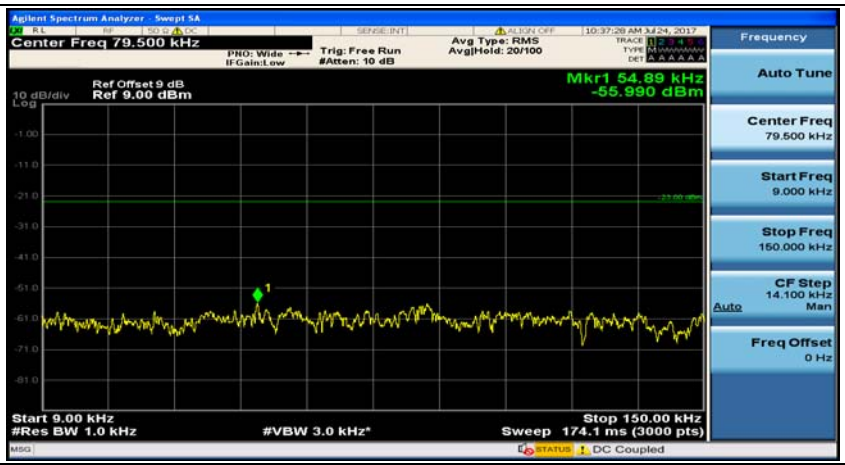
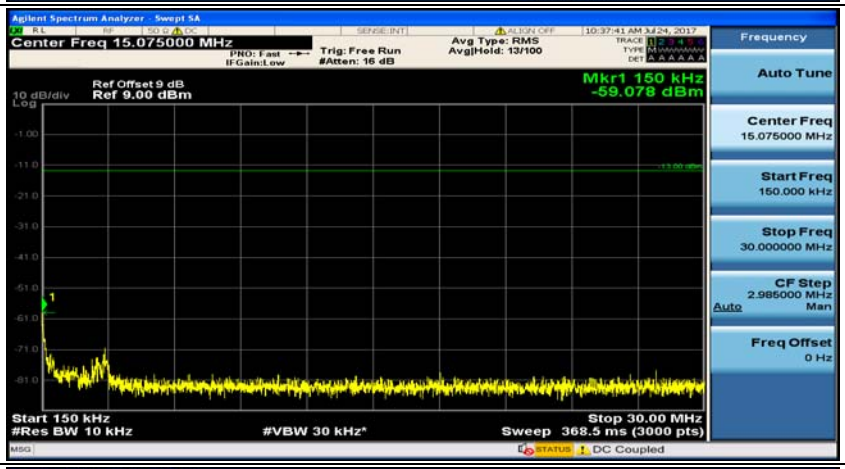
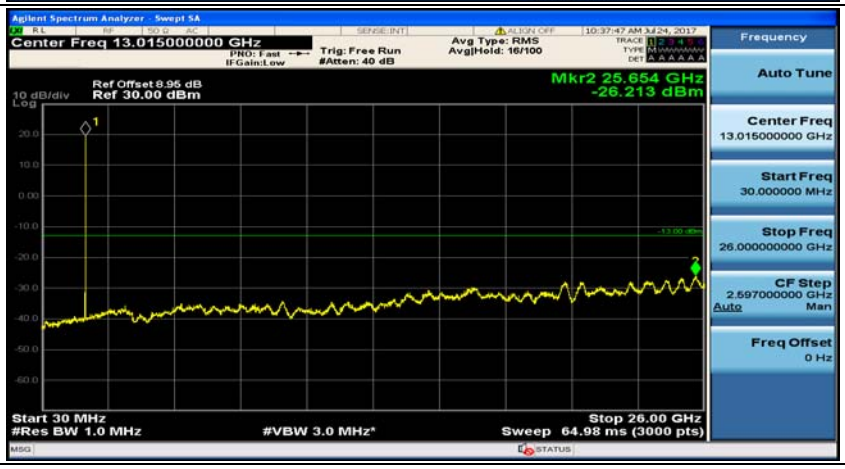
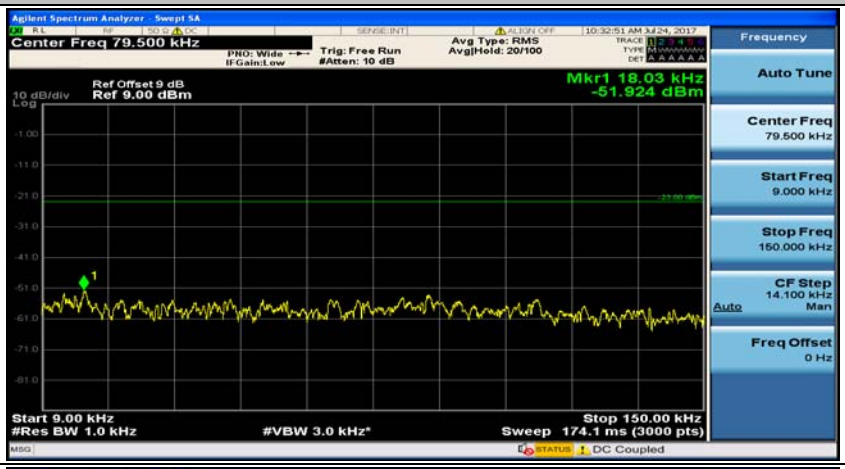
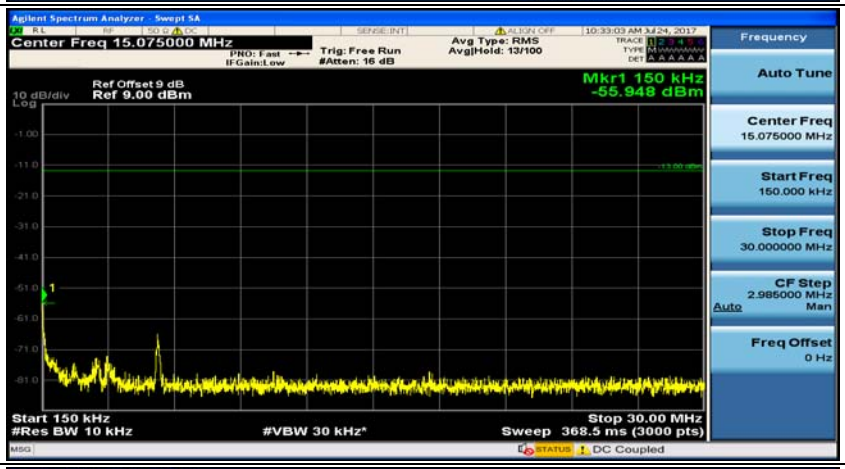
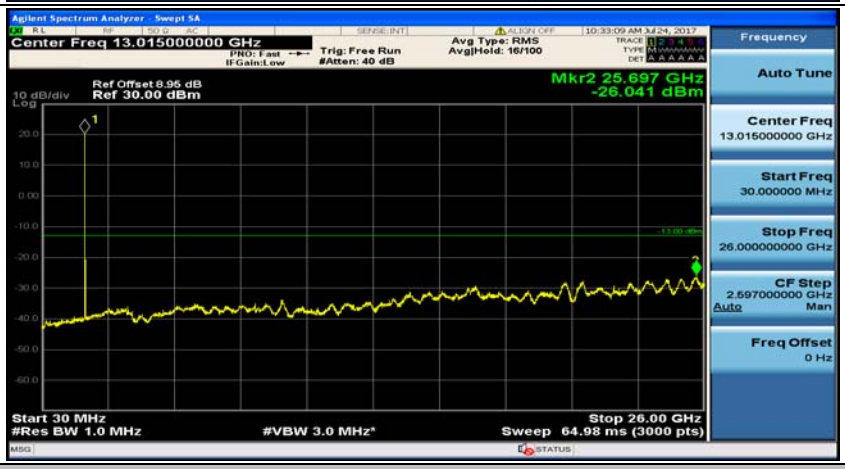
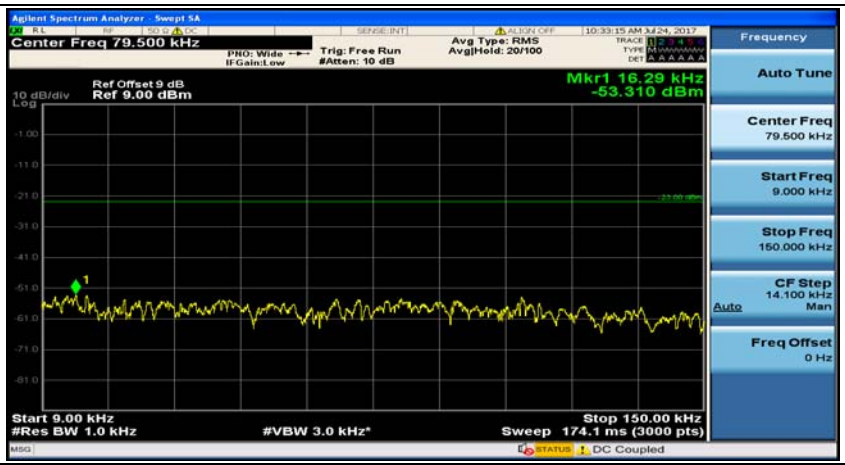
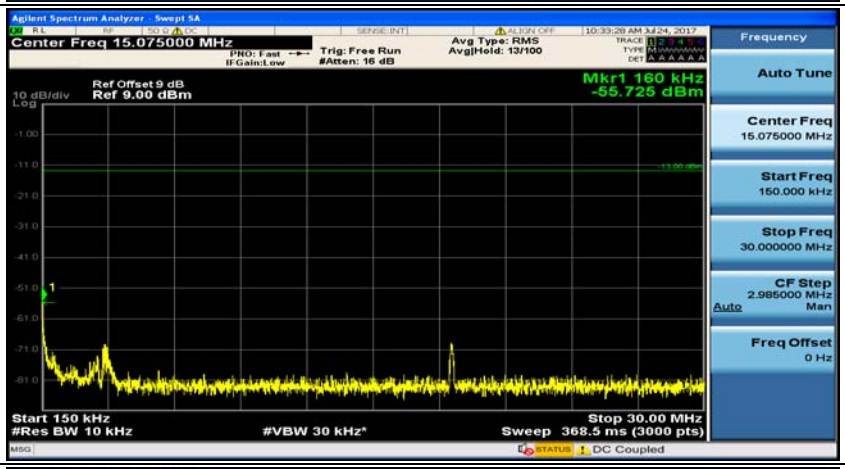

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:37:28 AM Jul 24, 2017
Frequency
Auto Tune
Mkr1 54.89 kHz
-55.990 dBm
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
10:37:41 AM Jul 24, 2017
Frequency
Auto Tune
Mkr1 150 kHz
-59.078 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

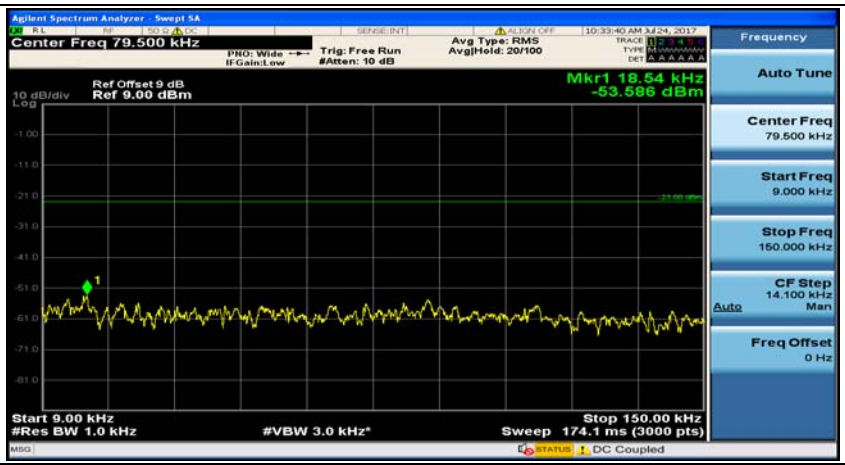

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 16/100
10:37:47 AM Jul 24, 2017
Frequency
Auto Tune
Mkr2 25.654 GHz
-26.213 dBm
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Center Freq
13.015000000 GHz
Start 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)

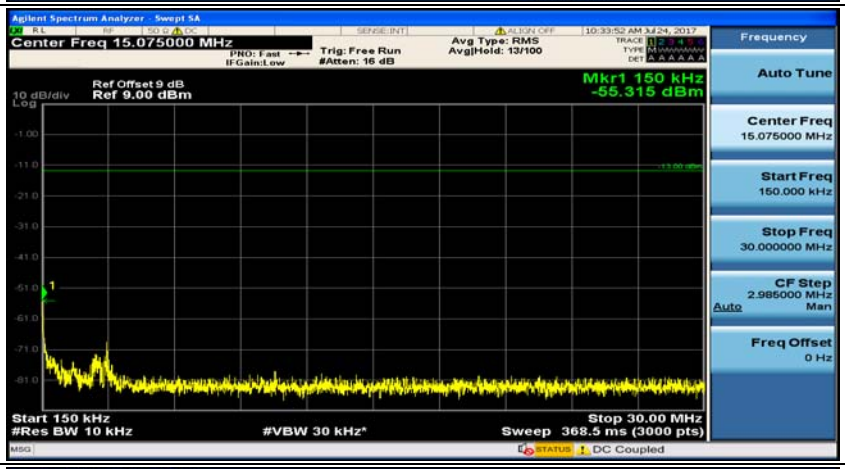
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#49

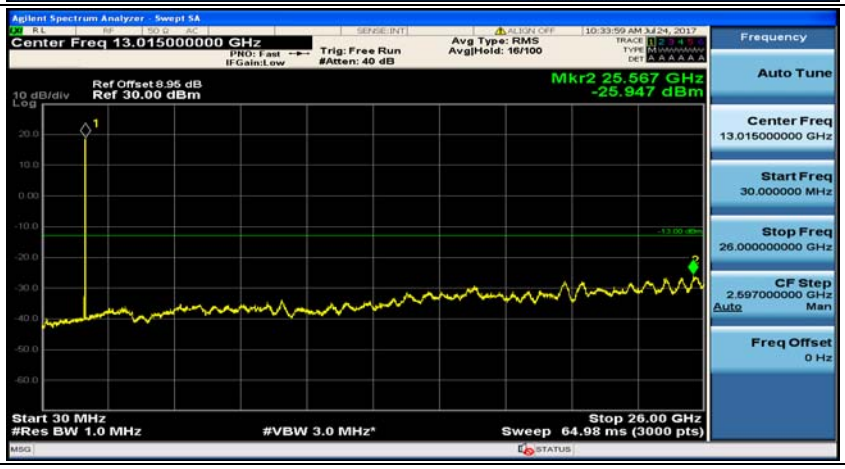


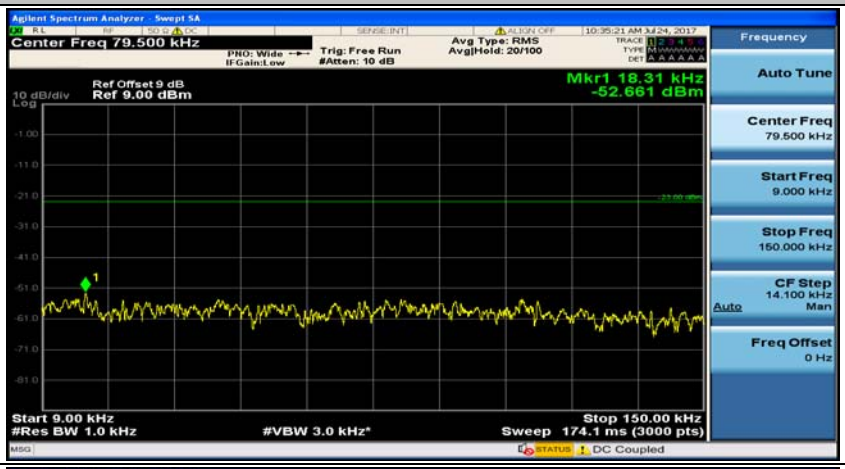
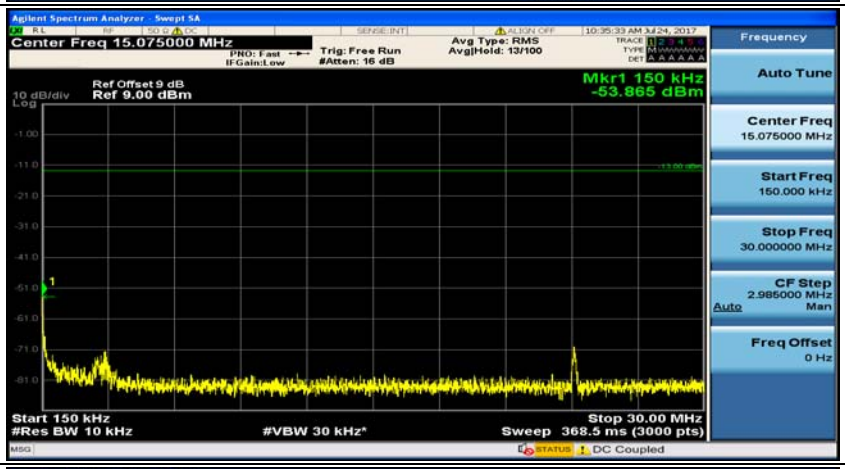
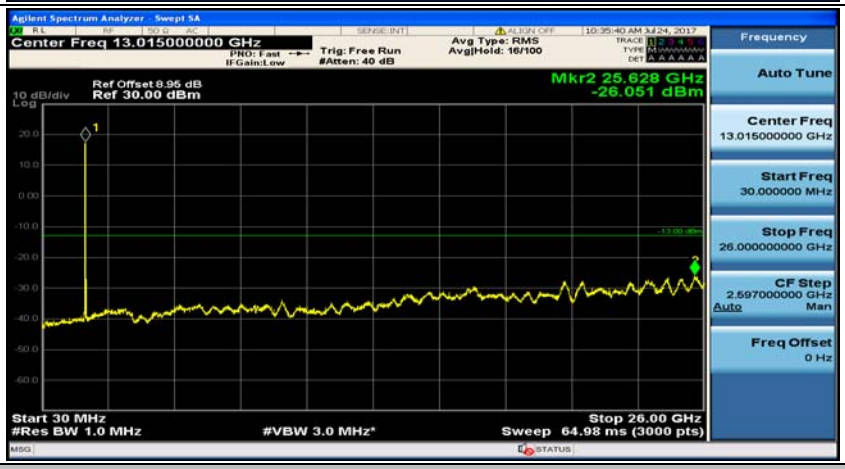


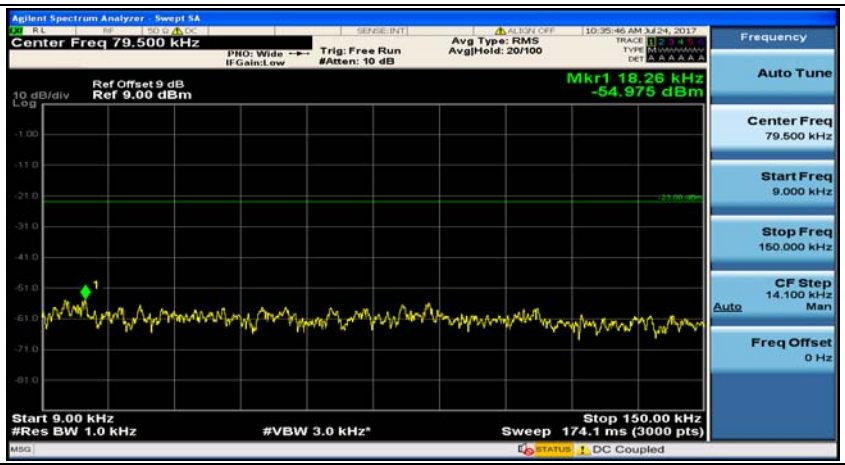
(Channel Bandwidth:20 MHz)_LCH_16QAM_1RB#99

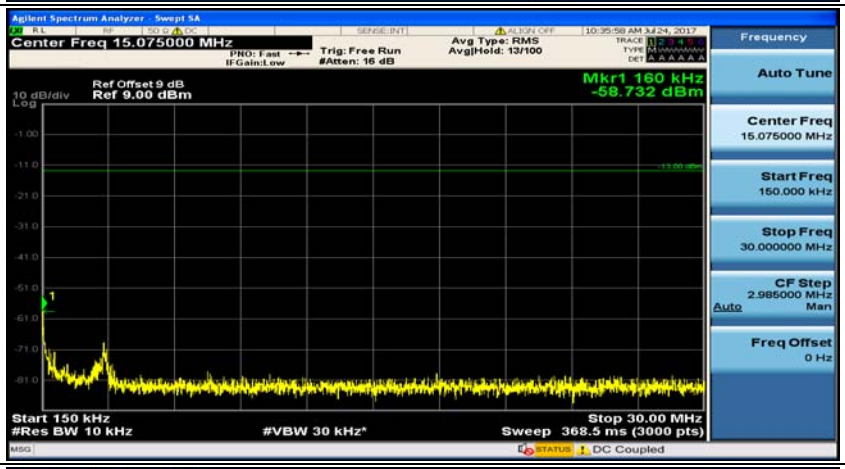

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:33:40 AM Jul 24, 2017
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 18.54 kHz
-53.586 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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

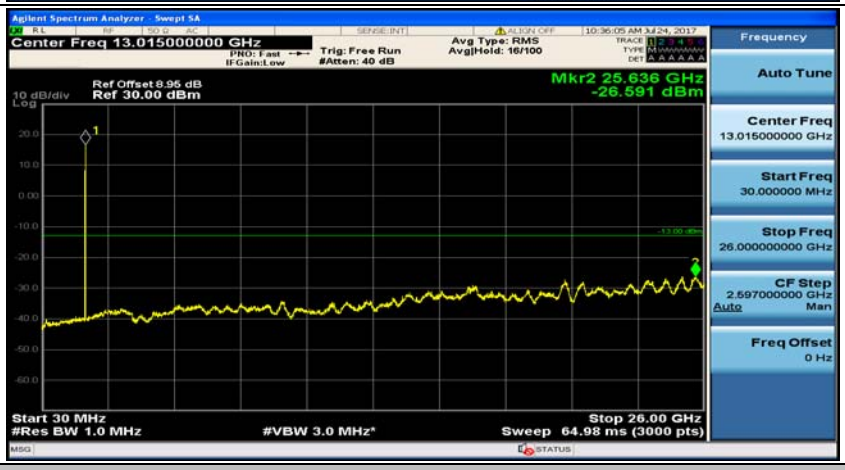

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
10:33:52 AM Jul 24, 2017
Frequency
Ref Offset 9 dB
10 dB/div
Log
Ref 9.00 dBm
Mkr1 150 kHz
-55.315 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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
10:33:59 AM Jul 24, 2017
Frequency
Ref Offset 8.95 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr2 25.567 GHz
-25.947 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)

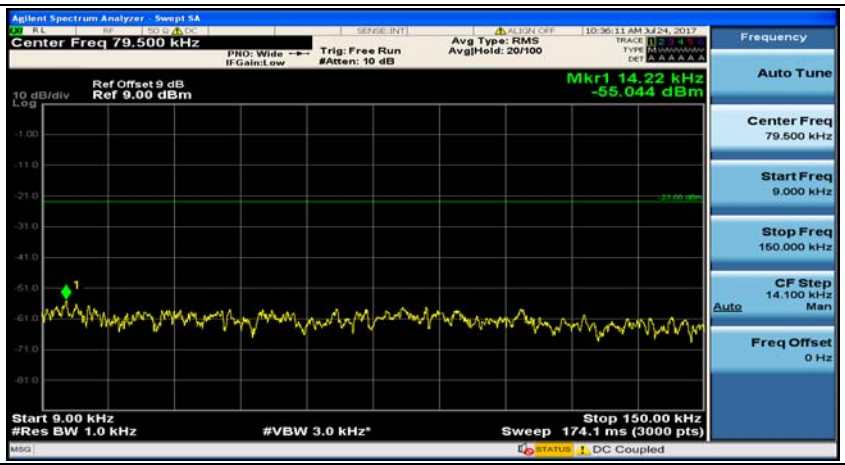
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#49

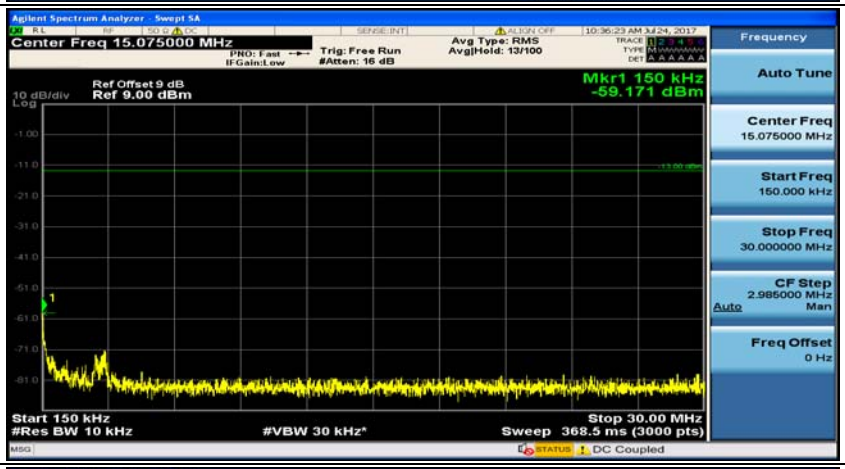


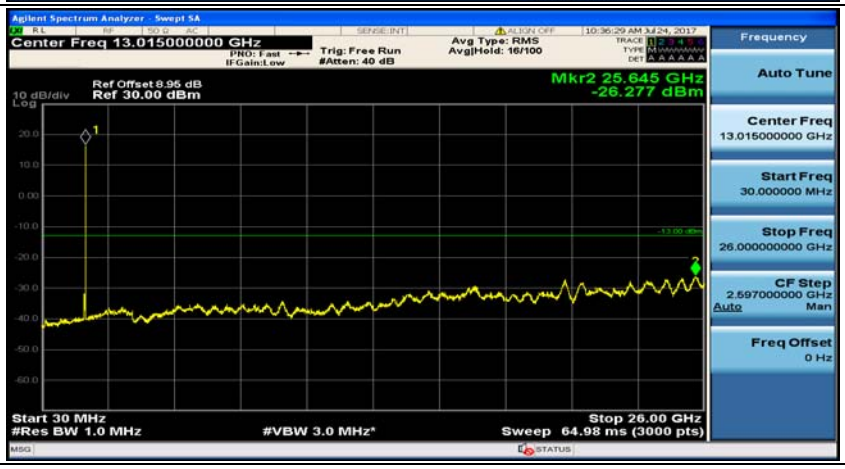


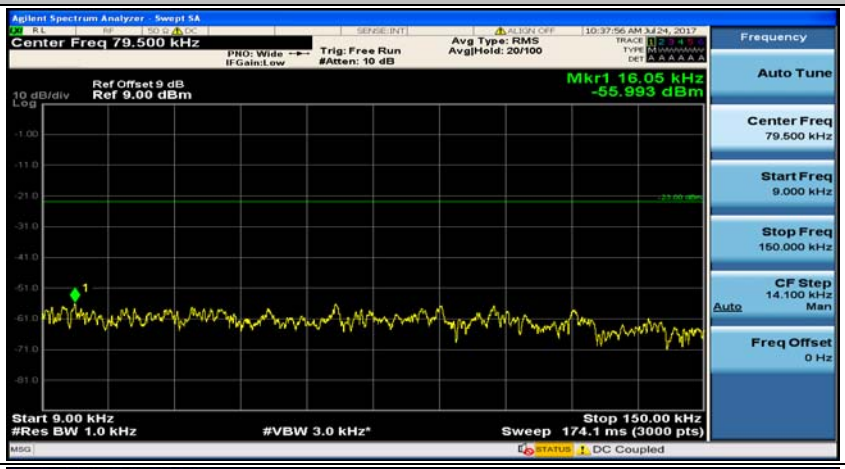
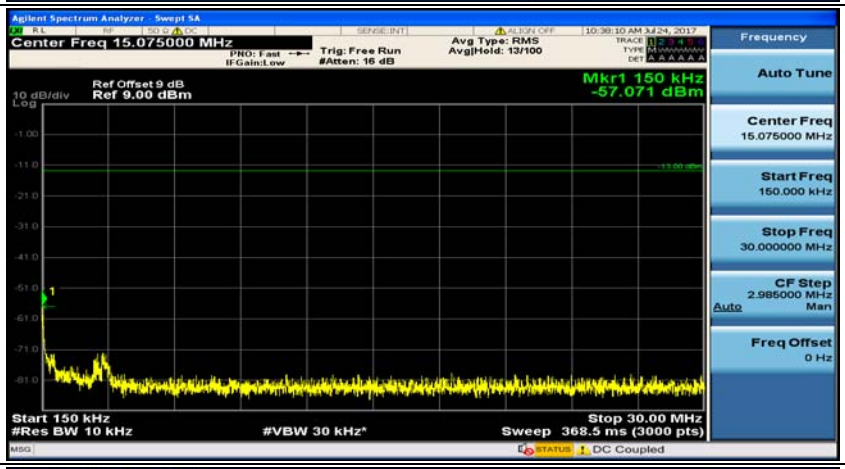
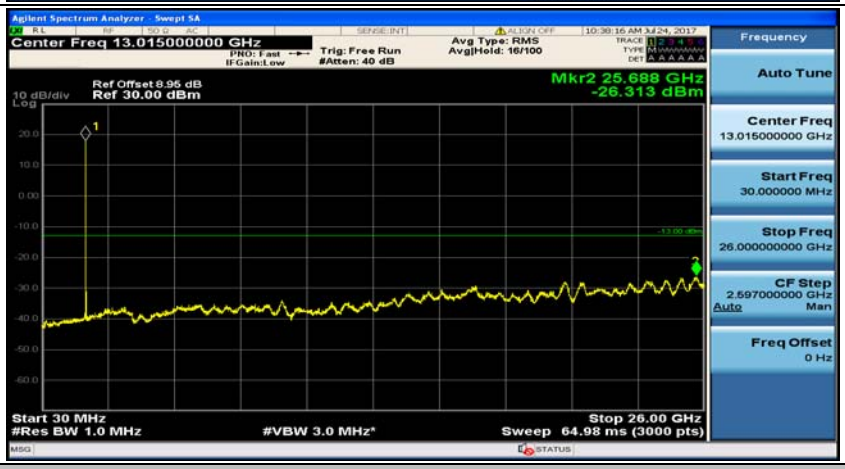


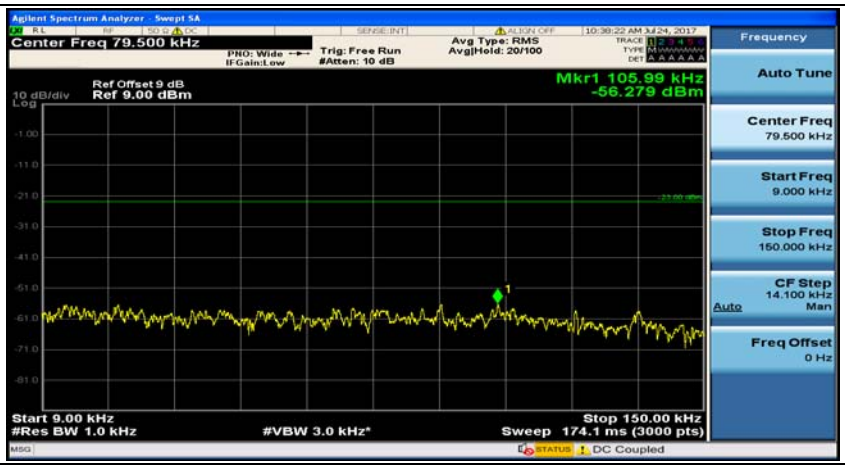
(Channel Bandwidth:20 MHz)_MCH_16QAM_1RB#99

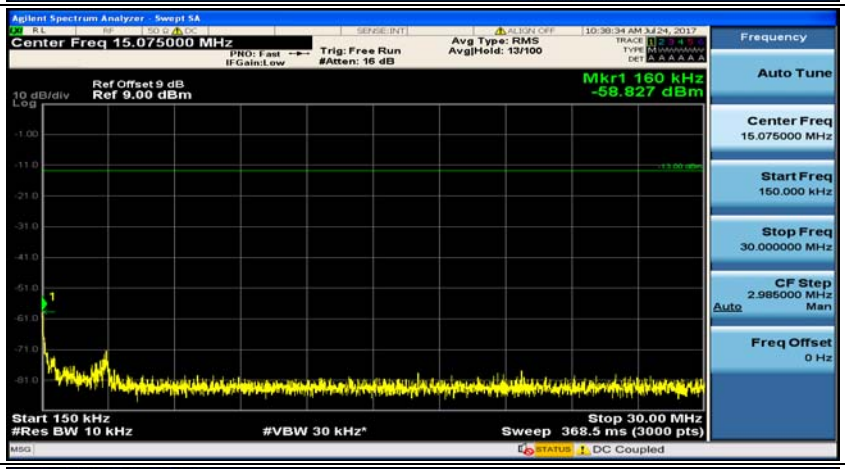

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 20/100
10:36:11 AM Jul 24, 2017
Frequency
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 14.22 kHz
-55.044 dBm
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop 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

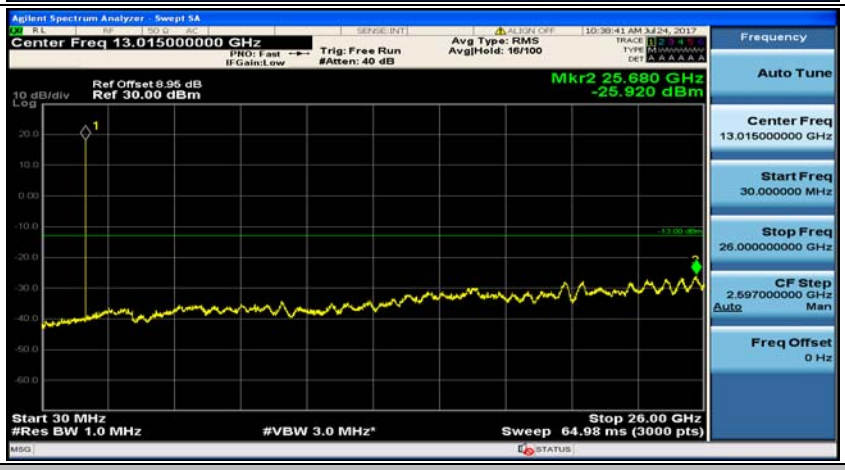

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
10:36:23 AM Jul 24, 2017
Frequency
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 150 kHz
-59.171 dBm
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 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
10:36:29 AM Jul 24, 2017
Frequency
Ref Offset 8.95 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr2 25.645 GHz
-26.277 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)

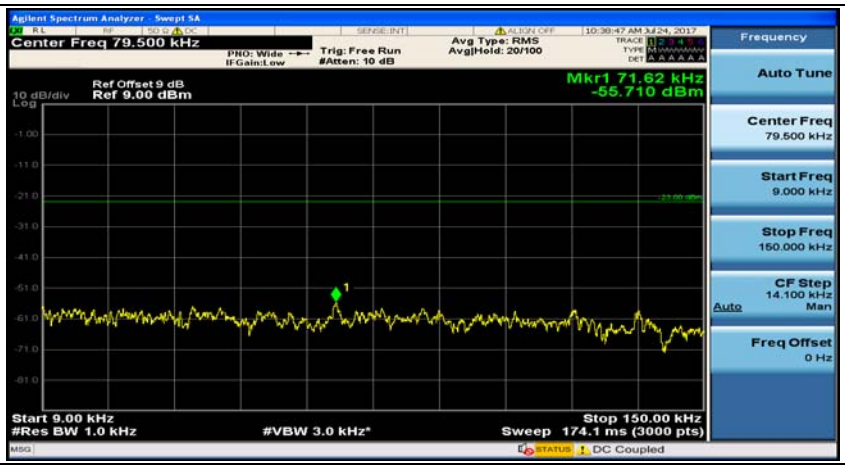
(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#49

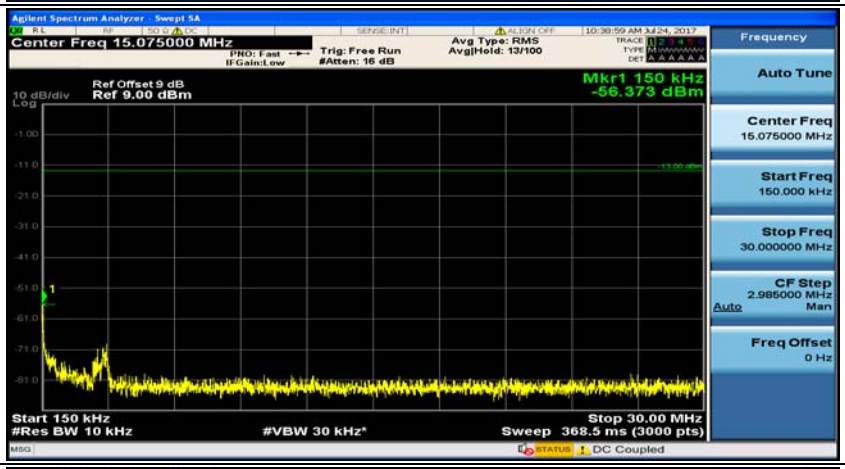


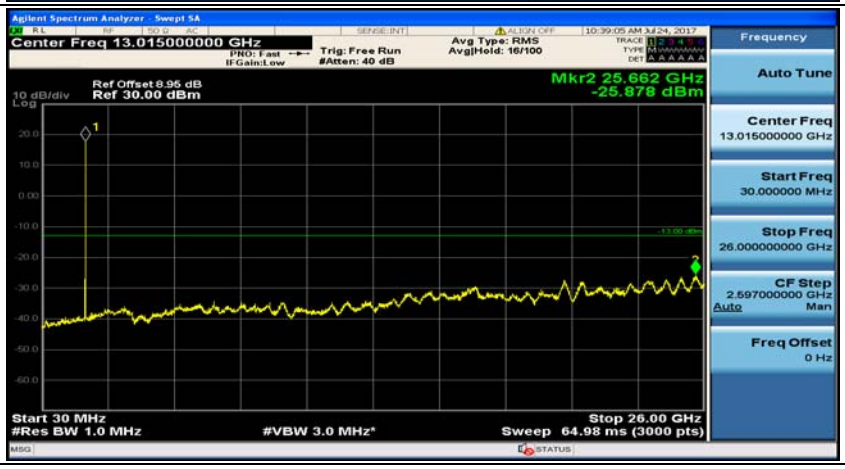




(Channel Bandwidth:20 MHz)_HCH_16QAM_1RB#99


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
10:38:47 AM Jul 24, 2017
Frequency
Auto Tune
Mkr1 71.62 kHz
-55.710 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: 16 dB
Avg Type: RMS
Avg|Hold: 13/100
10:38:59 AM Jul 24, 2017
Frequency
Auto Tune
Mkr1 150 kHz
-56.373 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: 16/100
10:39:05 AM Jul 24, 2017
Frequency
Auto Tune
Mkr2 25.662 GHz
-25.878 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)

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	-0.71	-0.000413	± 2.5	PASS
		VN	TN	-1.81	-0.001052	± 2.5	PASS
		VH	TN	3.9	0.002267	± 2.5	PASS
	MCH	VL	TN	2.39	0.001380	± 2.5	PASS
		VN	TN	1.41	0.000814	± 2.5	PASS
		VH	TN	1.15	0.000664	± 2.5	PASS
	HCH	VL	TN	3.31	0.001897	± 2.5	PASS
		VN	TN	3.07	0.001759	± 2.5	PASS
		VH	TN	2.1	0.001203	± 2.5	PASS
16QAM	LCH	VL	TN	1.77	0.001029	± 2.5	PASS
		VN	TN	0.4	0.000233	± 2.5	PASS
		VH	TN	2.78	0.001616	± 2.5	PASS
	MCH	VL	TN	2.12	0.001224	± 2.5	PASS
		VN	TN	2.38	0.001374	± 2.5	PASS
		VH	TN	1.81	0.001045	± 2.5	PASS
	HCH	VL	TN	0.82	0.000470	± 2.5	PASS
		VN	TN	4.73	0.002711	± 2.5	PASS
		VH	TN	4.52	0.002590	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	4.16	0.002419	± 2.5	PASS
		VN	-20	1.54	0.000895	± 2.5	PASS
		VN	-10	0.15	0.000087	± 2.5	PASS
		VN	0	0.97	0.000564	± 2.5	PASS
		VN	10	2.15	0.001250	± 2.5	PASS
		VN	20	3.15	0.001831	± 2.5	PASS
		VN	30	3.17	0.001843	± 2.5	PASS
		VN	40	-0.07	-0.000041	± 2.5	PASS
		VN	50	0.27	0.000157	± 2.5	PASS
	MCH	VN	-30	1.09	0.000629	± 2.5	PASS

		VN	-20	-1.72	-0.000993	± 2.5	PASS
		VN	-10	-0.86	-0.000496	± 2.5	PASS
		VN	0	3.58	0.002066	± 2.5	PASS
		VN	10	1.77	0.001022	± 2.5	PASS
		VN	20	3.71	0.002141	± 2.5	PASS
		VN	30	4.6	0.002655	± 2.5	PASS
		VN	40	-1.72	-0.000993	± 2.5	PASS
		VN	50	0.9	0.000519	± 2.5	PASS
	HCH	VN	-30	3.68	0.002109	± 2.5	PASS
		VN	-20	-1.81	-0.001037	± 2.5	PASS
		VN	-10	1.5	0.000860	± 2.5	PASS
		VN	0	-1.44	-0.000825	± 2.5	PASS
		VN	10	3.17	0.001817	± 2.5	PASS
		VN	20	3.18	0.001822	± 2.5	PASS
		VN	30	1.49	0.000854	± 2.5	PASS
		VN	40	-0.62	-0.000355	± 2.5	PASS
		VN	50	3.57	0.002046	± 2.5	PASS
16QAM	LCH	VN	-30	1.14	0.000658	± 2.5	PASS
		VN	-20	4.2	0.002424	± 2.5	PASS
		VN	-10	3.67	0.002118	± 2.5	PASS
		VN	0	4.66	0.002690	± 2.5	PASS
		VN	10	4.29	0.002476	± 2.5	PASS
		VN	20	-1.39	-0.000802	± 2.5	PASS
		VN	30	3.6	0.002078	± 2.5	PASS
		VN	40	3.26	0.001882	± 2.5	PASS
		VN	50	-0.26	-0.000150	± 2.5	PASS
	MCH	VN	-30	1.65	0.000946	± 2.5	PASS
		VN	-20	-0.87	-0.000499	± 2.5	PASS
		VN	-10	1.69	0.000968	± 2.5	PASS
		VN	0	-1.17	-0.000670	± 2.5	PASS
		VN	10	0.11	0.000063	± 2.5	PASS
		VN	20	2.99	0.001713	± 2.5	PASS
		VN	30	4.16	0.002384	± 2.5	PASS
		VN	40	-1.76	-0.001009	± 2.5	PASS
		VN	50	2.9	0.001662	± 2.5	PASS
	HCH	VN	-30	-2	-0.001146	± 2.5	PASS
		VN	-20	1.68	0.000963	± 2.5	PASS
		VN	-10	4.3	0.002464	± 2.5	PASS
		VN	0	-0.56	-0.000321	± 2.5	PASS
		VN	10	4.14	0.002372	± 2.5	PASS
		VN	20	-1.25	-0.000716	± 2.5	PASS

		VN	30	-0.01	-0.000006	± 2.5	PASS
		VN	40	4.23	0.002424	± 2.5	PASS
		VN	50	1.94	0.001112	± 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	2.68	0.001558	± 2.5	PASS
		VN	TN	3.91	0.002273	± 2.5	PASS
		VH	TN	0.78	0.000453	± 2.5	PASS
	MCH	VL	TN	2.97	0.001714	± 2.5	PASS
		VN	TN	1.36	0.000785	± 2.5	PASS
		VH	TN	4.56	0.002632	± 2.5	PASS
	HCH	VL	TN	-1.76	-0.001009	± 2.5	PASS
		VN	TN	2.52	0.001444	± 2.5	PASS
		VH	TN	-0.74	-0.000424	± 2.5	PASS
16QAM	LCH	VL	TN	2.95	0.001715	± 2.5	PASS
		VN	TN	1.63	0.000948	± 2.5	PASS
		VH	TN	-0.75	-0.000436	± 2.5	PASS
	MCH	VL	TN	-0.53	-0.000306	± 2.5	PASS
		VN	TN	-0.28	-0.000162	± 2.5	PASS
		VH	TN	3.88	0.002240	± 2.5	PASS
	HCH	VL	TN	2.6	0.001490	± 2.5	PASS
		VN	TN	1.88	0.001077	± 2.5	PASS
		VH	TN	0.29	0.000166	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.37	0.000215	± 2.5	PASS
		VN	-20	1.45	0.000843	± 2.5	PASS
		VN	-10	4.91	0.002855	± 2.5	PASS
		VN	0	-0.34	-0.000198	± 2.5	PASS
		VN	10	-1.25	-0.000727	± 2.5	PASS
		VN	20	1.23	0.000715	± 2.5	PASS
		VN	30	2.08	0.001209	± 2.5	PASS
		VN	40	4.14	0.002407	± 2.5	PASS
		VN	50	0.11	0.000064	± 2.5	PASS
	MCH	VN	-30	-1.54	-0.000889	± 2.5	PASS
		VN	-20	1.63	0.000941	± 2.5	PASS

		VN	-10	-1.23	-0.000710	± 2.5	PASS
		VN	0	1.48	0.000854	± 2.5	PASS
		VN	10	3.21	0.001853	± 2.5	PASS
		VN	20	1.56	0.000900	± 2.5	PASS
		VN	30	3.14	0.001812	± 2.5	PASS
		VN	40	-0.4	-0.000231	± 2.5	PASS
		VN	50	-1.14	-0.000658	± 2.5	PASS
	HCH	VN	-30	4.94	0.002831	± 2.5	PASS
		VN	-20	3.04	0.001742	± 2.5	PASS
		VN	-10	-1.65	-0.000946	± 2.5	PASS
		VN	0	-1.99	-0.001140	± 2.5	PASS
		VN	10	4.89	0.002802	± 2.5	PASS
		VN	20	-0.59	-0.000338	± 2.5	PASS
		VN	30	2.09	0.001198	± 2.5	PASS
		VN	40	2.83	0.001622	± 2.5	PASS
		VN	50	3.47	0.001989	± 2.5	PASS
QPSK	LCH	VN	-30	4.79	0.002765	± 2.5	PASS
		VN	-20	0.39	0.000225	± 2.5	PASS
		VN	-10	1.68	0.000970	± 2.5	PASS
		VN	0	3.19	0.001841	± 2.5	PASS
		VN	10	2.03	0.001172	± 2.5	PASS
		VN	20	0.77	0.000444	± 2.5	PASS
		VN	30	-0.09	-0.000052	± 2.5	PASS
		VN	40	0.7	0.000404	± 2.5	PASS
		VN	50	-1.6	-0.000924	± 2.5	PASS
	MCH	VN	-30	-0.74	-0.000424	± 2.5	PASS
		VN	-20	3.71	0.002126	± 2.5	PASS
		VN	-10	0.46	0.000264	± 2.5	PASS
		VN	0	0.48	0.000275	± 2.5	PASS
		VN	10	-1.12	-0.000642	± 2.5	PASS
		VN	20	-0.49	-0.000281	± 2.5	PASS
		VN	30	-0.05	-0.000029	± 2.5	PASS
		VN	40	4.92	0.002819	± 2.5	PASS
		VN	50	1.53	0.000877	± 2.5	PASS
	HCH	VN	-30	2.67	0.001530	± 2.5	PASS
		VN	-20	-1.03	-0.000590	± 2.5	PASS
		VN	-10	2.66	0.001524	± 2.5	PASS
		VN	0	1.44	0.000825	± 2.5	PASS
		VN	10	-1.81	-0.001037	± 2.5	PASS
		VN	20	2.76	0.001582	± 2.5	PASS
		VN	30	1.67	0.000957	± 2.5	PASS

		VN	40	1.88	0.001077	± 2.5	PASS
		VN	50	4.03	0.002309	± 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	2.28	0.001326	± 2.5	PASS
		VN	TN	4.55	0.002645	± 2.5	PASS
		VH	TN	-1.97	-0.001145	± 2.5	PASS
	MCH	VL	TN	-1.8	-0.001039	± 2.5	PASS
		VN	TN	4.72	0.002724	± 2.5	PASS
		VH	TN	0.32	0.000185	± 2.5	PASS
	HCH	VL	TN	1.28	0.000734	± 2.5	PASS
		VN	TN	-0.75	-0.000430	± 2.5	PASS
		VH	TN	3.74	0.002143	± 2.5	PASS
16QAM	LCH	VL	TN	4.09	0.002378	± 2.5	PASS
		VN	TN	2.69	0.001564	± 2.5	PASS
		VH	TN	0.53	0.000308	± 2.5	PASS
	MCH	VL	TN	3.77	0.002176	± 2.5	PASS
		VN	TN	-0.34	-0.000196	± 2.5	PASS
		VH	TN	1.4	0.000808	± 2.5	PASS
	HCH	VL	TN	3.35	0.001920	± 2.5	PASS
		VN	TN	-1.95	-0.001117	± 2.5	PASS
		VH	TN	2.32	0.001330	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	0.36	0.000209	± 2.5	PASS
		VN	-20	4.47	0.002599	± 2.5	PASS
		VN	-10	-1.62	-0.000942	± 2.5	PASS
		VN	0	4.61	0.002680	± 2.5	PASS
		VN	10	2.82	0.001640	± 2.5	PASS
		VN	20	3.89	0.002262	± 2.5	PASS
		VN	30	-0.53	-0.000308	± 2.5	PASS
		VN	40	0.88	0.000512	± 2.5	PASS
		VN	50	4.27	0.002483	± 2.5	PASS
	MCH	VN	-30	0.73	0.000421	± 2.5	PASS
		VN	-20	4.11	0.002372	± 2.5	PASS
		VN	-10	1.75	0.001010	± 2.5	PASS

		VN	0	-1.48	-0.000854	± 2.5	PASS
		VN	10	-1.54	-0.000889	± 2.5	PASS
		VN	20	4.44	0.002563	± 2.5	PASS
		VN	30	4.67	0.002696	± 2.5	PASS
		VN	40	0.19	0.000110	± 2.5	PASS
		VN	50	4.53	0.002615	± 2.5	PASS
	HCH	VN	-30	2.26	0.001295	± 2.5	PASS
		VN	-20	0.96	0.000550	± 2.5	PASS
		VN	-10	3.05	0.001748	± 2.5	PASS
		VN	0	0.24	0.000138	± 2.5	PASS
		VN	10	3.22	0.001845	± 2.5	PASS
		VN	20	-0.55	-0.000315	± 2.5	PASS
		VN	30	4.13	0.002367	± 2.5	PASS
		VN	40	0.23	0.000132	± 2.5	PASS
		VN	50	4.83	0.002768	± 2.5	PASS
16QAM	LCH	VN	-30	-1.55	-0.000895	± 2.5	PASS
		VN	-20	-1.57	-0.000906	± 2.5	PASS
		VN	-10	3.55	0.002049	± 2.5	PASS
		VN	0	0.34	0.000196	± 2.5	PASS
		VN	10	4.46	0.002574	± 2.5	PASS
		VN	20	1.28	0.000739	± 2.5	PASS
		VN	30	4.97	0.002869	± 2.5	PASS
		VN	40	-1.54	-0.000889	± 2.5	PASS
		VN	50	0.87	0.000502	± 2.5	PASS
	MCH	VN	-30	3.36	0.001926	± 2.5	PASS
		VN	-20	3.78	0.002166	± 2.5	PASS
		VN	-10	2.57	0.001473	± 2.5	PASS
		VN	0	3.61	0.002069	± 2.5	PASS
		VN	10	4.72	0.002705	± 2.5	PASS
		VN	20	-1.22	-0.000699	± 2.5	PASS
		VN	30	-0.97	-0.000556	± 2.5	PASS
		VN	40	0.92	0.000527	± 2.5	PASS
		VN	50	2.06	0.001181	± 2.5	PASS
	HCH	VN	-30	-1.02	-0.000585	± 2.5	PASS
		VN	-20	1.19	0.000682	± 2.5	PASS
		VN	-10	3.58	0.002052	± 2.5	PASS
		VN	0	1.24	0.000711	± 2.5	PASS
		VN	10	4.59	0.002630	± 2.5	PASS
		VN	20	-0.84	-0.000481	± 2.5	PASS
		VN	30	-1.91	-0.001095	± 2.5	PASS
		VN	40	-1.58	-0.000905	± 2.5	PASS

		VN	50	0.14	0.000080	± 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	3.52	0.002047	± 2.5	PASS
		VN	TN	0.44	0.000256	± 2.5	PASS
		VH	TN	-1.02	-0.000593	± 2.5	PASS
	MCH	VL	TN	0.24	0.000139	± 2.5	PASS
		VN	TN	-1.06	-0.000612	± 2.5	PASS
		VH	TN	3.99	0.002303	± 2.5	PASS
	HCH	VL	TN	3.23	0.001851	± 2.5	PASS
		VN	TN	2.26	0.001295	± 2.5	PASS
		VH	TN	-1.12	-0.000642	± 2.5	PASS
16QAM	LCH	VL	TN	-0.74	-0.000430	± 2.5	PASS
		VN	TN	4.85	0.002820	± 2.5	PASS
		VH	TN	-1.97	-0.001145	± 2.5	PASS
	MCH	VL	TN	2.55	0.001472	± 2.5	PASS
		VN	TN	-1.58	-0.000912	± 2.5	PASS
		VH	TN	-1.57	-0.000906	± 2.5	PASS
	HCH	VL	TN	-1.47	-0.000842	± 2.5	PASS
		VN	TN	0.53	0.000304	± 2.5	PASS
		VH	TN	-1.35	-0.000774	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
16QAM	LCH	VN	-30	1.35	0.000785	± 2.5	PASS
		VN	-20	-0.26	-0.000151	± 2.5	PASS
		VN	-10	4.47	0.002599	± 2.5	PASS
		VN	0	3.1	0.001802	± 2.5	PASS
		VN	10	3.84	0.002233	± 2.5	PASS
		VN	20	4.85	0.002820	± 2.5	PASS
		VN	30	-1.86	-0.001081	± 2.5	PASS
		VN	40	3.67	0.002134	± 2.5	PASS
		VN	50	4.05	0.002355	± 2.5	PASS
	MCH	VN	-30	0.28	0.000162	± 2.5	PASS
		VN	-20	-0.52	-0.000300	± 2.5	PASS
		VN	-10	-0.52	-0.000300	± 2.5	PASS
		VN	0	2.96	0.001709	± 2.5	PASS

		VN	10	-0.6	-0.000346	± 2.5	PASS
		VN	20	-0.08	-0.000046	± 2.5	PASS
		VN	30	-1.78	-0.001027	± 2.5	PASS
		VN	40	1.83	0.001056	± 2.5	PASS
		VN	50	4.78	0.002759	± 2.5	PASS
	HCH	VN	-30	1.62	0.000928	± 2.5	PASS
		VN	-20	-0.95	-0.000544	± 2.5	PASS
		VN	-10	0.63	0.000361	± 2.5	PASS
		VN	0	-0.37	-0.000212	± 2.5	PASS
		VN	10	3.03	0.001736	± 2.5	PASS
		VN	20	-0.71	-0.000407	± 2.5	PASS
		VN	30	1.29	0.000739	± 2.5	PASS
		VN	40	0.7	0.000401	± 2.5	PASS
		VN	50	0.58	0.000332	± 2.5	PASS
QPSK	LCH	VN	-30	1.93	0.001114	± 2.5	PASS
		VN	-20	-0.48	-0.000277	± 2.5	PASS
		VN	-10	1.95	0.001126	± 2.5	PASS
		VN	0	0.09	0.000052	± 2.5	PASS
		VN	10	3.7	0.002136	± 2.5	PASS
		VN	20	4.33	0.002499	± 2.5	PASS
		VN	30	3.24	0.001870	± 2.5	PASS
		VN	40	-1.96	-0.001131	± 2.5	PASS
		VN	50	2.37	0.001368	± 2.5	PASS
	MCH	VN	-30	4.49	0.002573	± 2.5	PASS
		VN	-20	-0.54	-0.000309	± 2.5	PASS
		VN	-10	3.26	0.001868	± 2.5	PASS
		VN	0	4.77	0.002734	± 2.5	PASS
		VN	10	2.78	0.001593	± 2.5	PASS
		VN	20	1.82	0.001043	± 2.5	PASS
		VN	30	-1.49	-0.000854	± 2.5	PASS
		VN	40	0.64	0.000367	± 2.5	PASS
		VN	50	-0.63	-0.000361	± 2.5	PASS
	HCH	VN	-30	-0.3	-0.000172	± 2.5	PASS
		VN	-20	-0.51	-0.000292	± 2.5	PASS
		VN	-10	4.65	0.002665	± 2.5	PASS
		VN	0	2.16	0.001238	± 2.5	PASS
		VN	10	4.35	0.002493	± 2.5	PASS
		VN	20	-0.04	-0.000023	± 2.5	PASS
		VN	30	-1.76	-0.001009	± 2.5	PASS
		VN	40	2.76	0.001582	± 2.5	PASS
		VN	50	4.31	0.002470	± 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	-1.95	-0.001134	± 2.5	PASS
		VN	TN	-1.8	-0.001047	± 2.5	PASS
		VH	TN	-0.87	-0.000506	± 2.5	PASS
	MCH	VL	TN	3.42	0.001974	± 2.5	PASS
		VN	TN	4.01	0.002315	± 2.5	PASS
		VH	TN	1.7	0.000981	± 2.5	PASS
	HCH	VL	TN	4.43	0.002539	± 2.5	PASS
		VN	TN	2.63	0.001507	± 2.5	PASS
		VH	TN	4.09	0.002344	± 2.5	PASS
16QAM	LCH	VL	TN	-0.78	-0.000453	± 2.5	PASS
		VN	TN	1.68	0.000977	± 2.5	PASS
		VH	TN	-0.54	-0.000314	± 2.5	PASS
	MCH	VL	TN	3.4	0.001962	± 2.5	PASS
		VN	TN	0.45	0.000260	± 2.5	PASS
		VH	TN	0.37	0.000214	± 2.5	PASS
	HCH	VL	TN	1.62	0.000928	± 2.5	PASS
		VN	TN	4.28	0.002453	± 2.5	PASS
		VH	TN	1.93	0.001106	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	3.33	0.001936	± 2.5	PASS
		VN	-20	0.97	0.000564	± 2.5	PASS
		VN	-10	0.73	0.000424	± 2.5	PASS
		VN	0	-0.86	-0.000500	± 2.5	PASS
		VN	10	3.89	0.002262	± 2.5	PASS
		VN	20	1.37	0.000797	± 2.5	PASS
		VN	30	3.82	0.002221	± 2.5	PASS
		VN	40	-0.34	-0.000198	± 2.5	PASS
		VN	50	1.21	0.000703	± 2.5	PASS
	MCH	VN	-30	-0.15	-0.000087	± 2.5	PASS
		VN	-20	4.36	0.002517	± 2.5	PASS
		VN	-10	2.88	0.001662	± 2.5	PASS
		VN	0	4.84	0.002794	± 2.5	PASS
		VN	10	2.21	0.001276	± 2.5	PASS
		VN	20	4.14	0.002390	± 2.5	PASS

		VN	30	0.69	0.000398	± 2.5	PASS
		VN	40	-1.79	-0.001033	± 2.5	PASS
		VN	50	3.34	0.001928	± 2.5	PASS
	HCH	VN	-30	-0.85	-0.000487	± 2.5	PASS
		VN	-20	2.85	0.001633	± 2.5	PASS
		VN	-10	1.16	0.000665	± 2.5	PASS
		VN	0	-0.85	-0.000487	± 2.5	PASS
		VN	10	2.25	0.001289	± 2.5	PASS
		VN	20	0.08	0.000046	± 2.5	PASS
		VN	30	1.93	0.001106	± 2.5	PASS
		VN	40	3.15	0.001805	± 2.5	PASS
		VN	50	-1.39	-0.000797	± 2.5	PASS
QPSK	LCH	VN	-30	3.72	0.002147	± 2.5	PASS
		VN	-20	3.89	0.002245	± 2.5	PASS
		VN	-10	2.67	0.001541	± 2.5	PASS
		VN	0	2.93	0.001691	± 2.5	PASS
		VN	10	-1.09	-0.000629	± 2.5	PASS
		VN	20	1.88	0.001085	± 2.5	PASS
		VN	30	1.76	0.001016	± 2.5	PASS
		VN	40	-1.95	-0.001126	± 2.5	PASS
		VN	50	3.6	0.002078	± 2.5	PASS
	MCH	VN	-30	-0.76	-0.000436	± 2.5	PASS
		VN	-20	0.83	0.000476	± 2.5	PASS
		VN	-10	4.9	0.002808	± 2.5	PASS
		VN	0	4.52	0.002590	± 2.5	PASS
		VN	10	1.68	0.000963	± 2.5	PASS
		VN	20	0.69	0.000395	± 2.5	PASS
		VN	30	2.79	0.001599	± 2.5	PASS
		VN	40	3.87	0.002218	± 2.5	PASS
		VN	50	0.11	0.000063	± 2.5	PASS
	HCH	VN	-30	1.98	0.001135	± 2.5	PASS
		VN	-20	0.12	0.000069	± 2.5	PASS
		VN	-10	-1.57	-0.000900	± 2.5	PASS
		VN	0	-1.03	-0.000590	± 2.5	PASS
		VN	10	-1.38	-0.000791	± 2.5	PASS
		VN	20	3.32	0.001903	± 2.5	PASS
		VN	30	4.01	0.002298	± 2.5	PASS
		VN	40	0.63	0.000361	± 2.5	PASS
		VN	50	3.21	0.001840	± 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	4.83	0.002808	± 2.5	PASS
		VN	TN	2.83	0.001645	± 2.5	PASS
		VH	TN	1.28	0.000744	± 2.5	PASS
	MCH	VL	TN	3.39	0.001957	± 2.5	PASS
		VN	TN	-1.96	-0.001131	± 2.5	PASS
		VH	TN	-0.5	-0.000289	± 2.5	PASS
	HCH	VL	TN	0.3	0.000172	± 2.5	PASS
		VN	TN	0.65	0.000372	± 2.5	PASS
		VH	TN	1.24	0.000711	± 2.5	PASS
16QAM	LCH	VL	TN	-0.73	-0.000424	± 2.5	PASS
		VN	TN	1.7	0.000988	± 2.5	PASS
		VH	TN	0.76	0.000442	± 2.5	PASS
	MCH	VL	TN	3.08	0.001778	± 2.5	PASS
		VN	TN	4.68	0.002701	± 2.5	PASS
		VH	TN	0.31	0.000179	± 2.5	PASS
	HCH	VL	TN	1.91	0.001095	± 2.5	PASS
		VN	TN	-1.45	-0.000831	± 2.5	PASS
		VH	TN	0.37	0.000212	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	1.77	0.001029	± 2.5	PASS
		VN	-20	-0.47	-0.000273	± 2.5	PASS
		VN	-10	4.24	0.002465	± 2.5	PASS
		VN	0	3.36	0.001953	± 2.5	PASS
		VN	10	4.56	0.002651	± 2.5	PASS
		VN	20	3.96	0.002302	± 2.5	PASS
		VN	30	-0.54	-0.000314	± 2.5	PASS
		VN	40	3.32	0.001930	± 2.5	PASS
		VN	50	-0.91	-0.000529	± 2.5	PASS
	MCH	VN	-30	2.74	0.001582	± 2.5	PASS
		VN	-20	3.15	0.001818	± 2.5	PASS
		VN	-10	2.64	0.001524	± 2.5	PASS
		VN	0	0.43	0.000248	± 2.5	PASS
		VN	10	3.22	0.001859	± 2.5	PASS
		VN	20	-1.67	-0.000964	± 2.5	PASS

		VN	30	4.53	0.002615	± 2.5	PASS
		VN	40	1.81	0.001045	± 2.5	PASS
		VN	50	1.23	0.000710	± 2.5	PASS
	HCH	VN	-30	-1.15	-0.000659	± 2.5	PASS
		VN	-20	2.64	0.001513	± 2.5	PASS
		VN	-10	0.24	0.000138	± 2.5	PASS
		VN	0	-1.47	-0.000842	± 2.5	PASS
		VN	10	0.53	0.000304	± 2.5	PASS
		VN	20	2.86	0.001639	± 2.5	PASS
		VN	30	3.76	0.002155	± 2.5	PASS
		VN	40	1.77	0.001014	± 2.5	PASS
		VN	50	1.73	0.000991	± 2.5	PASS
QPSK	LCH	VN	-30	1.72	0.000993	± 2.5	PASS
		VN	-20	-1.58	-0.000912	± 2.5	PASS
		VN	-10	3.89	0.002245	± 2.5	PASS
		VN	0	0.98	0.000566	± 2.5	PASS
		VN	10	3.59	0.002072	± 2.5	PASS
		VN	20	0.78	0.000450	± 2.5	PASS
		VN	30	1.31	0.000756	± 2.5	PASS
		VN	40	4.29	0.002476	± 2.5	PASS
		VN	50	1.9	0.001097	± 2.5	PASS
	MCH	VN	-30	4.4	0.002521	± 2.5	PASS
		VN	-20	1.59	0.000911	± 2.5	PASS
		VN	-10	3.16	0.001811	± 2.5	PASS
		VN	0	1.92	0.001100	± 2.5	PASS
		VN	10	4.73	0.002711	± 2.5	PASS
		VN	20	0.5	0.000287	± 2.5	PASS
		VN	30	3.57	0.002046	± 2.5	PASS
		VN	40	0.75	0.000430	± 2.5	PASS
		VN	50	1.19	0.000682	± 2.5	PASS
	HCH	VN	-30	3.5	0.002006	± 2.5	PASS
		VN	-20	-1.01	-0.000579	± 2.5	PASS
		VN	-10	-1.2	-0.000688	± 2.5	PASS
		VN	0	-0.3	-0.000172	± 2.5	PASS
		VN	10	-0.17	-0.000097	± 2.5	PASS
		VN	20	0.88	0.000504	± 2.5	PASS
		VN	30	-1.27	-0.000728	± 2.5	PASS
		VN	40	0.94	0.000539	± 2.5	PASS
		VN	50	3.14	0.001799	± 2.5	PASS