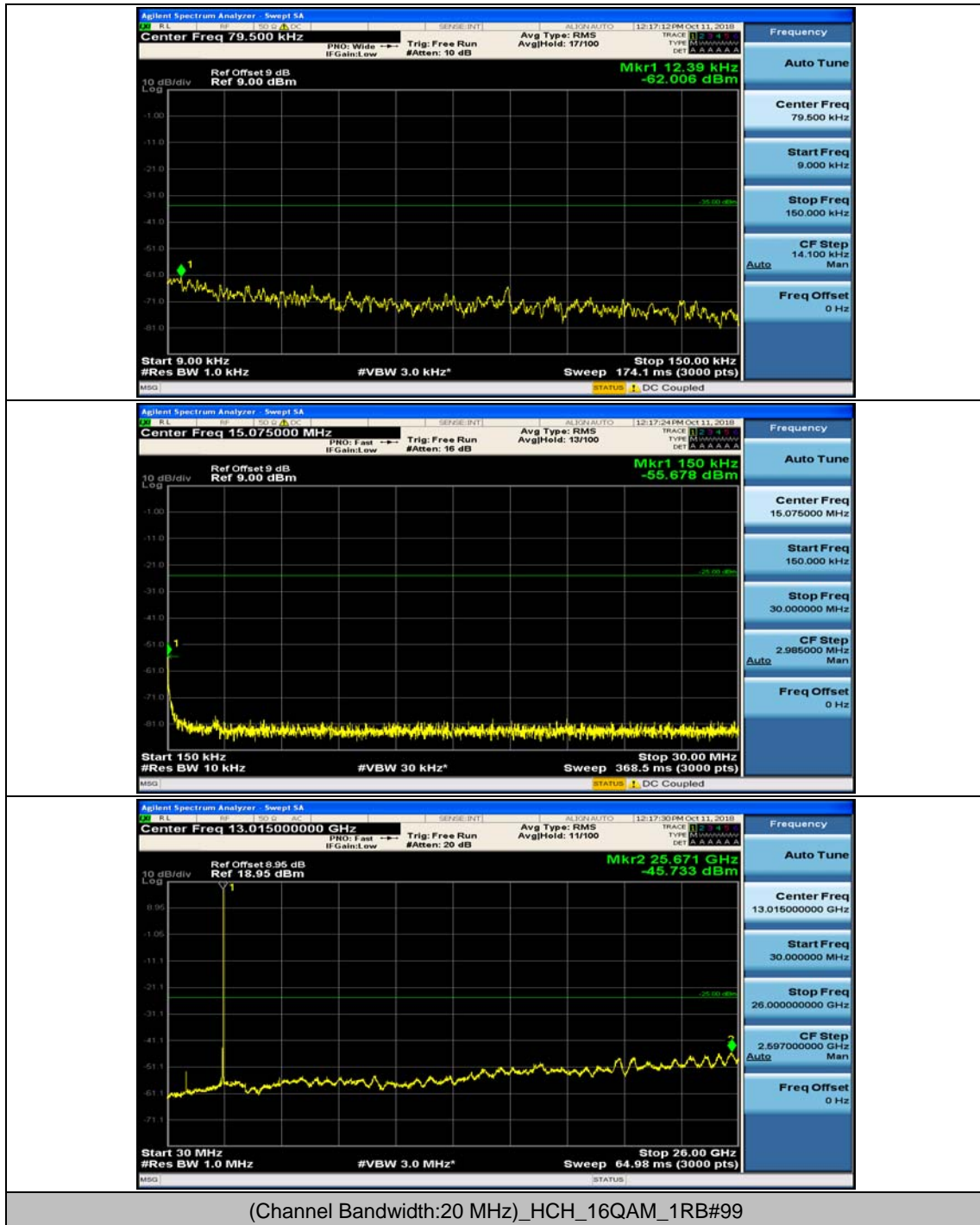


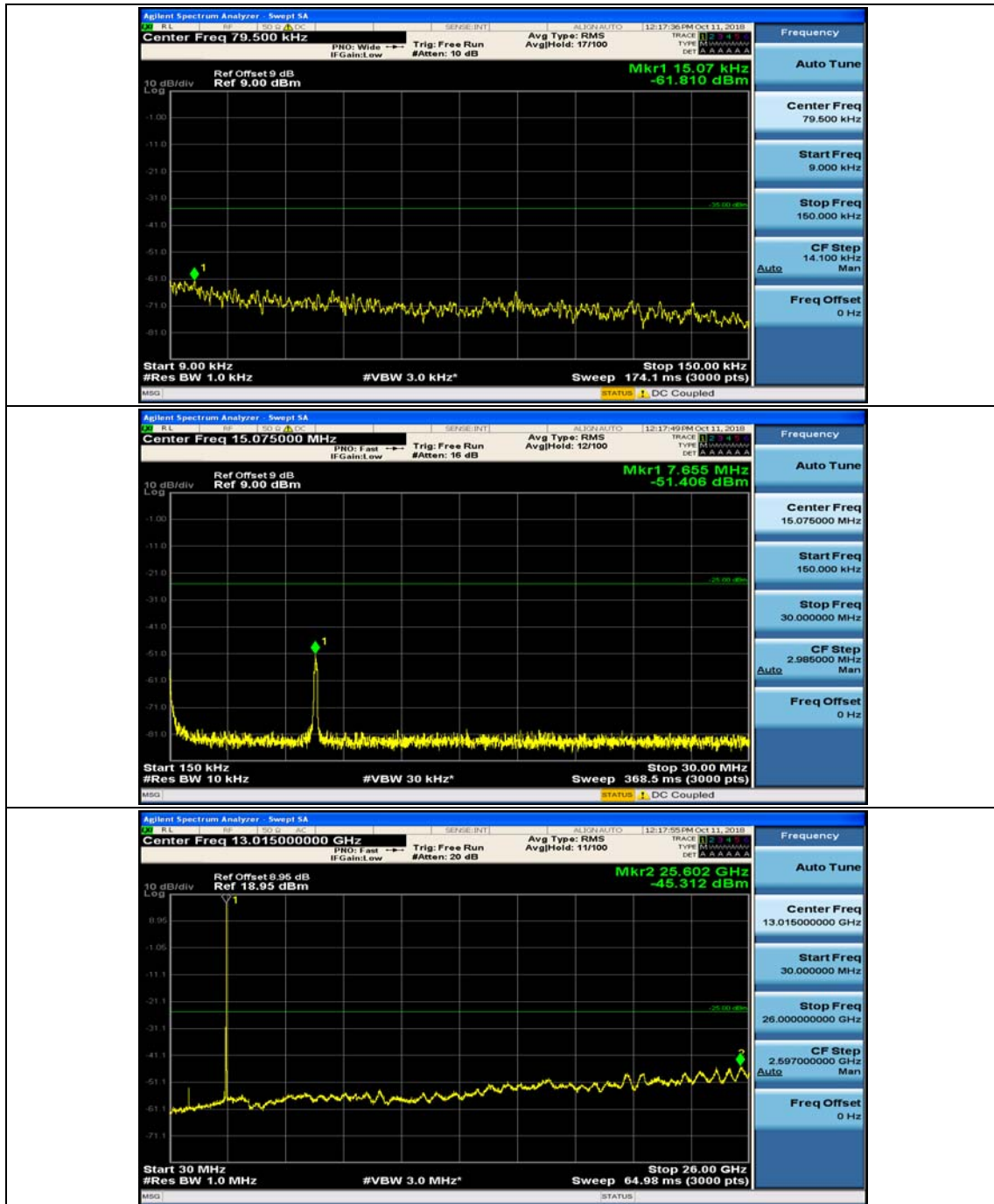


(Channel Bandwidth:20 MHz)\_HCH\_16QAM\_1RB#0



(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	3.08	0.001231	± 2.5	PASS
		VN	TN	-1.08	-0.000432	± 2.5	PASS
		VH	TN	1.16	0.000464	± 2.5	PASS
	MCH	VL	TN	3.48	0.001373	± 2.5	PASS
		VN	TN	-0.07	-0.000028	± 2.5	PASS
		VH	TN	-0.62	-0.000245	± 2.5	PASS
	HCH	VL	TN	4.15	0.001616	± 2.5	PASS
		VN	TN	2.48	0.000966	± 2.5	PASS
		VH	TN	4.09	0.001593	± 2.5	PASS
16QAM	LCH	VL	TN	1.47	0.000587	± 2.5	PASS
		VN	TN	-1.12	-0.000448	± 2.5	PASS
		VH	TN	-1.67	-0.000667	± 2.5	PASS
	MCH	VL	TN	-1.73	-0.000682	± 2.5	PASS
		VN	TN	-0.69	-0.000272	± 2.5	PASS
		VH	TN	1.26	0.000497	± 2.5	PASS
	HCH	VL	TN	-0.95	-0.000370	± 2.5	PASS
		VN	TN	4.09	0.001593	± 2.5	PASS
		VH	TN	-1.79	-0.000697	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	4.35	0.001738	± 2.5	PASS
		VN	-20	0.46	0.000184	± 2.5	PASS
		VN	-10	2.16	0.000863	± 2.5	PASS
		VN	0	3	0.001199	± 2.5	PASS
		VN	10	3.42	0.001367	± 2.5	PASS
		VN	20	0.9	0.000360	± 2.5	PASS
		VN	30	4.64	0.001854	± 2.5	PASS
		VN	40	1.21	0.000484	± 2.5	PASS
		VN	50	-1.18	-0.000472	± 2.5	PASS
	MCH	VN	-30	2.64	0.001041	± 2.5	PASS
		VN	-20	-0.33	-0.000130	± 2.5	PASS

		VN	-10	-0.04	-0.000016	± 2.5	PASS	
		VN	0	3.21	0.001266	± 2.5	PASS	
		VN	10	4.15	0.001637	± 2.5	PASS	
		VN	20	4	0.001578	± 2.5	PASS	
		VN	30	2.12	0.000836	± 2.5	PASS	
		VN	40	1.19	0.000469	± 2.5	PASS	
		VN	50	0.86	0.000339	± 2.5	PASS	
	HCH	VN	-30	3.34	0.001301	± 2.5	PASS	
		VN	-20	4.81	0.001873	± 2.5	PASS	
		VN	-10	2.66	0.001036	± 2.5	PASS	
		VN	0	0.32	0.000125	± 2.5	PASS	
		VN	10	3.69	0.001437	± 2.5	PASS	
		VN	20	-0.96	-0.000374	± 2.5	PASS	
		VN	30	2.16	0.000841	± 2.5	PASS	
	16QAM	LCH	VN	40	3.97	0.001546	± 2.5	PASS
			VN	50	4.17	0.001624	± 2.5	PASS
			VN	-30	-1.54	-0.000615	± 2.5	PASS
			VN	-20	0.31	0.000124	± 2.5	PASS
VN			-10	4.51	0.001802	± 2.5	PASS	
VN			0	3.73	0.001491	± 2.5	PASS	
VN			10	3.47	0.001387	± 2.5	PASS	
VN			20	-1.42	-0.000567	± 2.5	PASS	
VN			30	0.96	0.000384	± 2.5	PASS	
MCH		VN	40	-0.32	-0.000128	± 2.5	PASS	
		VN	50	4.28	0.001710	± 2.5	PASS	
		VN	-30	3.91	0.001542	± 2.5	PASS	
		VN	-20	-1.51	-0.000596	± 2.5	PASS	
		VN	-10	2.05	0.000809	± 2.5	PASS	
		VN	0	-0.14	-0.000055	± 2.5	PASS	
		VN	10	2.68	0.001057	± 2.5	PASS	
		VN	20	-1.82	-0.000718	± 2.5	PASS	
		VN	30	1.66	0.000655	± 2.5	PASS	
HCH	VN	40	-0.21	-0.000083	± 2.5	PASS		
	VN	50	0.8	0.000316	± 2.5	PASS		
	VN	-30	-0.84	-0.000327	± 2.5	PASS		
	VN	-20	0.38	0.000148	± 2.5	PASS		
	VN	-10	3.59	0.001398	± 2.5	PASS		
	VN	0	2.61	0.001017	± 2.5	PASS		
	VN	10	0.82	0.000319	± 2.5	PASS		
VN	20	2.35	0.000915	± 2.5	PASS			
VN	30	4.85	0.001889	± 2.5	PASS			

		VN	40	-0.6	-0.000234	± 2.5	PASS
		VN	50	-1.47	-0.000573	± 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	0.000870	0.000870	± 2.5	PASS
		VN	TN	0.000236	0.000236	± 2.5	PASS
		VH	TN	0.000064	0.000064	± 2.5	PASS
	MCH	VL	TN	-0.000458	-0.000458	± 2.5	PASS
		VN	TN	-0.000663	-0.000663	± 2.5	PASS
		VH	TN	0.001688	0.001688	± 2.5	PASS
	HCH	VL	TN	-0.000674	-0.000674	± 2.5	PASS
		VN	TN	-0.000507	-0.000507	± 2.5	PASS
		VH	TN	0.000113	0.000113	± 2.5	PASS
16QAM	LCH	VL	TN	0.000643	0.000643	± 2.5	PASS
		VN	TN	0.000204	0.000204	± 2.5	PASS
		VH	TN	0.000715	0.000715	± 2.5	PASS
	MCH	VL	TN	0.000146	0.000146	± 2.5	PASS
		VN	TN	0.001247	0.001247	± 2.5	PASS
		VH	TN	0.001542	0.001542	± 2.5	PASS
	HCH	VL	TN	0.000250	0.000250	± 2.5	PASS
		VN	TN	-0.000199	-0.000199	± 2.5	PASS
		VH	TN	-0.000612	-0.000612	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	3.7	0.001477	± 2.5	PASS
		VN	-20	0.65	0.000259	± 2.5	PASS
		VN	-10	3.59	0.001433	± 2.5	PASS
		VN	0	-0.62	-0.000248	± 2.5	PASS
		VN	10	1.97	0.000786	± 2.5	PASS
		VN	20	2.58	0.001030	± 2.5	PASS
		VN	30	0.53	0.000212	± 2.5	PASS
		VN	40	-0.08	-0.000032	± 2.5	PASS
		VN	50	-1.11	-0.000443	± 2.5	PASS
	MCH	VN	-30	4.77	0.001882	± 2.5	PASS
		VN	-20	4.92	0.001941	± 2.5	PASS
		VN	-10	2.79	0.001101	± 2.5	PASS

		VN	0	-1.1	-0.000434	± 2.5	PASS		
		VN	10	-0.05	-0.000020	± 2.5	PASS		
		VN	20	-0.8	-0.000316	± 2.5	PASS		
		VN	30	4.1	0.001617	± 2.5	PASS		
		VN	40	-1.68	-0.000663	± 2.5	PASS		
		VN	50	2.26	0.000892	± 2.5	PASS		
	HCH	VN	-30	-1.36	-0.000530	± 2.5	PASS		
		VN	-20	4.88	0.001903	± 2.5	PASS		
		VN	-10	2.92	0.001138	± 2.5	PASS		
		VN	0	4.9	0.001910	± 2.5	PASS		
		VN	10	2.44	0.000951	± 2.5	PASS		
		VN	20	-0.49	-0.000191	± 2.5	PASS		
		VN	30	1.78	0.000694	± 2.5	PASS		
		VN	40	0.56	0.000218	± 2.5	PASS		
		VN	50	-0.91	-0.000355	± 2.5	PASS		
		QPSK	LCH	VN	-30	-1.75	-0.000699	± 2.5	PASS
				VN	-20	-1.66	-0.000663	± 2.5	PASS
				VN	-10	3.01	0.001202	± 2.5	PASS
VN	0			4.11	0.001641	± 2.5	PASS		
VN	10			1.92	0.000766	± 2.5	PASS		
VN	20			3.8	0.001517	± 2.5	PASS		
VN	30			3.35	0.001337	± 2.5	PASS		
VN	40			0.98	0.000391	± 2.5	PASS		
VN	50			-0.49	-0.000196	± 2.5	PASS		
MCH	VN		-30	4.57	0.001803	± 2.5	PASS		
	VN		-20	4.15	0.001637	± 2.5	PASS		
	VN		-10	1.73	0.000682	± 2.5	PASS		
	VN		0	3.58	0.001412	± 2.5	PASS		
	VN		10	0.32	0.000126	± 2.5	PASS		
	VN		20	4.24	0.001673	± 2.5	PASS		
	VN		30	-1.18	-0.000465	± 2.5	PASS		
	VN		40	3.04	0.001199	± 2.5	PASS		
	VN		50	2.74	0.001081	± 2.5	PASS		
HCH	VN		-30	4.17	0.001626	± 2.5	PASS		
	VN		-20	-0.49	-0.000191	± 2.5	PASS		
	VN		-10	0.58	0.000226	± 2.5	PASS		
	VN		0	-0.71	-0.000277	± 2.5	PASS		
	VN		10	-0.66	-0.000257	± 2.5	PASS		
	VN		20	0.75	0.000292	± 2.5	PASS		
	VN		30	0.09	0.000035	± 2.5	PASS		
	VN		40	0.17	0.000066	± 2.5	PASS		

		VN	50	4.85	0.001891	± 2.5	PASS
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**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	0.27	0.000108	± 2.5	PASS
		VN	TN	-0.82	-0.000327	± 2.5	PASS
		VH	TN	3.29	0.001312	± 2.5	PASS
	MCH	VL	TN	0.86	0.000339	± 2.5	PASS
		VN	TN	0.07	0.000028	± 2.5	PASS
		VH	TN	-1.02	-0.000402	± 2.5	PASS
	HCH	VL	TN	2.2	0.000859	± 2.5	PASS
		VN	TN	1.88	0.000734	± 2.5	PASS
		VH	TN	0.52	0.000203	± 2.5	PASS
16QAM	LCH	VL	TN	4.11	0.001639	± 2.5	PASS
		VN	TN	-0.73	-0.000291	± 2.5	PASS
		VH	TN	-0.33	-0.000132	± 2.5	PASS
	MCH	VL	TN	1.19	0.000469	± 2.5	PASS
		VN	TN	3.14	0.001239	± 2.5	PASS
		VH	TN	1.54	0.000607	± 2.5	PASS
	HCH	VL	TN	0.25	0.000098	± 2.5	PASS
		VN	TN	1.52	0.000593	± 2.5	PASS
		VH	TN	-0.12	-0.000047	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.37	-0.000546	± 2.5	PASS
		VN	-20	-0.04	-0.000016	± 2.5	PASS
		VN	-10	0.07	0.000028	± 2.5	PASS
		VN	0	4.8	0.001914	± 2.5	PASS
		VN	10	1.07	0.000427	± 2.5	PASS
		VN	20	-1.93	-0.000770	± 2.5	PASS
		VN	30	3.05	0.001216	± 2.5	PASS
		VN	40	-1.76	-0.000702	± 2.5	PASS
		VN	50	0.29	0.000116	± 2.5	PASS
	MCH	VN	-30	-0.59	-0.000233	± 2.5	PASS
		VN	-20	3.01	0.001187	± 2.5	PASS
		VN	-10	3.94	0.001554	± 2.5	PASS
		VN	0	0.75	0.000296	± 2.5	PASS

		VN	10	-1.32	-0.000521	± 2.5	PASS
		VN	20	-1.52	-0.000600	± 2.5	PASS
		VN	30	-1.14	-0.000450	± 2.5	PASS
		VN	40	3.83	0.001511	± 2.5	PASS
		VN	50	4.67	0.001842	± 2.5	PASS
	HCH	VN	-30	2.68	0.001046	± 2.5	PASS
		VN	-20	-1.54	-0.000601	± 2.5	PASS
		VN	-10	1.03	0.000402	± 2.5	PASS
		VN	0	-1.57	-0.000613	± 2.5	PASS
		VN	10	1.08	0.000421	± 2.5	PASS
		VN	20	-0.97	-0.000379	± 2.5	PASS
		VN	30	0.42	0.000164	± 2.5	PASS
		VN	40	-0.67	-0.000261	± 2.5	PASS
		VN	50	2.74	0.001069	± 2.5	PASS
		QPSK	LCH	VN	-30	-1.37	-0.000546
VN	-20			2.18	0.000869	± 2.5	PASS
VN	-10			0.86	0.000343	± 2.5	PASS
VN	0			2.99	0.001192	± 2.5	PASS
VN	10			1.2	0.000479	± 2.5	PASS
VN	20			3.61	0.001440	± 2.5	PASS
VN	30			1.83	0.000730	± 2.5	PASS
VN	40			1.75	0.000698	± 2.5	PASS
VN	50			-1.72	-0.000686	± 2.5	PASS
MCH	VN		-30	-1.59	-0.000627	± 2.5	PASS
	VN		-20	4.59	0.001811	± 2.5	PASS
	VN		-10	2.86	0.001128	± 2.5	PASS
	VN		0	4.57	0.001803	± 2.5	PASS
	VN		10	4.42	0.001744	± 2.5	PASS
	VN		20	-1.24	-0.000489	± 2.5	PASS
	VN		30	-1.47	-0.000580	± 2.5	PASS
	VN		40	2.93	0.001156	± 2.5	PASS
	VN		50	-1.28	-0.000505	± 2.5	PASS
HCH	VN		-30	1.83	0.000714	± 2.5	PASS
	VN		-20	0.28	0.000109	± 2.5	PASS
	VN		-10	4.77	0.001861	± 2.5	PASS
	VN		0	3.33	0.001300	± 2.5	PASS
	VN		10	4.64	0.001811	± 2.5	PASS
	VN		20	1.09	0.000425	± 2.5	PASS
	VN		30	3.42	0.001335	± 2.5	PASS
	VN		40	1.41	0.000550	± 2.5	PASS
	VN		50	1.93	0.000753	± 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	-0.65	-0.000259	± 2.5	PASS
		VN	TN	2.09	0.000833	± 2.5	PASS
		VH	TN	2.88	0.001147	± 2.5	PASS
	MCH	VL	TN	3.26	0.001286	± 2.5	PASS
		VN	TN	4.61	0.001819	± 2.5	PASS
		VH	TN	1.06	0.000418	± 2.5	PASS
	HCH	VL	TN	1.95	0.000762	± 2.5	PASS
		VN	TN	3.18	0.001242	± 2.5	PASS
		VH	TN	3.59	0.001402	± 2.5	PASS
16QAM	LCH	VL	TN	1.33	0.000530	± 2.5	PASS
		VN	TN	4.15	0.001653	± 2.5	PASS
		VH	TN	2.78	0.001108	± 2.5	PASS
	MCH	VL	TN	2.34	0.000923	± 2.5	PASS
		VN	TN	1.91	0.000753	± 2.5	PASS
		VH	TN	-1.11	-0.000438	± 2.5	PASS
	HCH	VL	TN	3.86	0.001508	± 2.5	PASS
		VN	TN	-0.01	-0.000004	± 2.5	PASS
		VH	TN	-0.18	-0.000070	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.05	0.000817	± 2.5	PASS
		VN	-20	3.07	0.001223	± 2.5	PASS
		VN	-10	-1.7	-0.000677	± 2.5	PASS
		VN	0	3.77	0.001502	± 2.5	PASS
		VN	10	3.23	0.001287	± 2.5	PASS
		VN	20	2.51	0.001000	± 2.5	PASS
		VN	30	4.29	0.001709	± 2.5	PASS
		VN	40	-0.15	-0.000060	± 2.5	PASS
		VN	50	0.17	0.000068	± 2.5	PASS
	MCH	VN	-30	-1.4	-0.000552	± 2.5	PASS
		VN	-20	4.65	0.001834	± 2.5	PASS
		VN	-10	3.69	0.001456	± 2.5	PASS
		VN	0	2.34	0.000923	± 2.5	PASS
		VN	10	3.03	0.001195	± 2.5	PASS
		VN	20	2.19	0.000864	± 2.5	PASS

		VN	30	0.55	0.000217	± 2.5	PASS
		VN	40	-1.97	-0.000777	± 2.5	PASS
		VN	50	-0.12	-0.000047	± 2.5	PASS
	HCH	VN	-30	1.02	0.000398	± 2.5	PASS
		VN	-20	3.34	0.001305	± 2.5	PASS
		VN	-10	-1.06	-0.000414	± 2.5	PASS
		VN	0	2.12	0.000828	± 2.5	PASS
		VN	10	3.92	0.001531	± 2.5	PASS
		VN	20	1.34	0.000523	± 2.5	PASS
		VN	30	3.72	0.001453	± 2.5	PASS
		VN	40	4.29	0.001676	± 2.5	PASS
		VN	50	4.33	0.001691	± 2.5	PASS
QPSK	LCH	VN	-30	-0.24	-0.000096	± 2.5	PASS
		VN	-20	-1.03	-0.000410	± 2.5	PASS
		VN	-10	3.95	0.001574	± 2.5	PASS
		VN	0	4.29	0.001709	± 2.5	PASS
		VN	10	4.73	0.001884	± 2.5	PASS
		VN	20	4.04	0.001610	± 2.5	PASS
		VN	30	-0.28	-0.000112	± 2.5	PASS
		VN	40	-1.32	-0.000526	± 2.5	PASS
	MCH	VN	50	0.01	0.000004	± 2.5	PASS
		VN	-30	0.49	0.000193	± 2.5	PASS
		VN	-20	-0.29	-0.000114	± 2.5	PASS
		VN	-10	0.62	0.000245	± 2.5	PASS
		VN	0	3.49	0.001377	± 2.5	PASS
		VN	10	-1.09	-0.000430	± 2.5	PASS
		VN	20	3.53	0.001393	± 2.5	PASS
		VN	30	2.78	0.001097	± 2.5	PASS
		VN	40	0.27	0.000107	± 2.5	PASS
	HCH	VN	50	4.06	0.001602	± 2.5	PASS
		VN	-30	3	0.001172	± 2.5	PASS
		VN	-20	-0.19	-0.000074	± 2.5	PASS
		VN	-10	2.72	0.001063	± 2.5	PASS
		VN	0	-0.83	-0.000324	± 2.5	PASS
		VN	10	3.67	0.001434	± 2.5	PASS
		VN	20	-1.64	-0.000641	± 2.5	PASS
VN		30	0.38	0.000148	± 2.5	PASS	
	VN	40	0.9	0.000352	± 2.5	PASS	
	VN	50	1.6	0.000625	± 2.5	PASS	