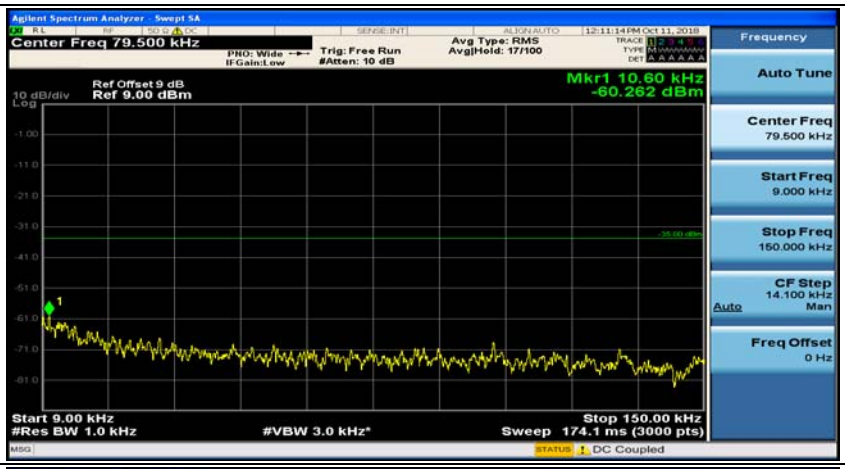
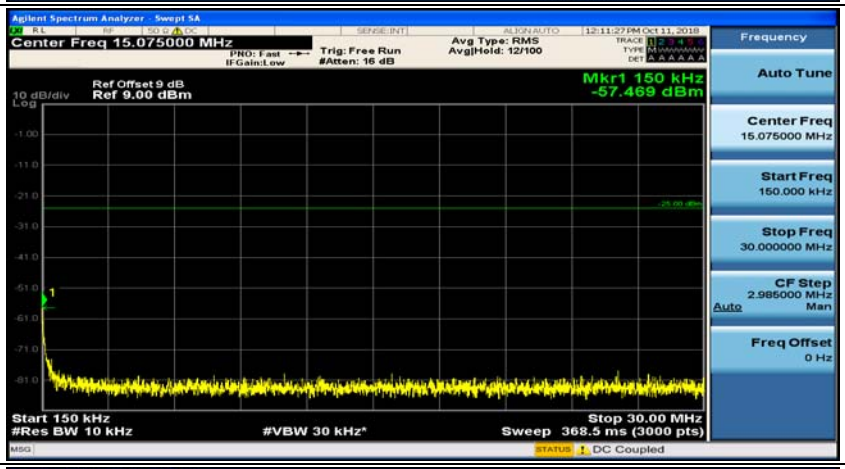
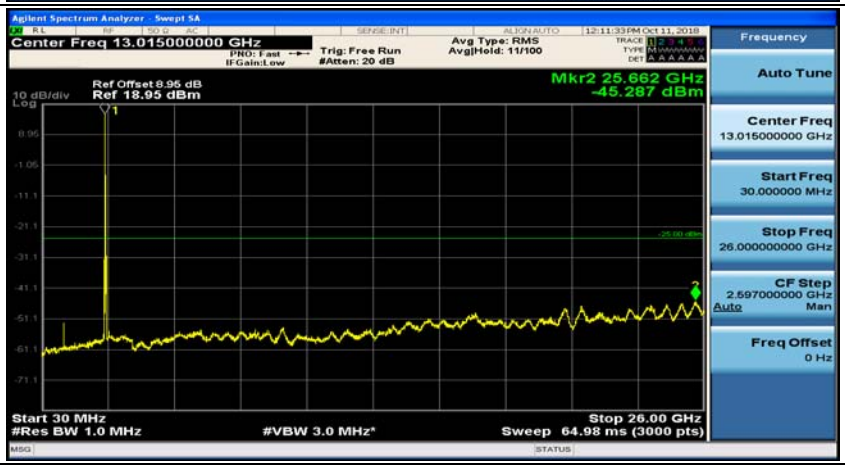
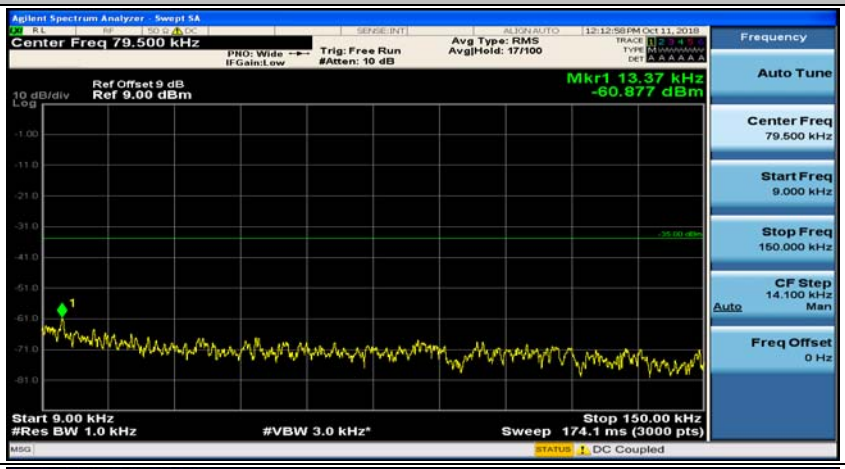
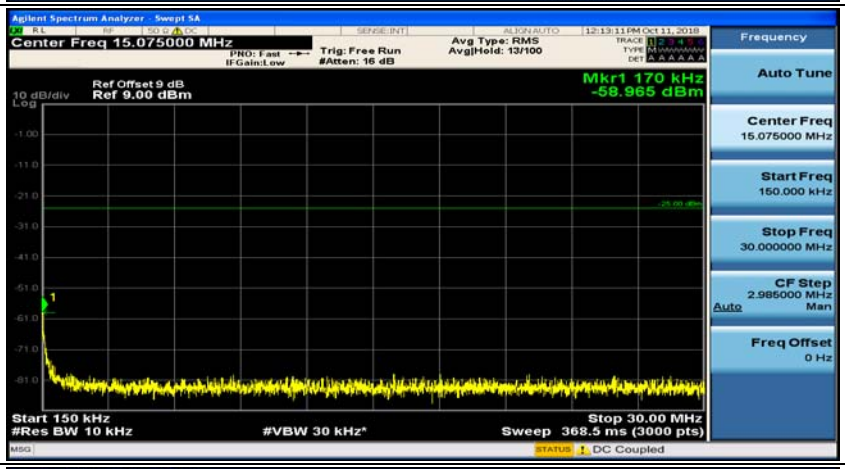

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
12:11:14 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 10.60 kHz
-60.262 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
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

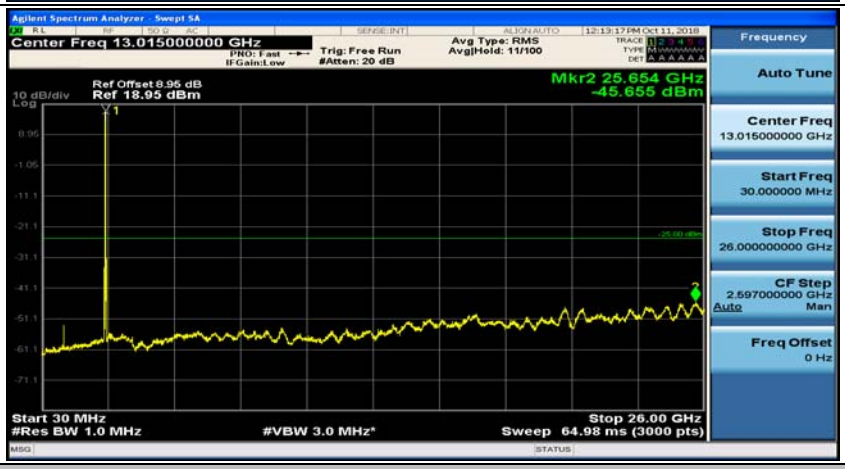

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
12:11:27 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 150 kHz
-57.469 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
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


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
12:11:33 PM Oct 11, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.662 GHz
-45.287 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
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

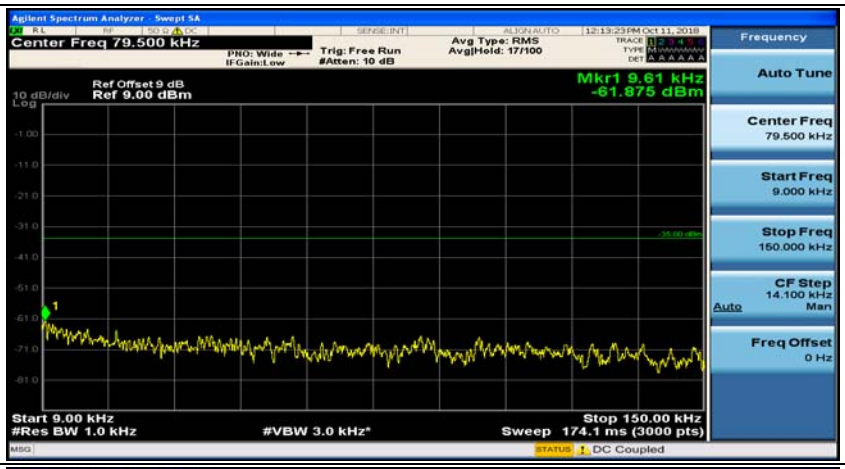
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#0

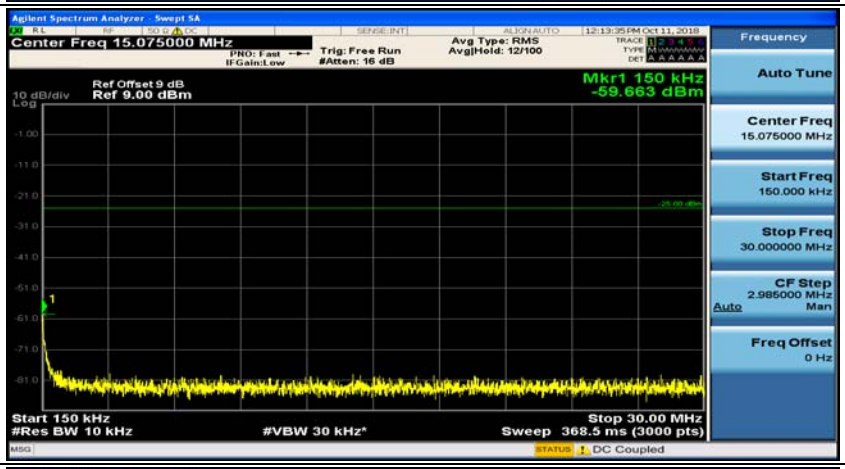


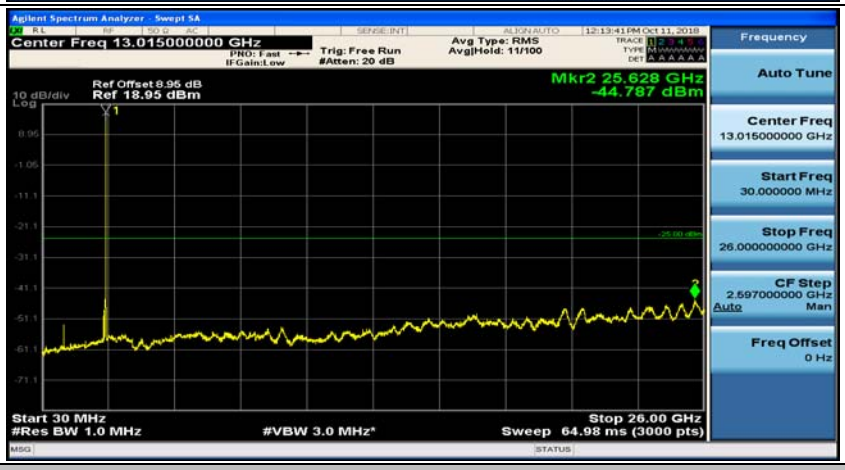




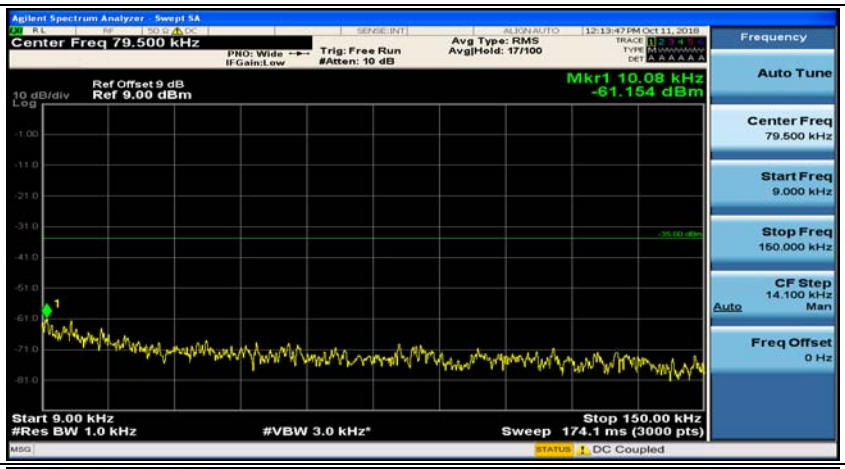
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#49

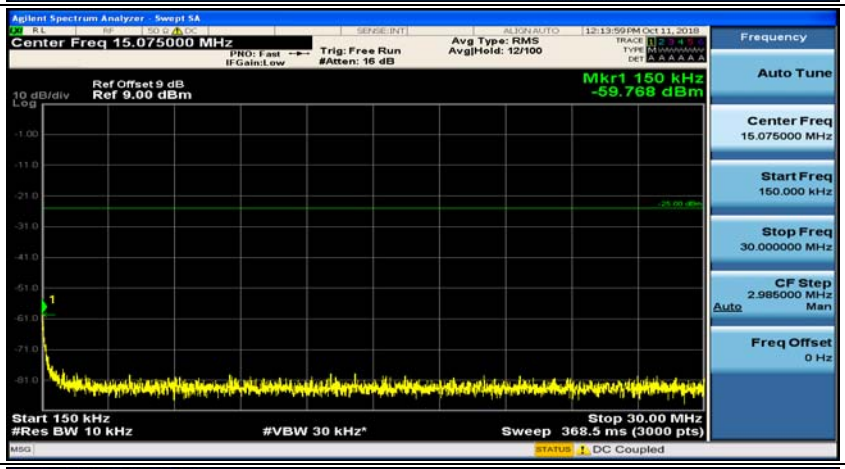


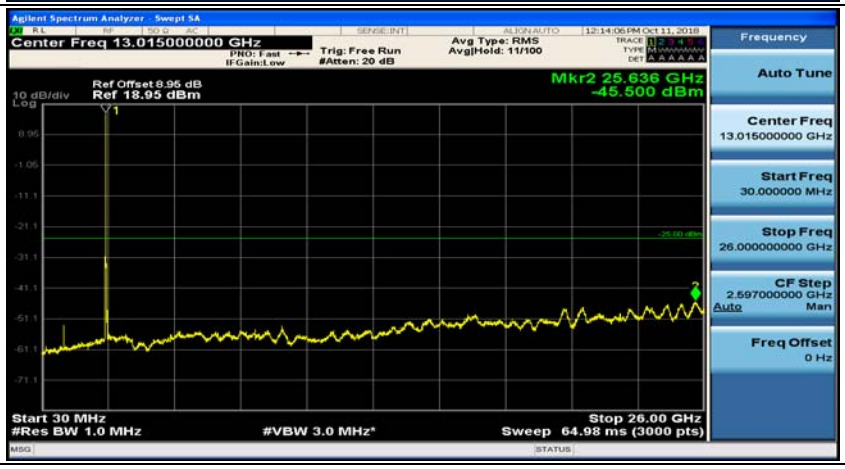




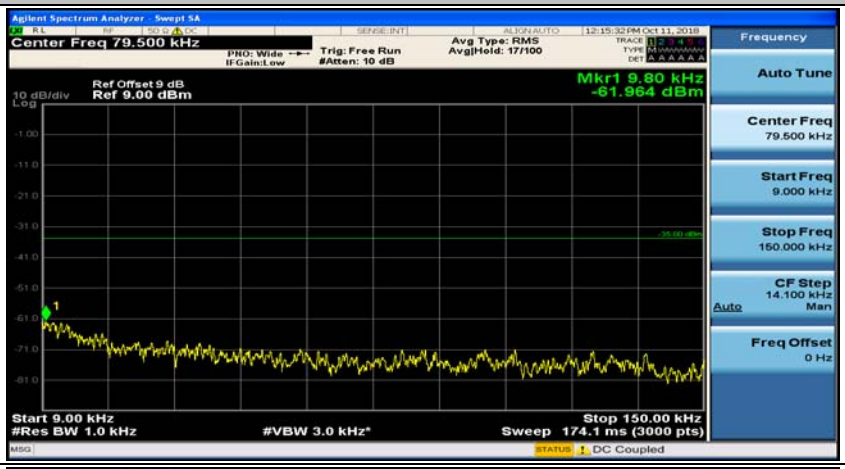
(Channel Bandwidth:20 MHz)_MCH_QPSK_1RB#99

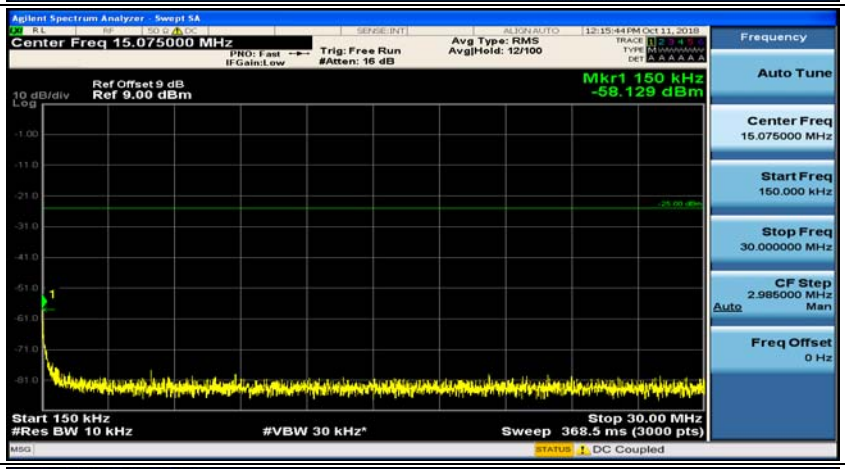

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
12:13:47 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 10.08 kHz
-61.154 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
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

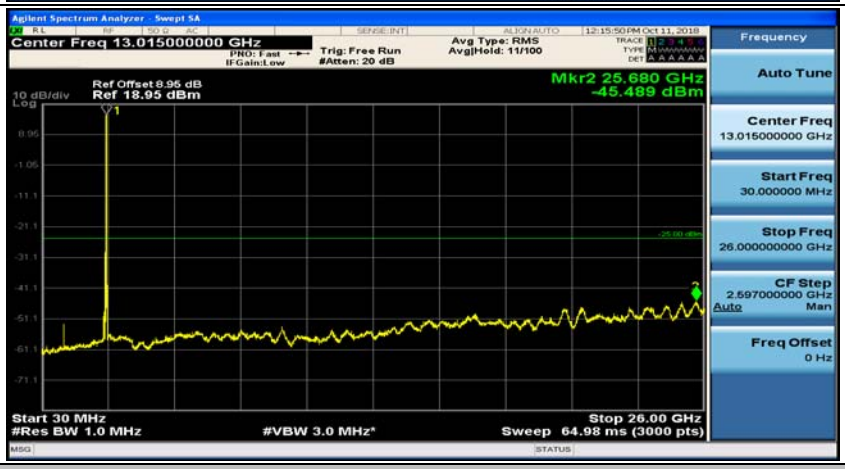

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
12:13:59 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 150 kHz
-59.768 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
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


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
12:14:06 PM Oct 11, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.636 GHz
-45.500 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
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

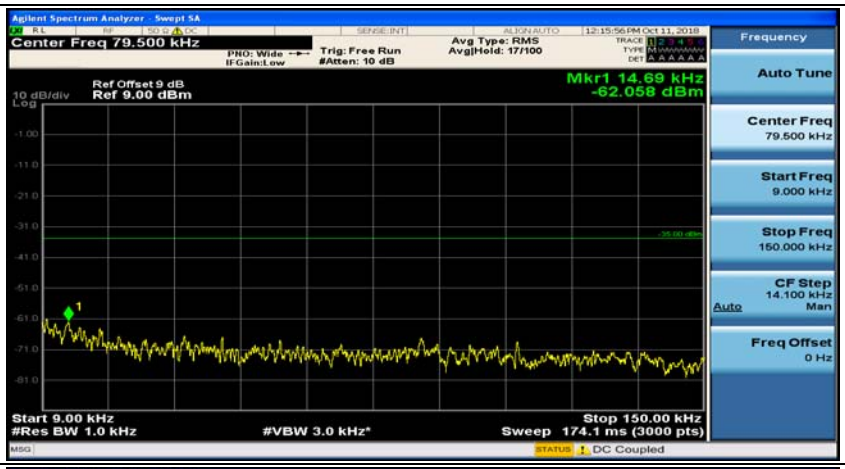
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#0

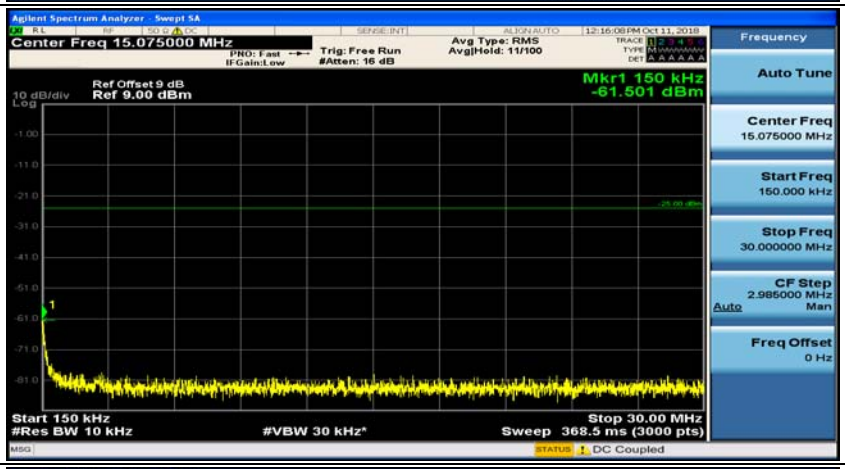


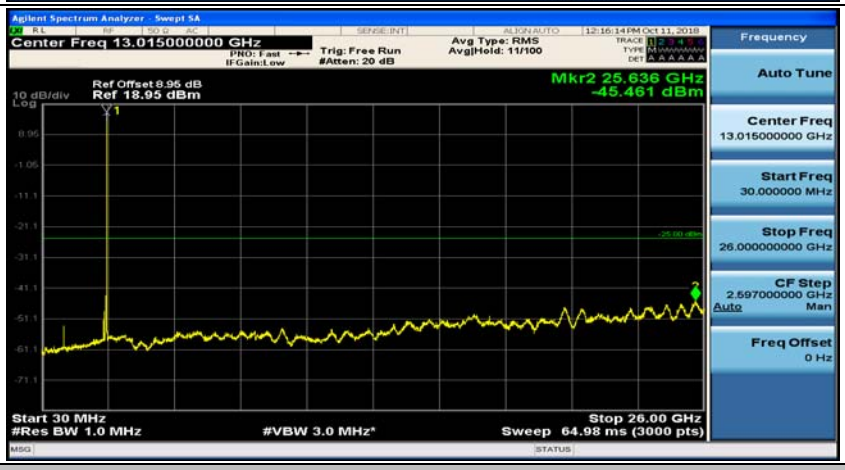




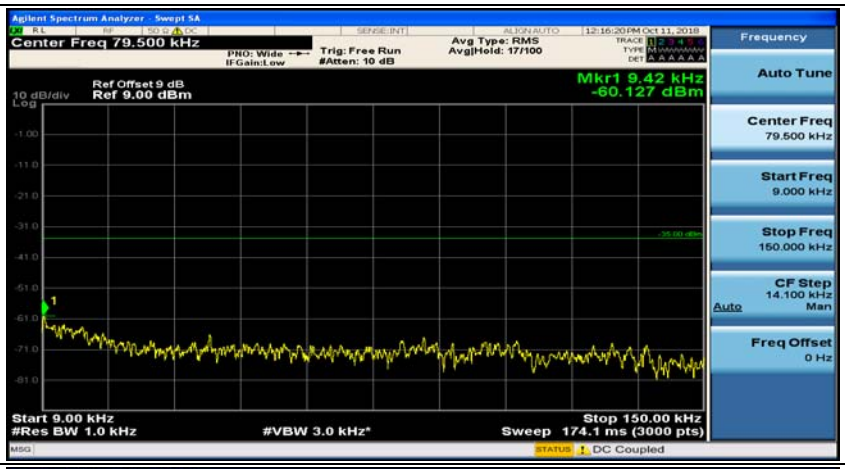
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#49

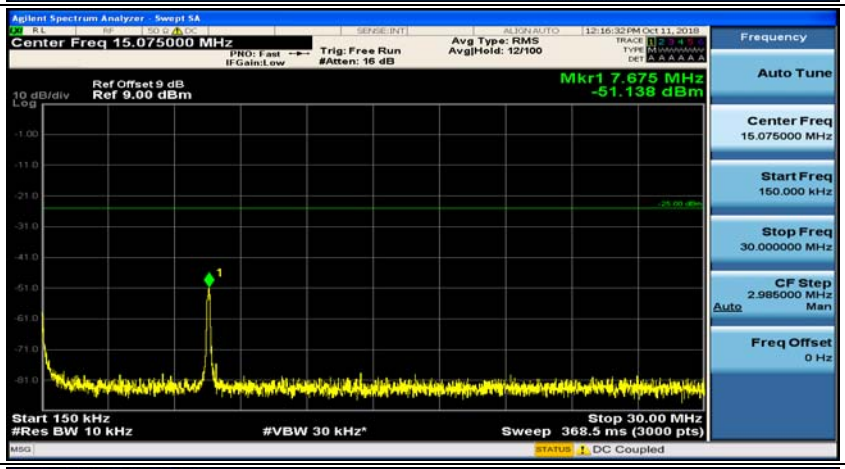


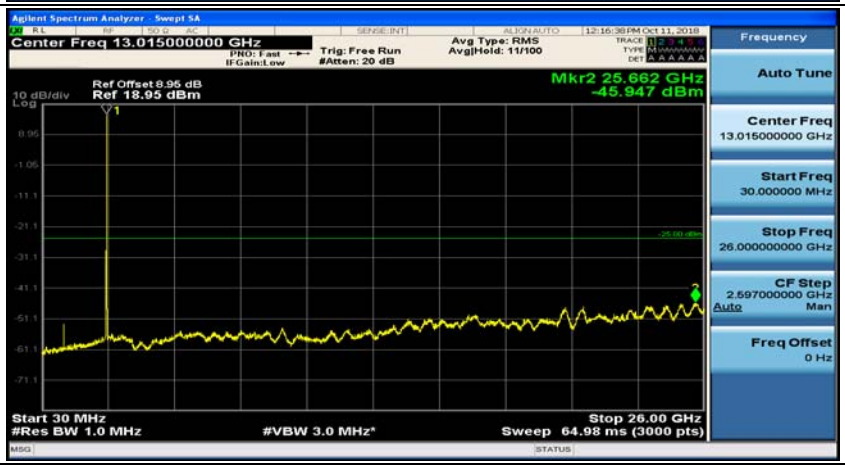




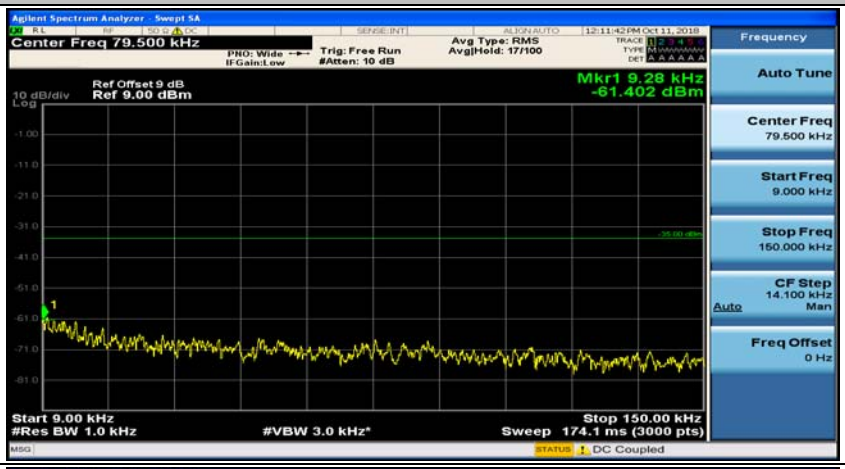
(Channel Bandwidth:20 MHz)_HCH_QPSK_1RB#99

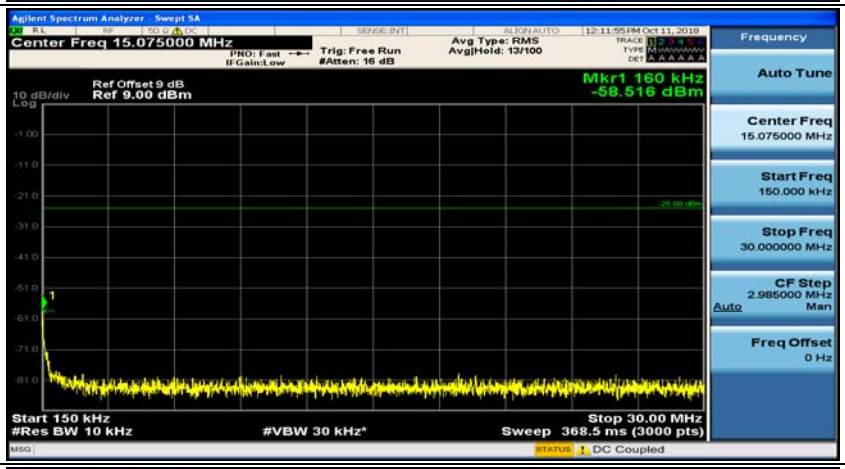

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
12:16:20 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 9.42 kHz
-60.127 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
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

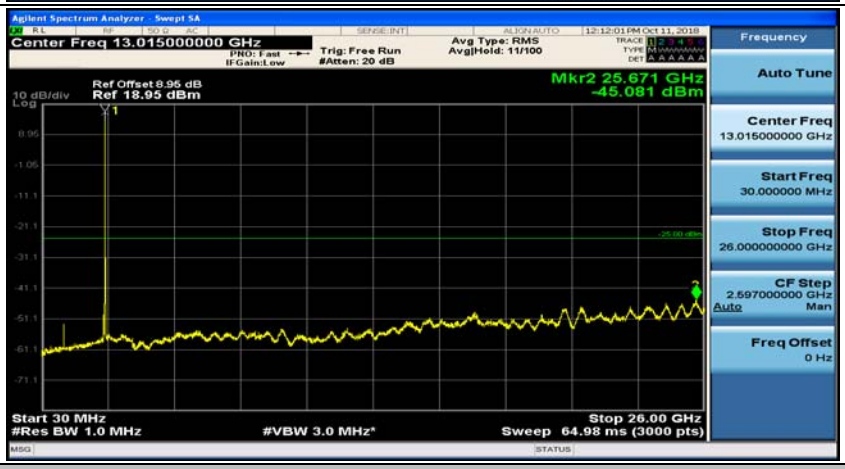

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
12:16:32 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 7.675 MHz
-51.138 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
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


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
12:16:38 PM Oct 11, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.662 GHz
-45.947 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
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

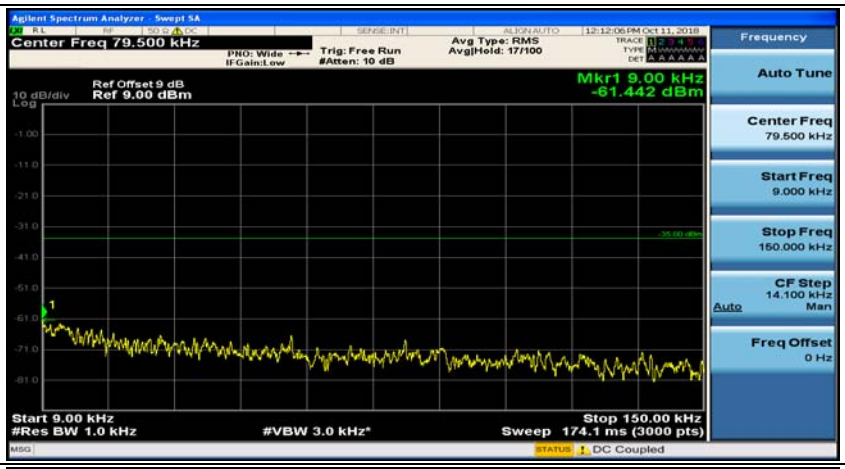
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0

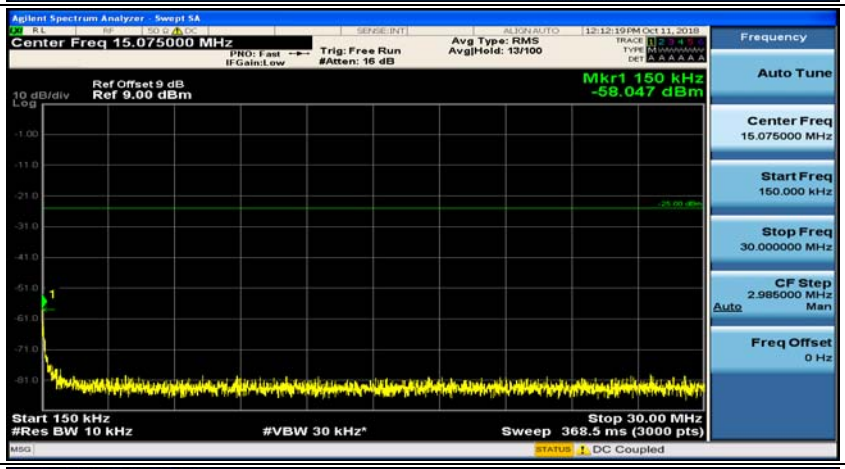


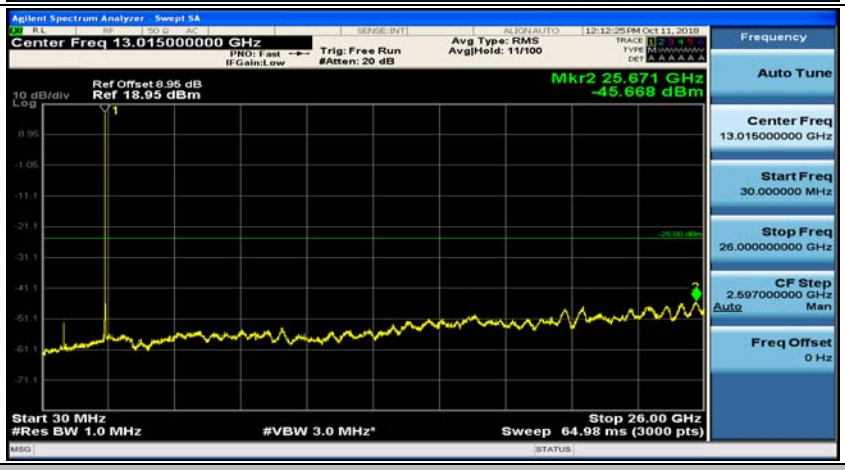




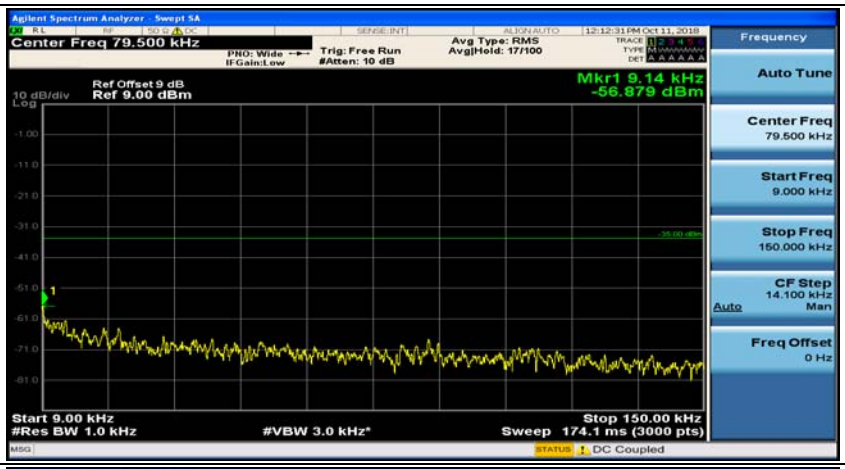
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

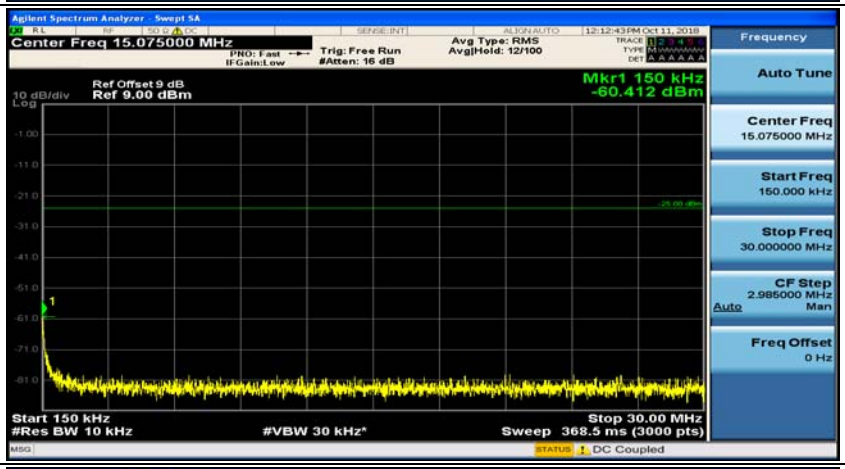


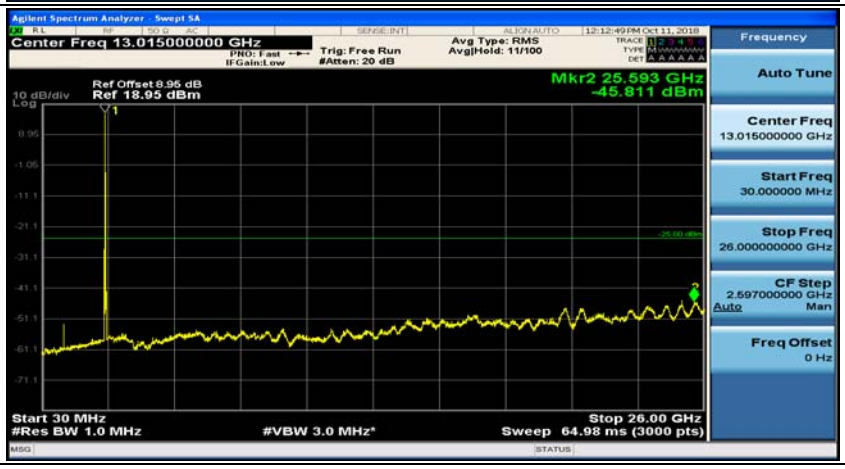




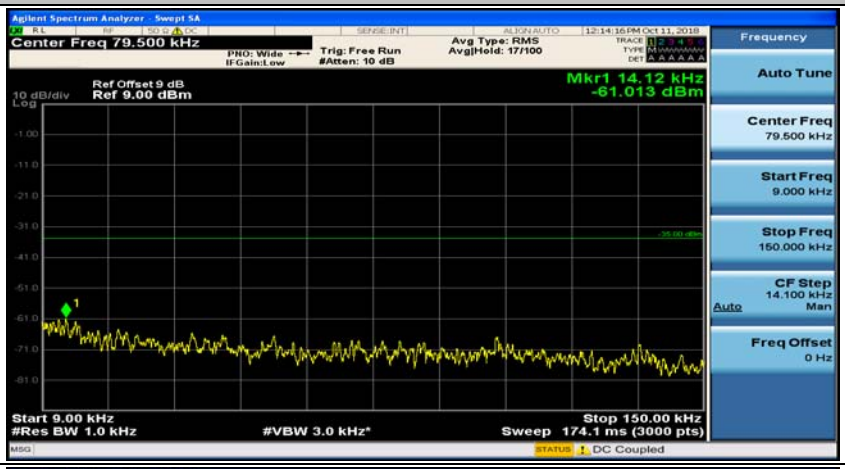
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#99

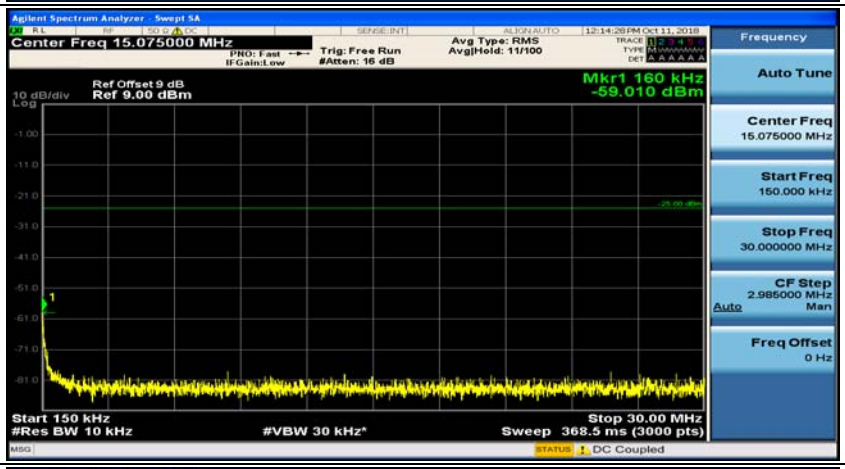

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
12:12:31 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 9.14 kHz
-56.879 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
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

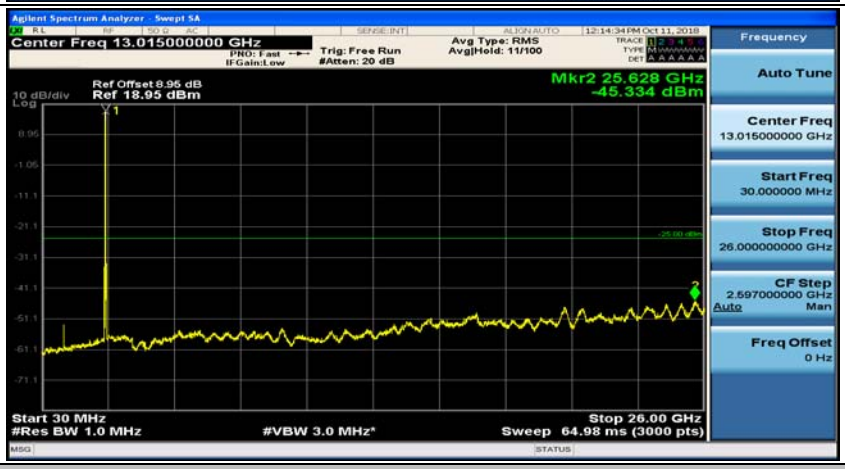

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 12/100
12:12:43 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 150 kHz
-60.412 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
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


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
12:12:49 PM Oct 11, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.593 GHz
-45.811 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
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

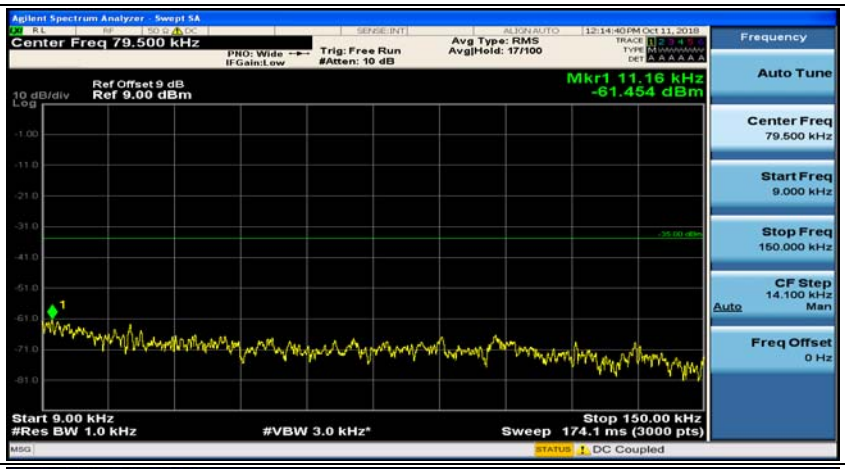
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0

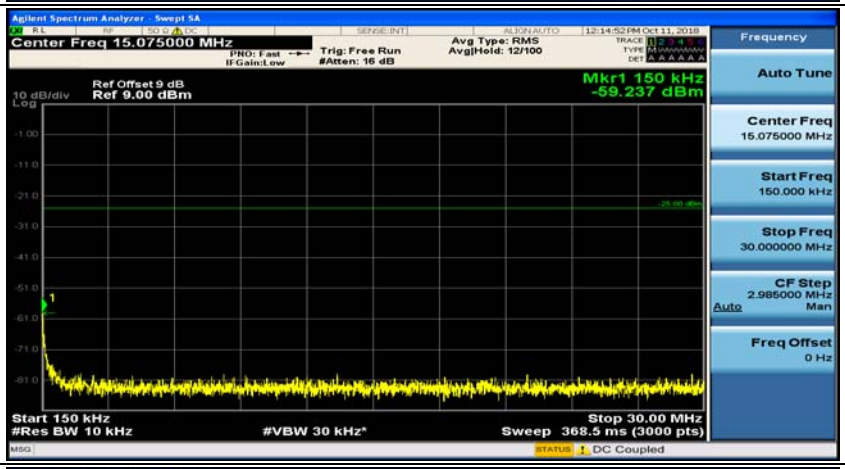


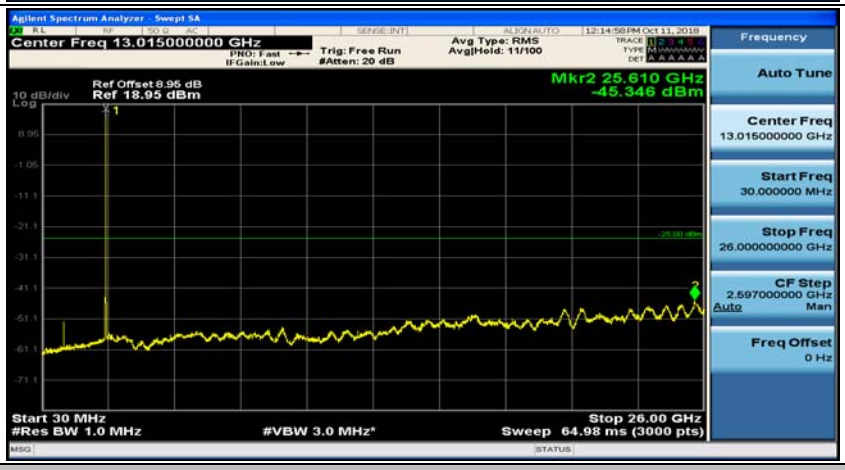




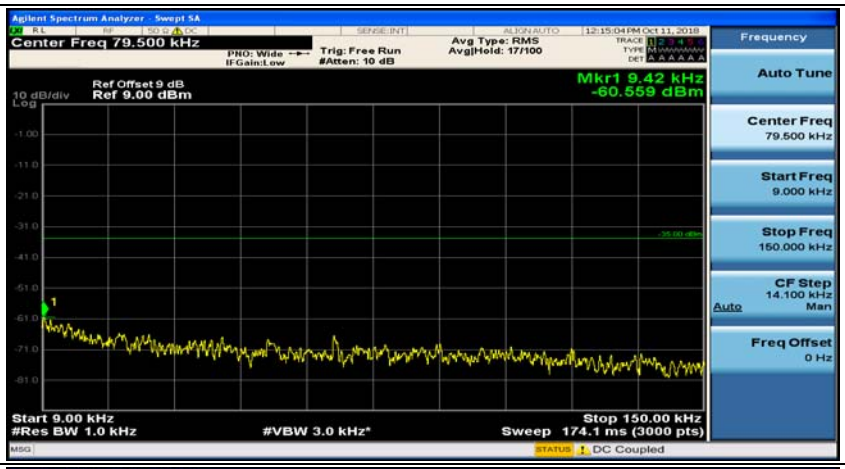
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

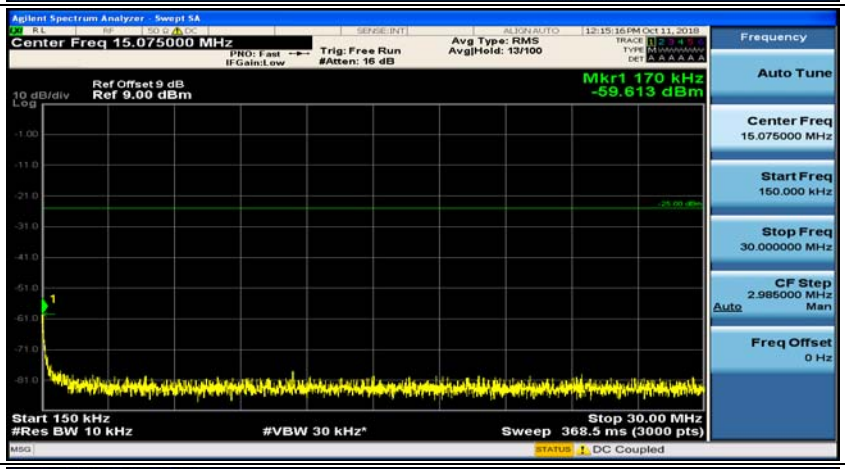


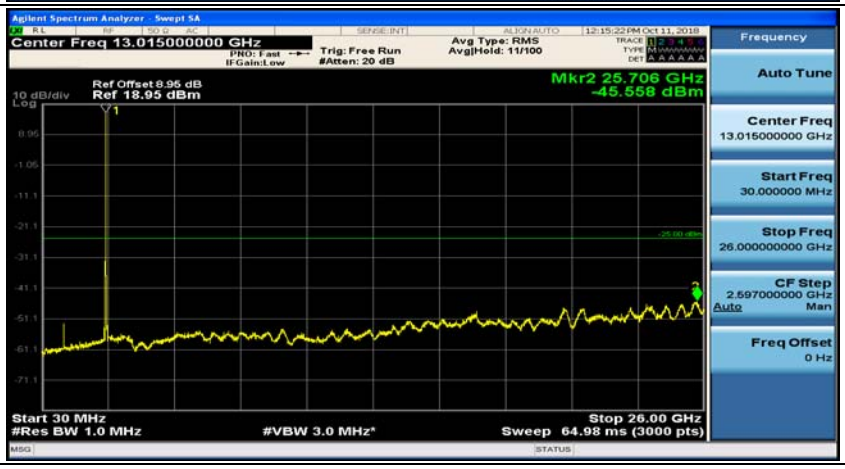




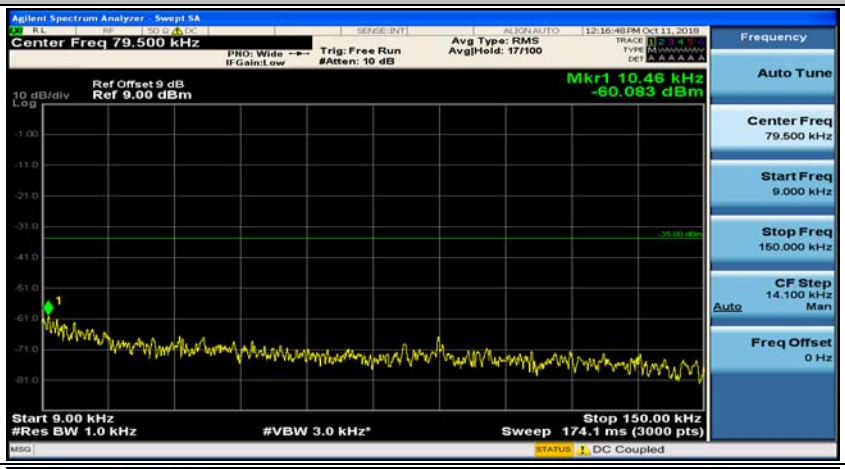
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#99

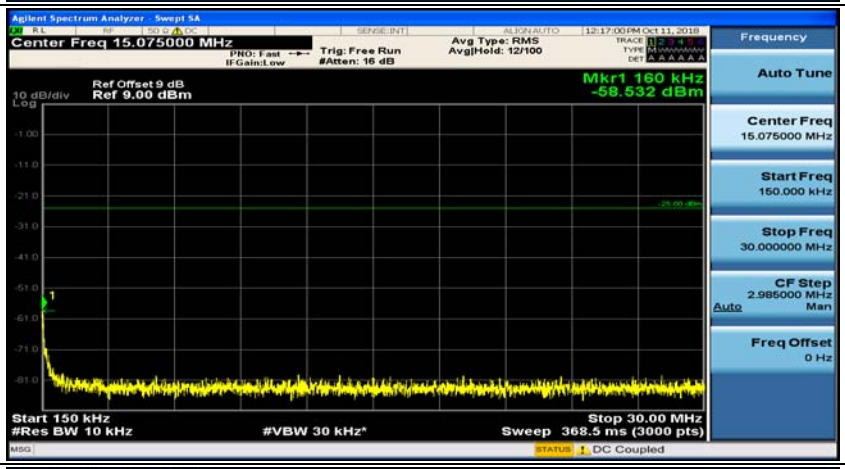

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
12:15:04 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 9.42 kHz
-60.559 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
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

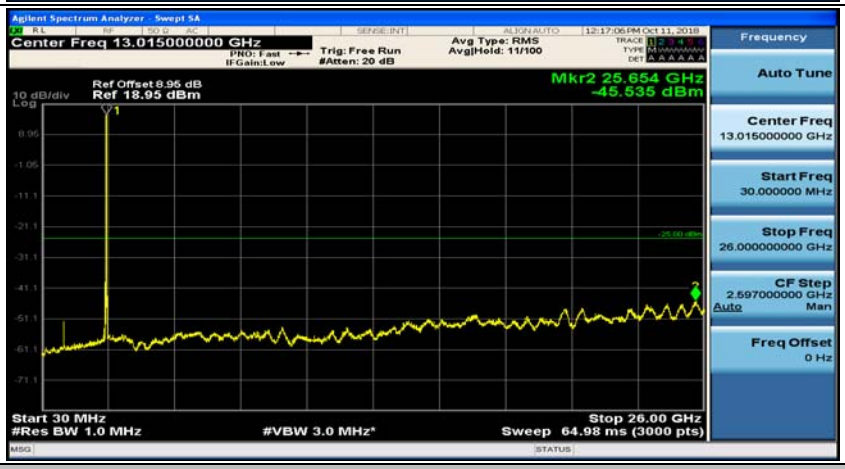

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
12:15:16 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 170 kHz
-59.613 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
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


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
12:15:22 PM Oct 11, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.706 GHz
-45.558 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
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

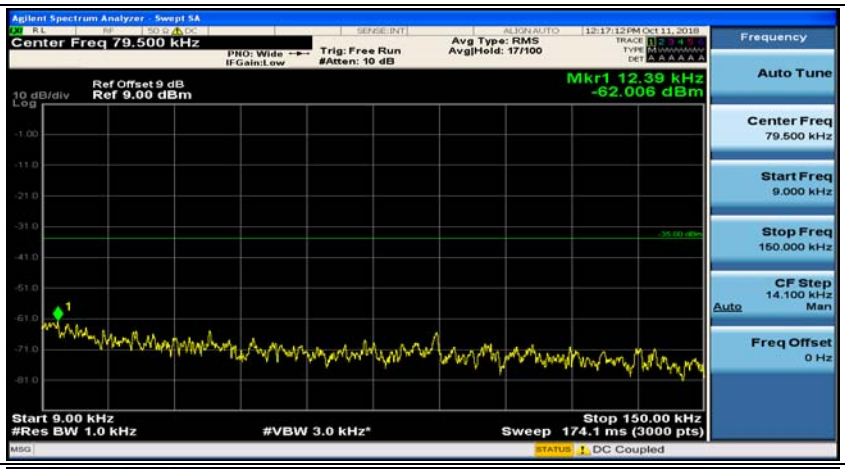
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0

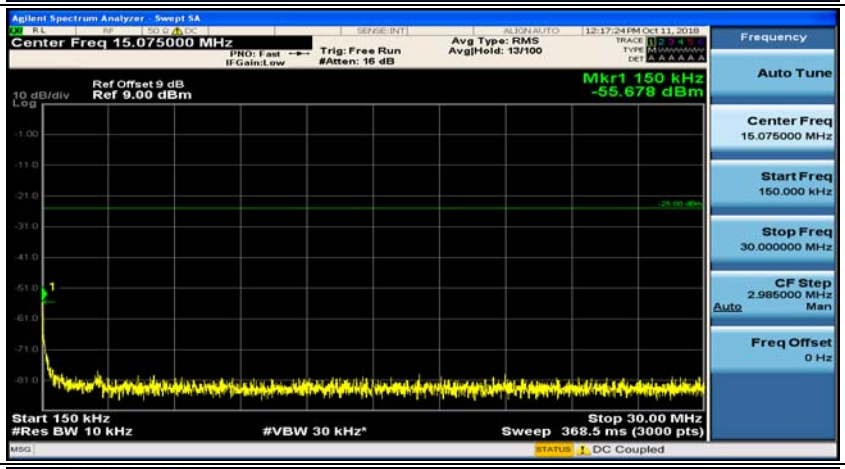


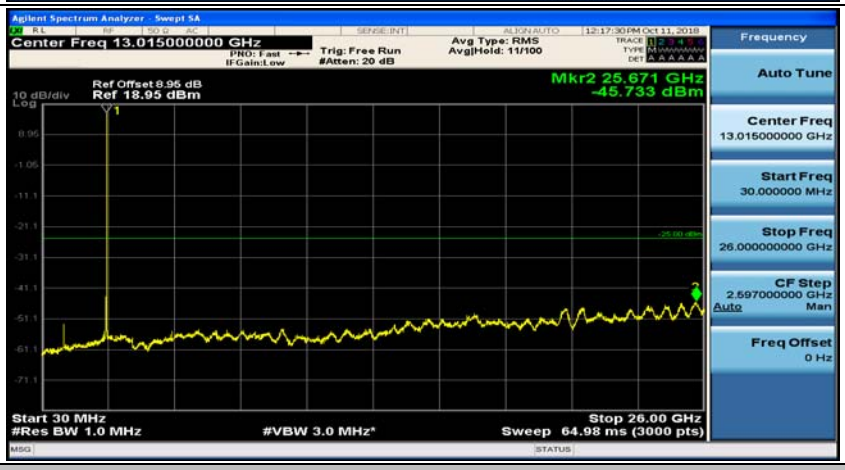




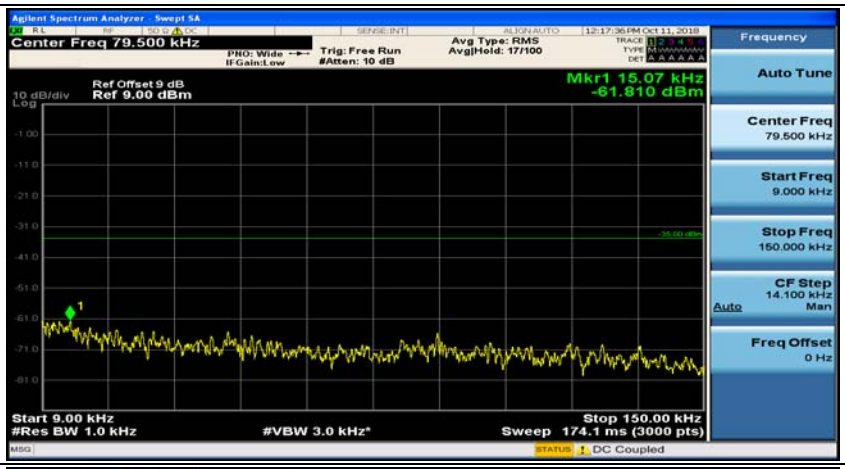
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49

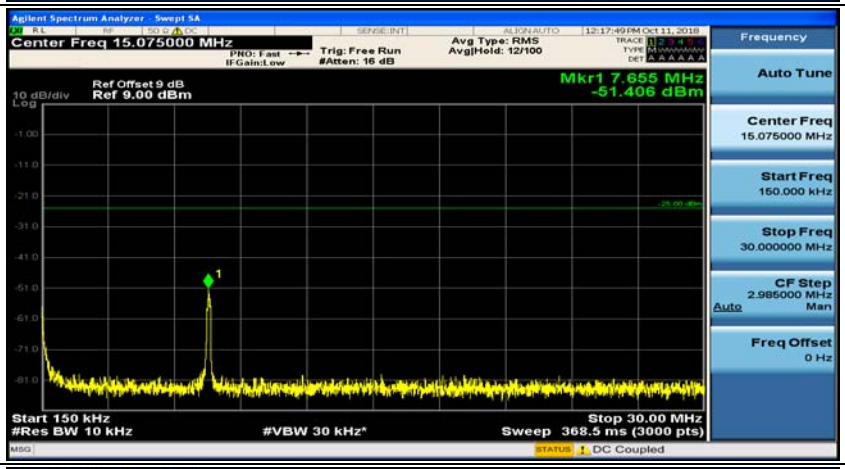


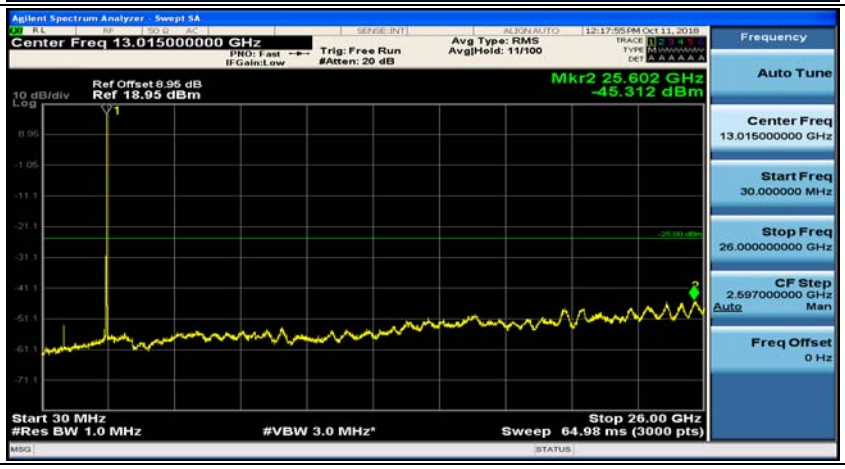




(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#99


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: 17/100
12:17:36 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 15.07 kHz
-61.810 dBm
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
Frequency
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


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: 12/100
12:17:49 PM Oct 11, 2018
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Mkr1 7.655 MHz
-51.406 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
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


Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: RMS
Avg|Hold: 11/100
12:17:55 PM Oct 11, 2018
Ref Offset 8.95 dB
10 dB/div
Ref 18.95 dBm
Mkr2 25.602 GHz
-45.312 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
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

Appendix F: Frequency Stability

Test Result

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	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 (℃)	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
		VN	40	3.97	0.001546	± 2.5	PASS
		VN	50	4.17	0.001624	± 2.5	PASS
16QAM	LCH	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
		VN	40	-0.32	-0.000128	± 2.5	PASS
		VN	50	4.28	0.001710	± 2.5	PASS
	MCH	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
		VN	40	-0.21	-0.000083	± 2.5	PASS
		VN	50	0.8	0.000316	± 2.5	PASS
	HCH	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 (℃)	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 (℃)	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

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	0.27	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 (℃)	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	± 2.5	PASS
		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 (℃)	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 (℃)	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
		VN	50	0.01	0.000004	± 2.5	PASS
	MCH	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
		VN	50	4.06	0.001602	± 2.5	PASS
	HCH	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