Appendix D: Test Data for E-UTRA Band 5

Product Name: 4G Mi-Fi
Trade Mark: LOGIC, iSWAG, UNONU
Test Model: ML10

Environmental Conditions

Temperature:	23.1° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	DIAMOND.LU
Supervised by:	LI HUAN

D.1 Conducted Output Power

Conducted Output Power Test Result (Channel Bandwidth: 1.4 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm] QPSK	Average Power [dBm] 16QAM	Verdict
		Size	Offset			
QPSK / 16QAM	LCH	1	0	23.85	23.31	PASS
		1	3	23.48	22.84	PASS
		1	5	23.40	22.70	PASS
		3	0	23.33	22.85	PASS
		3	2	23.00	22.39	PASS
		3	3	23.10	22.09	PASS
		6	0	23.10	21.77	PASS
	MCH	1	0	23.80	22.38	PASS
		1	3	23.93	22.48	PASS
		1	5	23.74	22.69	PASS
		3	0	23.84	22.81	PASS
		3	2	23.86	22.73	PASS
		3	3	23.82	22.59	PASS
		6	0	22.86	21.61	PASS
	HCH	1	0	24.15	23.44	PASS
		1	3	24.14	23.51	PASS
		1	5	24.04	23.48	PASS
		3	0	24.09	23.14	PASS
		3	2	24.08	23.21	PASS
		3	3	24.00	23.13	PASS
		6	0	23.39	22.26	PASS

Conducted Output Power Test Result (Channel Bandwidth: 3 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm] QPSK	Average Power [dBm] 16QAM	Verdict
		Size	Offset			
QPSK / 16QAM	LCH	1	0	23.52	22.75	PASS
		1	7	23.62	22.87	PASS
		1	14	23.77	22.97	PASS
		8	0	22.95	21.88	PASS
		8	4	23.08	22.06	PASS
		8	7	23.12	22.29	PASS
		15	0	23.00	22.07	PASS
	MCH	1	0	23.59	22.86	PASS
		1	7	24.05	23.19	PASS
		1	14	23.77	23.15	PASS
		8	0	22.81	21.82	PASS
		8	4	22.90	21.87	PASS
		8	7	22.87	21.80	PASS
		15	0	22.82	21.76	PASS
	HCH	1	0	24.03	23.41	PASS
		1	7	24.12	23.38	PASS
		1	14	24.03	23.47	PASS
		8	0	23.20	22.21	PASS
		8	4	23.25	22.15	PASS
		8	7	23.27	22.24	PASS
		15	0	23.27	22.34	PASS

Conducted Output Power Test Result (Channel Bandwidth: 5 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	23.54	22.39	PASS
		1	12	23.86	22.81	PASS
		1	24	24.33	22.51	PASS
		12	0	22.88	21.84	PASS
		12	6	23.08	22.09	PASS
		12	13	22.92	21.90	PASS
		25	0	22.99	22.06	PASS
	MCH	1	0	23.55	22.41	PASS
		1	12	24.26	22.99	PASS
		1	24	23.94	22.82	PASS
		12	0	22.79	21.75	PASS
		12	6	22.97	21.76	PASS
		12	13	22.87	21.71	PASS
		25	0	22.80	21.87	PASS
	HCH	1	0	24.06	22.87	PASS
		1	12	24.37	23.07	PASS
		1	24	23.77	22.79	PASS
		12	0	23.06	22.10	PASS
		12	6	23.22	22.18	PASS
		12	13	23.26	22.25	PASS
		25	0	23.25	22.44	PASS

Conducted Output Power Test Result (Channel Bandwidth: 10 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	22.94	22.23	PASS
		1	24	24.58	24.01	PASS
		1	49	23.41	22.78	PASS
		25	0	22.96	21.89	PASS
		25	12	23.06	21.98	PASS
		25	25	22.82	21.79	PASS
		50	0	22.90	21.87	PASS
	MCH	1	0	23.71	23.15	PASS
		1	24	24.29	23.51	PASS
		1	49	23.79	22.94	PASS
		25	0	22.81	21.81	PASS
		25	12	22.93	21.85	PASS
		25	25	22.94	21.89	PASS
		50	0	22.85	21.78	PASS
	HCH	1	0	23.97	23.25	PASS
		1	24	24.10	23.31	PASS
		1	49	23.57	22.87	PASS
		25	0	23.11	22.14	PASS
		25	12	23.06	22.12	PASS
		25	25	23.13	22.09	PASS
		50	0	23.14	22.20	PASS

D.2 Peak-to-Average Ratio

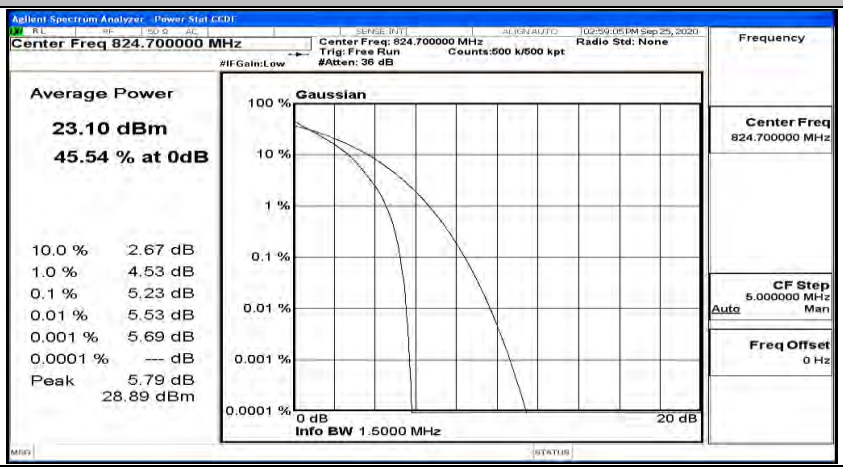
Peak-to Average Ratio Test Result (Channel Bandwidth: 1.4 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	5.23	<13	PASS
	MCH	5.23	<13	PASS
	HCH	4.71	<13	PASS
16QAM	LCH	6.08	<13	PASS
	MCH	6.08	<13	PASS
	HCH	5.72	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 3 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	5.29	<13	PASS
	MCH	5.24	<13	PASS
	HCH	4.92	<13	PASS
16QAM	LCH	6.16	<13	PASS
	MCH	6.2	<13	PASS
	HCH	5.82	<13	PASS

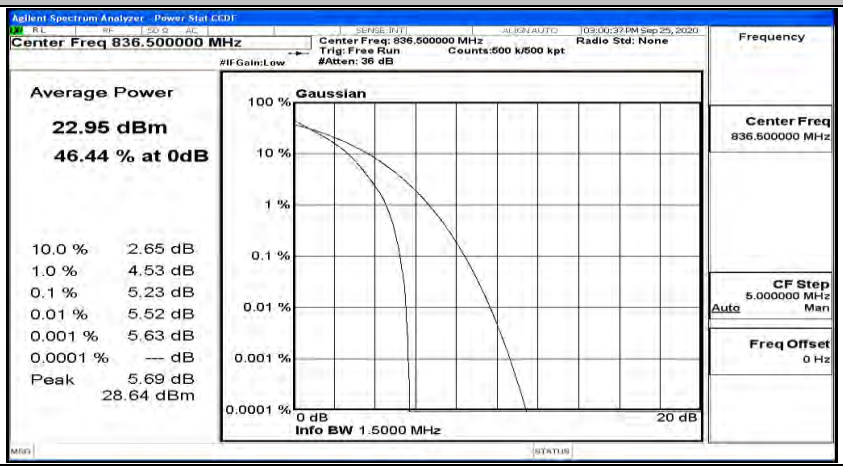
Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	5.16	<13	PASS
	MCH	5.23	<13	PASS
	HCH	4.84	<13	PASS
16QAM	LCH	5.94	<13	PASS
	MCH	6.04	<13	PASS
	HCH	5.73	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	5.04	<13	PASS
	MCH	5.17	<13	PASS
	HCH	5.16	<13	PASS
16QAM	LCH	5.88	<13	PASS
	MCH	5.97	<13	PASS
	HCH	5.86	<13	PASS

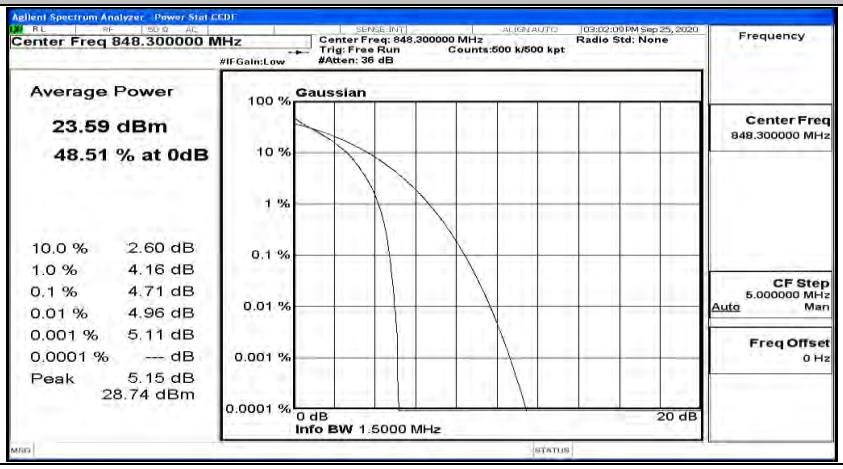
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK



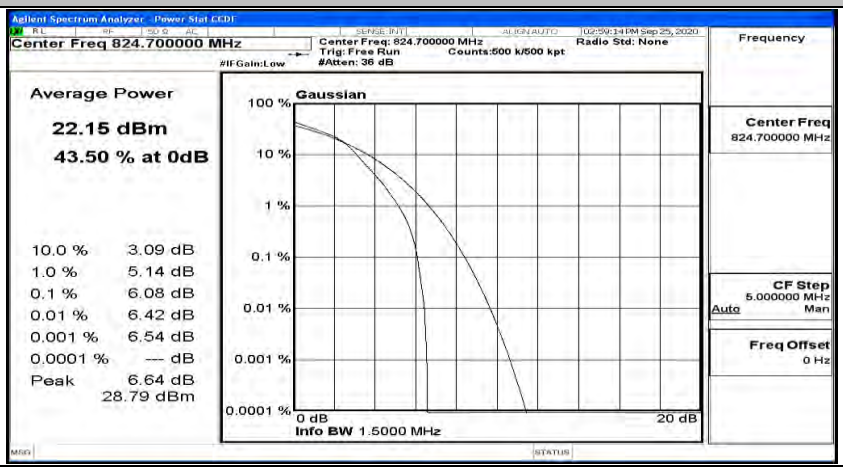
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_QPSK



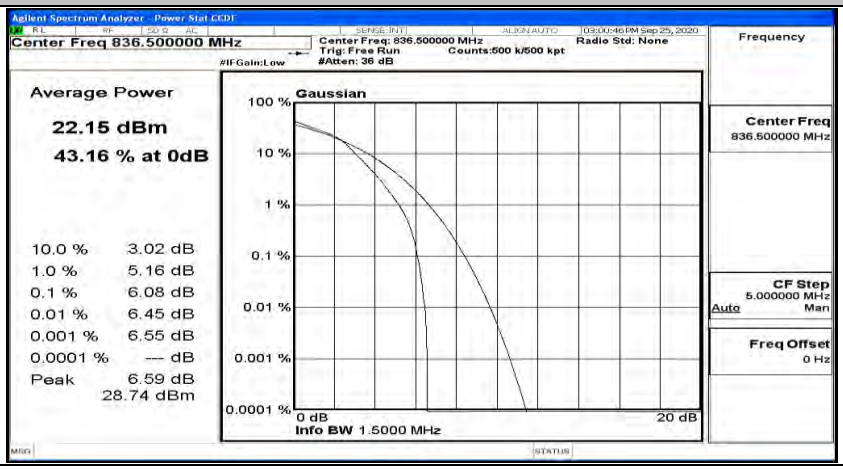
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK



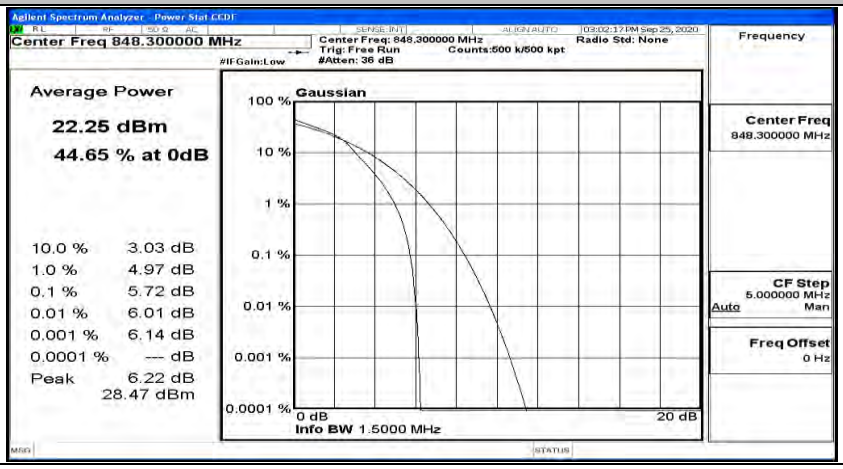
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM



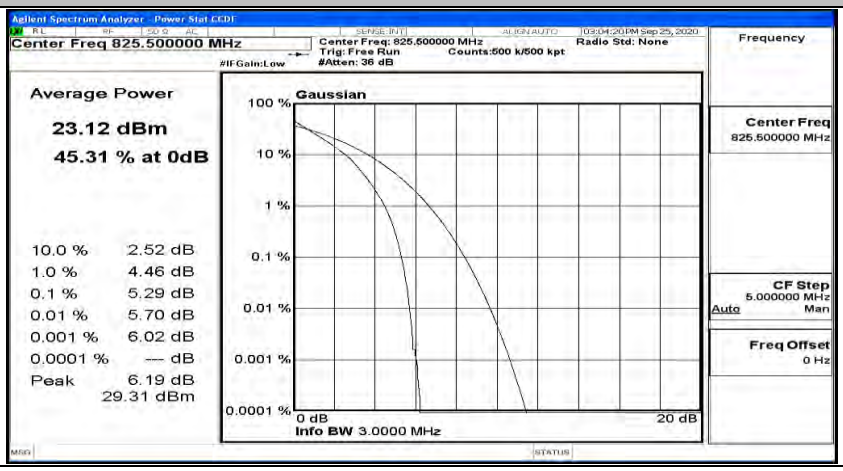
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_16QAM



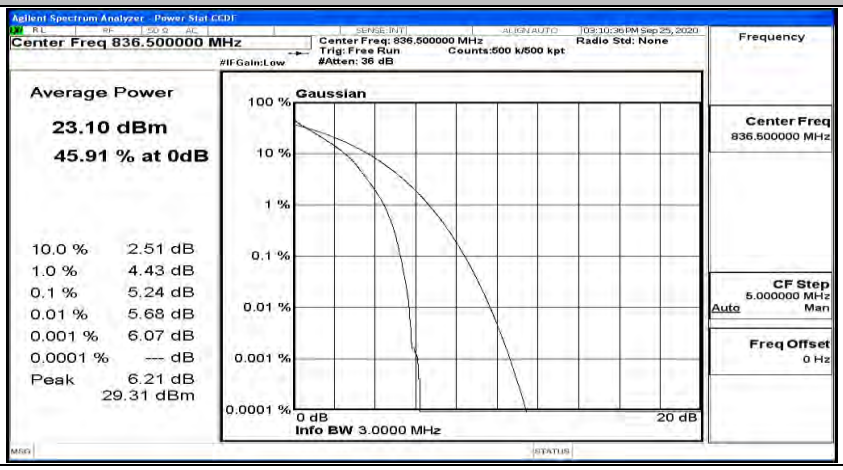
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM



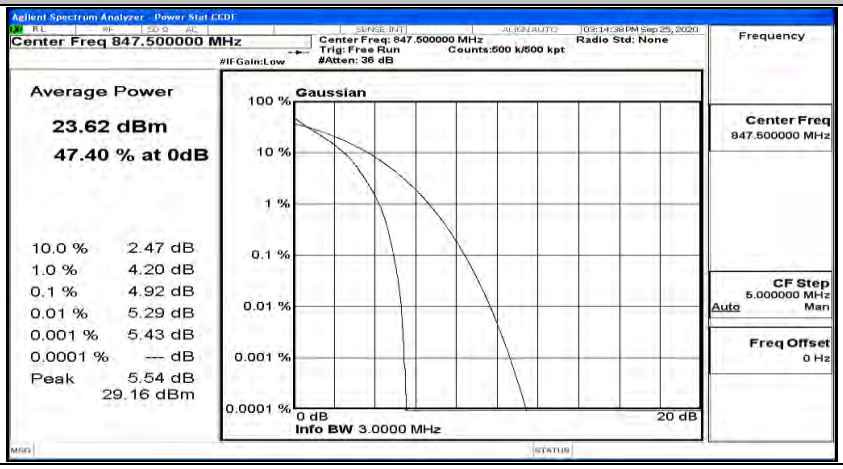
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK



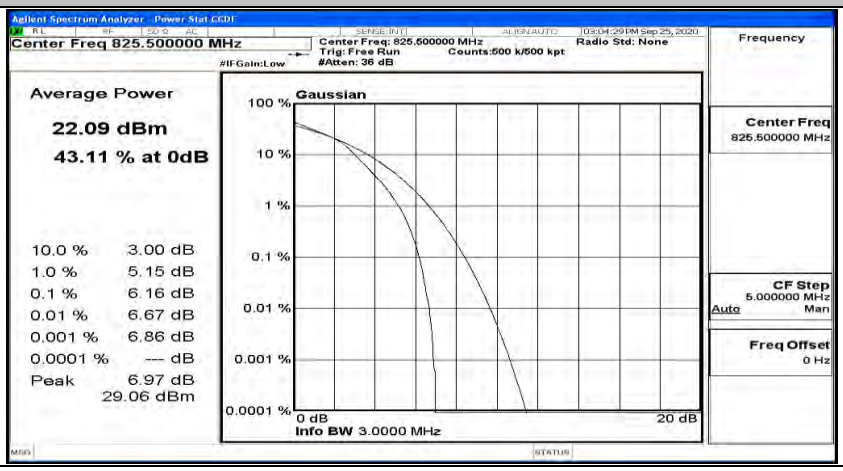
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_QPSK



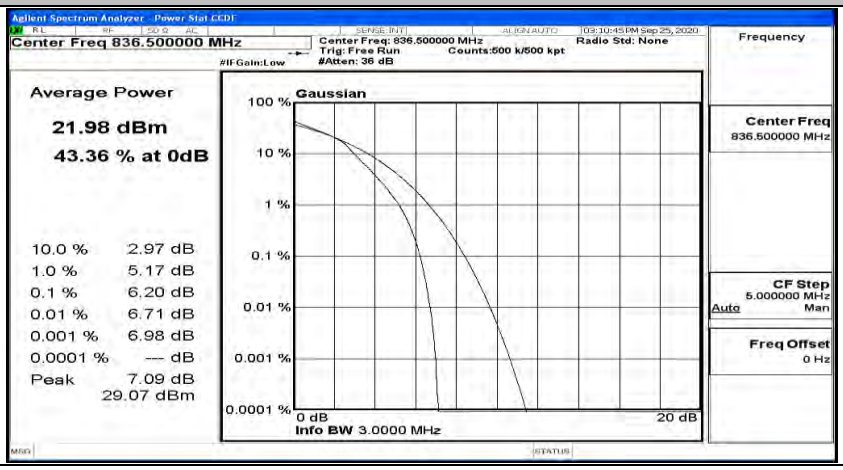
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK



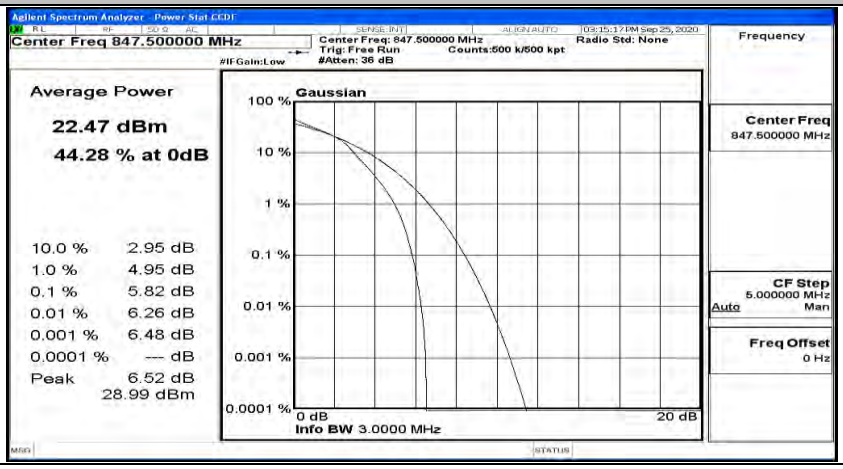
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM



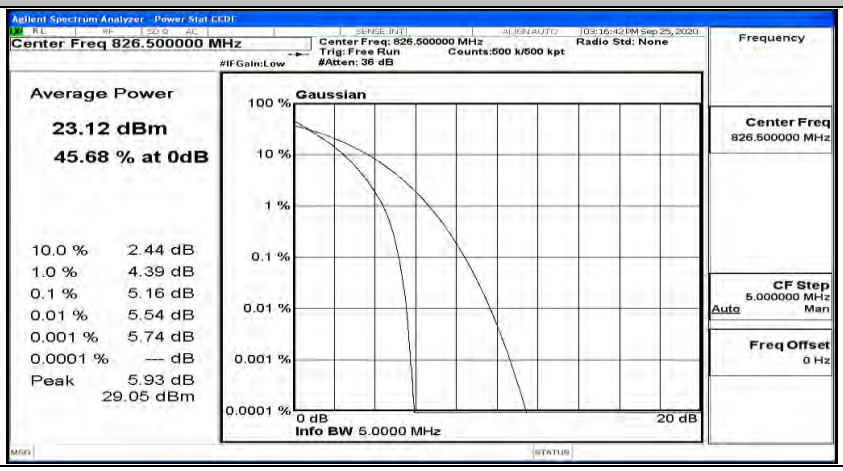
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_16QAM



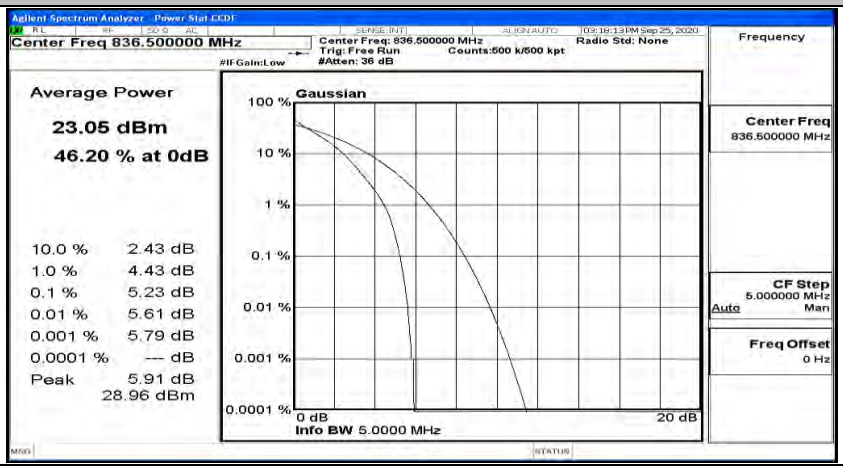
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM



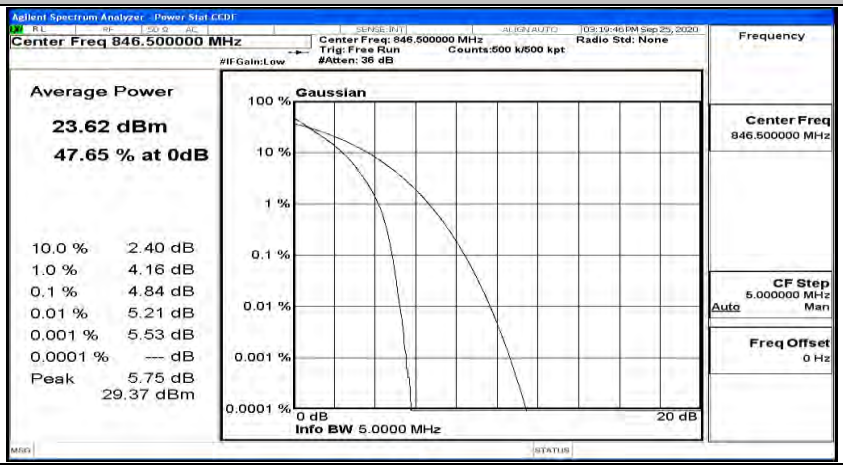
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



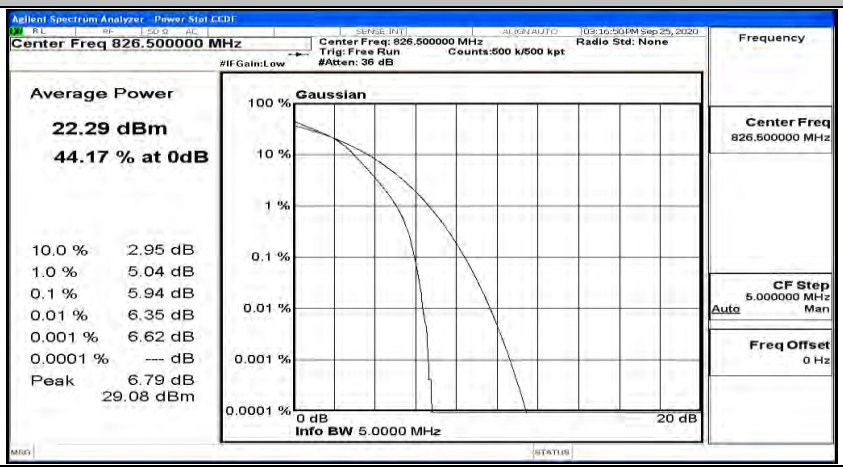
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



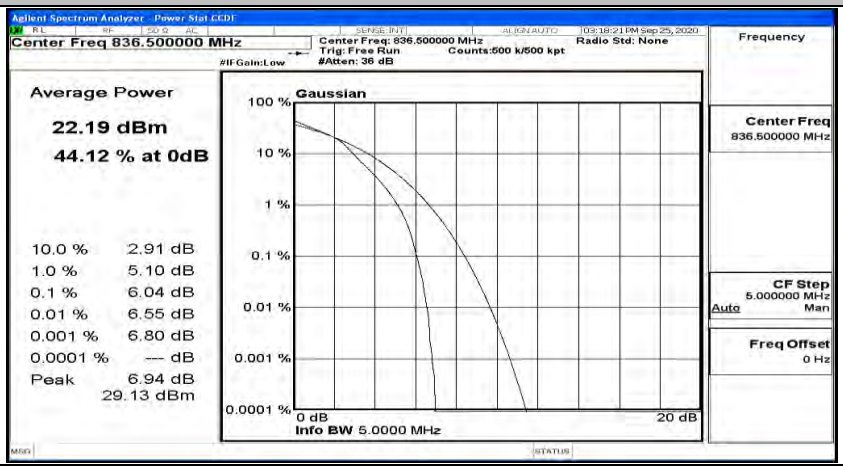
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



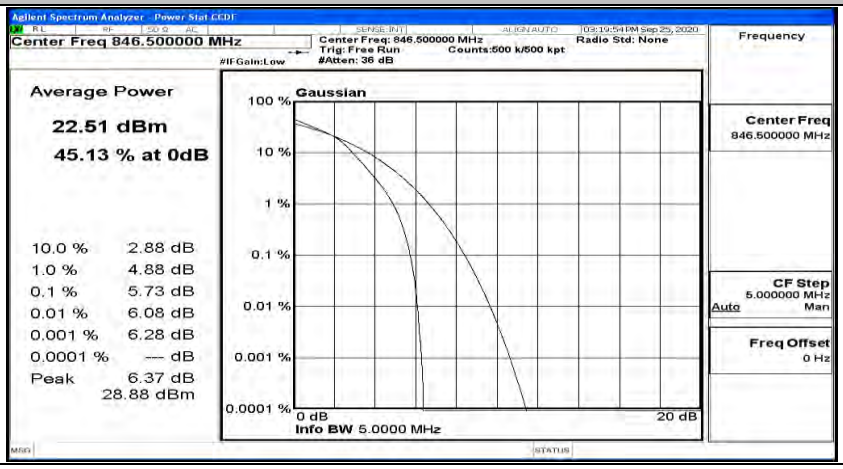
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



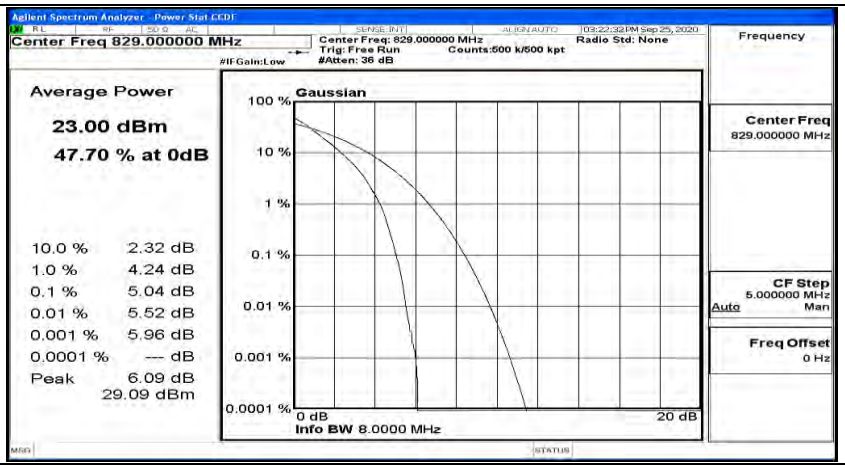
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



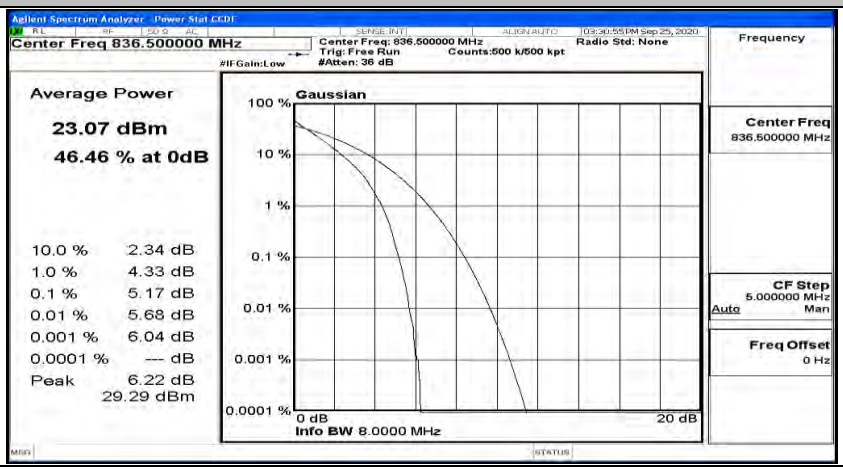
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



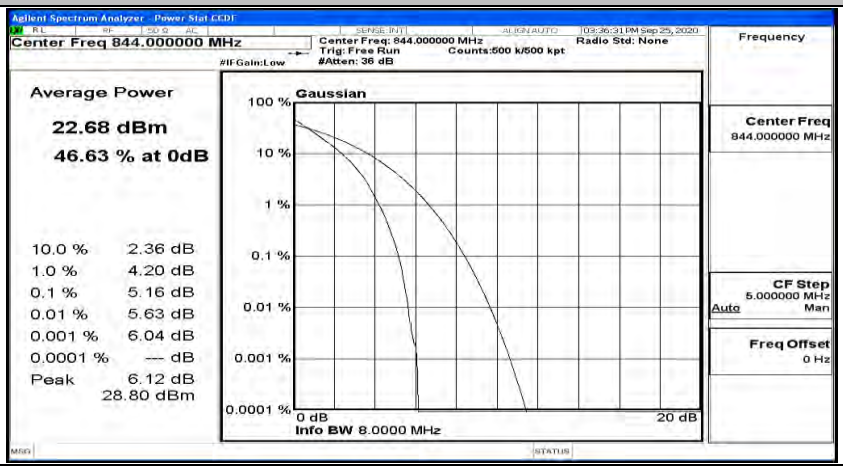
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK


Agilent Spectrum Analyzer - Power Stat CCDF
Center Freq 829.000000 MHz
Center Freq: 829.000000 MHz
Trig: Free Run
#Atten: 36 dB
Counts:500 k/500 kpt
Radio Std: None
#IFGain:Low
Frequency
Average Power
23.00 dBm
47.70 % at 0dB
10.0 % 2.32 dB
1.0 % 4.24 dB
0.1 % 5.04 dB
0.01 % 5.52 dB
0.001 % 5.96 dB
0.0001 % --- dB
Peak 6.09 dB
29.09 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 8.0000 MHz
Center Freq
829.000000 MHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

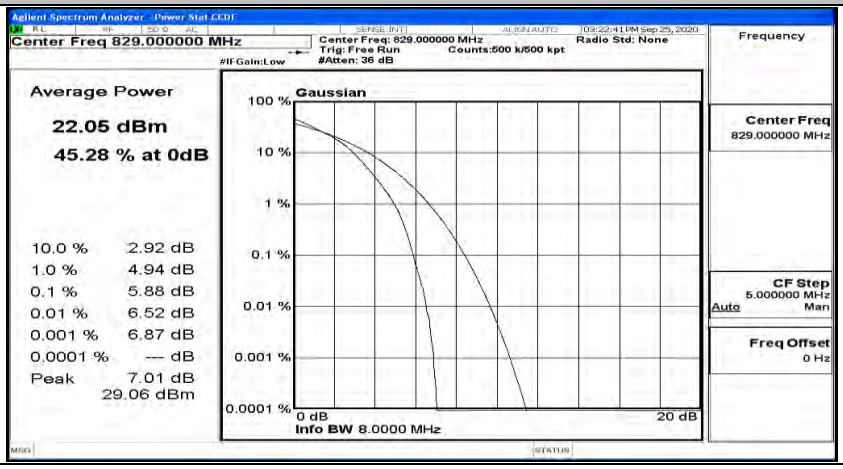
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



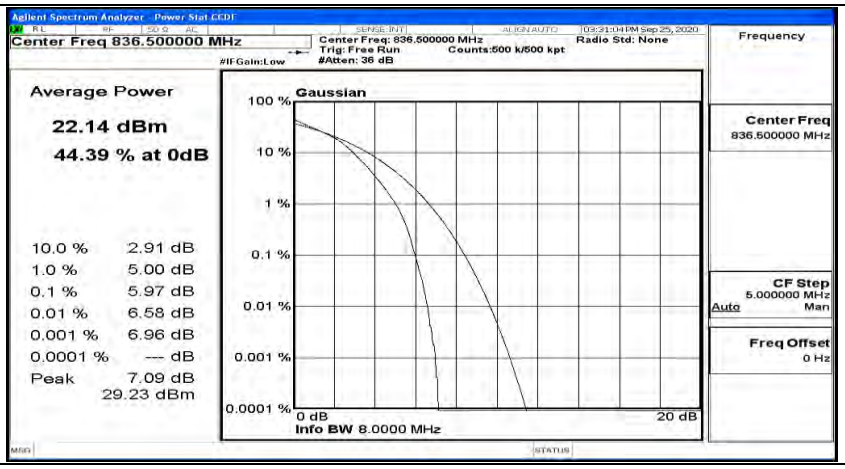
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK

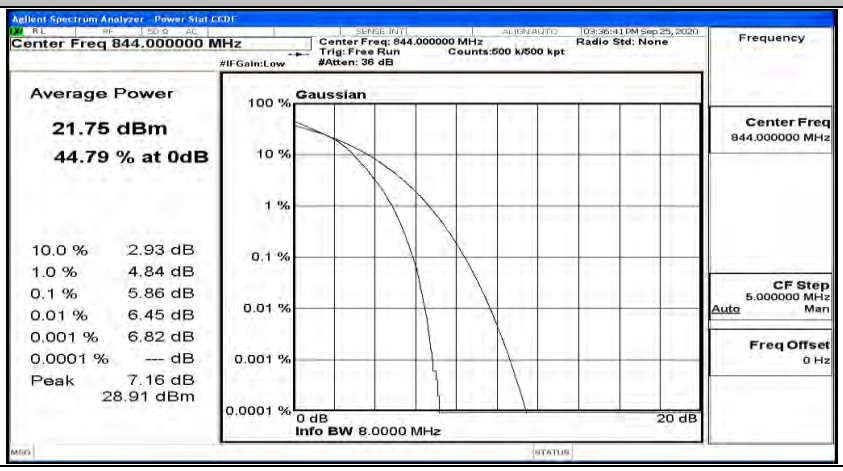


Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM


Agilent Spectrum Analyzer - Power Stat CCDF
Center Freq 836.500000 MHz
Center Freq: 836.500000 MHz
Trig: Free Run
#Atten: 36 dB
Counts:500 k/500 kpt
Radio Std: None
#IFGain:Low
Frequency
Average Power
22.14 dBm
44.39 % at 0dB
10.0 % 2.91 dB
1.0 % 5.00 dB
0.1 % 5.97 dB
0.01 % 6.58 dB
0.001 % 6.96 dB
0.0001 % --- dB
Peak 7.09 dB
29.23 dBm
Gaussian
100 %
10 %
1 %
0.1 %
0.01 %
0.001 %
0.0001 %
0 dB
20 dB
Info BW 8.0000 MHz
Center Freq
836.500000 MHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM


D.3 26dB Bandwidth and Occupied Bandwidth

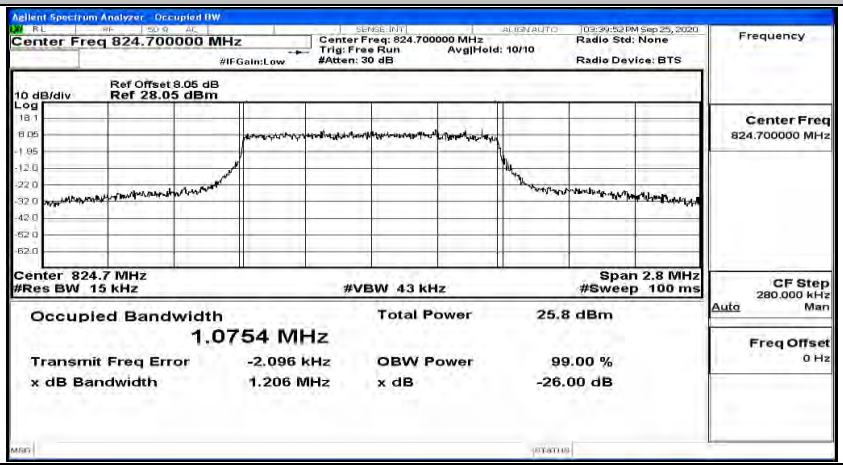
EBW & OBW Test Result (Channel Bandwidth: 1.4 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	1.0754	1.206	PASS
	MCH	1.0766	1.222	PASS
	HCH	1.0754	1.223	PASS
16QAM	LCH	1.0810	1.243	PASS
	MCH	1.0756	1.248	PASS
	HCH	1.0791	1.221	PASS

EBW & OBW Test Result (Channel Bandwidth: 3 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	2.6781	2.836	PASS
	MCH	2.6801	2.849	PASS
	HCH	2.6774	2.823	PASS
16QAM	LCH	2.6822	2.847	PASS
	MCH	2.6811	2.838	PASS
	HCH	2.6765	2.831	PASS

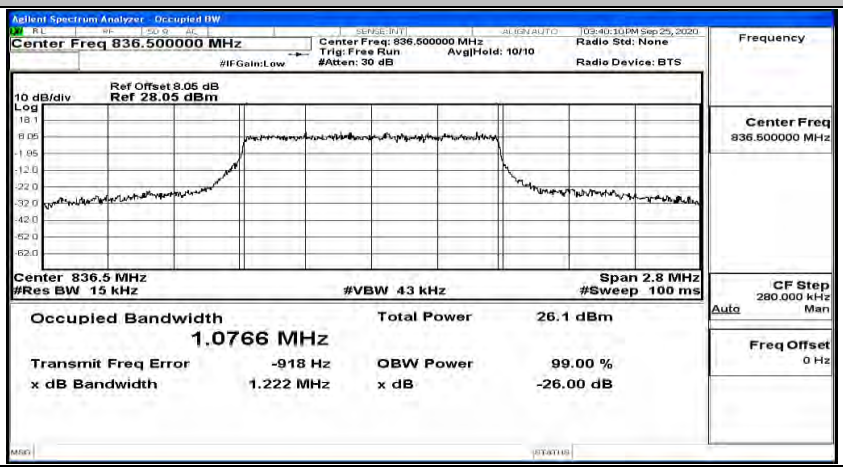
EBW & OBW Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	4.4783	4.878	PASS
	MCH	4.4756	4.944	PASS
	HCH	4.4764	4.954	PASS
16QAM	LCH	4.4823	4.844	PASS
	MCH	4.4781	4.775	PASS
	HCH	4.4863	4.862	PASS

EBW & OBW Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	8.9493	9.485	PASS
	MCH	8.9311	9.467	PASS
	HCH	8.9536	9.570	PASS
16QAM	LCH	8.9360	9.529	PASS
	MCH	8.9469	9.500	PASS
	HCH	8.9400	9.548	PASS

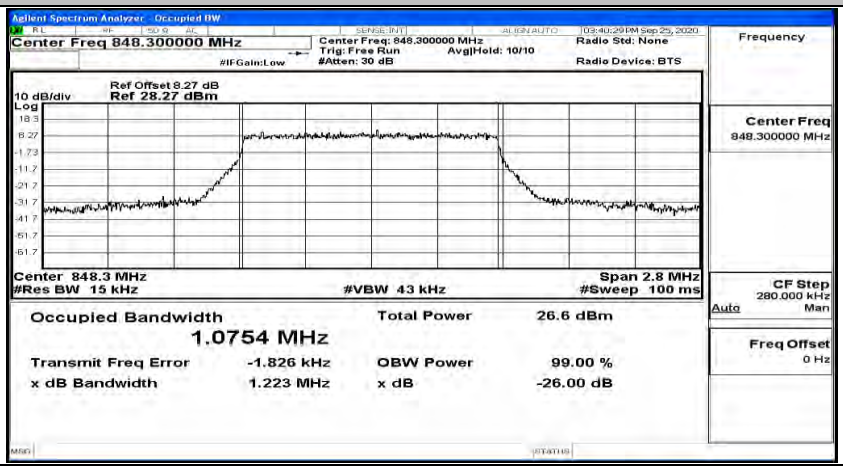
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK



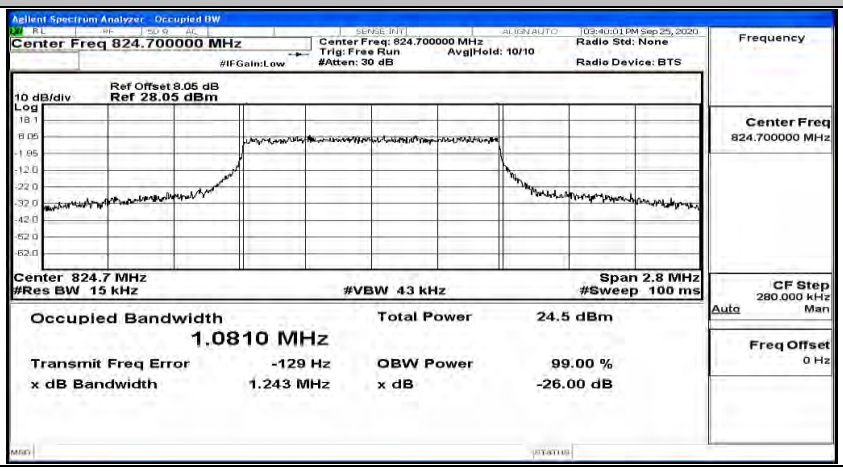
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_QPSK



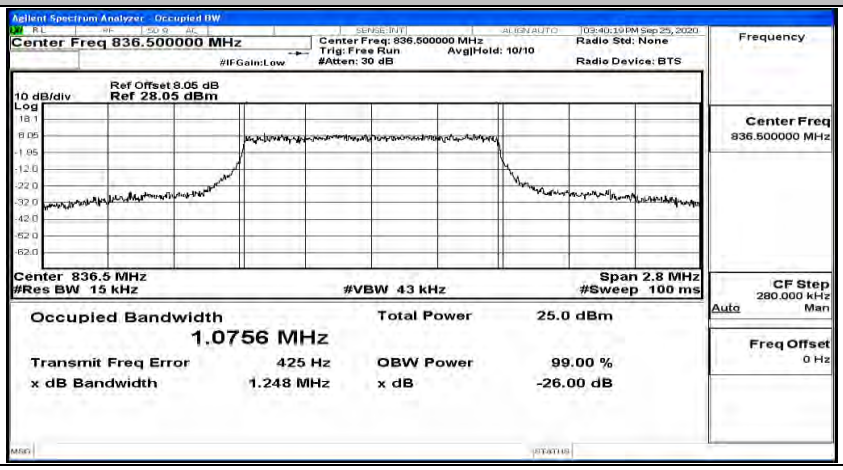
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK



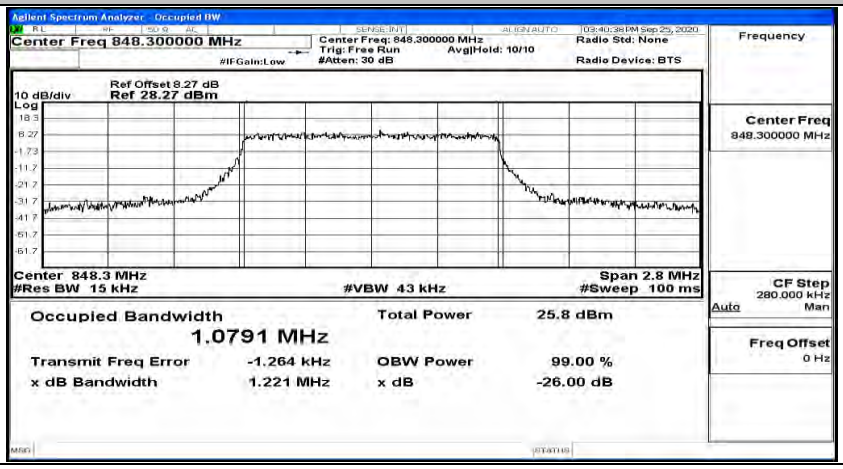
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM



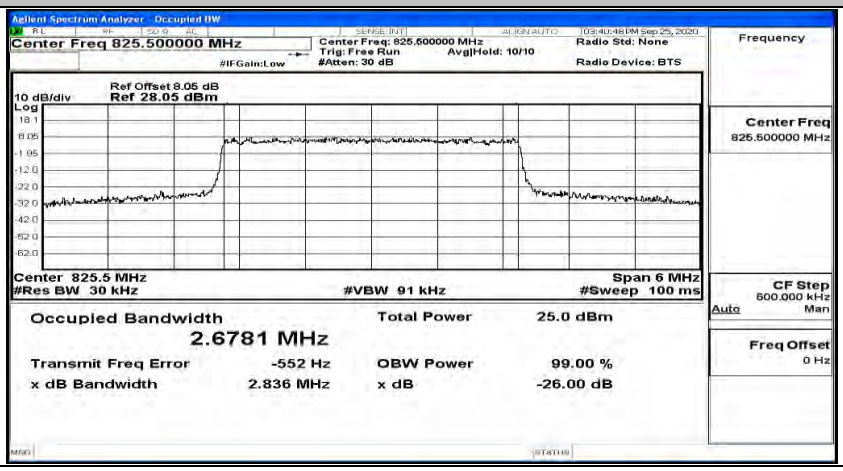
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_16QAM



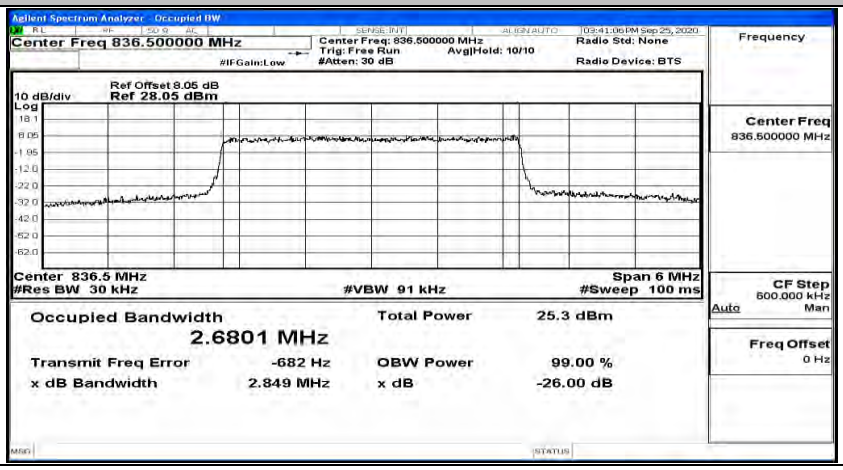
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM



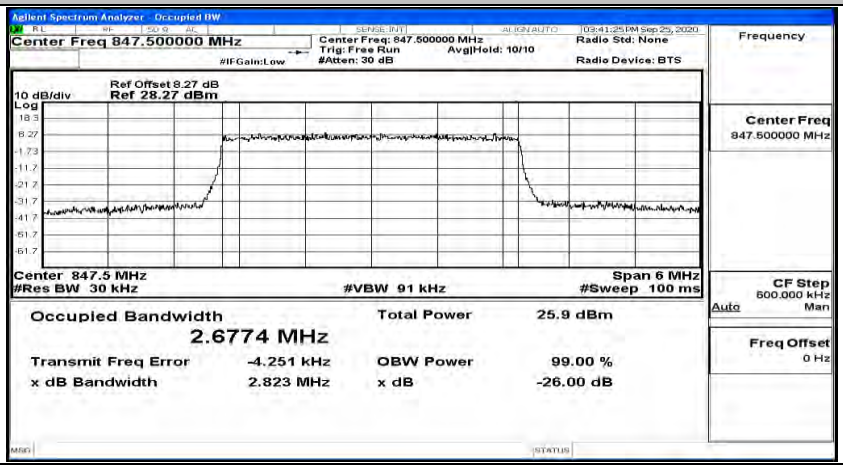
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK



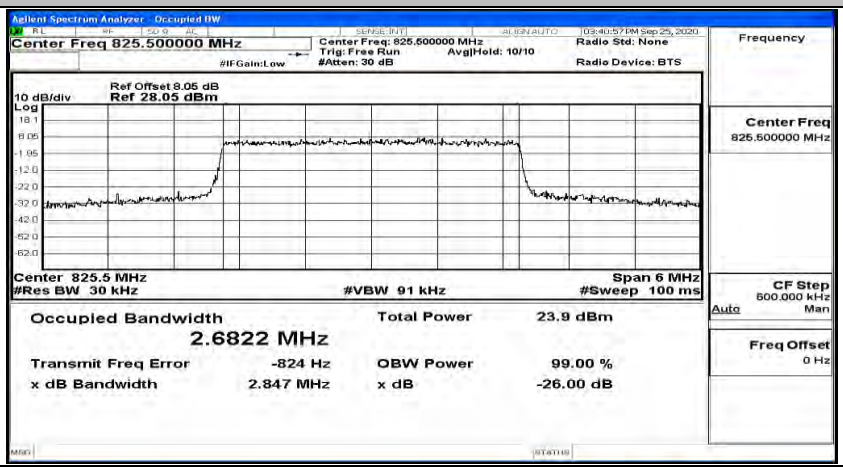
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_QPSK



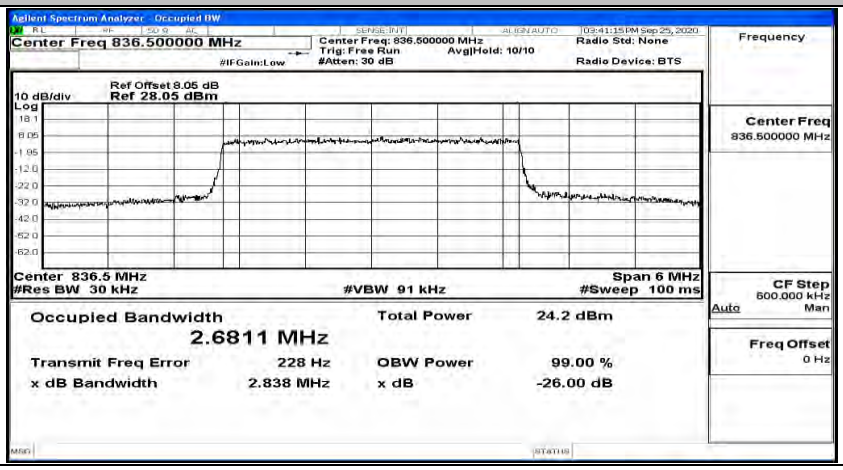
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK



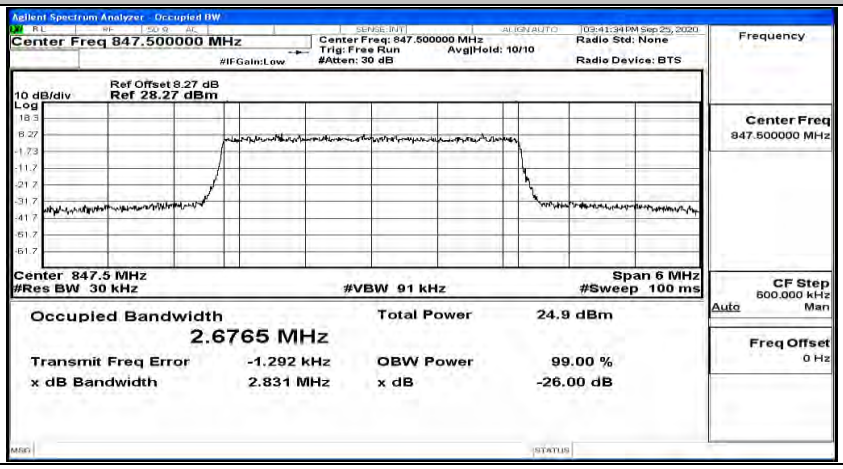
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM



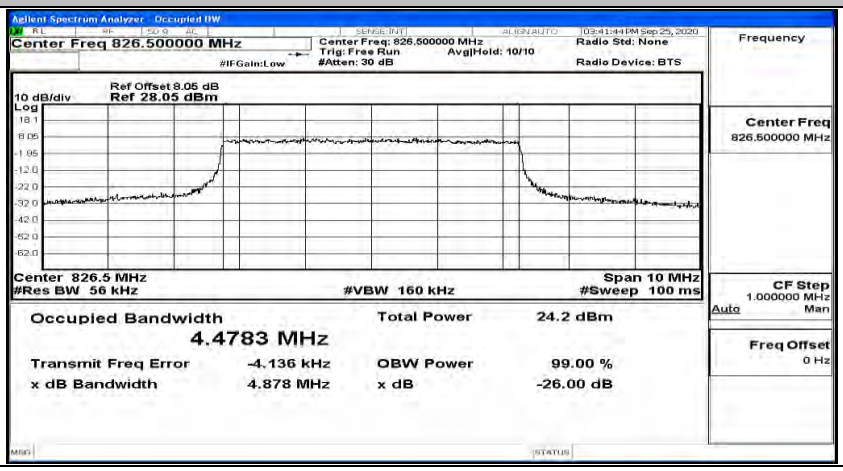
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_16QAM



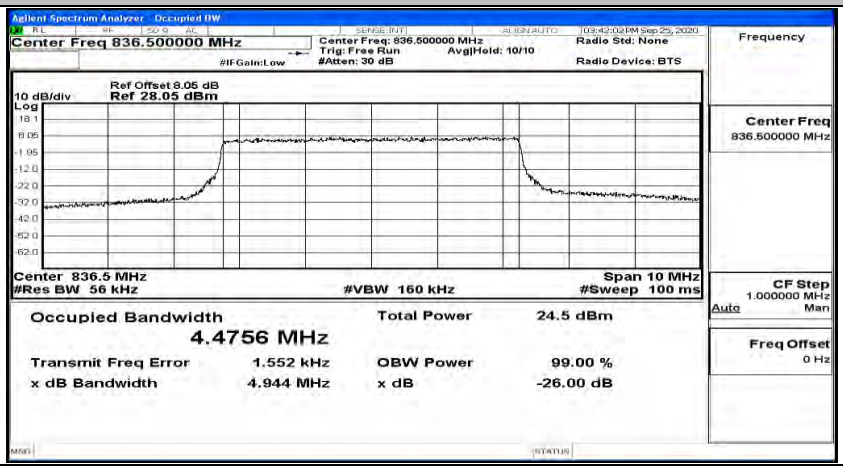
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM



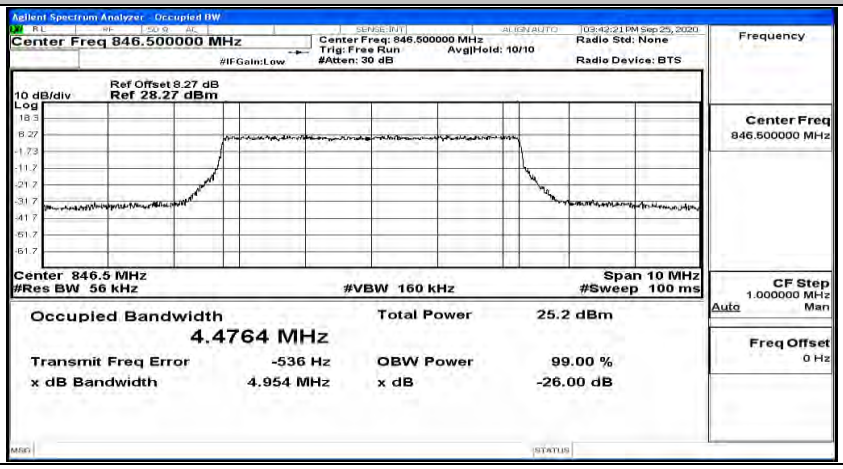
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



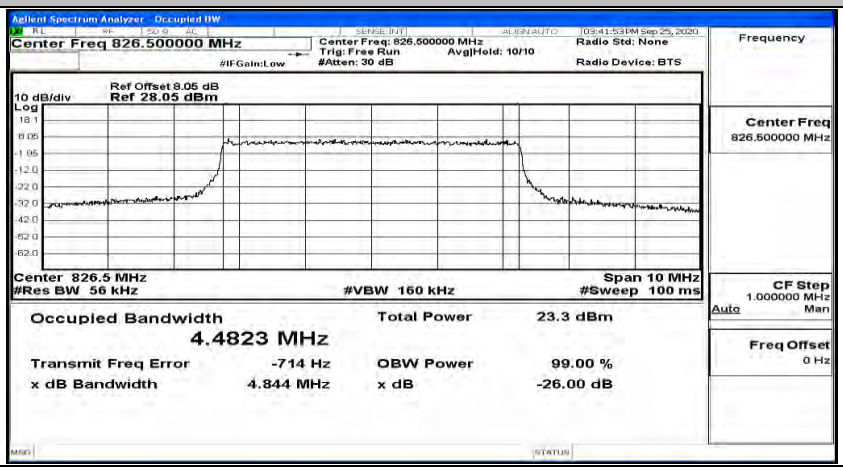
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



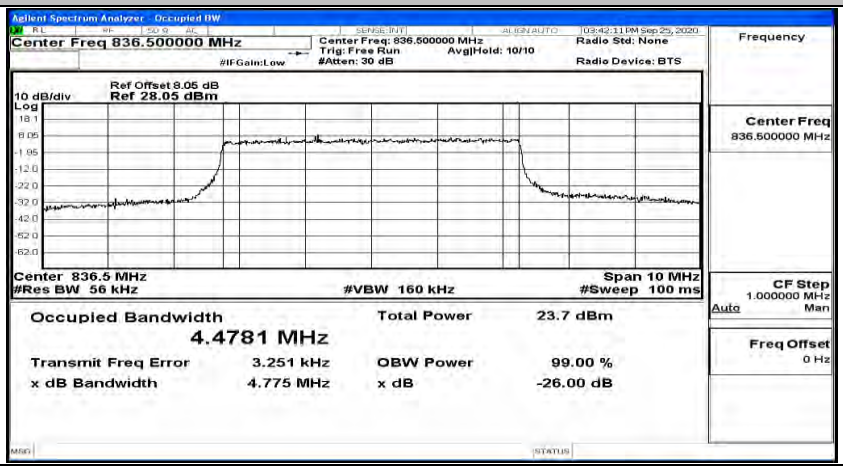
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



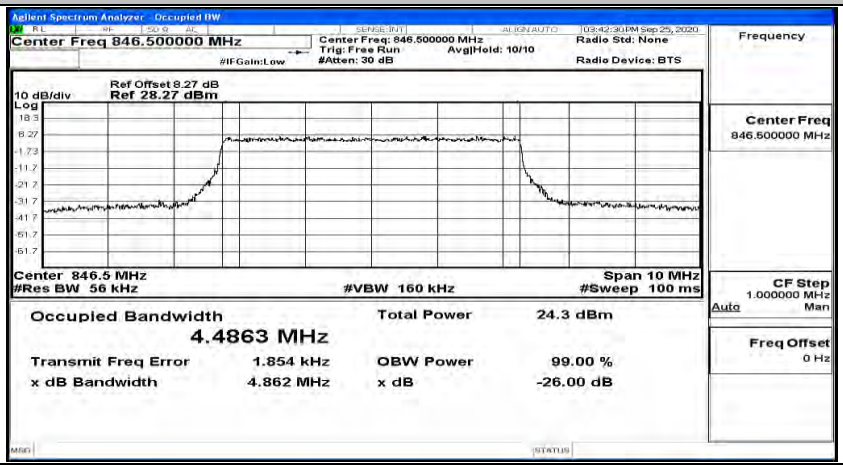
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



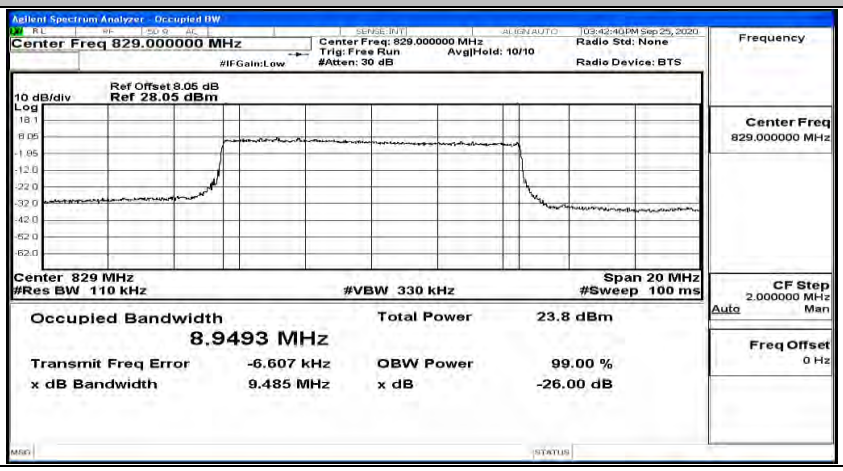
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



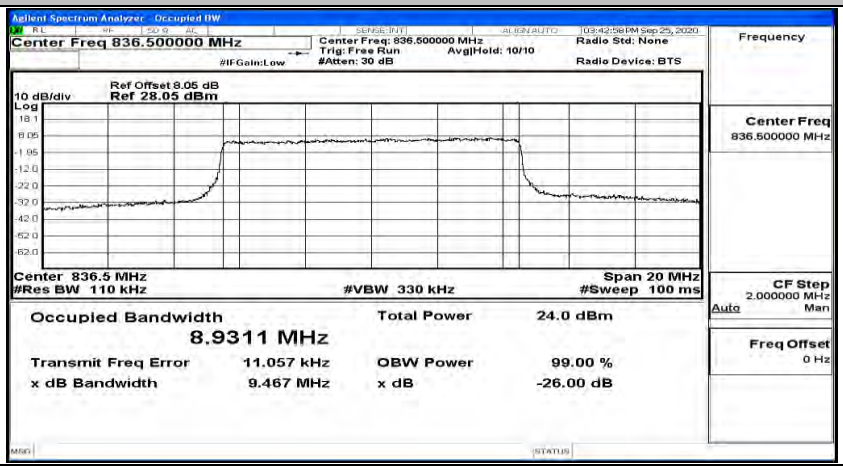
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



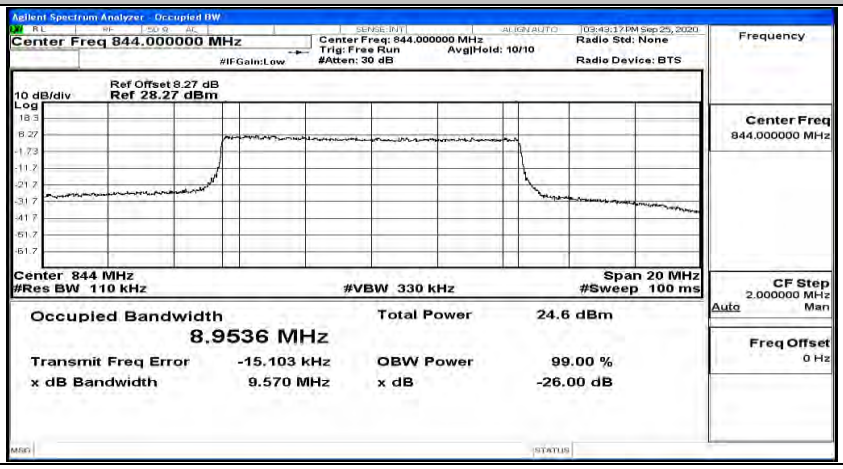
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



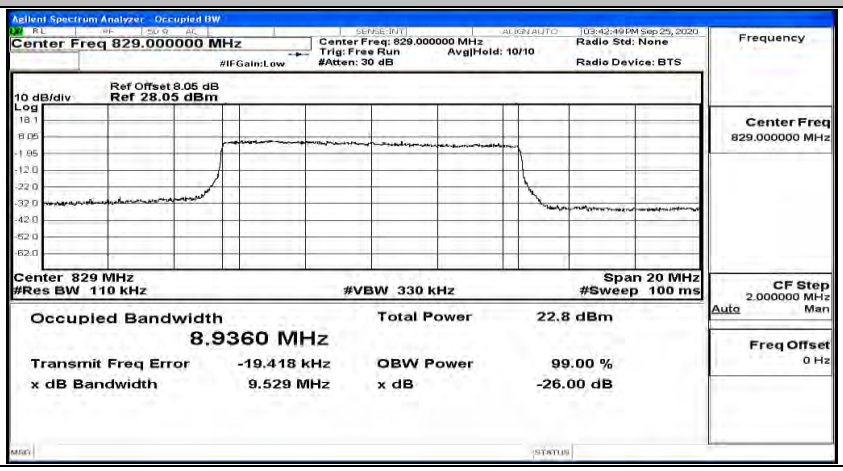
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



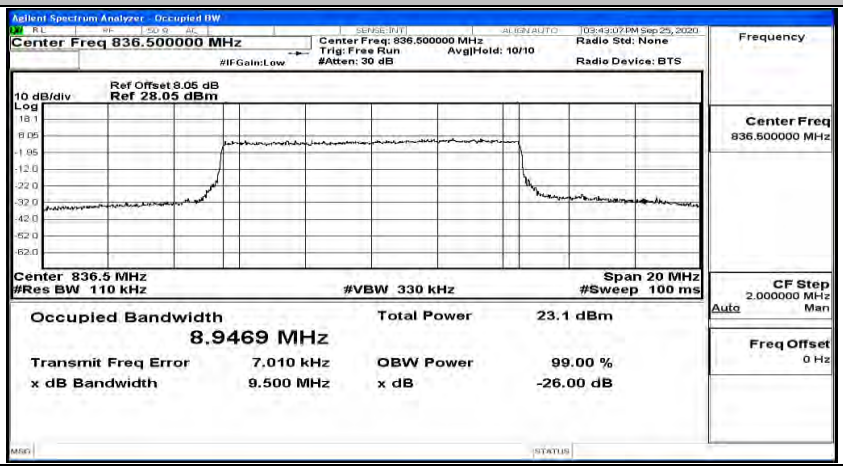
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



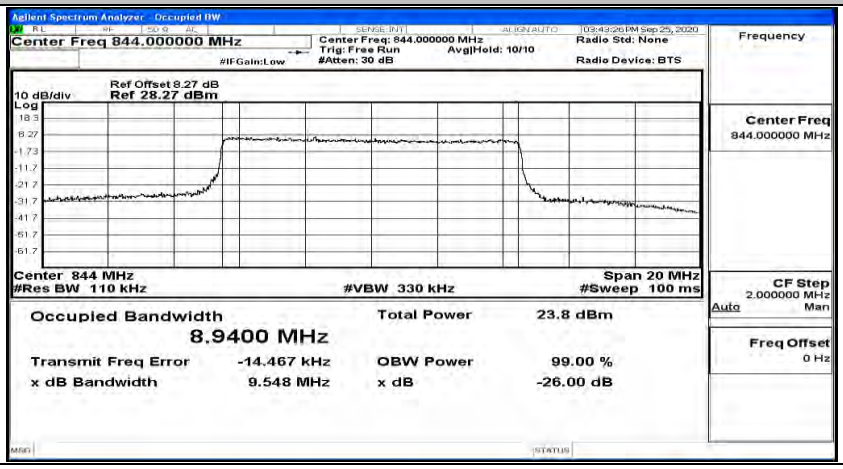
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM

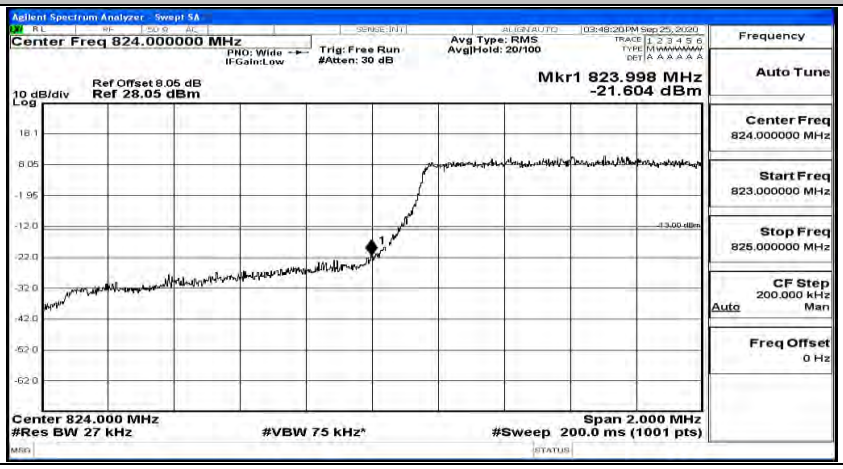


EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM

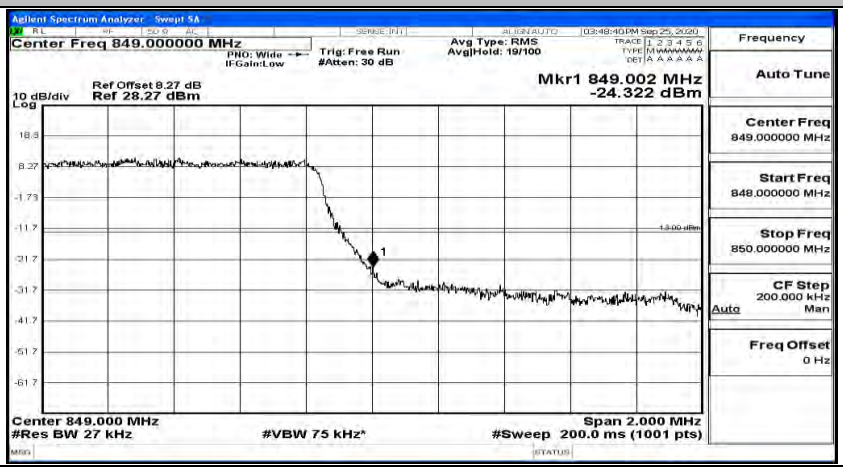


D.4 Band Edge

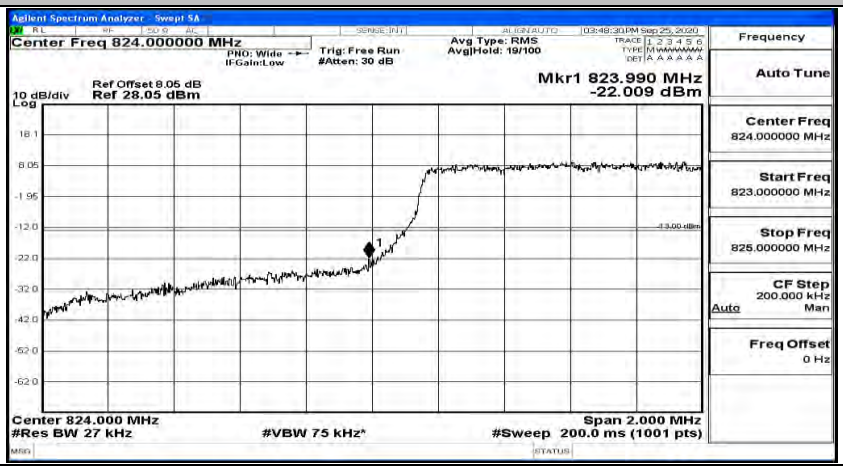
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK



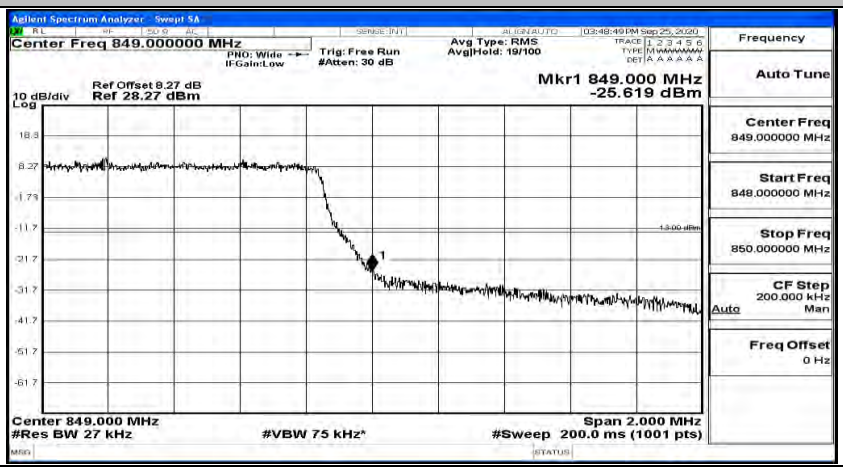
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK



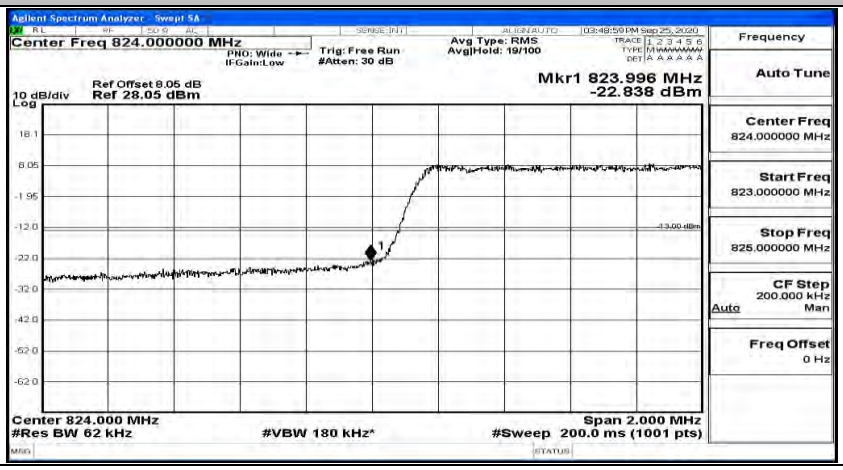
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM



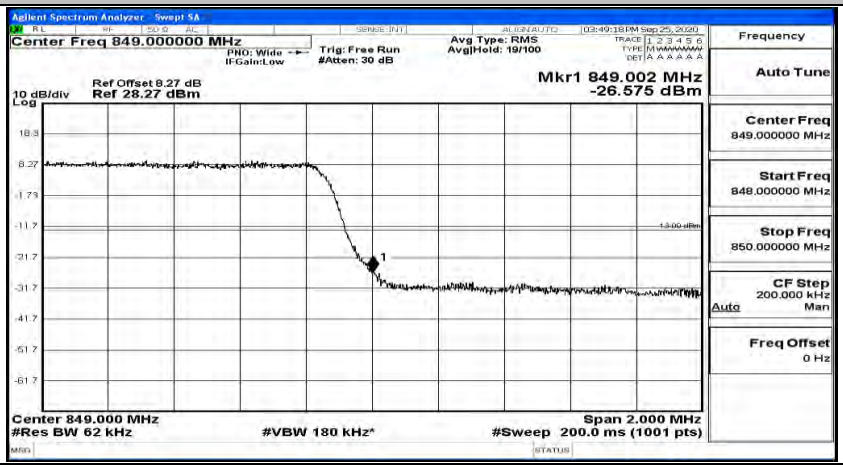
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM



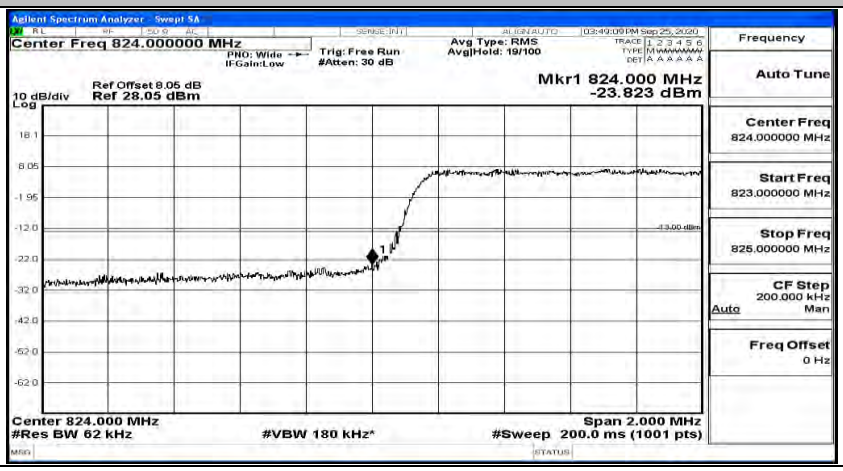
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK



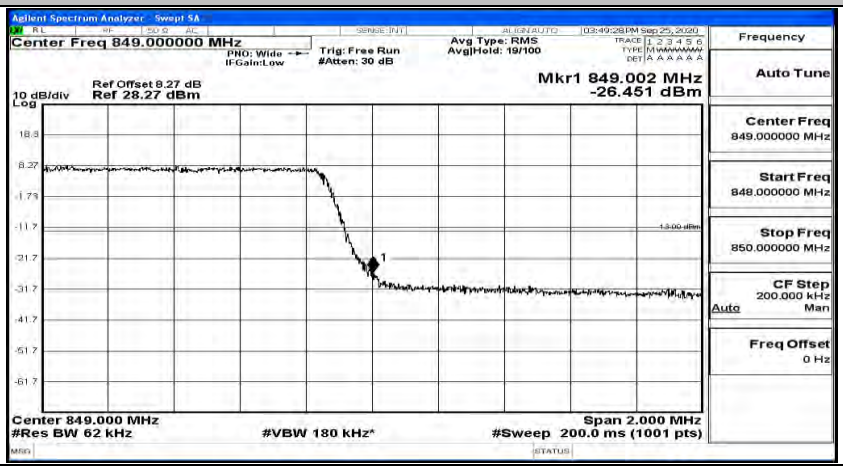
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK



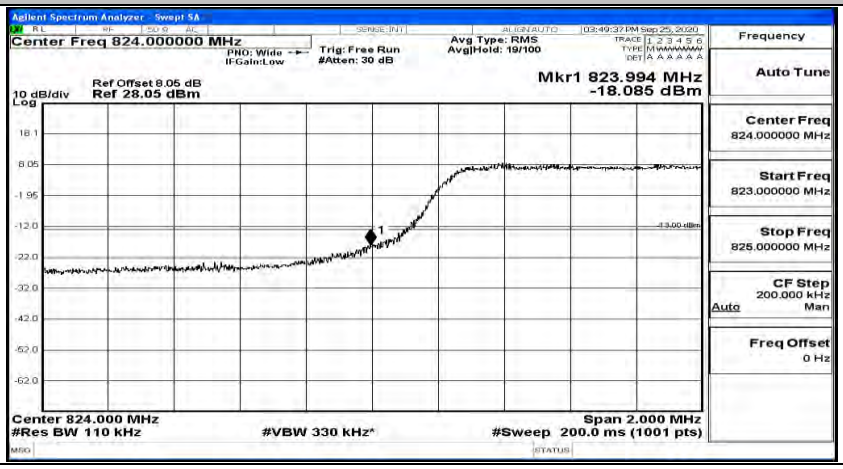
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM



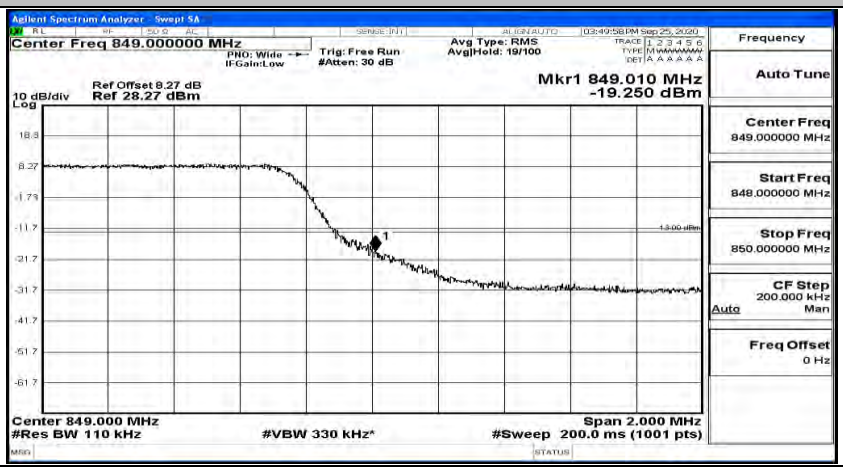
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM



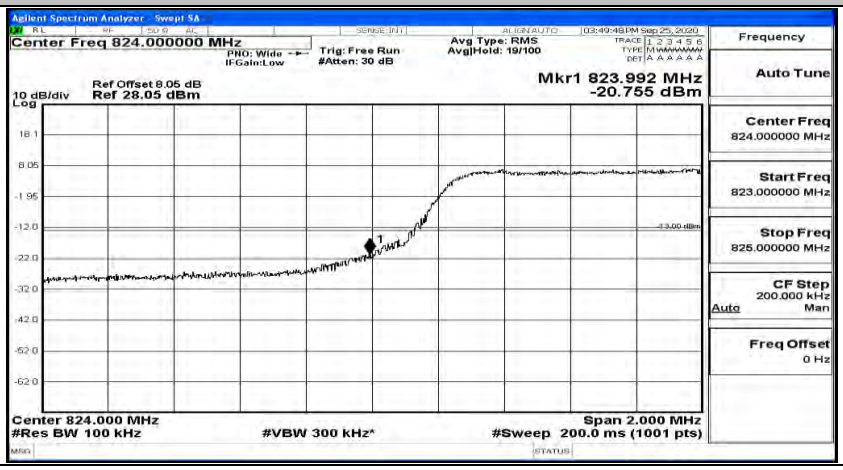
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



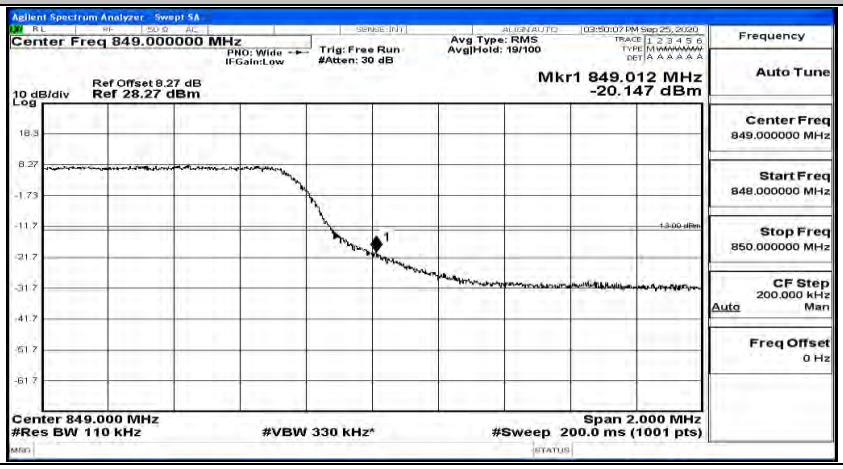
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



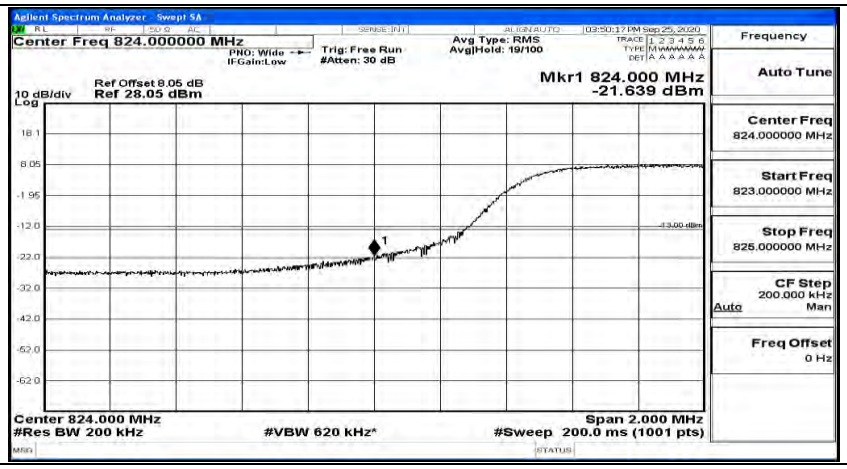
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



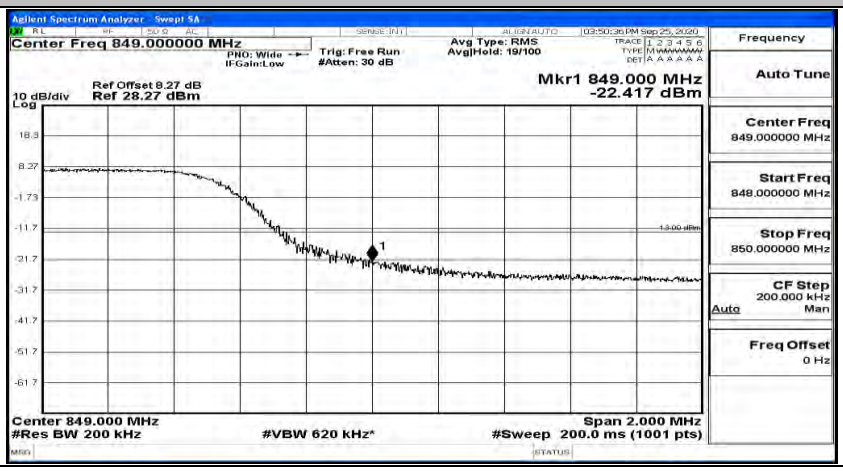
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



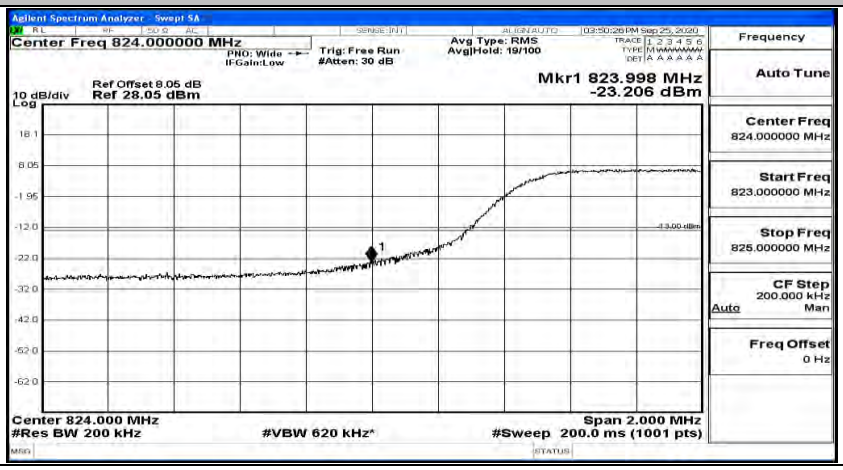
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK


Agilent Spectrum Analyzer - Swept SA
Center Freq 824.000000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold: 19/100
03:50:17 PM Sep 25, 2020
Mkr1 824.000 MHz
-21.639 dBm
Ref Offset 8.05 dB
10 dB/div
Log
Ref 28.05 dBm
18.1
8.05
-1.95
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-13.00 dBm
Center 824.000 MHz
#Res BW 200 kHz
#VBW 620 kHz*
Span 2.000 MHz
#Sweep 200.0 ms (1001 pts)
Frequency
Auto Tune
Center Freq
824.000000 MHz
Start Freq
823.000000 MHz
Stop Freq
825.000000 MHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

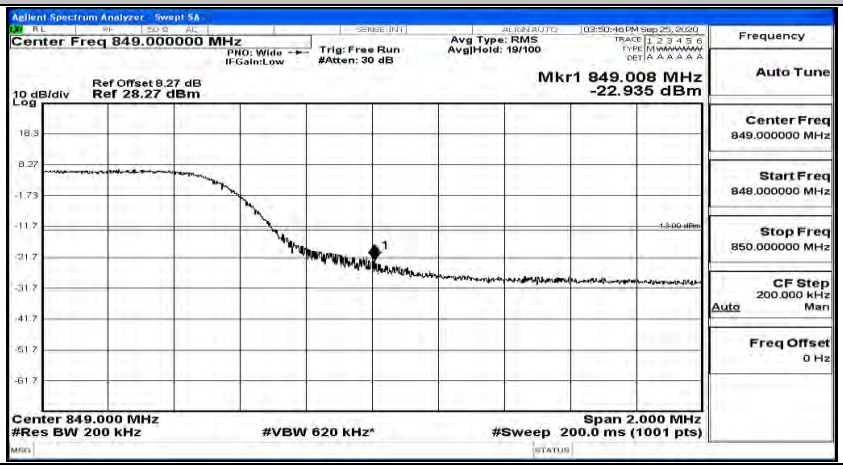
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



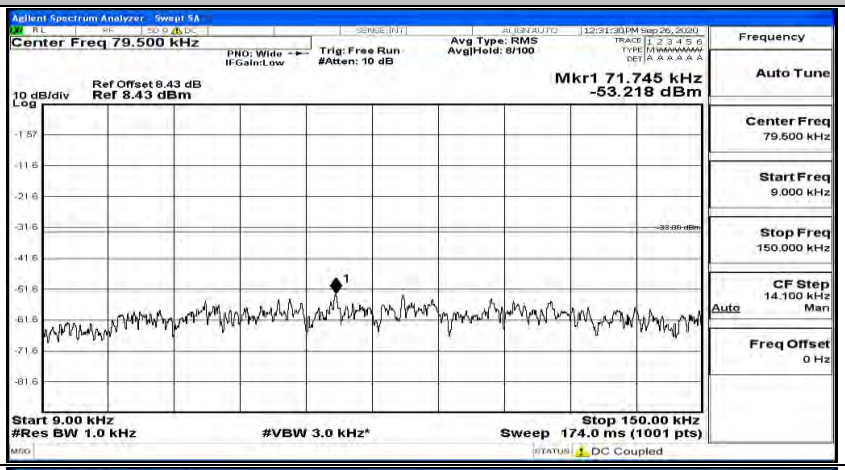
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM

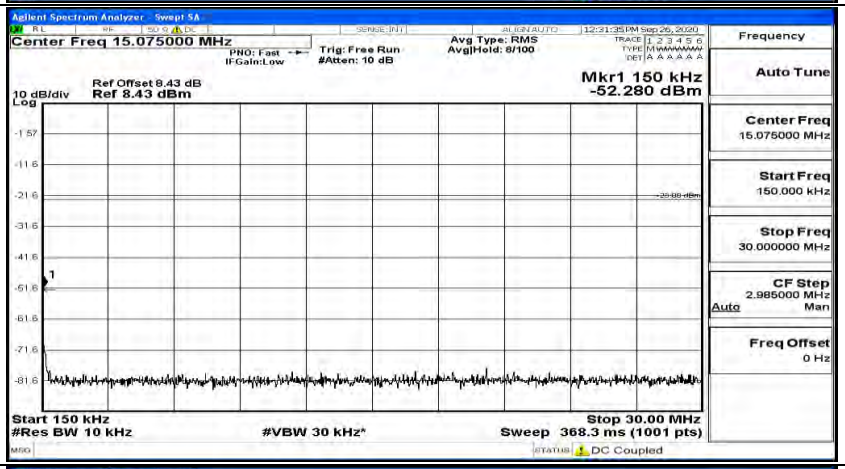


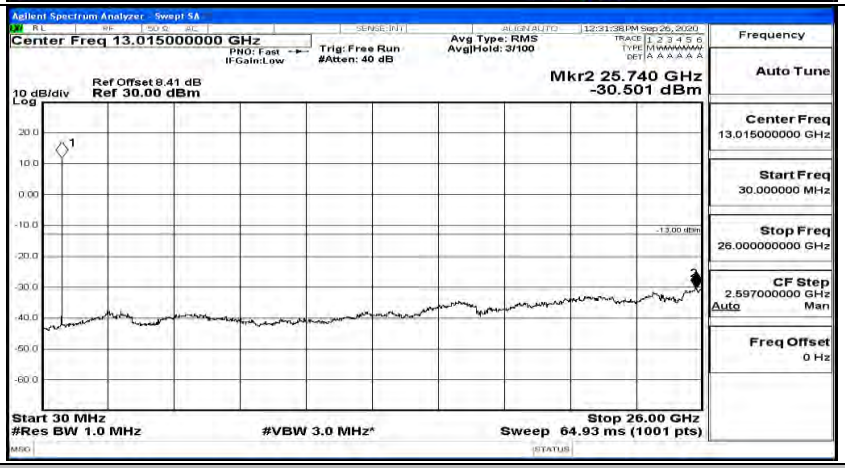
D.5 Conducted Spurious Emission

Channel Bandwidth: 1.4 MHz

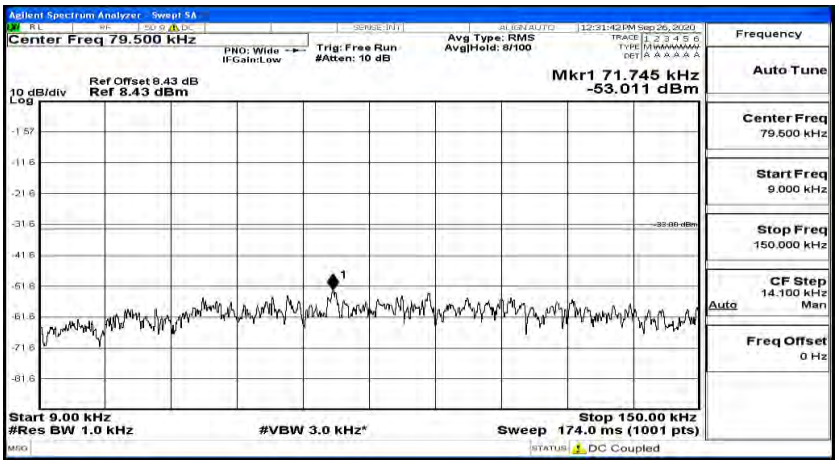
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#0

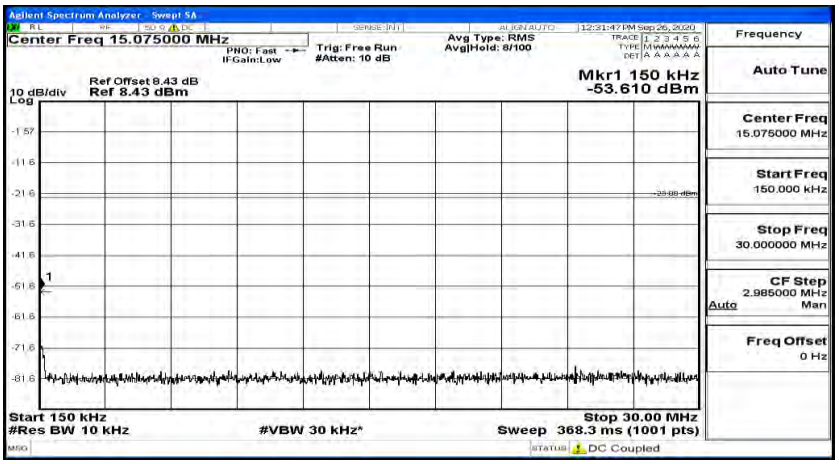




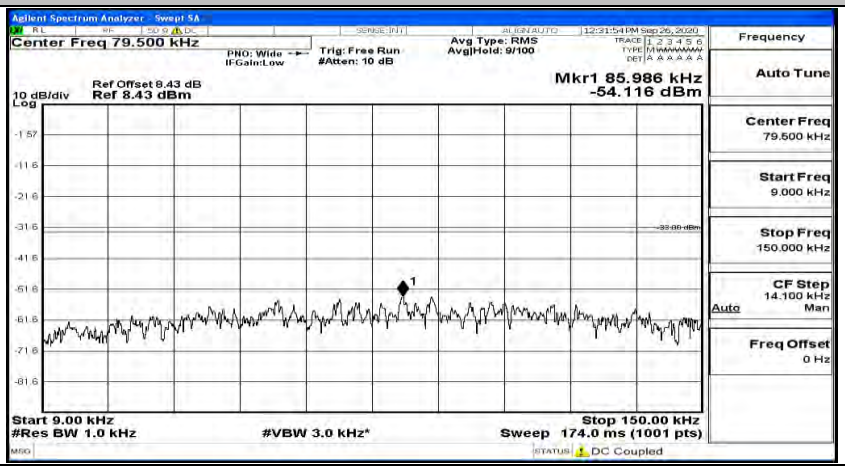


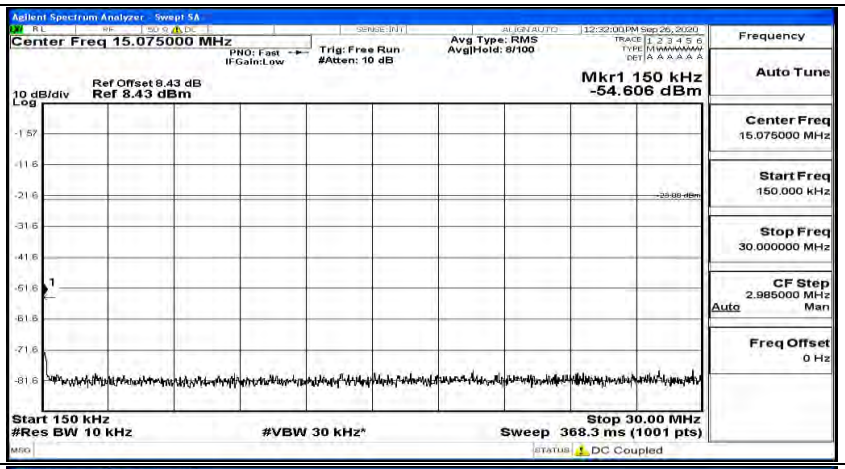
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#3



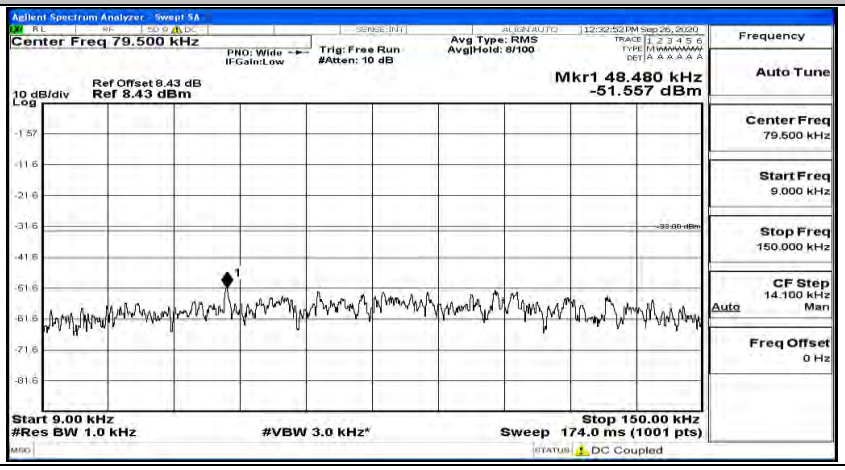


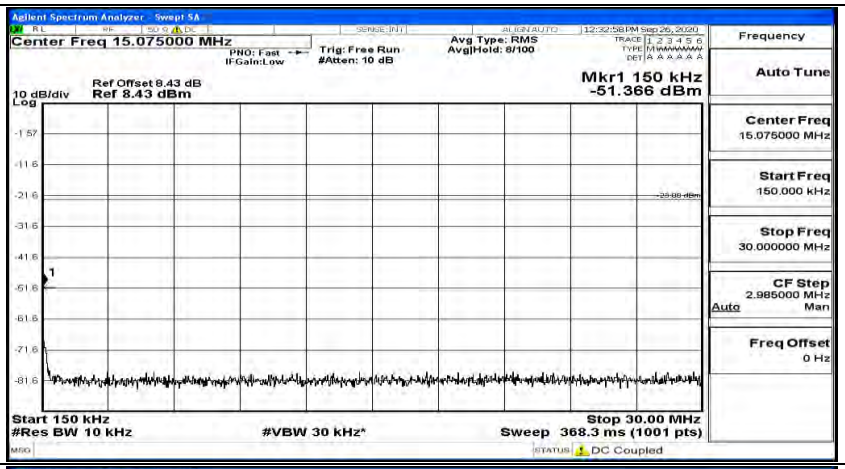
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#5



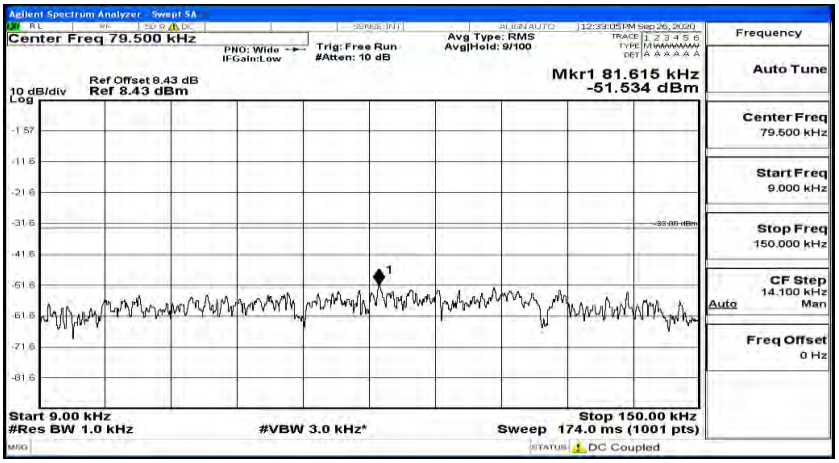


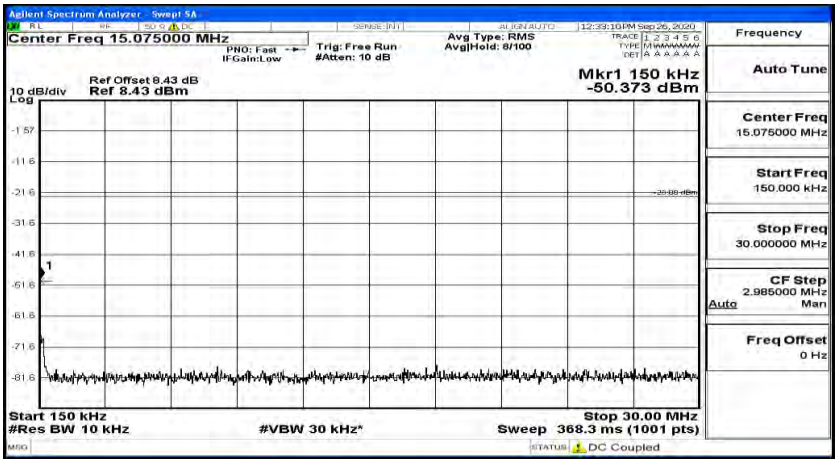
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#0



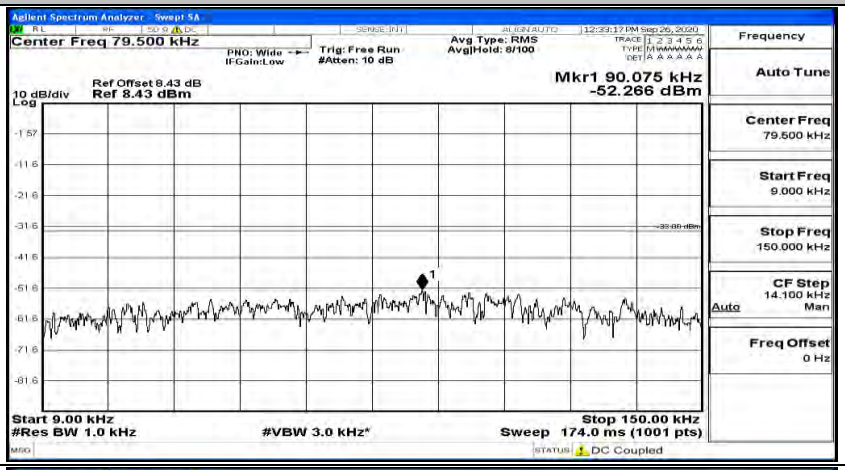


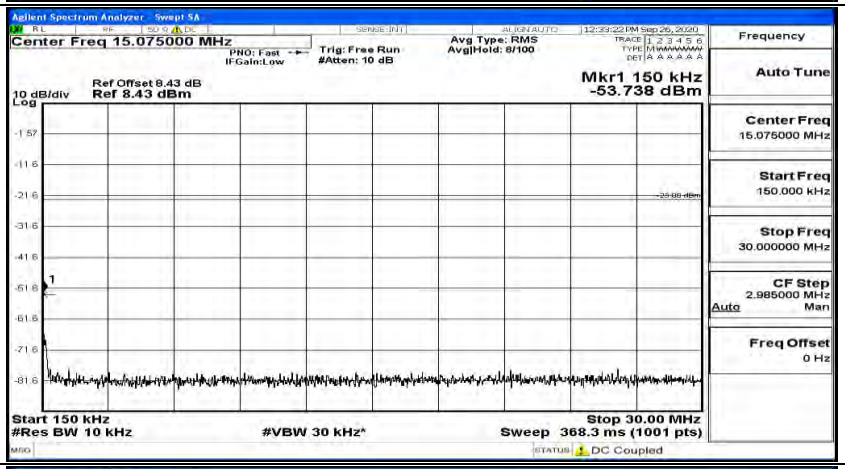
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#3



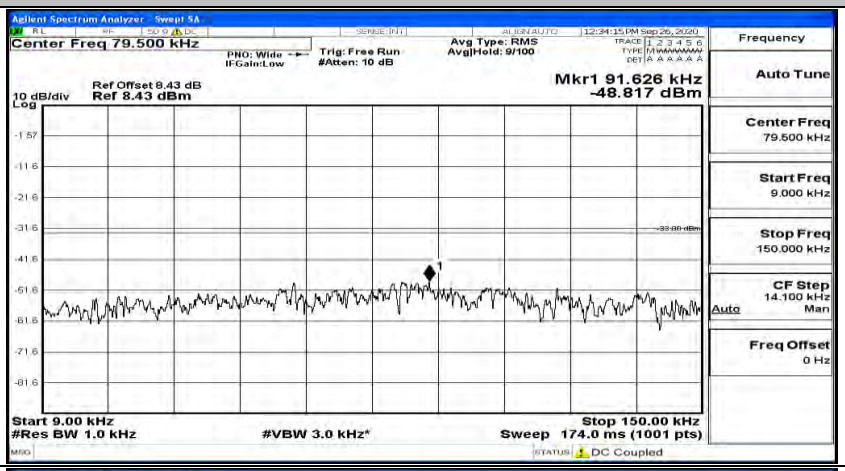


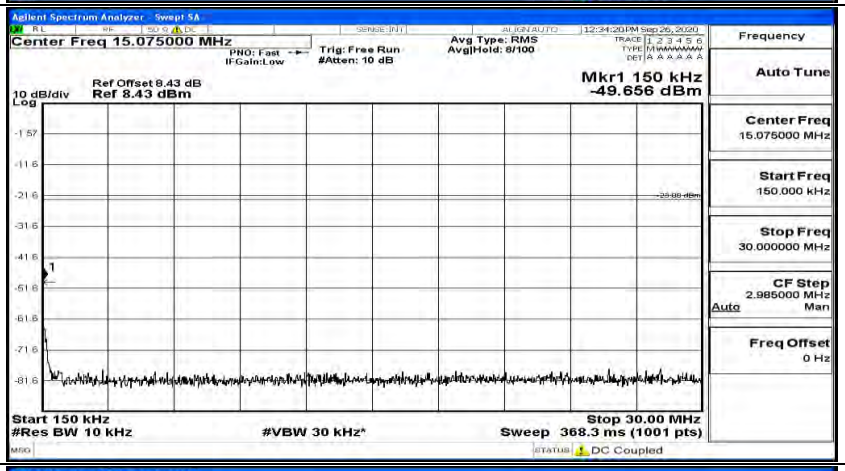
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#5



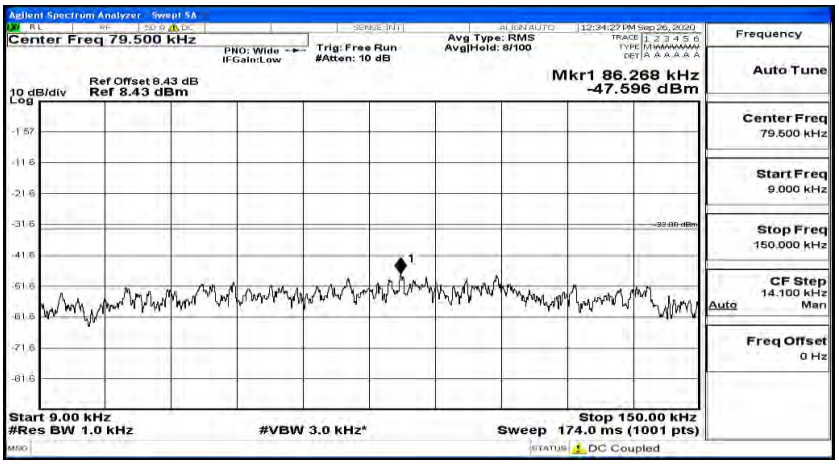


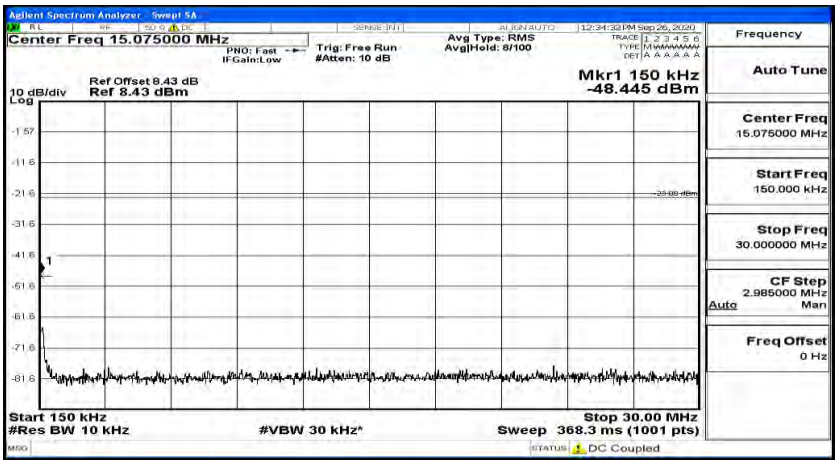
(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#0



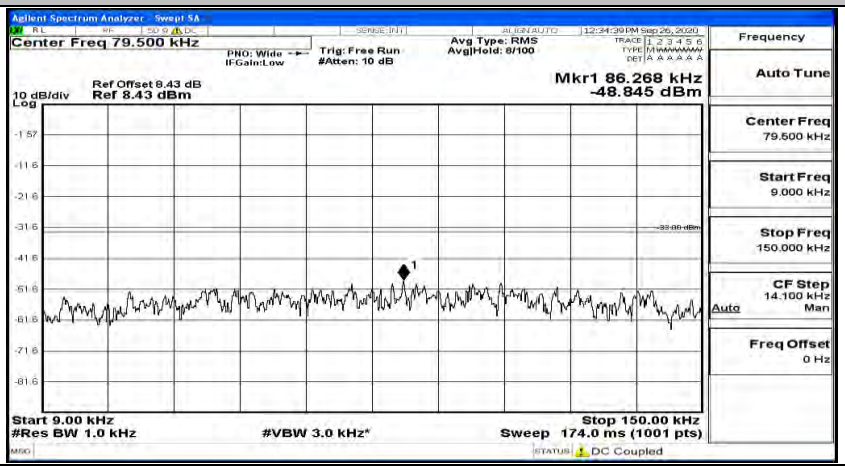


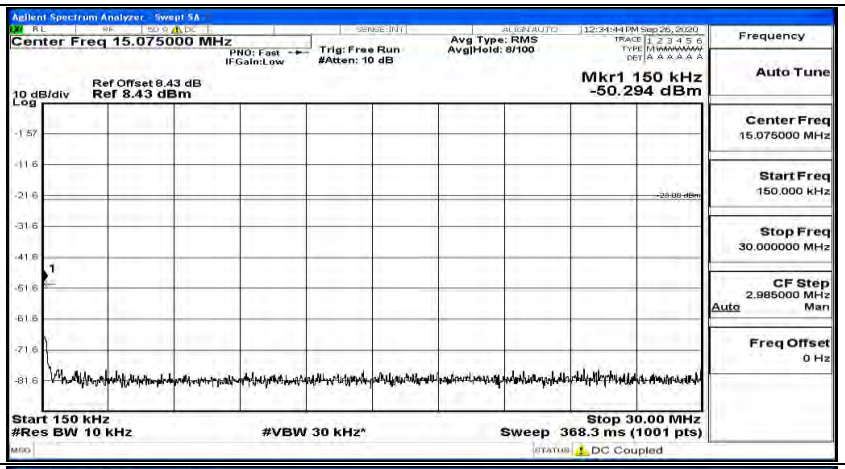
(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#3



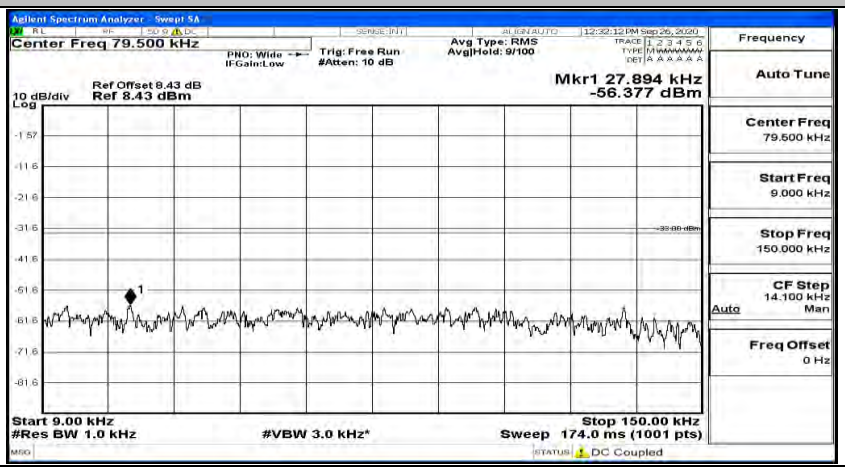


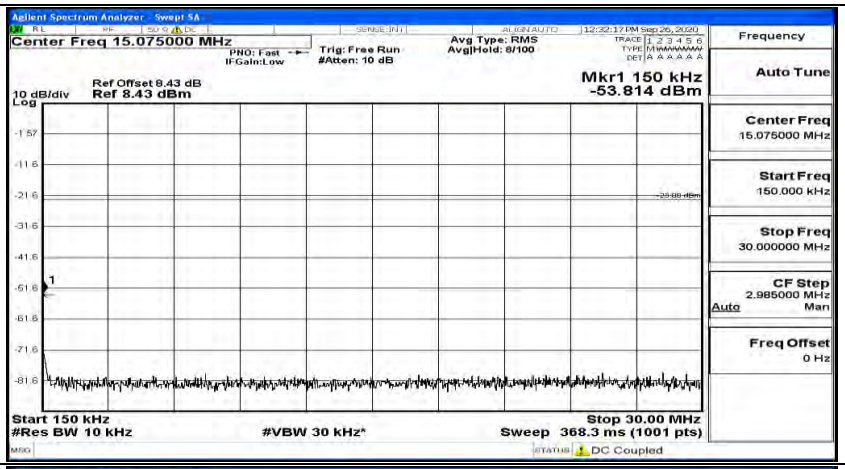
(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#5

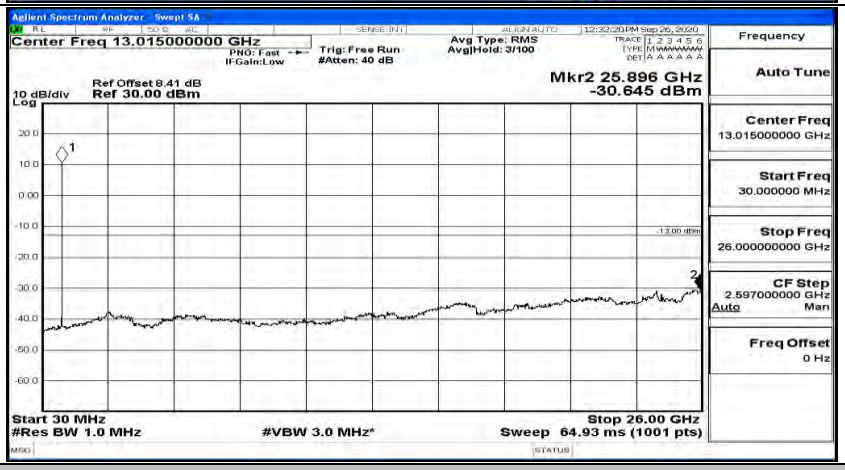




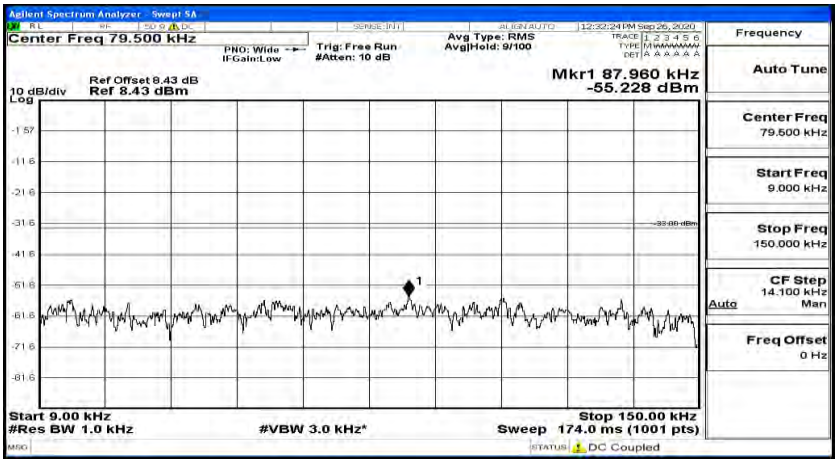
(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#0

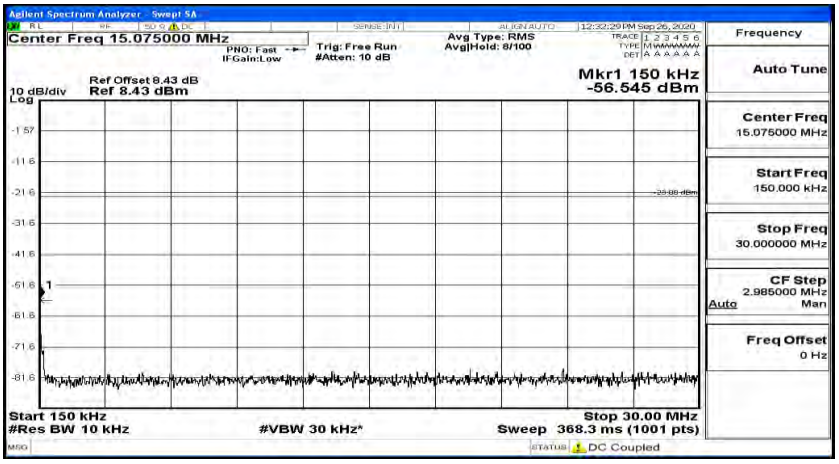




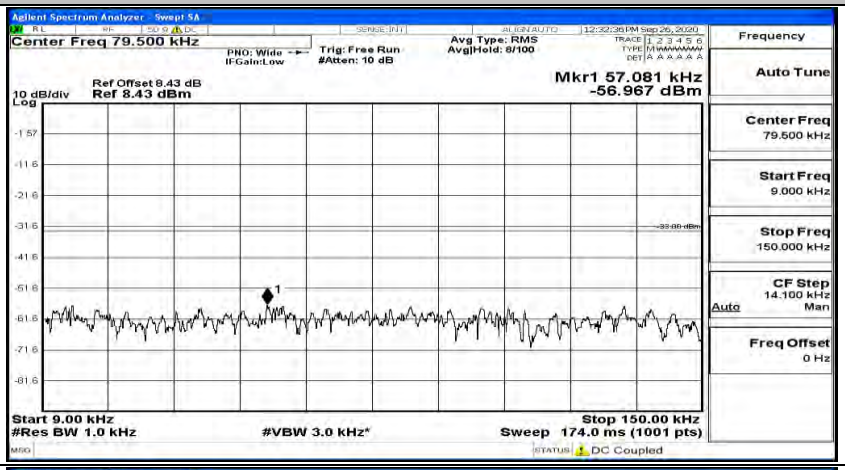


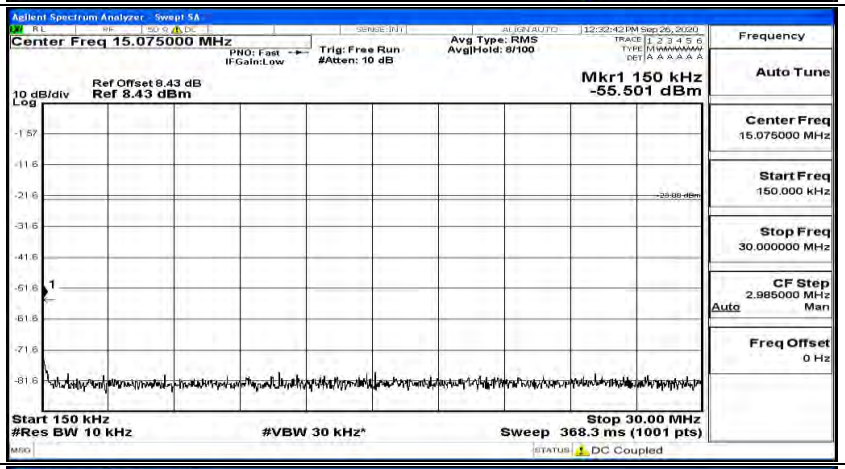
(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#3

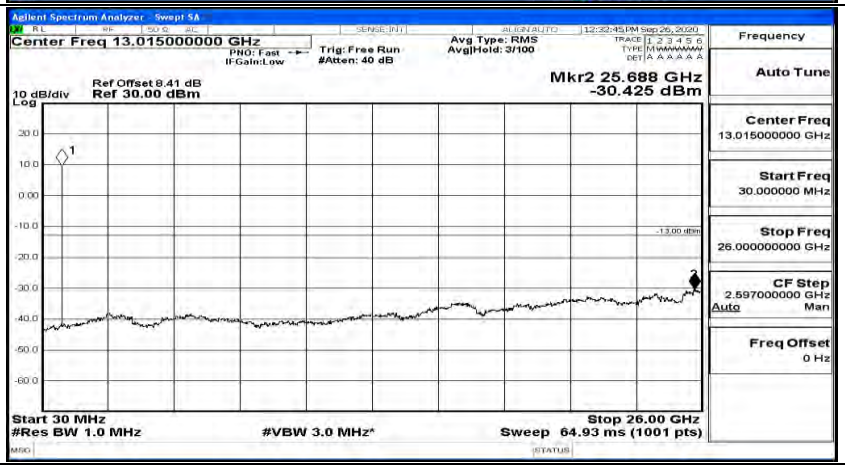




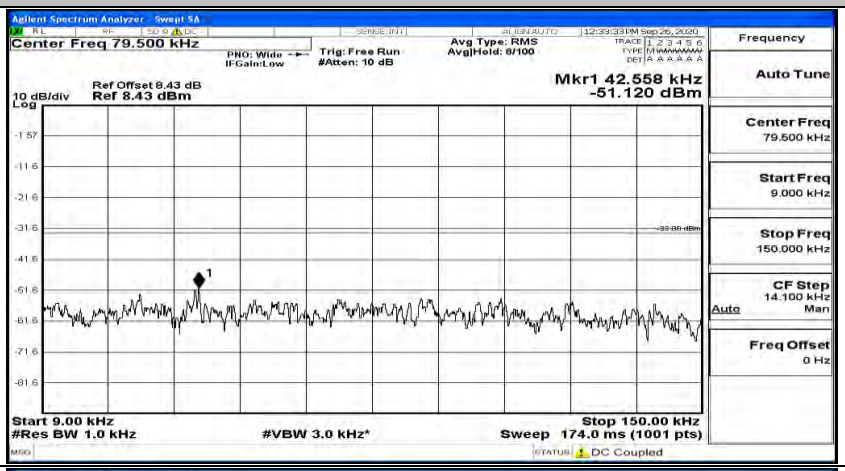
(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#5

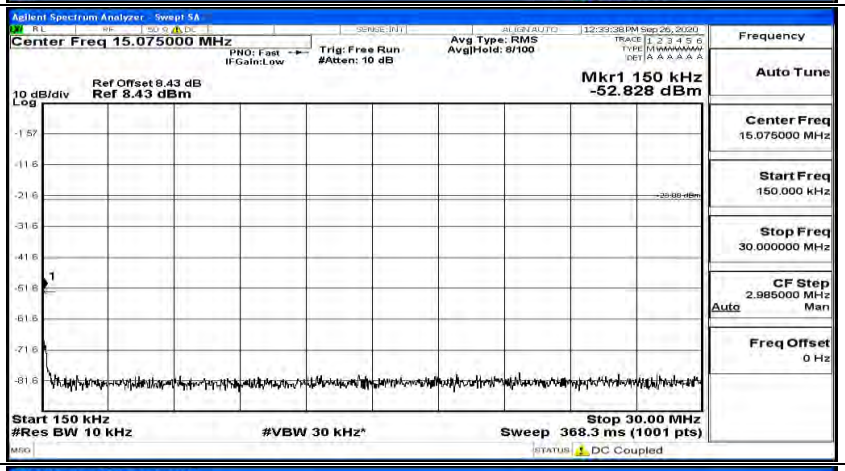




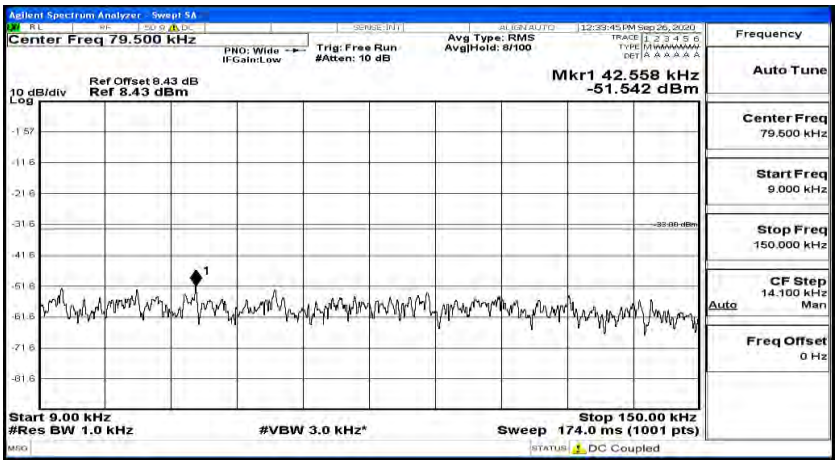


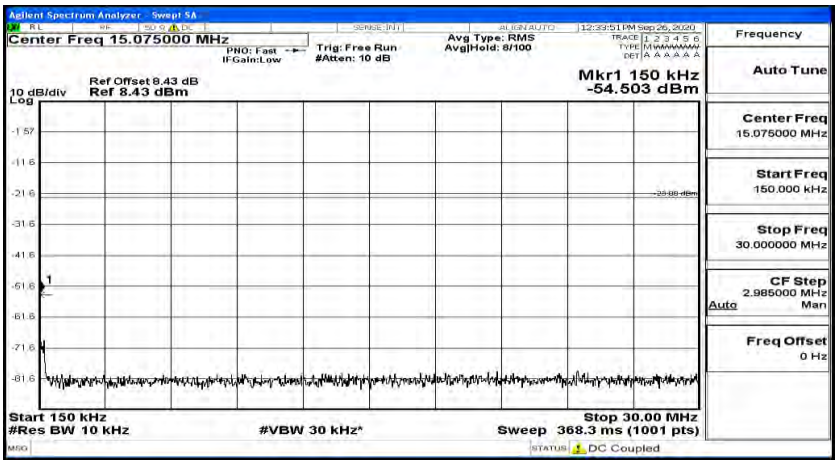
(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#0

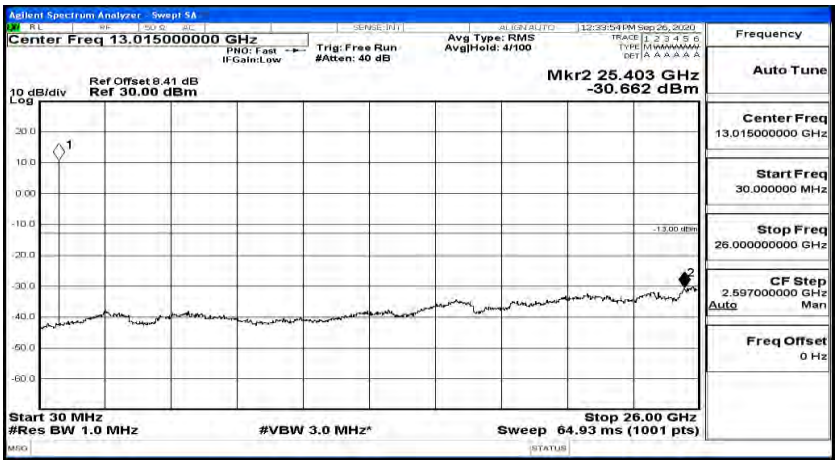




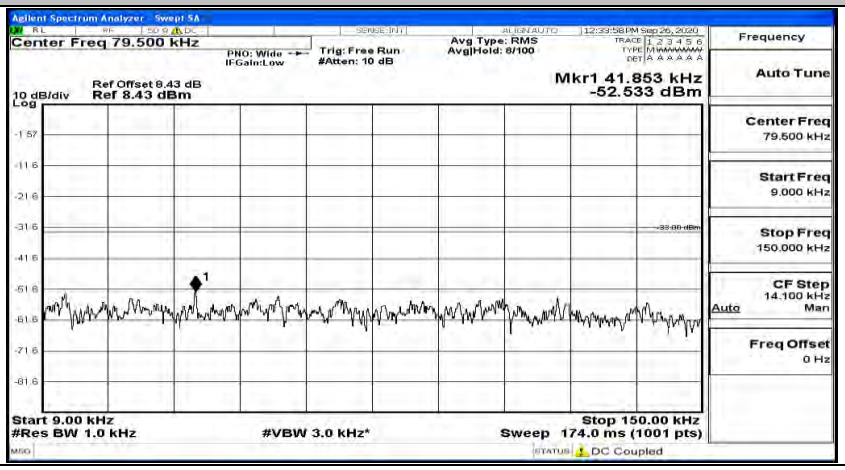
(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#3

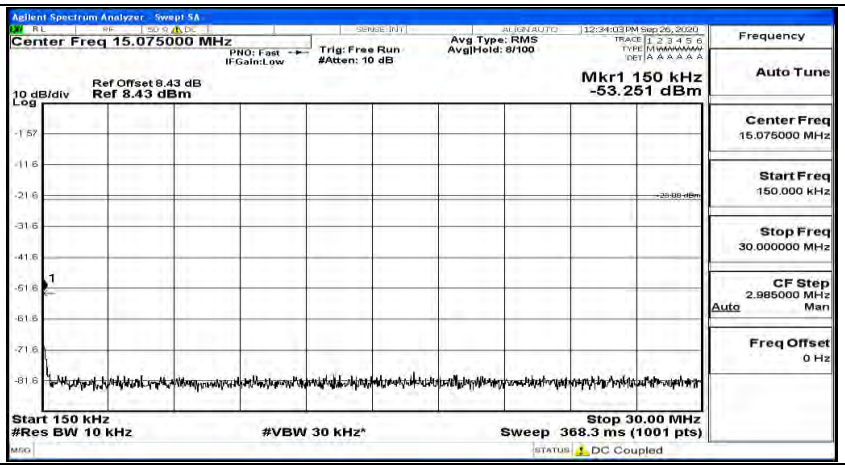


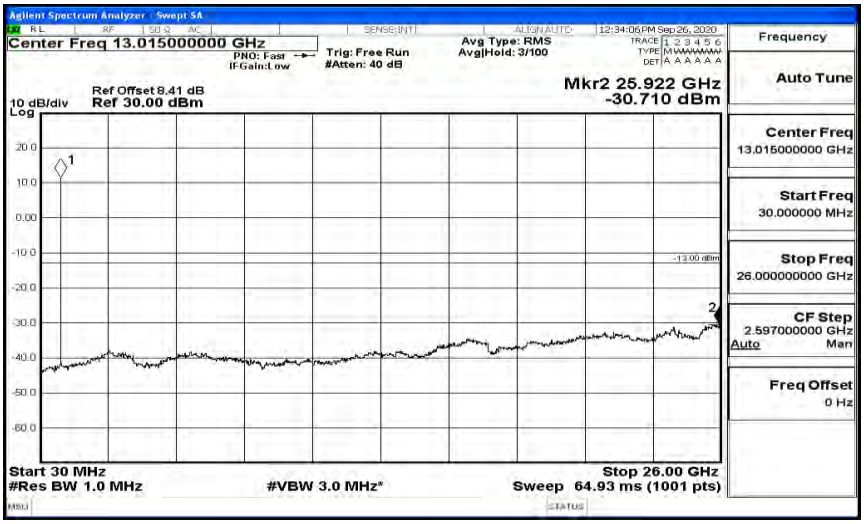




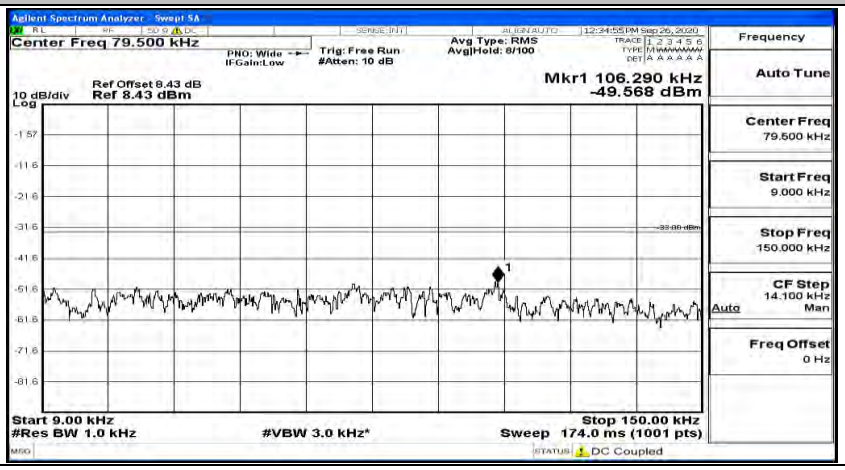
(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#5

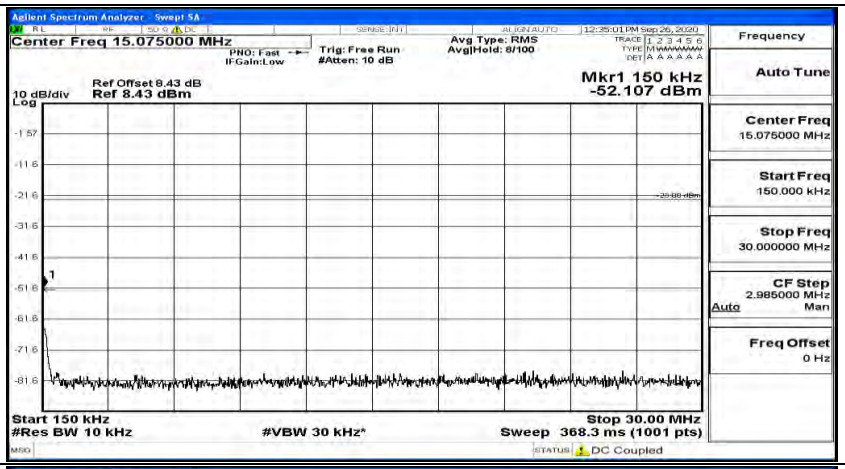




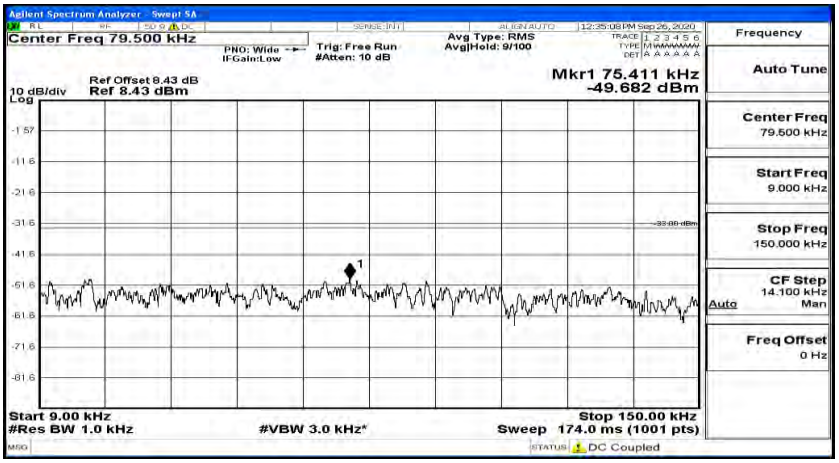


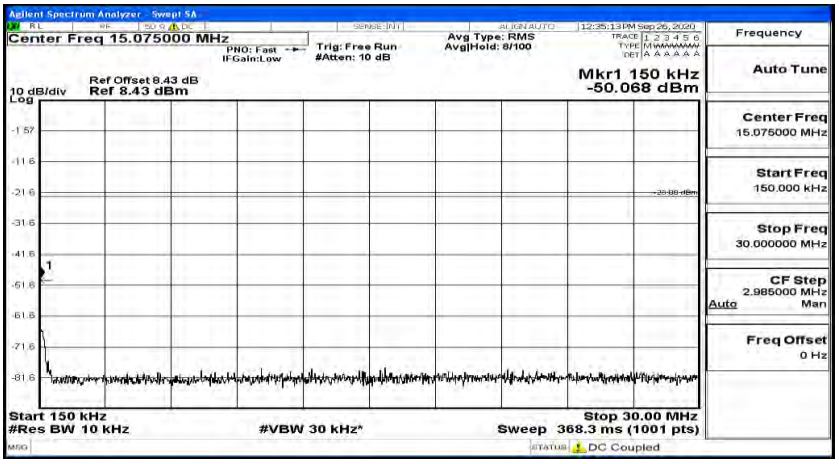
(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#0



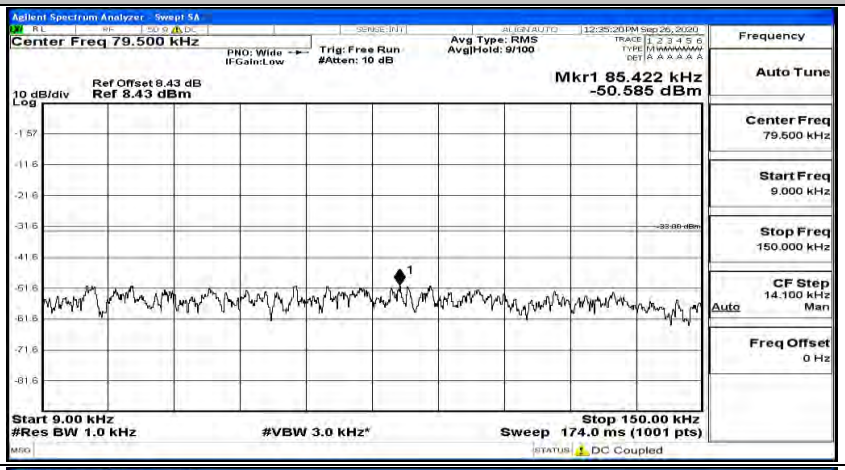


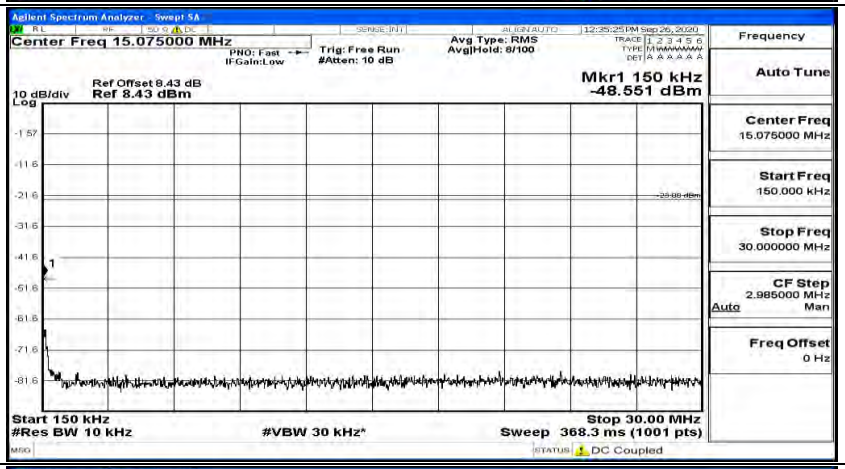
(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#3

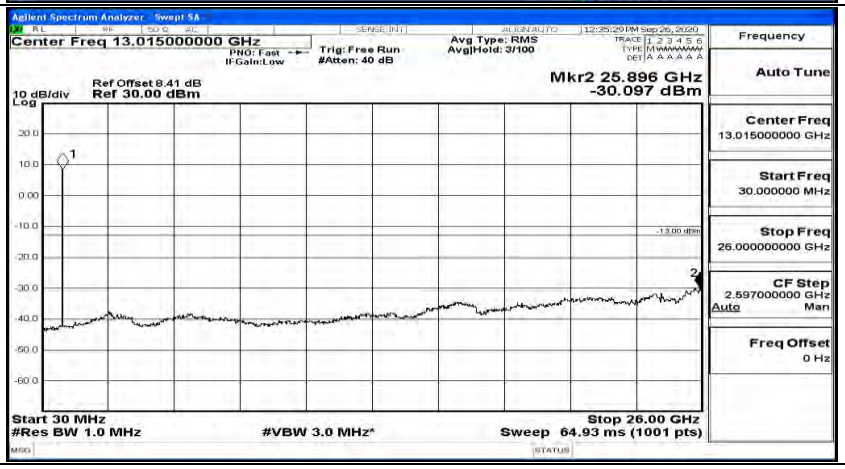




(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_1RB#5

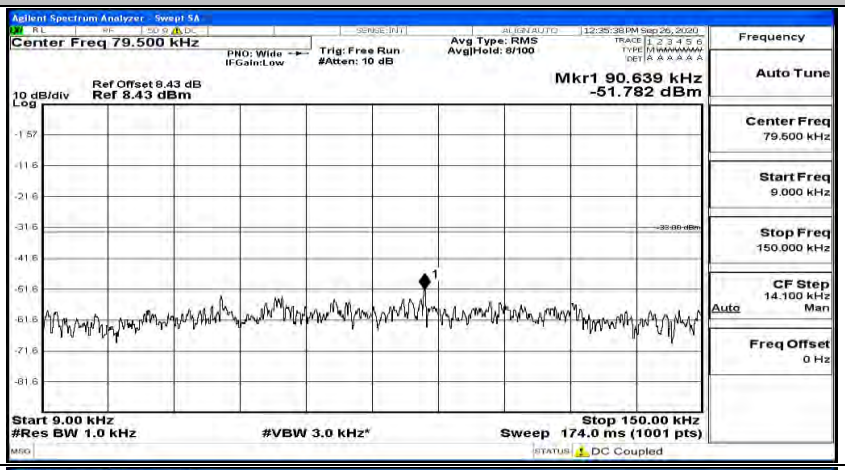


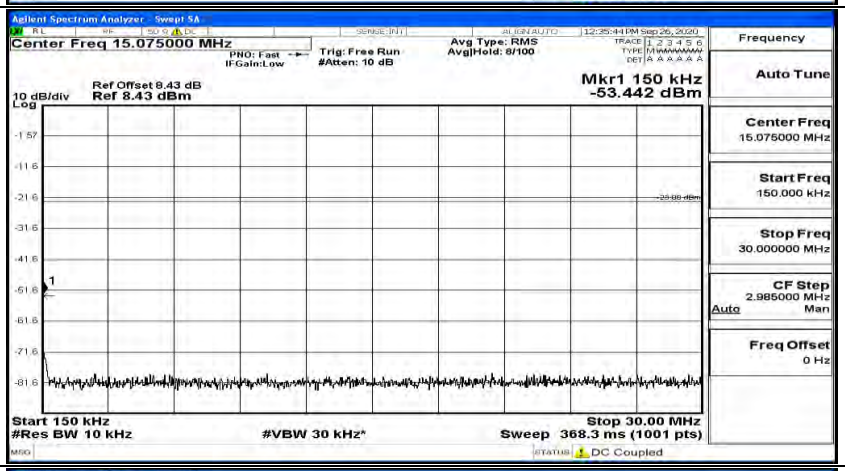




Channel Bandwidth: 3 MHz

(Channel Bandwidth: 3 MHz)_LCH_QPSK_1RB#0





(Channel Bandwidth: 3 MHz)_LCH_QPSK_1RB#7