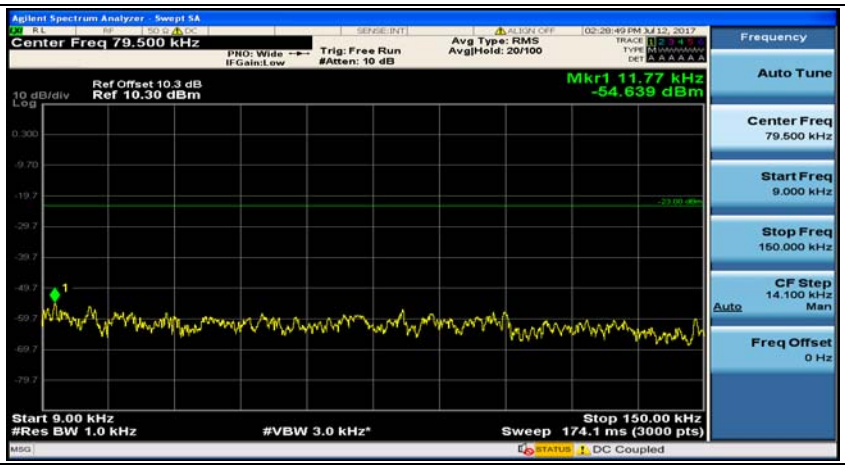
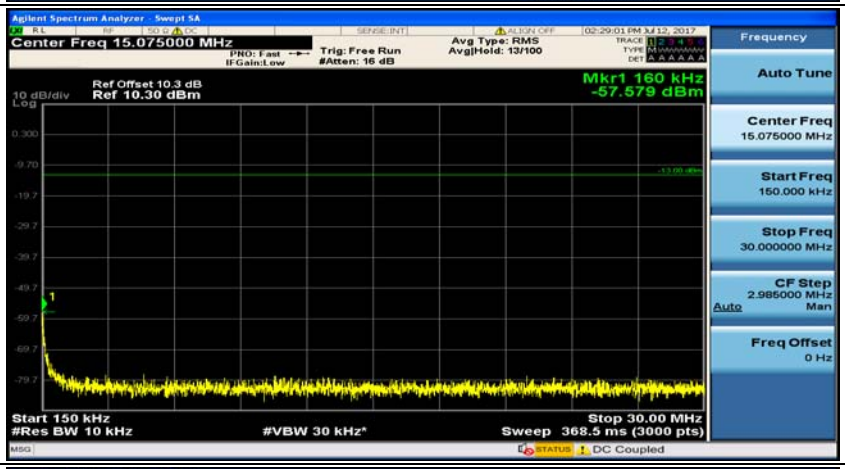
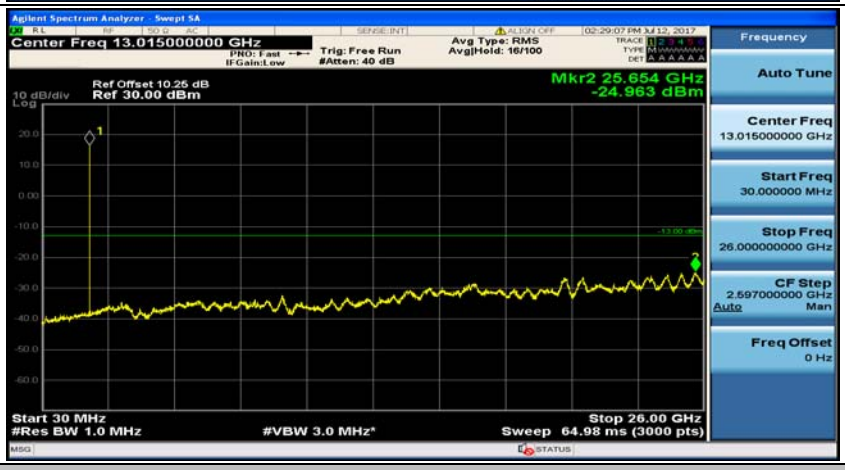
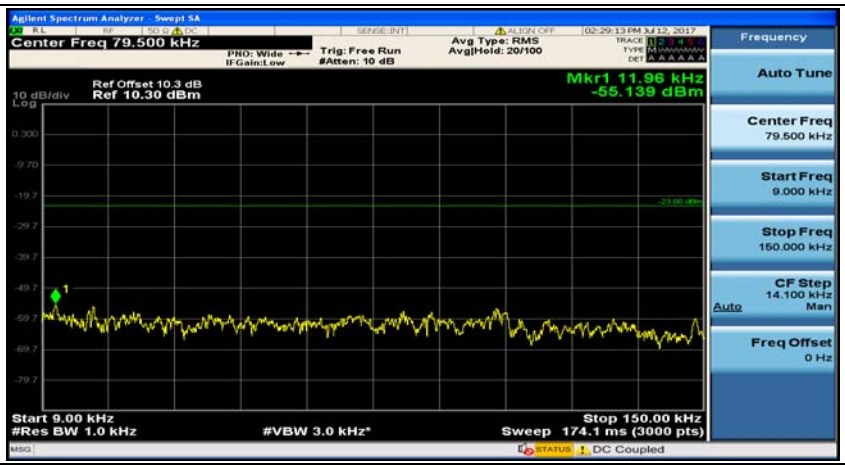
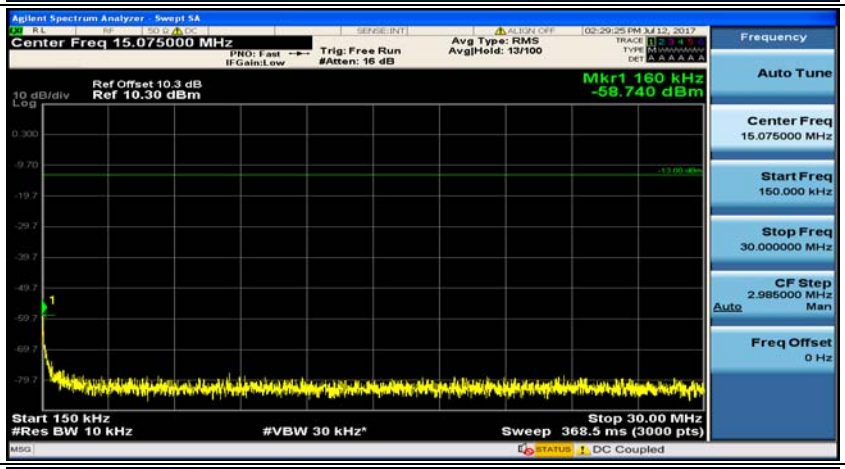


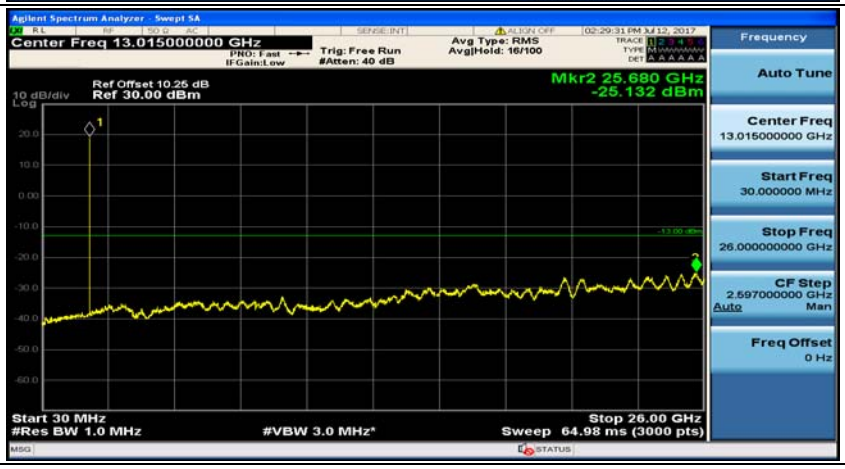




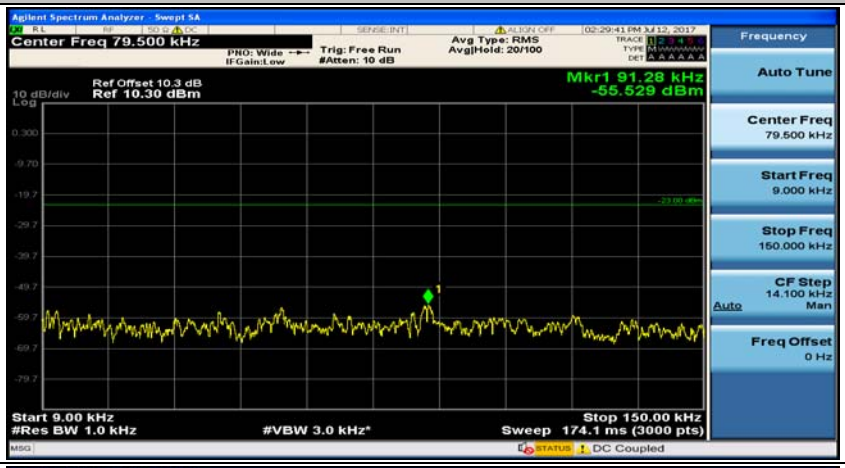
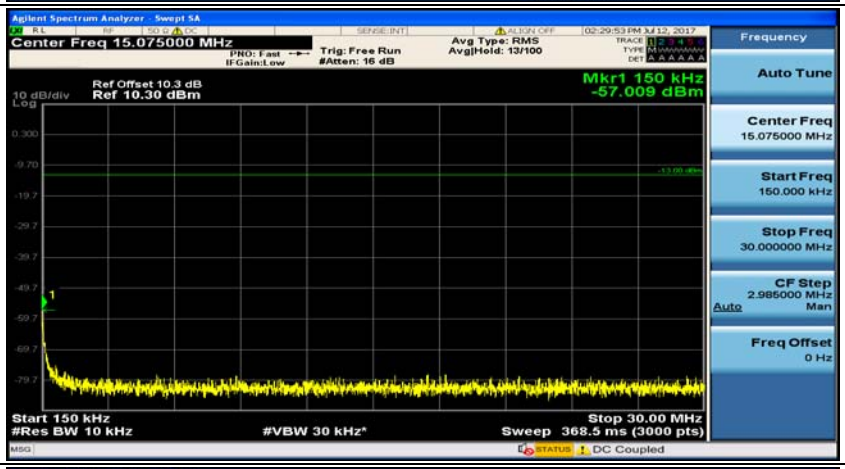
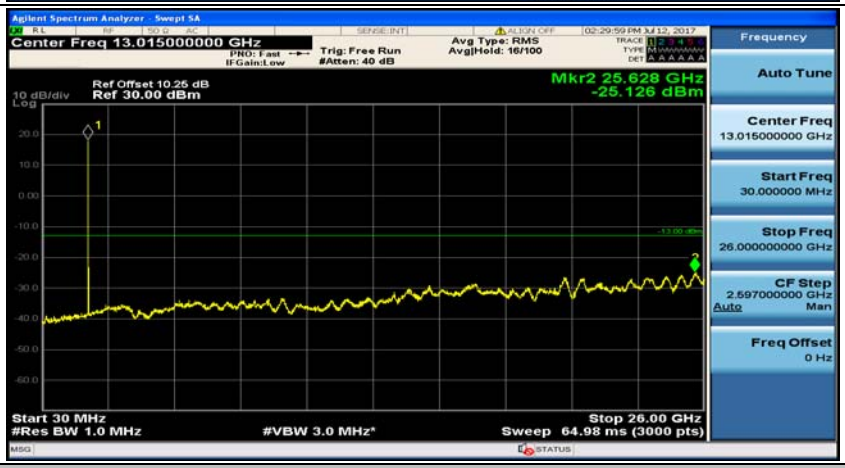
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#49

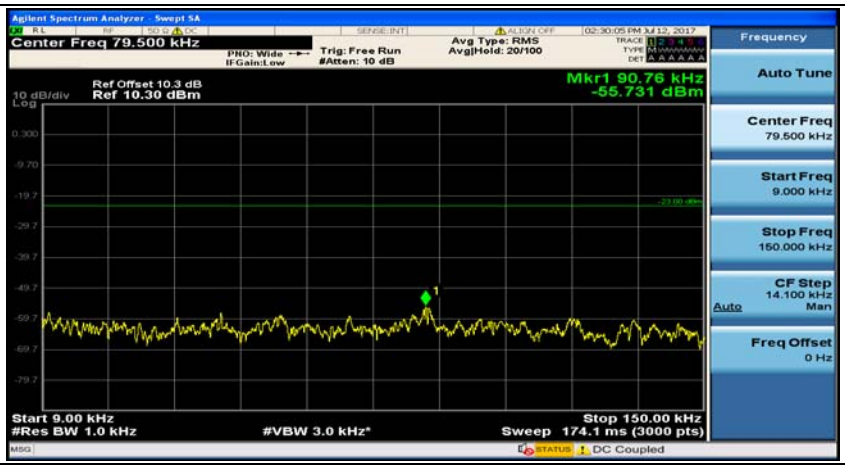

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
02:29:13 PM Jul 12, 2017
Frequency
Ref Offset 10.3 dB
10 dB/div
Ref 10.30 dBm
Mkr1 11.96 kHz
-55.139 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled

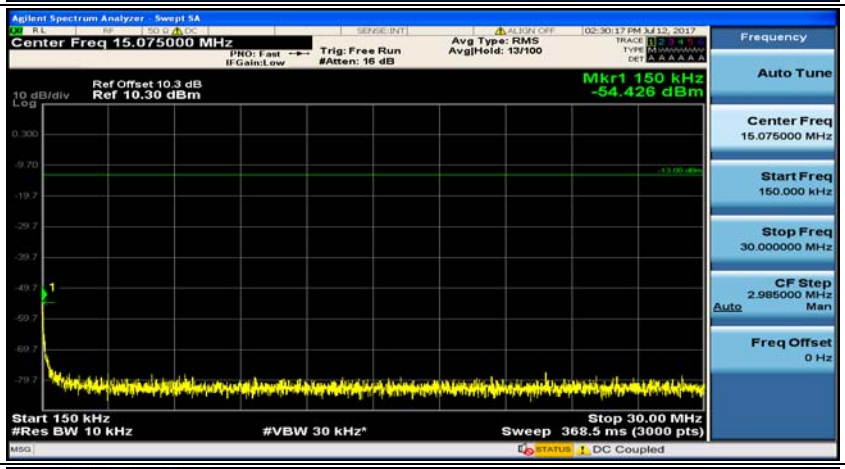

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
02:29:25 PM Jul 12, 2017
Frequency
Ref Offset 10.3 dB
10 dB/div
Ref 10.30 dBm
Mkr1 160 kHz
-58.740 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled

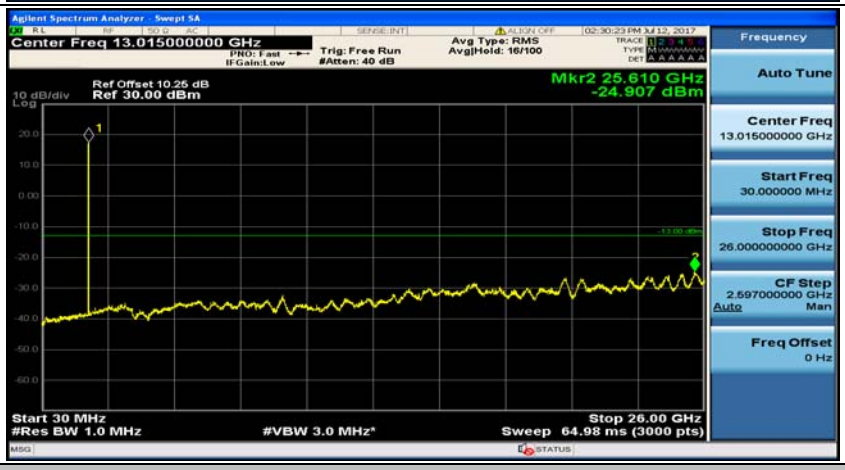

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
02:29:31 PM Jul 12, 2017
Frequency
Ref Offset 10.25 dB
10 dB/div
Ref 30.00 dBm
Mkr2 25.680 GHz
-25.132 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)

Channel Bandwidth: 15 MHz

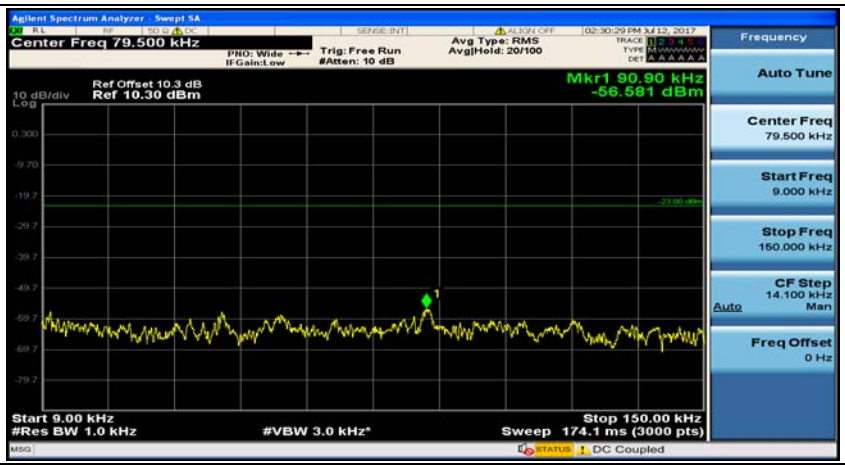
(Channel Bandwidth:15 MHz)_LCH_QPSK_1RB#0



(Channel Bandwidth:15 MHz)_LCH_QPSK_1RB#37

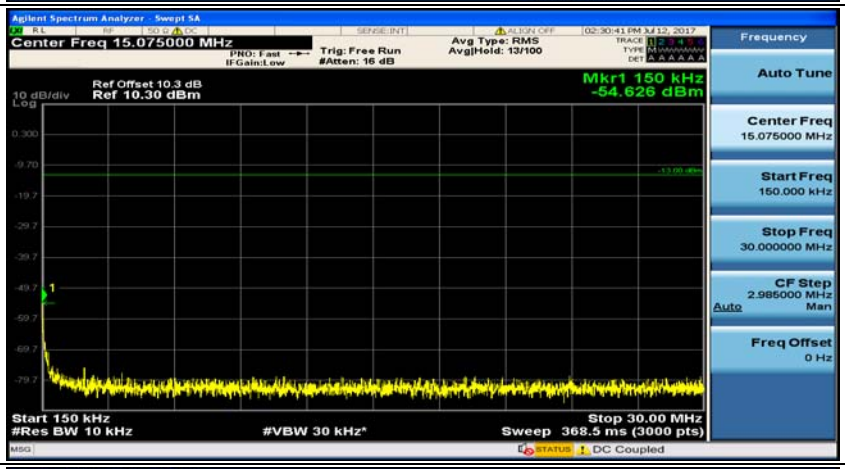




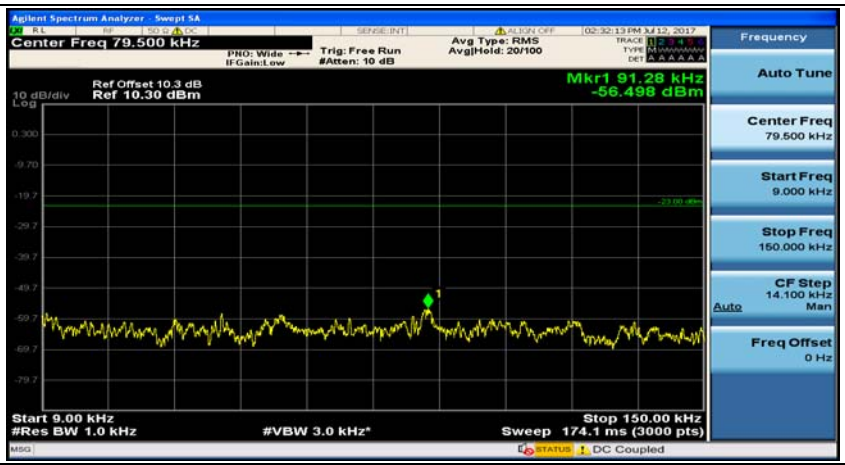


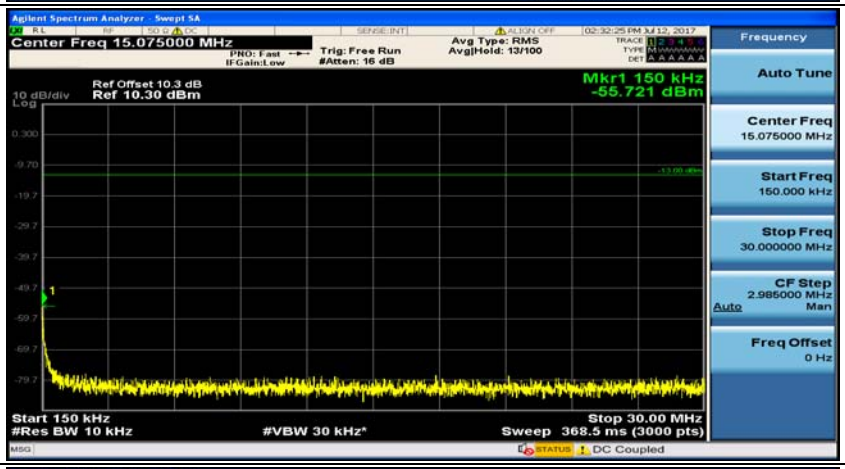
(Channel Bandwidth:15 MHz)_LCH_QPSK_1RB#74



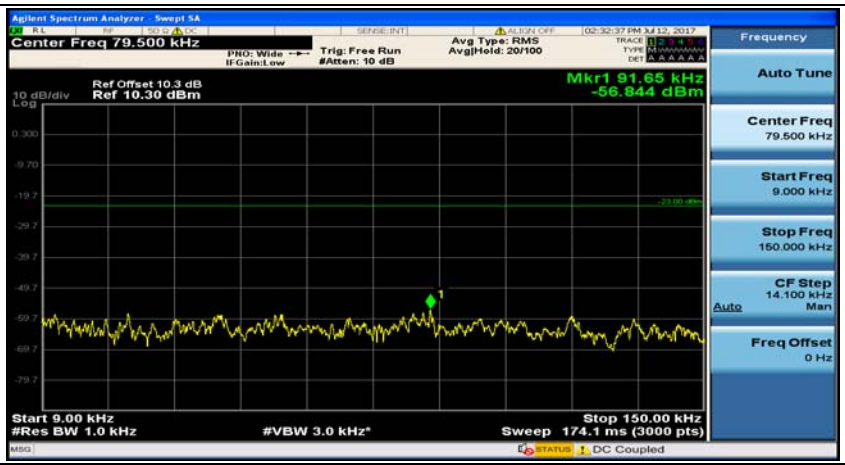


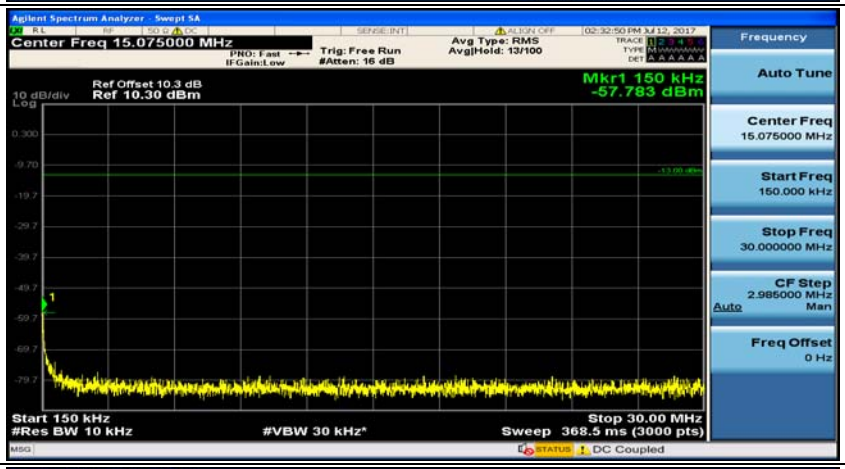
Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#0



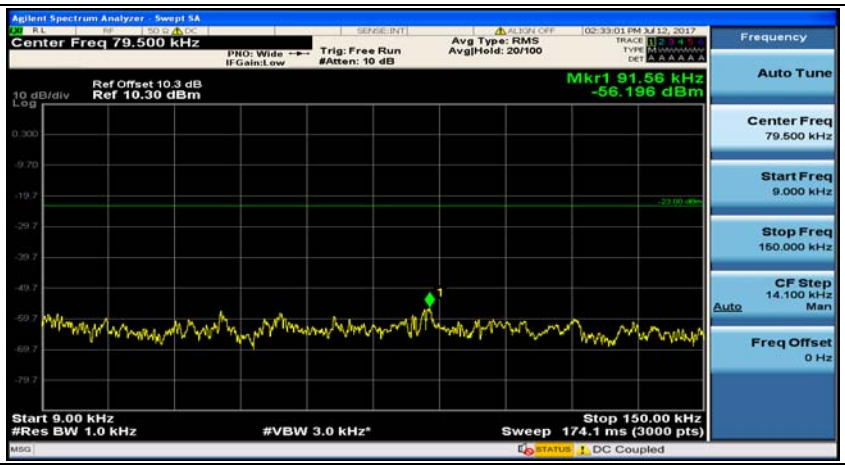


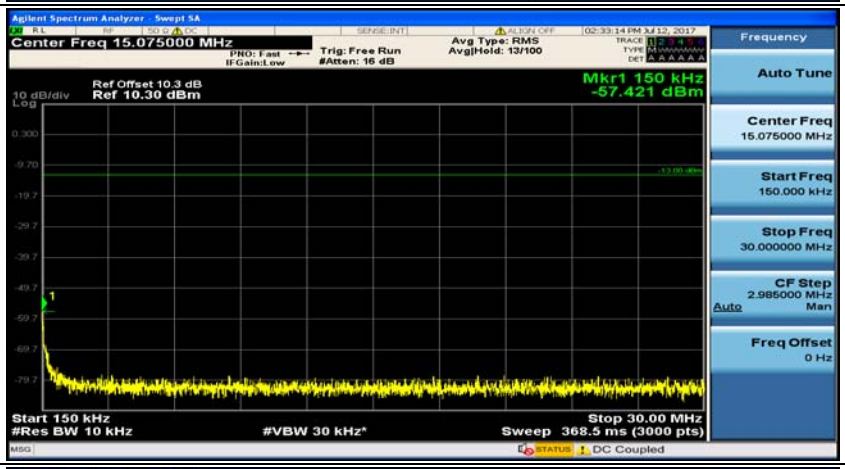
(Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#37

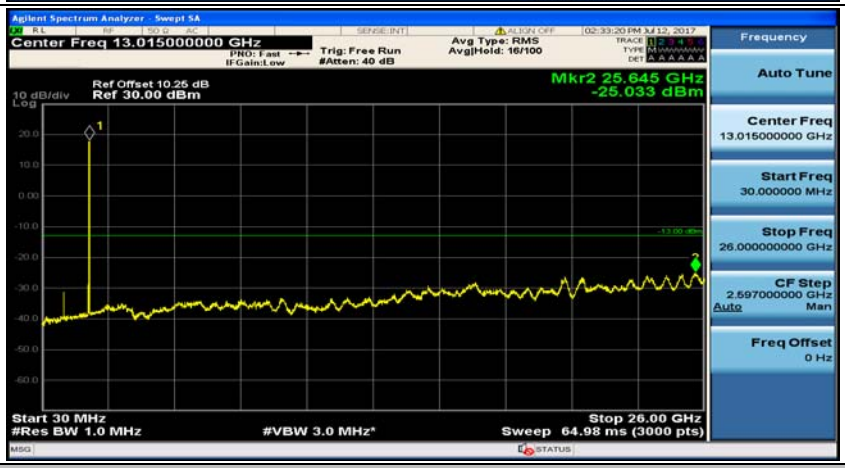




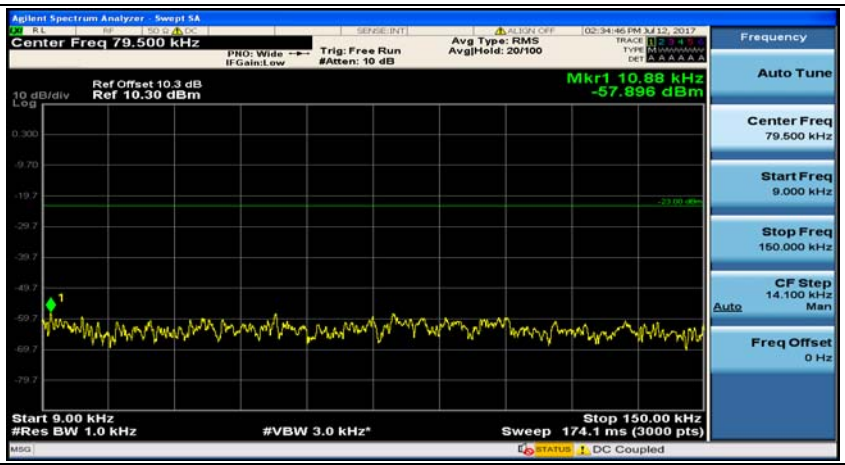
(Channel Bandwidth:15 MHz)_MCH_QPSK_1RB#74

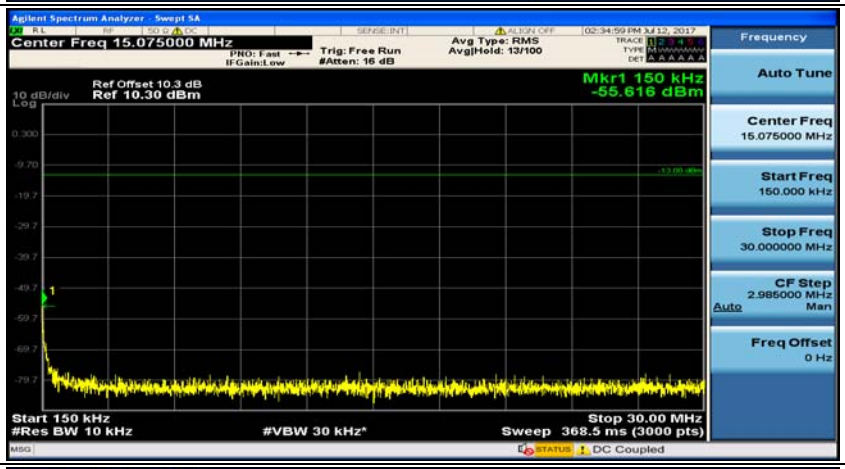


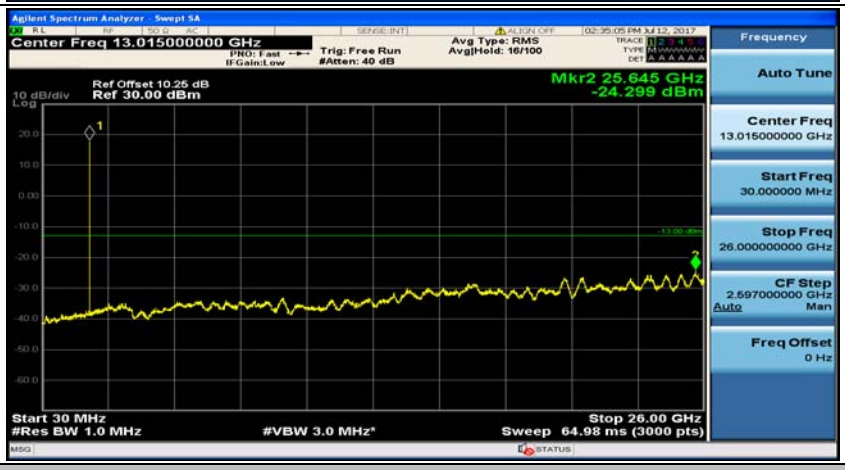




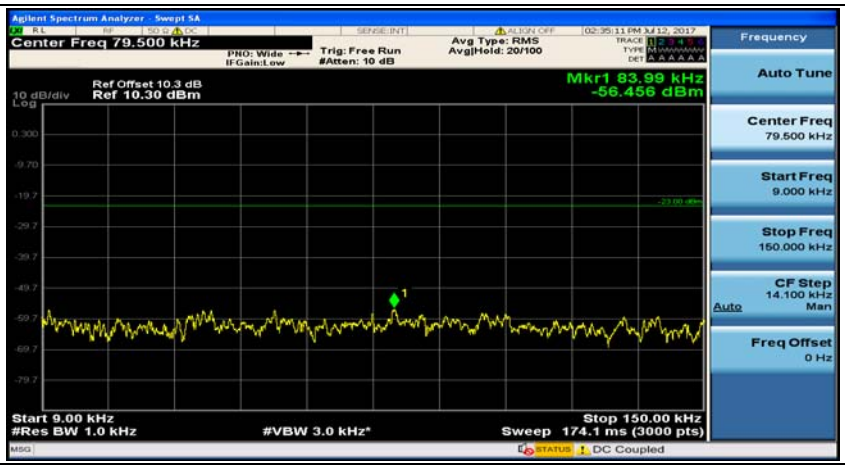
(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#0

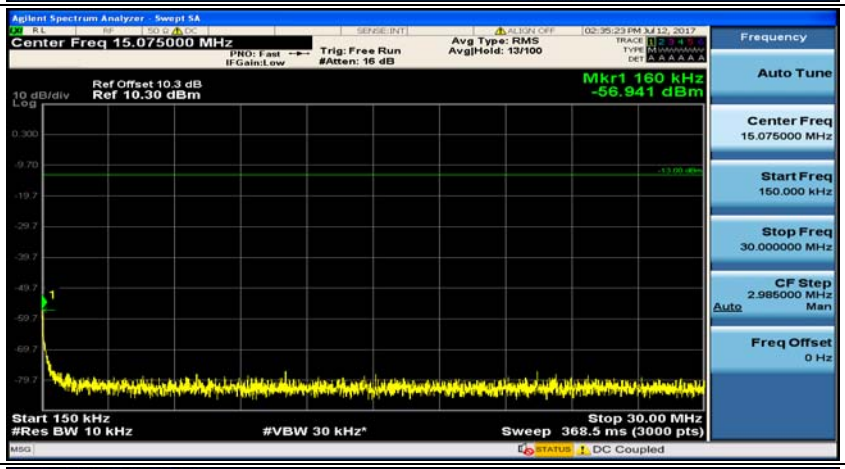


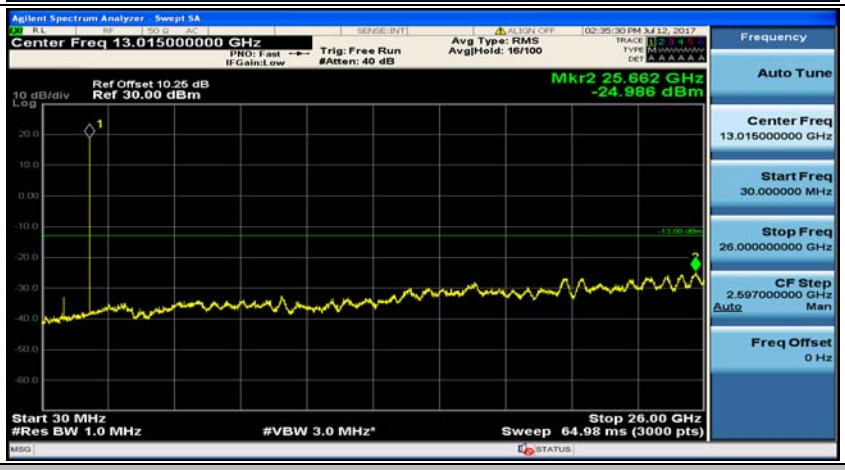




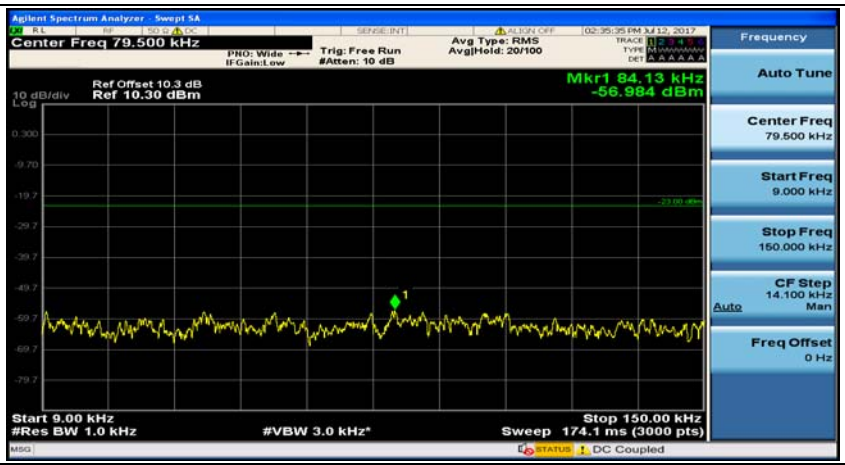
(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#37

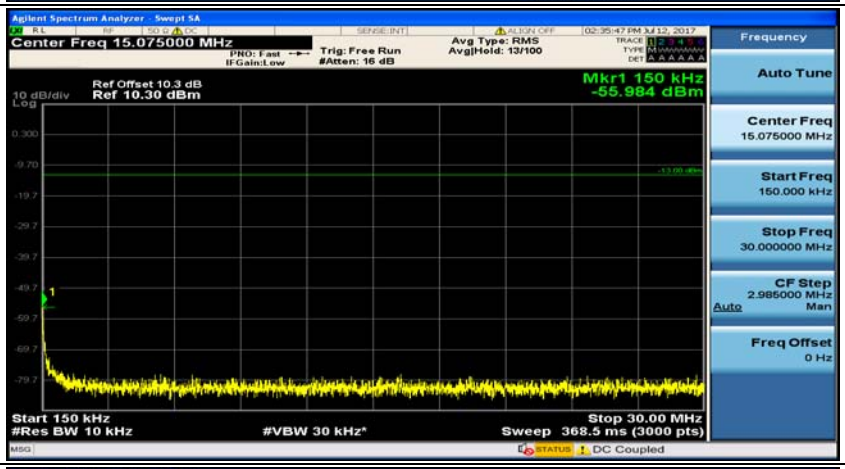


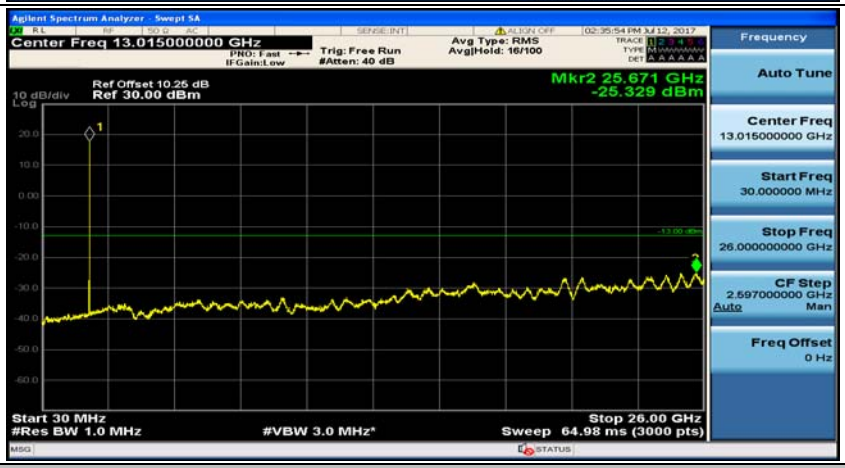




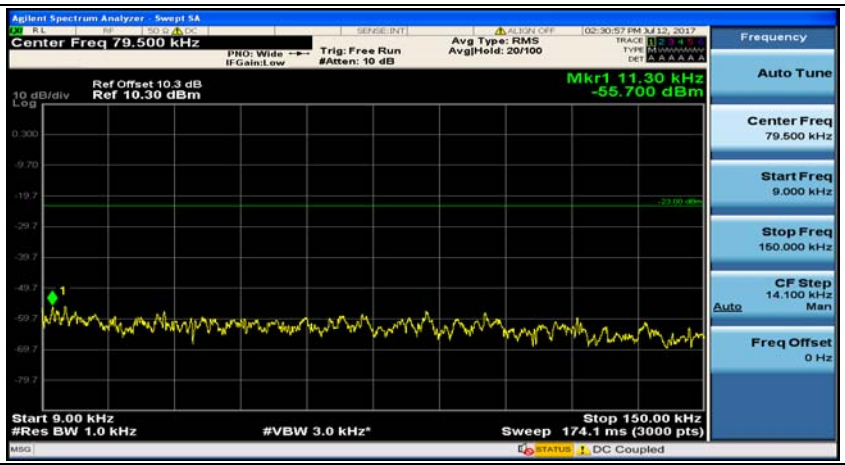
(Channel Bandwidth:15 MHz)_HCH_QPSK_1RB#74

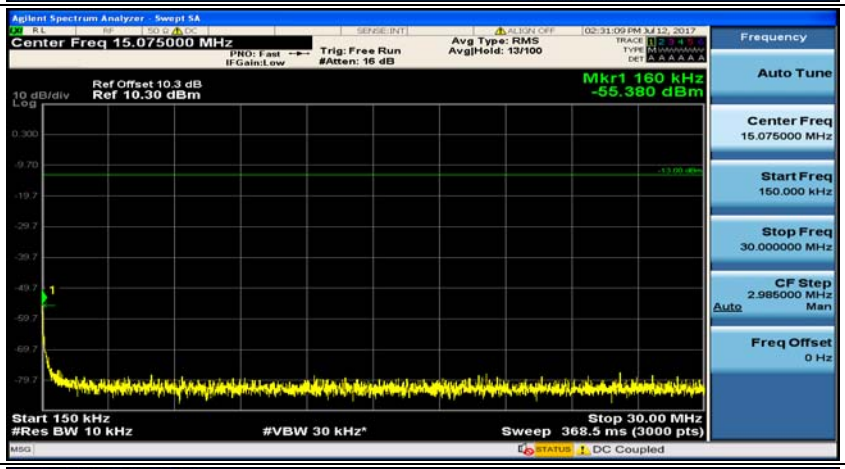




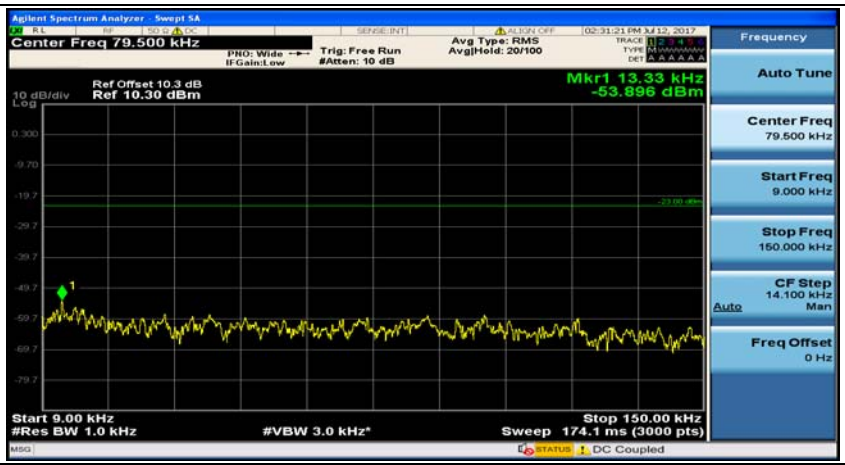


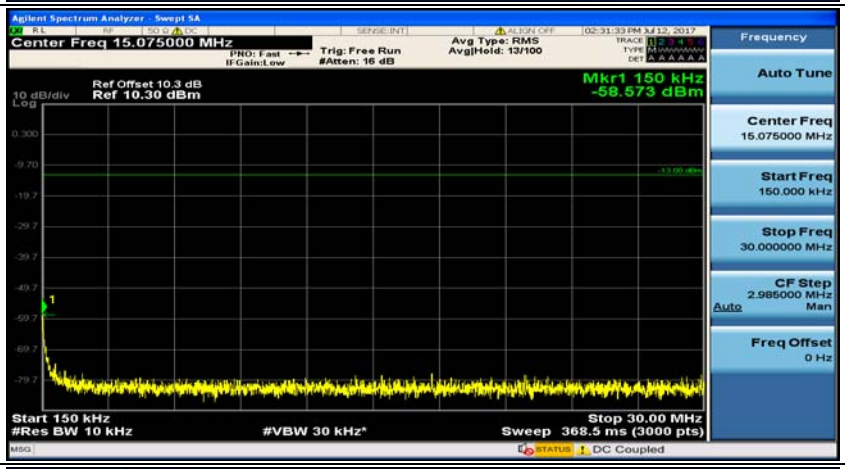
(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#0

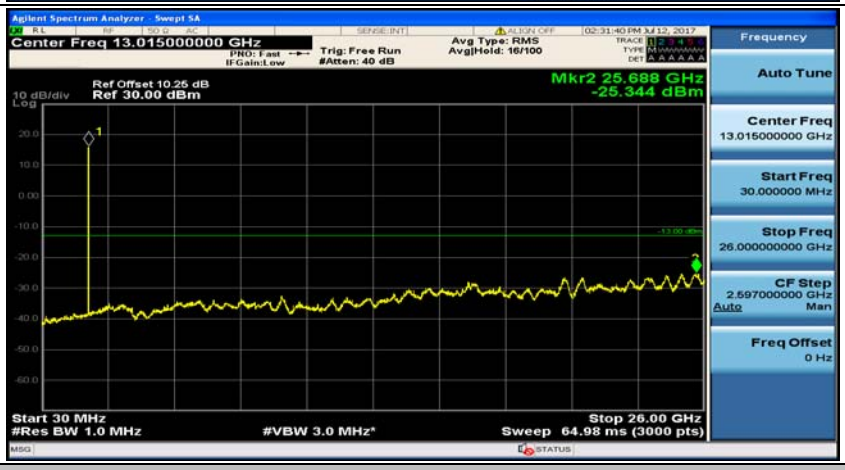




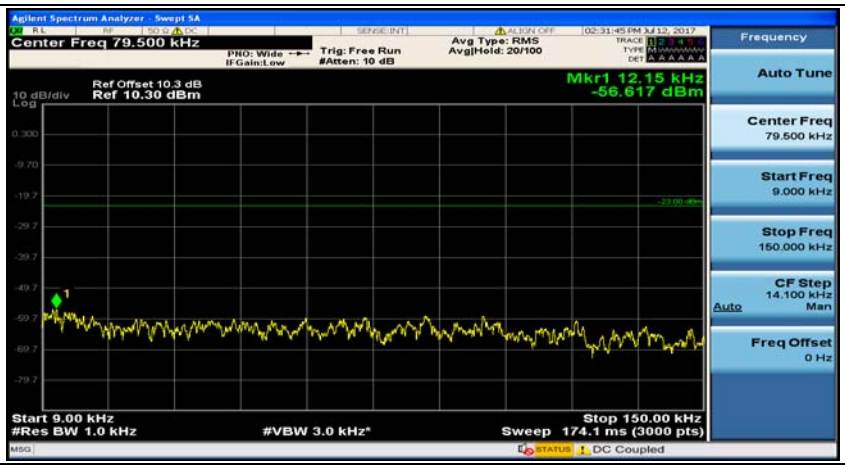
(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#37

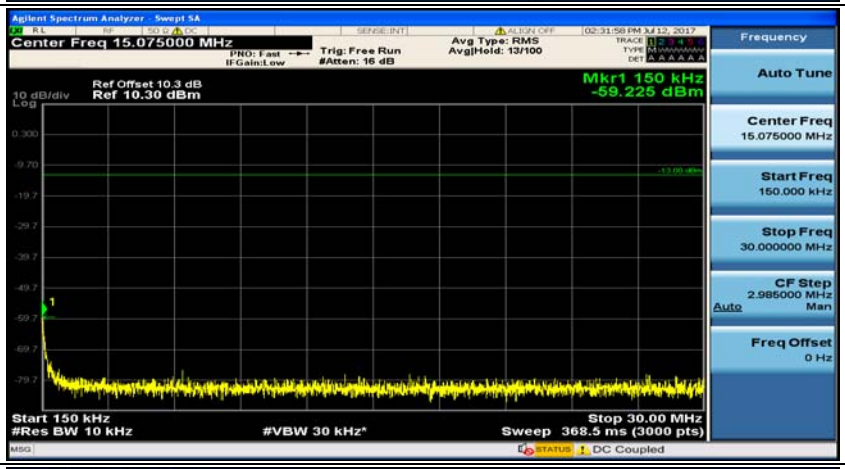


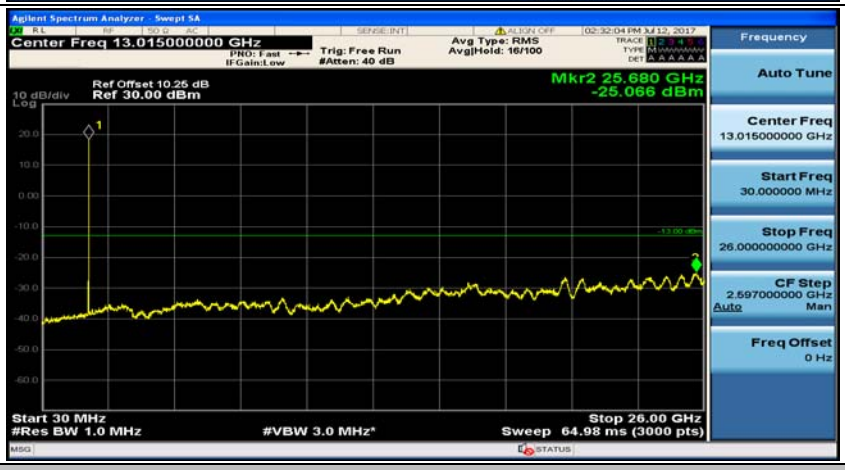




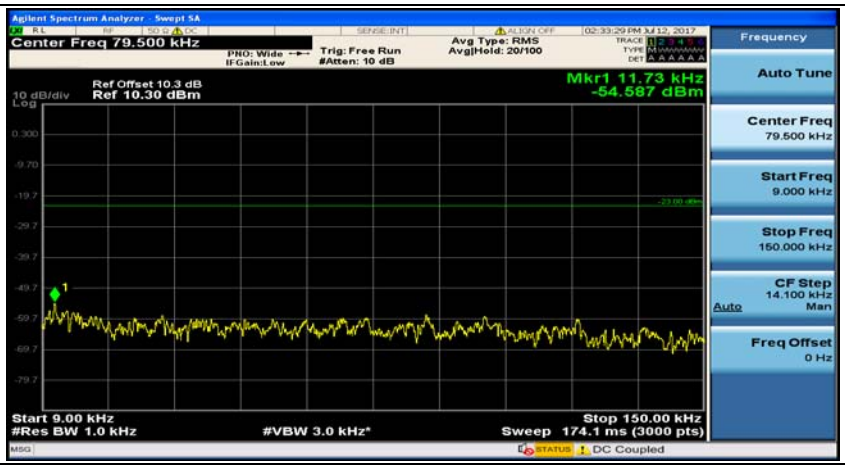
(Channel Bandwidth:15 MHz)_LCH_16QAM_1RB#74

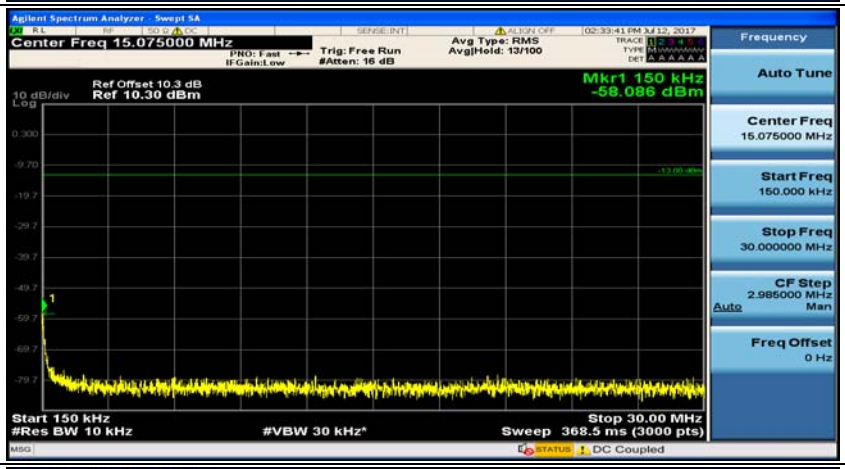




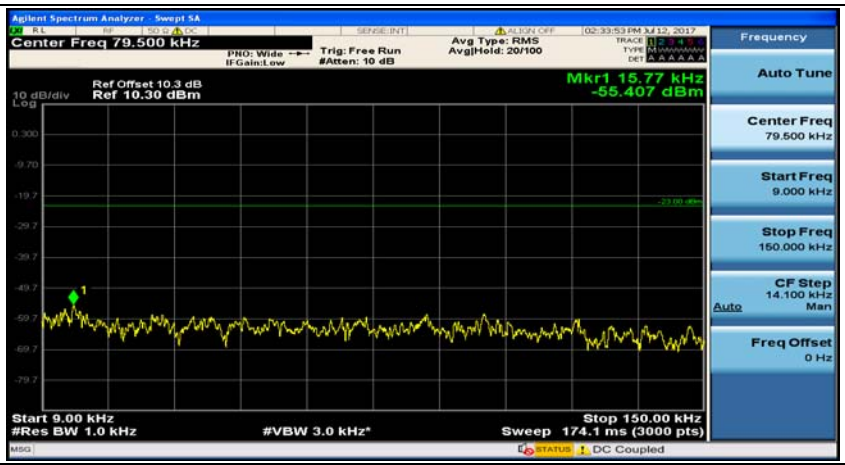


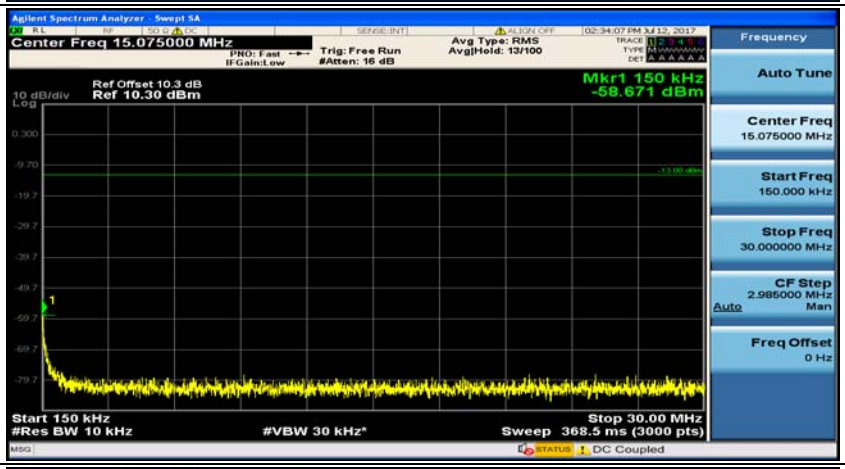
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#0



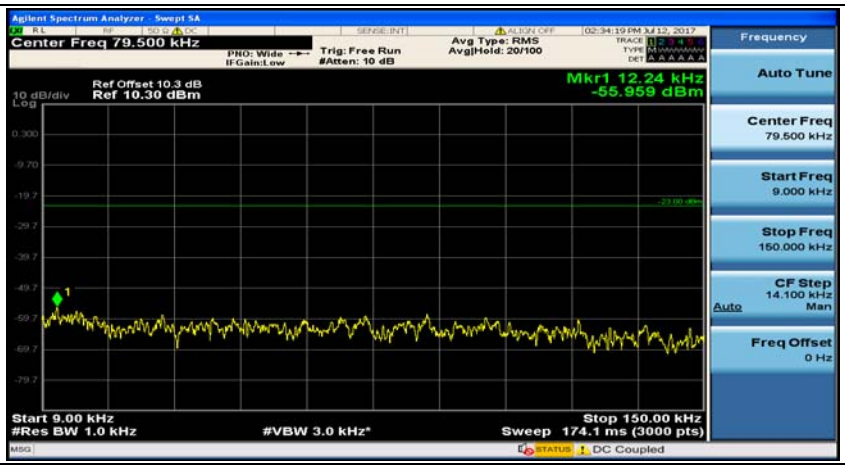


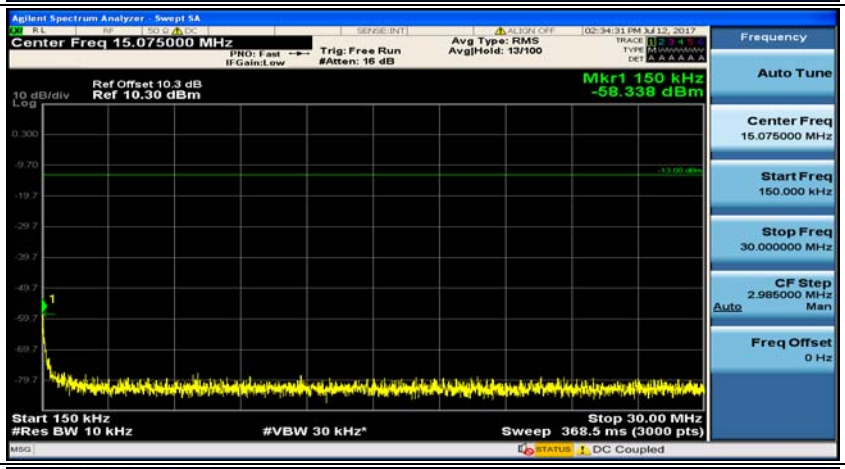
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#37



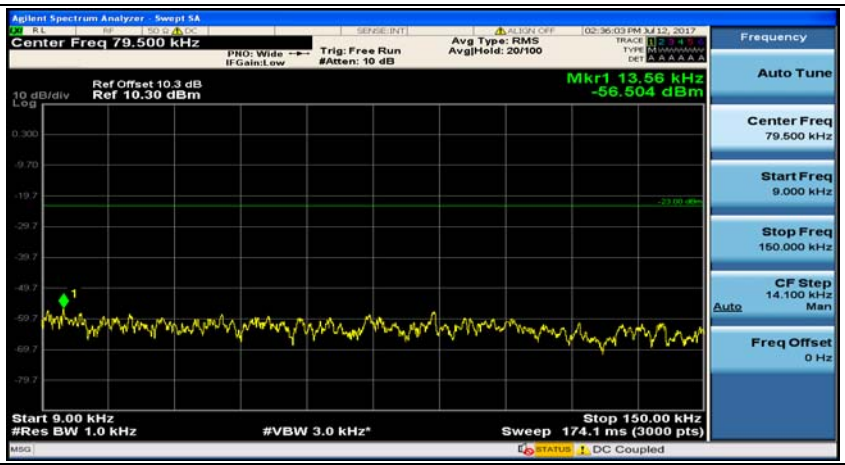


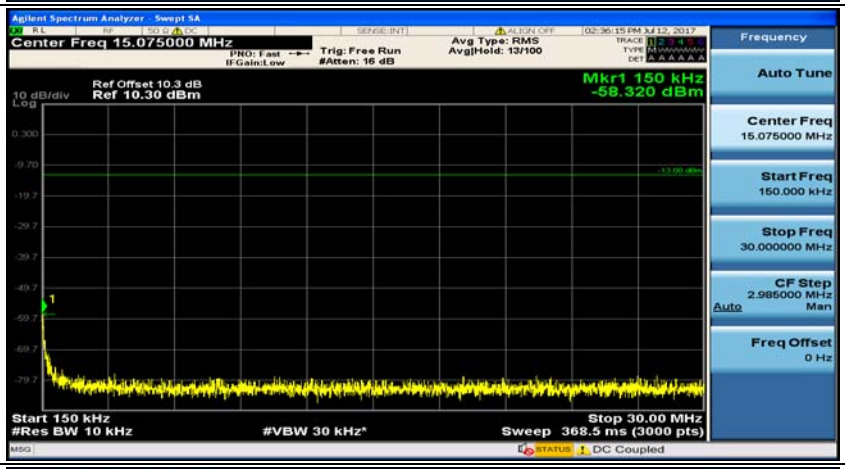
(Channel Bandwidth:15 MHz)_MCH_16QAM_1RB#74

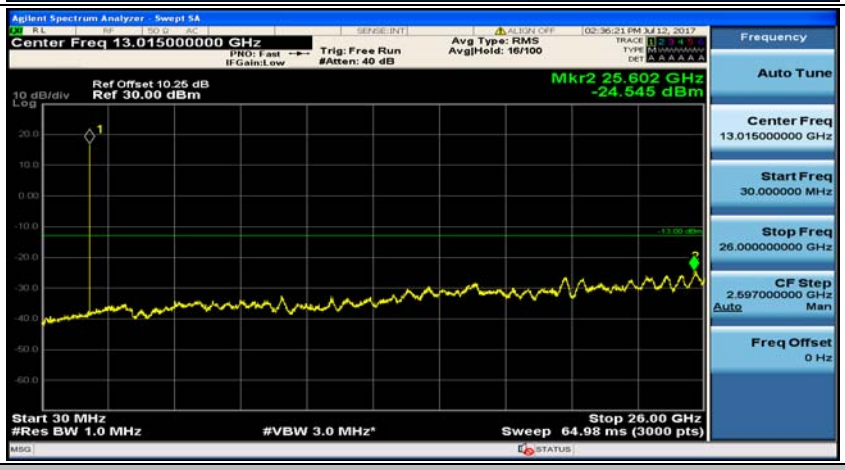




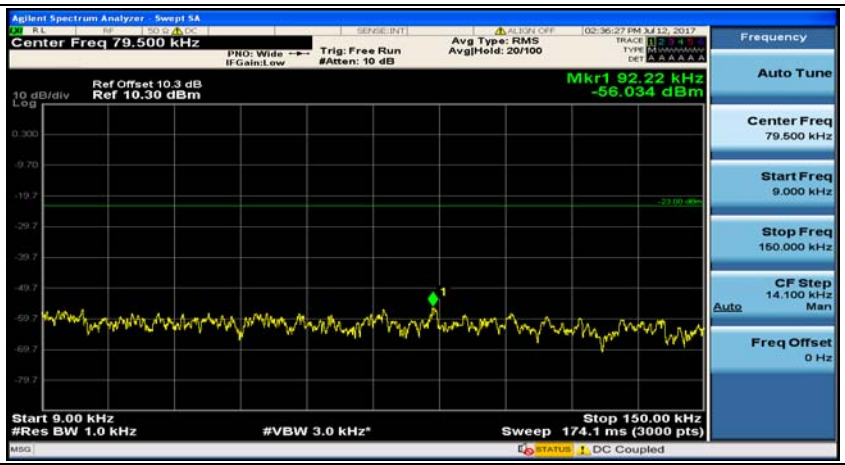
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#0

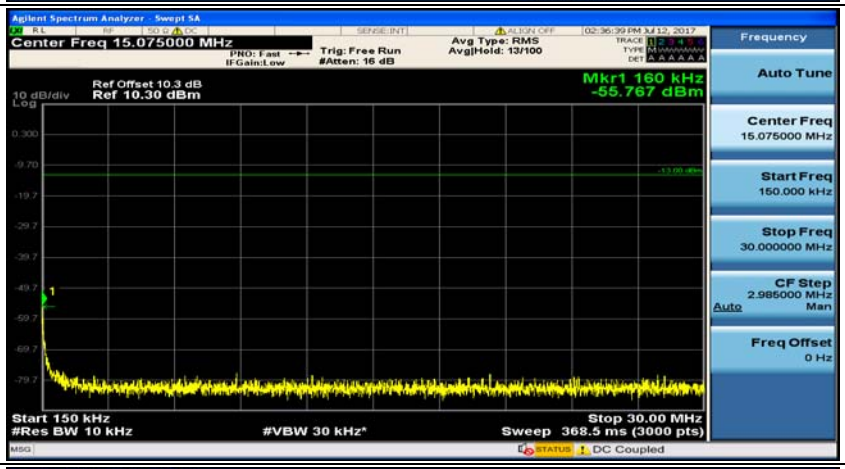


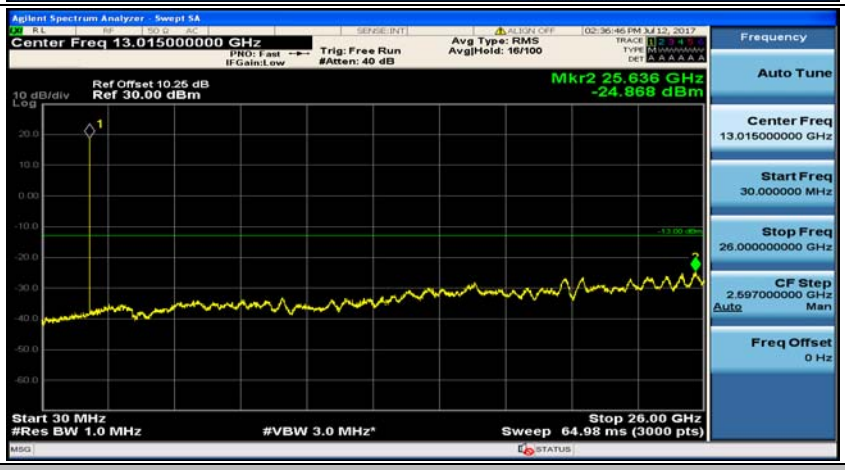




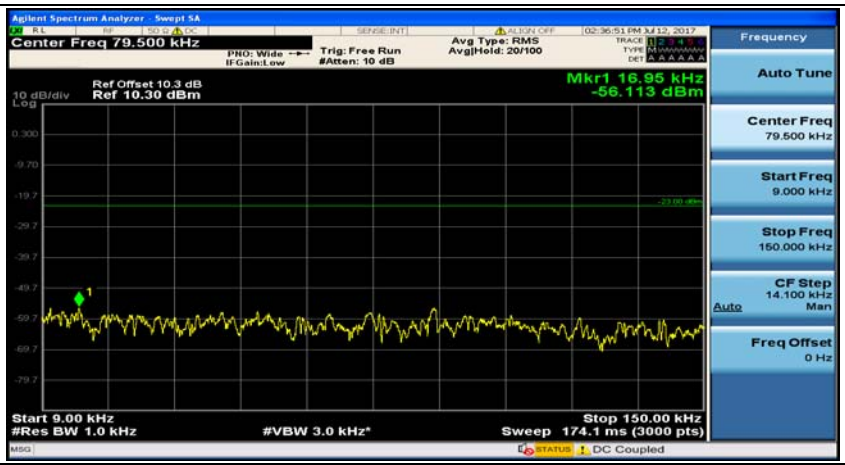
(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#37

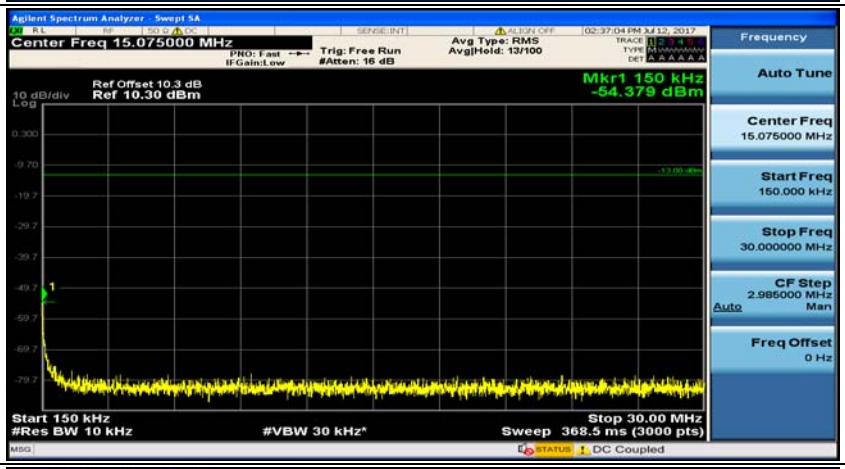


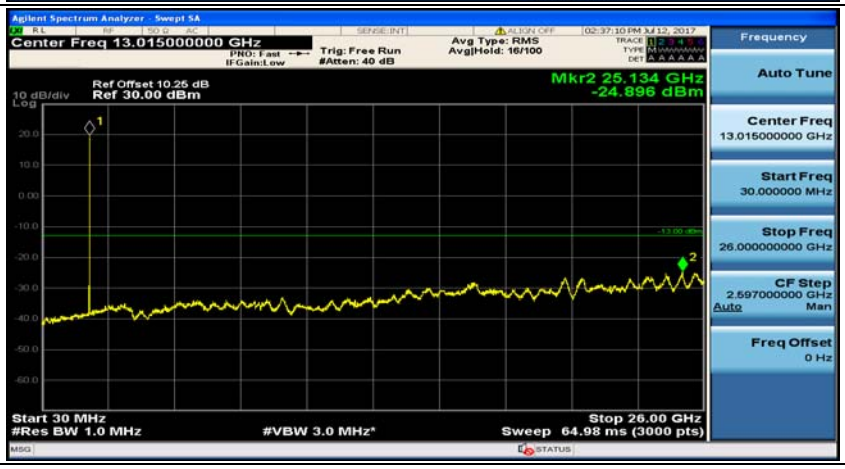




(Channel Bandwidth:15 MHz)_HCH_16QAM_1RB#74

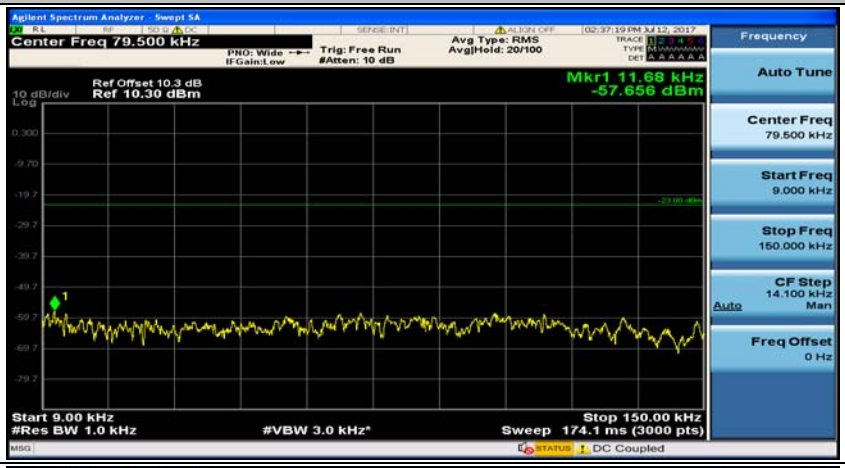

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
02:36:51 PM Jul 12, 2017
Frequency
Ref Offset 10.3 dB
10 dB/div
Log
Ref 10.30 dBm
Mkr1 16.95 kHz
-56.113 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled

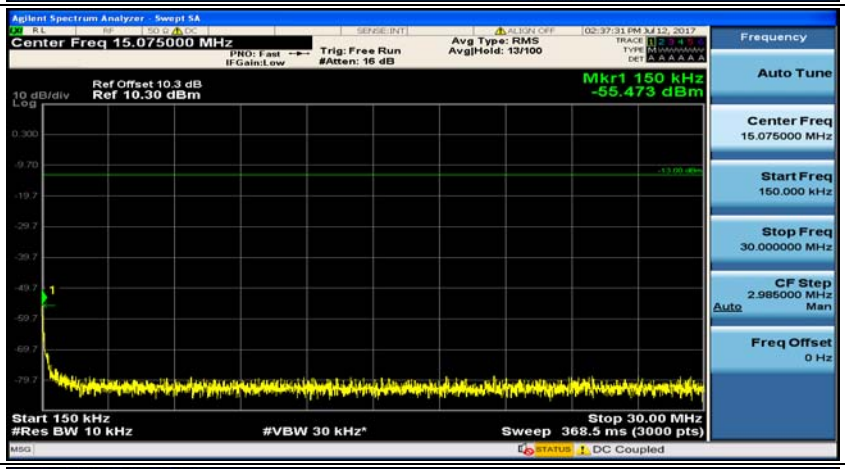

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
02:37:04 PM Jul 12, 2017
Frequency
Ref Offset 10.3 dB
10 dB/div
Log
Ref 10.30 dBm
Mkr1 150 kHz
-54.379 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled

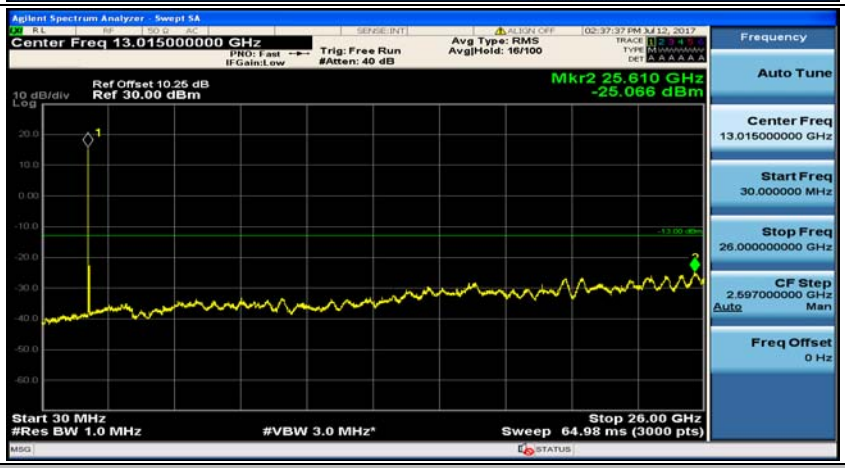

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
02:37:10 PM Jul 12, 2017
Frequency
Ref Offset 10.25 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.134 GHz
-24.896 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)

Channel Bandwidth: 20 MHz

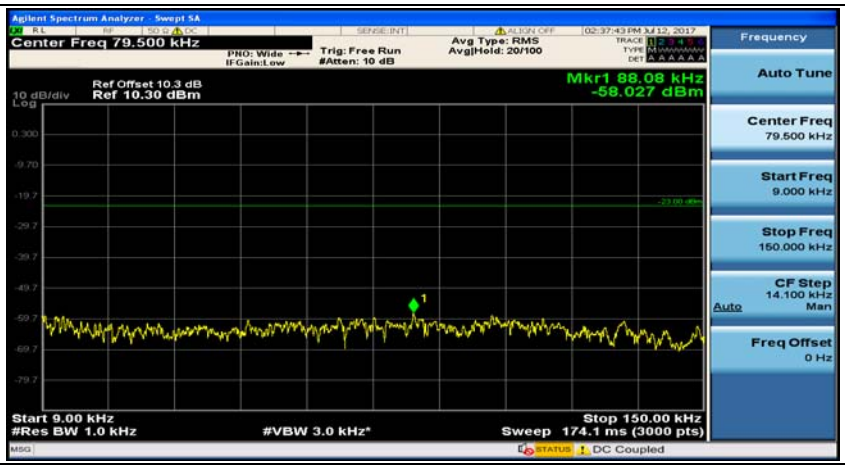
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#0

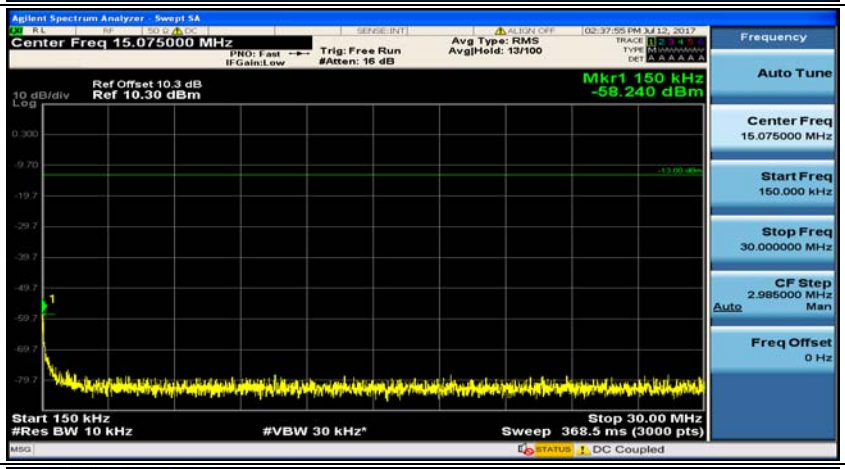


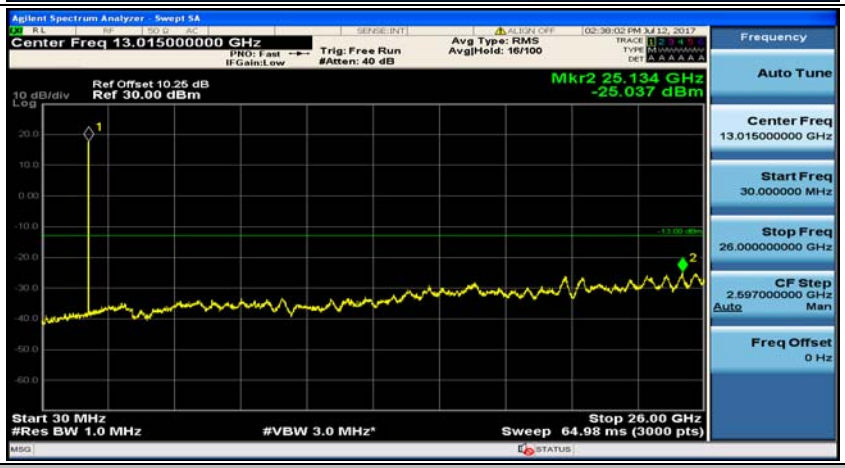




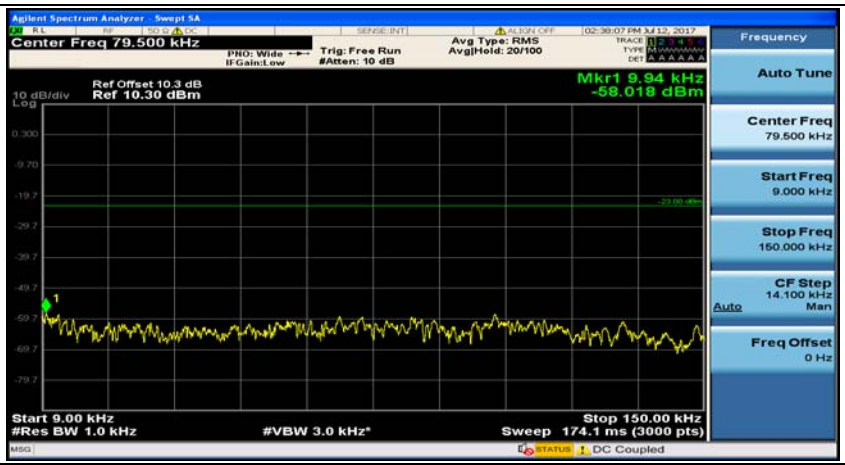
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#49

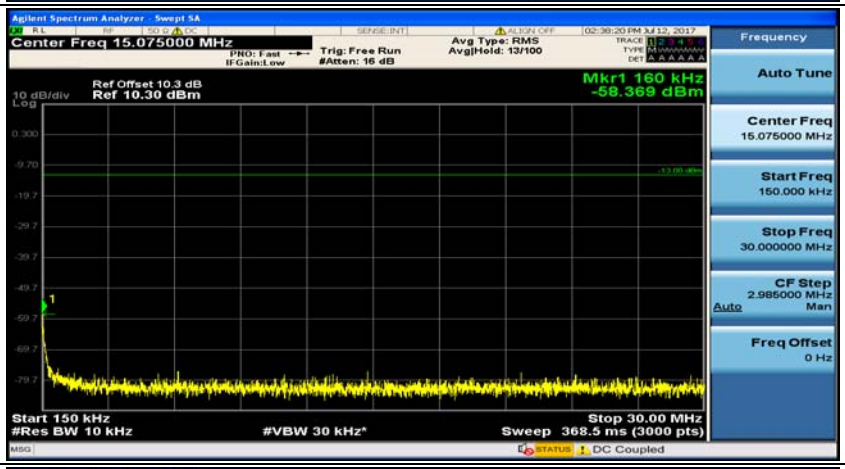




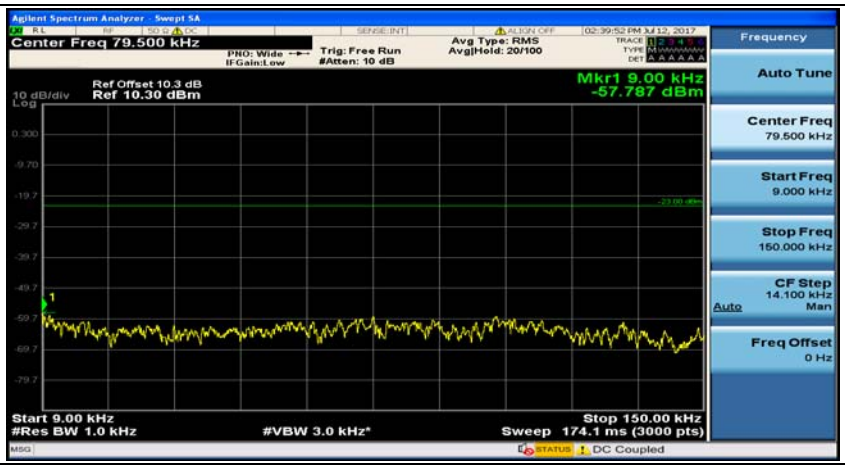


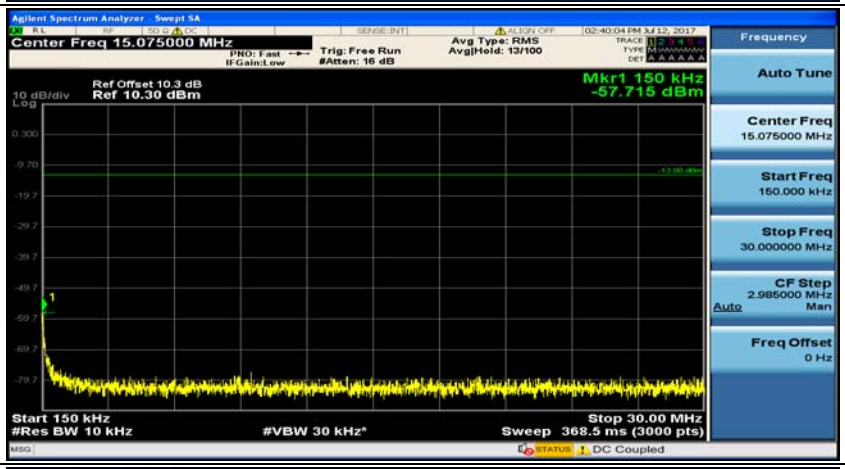
(Channel Bandwidth:20 MHz)_LCH_QPSK_1RB#99



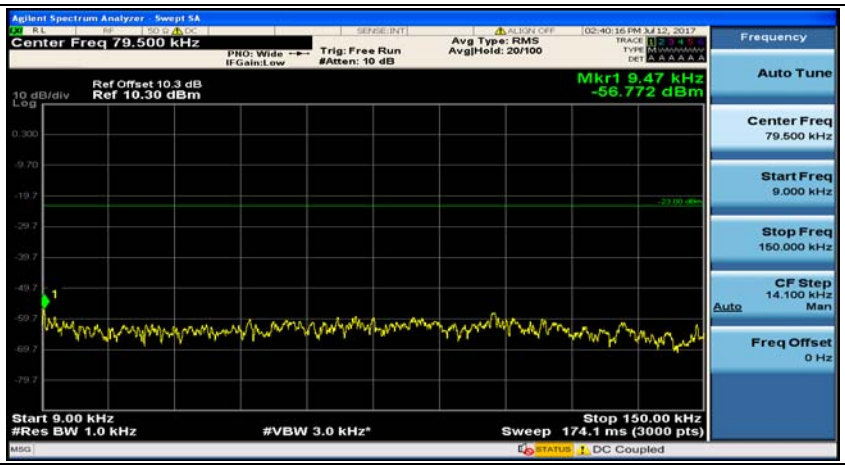


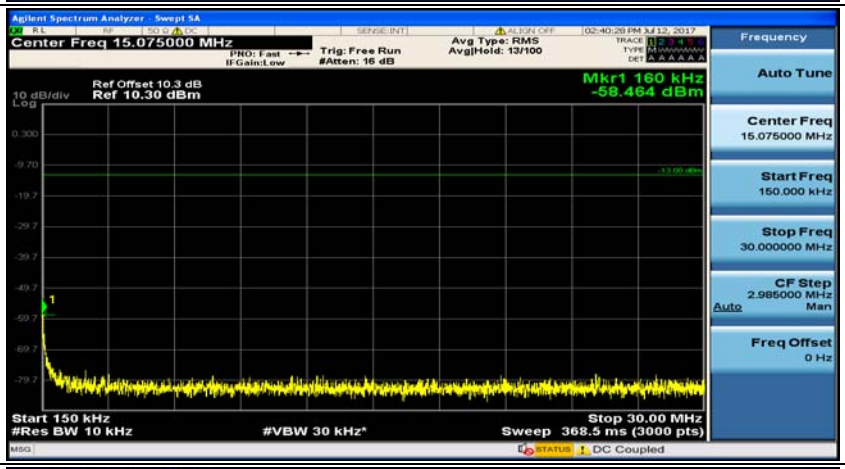
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

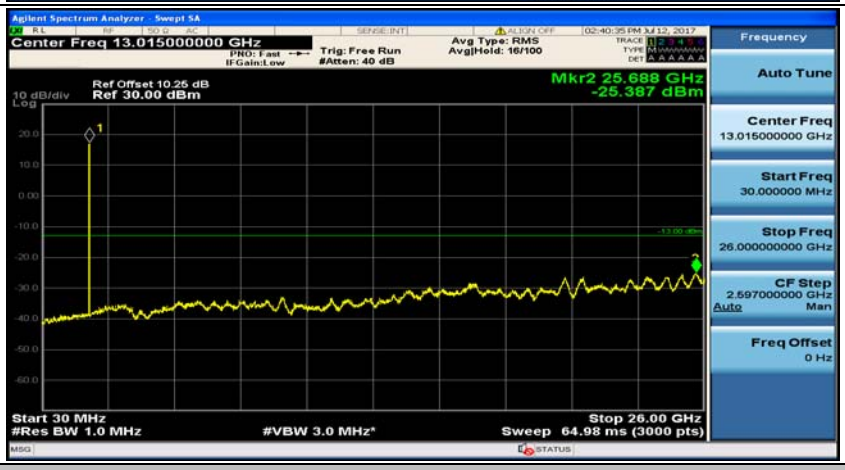




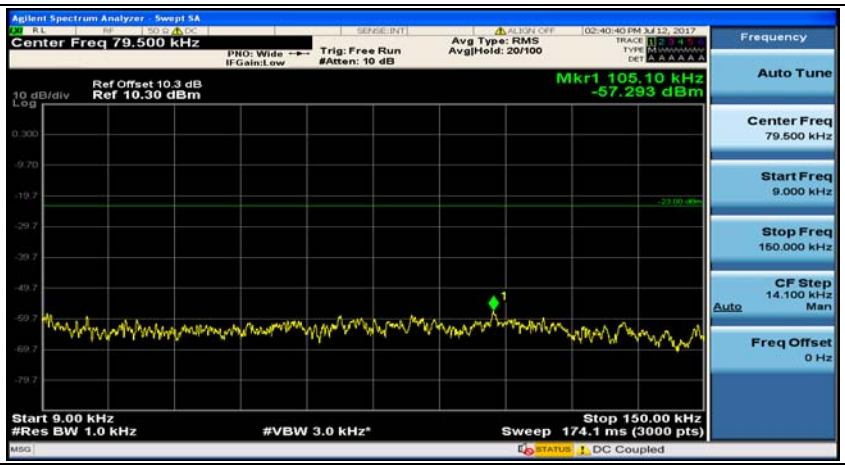
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

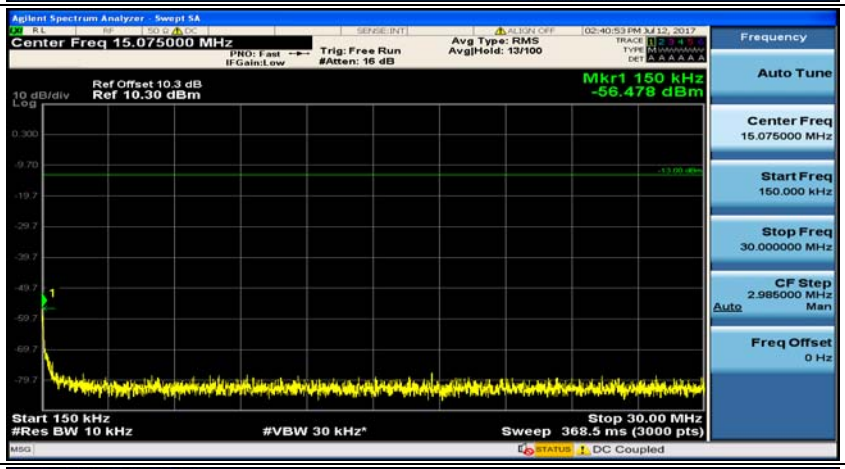




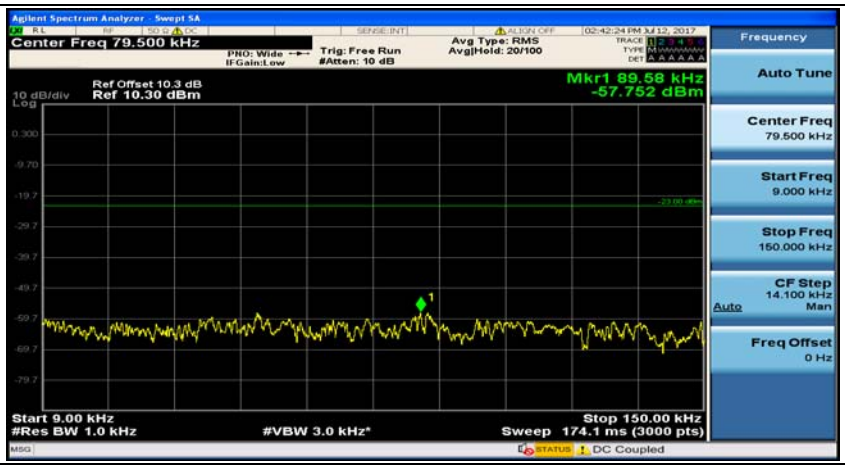


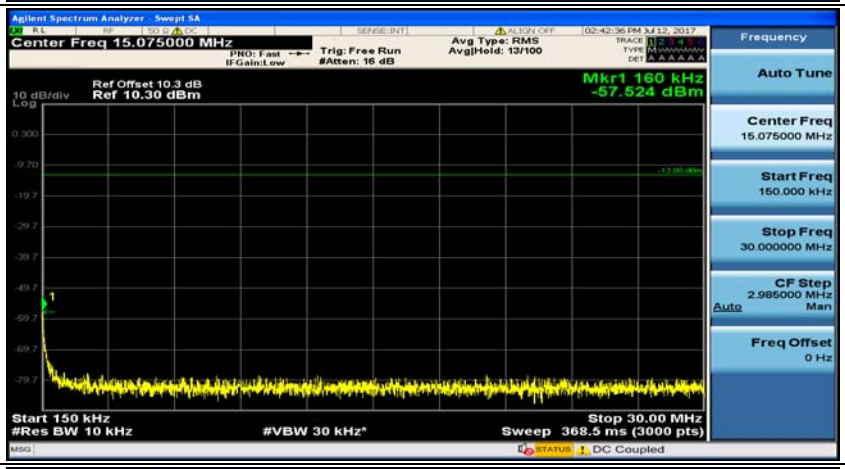
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#99

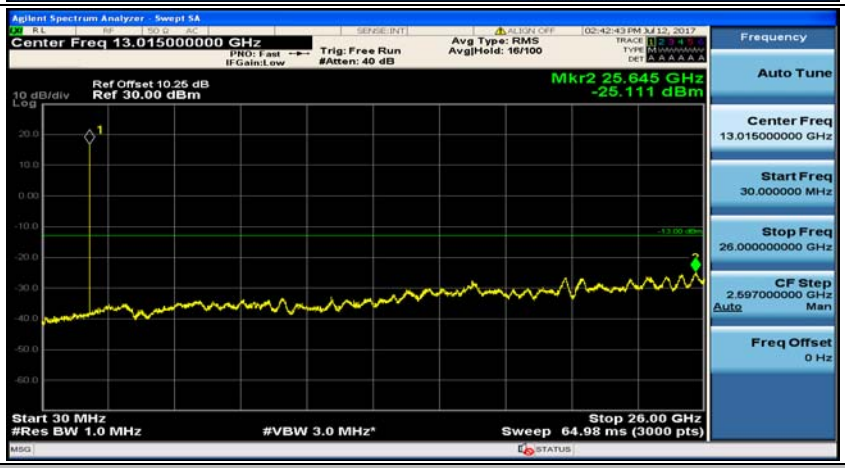




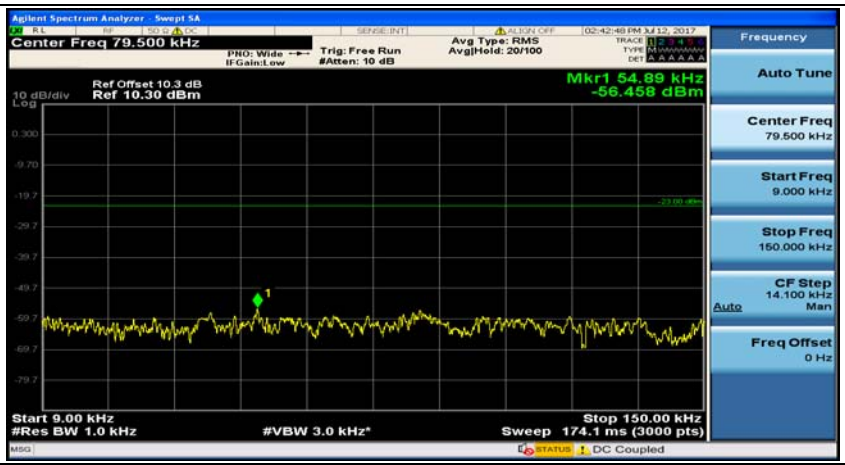
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

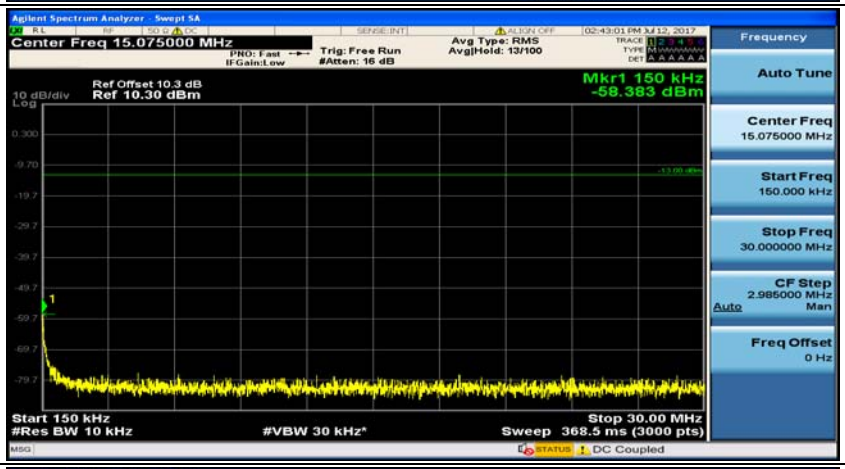




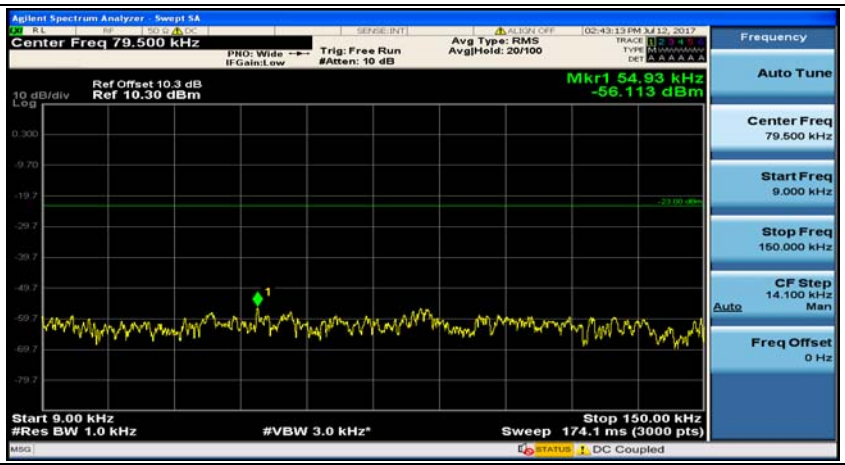


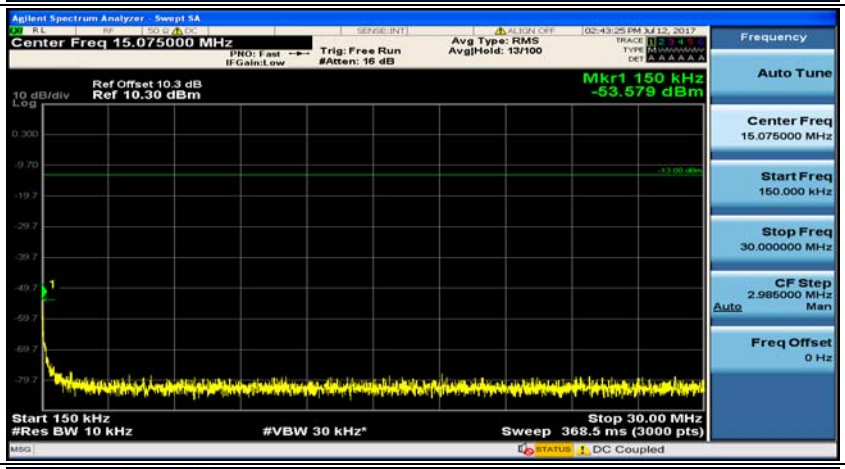
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

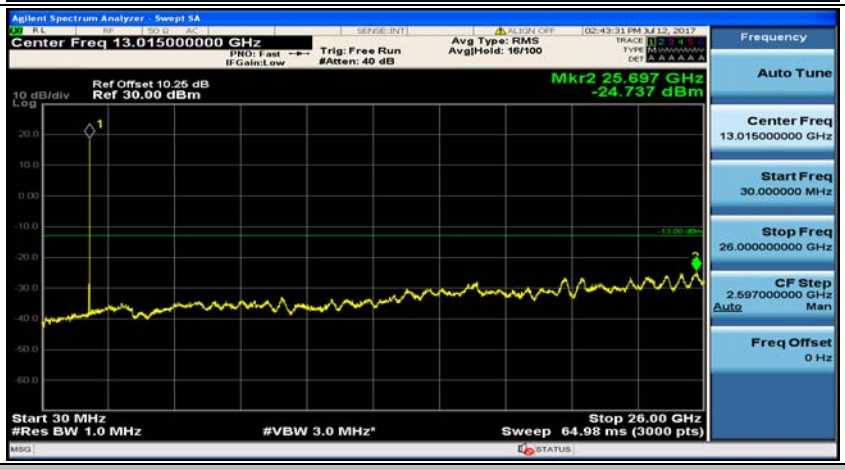




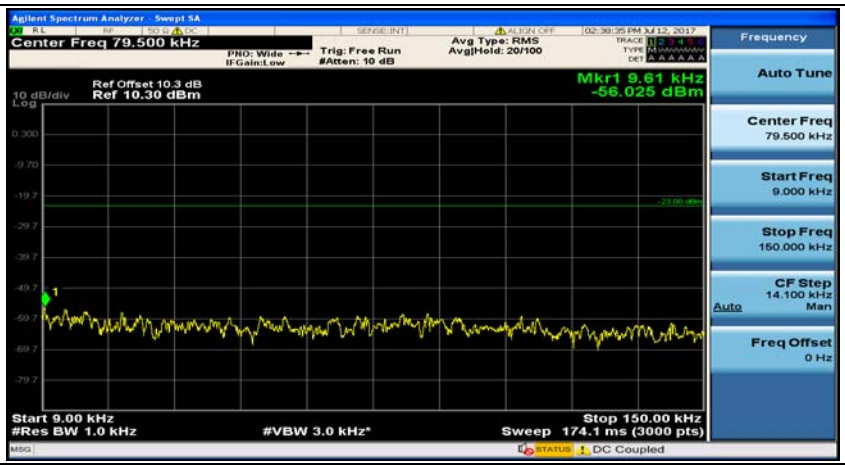
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#99

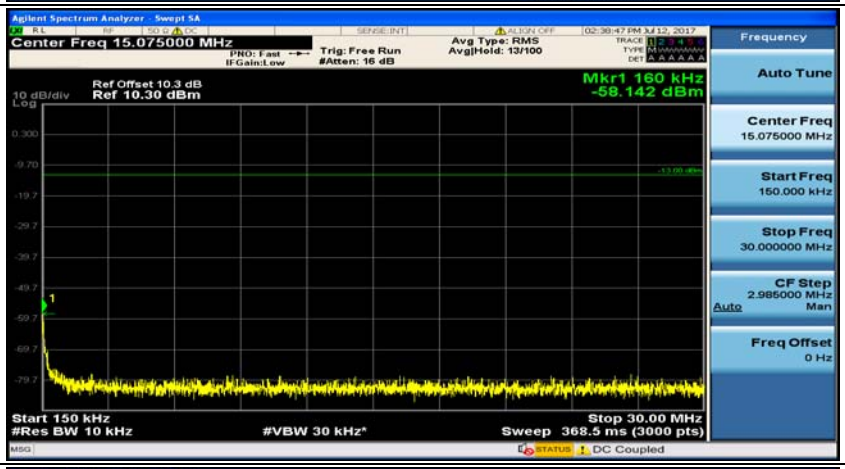


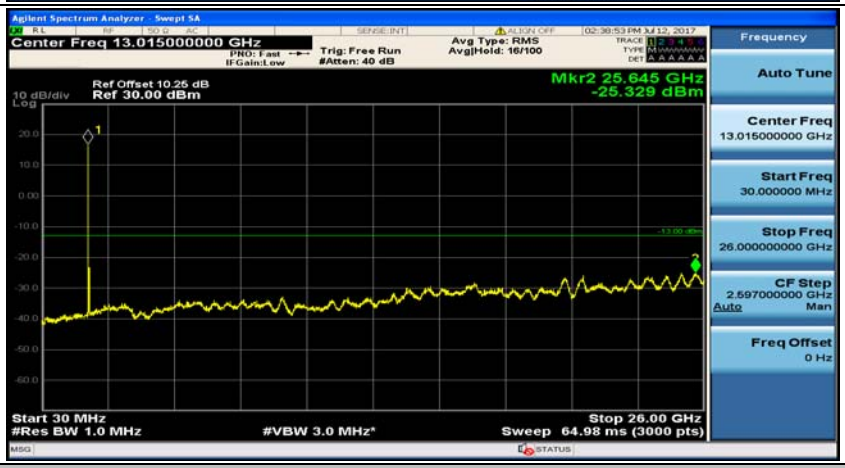




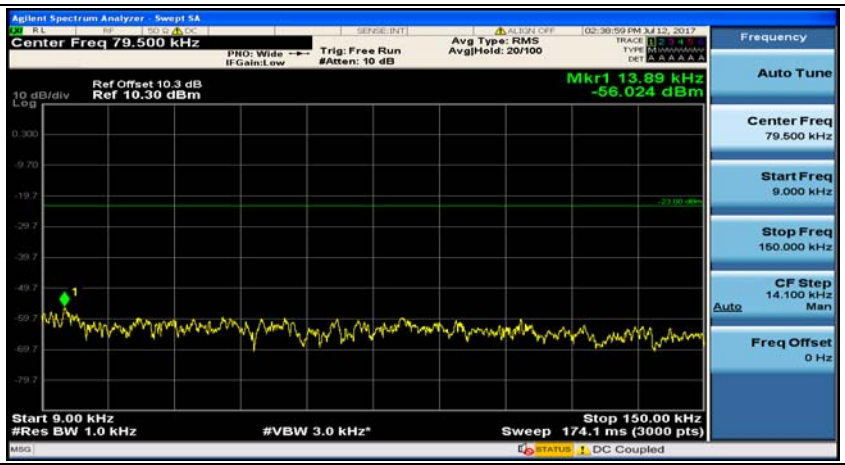
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

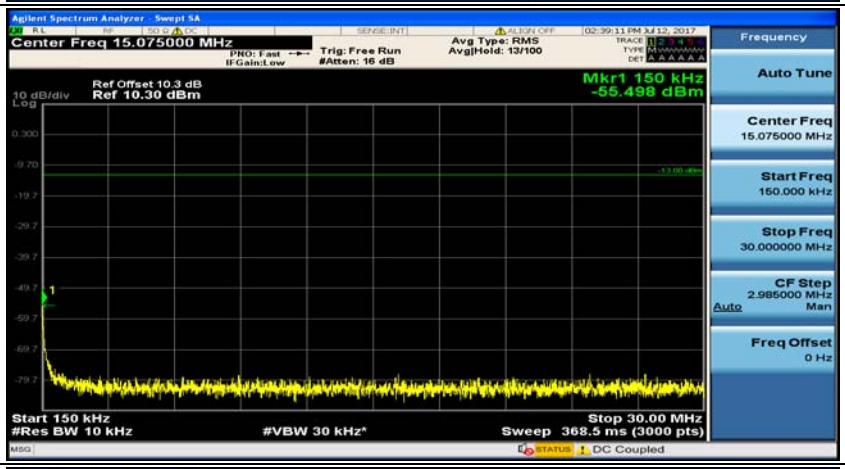


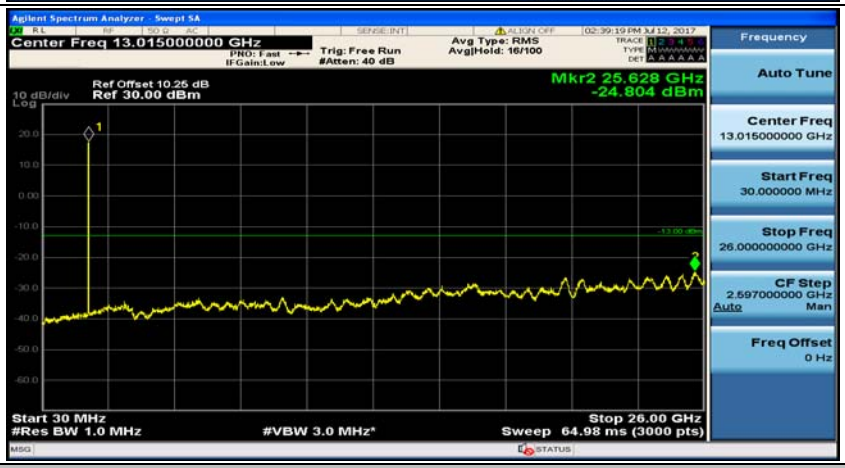




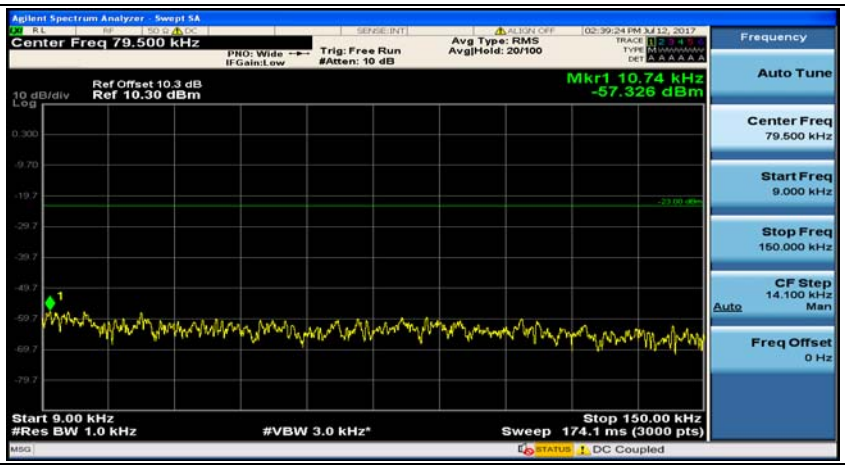
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

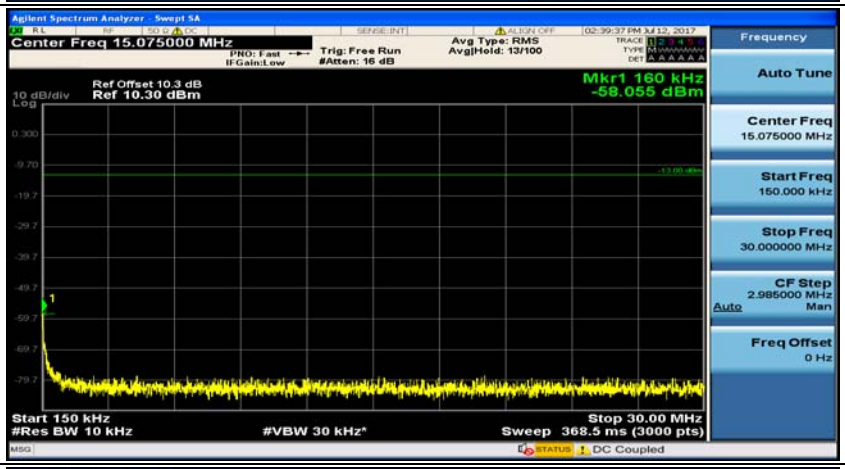


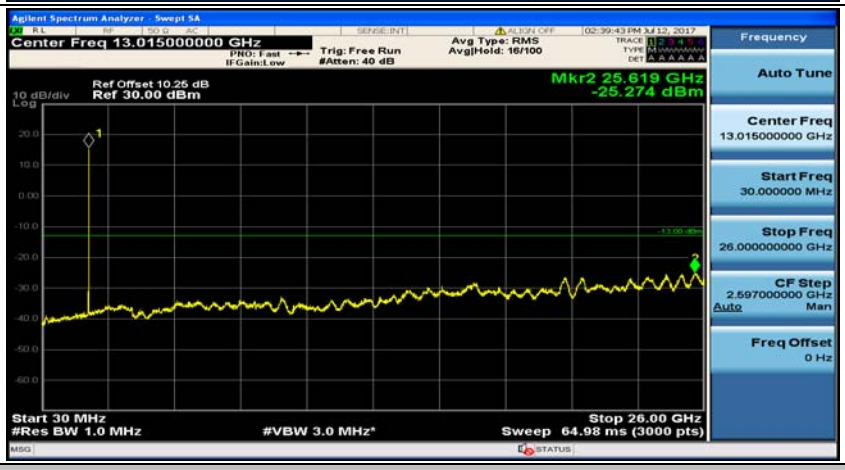




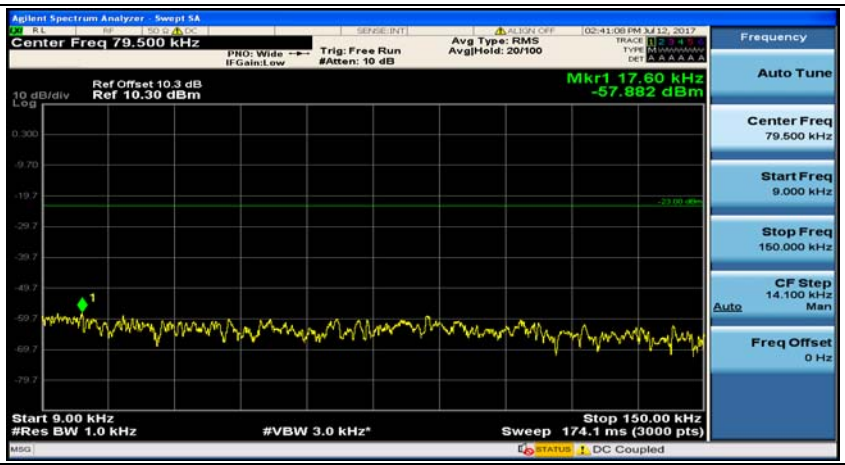
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#99

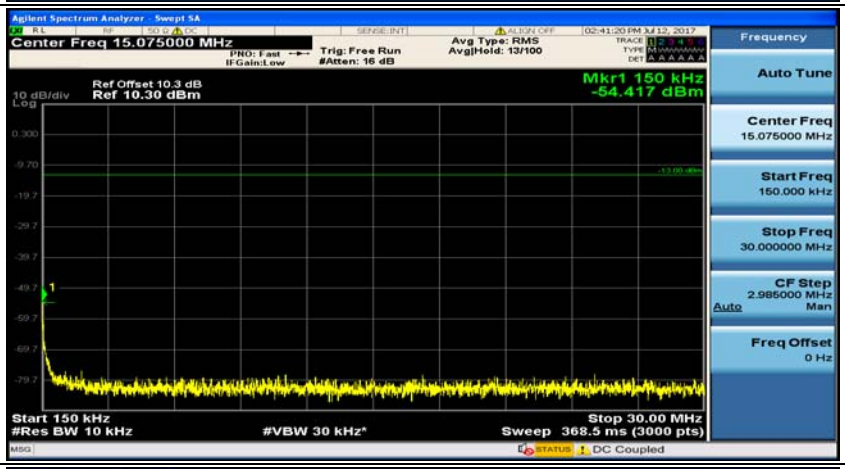


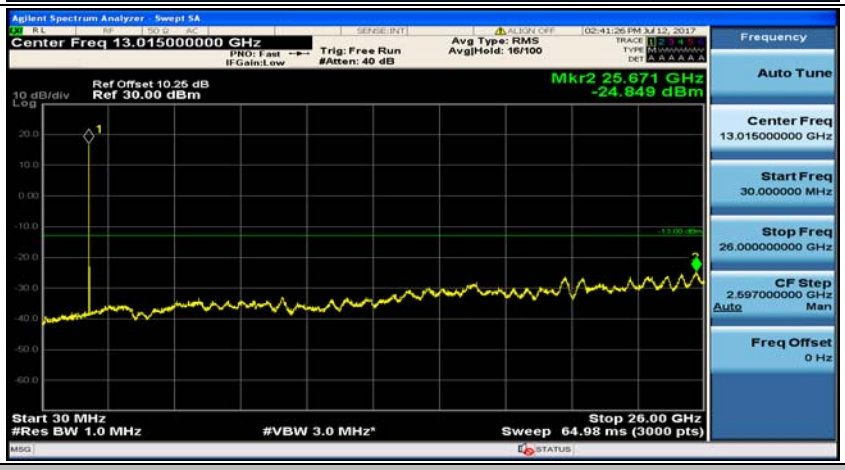




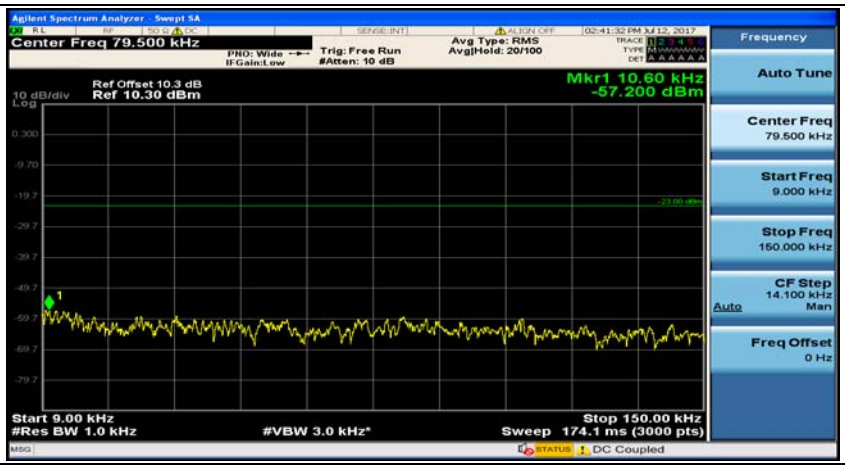
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

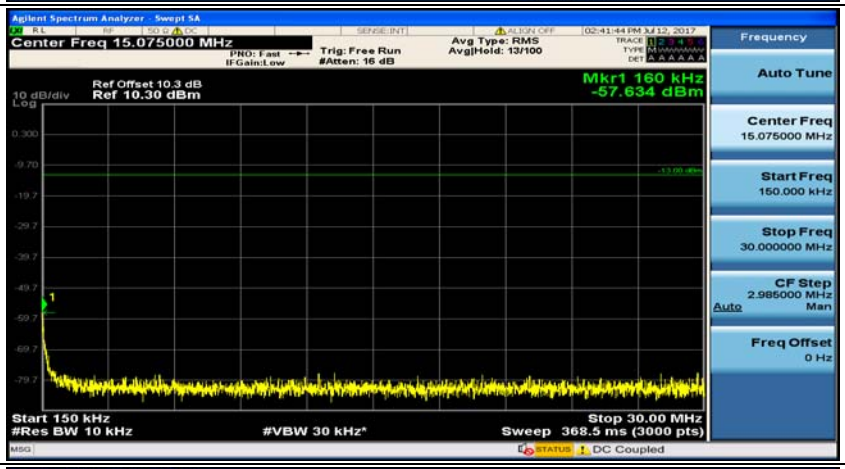


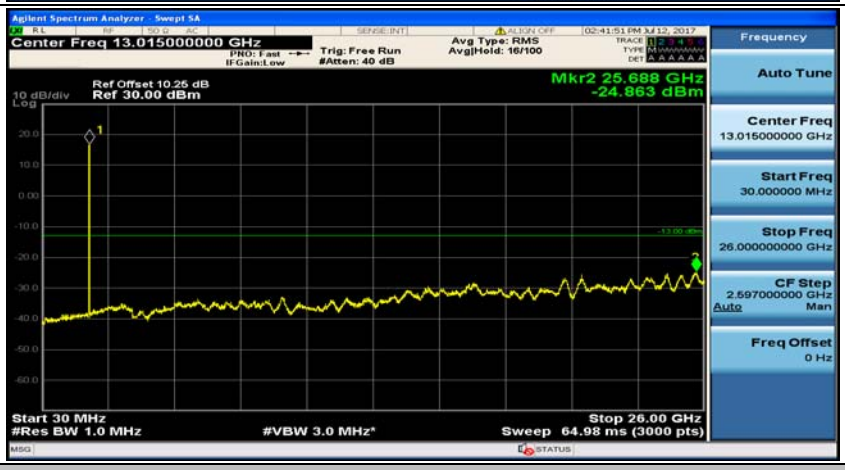




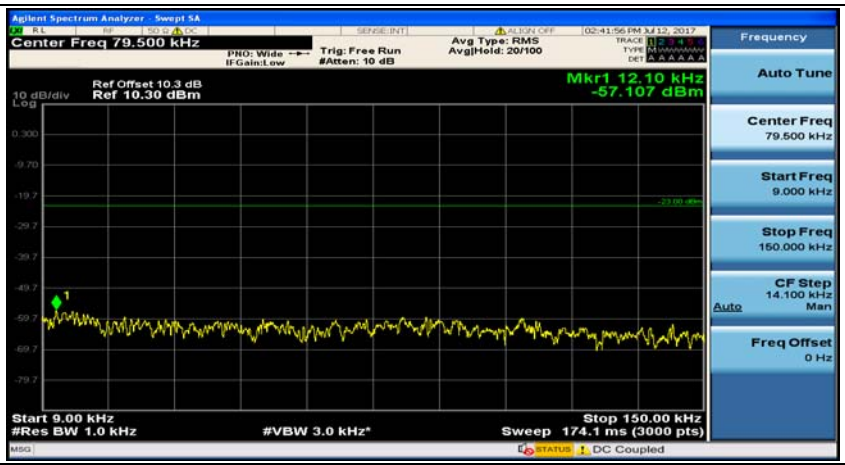
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

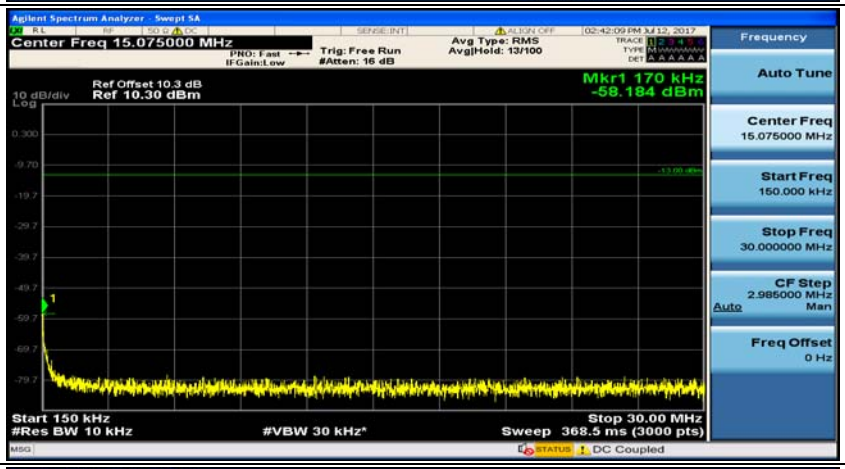


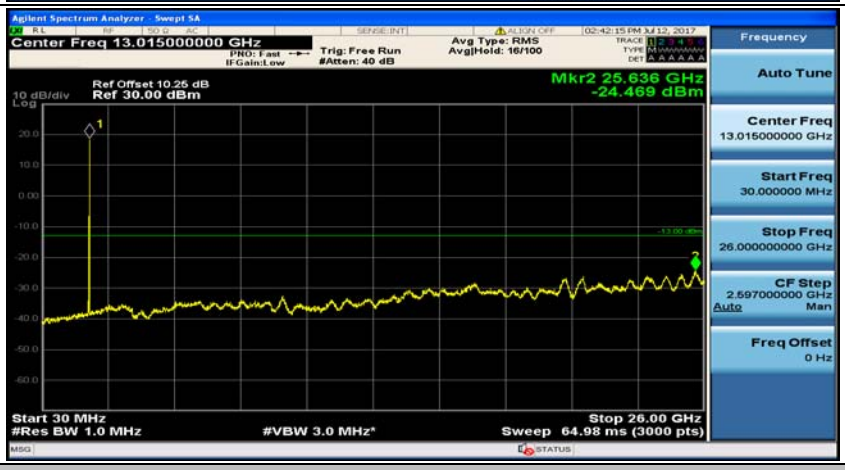




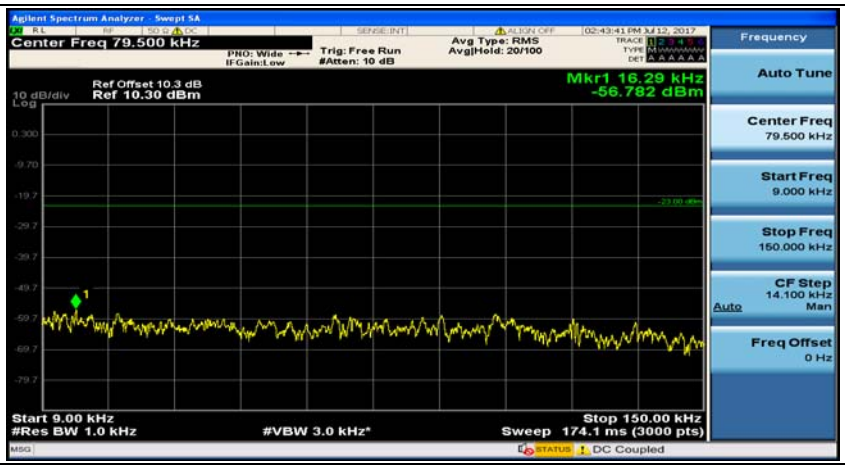
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#99

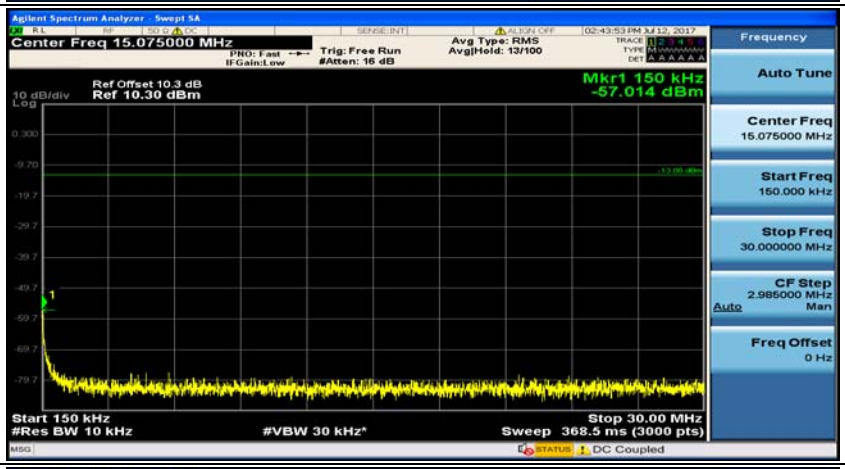




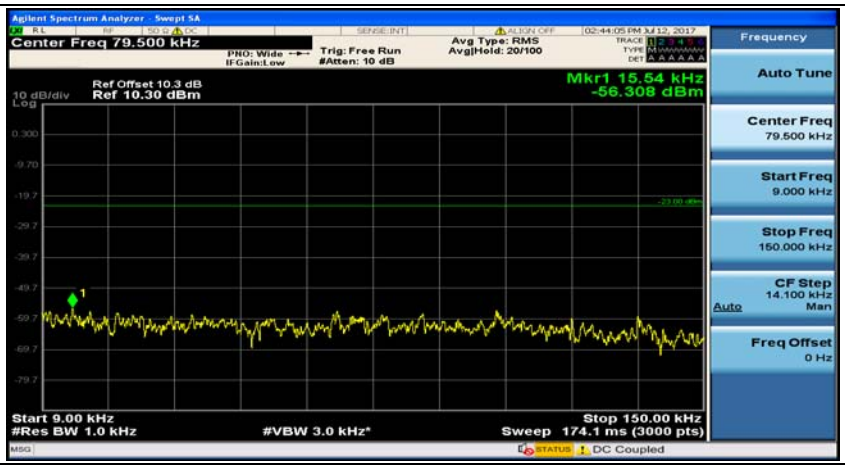


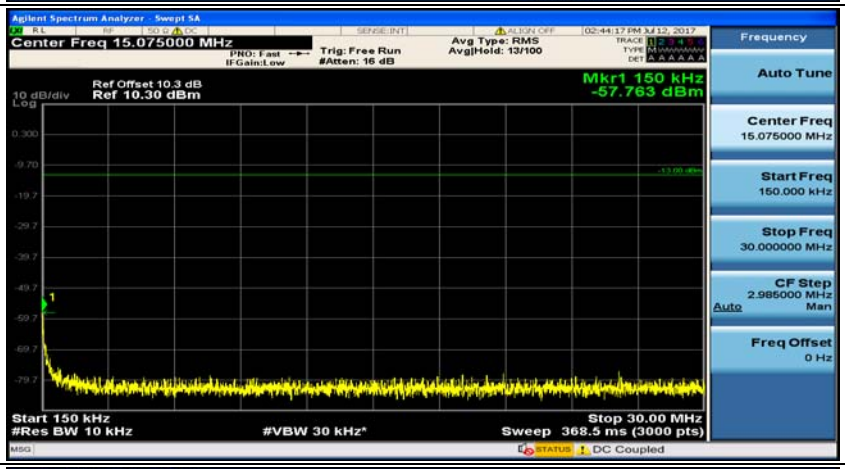
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



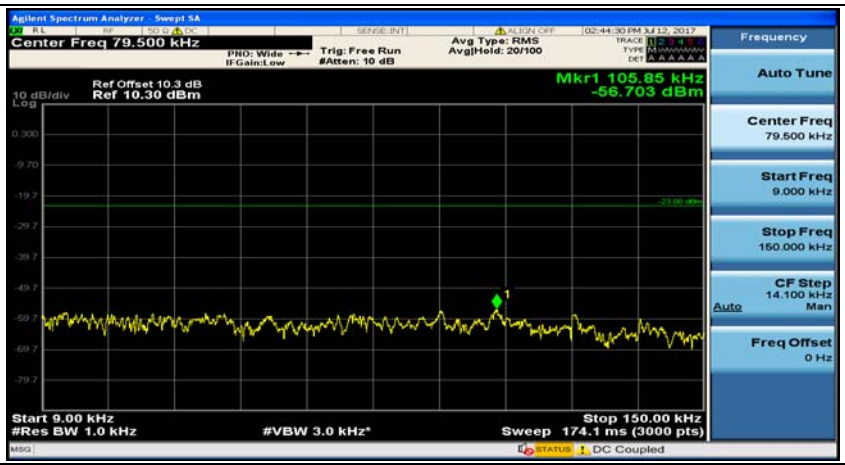


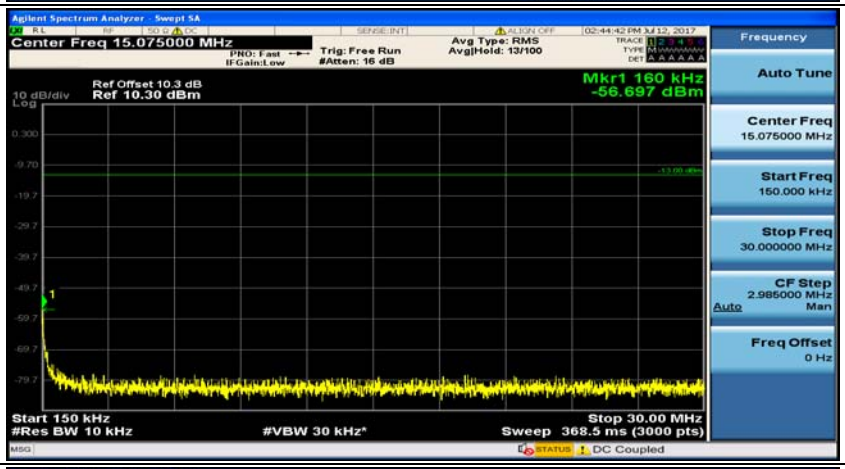
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49

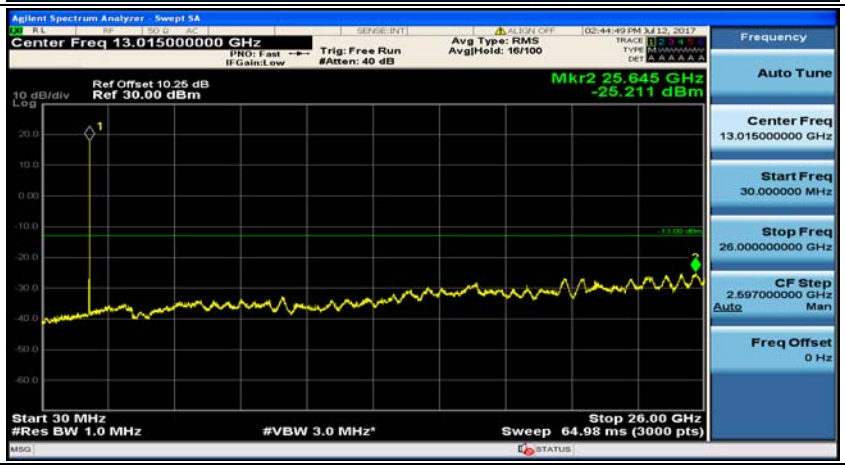




(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#99


Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
02:44:30 PM Jul 12, 2017
Frequency
Mkr1 105.85 kHz
-56.703 dBm
Ref Offset 10.3 dB
10 dB/div
Log
Ref 10.30 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled


Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
02:44:42 PM Jul 12, 2017
Frequency
Mkr1 160 kHz
-56.697 dBm
Ref Offset 10.3 dB
10 dB/div
Log
Ref 10.30 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
02:44:49 PM Jul 12, 2017
Frequency
Mkr2 25.645 GHz
-25.211 dBm
Ref Offset 10.25 dB
10 dB/div
Log
Ref 30.00 dBm
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)

Appendix F: Frequency Stability

Test Result

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	1.07	0.000578	± 2.5	PASS
		VN	TN	3.75	0.002026	± 2.5	PASS
		VH	TN	1.75	0.000946	± 2.5	PASS
	MCH	VL	TN	-1.55	-0.000824	± 2.5	PASS
		VN	TN	4.46	0.002372	± 2.5	PASS
		VH	TN	-1.06	-0.000564	± 2.5	PASS
	HCH	VL	TN	2.24	0.001173	± 2.5	PASS
		VN	TN	1.71	0.000896	± 2.5	PASS
		VH	TN	2.42	0.001267	± 2.5	PASS
16QAM	LCH	VL	TN	2.34	0.001264	± 2.5	PASS
		VN	TN	-1.3	-0.000702	± 2.5	PASS
		VH	TN	-1.07	-0.000578	± 2.5	PASS
	MCH	VL	TN	4.38	0.002330	± 2.5	PASS
		VN	TN	2.57	0.001367	± 2.5	PASS
		VH	TN	1.46	0.000777	± 2.5	PASS
	HCH	VL	TN	-1.63	-0.000854	± 2.5	PASS
		VN	TN	-0.46	-0.000241	± 2.5	PASS
		VH	TN	2.7	0.001414	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.14	-0.000616	± 2.5	PASS
		VN	-20	0.86	0.000465	± 2.5	PASS
		VN	-10	-0.07	-0.000038	± 2.5	PASS
		VN	0	-1.76	-0.000951	± 2.5	PASS
		VN	10	1.84	0.000994	± 2.5	PASS
		VN	20	0.8	0.000432	± 2.5	PASS
		VN	30	-0.87	-0.000470	± 2.5	PASS
		VN	40	3.4	0.001837	± 2.5	PASS
		VN	50	-0.34	-0.000184	± 2.5	PASS
	MCH	VN	-30	2.82	0.001500	± 2.5	PASS
		VN	-20	0.25	0.000133	± 2.5	PASS

		VN	-10	4.9	0.002606	± 2.5	PASS
		VN	0	-0.68	-0.000362	± 2.5	PASS
		VN	10	4.49	0.002388	± 2.5	PASS
		VN	20	2.13	0.001133	± 2.5	PASS
		VN	30	1.06	0.000564	± 2.5	PASS
		VN	40	4.81	0.002559	± 2.5	PASS
		VN	50	0.88	0.000468	± 2.5	PASS
	HCH	VN	-30	1.97	0.001032	± 2.5	PASS
		VN	-20	2.38	0.001247	± 2.5	PASS
		VN	-10	4.87	0.002551	± 2.5	PASS
		VN	0	-0.7	-0.000367	± 2.5	PASS
		VN	10	3.98	0.002085	± 2.5	PASS
		VN	20	1.62	0.000848	± 2.5	PASS
		VN	30	0.1	0.000052	± 2.5	PASS
		VN	40	-0.67	-0.000351	± 2.5	PASS
		VN	50	2.44	0.001278	± 2.5	PASS
16QAM	LCH	VN	-30	1.62	0.000875	± 2.5	PASS
		VN	-20	1.72	0.000929	± 2.5	PASS
		VN	-10	1.62	0.000875	± 2.5	PASS
		VN	0	3.45	0.001864	± 2.5	PASS
		VN	10	3.46	0.001870	± 2.5	PASS
		VN	20	-0.21	-0.000113	± 2.5	PASS
		VN	30	1.9	0.001027	± 2.5	PASS
		VN	40	1.87	0.001010	± 2.5	PASS
		VN	50	0.61	0.000330	± 2.5	PASS
	MCH	VN	-30	3.3	0.001755	± 2.5	PASS
		VN	-20	4.97	0.002644	± 2.5	PASS
		VN	-10	-0.98	-0.000521	± 2.5	PASS
		VN	0	2.76	0.001468	± 2.5	PASS
		VN	10	3.76	0.002000	± 2.5	PASS
		VN	20	1.79	0.000952	± 2.5	PASS
		VN	30	-1.41	-0.000750	± 2.5	PASS
		VN	40	1.95	0.001037	± 2.5	PASS
		VN	50	2.67	0.001420	± 2.5	PASS
	HCH	VN	-30	4.51	0.002362	± 2.5	PASS
		VN	-20	0.69	0.000361	± 2.5	PASS
		VN	-10	3.23	0.001692	± 2.5	PASS
		VN	0	4.88	0.002556	± 2.5	PASS
		VN	10	4.79	0.002509	± 2.5	PASS
		VN	20	-1.92	-0.001006	± 2.5	PASS
		VN	30	-0.42	-0.000220	± 2.5	PASS

		VN	40	0.4	0.000210	± 2.5	PASS
		VN	50	-0.81	-0.000424	± 2.5	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz+							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	1.9	0.001026	± 2.5	PASS
		VN	TN	-0.73	-0.000394	± 2.5	PASS
		VH	TN	4.06	0.002193	± 2.5	PASS
	MCH	VL	TN	0.54	0.000287	± 2.5	PASS
		VN	TN	4.95	0.002633	± 2.5	PASS
		VH	TN	3.8	0.002021	± 2.5	PASS
	HCH	VL	TN	-1.97	-0.001032	± 2.5	PASS
		VN	TN	-1.83	-0.000959	± 2.5	PASS
		VH	TN	-0.91	-0.000477	± 2.5	PASS
16QAM	LCH	VL	TN	2.57	0.001388	± 2.5	PASS
		VN	TN	-1.64	-0.000886	± 2.5	PASS
		VH	TN	-0.11	-0.000059	± 2.5	PASS
	MCH	VL	TN	0.55	0.000293	± 2.5	PASS
		VN	TN	0.3	0.000160	± 2.5	PASS
		VH	TN	-0.48	-0.000255	± 2.5	PASS
	HCH	VL	TN	2.65	0.001389	± 2.5	PASS
		VN	TN	2.62	0.001373	± 2.5	PASS
		VH	TN	-0.81	-0.000424	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-1.62	-0.000875	± 2.5	PASS
		VN	-20	4.79	0.002587	± 2.5	PASS
		VN	-10	-0.07	-0.000038	± 2.5	PASS
		VN	0	-1.35	-0.000729	± 2.5	PASS
		VN	10	-0.22	-0.000119	± 2.5	PASS
		VN	20	4.55	0.002457	± 2.5	PASS
		VN	30	2.57	0.001388	± 2.5	PASS
		VN	40	3.7	0.001998	± 2.5	PASS
		VN	50	-1.96	-0.001059	± 2.5	PASS
	MCH	VN	-30	-0.03	-0.000016	± 2.5	PASS
		VN	-20	2.8	0.001489	± 2.5	PASS
		VN	-10	-0.07	-0.000037	± 2.5	PASS

		VN	0	1.33	0.000707	± 2.5	PASS
		VN	10	4.57	0.002431	± 2.5	PASS
		VN	20	4.63	0.002463	± 2.5	PASS
		VN	30	-0.46	-0.000245	± 2.5	PASS
		VN	40	1.82	0.000968	± 2.5	PASS
		VN	50	-0.75	-0.000399	± 2.5	PASS
	HCH	VN	-30	2.47	0.001294	± 2.5	PASS
		VN	-20	2.48	0.001299	± 2.5	PASS
		VN	-10	0.03	0.000016	± 2.5	PASS
		VN	0	-0.57	-0.000299	± 2.5	PASS
		VN	10	0.21	0.000110	± 2.5	PASS
		VN	20	2.6	0.001362	± 2.5	PASS
		VN	30	3.2	0.001677	± 2.5	PASS
		VN	40	-0.98	-0.000513	± 2.5	PASS
		VN	50	-1.78	-0.000933	± 2.5	PASS
16QAM	LCH	VN	-30	-0.71	-0.000383	± 2.5	PASS
		VN	-20	3.72	0.002009	± 2.5	PASS
		VN	-10	1.54	0.000832	± 2.5	PASS
		VN	0	2.94	0.001588	± 2.5	PASS
		VN	10	4.83	0.002609	± 2.5	PASS
		VN	20	1.03	0.000556	± 2.5	PASS
		VN	30	2.73	0.001474	± 2.5	PASS
		VN	40	-0.98	-0.000529	± 2.5	PASS
		VN	50	4.91	0.002652	± 2.5	PASS
	MCH	VN	-30	2.13	0.001133	± 2.5	PASS
		VN	-20	1.43	0.000761	± 2.5	PASS
		VN	-10	2.43	0.001293	± 2.5	PASS
		VN	0	1.09	0.000580	± 2.5	PASS
		VN	10	-1.7	-0.000904	± 2.5	PASS
		VN	20	3.22	0.001713	± 2.5	PASS
		VN	30	1.97	0.001048	± 2.5	PASS
		VN	40	2.86	0.001521	± 2.5	PASS
		VN	50	-0.23	-0.000122	± 2.5	PASS
	HCH	VN	-30	4.01	0.002101	± 2.5	PASS
		VN	-20	4.91	0.002573	± 2.5	PASS
		VN	-10	0.31	0.000162	± 2.5	PASS
		VN	0	2.57	0.001347	± 2.5	PASS
		VN	10	2.4	0.001258	± 2.5	PASS
		VN	20	0.85	0.000445	± 2.5	PASS
		VN	30	-1.86	-0.000975	± 2.5	PASS
		VN	40	-1.66	-0.000870	± 2.5	PASS

		VN	50	3.7	0.001939	± 2.5	PASS

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	-1.73	-0.000934	± 2.5	PASS
		VN	TN	-0.32	-0.000173	± 2.5	PASS
		VH	TN	1.56	0.000842	± 2.5	PASS
	MCH	VL	TN	4.34	0.002309	± 2.5	PASS
		VN	TN	-1.5	-0.000798	± 2.5	PASS
		VH	TN	-1.63	-0.000867	± 2.5	PASS
	HCH	VL	TN	-0.46	-0.000241	± 2.5	PASS
		VN	TN	1.61	0.000844	± 2.5	PASS
		VH	TN	0.48	0.000252	± 2.5	PASS
16QAM	LCH	VL	TN	4.23	0.002283	± 2.5	PASS
		VN	TN	0.68	0.000367	± 2.5	PASS
		VH	TN	0.46	0.000248	± 2.5	PASS
	MCH	VL	TN	2.88	0.001532	± 2.5	PASS
		VN	TN	-1.48	-0.000787	± 2.5	PASS
		VH	TN	-0.44	-0.000234	± 2.5	PASS
	HCH	VL	TN	0	0.000000	± 2.5	PASS
		VN	TN	0.16	0.000084	± 2.5	PASS
		VH	TN	-0.33	-0.000173	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.62	0.001954	± 2.5	PASS
		VN	-20	1.8	0.000972	± 2.5	PASS
		VN	-10	1.1	0.000594	± 2.5	PASS
		VN	0	3.19	0.001722	± 2.5	PASS
		VN	10	4.68	0.002526	± 2.5	PASS
		VN	20	4.22	0.002278	± 2.5	PASS
		VN	30	1.05	0.000567	± 2.5	PASS
		VN	40	-0.95	-0.000513	± 2.5	PASS
		VN	50	2	0.001080	± 2.5	PASS
	MCH	VN	-30	3.89	0.002069	± 2.5	PASS
		VN	-20	-0.53	-0.000282	± 2.5	PASS
		VN	-10	-0.13	-0.000069	± 2.5	PASS
		VN	0	-1.63	-0.000867	± 2.5	PASS

		VN	10	2.27	0.001207	± 2.5	PASS
		VN	20	0.57	0.000303	± 2.5	PASS
		VN	30	-1.56	-0.000830	± 2.5	PASS
		VN	40	4.49	0.002388	± 2.5	PASS
		VN	50	-1.72	-0.000915	± 2.5	PASS
	HCH	VN	-30	-1.32	-0.000692	± 2.5	PASS
		VN	-20	0.03	0.000016	± 2.5	PASS
		VN	-10	0.7	0.000367	± 2.5	PASS
		VN	0	3.93	0.002060	± 2.5	PASS
		VN	10	2.1	0.001101	± 2.5	PASS
		VN	20	2.82	0.001478	± 2.5	PASS
		VN	30	-0.17	-0.000089	± 2.5	PASS
		VN	40	-0.92	-0.000482	± 2.5	PASS
		VN	50	3.31	0.001735	± 2.5	PASS
	LCH	VN	-30	3.54	0.001911	± 2.5	PASS
		VN	-20	3.69	0.001992	± 2.5	PASS
		VN	-10	3.31	0.001787	± 2.5	PASS
		VN	0	0.27	0.000146	± 2.5	PASS
		VN	10	4.92	0.002656	± 2.5	PASS
		VN	20	0.98	0.000529	± 2.5	PASS
		VN	30	-1.21	-0.000653	± 2.5	PASS
		VN	40	4.01	0.002165	± 2.5	PASS
		VN	50	0.77	0.000416	± 2.5	PASS
	MCH	VN	-30	-0.89	-0.000473	± 2.5	PASS
		VN	-20	4.84	0.002574	± 2.5	PASS
		VN	-10	2.11	0.001122	± 2.5	PASS
		VN	0	0.12	0.000064	± 2.5	PASS
16QAM		VN	10	0.92	0.000489	± 2.5	PASS
		VN	20	4.61	0.002452	± 2.5	PASS
		VN	30	0.12	0.000064	± 2.5	PASS
		VN	40	1.55	0.000824	± 2.5	PASS
		VN	50	3.05	0.001622	± 2.5	PASS
	HCH	VN	-30	1.24	0.000650	± 2.5	PASS
		VN	-20	-1.01	-0.000529	± 2.5	PASS
		VN	-10	-0.33	-0.000173	± 2.5	PASS
		VN	0	3.08	0.001615	± 2.5	PASS
		VN	10	-0.91	-0.000477	± 2.5	PASS
		VN	20	-0.2	-0.000105	± 2.5	PASS
		VN	30	4.2	0.002202	± 2.5	PASS
		VN	40	-0.62	-0.000325	± 2.5	PASS
		VN	50	3.54	0.001856	± 2.5	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	3.87	0.002086	± 2.5	PASS
		VN	TN	1.33	0.000717	± 2.5	PASS
		VH	TN	3.58	0.001930	± 2.5	PASS
	MCH	VL	TN	0.64	0.000340	± 2.5	PASS
		VN	TN	-1.77	-0.000941	± 2.5	PASS
		VH	TN	1.76	0.000936	± 2.5	PASS
	HCH	VL	TN	2.5	0.001312	± 2.5	PASS
		VN	TN	0.59	0.000310	± 2.5	PASS
		VH	TN	2.09	0.001097	± 2.5	PASS
16QAM	LCH	VL	TN	-0.38	-0.000205	± 2.5	PASS
		VN	TN	0.51	0.000275	± 2.5	PASS
		VH	TN	-1.24	-0.000668	± 2.5	PASS
	MCH	VL	TN	-0.32	-0.000170	± 2.5	PASS
		VN	TN	3.15	0.001676	± 2.5	PASS
		VH	TN	2.41	0.001282	± 2.5	PASS
	HCH	VL	TN	2.11	0.001108	± 2.5	PASS
		VN	TN	0.32	0.000168	± 2.5	PASS
		VH	TN	3.66	0.001921	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	0.89	0.000480	± 2.5	PASS
		VN	-20	1.5	0.000809	± 2.5	PASS
		VN	-10	1.36	0.000733	± 2.5	PASS
		VN	0	1.88	0.001013	± 2.5	PASS
		VN	10	0.41	0.000221	± 2.5	PASS
		VN	20	2.95	0.001590	± 2.5	PASS
		VN	30	1.26	0.000679	± 2.5	PASS
		VN	40	3.15	0.001698	± 2.5	PASS
		VN	50	-0.17	-0.000092	± 2.5	PASS
	MCH	VN	-30	1.93	0.001027	± 2.5	PASS
		VN	-20	3.23	0.001718	± 2.5	PASS
		VN	-10	-0.08	-0.000043	± 2.5	PASS
		VN	0	-1.6	-0.000851	± 2.5	PASS
		VN	10	0.96	0.000511	± 2.5	PASS
		VN	20	-1.27	-0.000676	± 2.5	PASS

		VN	30	-1.93	-0.001027	± 2.5	PASS
		VN	40	1.37	0.000729	± 2.5	PASS
		VN	50	-1.23	-0.000654	± 2.5	PASS
	HCH	VN	-30	1.16	0.000609	± 2.5	PASS
		VN	-20	-1.79	-0.000940	± 2.5	PASS
		VN	-10	0.91	0.000478	± 2.5	PASS
		VN	0	4.9	0.002572	± 2.5	PASS
		VN	10	-1.16	-0.000609	± 2.5	PASS
		VN	20	0.07	0.000037	± 2.5	PASS
		VN	30	-1.19	-0.000625	± 2.5	PASS
		VN	40	-1.11	-0.000583	± 2.5	PASS
		VN	50	0.73	0.000383	± 2.5	PASS
QPSK	LCH	VN	-30	3.78	0.002038	± 2.5	PASS
		VN	-20	-0.22	-0.000119	± 2.5	PASS
		VN	-10	0.32	0.000173	± 2.5	PASS
		VN	0	3.13	0.001687	± 2.5	PASS
		VN	10	1.75	0.000943	± 2.5	PASS
		VN	20	0.32	0.000173	± 2.5	PASS
		VN	30	-0.88	-0.000474	± 2.5	PASS
		VN	40	0.87	0.000469	± 2.5	PASS
		VN	50	0.02	0.000011	± 2.5	PASS
	MCH	VN	-30	1.37	0.000729	± 2.5	PASS
		VN	-20	2.87	0.001527	± 2.5	PASS
		VN	-10	1.95	0.001037	± 2.5	PASS
		VN	0	0.18	0.000096	± 2.5	PASS
		VN	10	2.69	0.001431	± 2.5	PASS
		VN	20	4.05	0.002154	± 2.5	PASS
		VN	30	0.82	0.000436	± 2.5	PASS
		VN	40	3.29	0.001750	± 2.5	PASS
		VN	50	1.55	0.000824	± 2.5	PASS
	HCH	VN	-30	0.83	0.000436	± 2.5	PASS
		VN	-20	0.24	0.000126	± 2.5	PASS
		VN	-10	3	0.001575	± 2.5	PASS
		VN	0	3.88	0.002037	± 2.5	PASS
		VN	10	1.84	0.000966	± 2.5	PASS
		VN	20	-1.7	-0.000892	± 2.5	PASS
		VN	30	3.05	0.001601	± 2.5	PASS
		VN	40	1.2	0.000630	± 2.5	PASS
		VN	50	0.09	0.000047	± 2.5	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	0.04	0.000022	± 2.5	PASS
		VN	TN	4.61	0.002482	± 2.5	PASS
		VH	TN	3.21	0.001728	± 2.5	PASS
	MCH	VL	TN	2.83	0.001505	± 2.5	PASS
		VN	TN	1.76	0.000936	± 2.5	PASS
		VH	TN	2.36	0.001255	± 2.5	PASS
	HCH	VL	TN	-1.26	-0.000662	± 2.5	PASS
		VN	TN	-1.74	-0.000915	± 2.5	PASS
		VH	TN	-1.48	-0.000778	± 2.5	PASS
16QAM	LCH	VL	TN	2.21	0.001190	± 2.5	PASS
		VN	TN	3.89	0.002094	± 2.5	PASS
		VH	TN	3.91	0.002105	± 2.5	PASS
	MCH	VL	TN	1	0.000532	± 2.5	PASS
		VN	TN	2.49	0.001324	± 2.5	PASS
		VH	TN	4.79	0.002548	± 2.5	PASS
	HCH	VL	TN	0.21	0.000110	± 2.5	PASS
		VN	TN	2.46	0.001293	± 2.5	PASS
		VH	TN	-1.27	-0.000668	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.48	0.001335	± 2.5	PASS
		VN	-20	-0.03	-0.000016	± 2.5	PASS
		VN	-10	3.72	0.002003	± 2.5	PASS
		VN	0	2.08	0.001120	± 2.5	PASS
		VN	10	4.35	0.002342	± 2.5	PASS
		VN	20	-1.41	-0.000759	± 2.5	PASS
		VN	30	0.77	0.000415	± 2.5	PASS
		VN	40	-1.45	-0.000781	± 2.5	PASS
		VN	50	3.58	0.001927	± 2.5	PASS
	MCH	VN	-30	1.17	0.000622	± 2.5	PASS
		VN	-20	-0.4	-0.000213	± 2.5	PASS
		VN	-10	1.14	0.000606	± 2.5	PASS
		VN	0	4.4	0.002340	± 2.5	PASS
		VN	10	3.25	0.001729	± 2.5	PASS
		VN	20	2.69	0.001431	± 2.5	PASS

		VN	30	2.6	0.001383	± 2.5	PASS
		VN	40	-0.42	-0.000223	± 2.5	PASS
		VN	50	-1.6	-0.000851	± 2.5	PASS
	HCH	VN	-30	-0.15	-0.000079	± 2.5	PASS
		VN	-20	2.82	0.001482	± 2.5	PASS
		VN	-10	2.11	0.001109	± 2.5	PASS
		VN	0	1.43	0.000752	± 2.5	PASS
		VN	10	2.38	0.001251	± 2.5	PASS
		VN	20	0.38	0.000200	± 2.5	PASS
		VN	30	3.12	0.001640	± 2.5	PASS
		VN	40	-1.29	-0.000678	± 2.5	PASS
		VN	50	2.56	0.001346	± 2.5	PASS
16QAM	LCH	VN	-30	3.05	0.001642	± 2.5	PASS
		VN	-20	2.04	0.001098	± 2.5	PASS
		VN	-10	2.77	0.001491	± 2.5	PASS
		VN	0	0.64	0.000345	± 2.5	PASS
		VN	10	4.48	0.002412	± 2.5	PASS
		VN	20	2.62	0.001410	± 2.5	PASS
		VN	30	3.39	0.001825	± 2.5	PASS
		VN	40	-0.26	-0.000140	± 2.5	PASS
		VN	50	4.4	0.002369	± 2.5	PASS
	MCH	VN	-30	2.48	0.001319	± 2.5	PASS
		VN	-20	2.46	0.001309	± 2.5	PASS
		VN	-10	4.78	0.002543	± 2.5	PASS
		VN	0	0.57	0.000303	± 2.5	PASS
		VN	10	4.83	0.002569	± 2.5	PASS
		VN	20	3.97	0.002112	± 2.5	PASS
		VN	30	0.21	0.000112	± 2.5	PASS
		VN	40	2.53	0.001346	± 2.5	PASS
		VN	50	-1.03	-0.000548	± 2.5	PASS
	HCH	VN	-30	2.72	0.001430	± 2.5	PASS
		VN	-20	3.91	0.002055	± 2.5	PASS
		VN	-10	0.06	0.000032	± 2.5	PASS
		VN	0	1.45	0.000762	± 2.5	PASS
		VN	10	1.91	0.001004	± 2.5	PASS
		VN	20	-0.83	-0.000436	± 2.5	PASS
		VN	30	-1.6	-0.000841	± 2.5	PASS
		VN	40	3.29	0.001729	± 2.5	PASS
		VN	50	4.69	0.002465	± 2.5	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	-0.56	-0.000301	± 2.5	PASS
		VN	TN	2.21	0.001188	± 2.5	PASS
		VH	TN	-1.18	-0.000634	± 2.5	PASS
	MCH	VL	TN	-0.37	-0.000197	± 2.5	PASS
		VN	TN	1.1	0.000585	± 2.5	PASS
		VH	TN	3.36	0.001787	± 2.5	PASS
	HCH	VL	TN	1.4	0.000737	± 2.5	PASS
		VN	TN	0.19	0.000100	± 2.5	PASS
		VH	TN	2.14	0.001126	± 2.5	PASS
16QAM	LCH	VL	TN	1.07	0.000575	± 2.5	PASS
		VN	TN	1.03	0.000554	± 2.5	PASS
		VH	TN	2.76	0.001484	± 2.5	PASS
	MCH	VL	TN	0.07	0.000037	± 2.5	PASS
		VN	TN	-1.16	-0.000617	± 2.5	PASS
		VH	TN	-1.35	-0.000718	± 2.5	PASS
	HCH	VL	TN	-0.58	-0.000305	± 2.5	PASS
		VN	TN	2.11	0.001111	± 2.5	PASS
		VH	TN	3.32	0.001747	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	2.46	0.001323	± 2.5	PASS
		VN	-20	-0.22	-0.000118	± 2.5	PASS
		VN	-10	-1.76	-0.000946	± 2.5	PASS
		VN	0	4.15	0.002231	± 2.5	PASS
		VN	10	-1.81	-0.000973	± 2.5	PASS
		VN	20	-1.15	-0.000618	± 2.5	PASS
		VN	30	3.97	0.002134	± 2.5	PASS
		VN	40	-1.2	-0.000645	± 2.5	PASS
		VN	50	1.35	0.000726	± 2.5	PASS
	MCH	VN	-30	-1.34	-0.000713	± 2.5	PASS
		VN	-20	0.82	0.000436	± 2.5	PASS
		VN	-10	4.29	0.002282	± 2.5	PASS
		VN	0	4.09	0.002176	± 2.5	PASS
		VN	10	4.19	0.002229	± 2.5	PASS
		VN	20	3.96	0.002106	± 2.5	PASS

		VN	30	4.41	0.002346	± 2.5	PASS
		VN	40	1.16	0.000617	± 2.5	PASS
		VN	50	-1.89	-0.001005	± 2.5	PASS
	HCH	VN	-30	3.26	0.001716	± 2.5	PASS
		VN	-20	4.53	0.002384	± 2.5	PASS
		VN	-10	1.38	0.000726	± 2.5	PASS
		VN	0	1.56	0.000821	± 2.5	PASS
		VN	10	3.61	0.001900	± 2.5	PASS
		VN	20	-0.2	-0.000105	± 2.5	PASS
		VN	30	-1.1	-0.000579	± 2.5	PASS
		VN	40	3.72	0.001958	± 2.5	PASS
		VN	50	-0.59	-0.000311	± 2.5	PASS
16QAM	LCH	VN	-30	2.46	0.001323	± 2.5	PASS
		VN	-20	3.54	0.001903	± 2.5	PASS
		VN	-10	1.61	0.000866	± 2.5	PASS
		VN	0	-1.11	-0.000597	± 2.5	PASS
		VN	10	1.24	0.000667	± 2.5	PASS
		VN	20	3.38	0.001817	± 2.5	PASS
		VN	30	3.33	0.001790	± 2.5	PASS
		VN	40	-1.71	-0.000919	± 2.5	PASS
		VN	50	-1.67	-0.000898	± 2.5	PASS
	MCH	VN	-30	-0.91	-0.000484	± 2.5	PASS
		VN	-20	1.5	0.000798	± 2.5	PASS
		VN	-10	3.23	0.001718	± 2.5	PASS
		VN	0	2.67	0.001420	± 2.5	PASS
		VN	10	3.56	0.001894	± 2.5	PASS
		VN	20	3.64	0.001936	± 2.5	PASS
		VN	30	3.85	0.002048	± 2.5	PASS
		VN	40	3.25	0.001729	± 2.5	PASS
		VN	50	0.75	0.000399	± 2.5	PASS
	HCH	VN	-30	-1.29	-0.000679	± 2.5	PASS
		VN	-20	-1.95	-0.001026	± 2.5	PASS
		VN	-10	0	0.000000	± 2.5	PASS
		VN	0	3.63	0.001911	± 2.5	PASS
		VN	10	1.63	0.000858	± 2.5	PASS
		VN	20	3.12	0.001642	± 2.5	PASS
		VN	30	-1.87	-0.000984	± 2.5	PASS
		VN	40	4.87	0.002563	± 2.5	PASS
		VN	50	-0.33	-0.000174	± 2.5	PASS