

Appendix for Band 13

Appendix A: Average Power Output Data

Test Result

Channel Bandwidth: 5 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	22.81	PASS
		1	12	23.27	PASS
		1	24	22.88	PASS
		12	0	21.94	PASS
		12	6	21.95	PASS
		12	13	21.80	PASS
		25	0	21.94	PASS
	MCH	1	0	22.86	PASS
		1	12	23.22	PASS
		1	24	22.85	PASS
		12	0	21.92	PASS
		12	6	21.98	PASS
		12	13	21.93	PASS
		25	0	21.99	PASS
	HCH	1	0	22.87	PASS
		1	12	23.22	PASS
		1	24	22.86	PASS
		12	0	21.81	PASS
		12	6	21.93	PASS
		12	13	21.90	PASS
		25	0	21.96	PASS
16QAM	LCH	1	0	22.09	PASS
		1	12	22.52	PASS
		1	24	22.23	PASS
		12	0	21.04	PASS
		12	6	21.04	PASS
		12	13	20.88	PASS
		25	0	20.98	PASS
	MCH	1	0	22.21	PASS
		1	12	22.58	PASS
		1	24	22.16	PASS
		12	0	21.08	PASS

		12	6	21.16	PASS
		12	13	21.12	PASS
		25	0	20.99	PASS
	HCH	1	0	22.15	PASS
		1	12	22.49	PASS
		1	24	22.15	PASS
		12	0	20.84	PASS
		12	6	20.96	PASS
		12	13	20.98	PASS
		25	0	21.04	PASS

Channel Bandwidth: 10 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	MCH	1	0	22.74	PASS
		1	24	23.29	PASS
		1	49	22.79	PASS
		25	0	22.14	PASS
		25	12	21.99	PASS
		25	25	22.22	PASS
		50	0	22.18	PASS
16QAM	MCH	1	0	22.07	PASS
		1	24	22.43	PASS
		1	49	22.20	PASS
		25	0	21.22	PASS
		25	12	21.01	PASS
		25	25	21.24	PASS
		50	0	21.23	PASS

Appendix B: Peak-to-Average Ratio

Test Result

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	4.81	<13	PASS
		1	12	5.16	<13	PASS
		1	24	5.59	<13	PASS
		12	0	5.49	<13	PASS
		12	6	5.67	<13	PASS
		12	13	5.99	<13	PASS
		25	0	5.84	<13	PASS
	MCH	1	0	5.22	<13	PASS
		1	12	5.4	<13	PASS
		1	24	5.62	<13	PASS
		12	0	6.09	<13	PASS
		12	6	6	<13	PASS
		12	13	6	<13	PASS
		25	0	6.1	<13	PASS
	HCH	1	0	5.84	<13	PASS
		1	12	5.69	<13	PASS
		1	24	5.58	<13	PASS
		12	0	6.12	<13	PASS
		12	6	6.01	<13	PASS
		12	13	5.87	<13	PASS
		25	0	6	<13	PASS
16QAM	LCH	1	0	5.69	<13	PASS
		1	12	5.94	<13	PASS
		1	24	6.8	<13	PASS
		12	0	6.45	<13	PASS
		12	6	6.54	<13	PASS
		12	13	6.74	<13	PASS
		25	0	6.66	<13	PASS
	MCH	1	0	6.26	<13	PASS
		1	12	6.44	<13	PASS
		1	24	6.27	<13	PASS
		12	0	6.83	<13	PASS
		12	6	6.86	<13	PASS

		12	13	6.82	<13	PASS
		25	0	6.85	<13	PASS
	HCH	1	0	6.46	<13	PASS
		1	12	6.48	<13	PASS
		1	24	6.29	<13	PASS
		12	0	7.02	<13	PASS
		12	6	6.92	<13	PASS
		12	13	6.82	<13	PASS
		25	0	6.66	<13	PASS

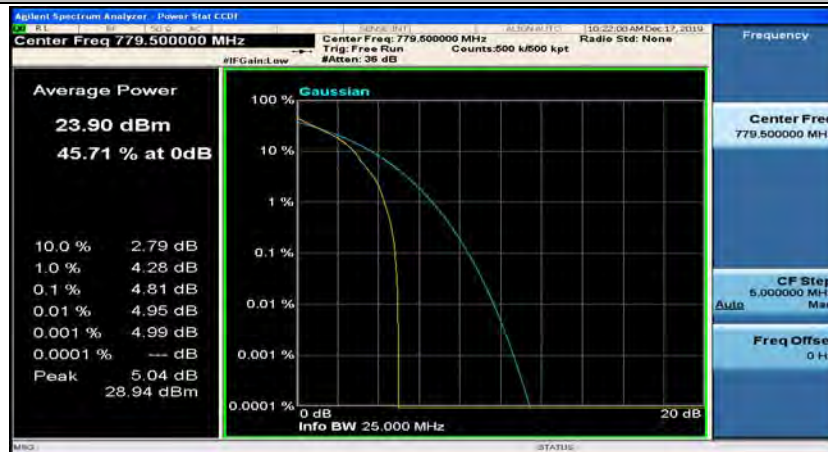
Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	MCH	1	0	4.74	<13	PASS
		1	24	5.51	<13	PASS
		1	49	5.21	<13	PASS
		25	0	5.8	<13	PASS
		25	12	6.07	<13	PASS
		25	25	5.84	<13	PASS
		50	0	5.95	<13	PASS
16QAM	MCH	1	0	5.58	<13	PASS
		1	24	6.64	<13	PASS
		1	49	6.37	<13	PASS
		25	0	6.63	<13	PASS
		25	12	6.94	<13	PASS
		25	25	6.78	<13	PASS
		50	0	6.7	<13	PASS

Test Graphs

Channel Bandwidth: 5 MHz

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12



(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0



(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#6



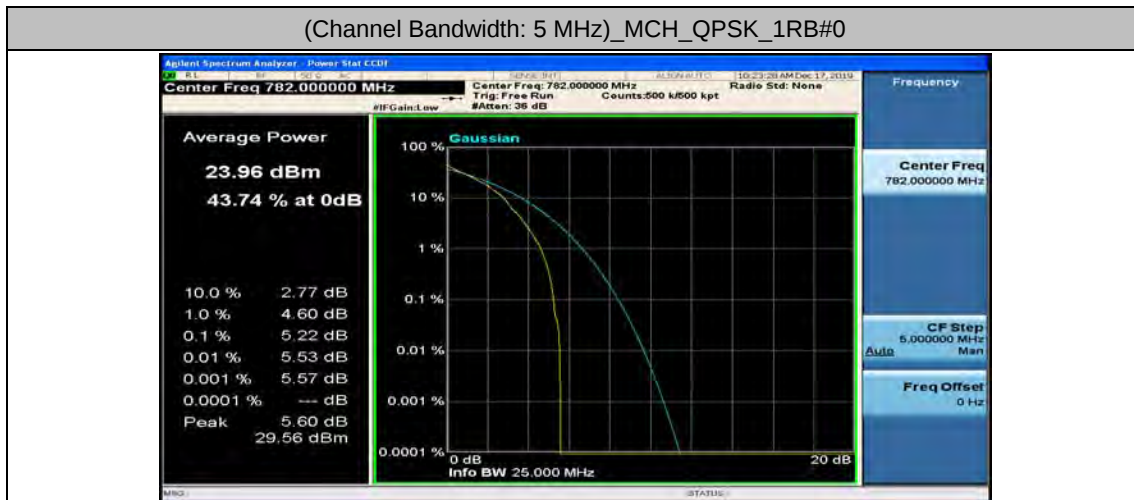
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13



(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24



(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#6



(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#13



(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0



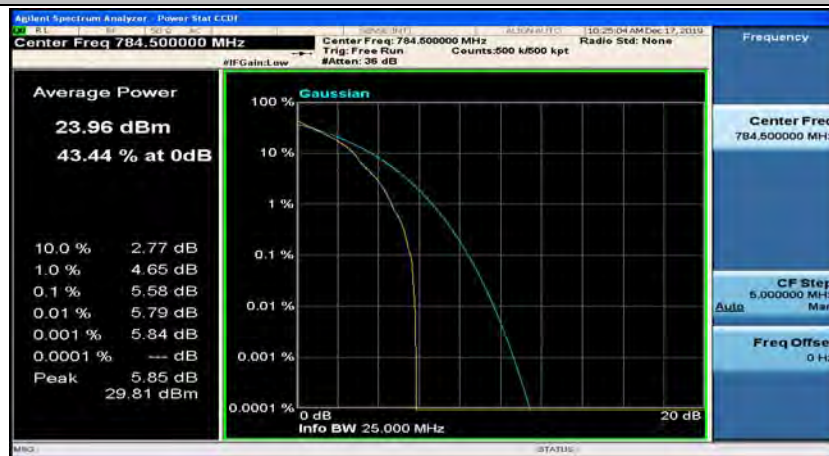
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(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24



(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6



(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13



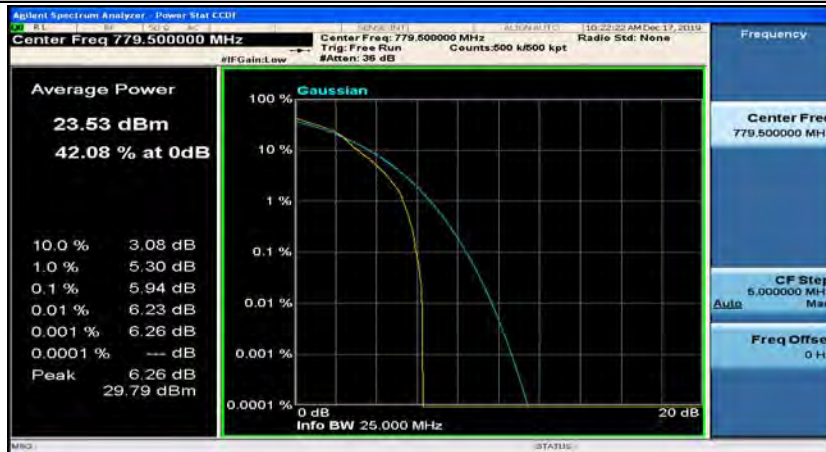
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



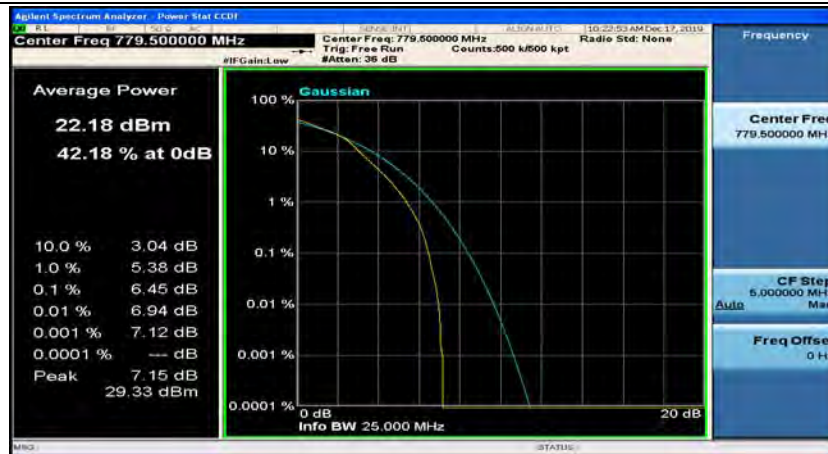
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12



(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24



(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0



(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#6



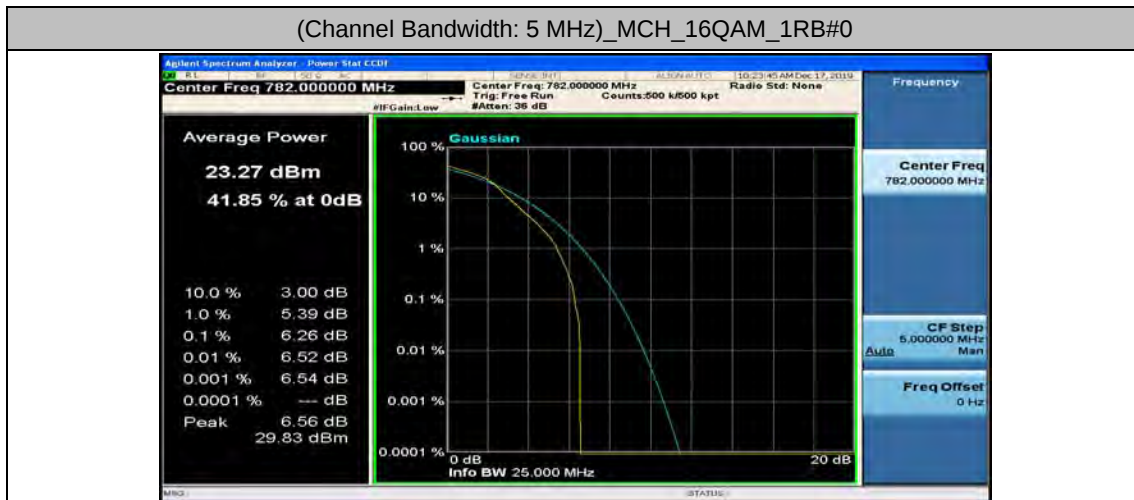
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(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#24



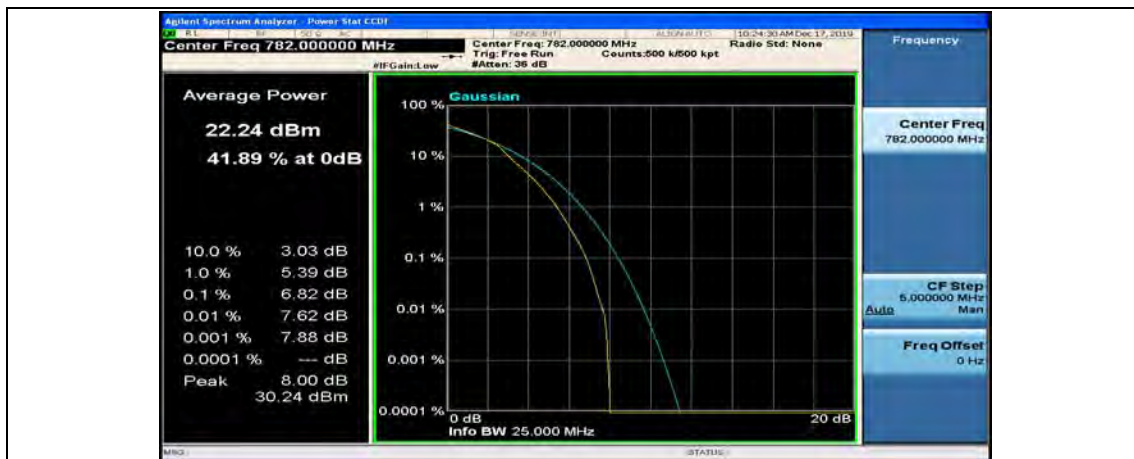
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#6



(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#13



(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



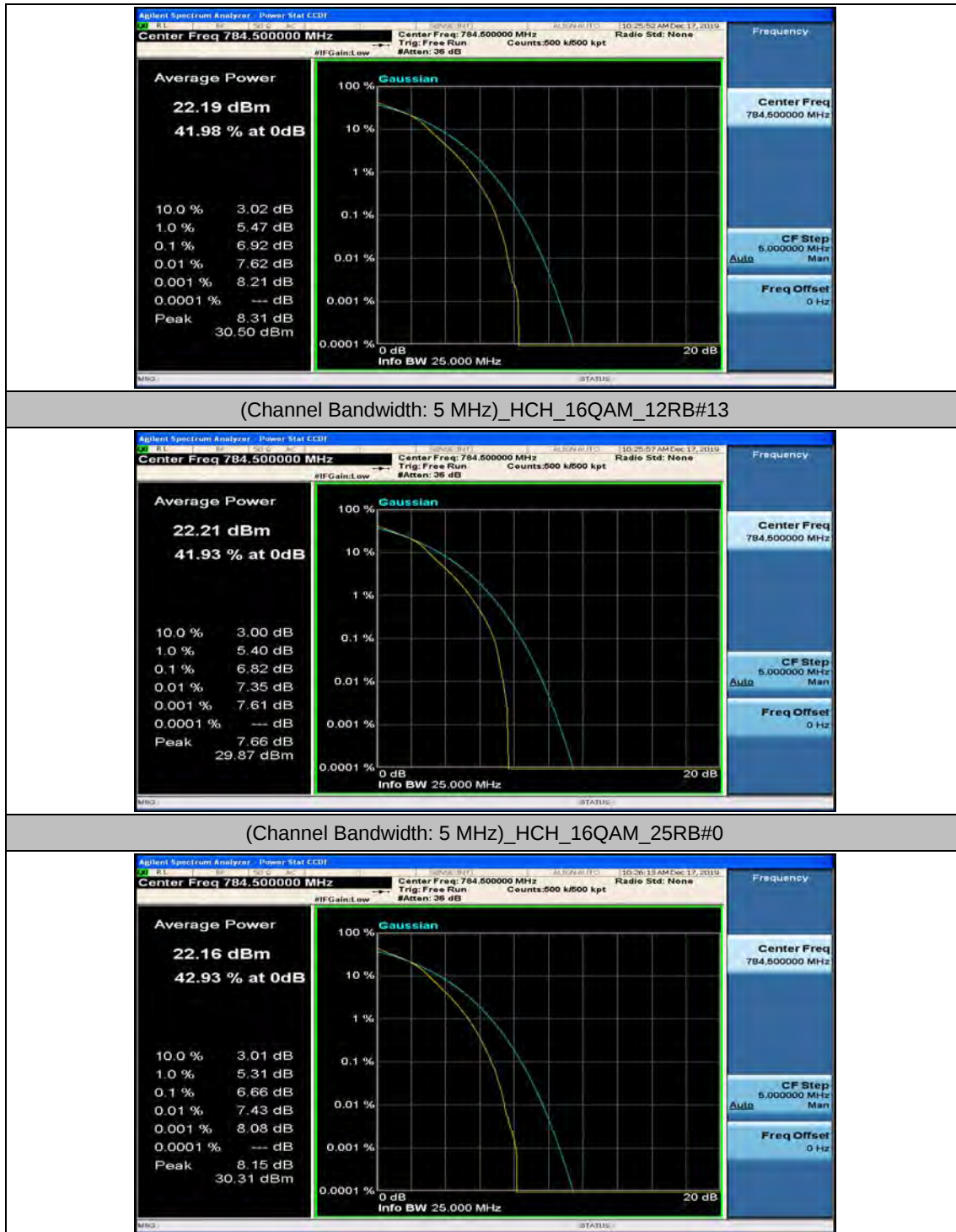
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24



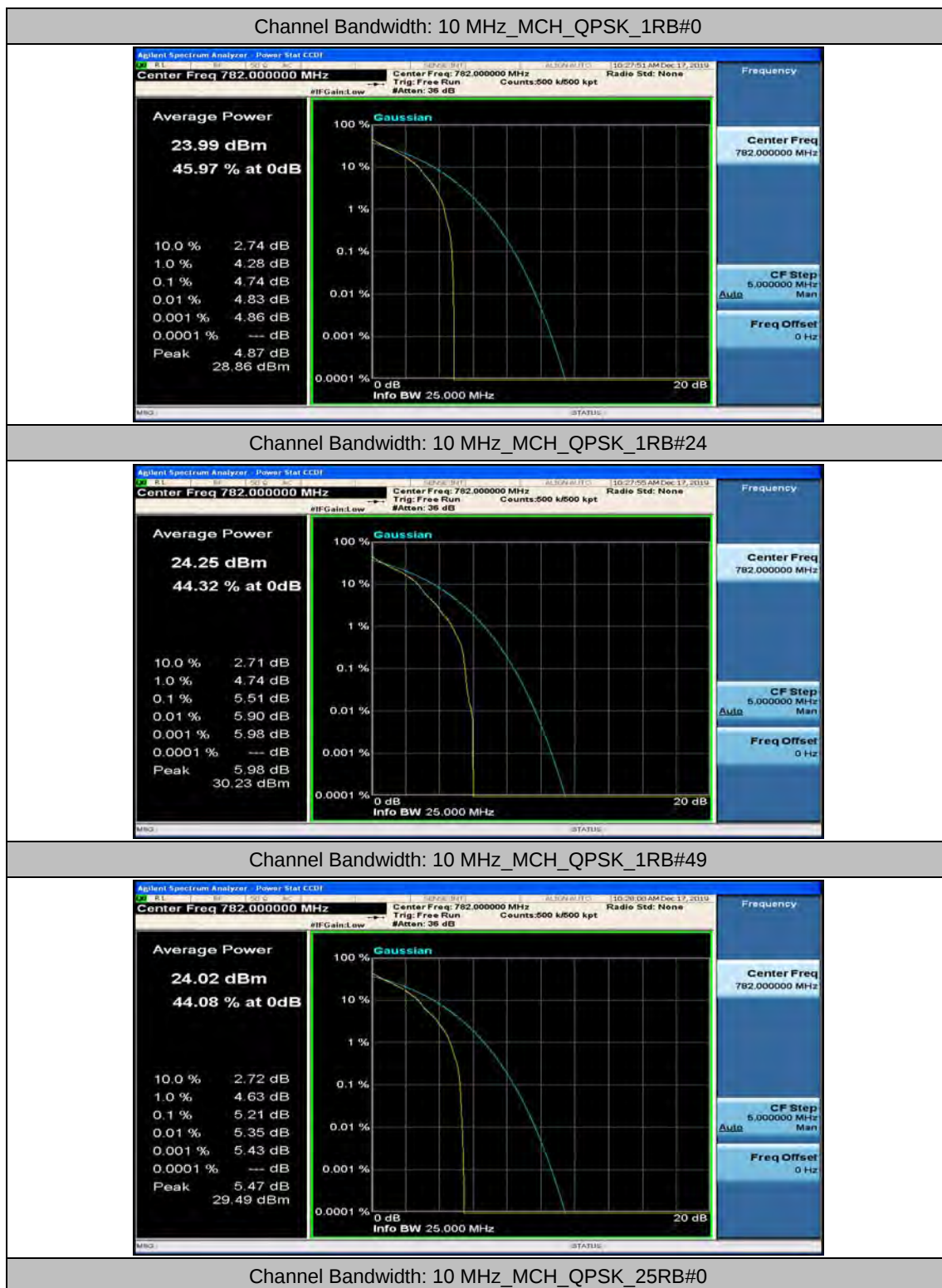
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#0

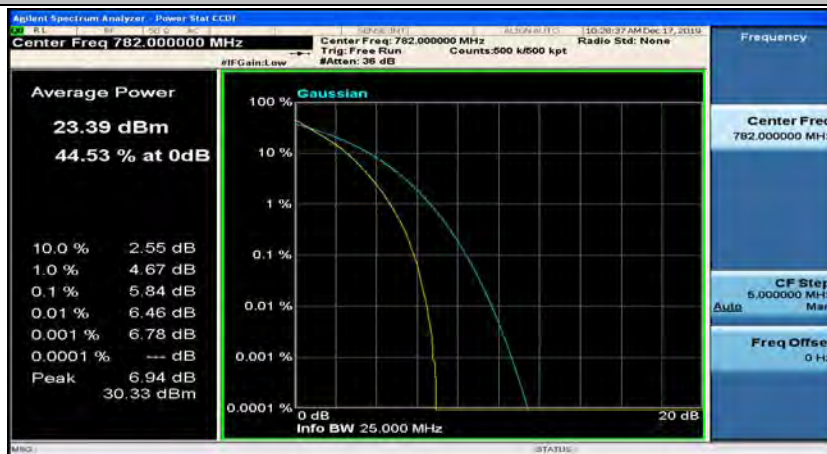
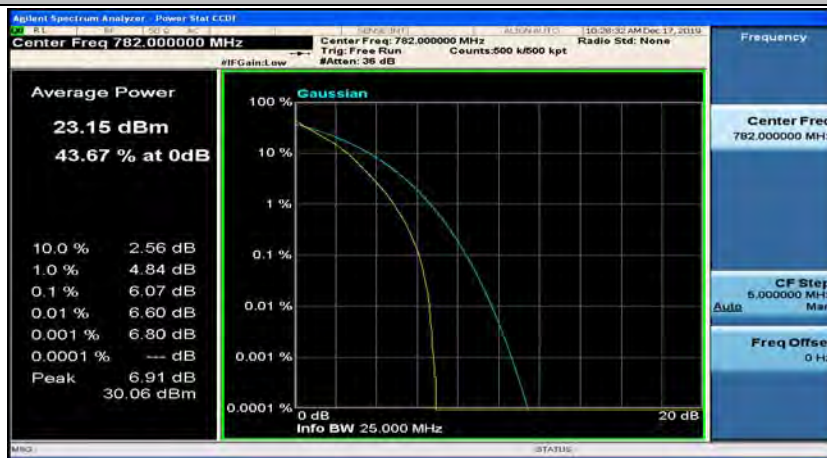


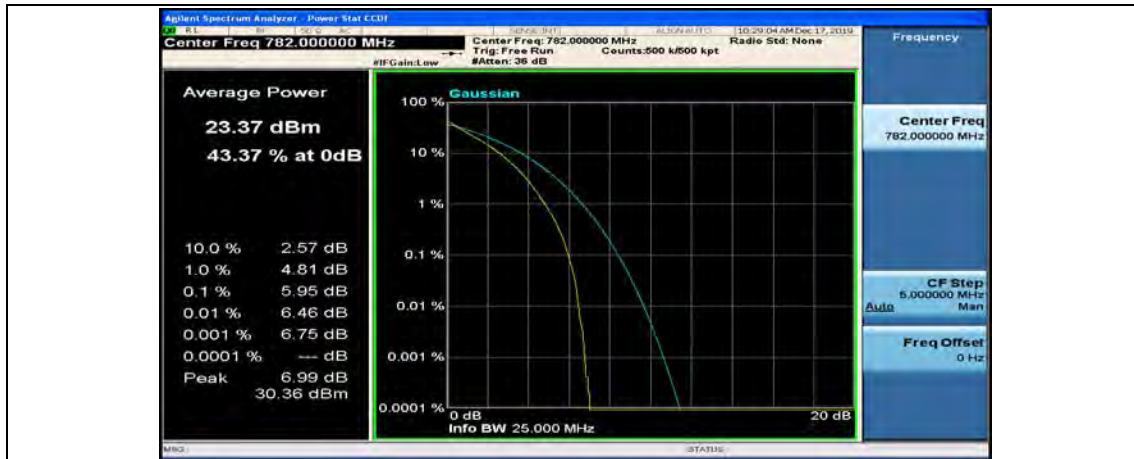
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#6



Channel Bandwidth: 10 MHz



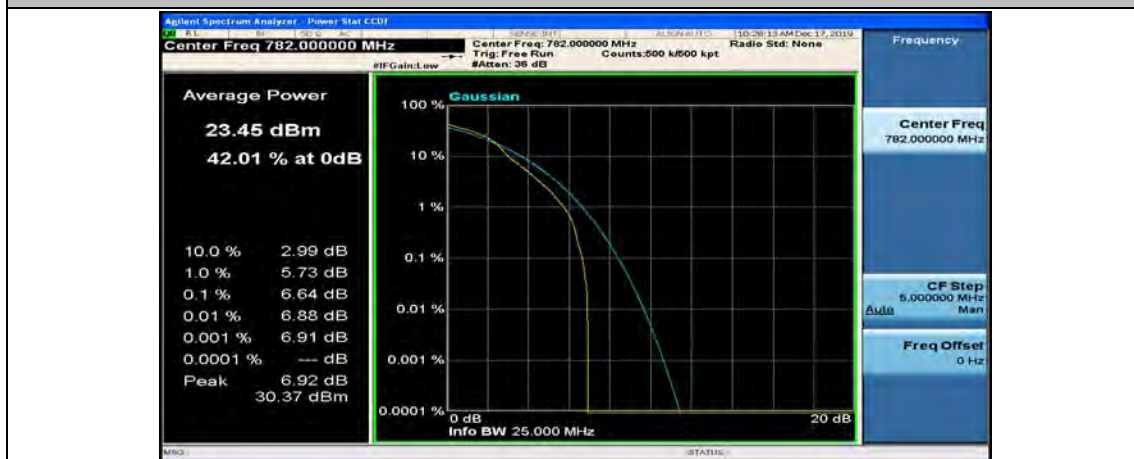




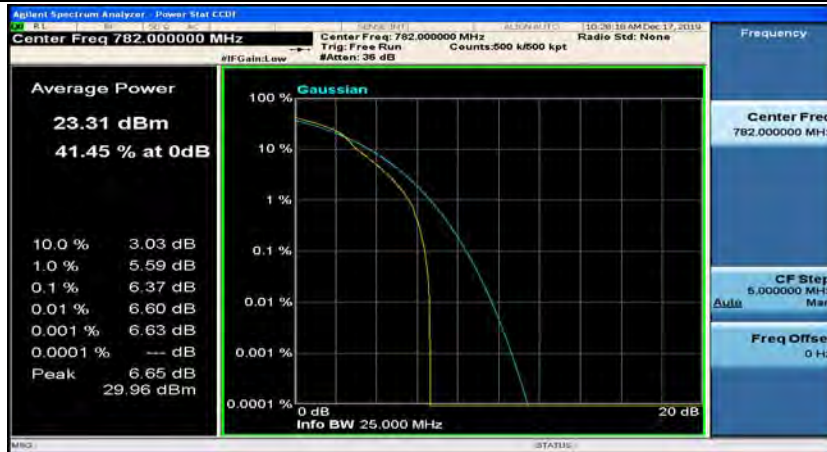
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0

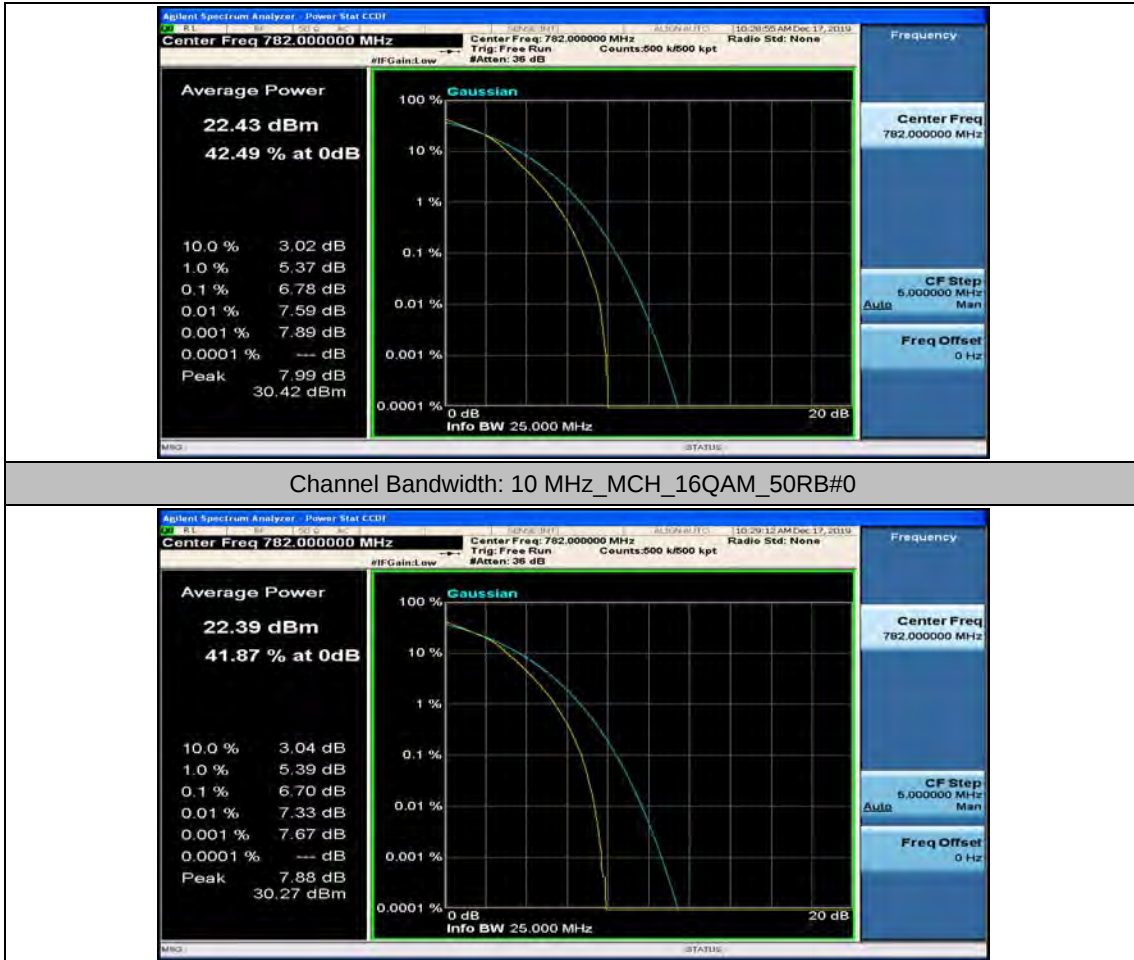


Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24



Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49





Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	25	0	4.4771	4.907	PASS
	MCH	25	0	4.4786	4.917	PASS
	HCH	25	0	4.4733	4.915	PASS
16QAM	LCH	25	0	4.4793	4.814	PASS
	MCH	25	0	4.4810	4.897	PASS
	HCH	25	0	4.4753	4.828	PASS

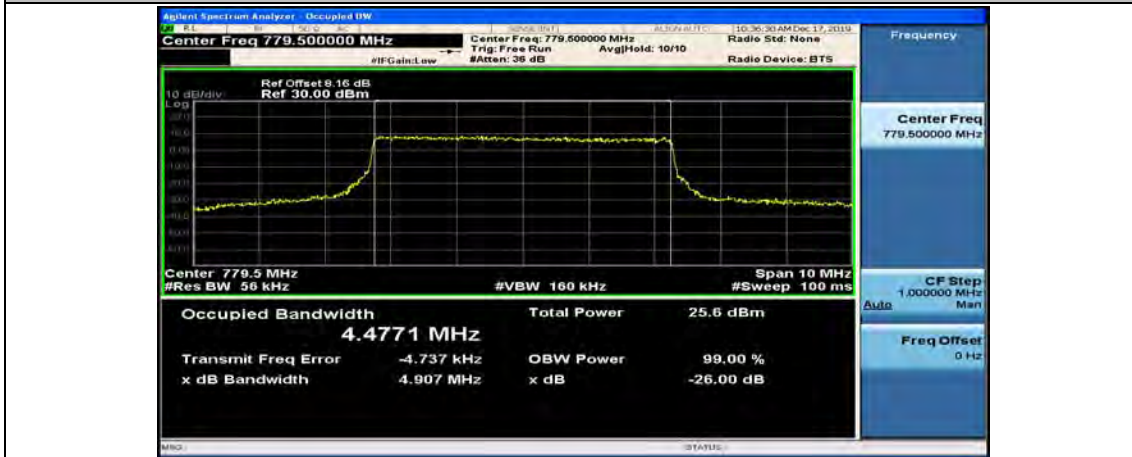
Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	MCH	50	0	8.9631	9.590	PASS
16QAM	MCH	50	0	8.9705	9.543	PASS

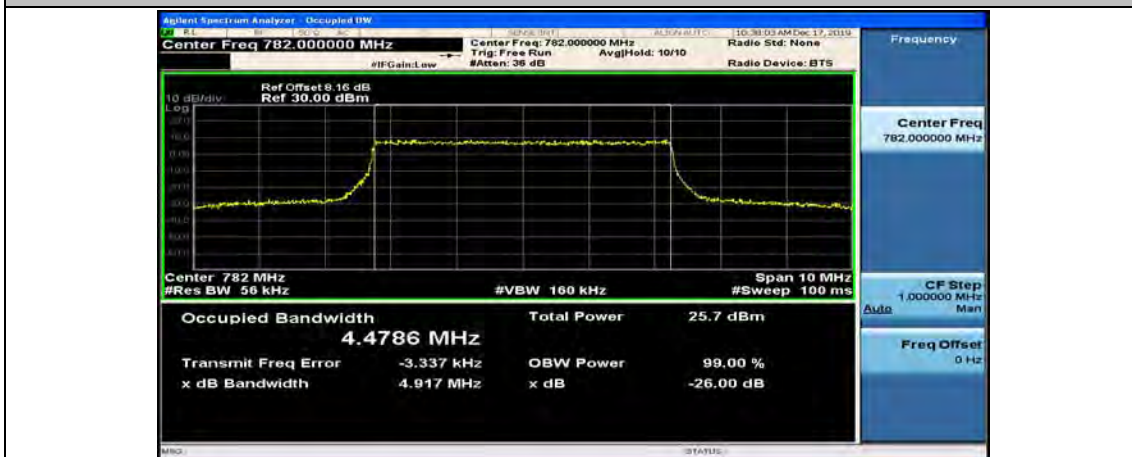
Test Graphs

Channel Bandwidth: 5 MHz

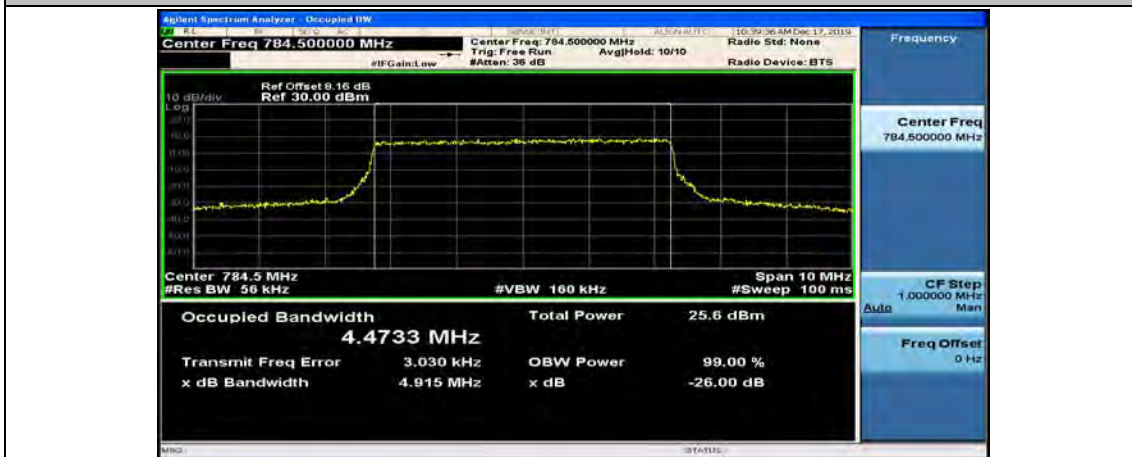
(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



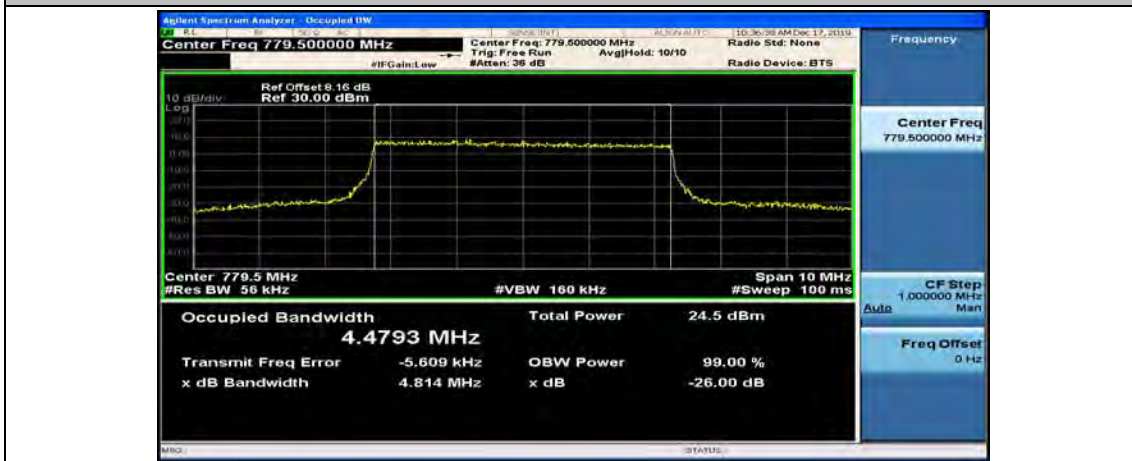
(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0



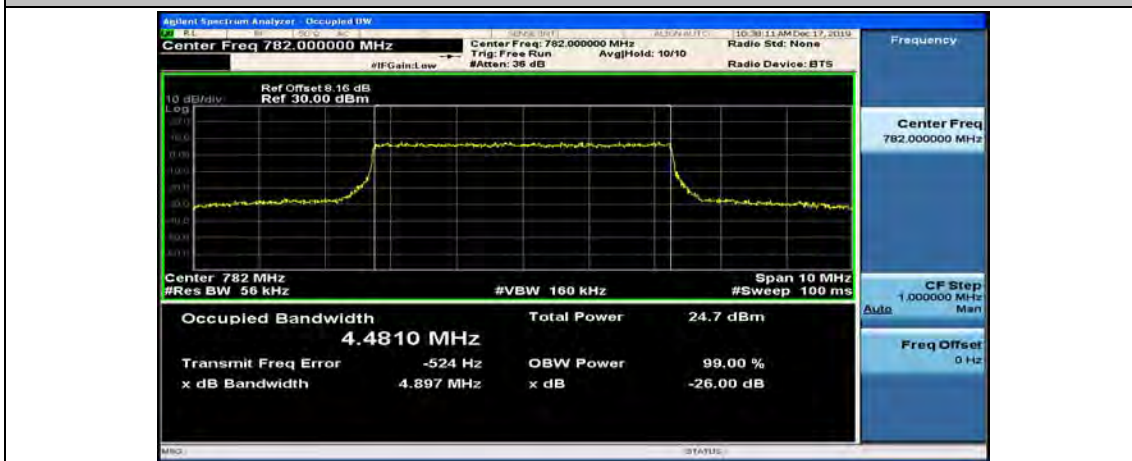
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



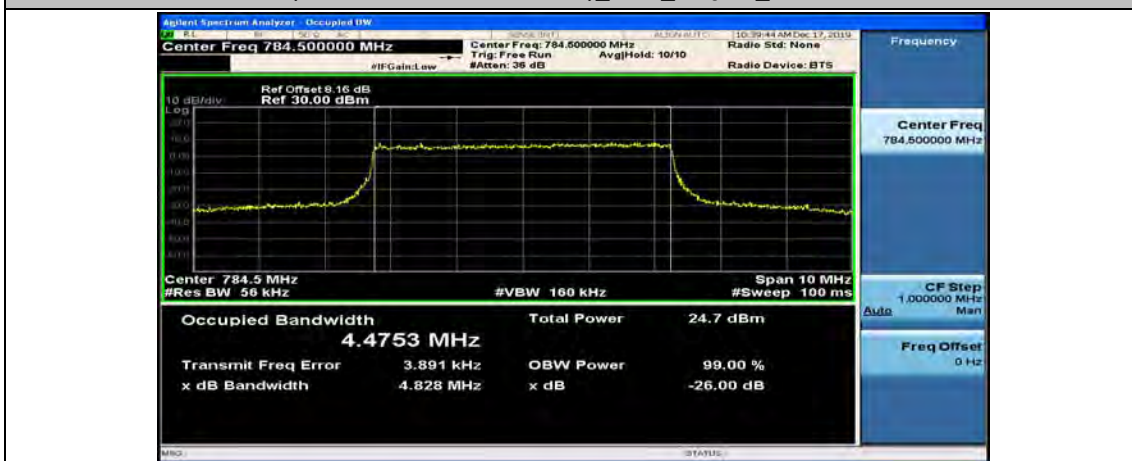
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



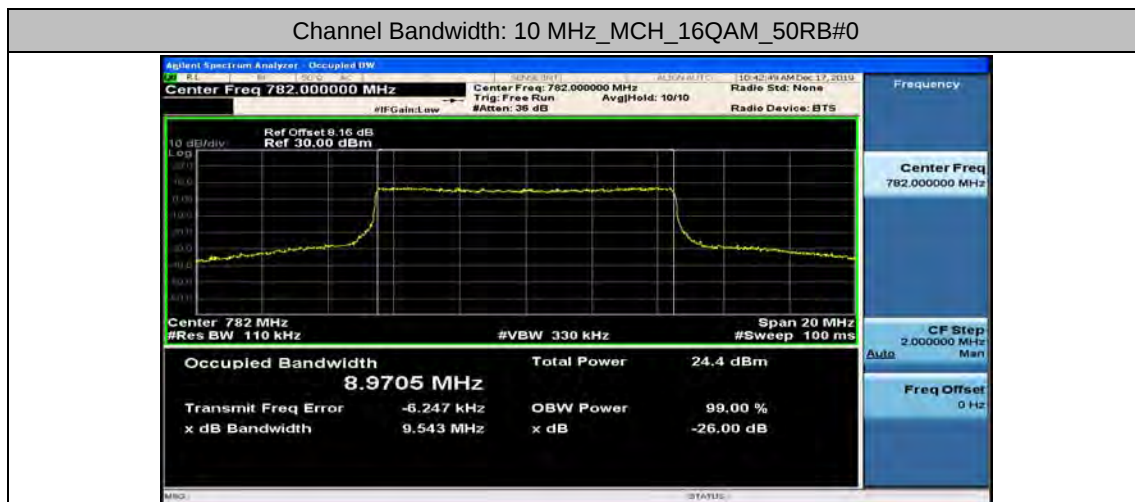
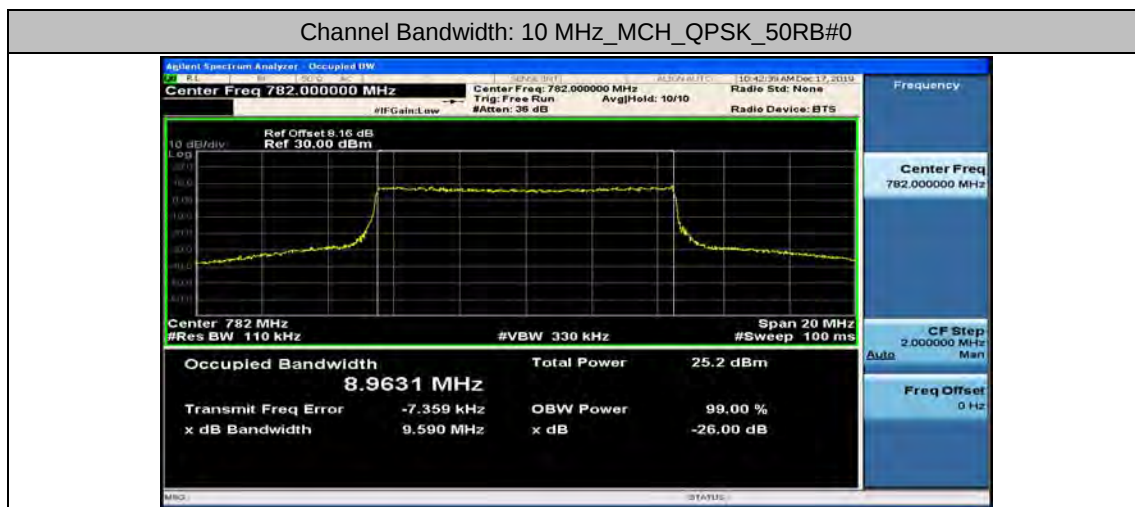
(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0



Channel Bandwidth: 10 MHz



Appendix D: Band Edge

Test Graphs

Band13_5MHz_QPSK_23205_1RB#0



Band13_5MHz_QPSK_23205_25RB#0



Band13_5MHz_QPSK_23255_1RB#0



Band13_5MHz_QPSK_23255_25RB#0



Band13_5MHz_16QAM_23205_1RB#0



Band13_5MHz_16QAM_23205_25RB#0



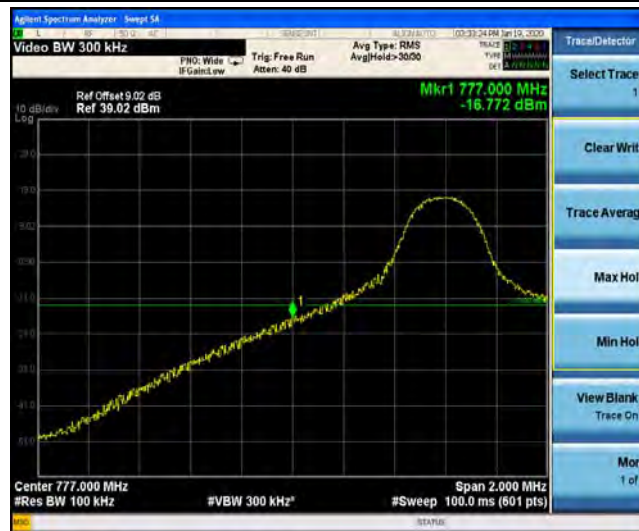
Band13_5MHz_16QAM_23255_1RB#0



Band13_5MHz_16QAM_23255_25RB#0



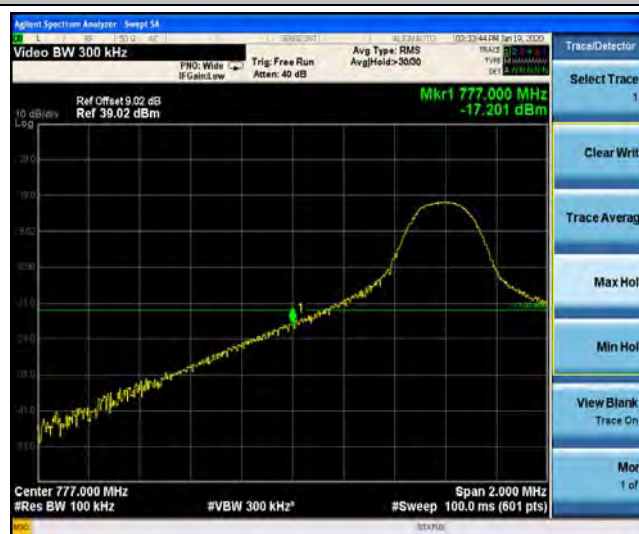
Band13_10MHz_QPSK_23230_1RB#0



Band13_10MHz_QPSK_23230_50RB#0



Band13_10MHz_QPSK_23230_1RB#0



Band13_10MHz_QPSK_23230_50RB#0



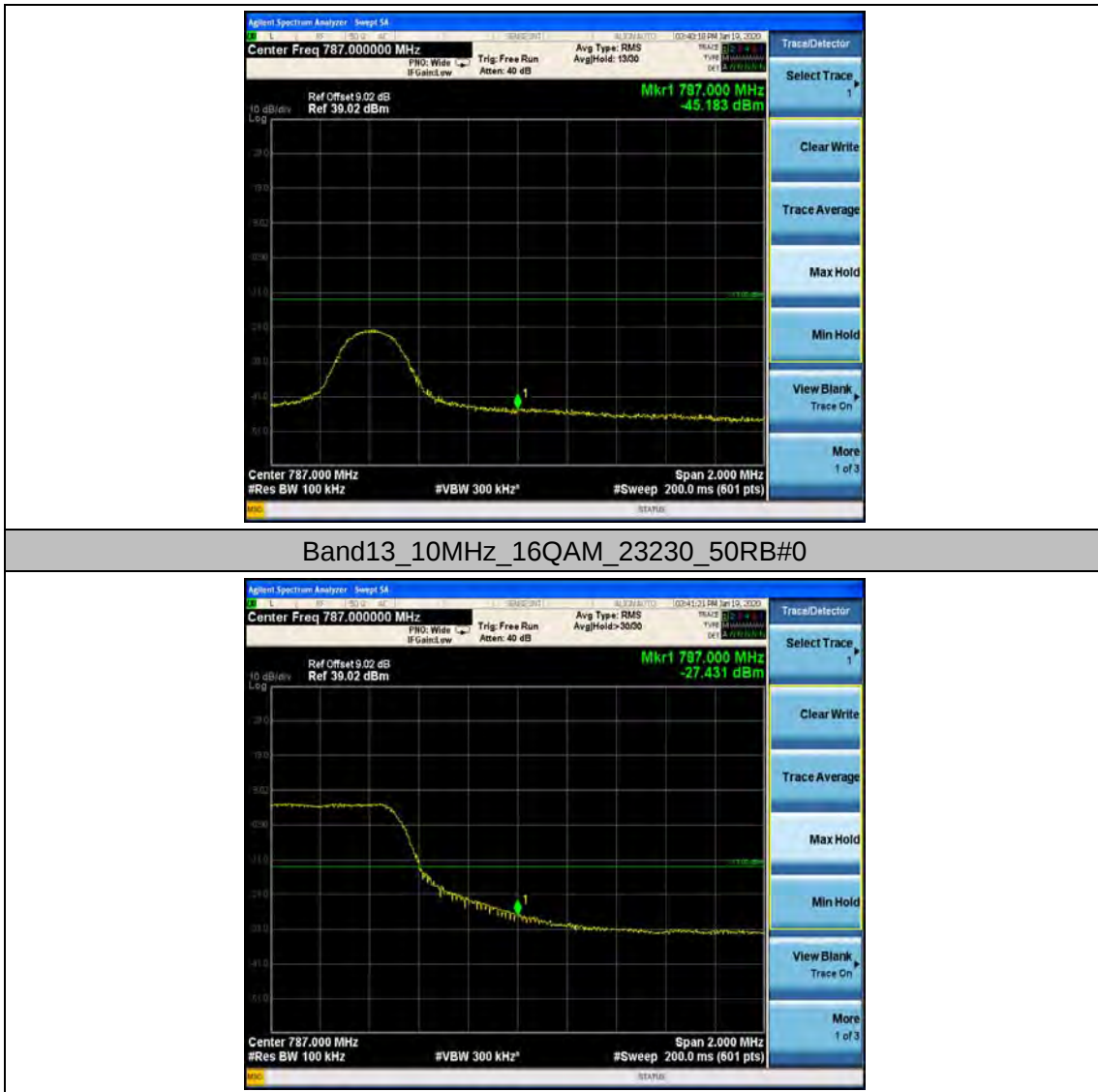
Band13_10MHz_16QAM_23260_1RB#0



Band13_10MHz_16QAM_23260_50RB#0



Band13_10MHz_16QAM_23230_1RB#0

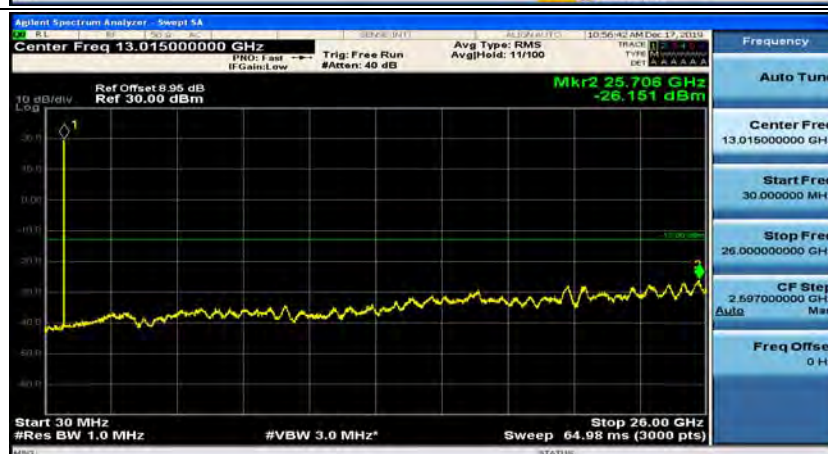
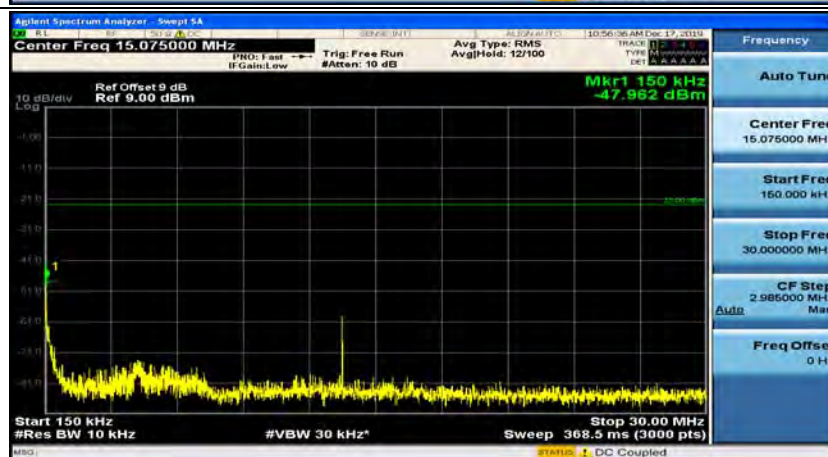


Appendix E: Conducted Spurious Emission

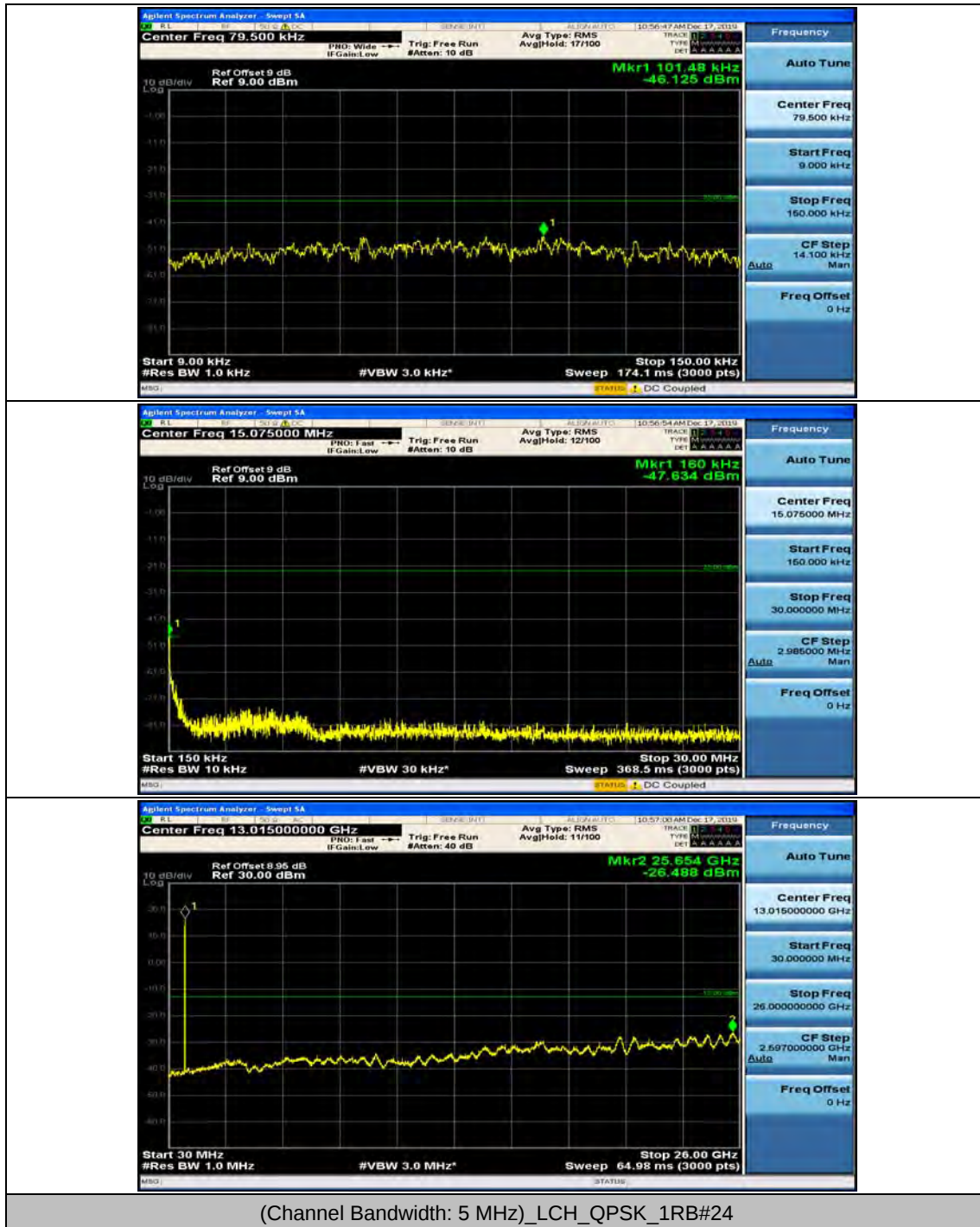
Test Graphs

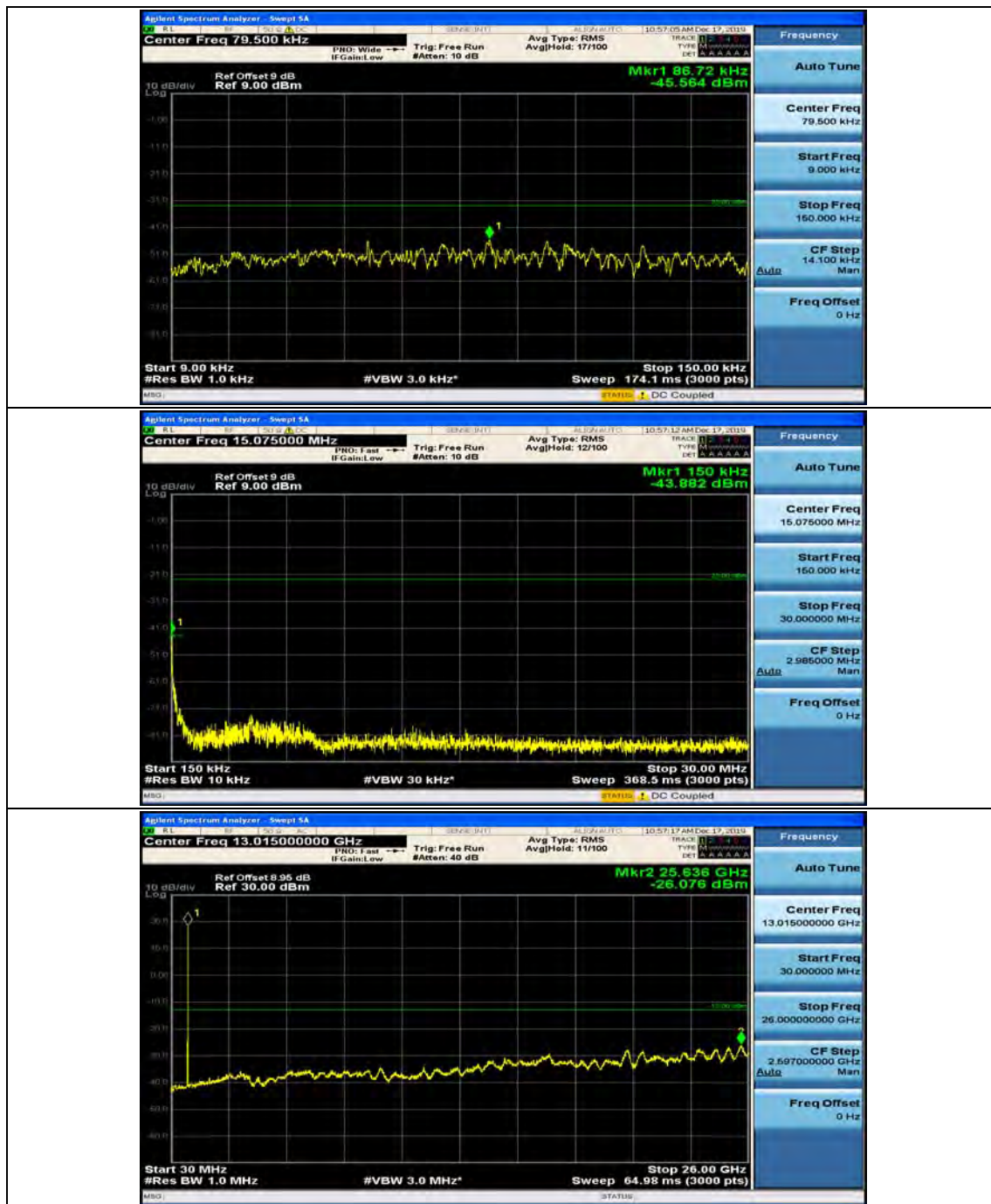
Channel Bandwidth: 5 MHz

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0

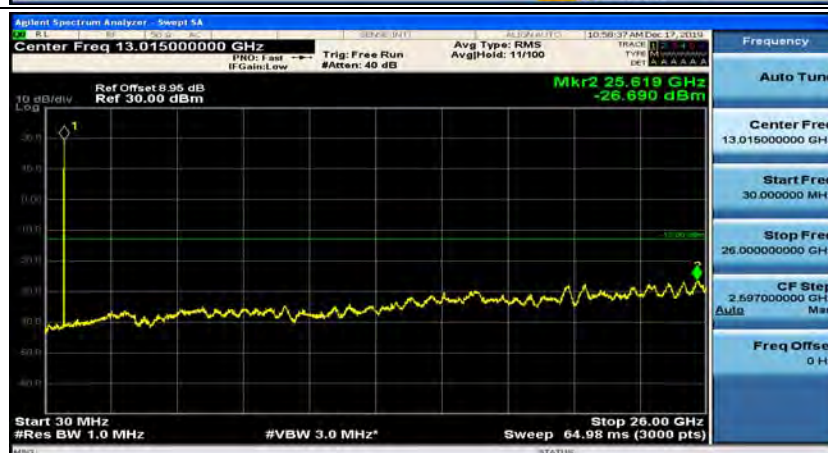
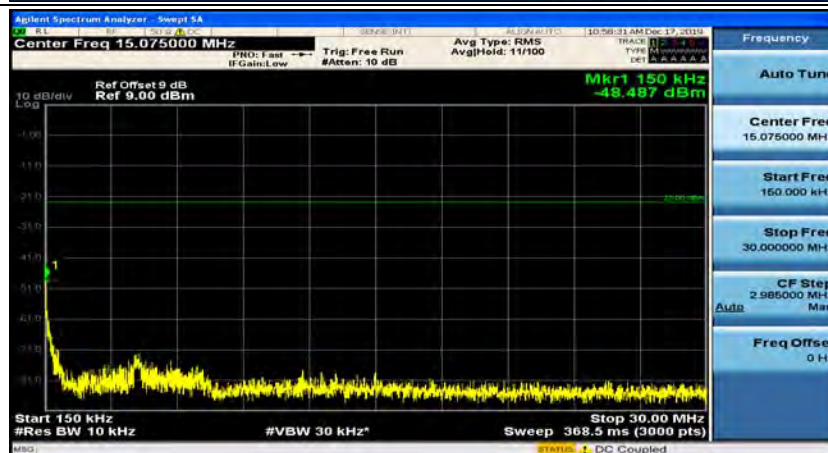


(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12

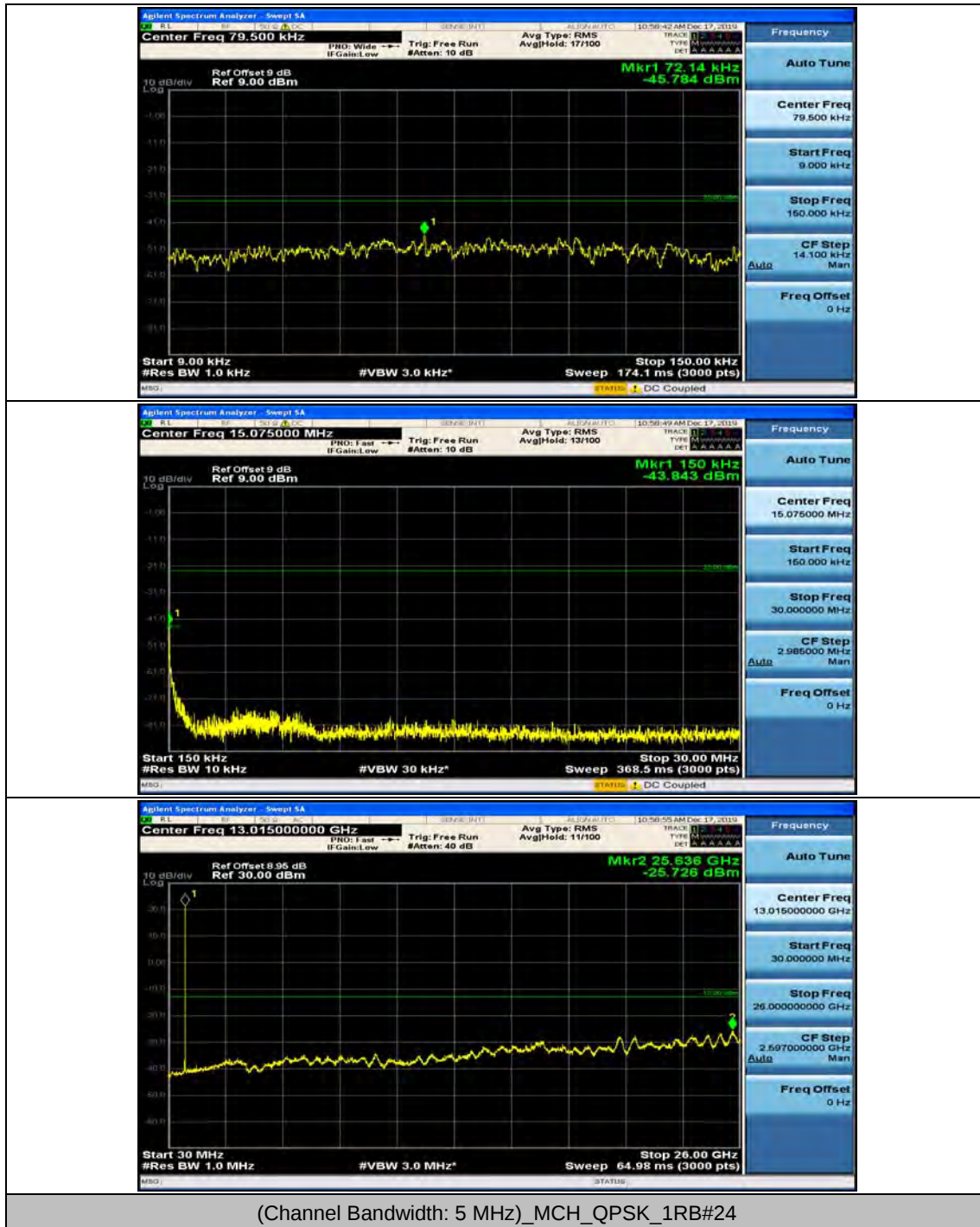


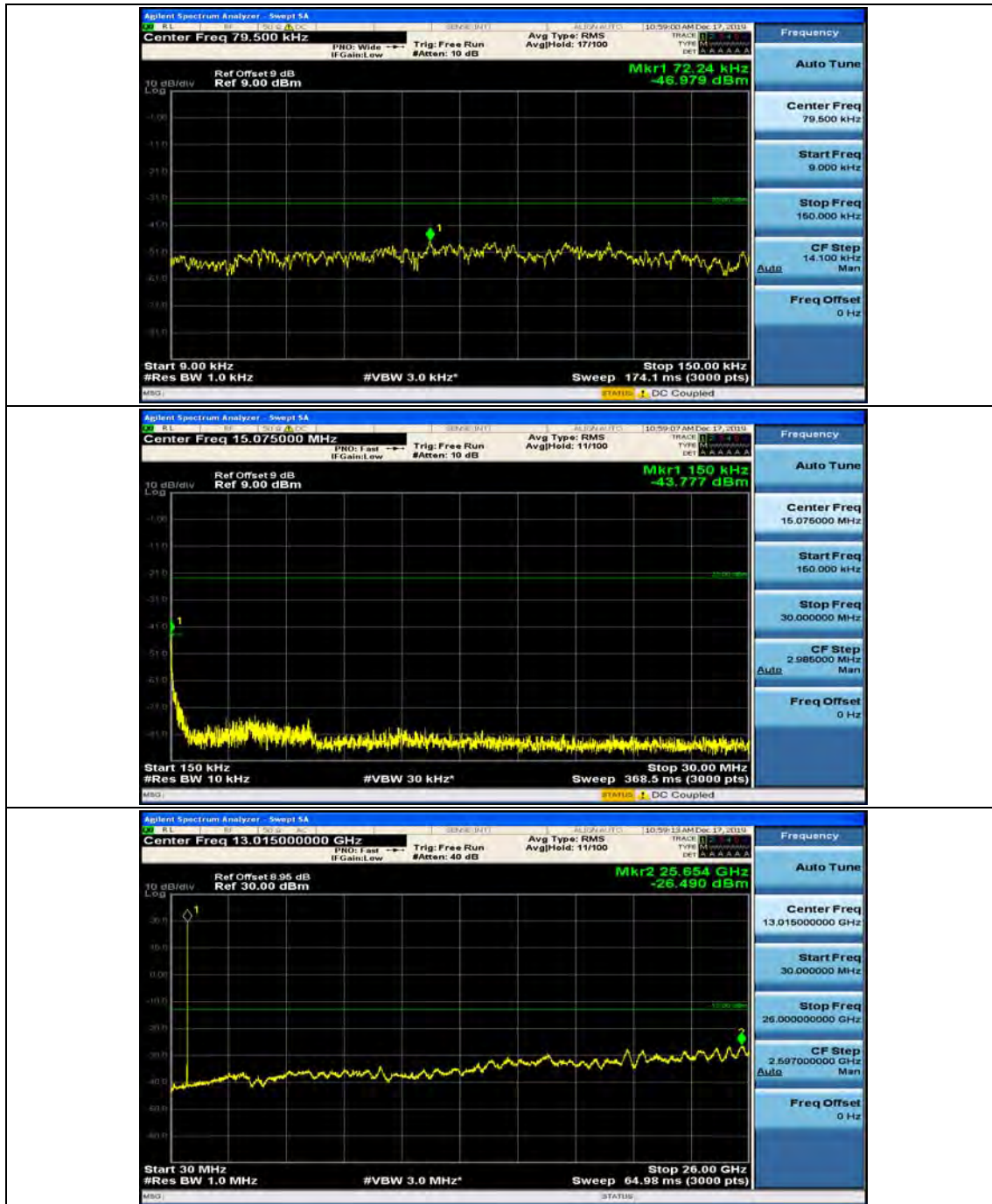


(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0

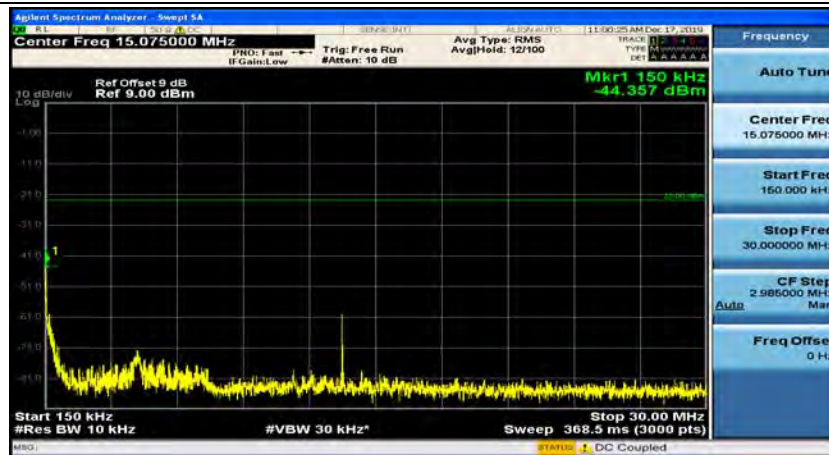
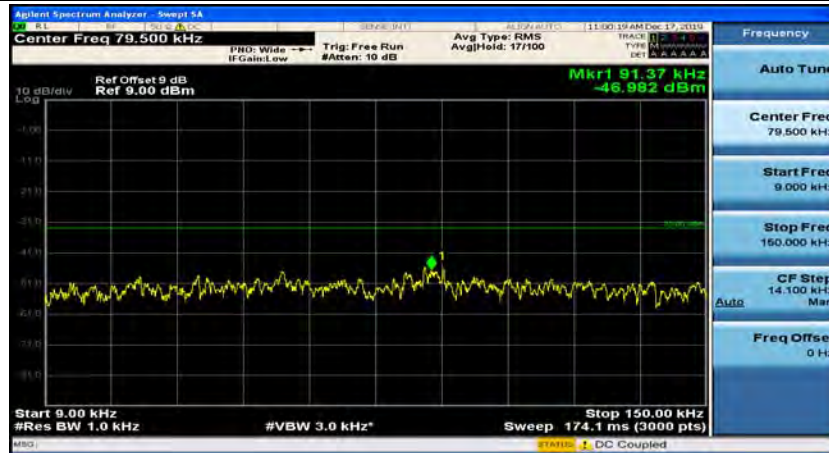


(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12

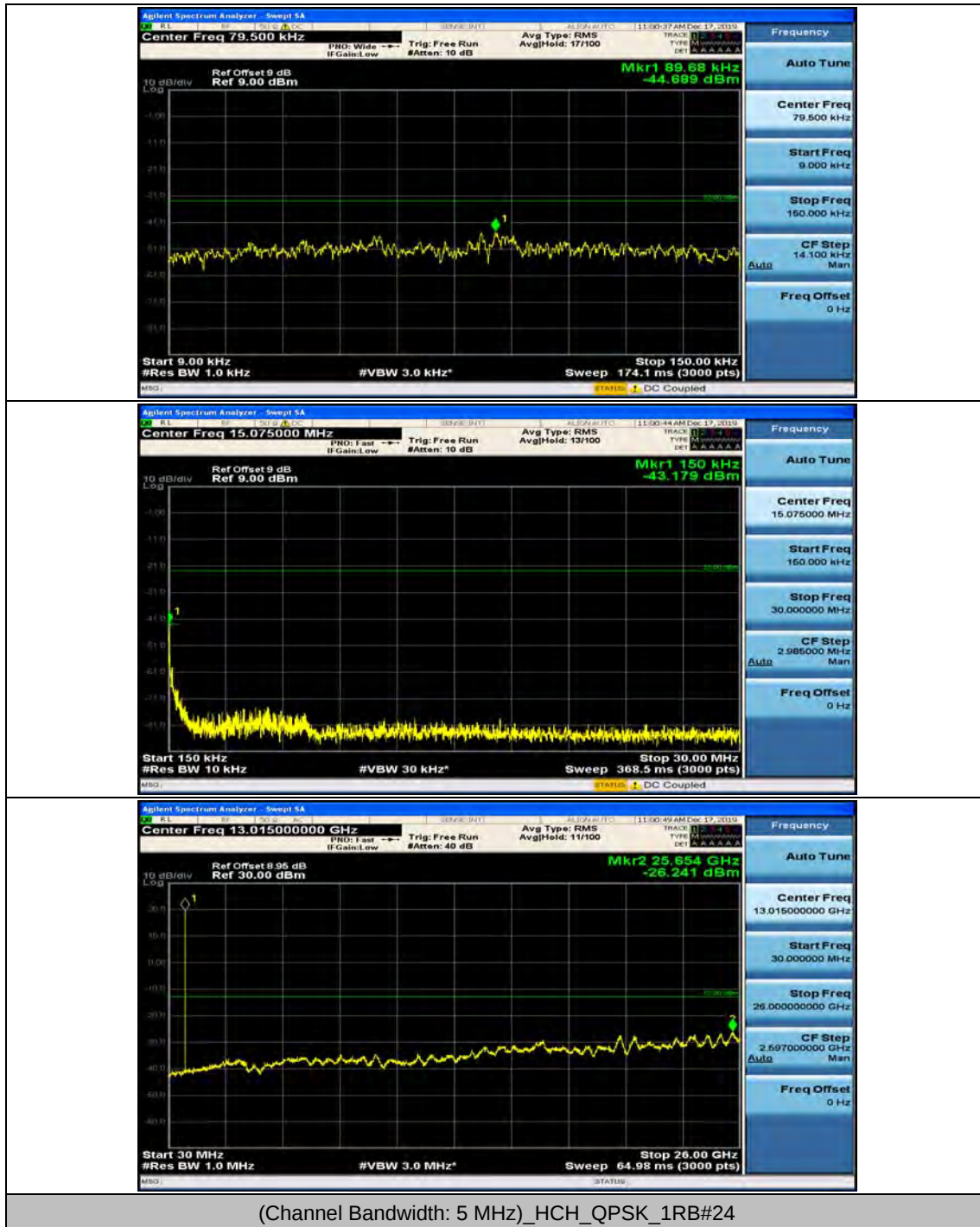


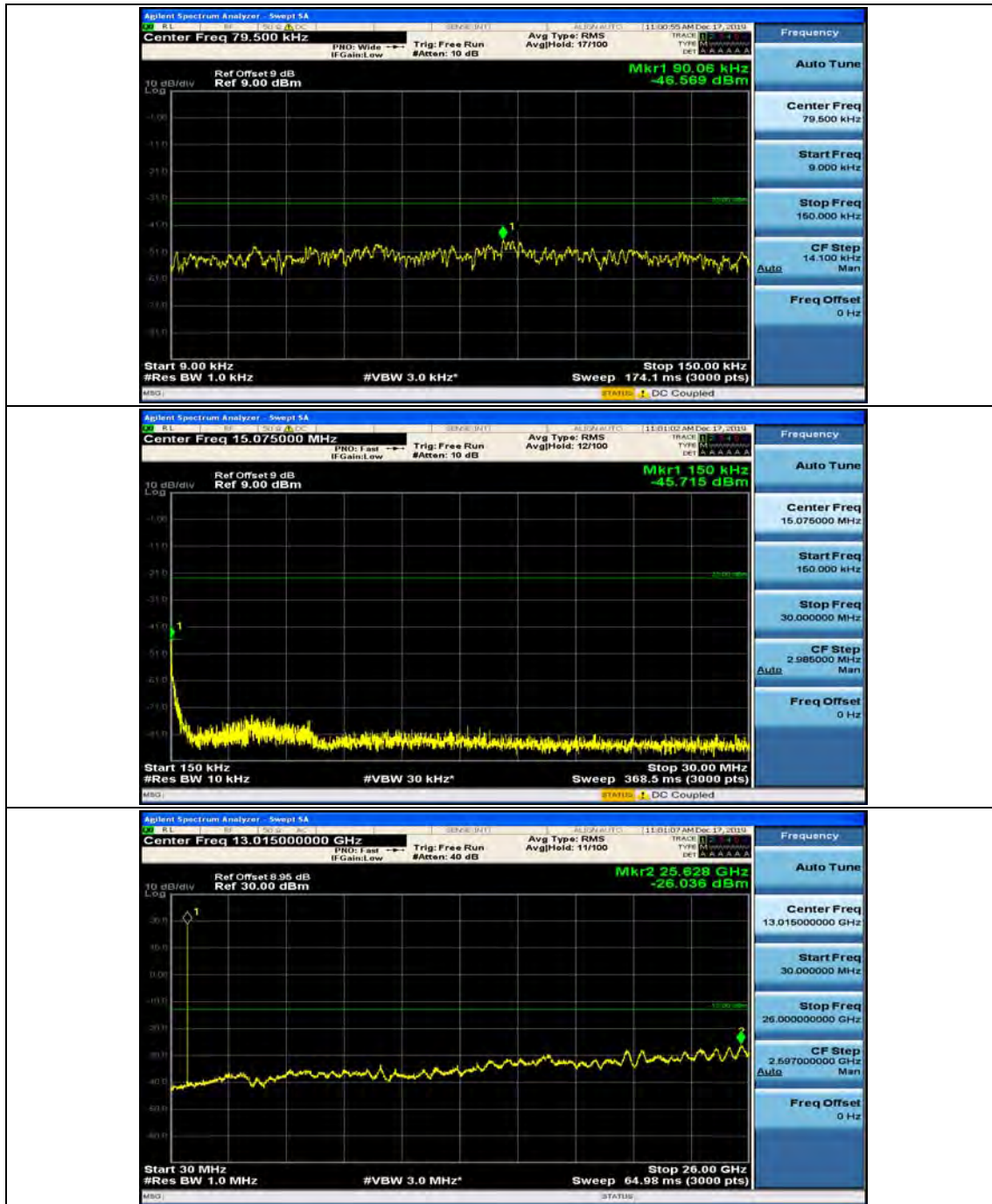


(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0

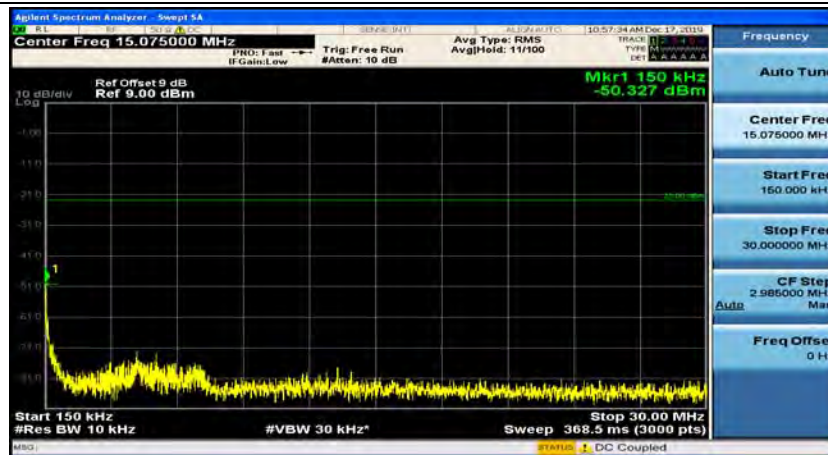


(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12

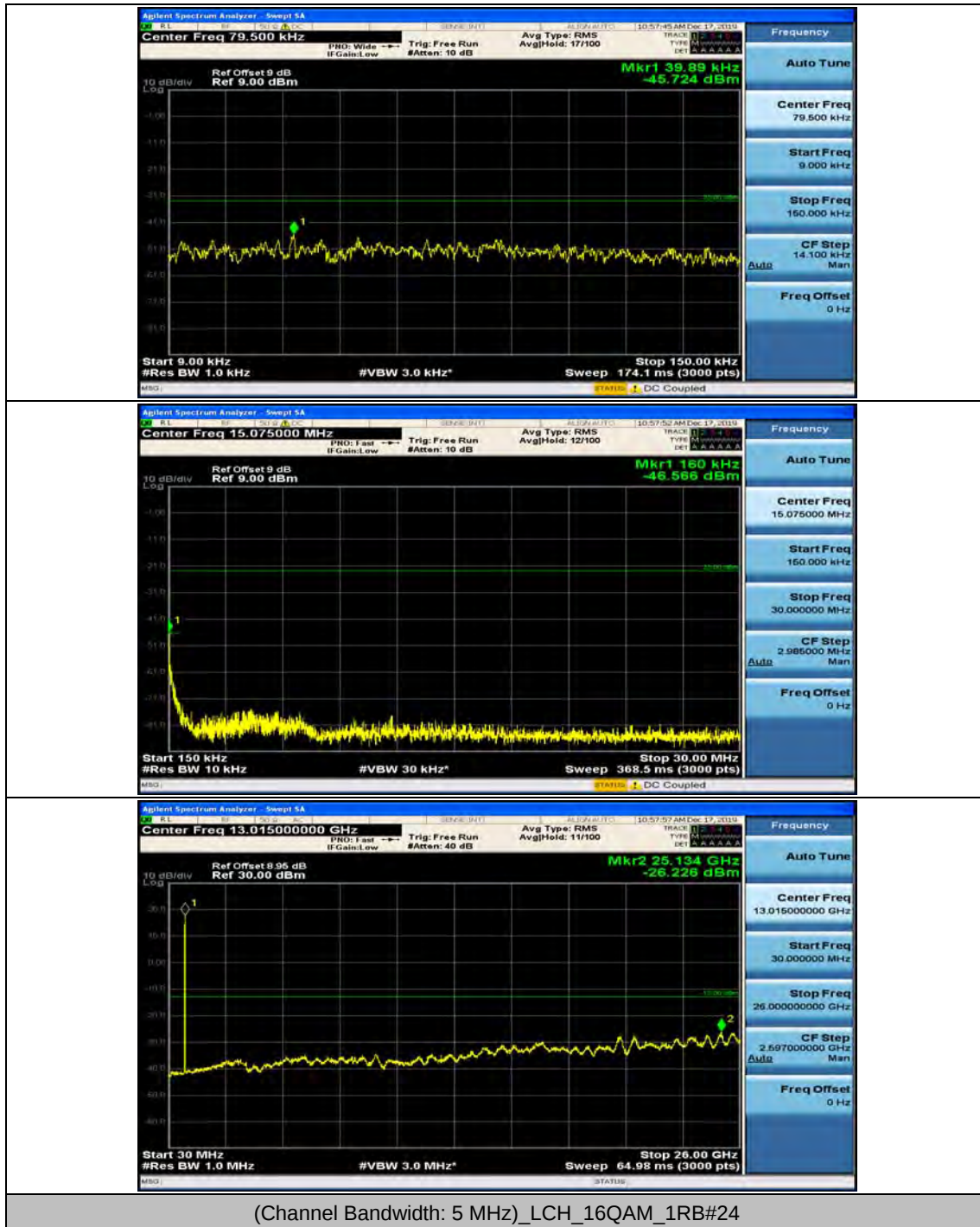


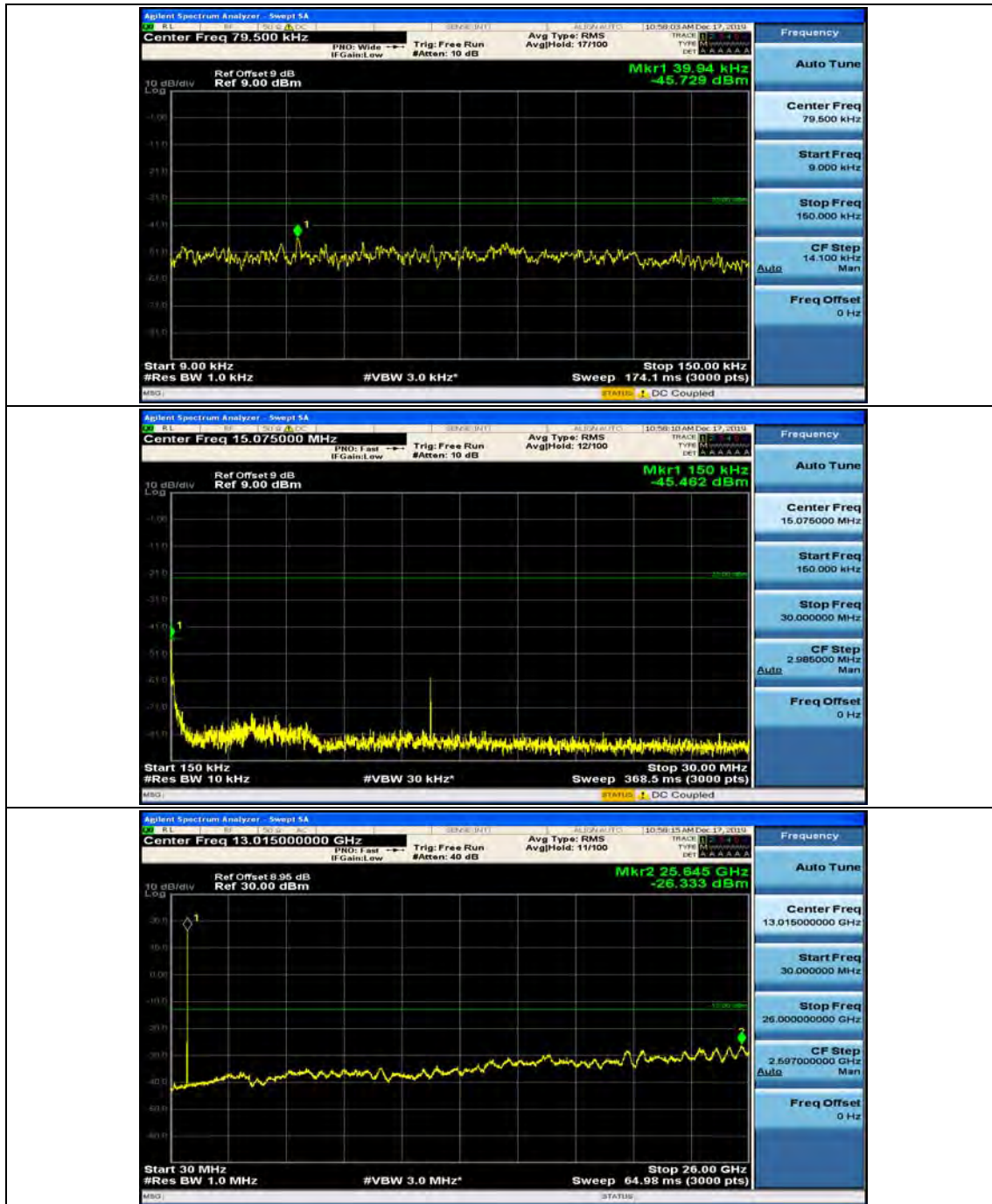


(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0

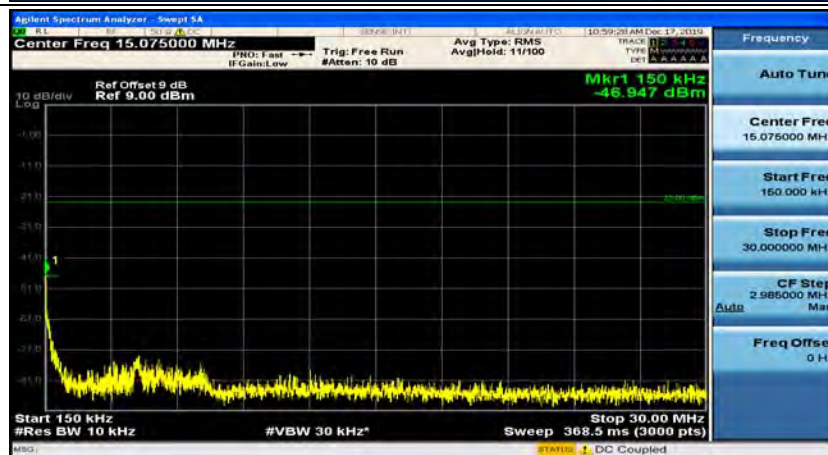


(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12

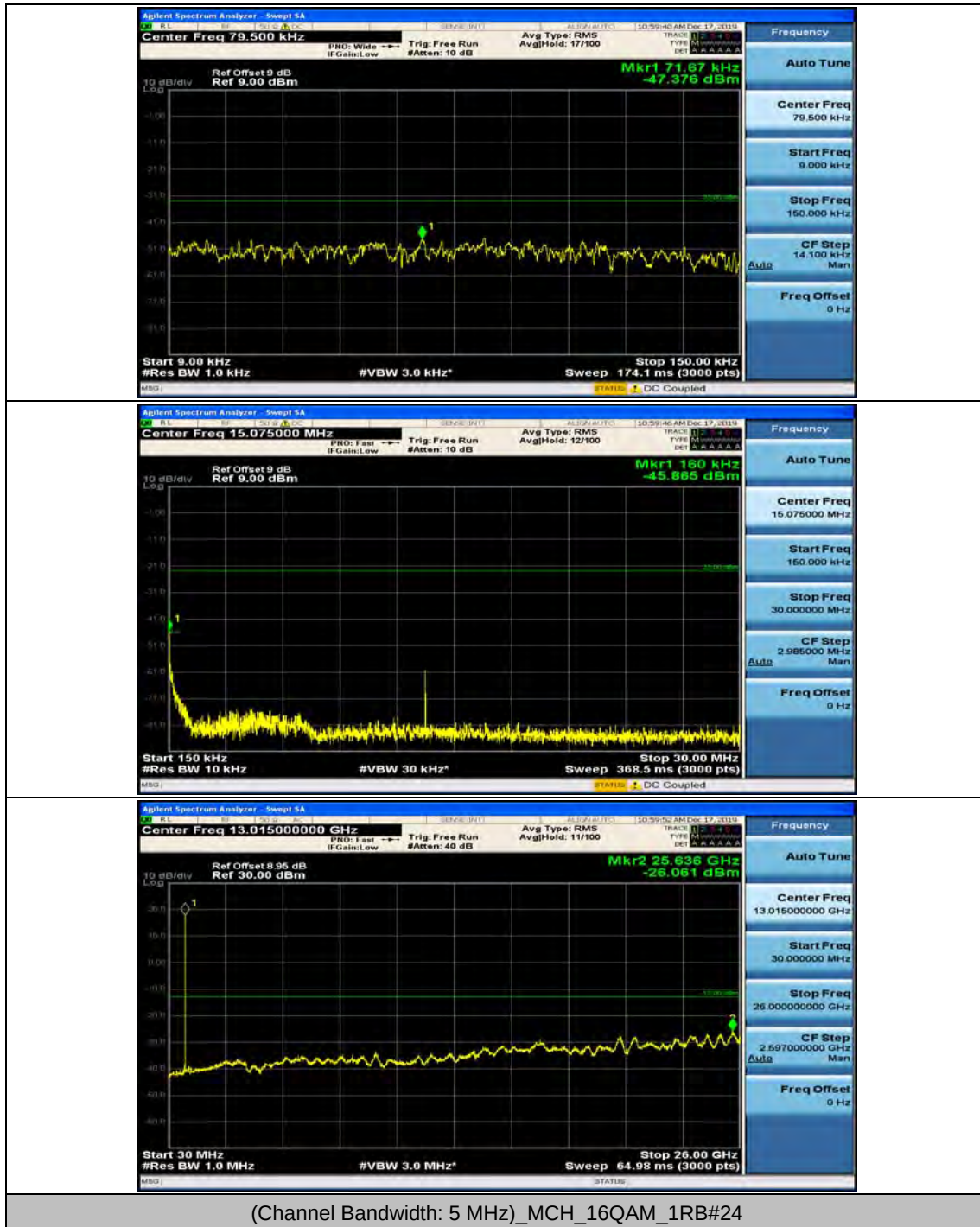


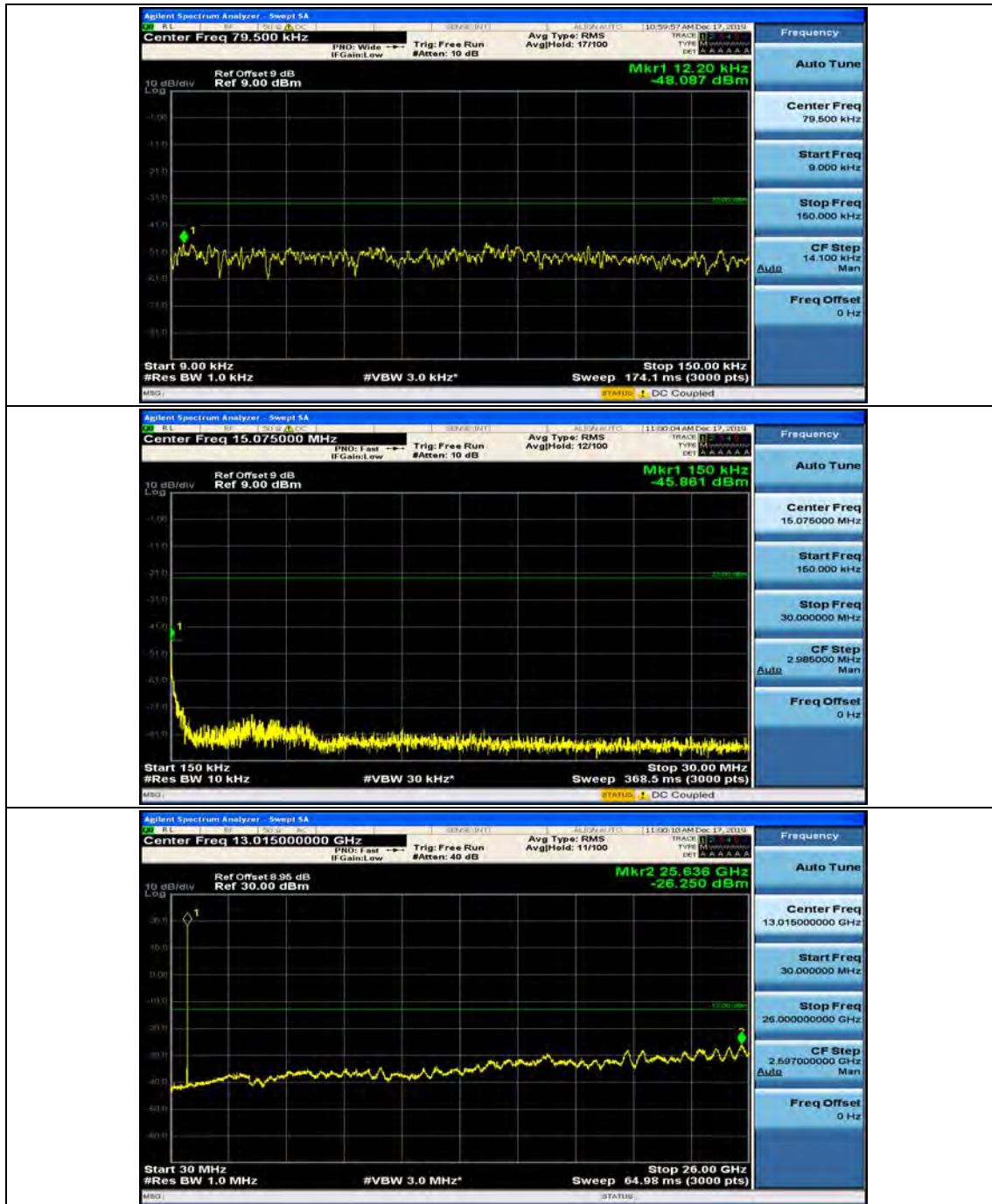


(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0

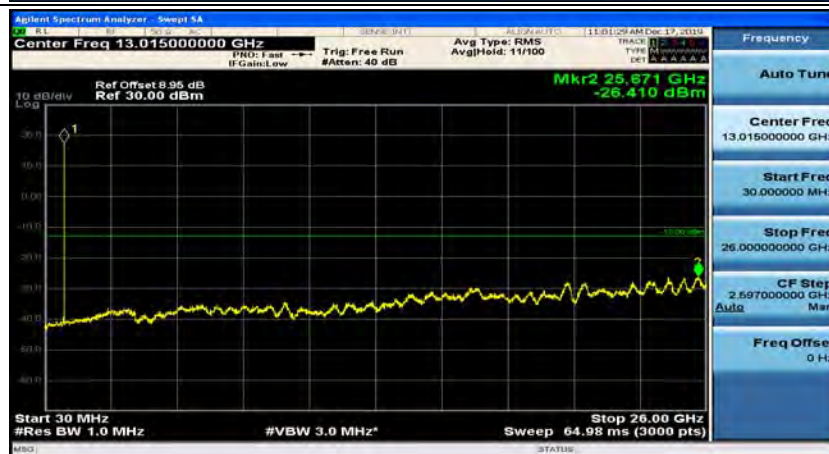
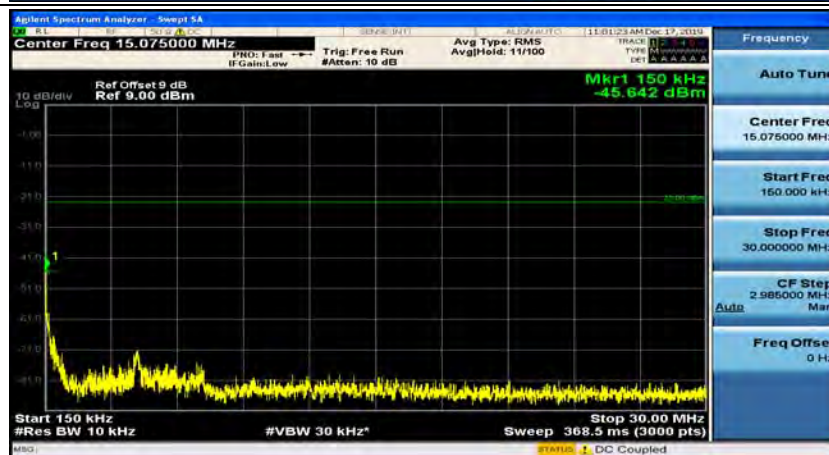


(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12

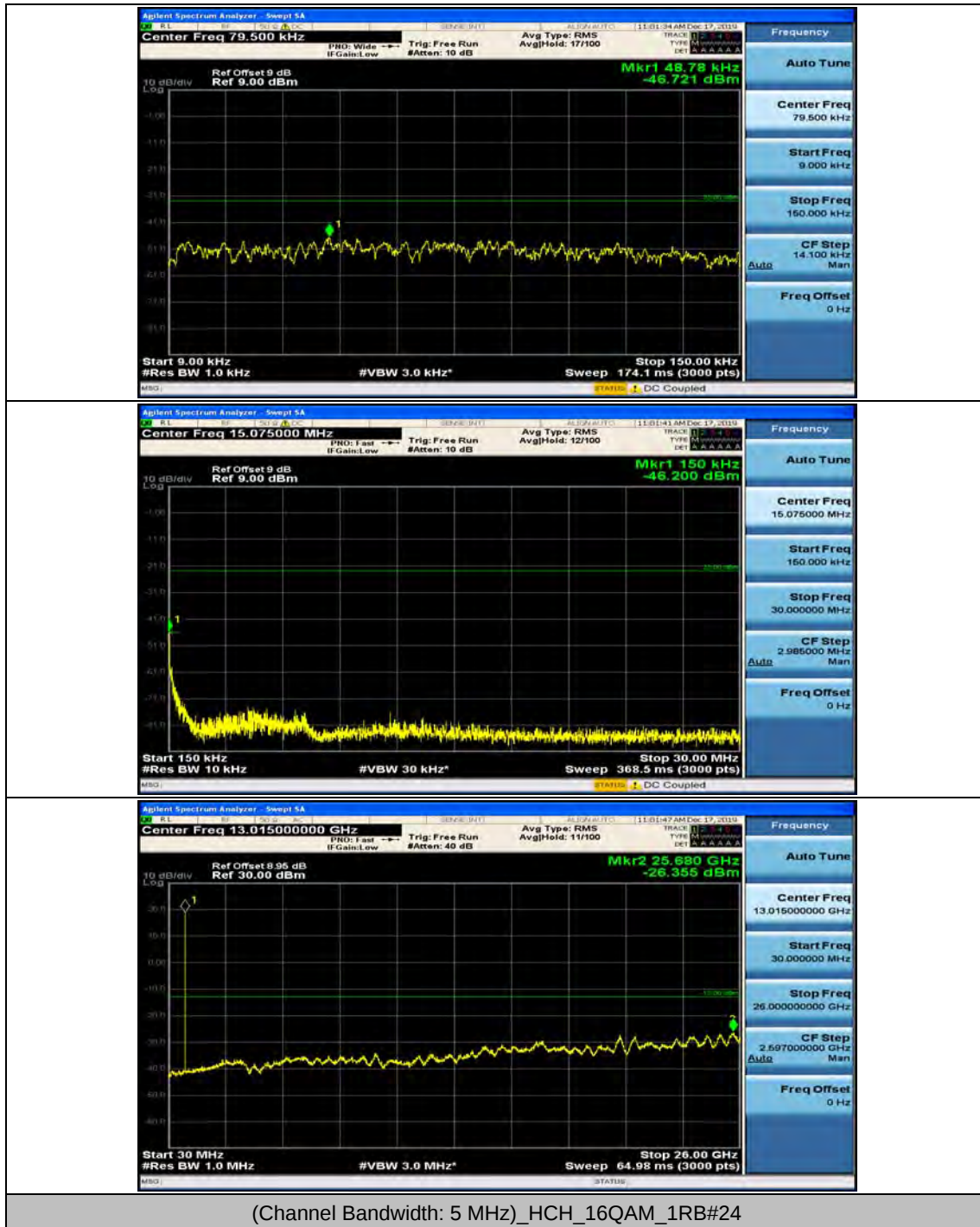


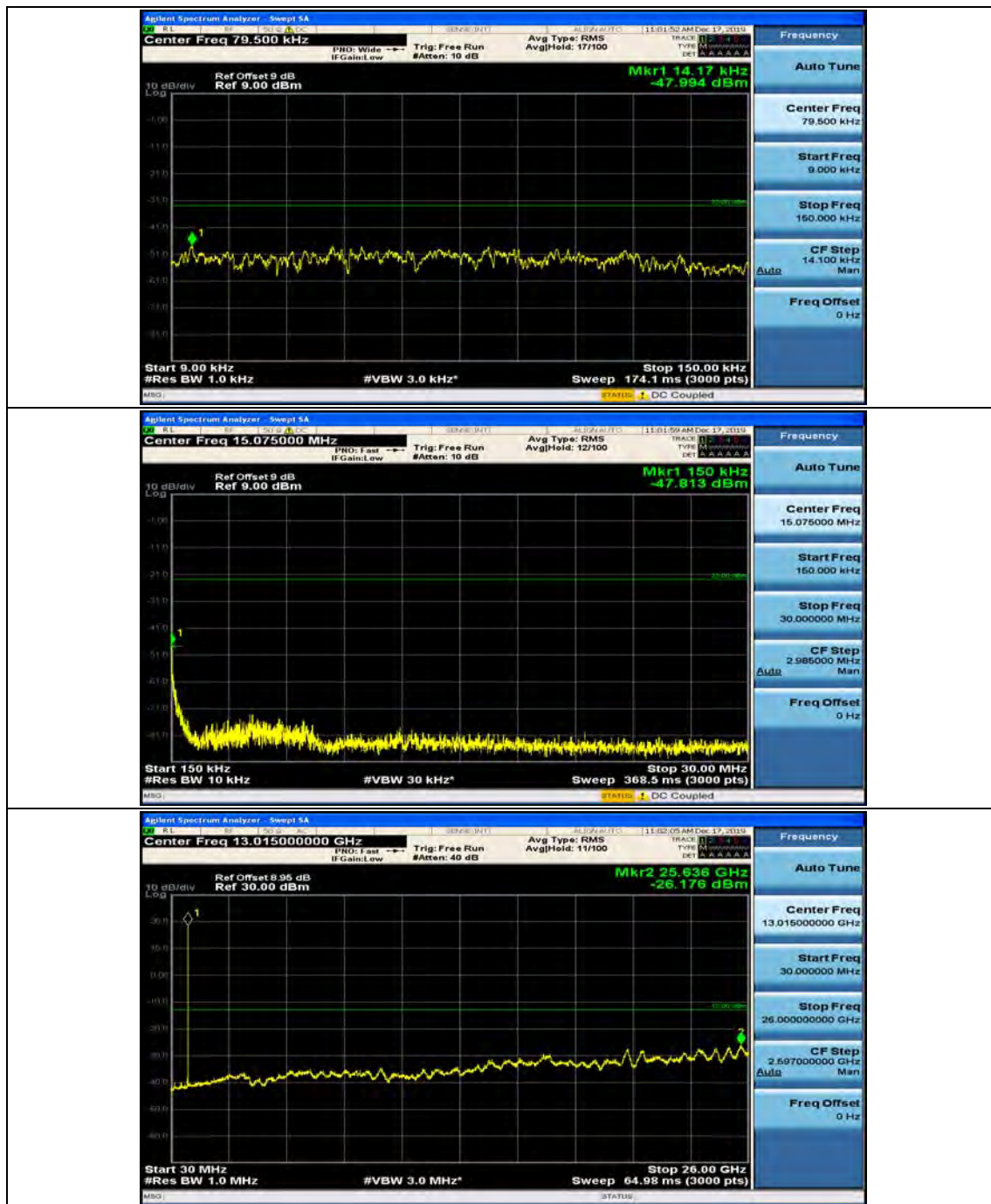


(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



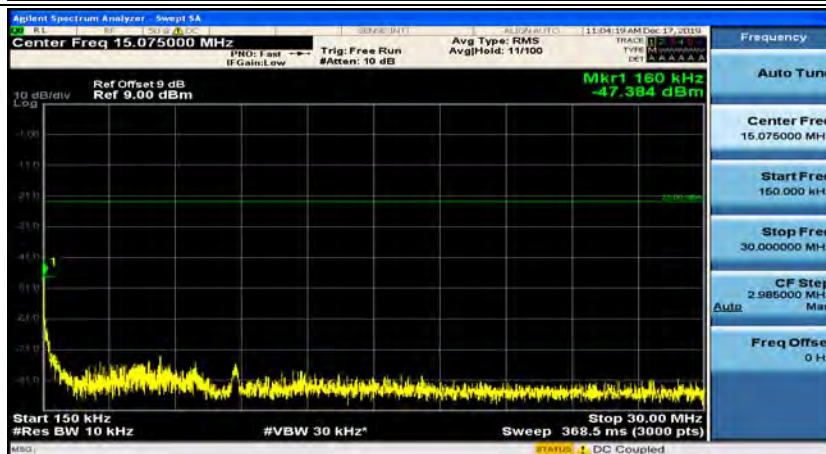
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



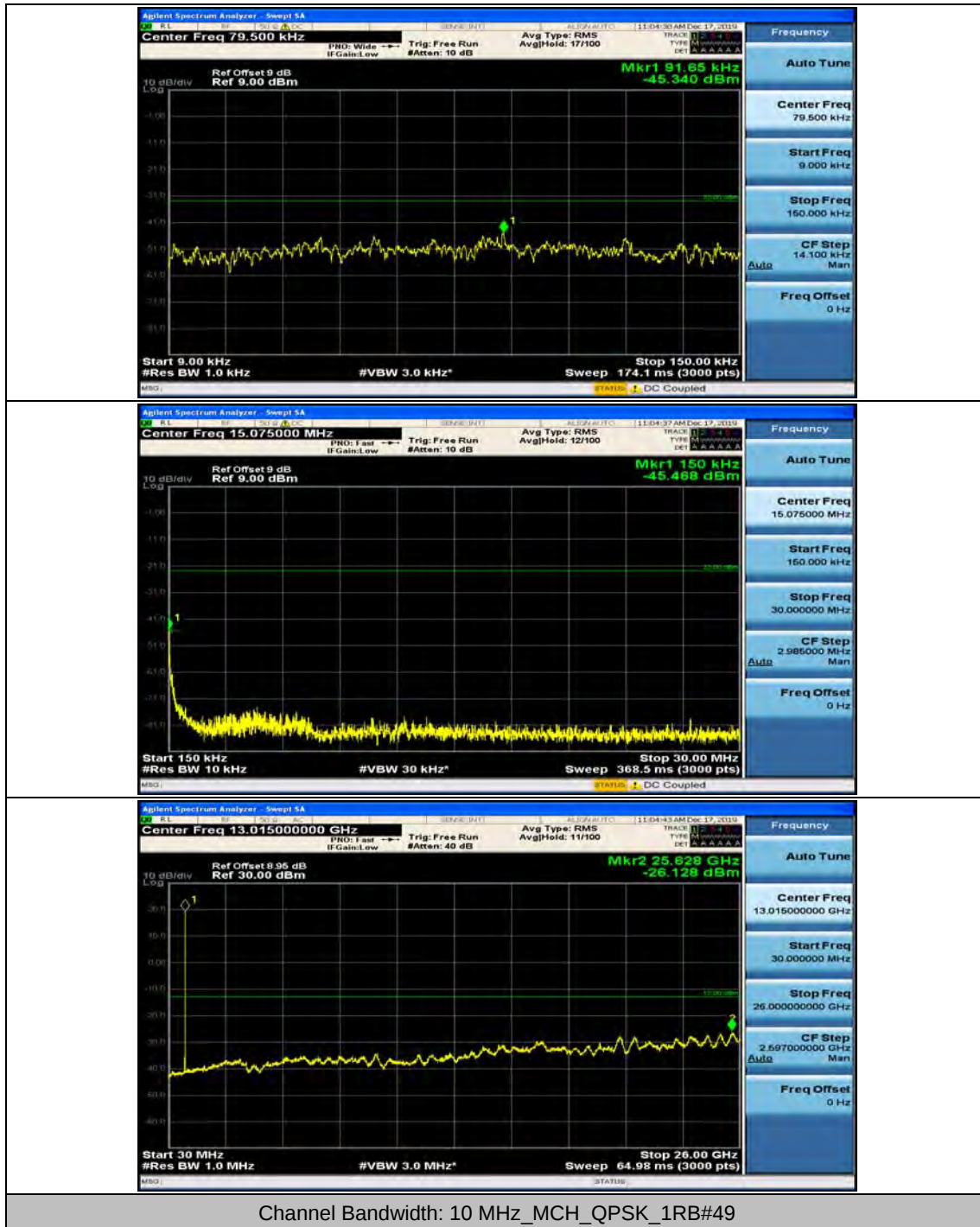


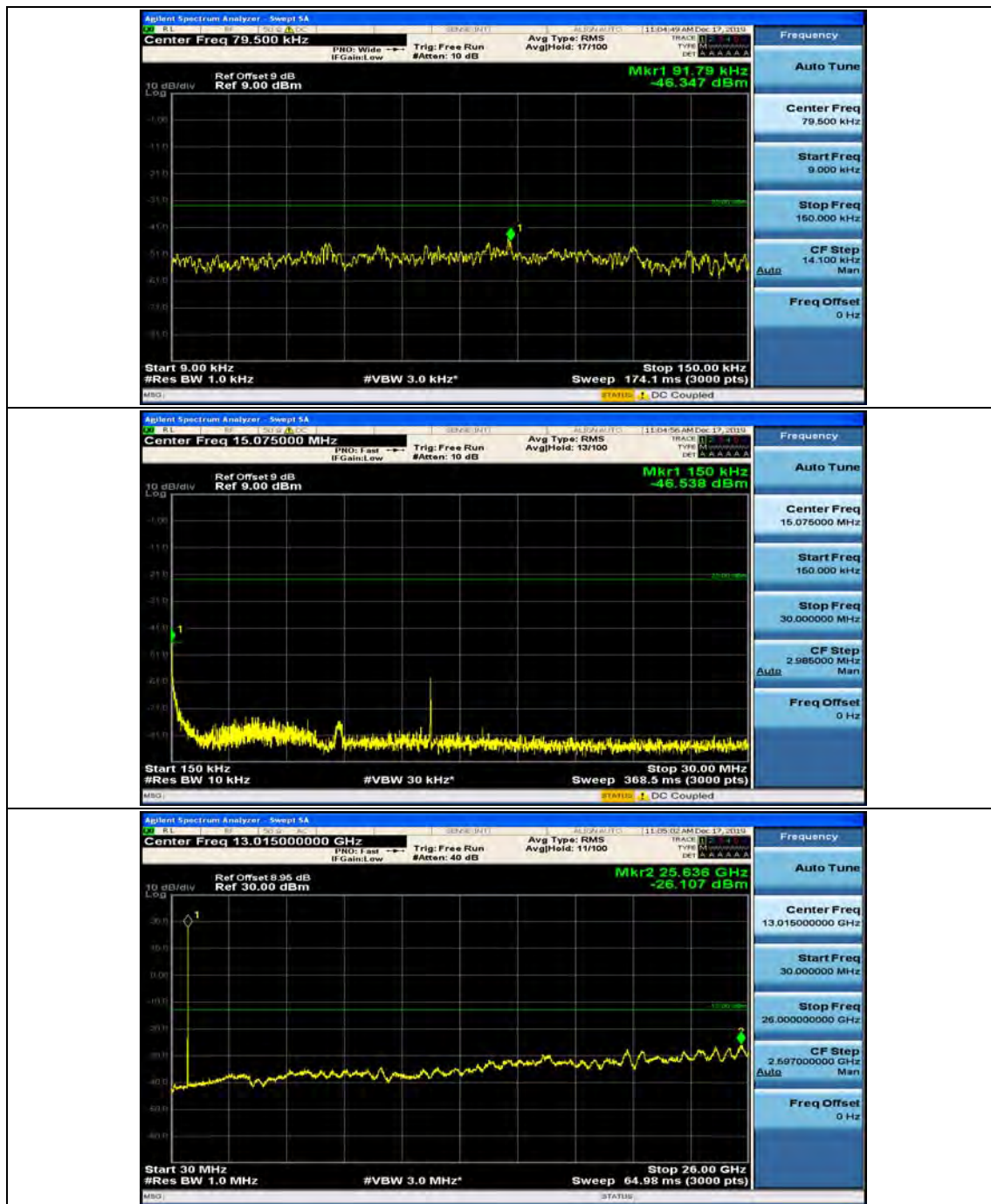
Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0

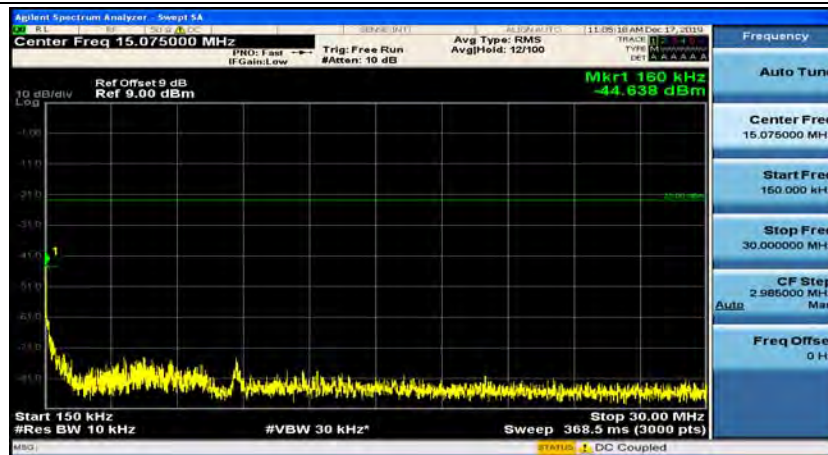


Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24

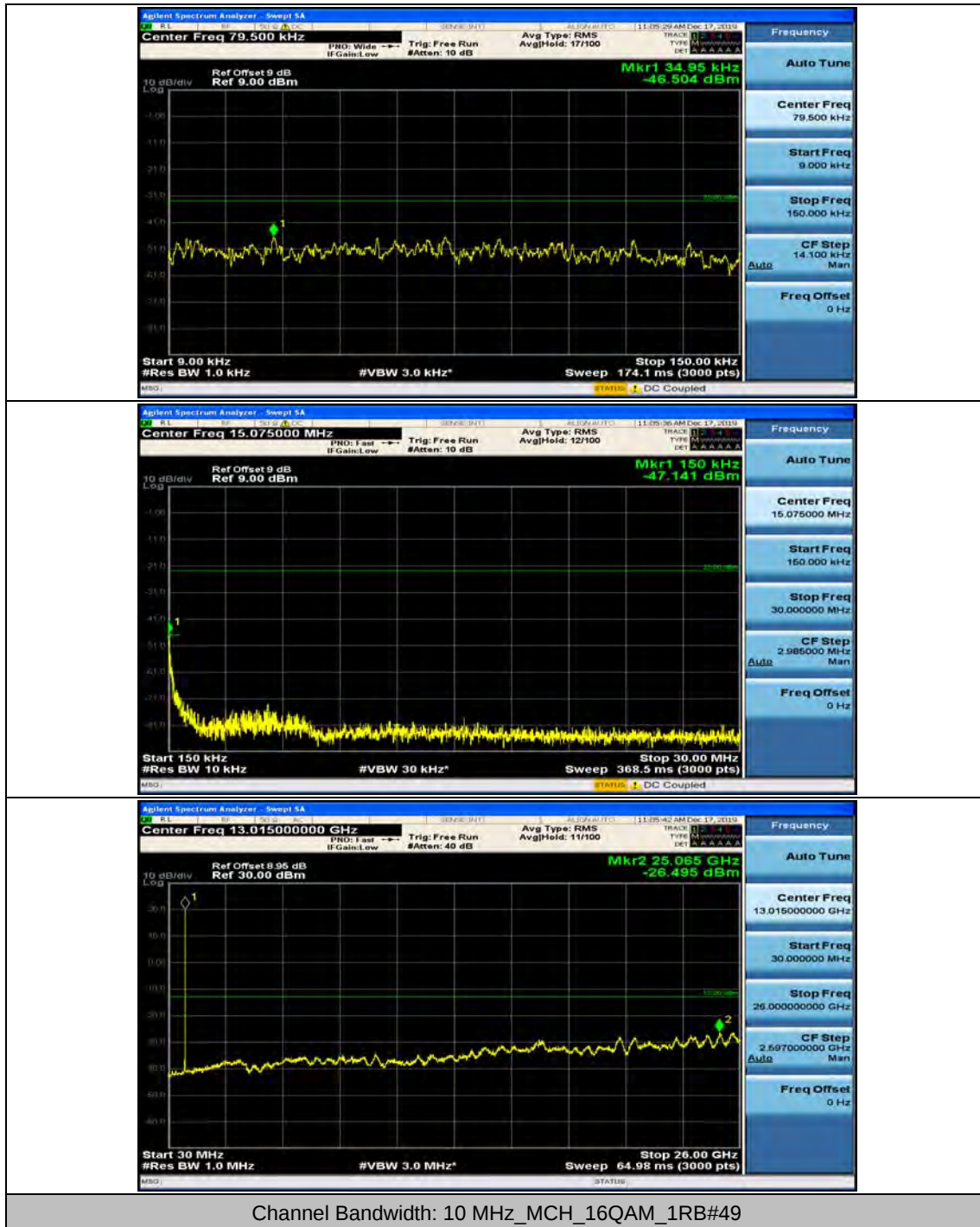


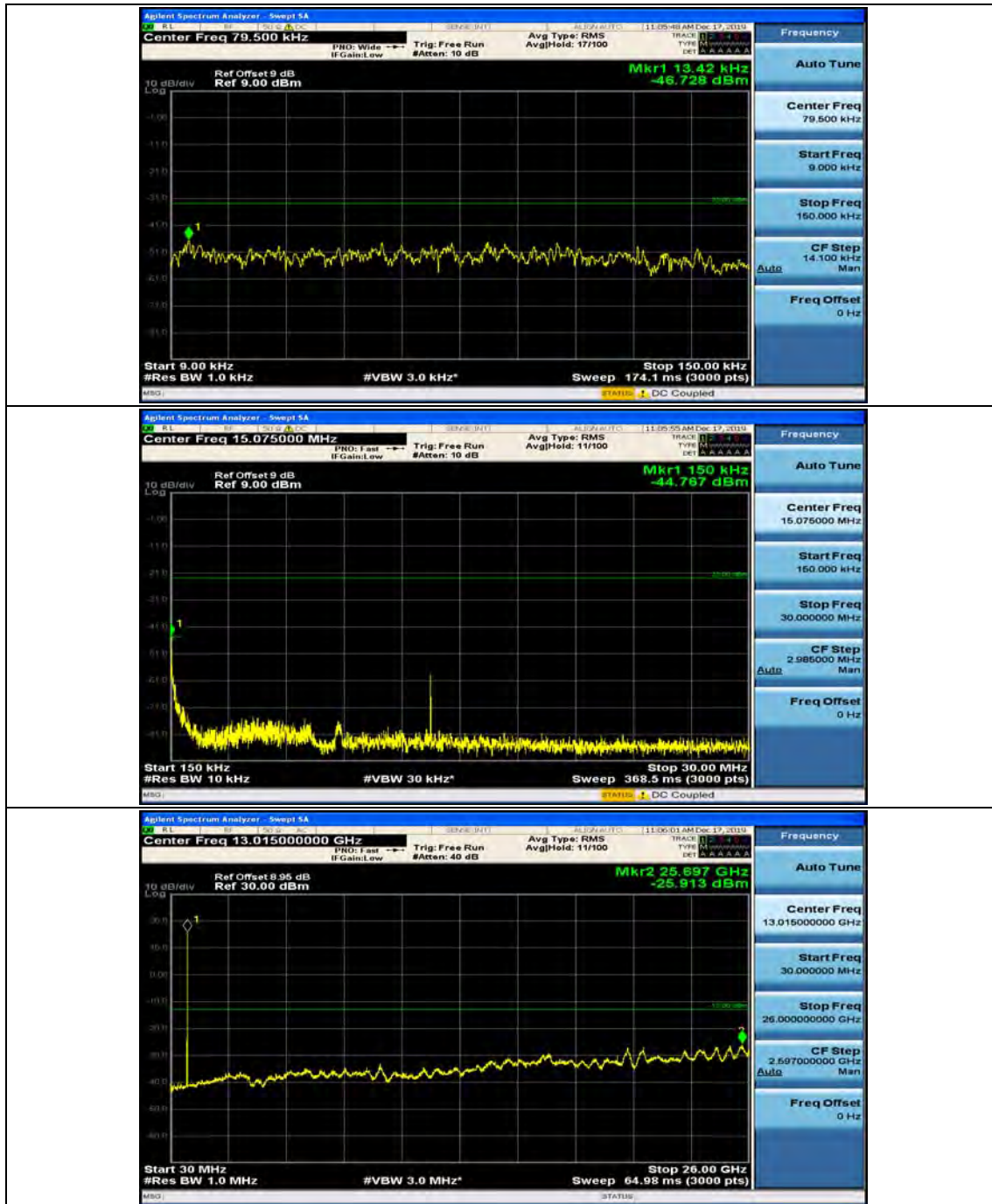


Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24





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	-0.38	-0.000487	± 2.5	PASS
		VN	TN	-1.32	-0.001693	± 2.5	PASS
		VH	TN	0.89	0.001142	± 2.5	PASS
	MCH	VL	TN	-1.56	-0.001995	± 2.5	PASS
		VN	TN	-0.75	-0.000959	± 2.5	PASS
		VH	TN	1.87	0.002391	± 2.5	PASS
	HCH	VL	TN	0.41	0.000523	± 2.5	PASS
		VN	TN	3.91	0.004984	± 2.5	PASS
		VH	TN	-1.01	-0.001287	± 2.5	PASS
16QAM	LCH	VL	TN	1.21	0.001552	± 2.5	PASS
		VN	TN	2.49	0.003194	± 2.5	PASS
		VH	TN	1.37	0.001758	± 2.5	PASS
	MCH	VL	TN	1.71	0.002187	± 2.5	PASS
		VN	TN	-0.64	-0.000818	± 2.5	PASS
		VH	TN	0.57	0.000729	± 2.5	PASS
	HCH	VL	TN	3.62	0.004614	± 2.5	PASS
		VN	TN	0.14	0.000178	± 2.5	PASS
		VH	TN	4.41	0.005621	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.56	0.002001	± 2.5	PASS
		VN	-20	-0.28	-0.000359	± 2.5	PASS
		VN	-10	1.19	0.001527	± 2.5	PASS
		VN	0	-0.39	-0.000500	± 2.5	PASS
		VN	10	3.16	0.004054	± 2.5	PASS
		VN	20	0.82	0.001052	± 2.5	PASS
		VN	30	4.34	0.005568	± 2.5	PASS
		VN	40	3.6	0.004618	± 2.5	PASS
		VN	50	3.76	0.004824	± 2.5	PASS
	MCH	VN	-30	-1.52	-0.001944	± 2.5	PASS
		VN	-20	3.24	0.004143	± 2.5	PASS

		VN	-10	3.19	0.004079	± 2.5	PASS
		VN	0	1.91	0.002442	± 2.5	PASS
		VN	10	2.33	0.002980	± 2.5	PASS
		VN	20	4.54	0.005806	± 2.5	PASS
		VN	30	-1.42	-0.001816	± 2.5	PASS
		VN	40	2.59	0.003312	± 2.5	PASS
		VN	50	4.36	0.005575	± 2.5	PASS
	HCH	VN	-30	3.49	0.004449	± 2.5	PASS
		VN	-20	0.15	0.000191	± 2.5	PASS
		VN	-10	-1.79	-0.002282	± 2.5	PASS
		VN	0	0.32	0.000408	± 2.5	PASS
		VN	10	2.33	0.002970	± 2.5	PASS
		VN	20	3.56	0.004538	± 2.5	PASS
		VN	30	3.67	0.004678	± 2.5	PASS
		VN	40	0.52	0.000663	± 2.5	PASS
		VN	50	-0.85	-0.001083	± 2.5	PASS
16QAM	LCH	VN	-30	2.46	0.003156	± 2.5	PASS
		VN	-20	1.96	0.002514	± 2.5	PASS
		VN	-10	4.21	0.005401	± 2.5	PASS
		VN	0	1.42	0.001822	± 2.5	PASS
		VN	10	0.82	0.001052	± 2.5	PASS
		VN	20	2.95	0.003784	± 2.5	PASS
		VN	30	2.92	0.003746	± 2.5	PASS
		VN	40	1.76	0.002258	± 2.5	PASS
		VN	50	2.81	0.003605	± 2.5	PASS
	MCH	VN	-30	-1.12	-0.001432	± 2.5	PASS
		VN	-20	4.99	0.006381	± 2.5	PASS
		VN	-10	2.17	0.002775	± 2.5	PASS
		VN	0	1.03	0.001317	± 2.5	PASS
		VN	10	3.69	0.004719	± 2.5	PASS
		VN	20	2.57	0.003286	± 2.5	PASS
		VN	30	4.13	0.005281	± 2.5	PASS
		VN	40	-0.85	-0.001087	± 2.5	PASS
		VN	50	-1.54	-0.001969	± 2.5	PASS
	HCH	VN	-30	-1.95	-0.002486	± 2.5	PASS
		VN	-20	4.08	0.005201	± 2.5	PASS
		VN	-10	0.09	0.000115	± 2.5	PASS
		VN	0	4.26	0.005430	± 2.5	PASS
		VN	10	1.89	0.002409	± 2.5	PASS
		VN	20	0.85	0.001083	± 2.5	PASS
		VN	30	-1.73	-0.002205	± 2.5	PASS

		VN	40	0.74	0.000943	± 2.5	PASS
		VN	50	4.74	0.006042	± 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	MCH	VL	TN	-0.54	-0.000691	± 2.5	PASS
		VN	TN	3.62	0.004629	± 2.5	PASS
		VH	TN	-0.17	-0.000217	± 2.5	PASS
16QAM	MCH	VL	TN	1.8	0.002302	± 2.5	PASS
		VN	TN	1.64	0.002097	± 2.5	PASS
		VH	TN	1.02	0.001304	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VN	-30	1.54	0.001969	± 2.5	PASS
		VN	-20	-0.78	-0.000997	± 2.5	PASS
		VN	-10	3.59	0.004591	± 2.5	PASS
		VN	0	4.6	0.005882	± 2.5	PASS
		VN	10	0.47	0.000601	± 2.5	PASS
		VN	20	-0.3	-0.000384	± 2.5	PASS
		VN	30	-1.95	-0.002494	± 2.5	PASS
		VN	40	0.78	0.000997	± 2.5	PASS
		VN	50	3.65	0.004668	± 2.5	PASS
16QAM	MCH	VN	-30	2.55	0.003261	± 2.5	PASS
		VN	-20	-1.99	-0.002545	± 2.5	PASS
		VN	-10	4.64	0.005934	± 2.5	PASS
		VN	0	2.11	0.002698	± 2.5	PASS
		VN	10	0.64	0.000818	± 2.5	PASS
		VN	20	0.83	0.001061	± 2.5	PASS
		VN	30	1.57	0.002008	± 2.5	PASS
		VN	40	0.87	0.001113	± 2.5	PASS
		VN	50	-0.72	-0.000921	± 2.5	PASS