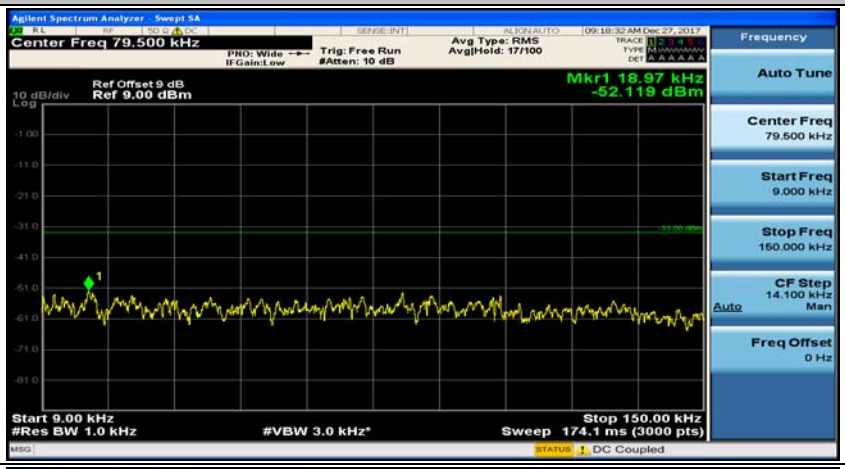
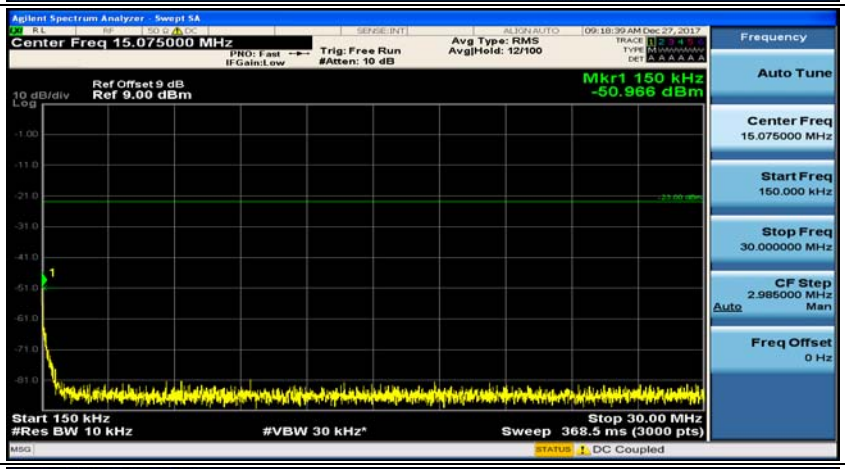
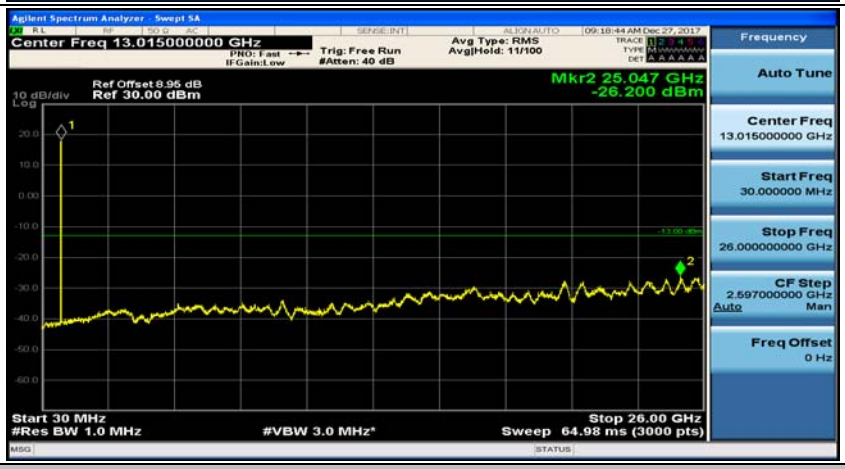
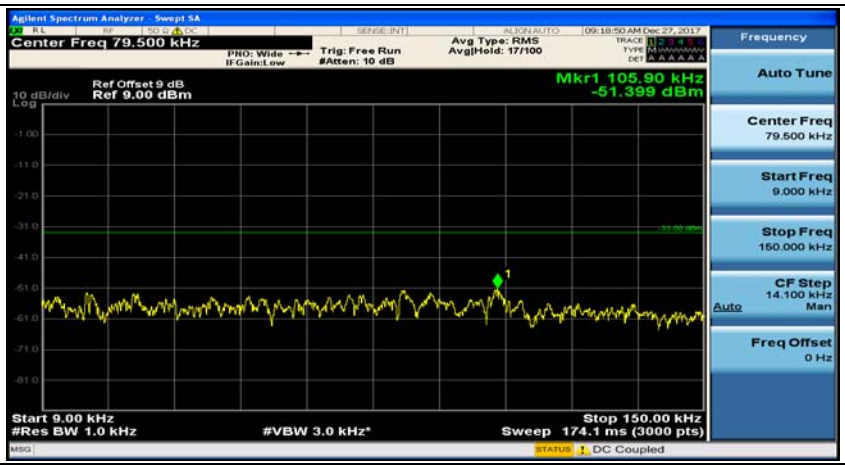
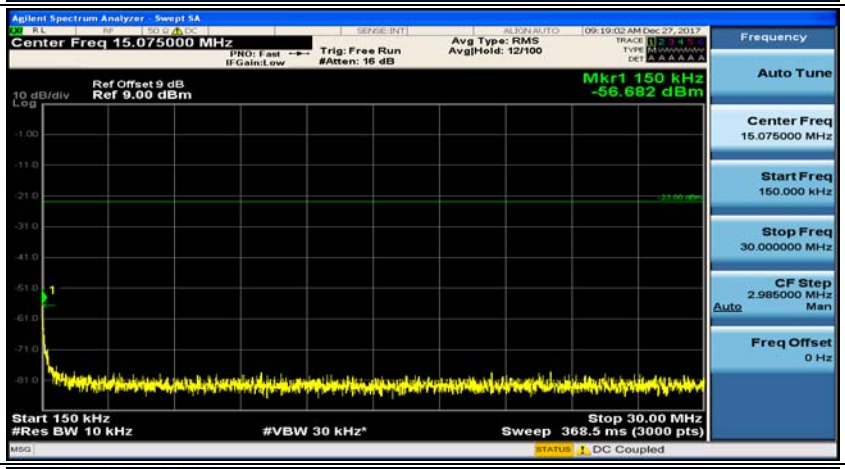
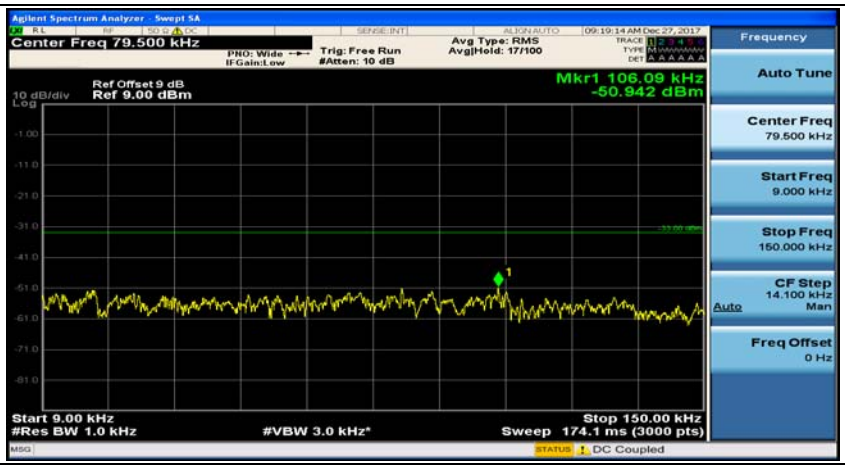
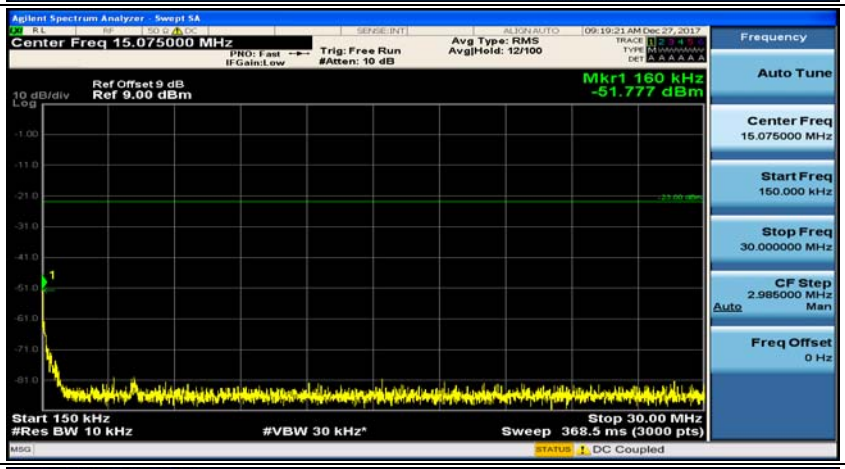
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12

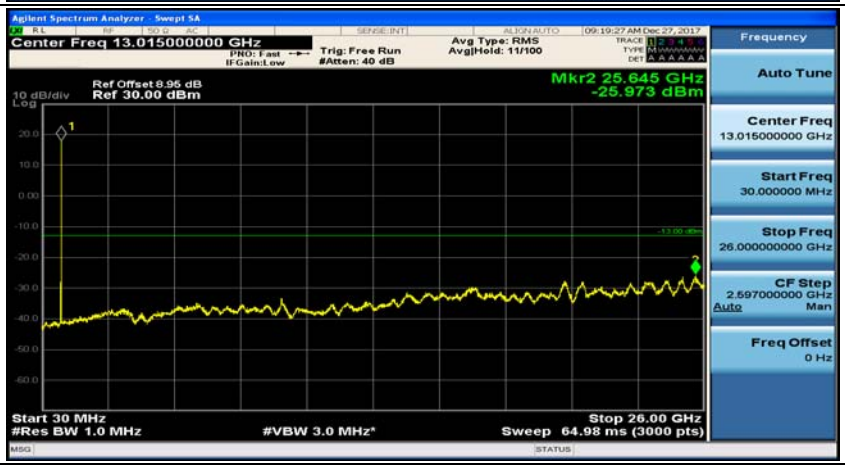


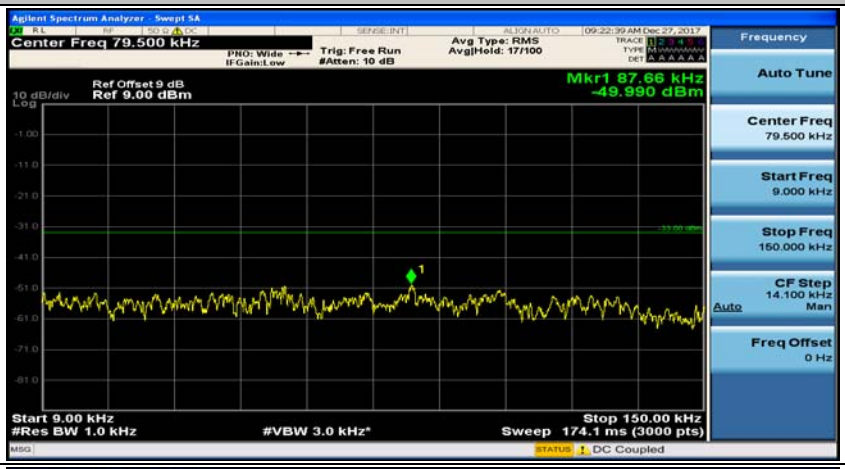
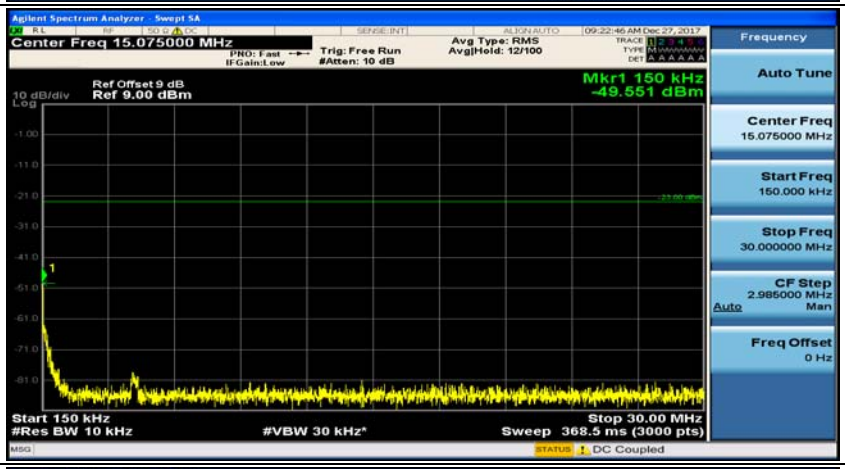
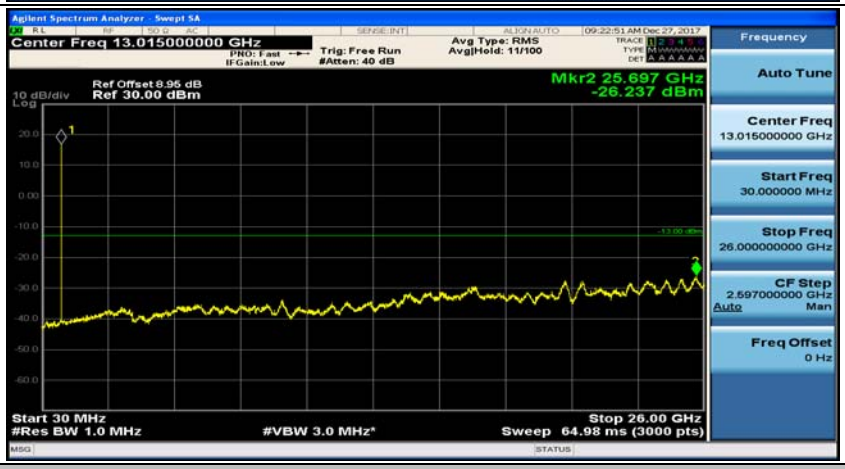


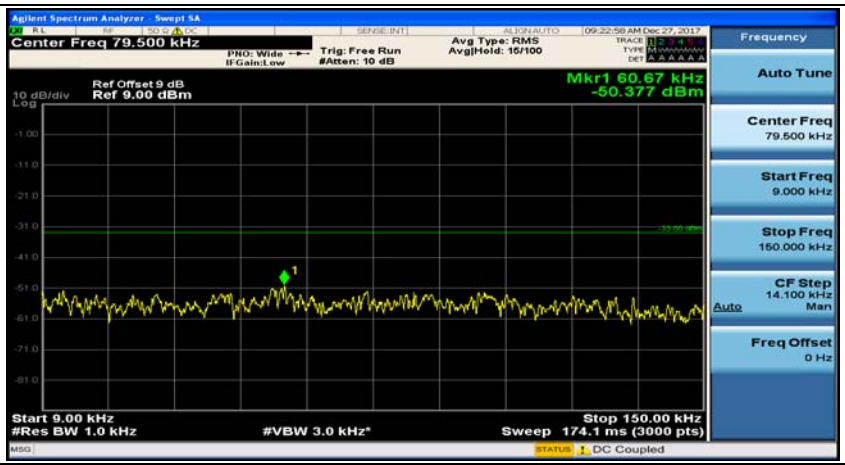
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24

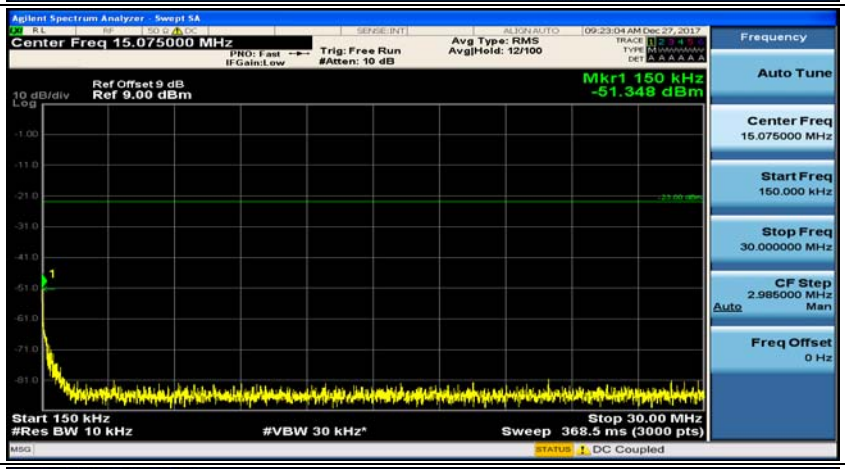

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
09:19:14 AM Dec 27, 2017
Frequency
Auto Tune
Mkr1 106.09 kHz
-50.942 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
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

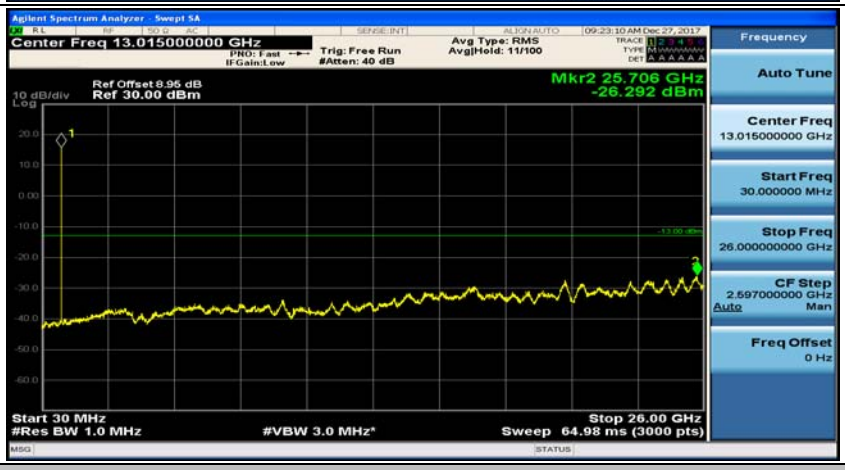

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 12/100
09:19:21 AM Dec 27, 2017
Frequency
Auto Tune
Mkr1 160 kHz
-51.777 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
15.075000 MHz
Start Freq
150.000 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: 11/100
09:19:27 AM Dec 27, 2017
Frequency
Auto Tune
Mkr2 25.645 GHz
-25.973 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
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)

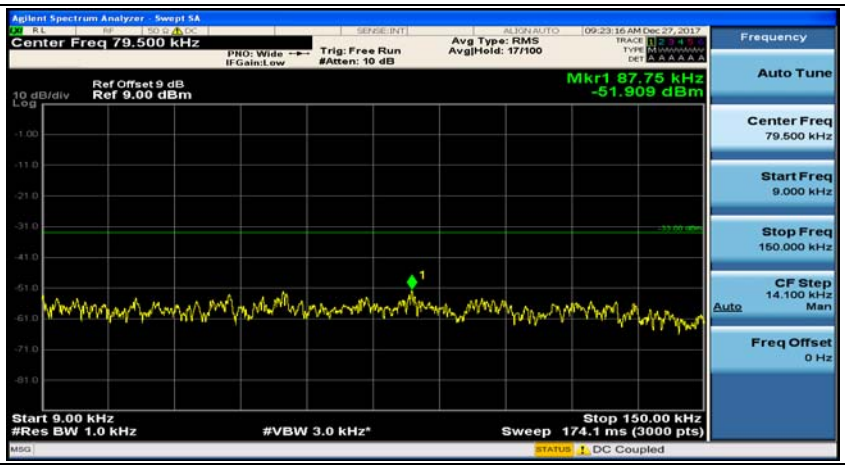
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12

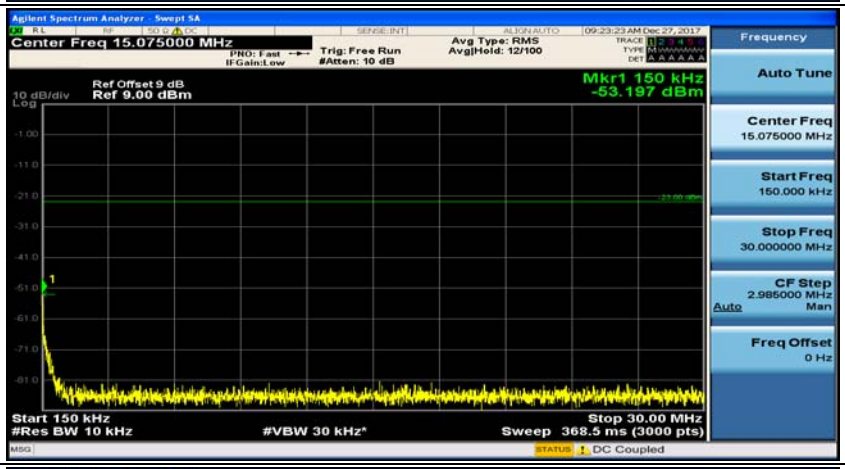


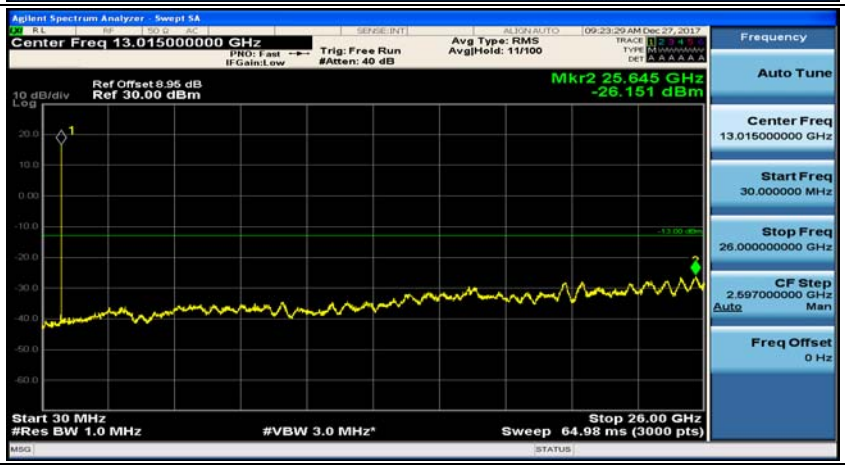




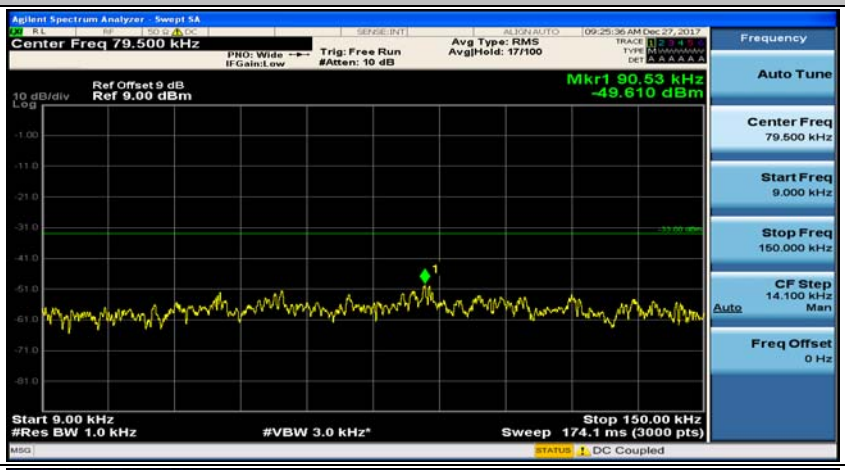
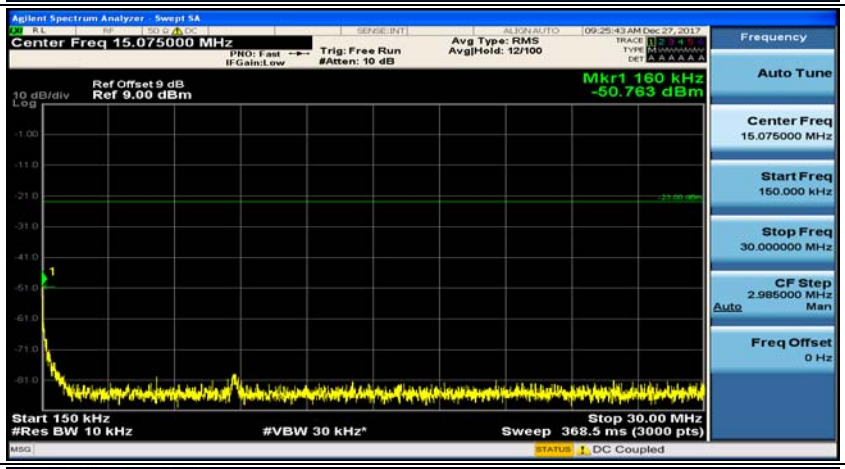
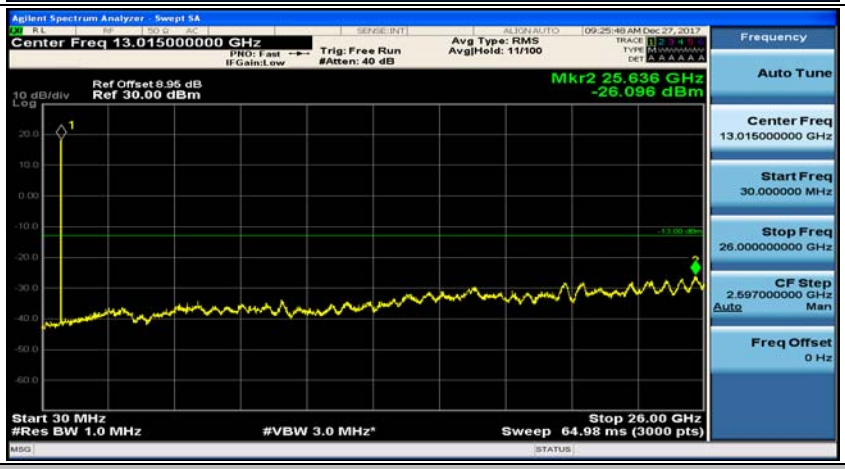
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24

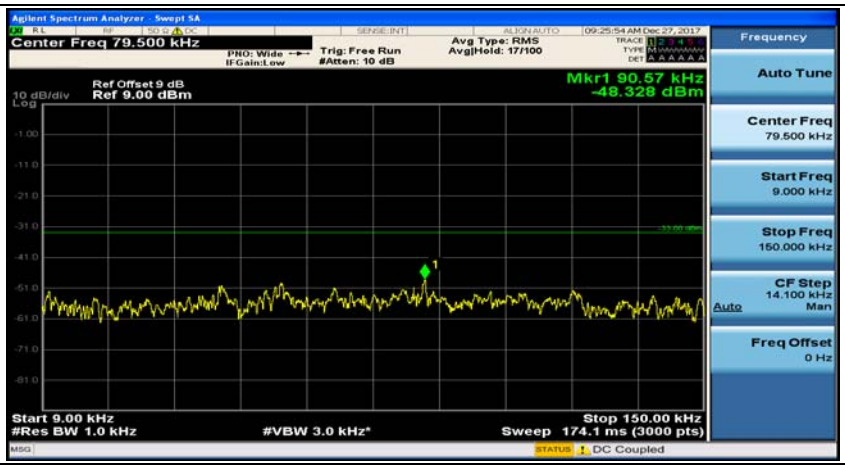

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
09:23:16 AM Dec 27, 2017
Frequency
Auto Tune
Mkr1 87.75 kHz
-51.909 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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

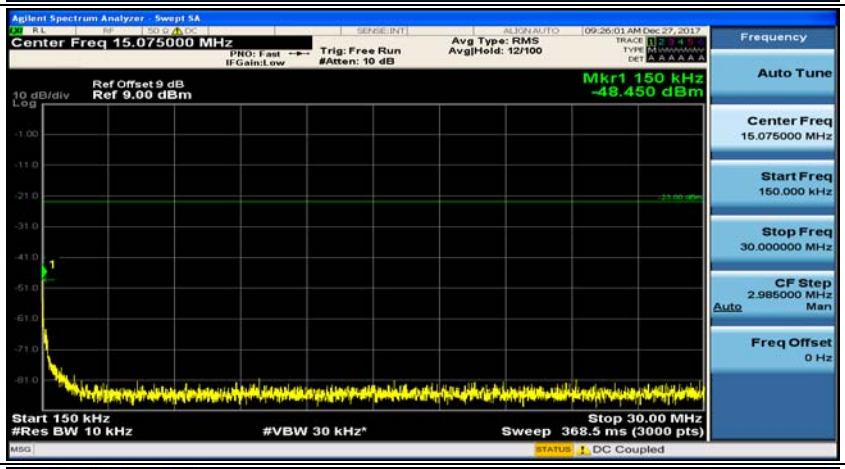

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 12/100
09:23:23 AM Dec 27, 2017
Frequency
Auto Tune
Mkr1 150 kHz
-53.197 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
15.075000 MHz
Start Freq
150.000 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

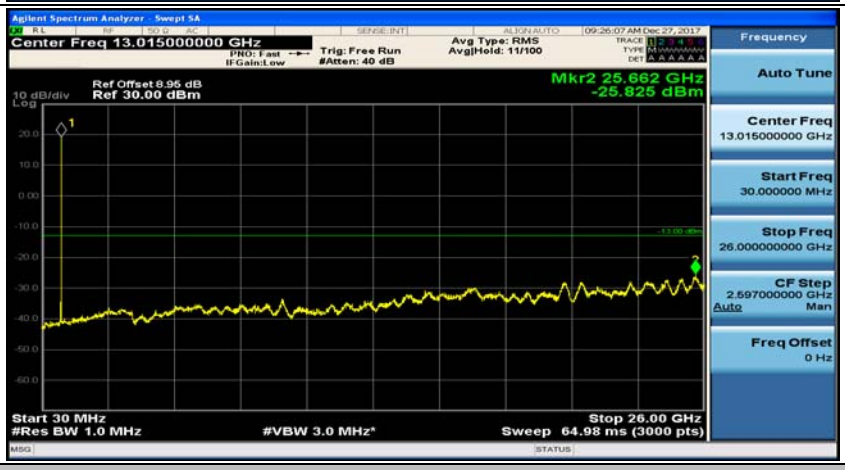

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 11/100
09:23:29 AM Dec 27, 2017
Frequency
Auto Tune
Mkr2 25.645 GHz
-26.151 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Center Freq
13.015000000 GHz
Start 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: 10 MHz

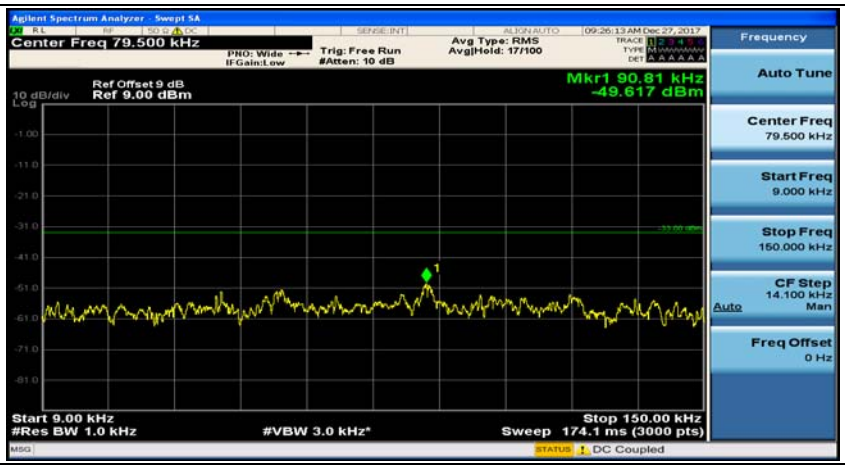
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0



Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24

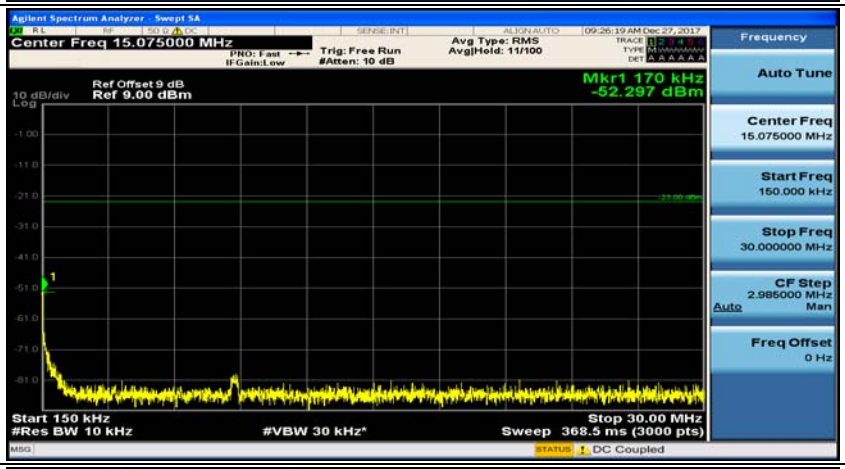


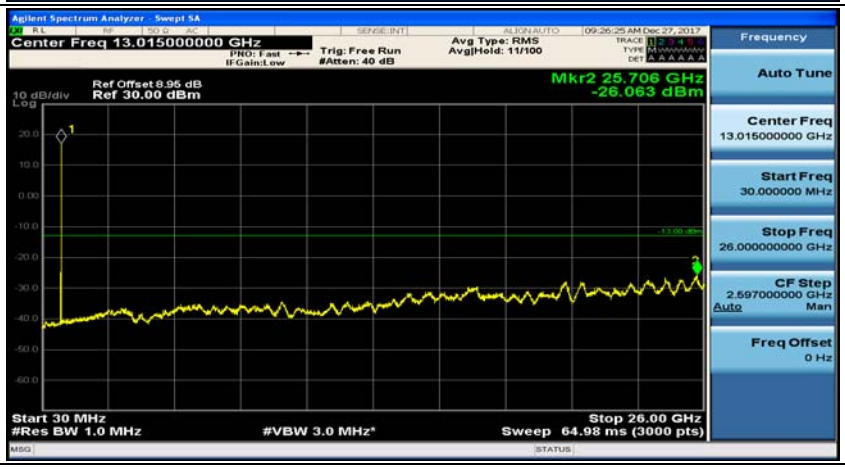


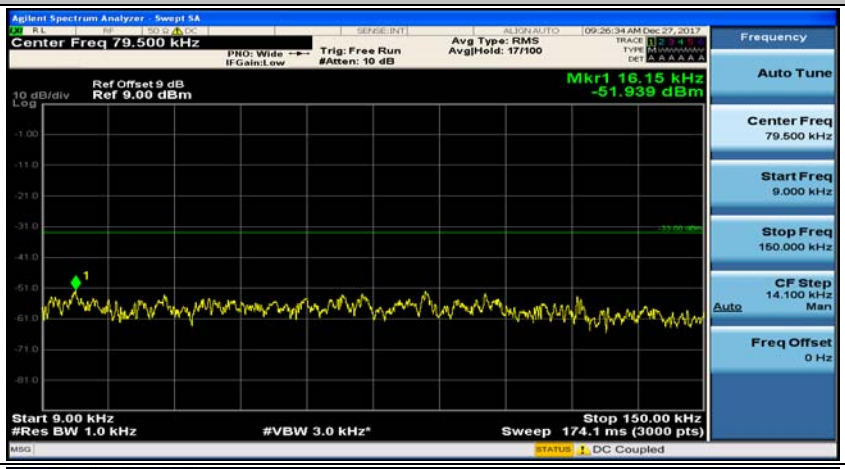
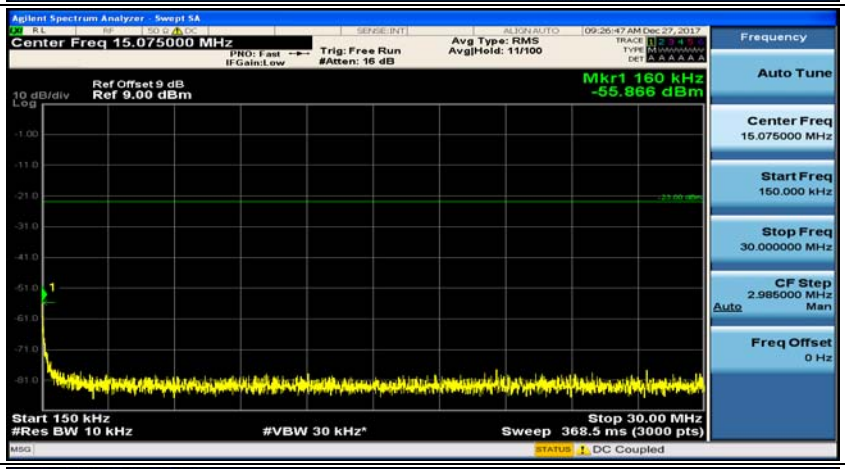
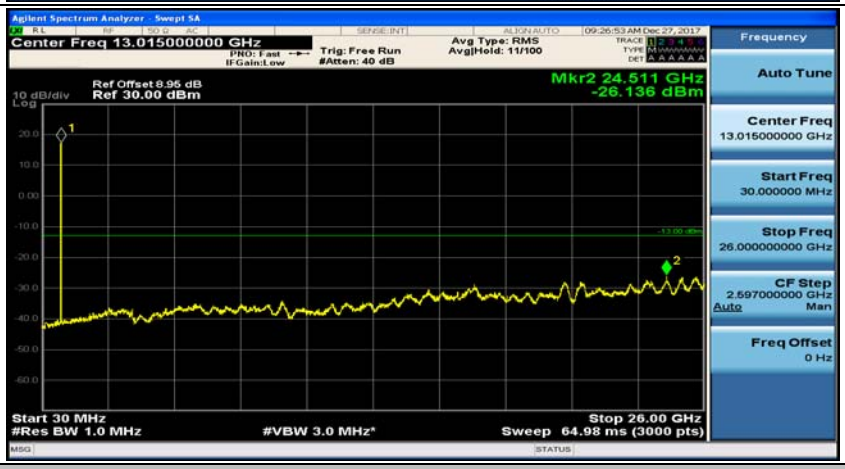


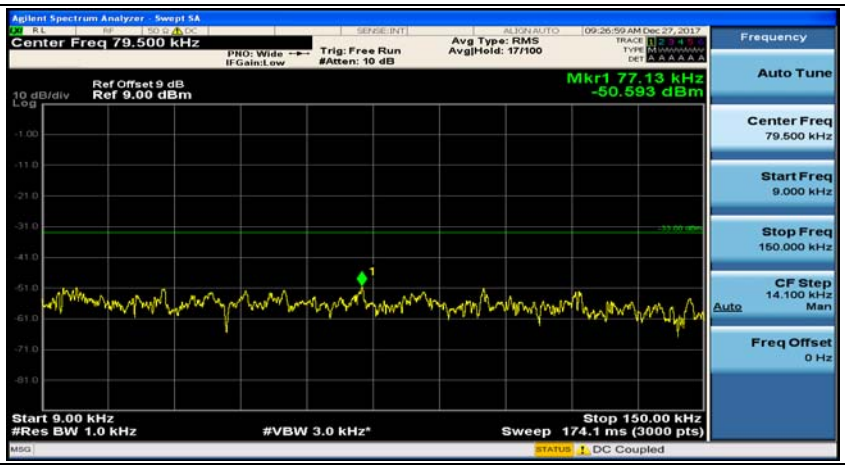
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49

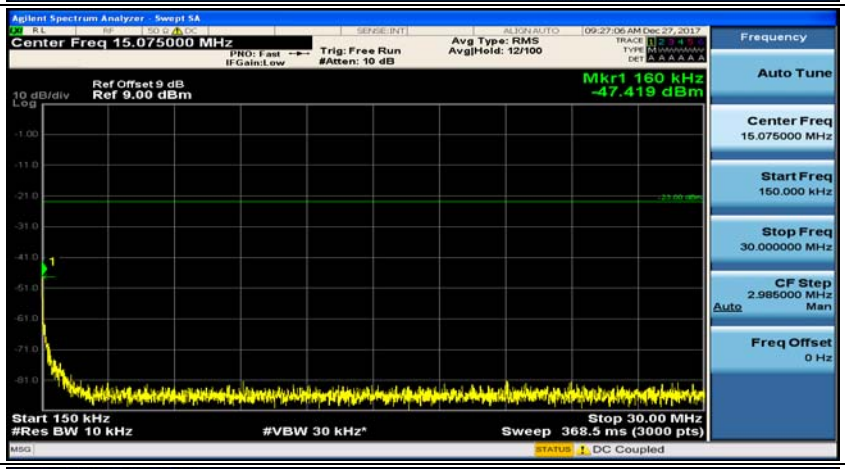

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 17/100
09:26:13 AM Dec 27, 2017
Frequency
Auto Tune
Mkr1 90.81 kHz
-49.617 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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

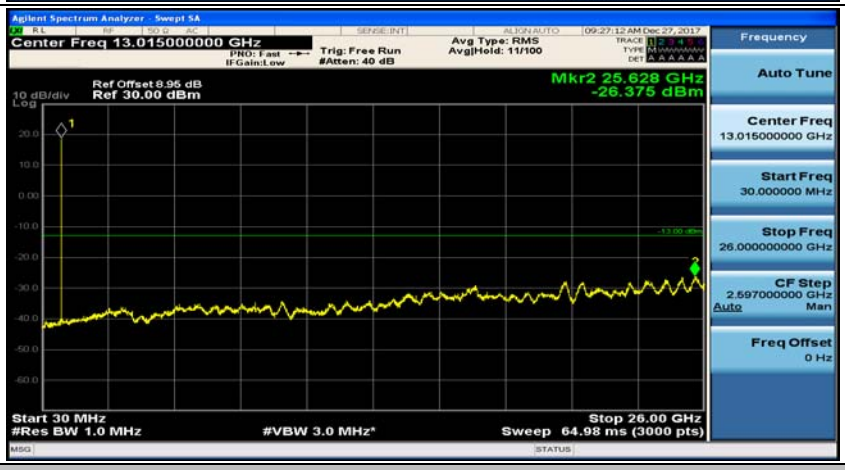

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 11/100
09:26:19 AM Dec 27, 2017
Frequency
Auto Tune
Mkr1 170 kHz
-52.297 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
15.075000 MHz
Start Freq
150.000 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: 11/100
09:26:25 AM Dec 27, 2017
Frequency
Auto Tune
Mkr2 25.706 GHz
-26.063 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
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)

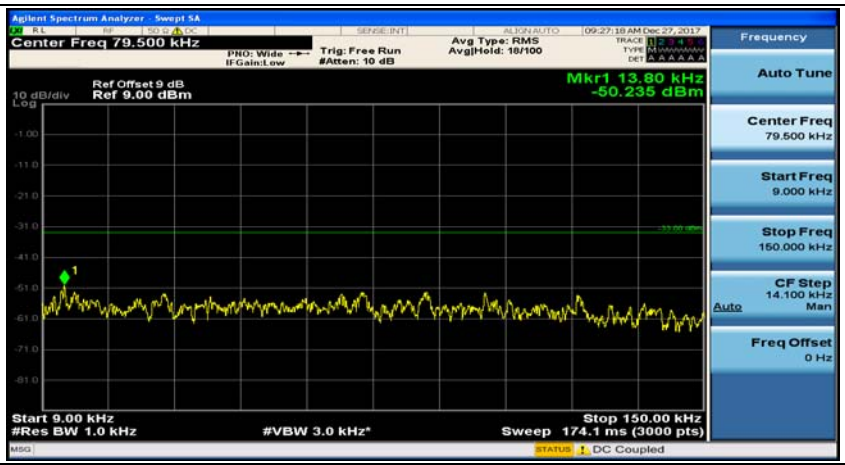
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0



Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24

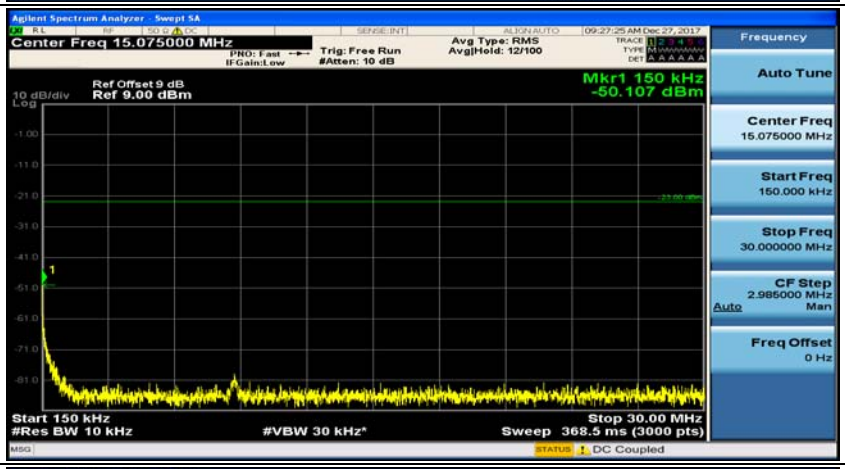


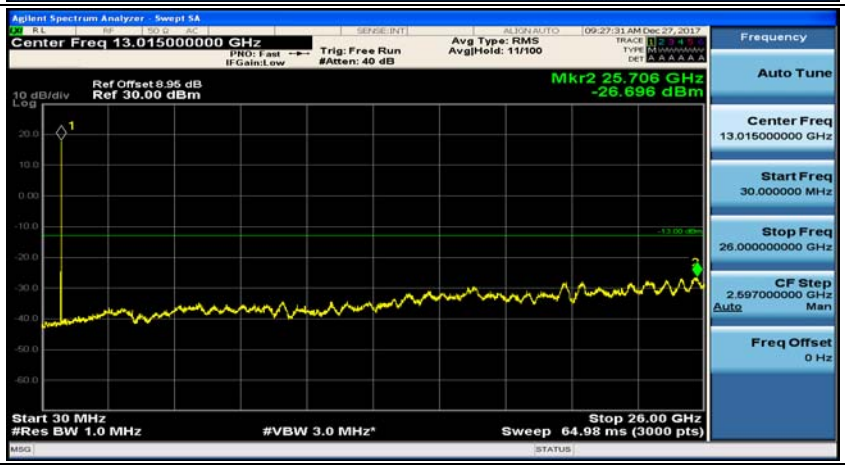




Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49


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: 18/100
09:27:10 AM Dec 27, 2017
Frequency
Mkr1 13.80 kHz
-50.235 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 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: 10 dB
Avg Type: RMS
Avg|Hold: 12/100
09:27:25 AM Dec 27, 2017
Frequency
Mkr1 150 kHz
-50.107 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 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: 11/100
09:27:31 AM Dec 27, 2017
Frequency
Mkr2 25.706 GHz
-26.696 dBm
Ref Offset 8.95 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: 5 MHz

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	2.5	0.003207	± 2.5	PASS
		VN	TN	0.26	0.000334	± 2.5	PASS
		VH	TN	0.17	0.000218	± 2.5	PASS
	/	/	/	/	/	/	/
		/	/	/	/	/	/
		/	/	/	/	/	/
	HCH	VL	TN	0.26	0.000331	± 2.5	PASS
		VN	TN	-0.8	-0.001020	± 2.5	PASS
		VH	TN	-1.13	-0.001440	± 2.5	PASS
16QAM	LCH	VL	TN	2.89	0.003708	± 2.5	PASS
		VN	TN	1.09	0.001398	± 2.5	PASS
		VH	TN	-1.96	-0.002514	± 2.5	PASS
	/	/	/	/	/	/	/
		/	/	/	/	/	/
		/	/	/	/	/	/
	HCH	VL	TN	-1.14	-0.001453	± 2.5	PASS
		VN	TN	-0.96	-0.001224	± 2.5	PASS
		VH	TN	3.34	0.004257	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.55	0.001988	± 2.5	PASS
		VN	-20	3.24	0.004157	± 2.5	PASS
		VN	-10	3.47	0.004452	± 2.5	PASS
		VN	0	0.16	0.000205	± 2.5	PASS
		VN	10	3.04	0.003900	± 2.5	PASS
		VN	20	4.64	0.005953	± 2.5	PASS
		VN	30	1.76	0.002258	± 2.5	PASS
		VN	40	1.49	0.001911	± 2.5	PASS
		VN	50	-0.99	-0.001270	± 2.5	PASS
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	HCH	VN	-30	-0.97	-0.001236	± 2.5	PASS
		VN	-20	4.53	0.005774	± 2.5	PASS
		VN	-10	0.19	0.000242	± 2.5	PASS
		VN	0	1.01	0.001287	± 2.5	PASS
		VN	10	3.65	0.004653	± 2.5	PASS
		VN	20	1.82	0.002320	± 2.5	PASS
		VN	30	4.51	0.005749	± 2.5	PASS
		VN	40	0.32	0.000408	± 2.5	PASS
		VN	50	-1.35	-0.001721	± 2.5	PASS
16QAM	LCH	VN	-30	0.77	0.000988	± 2.5	PASS
		VN	-20	-1	-0.001283	± 2.5	PASS
		VN	-10	1.33	0.001706	± 2.5	PASS
		VN	0	1.45	0.001860	± 2.5	PASS
		VN	10	-0.37	-0.000475	± 2.5	PASS
		VN	20	3.67	0.004708	± 2.5	PASS
		VN	30	4.57	0.005863	± 2.5	PASS
		VN	40	-0.03	-0.000038	± 2.5	PASS
		VN	50	2.36	0.003028	± 2.5	PASS
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	HCH	VN	-30	3.11	0.003964	± 2.5	PASS
		VN	-20	3.67	0.004678	± 2.5	PASS
		VN	-10	-0.24	-0.000306	± 2.5	PASS
		VN	0	0.32	0.000408	± 2.5	PASS
		VN	10	3.58	0.004563	± 2.5	PASS
		VN	20	3.01	0.003837	± 2.5	PASS
		VN	30	-0.65	-0.000829	± 2.5	PASS

		VN	40	4.08	0.005201	± 2.5	PASS
		VN	50	1.58	0.002014	± 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	/	/	/	/	/	/
		/	/	/	/	/	/
		/	/	/	/	/	/
	MCH	VL	TN	4.76	0.006087	± 2.5	PASS
		VN	TN	-1.42	-0.001816	± 2.5	PASS
		VH	TN	-1.39	-0.001777	± 2.5	PASS
	HCH	/	/	/	/	/	/
		/	/	/	/	/	/
		/	/	/	/	/	/
16QAM	LCH	/	/	/	/	/	/
		/	/	/	/	/	/
		/	/	/	/	/	/
	MCH	VL	TN	-0.27	-0.000345	± 2.5	PASS
		VN	TN	1.82	0.002327	± 2.5	PASS
		VH	TN	2.54	0.003248	± 2.5	PASS
	HCH	/	/	/	/	/	/
		/	/	/	/	/	/
		/	/	/	/	/	/
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	/	/	/	/	/	/
		/	/	/	/	/	/
		/	/	/	/	/	/
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	MCH	VN	-30	0.92	0.001176	± 2.5	PASS
		VN	-20	0.75	0.000959	± 2.5	PASS
		VN	-10	2.67	0.003414	± 2.5	PASS
		VN	0	2.33	0.002980	± 2.5	PASS

		VN	10	3.71	0.004744	± 2.5	PASS
		VN	20	1.15	0.001471	± 2.5	PASS
		VN	30	0.66	0.000844	± 2.5	PASS
		VN	40	-0.83	-0.001061	± 2.5	PASS
		VN	50	0.57	0.000729	± 2.5	PASS
	HCH	/	/	/	/	/	/
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		/	/	/	/	/	/
QPSK	LCH	/	/	/	/	/	/
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	MCH	VN	-30	4.95	0.006330	± 2.5	PASS
		VN	-20	3.32	0.004246	± 2.5	PASS
		VN	-10	1.66	0.002123	± 2.5	PASS
		VN	0	-0.4	-0.000512	± 2.5	PASS
		VN	10	-0.22	-0.000281	± 2.5	PASS
		VN	20	0.47	0.000601	± 2.5	PASS
		VN	30	0.77	0.000985	± 2.5	PASS
		VN	40	3.89	0.004974	± 2.5	PASS
		VN	50	0.33	0.000422	± 2.5	PASS
	HCH	/	/	/	/	/	/
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		/	/	/	/	/	/
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