

Appendix A: Test Data for E-UTRA Band 41

Product Name: GNSS RECEIVER

Trade Mark: SOUTH, KOLIDA, SANDING, RUIDE, TIANYU

Test Model: K5

Environmental Conditions

Temperature:	23.2 ° C
Relative Humidity:	53.4%
ATM Pressure:	100.0 kPa
Test Engineer:	Mina.Xu
Supervised by:	Tom.Liu

A.1 Conducted Output Power

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	22.51	22.51	PASS
		1	12	22.69	22.46	PASS
		1	24	22.77	22.39	PASS
		12	0	22.75	22.37	PASS
		12	6	22.80	22.42	PASS
		12	13	22.70	22.36	PASS
		25	0	22.60	22.24	PASS
	MCH	1	0	20.01	19.13	PASS
		1	12	20.43	19.52	PASS
		1	24	20.26	19.44	PASS
		12	0	19.19	18.20	PASS
		12	6	19.29	18.31	PASS
		12	13	19.32	18.33	PASS
		25	0	19.26	18.32	PASS
	HCH	1	0	20.61	19.77	PASS
		1	12	20.76	19.90	PASS
		1	24	20.31	19.48	PASS
		12	0	19.72	18.72	PASS
		12	6	19.67	18.71	PASS
		12	13	19.51	18.53	PASS
		25	0	19.57	18.67	PASS

Conducted Output Power Test Result (Channel Bandwidth: 10 MHz)

Modulation	Channel	RB Configuration		Average Power [dBm] QPSK	Average Power [dBm] 16QAM	Verdict
		Size	Offset			
QPSK / 16QAM	LCH	1	0	22.49	22.30	PASS
		1	24	22.31	22.21	PASS
		1	49	21.71	21.69	PASS
		25	0	22.51	22.15	PASS
		25	12	22.32	22.02	PASS
		25	25	21.96	21.72	PASS
		50	0	22.18	21.93	PASS
	MCH	1	0	19.94	19.25	PASS
		1	24	20.18	19.47	PASS
		1	49	20.48	19.78	PASS
		25	0	19.13	18.16	PASS
		25	12	19.25	18.30	PASS
		25	25	19.41	18.40	PASS
		50	0	19.28	18.33	PASS
	HCH	1	0	21.09	20.42	PASS
		1	24	20.83	20.08	PASS
		1	49	20.40	19.71	PASS
		25	0	20.04	19.05	PASS
		25	12	19.82	18.88	PASS
		25	25	19.60	18.60	PASS
		50	0	19.74	18.84	PASS

Conducted Output Power Test Result (Channel Bandwidth: 15 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	22.37	22.19	PASS
		1	37	21.77	21.73	PASS
		1	74	21.27	21.20	PASS
		37	0	22.20	21.85	PASS
		37	18	21.79	21.53	PASS
		37	38	21.38	21.15	PASS
		75	0	21.75	21.22	PASS
	MCH	1	0	19.80	19.11	PASS
		1	37	20.30	19.63	PASS
		1	74	20.55	19.93	PASS
		37	0	19.20	18.14	PASS
		37	18	19.34	18.29	PASS
		37	38	19.54	18.49	PASS
		75	0	19.37	18.35	PASS
	HCH	1	0	21.22	20.49	PASS
		1	37	21.16	20.39	PASS
		1	74	20.29	19.59	PASS
		37	0	20.35	19.31	PASS
		37	18	20.16	19.09	PASS
		37	38	19.84	18.76	PASS
		75	0	20.12	19.08	PASS

Conducted Output Power Test Result (Channel Bandwidth: 20 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	22.42	22.15	PASS
		1	49	21.61	21.55	PASS
		1	99	21.41	21.39	PASS
		50	0	21.97	21.68	PASS
		50	25	21.41	21.14	PASS
		50	50	21.20	20.93	PASS
		100	0	21.65	21.08	PASS
	MCH	1	0	19.73	18.99	PASS
		1	49	20.20	19.53	PASS
		1	99	20.54	19.93	PASS
		50	0	19.02	17.99	PASS
		50	25	19.32	18.31	PASS
		50	50	19.51	18.54	PASS
		100	0	19.28	18.29	PASS
	HCH	1	0	21.01	20.34	PASS
		1	49	21.27	20.54	PASS
		1	99	20.18	19.55	PASS
		50	0	20.23	19.32	PASS
		50	25	20.15	19.21	PASS
		50	50	19.74	18.83	PASS
		100	0	20.00	19.03	PASS

A.2 Peak-to-Average Ratio

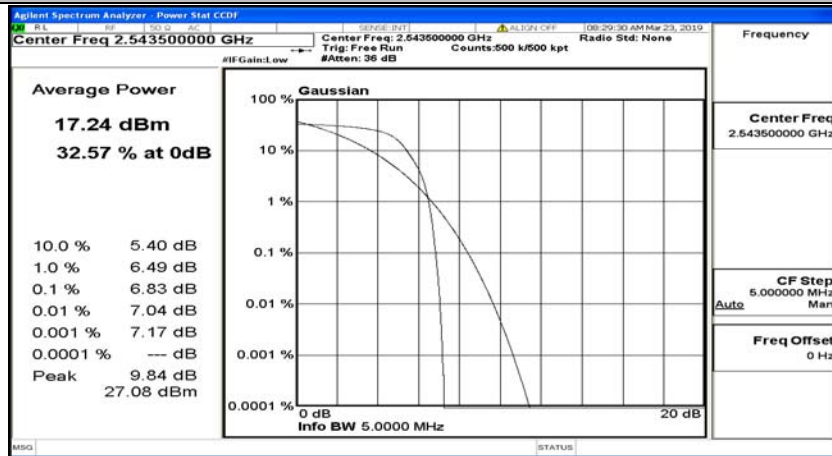
Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	6.83	<13	PASS
	MCH	9.63	<13	PASS
	HCH	9.17	<13	PASS
16QAM	LCH	9.33	<13	PASS
	MCH	9.82	<13	PASS
	HCH	11.21	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	7.15	<13	PASS
	MCH	10.71	<13	PASS
	HCH	8.23	<13	PASS
16QAM	LCH	7.69	<13	PASS
	MCH	9.87	<13	PASS
	HCH	10.09	<13	PASS

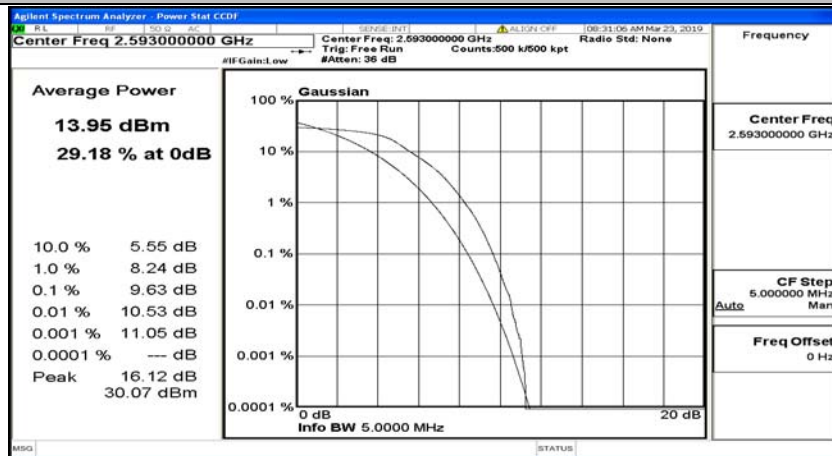
Peak-to Average Ratio Test Result (Channel Bandwidth: 15 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	7.72	<13	PASS
	MCH	8.83	<13	PASS
	HCH	9.44	<13	PASS
16QAM	LCH	10.15	<13	PASS
	MCH	10.65	<13	PASS
	HCH	11.24	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 20 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	8.86	<13	PASS
	MCH	9.13	<13	PASS
	HCH	10.83	<13	PASS
16QAM	LCH	9.42	<13	PASS
	MCH	10.36	<13	PASS
	HCH	8.77	<13	PASS

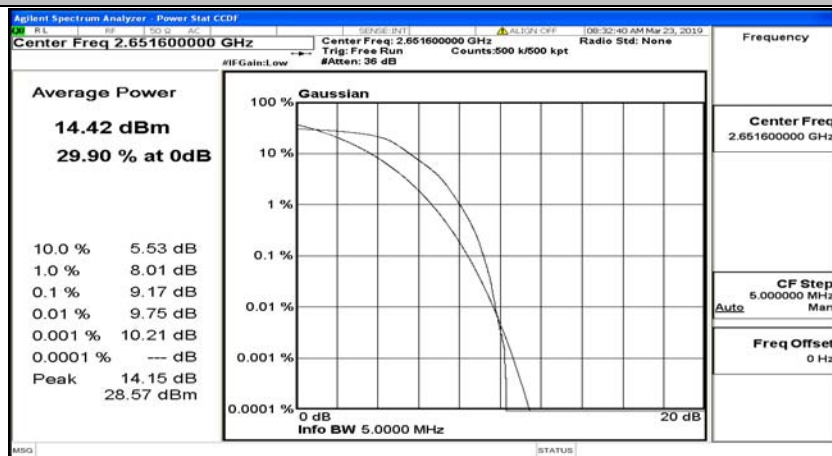
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



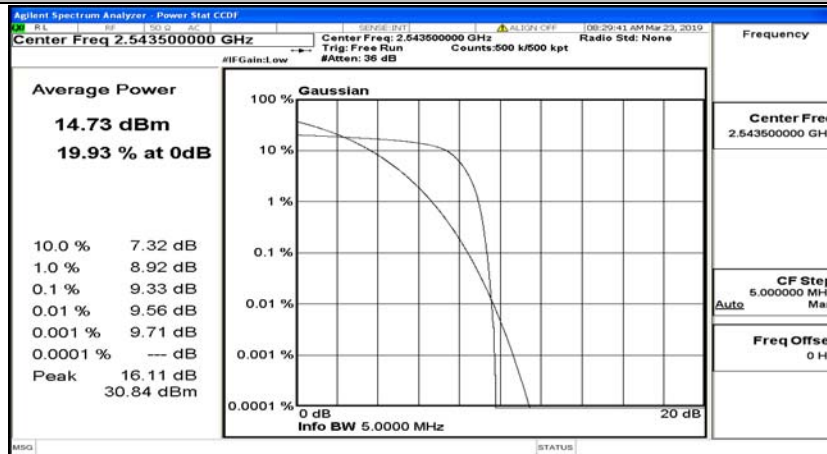
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



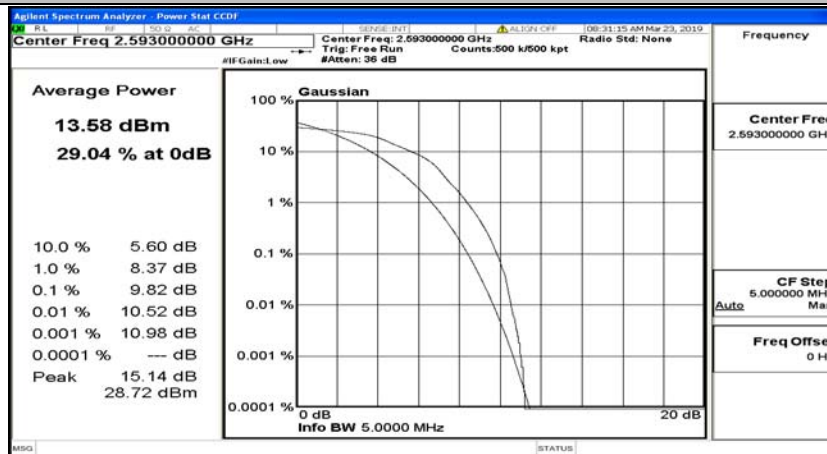
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



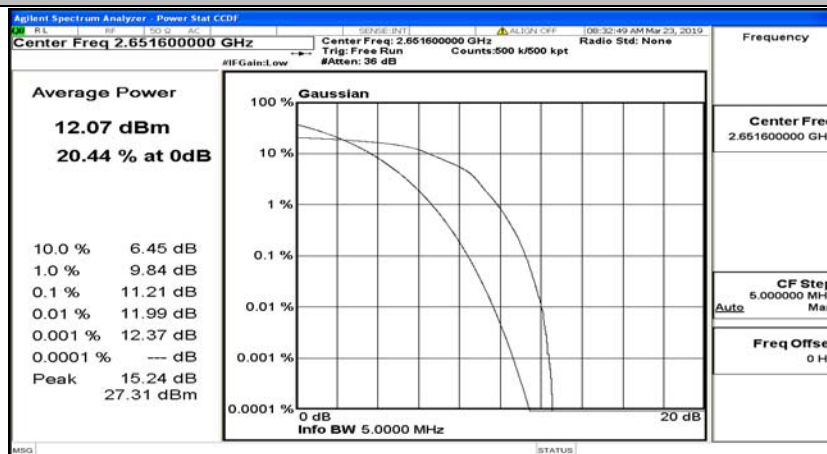
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



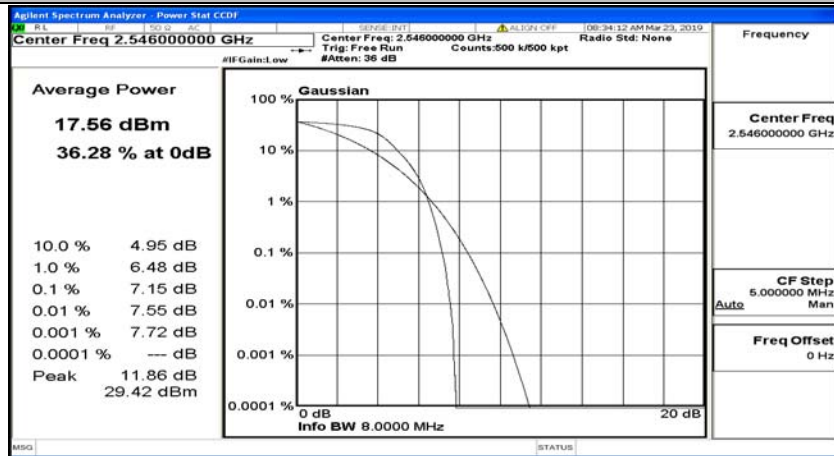
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



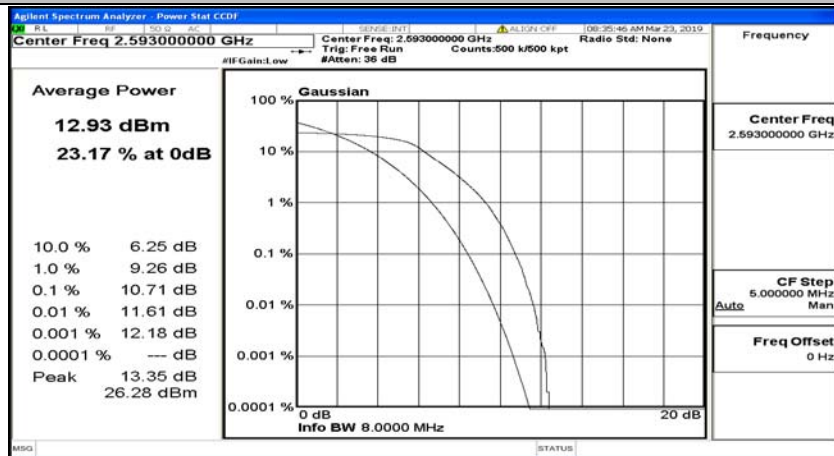
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



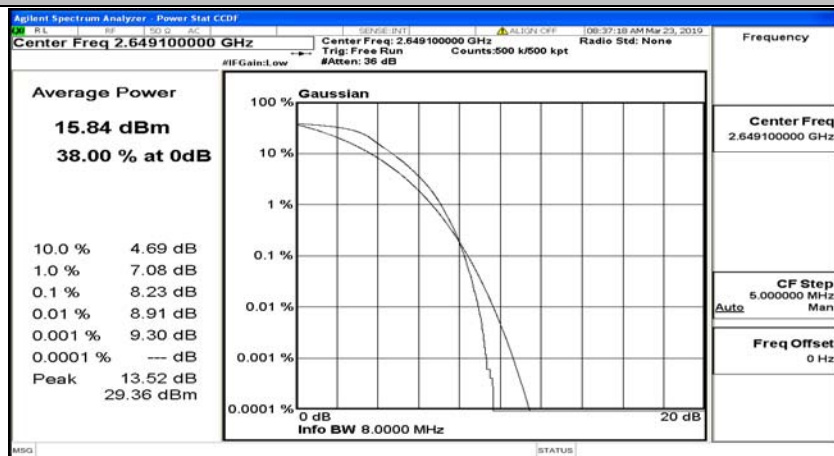
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



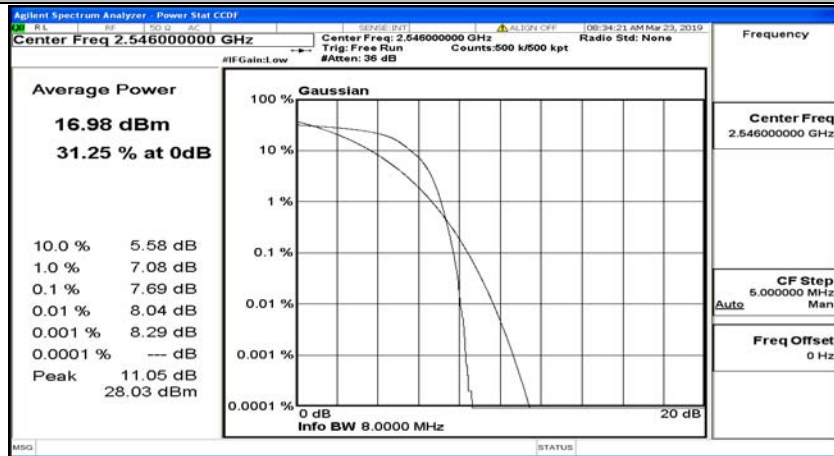
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



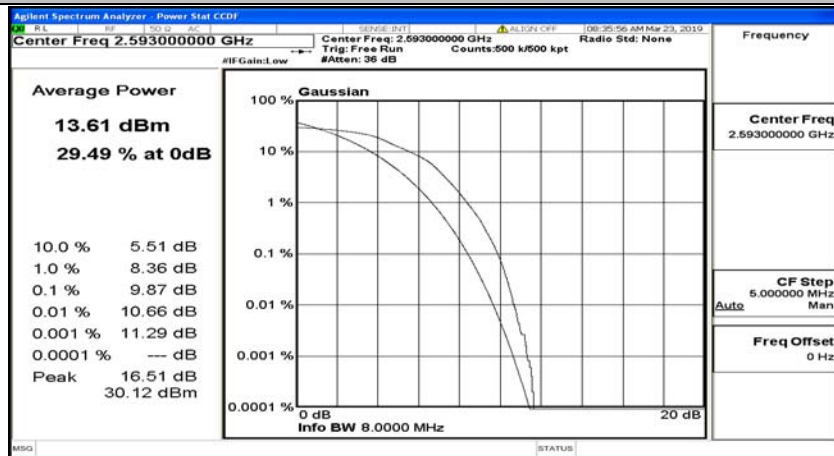
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



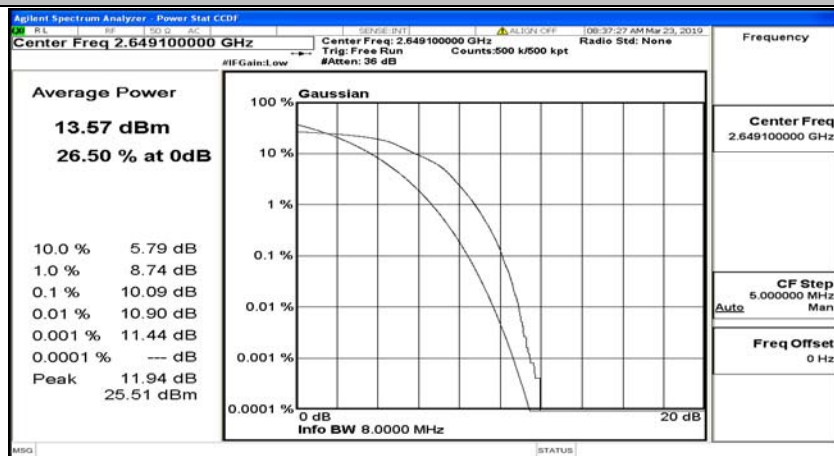
Peak-to-Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



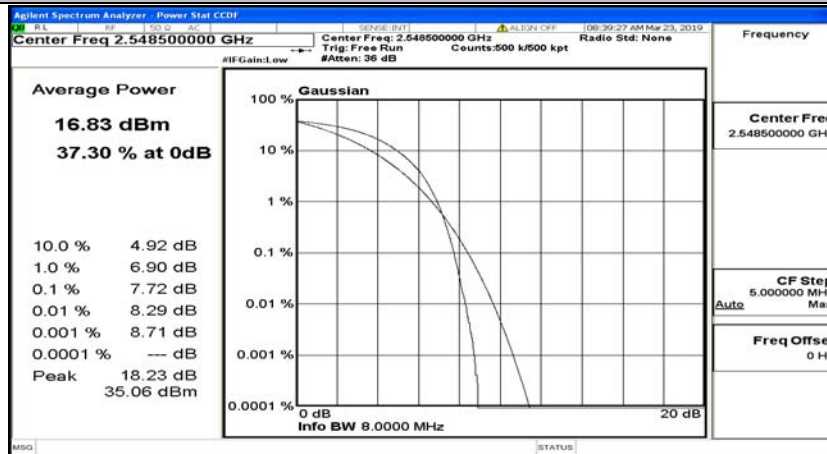
Peak-to-Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM



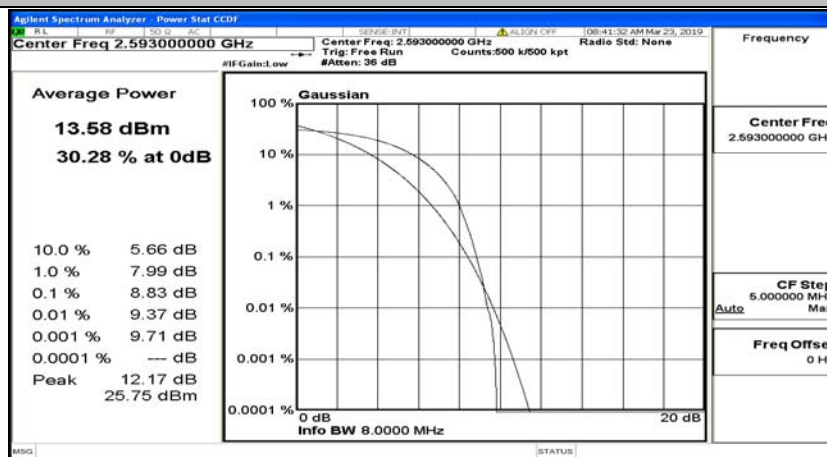
Peak-to-Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM



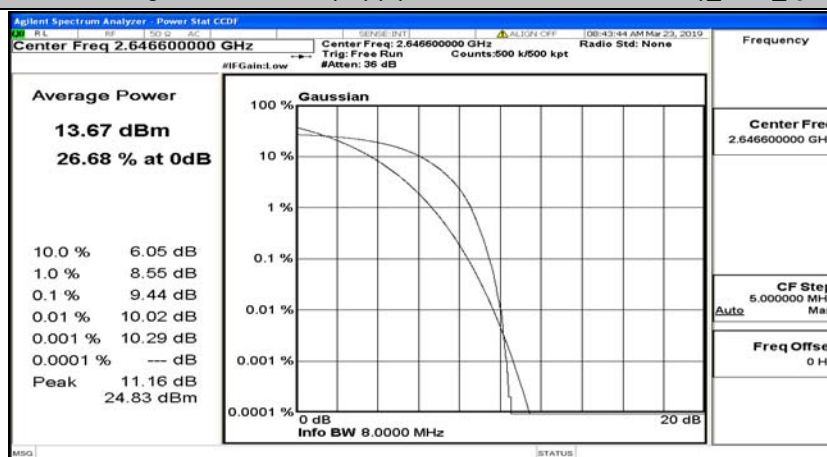
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_QPSK



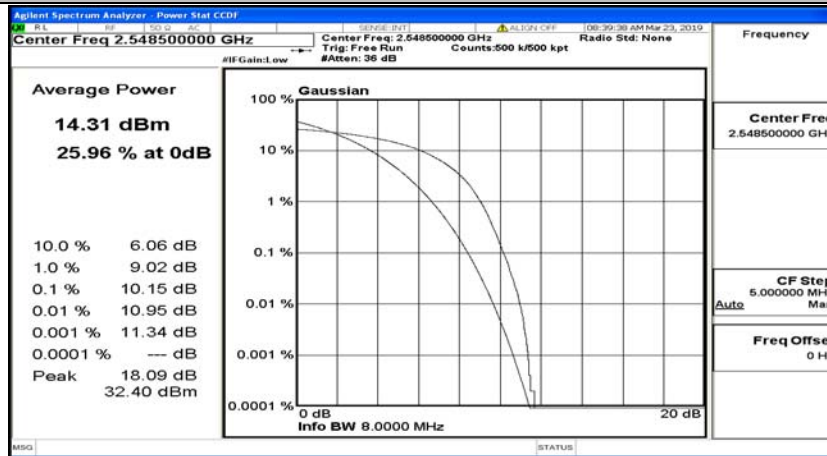
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_QPSK



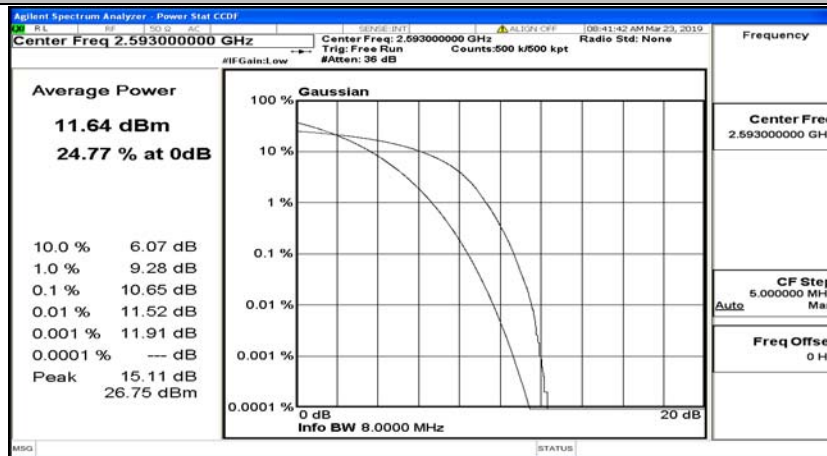
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_QPSK



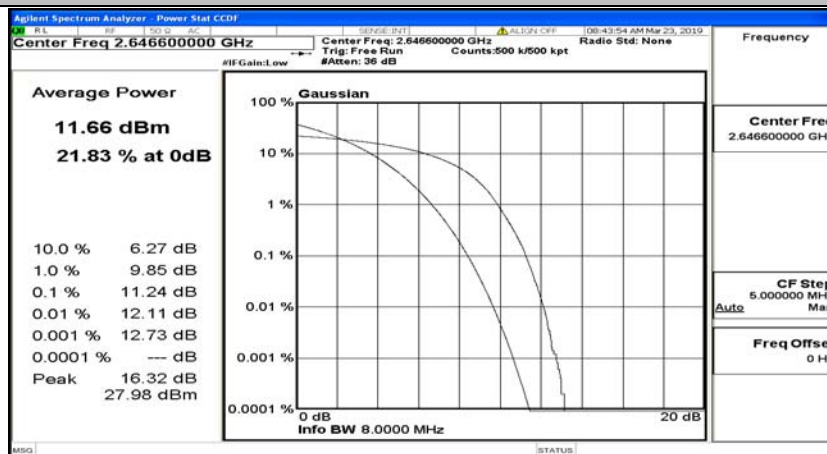
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_16QAM



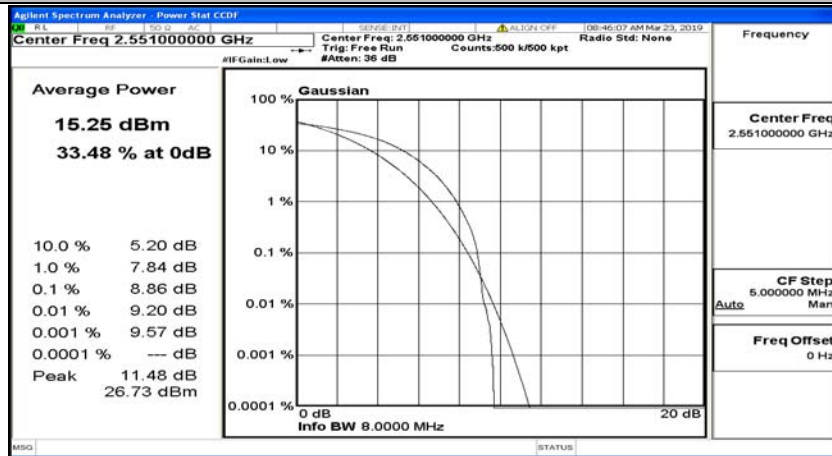
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_16QAM



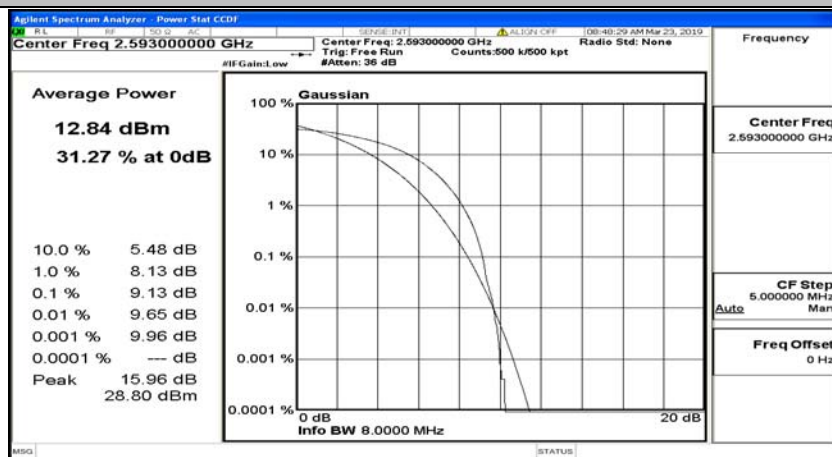
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_16QAM



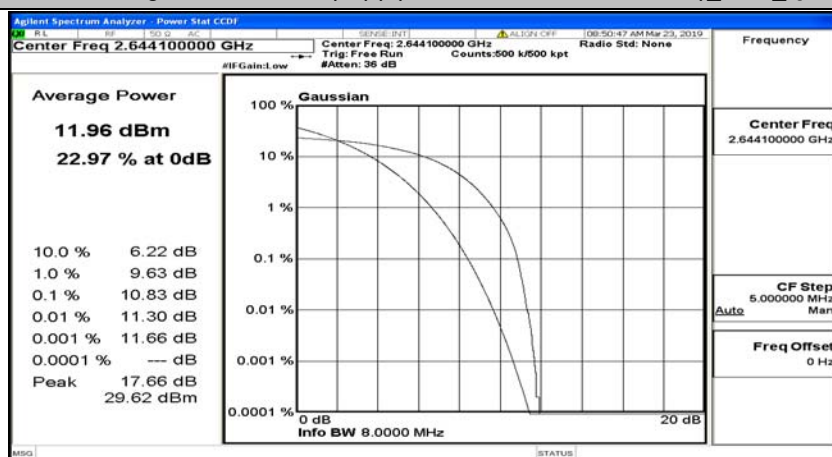
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK



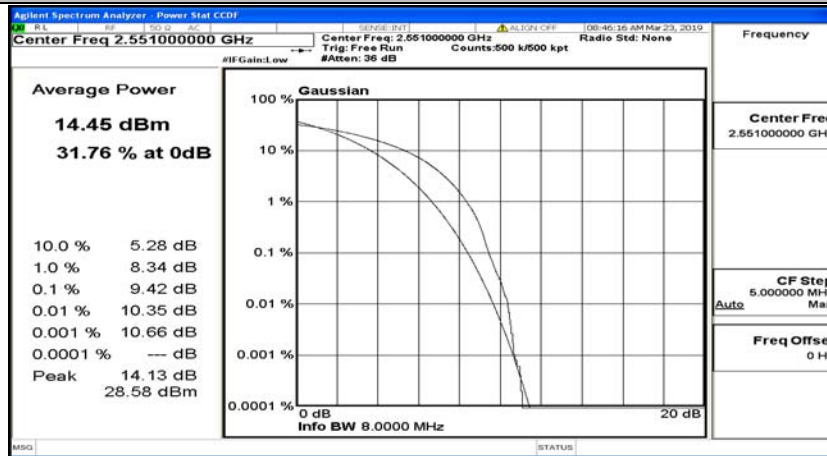
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_QPSK



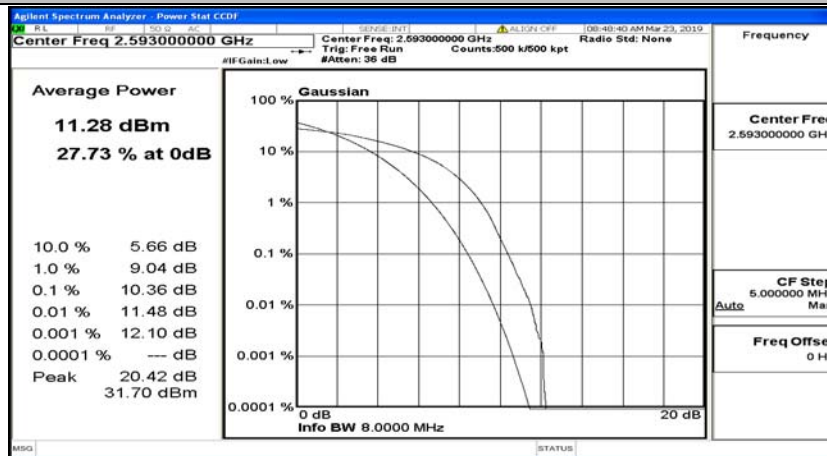
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_QPSK



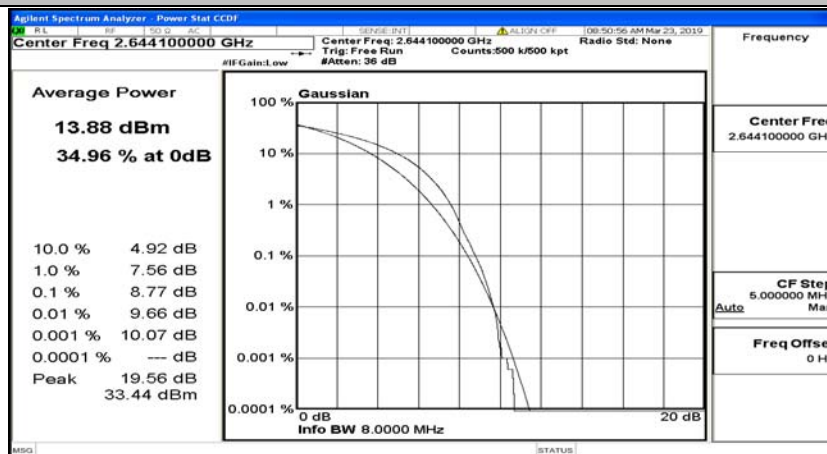
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_16QAM



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_16QAM



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_16QAM



A.3 26dB Bandwidth and Occupied Bandwidth

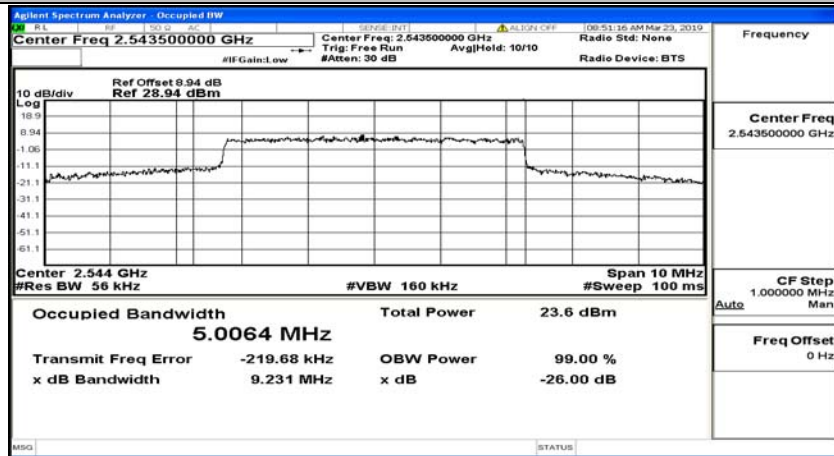
EBW & OBW Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	5.0064	9.231	PASS
	MCH	4.4672	4.701	PASS
	HCH	4.4820	4.743	PASS
16QAM	LCH	5.4389	9.894	PASS
	MCH	4.4768	4.739	PASS
	HCH	4.4681	4.734	PASS

EBW & OBW Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	9.1909	17.10	PASS
	MCH	8.9280	9.349	PASS
	HCH	8.9369	9.368	PASS
16QAM	LCH	9.9194	18.86	PASS
	MCH	8.9252	9.305	PASS
	HCH	8.9285	9.326	PASS

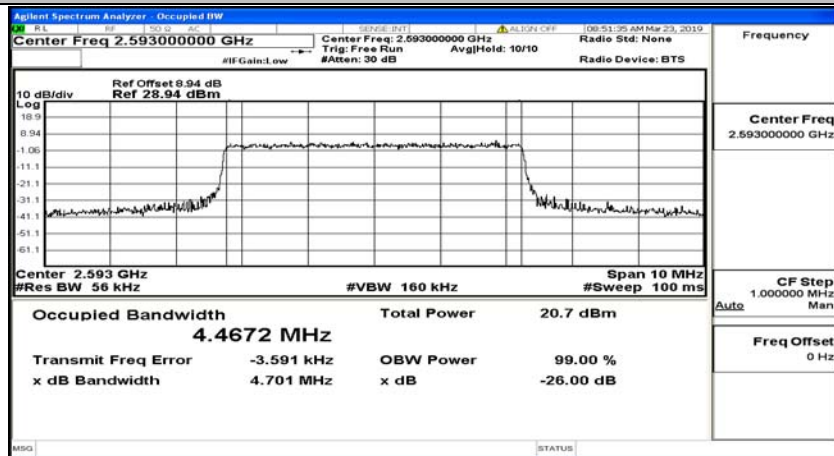
EBW & OBW Test Result (Channel Bandwidth: 15 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	13.670	28.20	PASS
	MCH	13.397	13.97	PASS
	HCH	13.394	14.00	PASS
16QAM	LCH	13.530	25.25	PASS
	MCH	13.404	14.00	PASS
	HCH	13.387	13.94	PASS

EBW & OBW Test Result (Channel Bandwidth: 20 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	17.972	31.91	PASS
	MCH	17.826	18.53	PASS
	HCH	17.834	18.51	PASS
16QAM	LCH	17.970	26.56	PASS
	MCH	17.849	18.52	PASS
	HCH	17.827	18.61	PASS

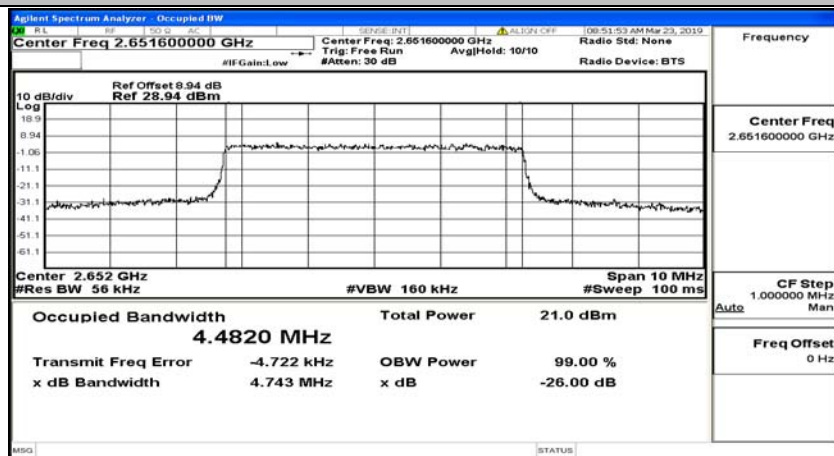
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



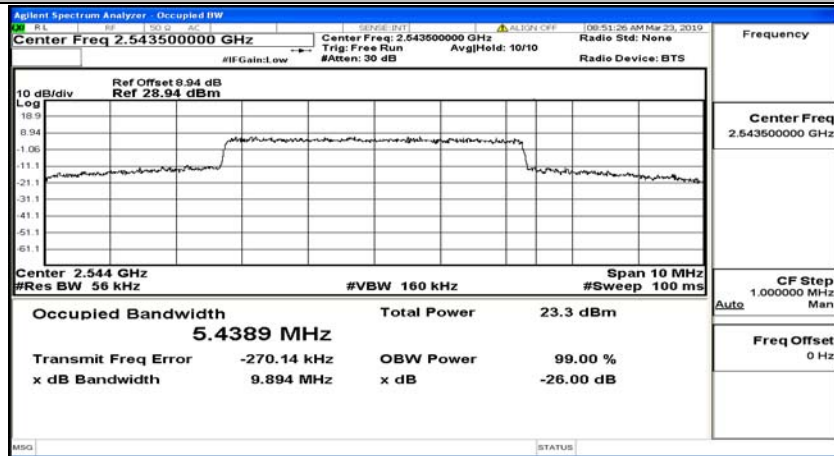
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



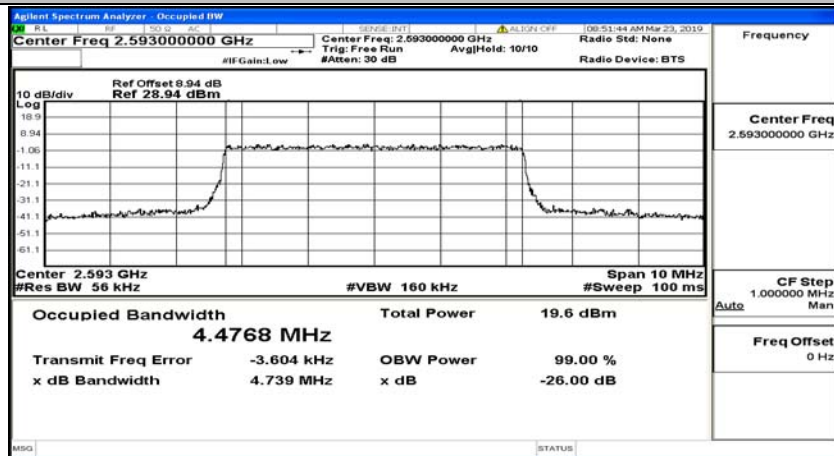
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



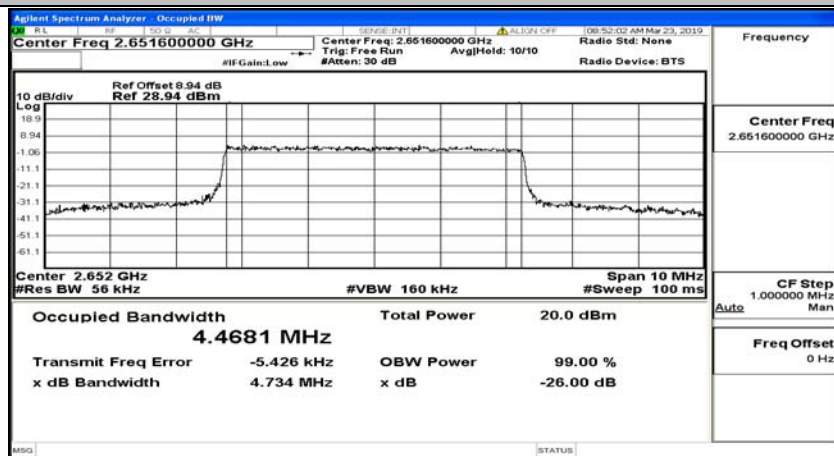
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



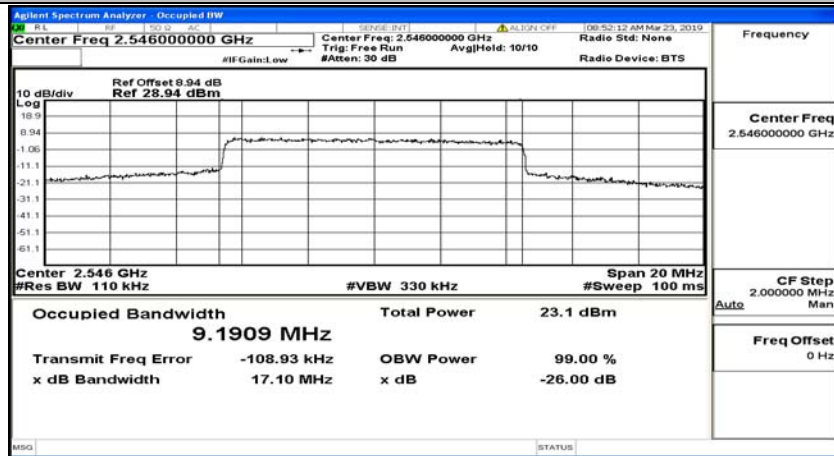
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



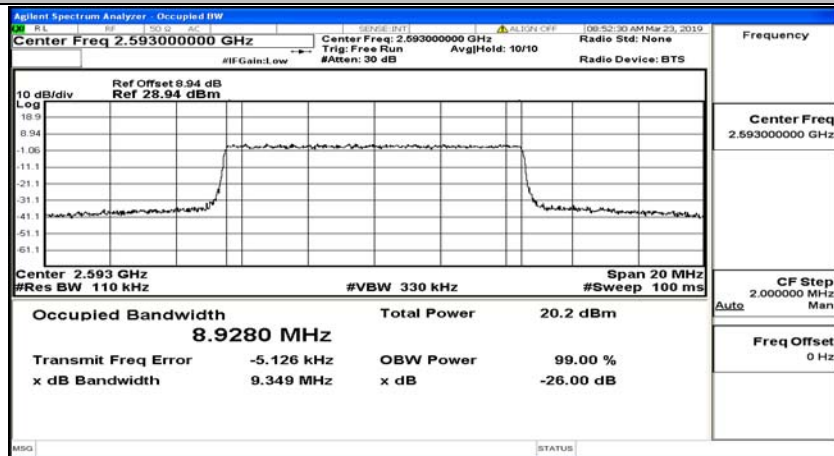
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



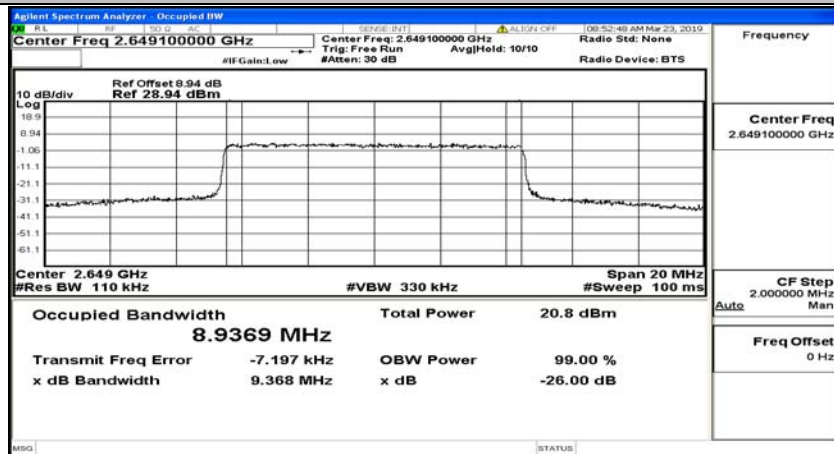
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



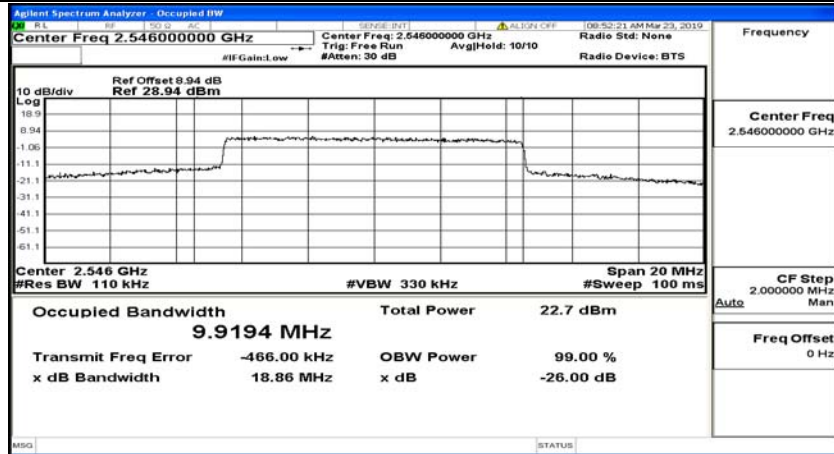
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



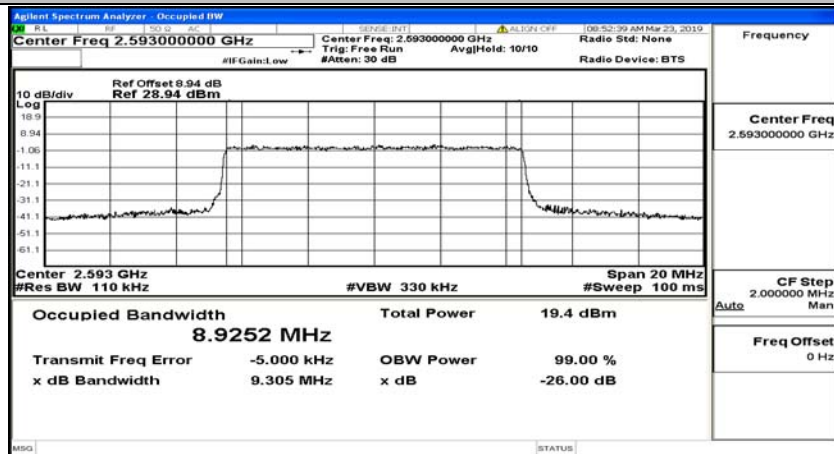
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



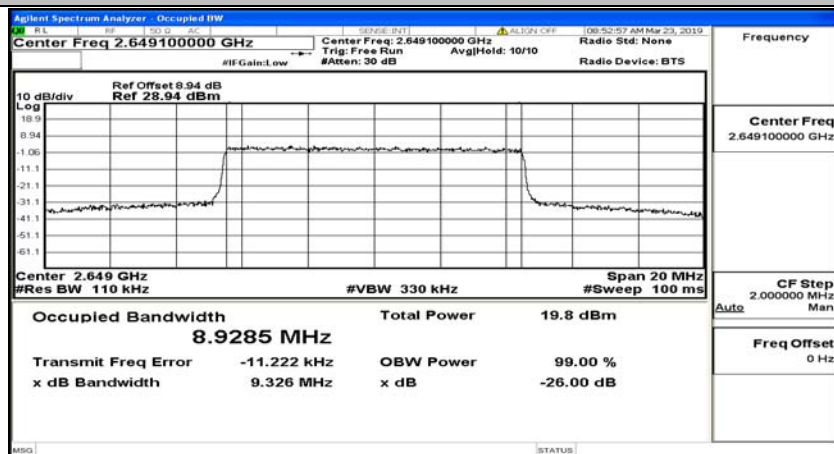
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



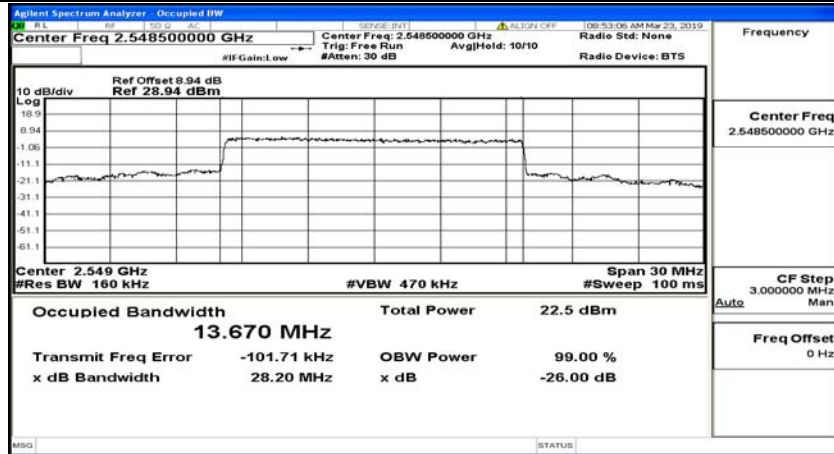
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM



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



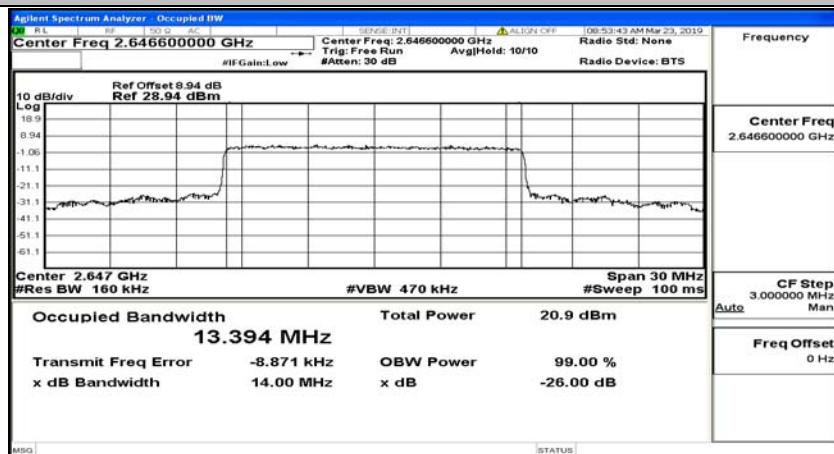
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_QPSK



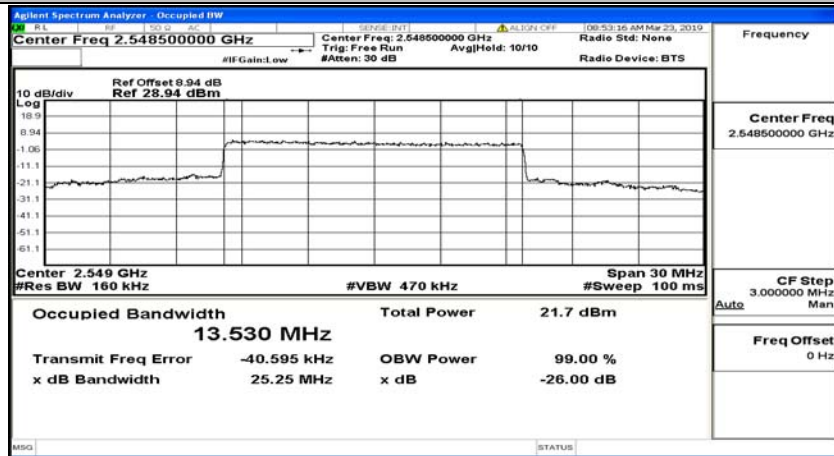
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_QPSK



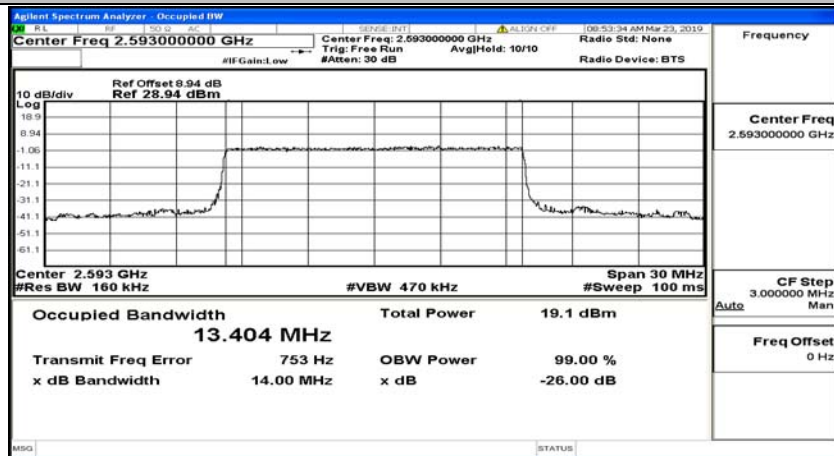
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_QPSK



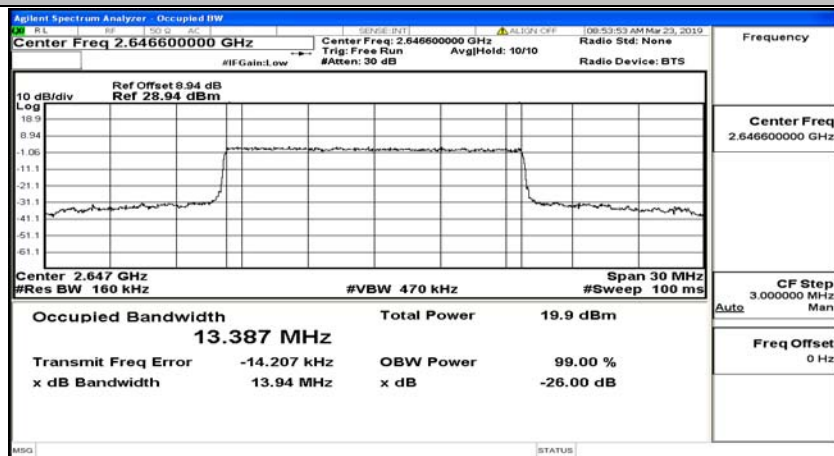
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_16QAM



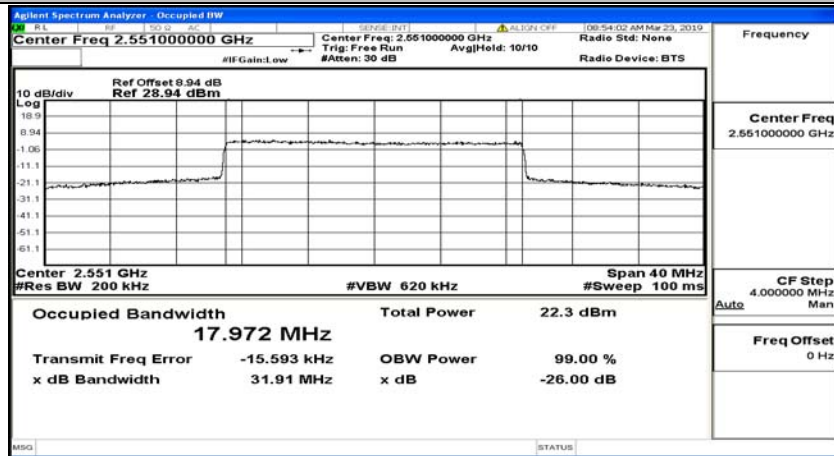
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_16QAM



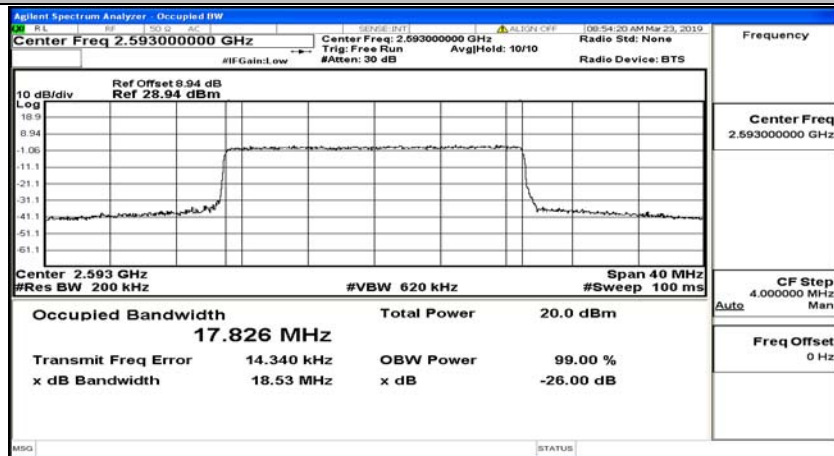
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_16QAM



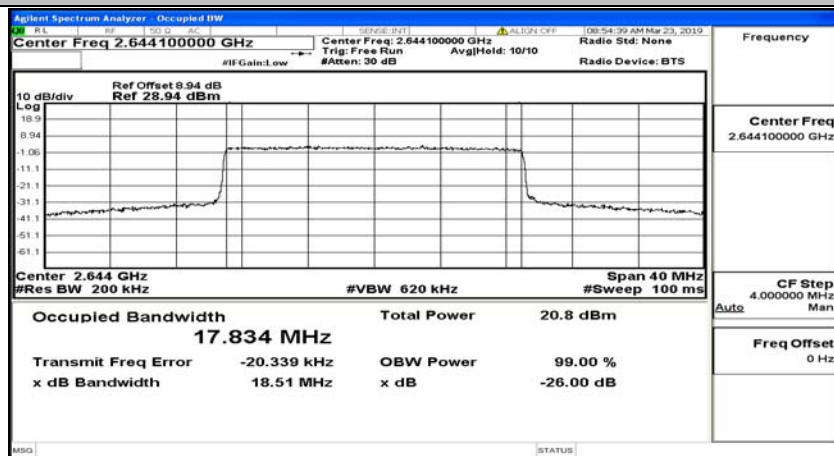
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK



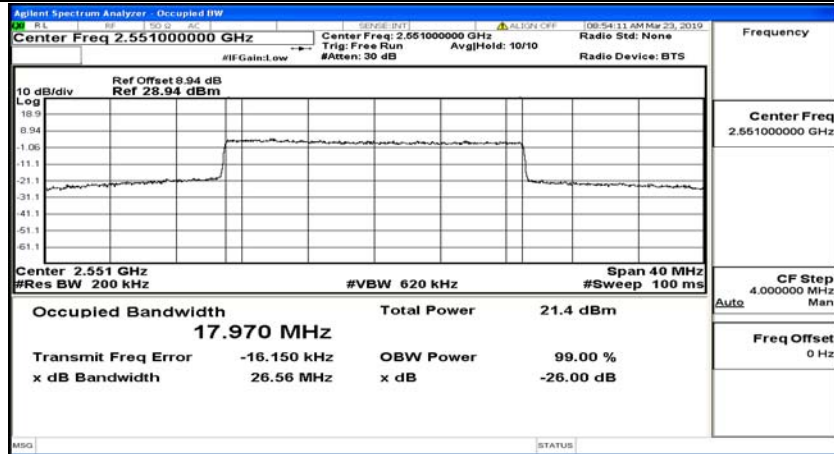
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_QPSK



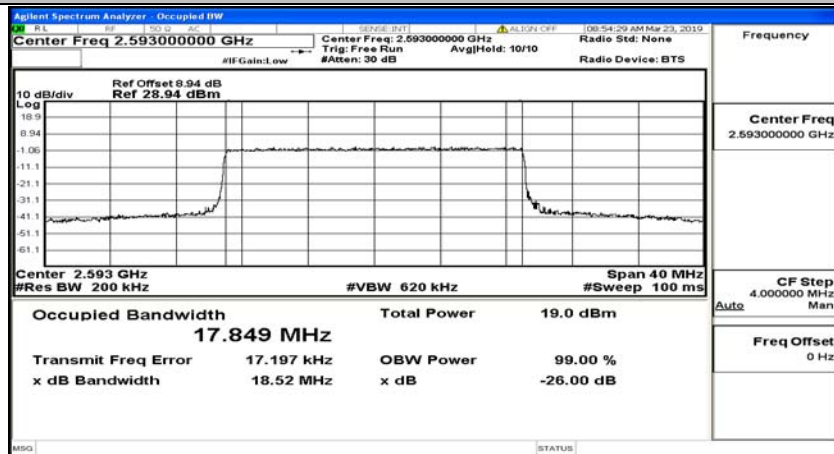
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_QPSK



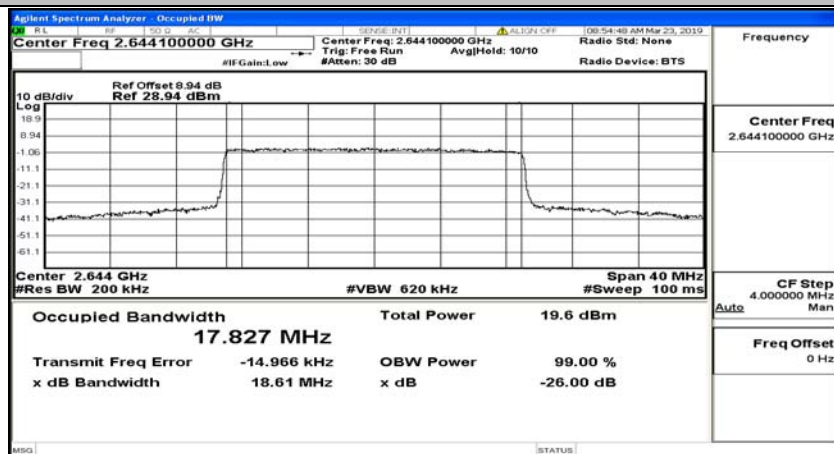
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_16QAM



EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_16QAM

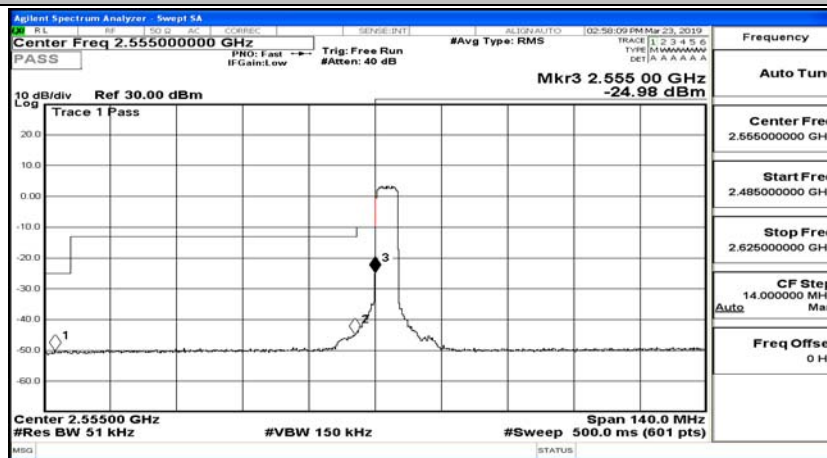


EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_16QAM

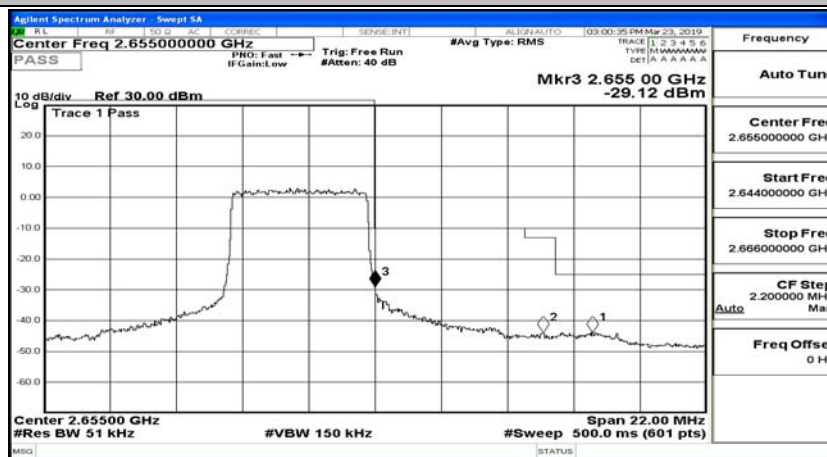


A.4 Band Edge

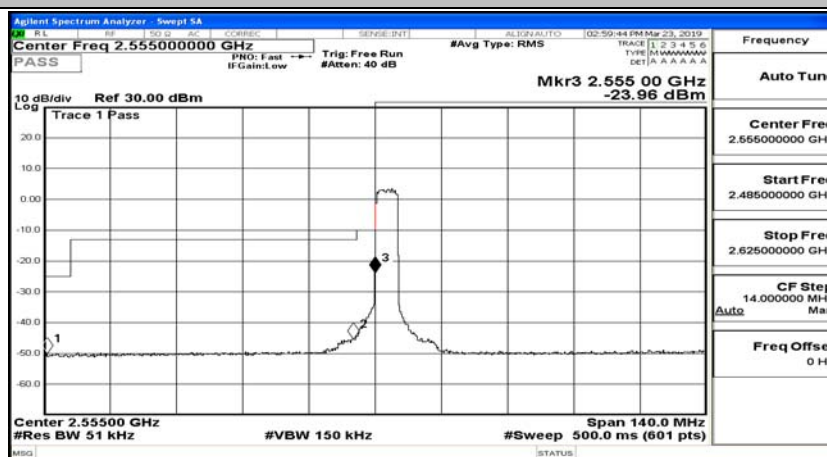
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



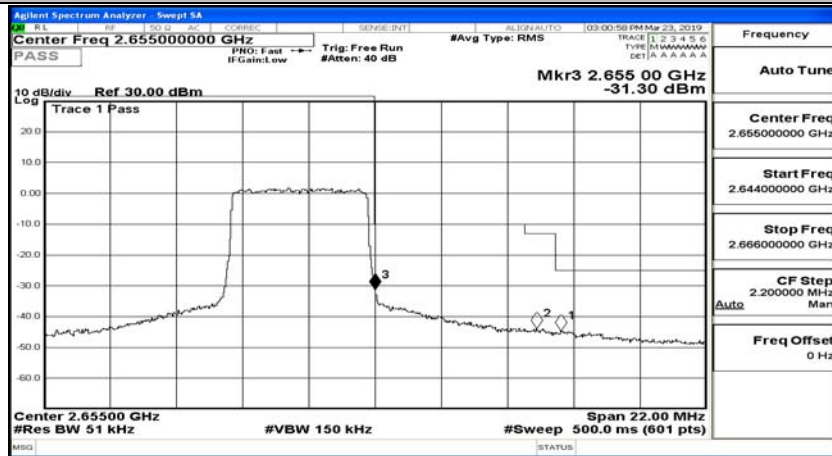
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



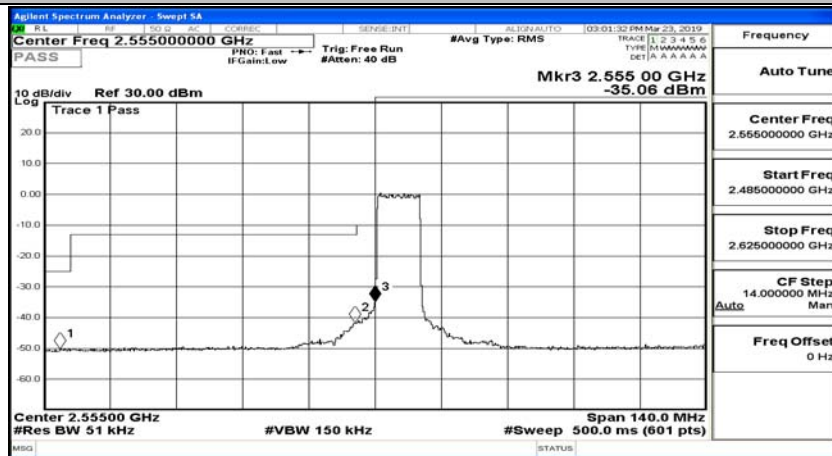
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



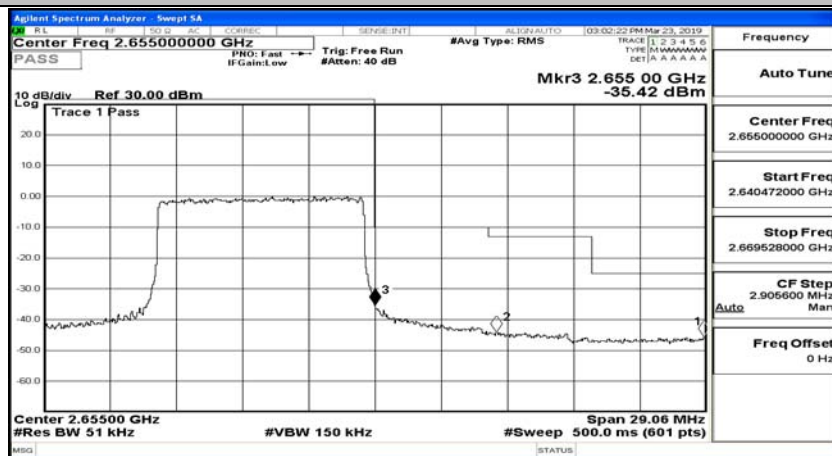
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



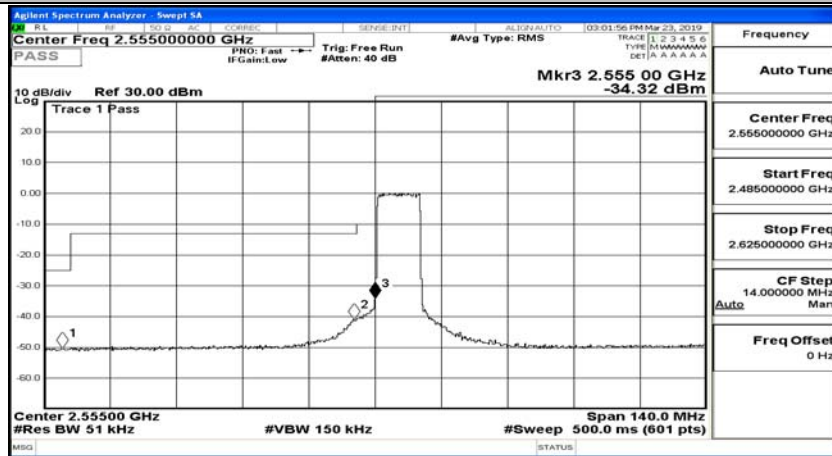
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



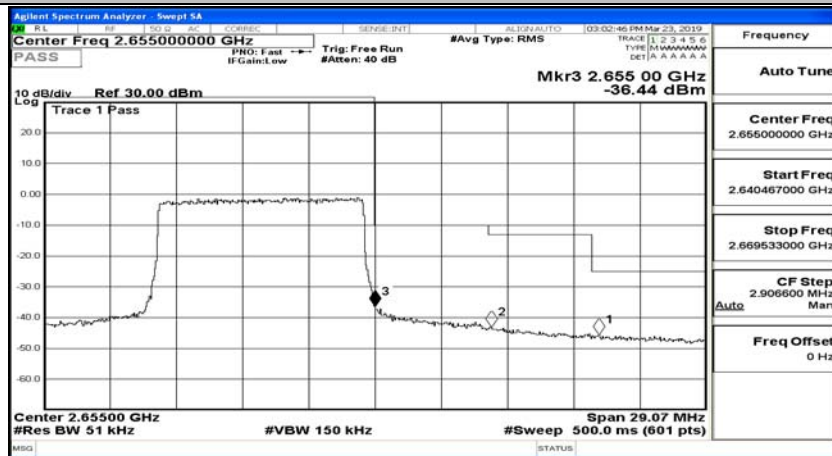
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



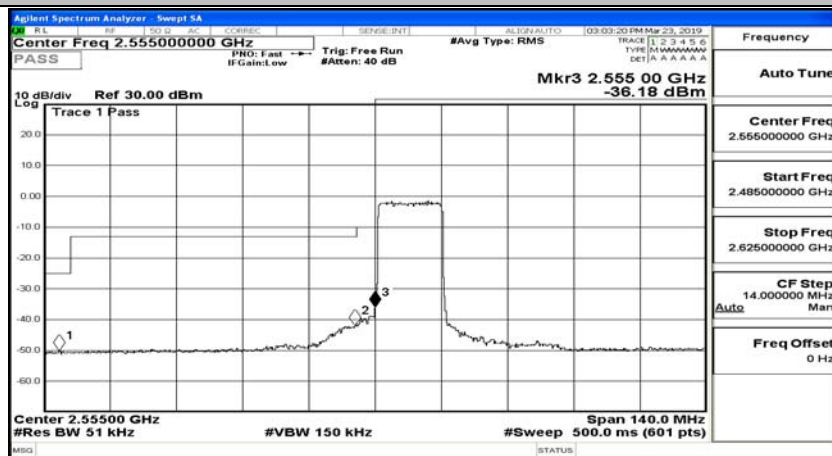
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



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



Band Edge Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_QPSK



Agilent Spectrum Analyzer - Sweep 5A

Center Freq 2.655000000 GHz

PASS

Trig: Free Run

#Avg Type: RMS

Mkr3 2.655 000 0 GHz -36.99 dBm

10 dB/div Ref 30.00 dBm

Log

Trace 1 Pass

Center 2.655000 GHz

#Res BW 51 kHz

#VBW 150 kHz

Span 38.52 MHz

#Sweep 500.0 ms (601 pts)

Frequency

Auto Tun

Center Freq 2.655000000 GHz

Start Freq 2.635740000 GHz

Stop Freq 2.674260000 GHz

CF Step 3.852000 MHz

Auto

Freq Offset 0 Hz

[illegible]

Agilent Spectrum Analyzer - Sweep SA

Center Freq 2.655000000 GHz

Span 38.56 MHz

Res BW 51 kHz

#VBW 150 kHz

#Sweep 500.0 ms (601 pts)

Mkr3 2.655 19 GHz -38.15 dBm

Trace 1 Pass

Auto Tun

Center Freq 2.655000000 GHz

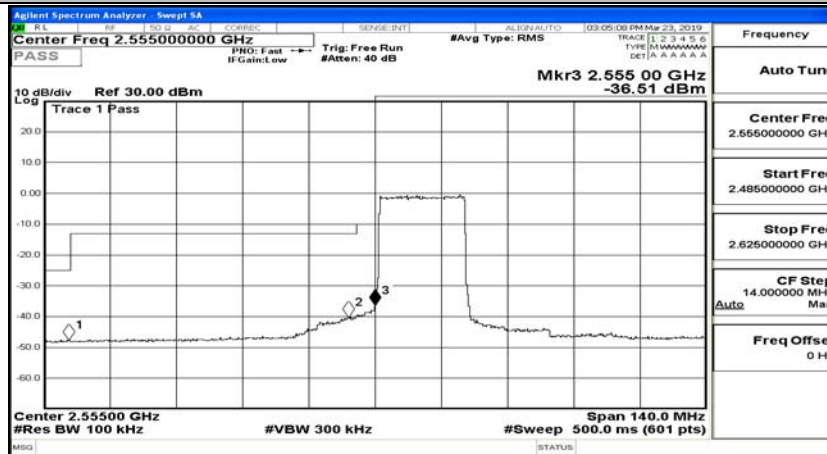
Start Freq 2.635720000 GHz

Stop Freq 2.674280000 GHz

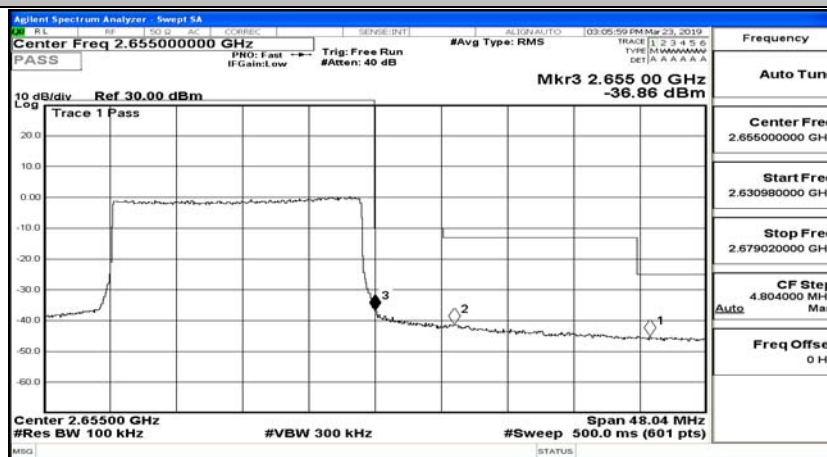
CF Step 3.8560000 MHz

Freq Offset 0 Hz

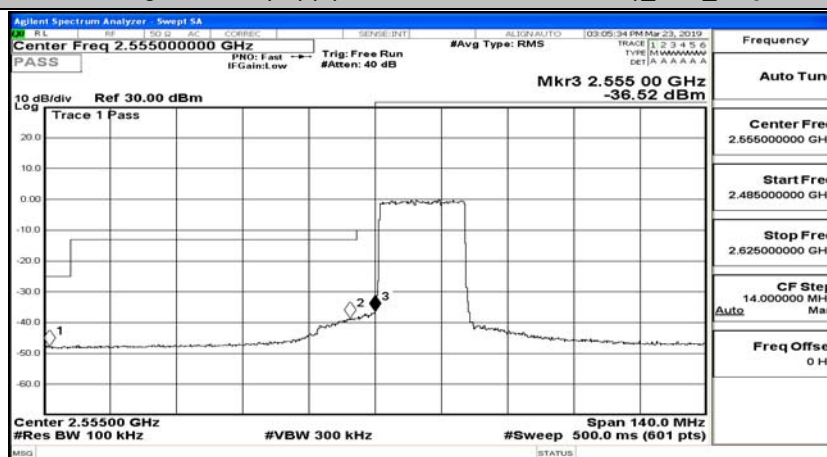
Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK



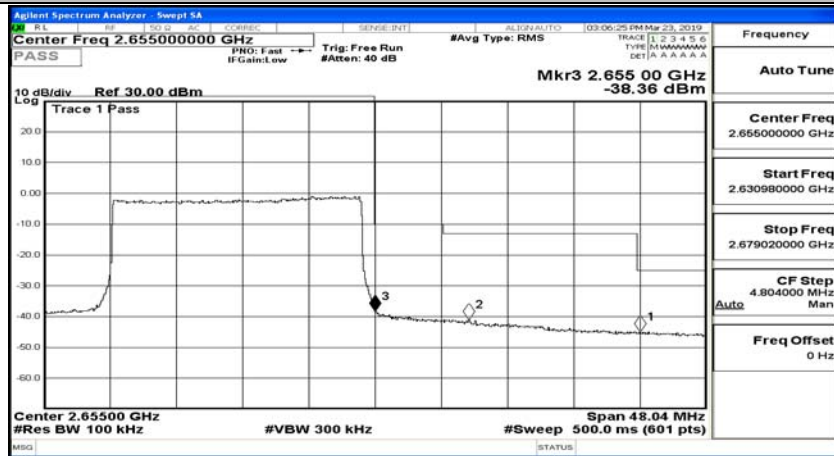
Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_QPSK



Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_16QAM

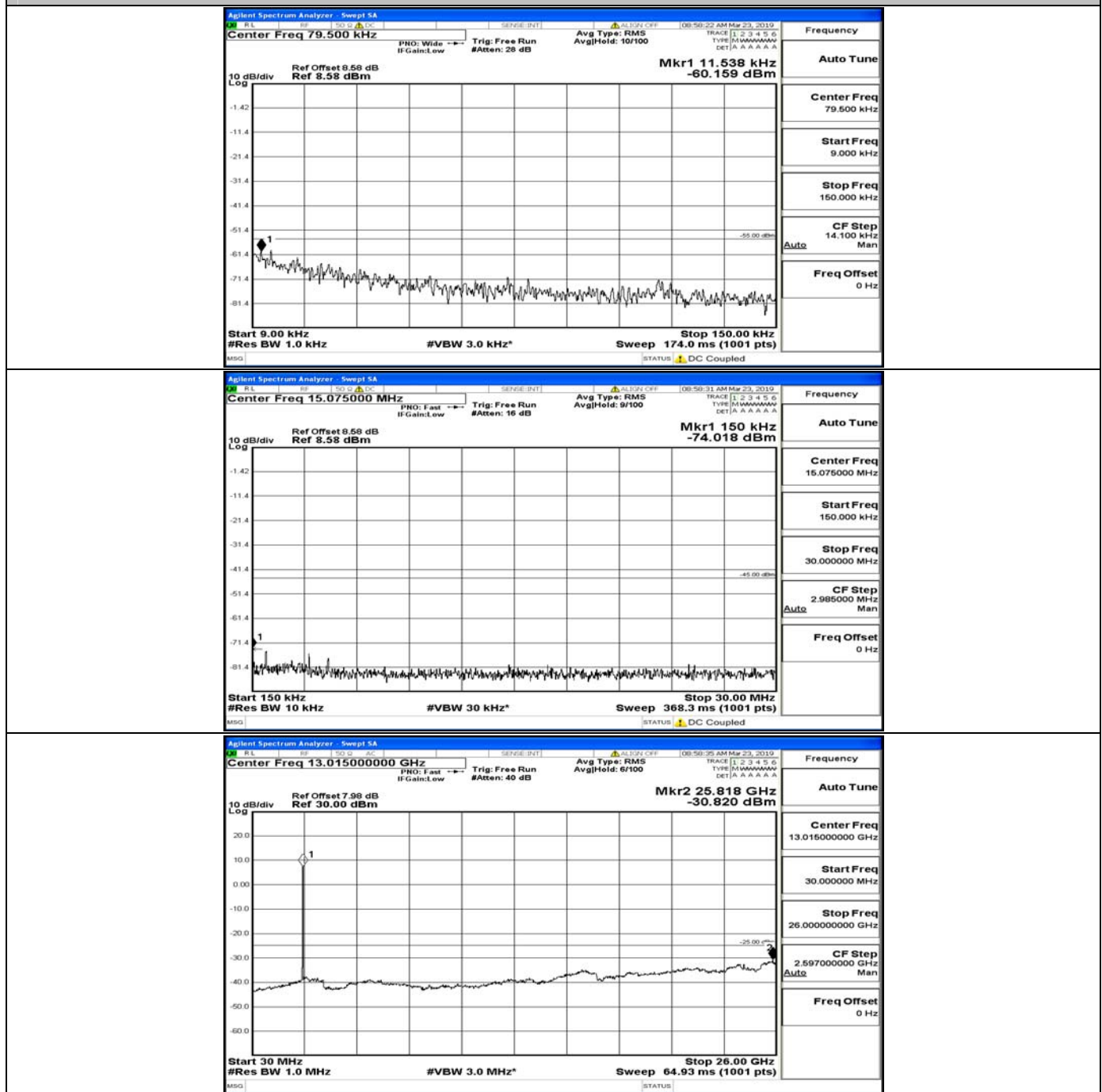


Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_16QAM

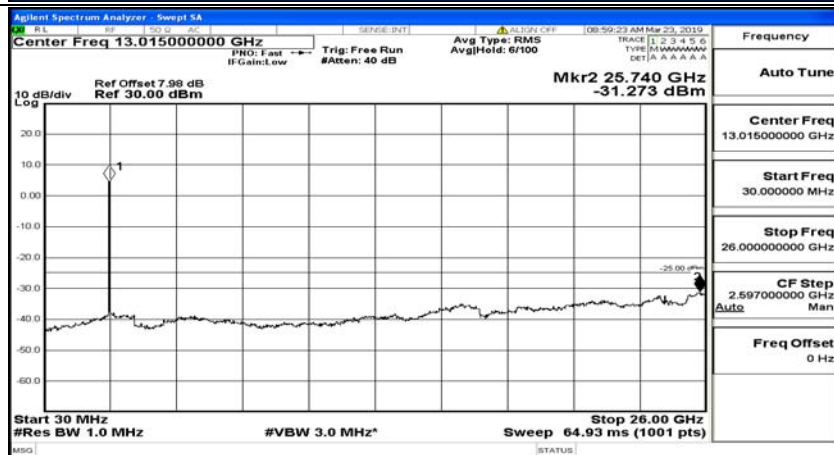
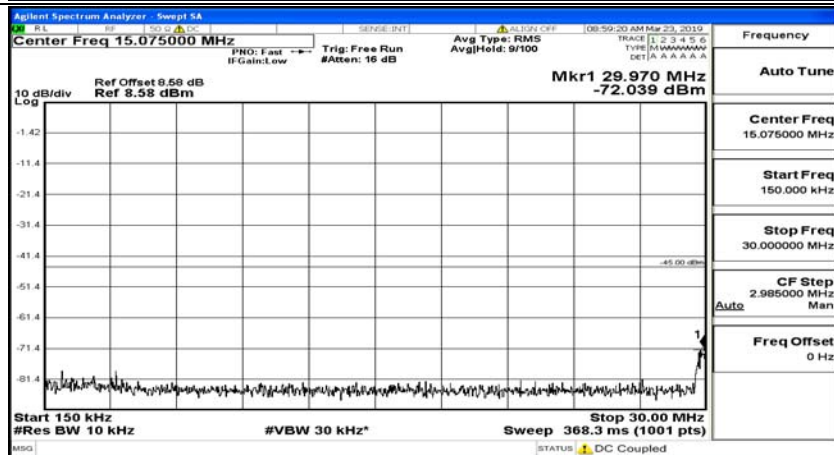
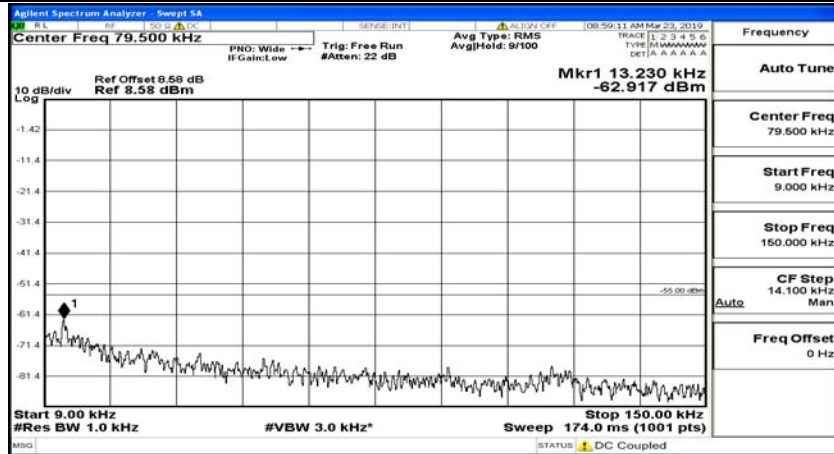


A.5 Conducted Spurious Emission

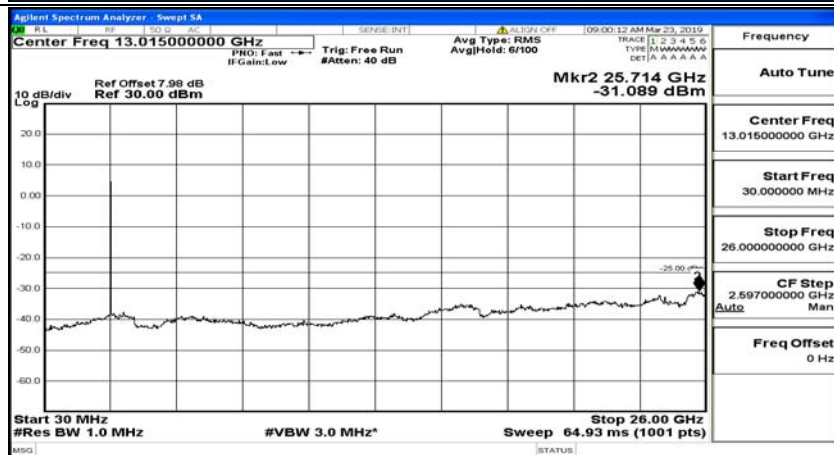
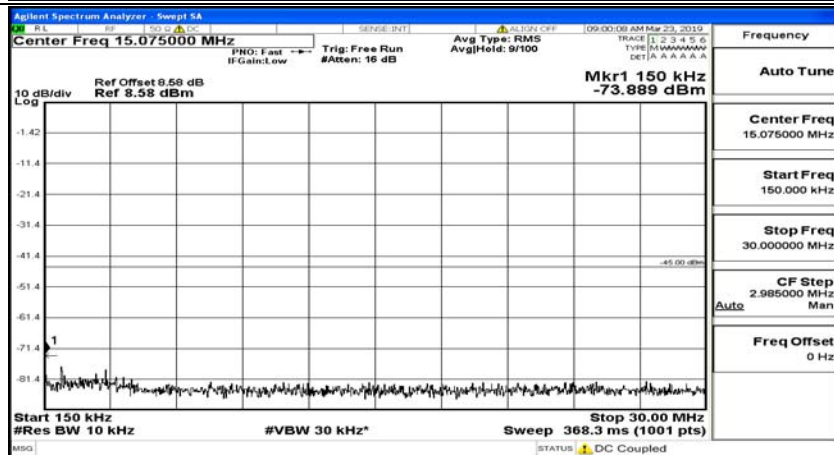
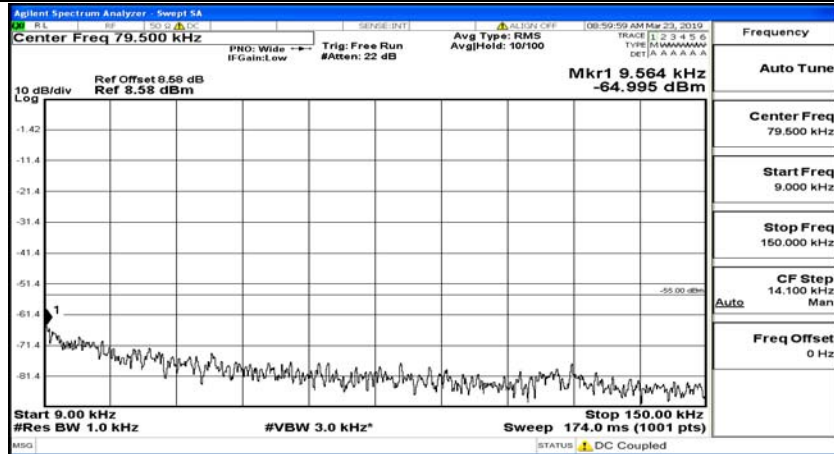
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



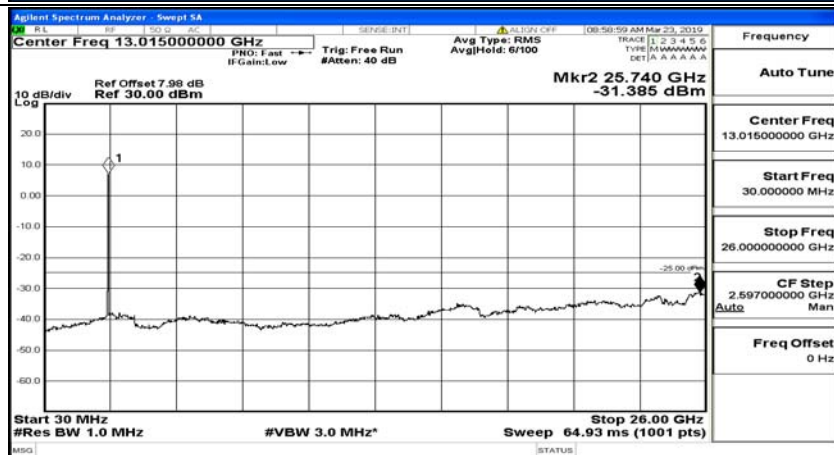
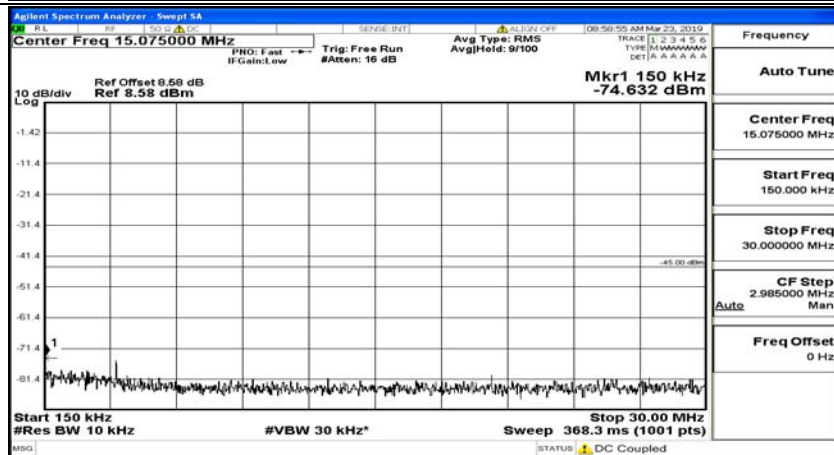
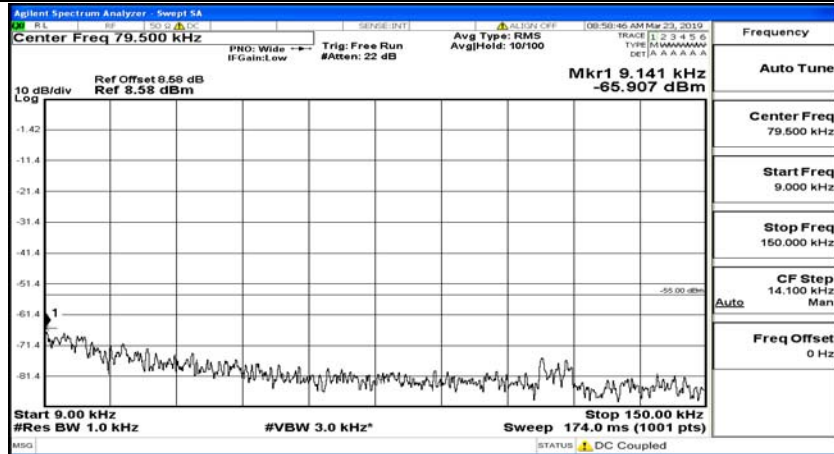
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



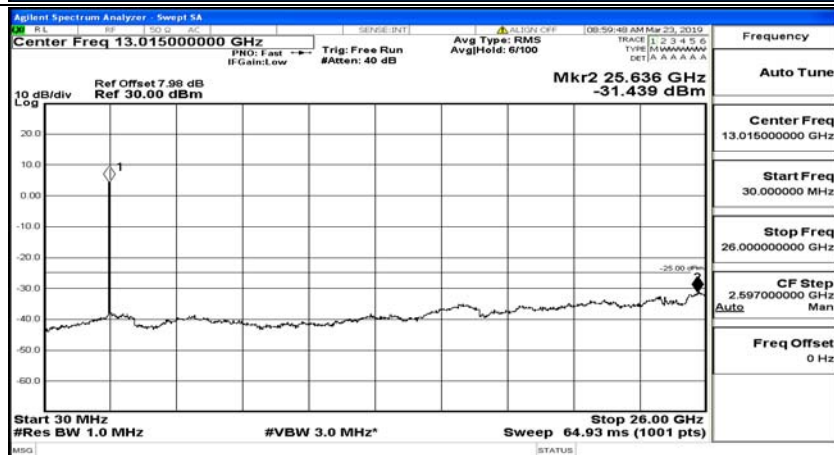
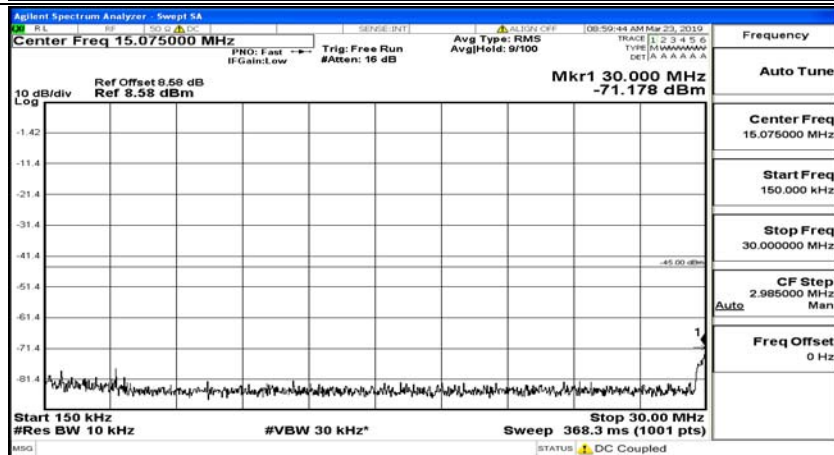
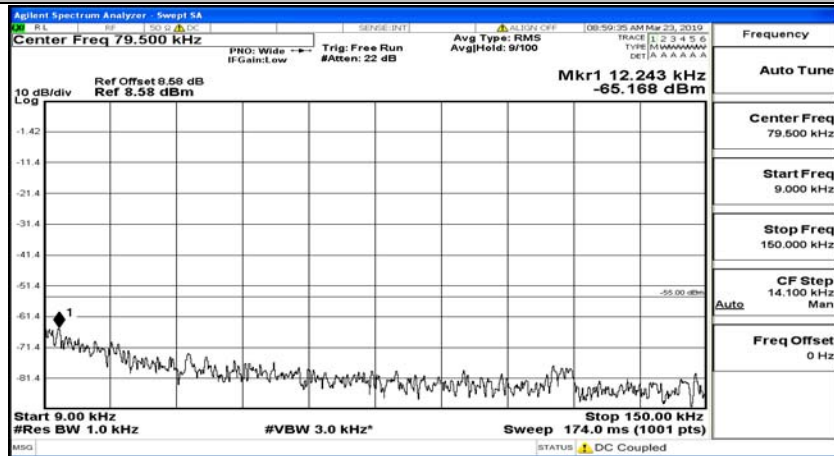
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



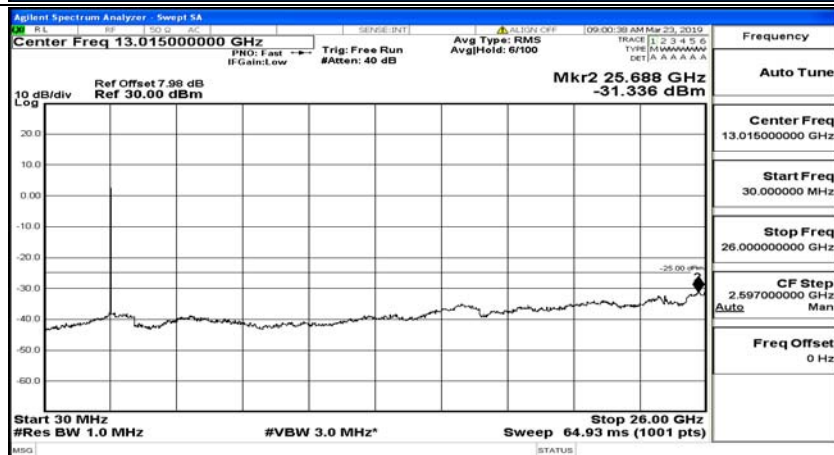
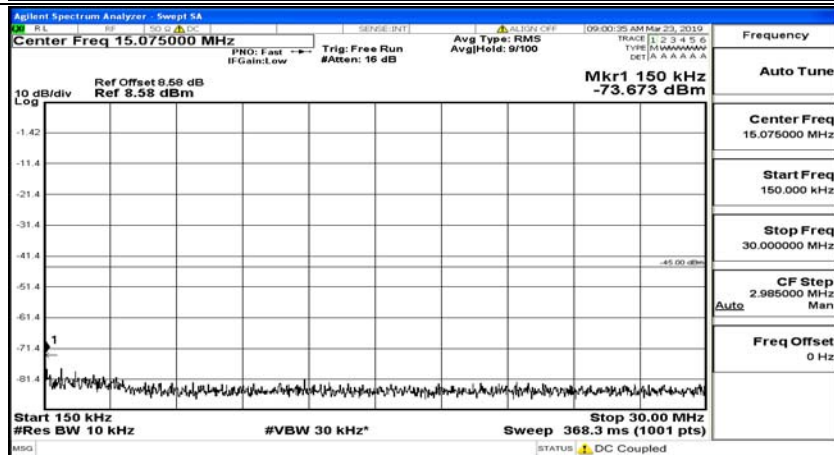
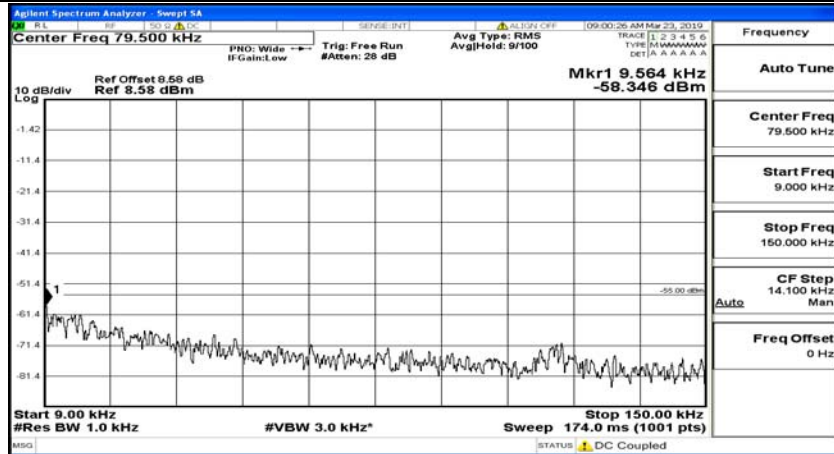
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



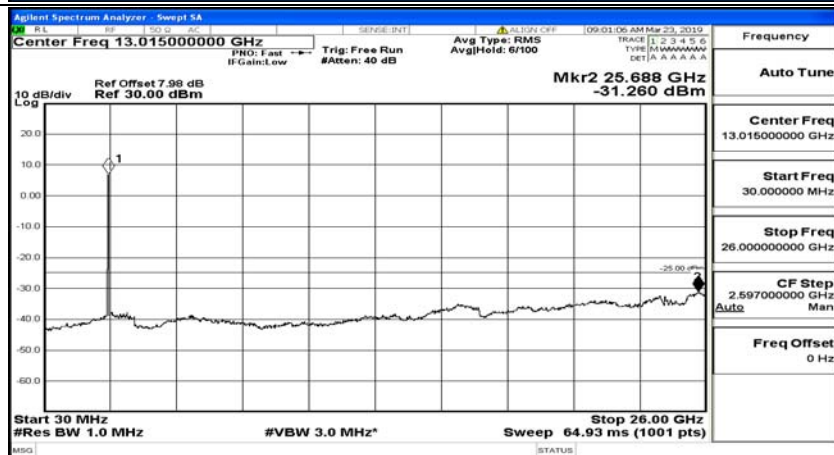
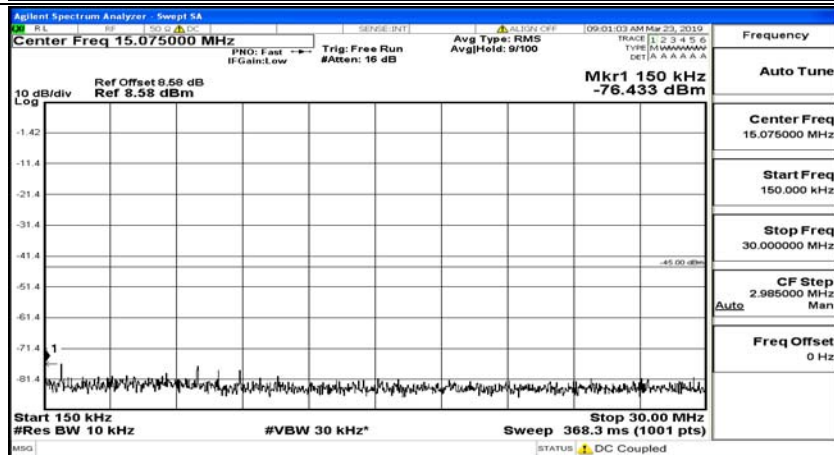
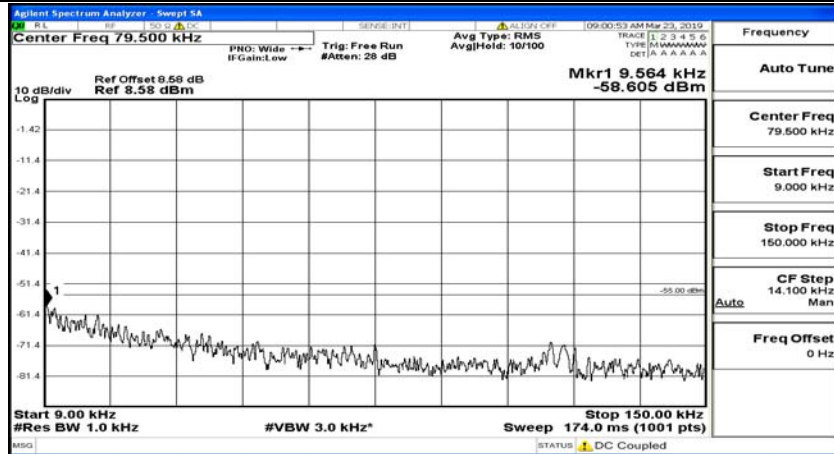
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



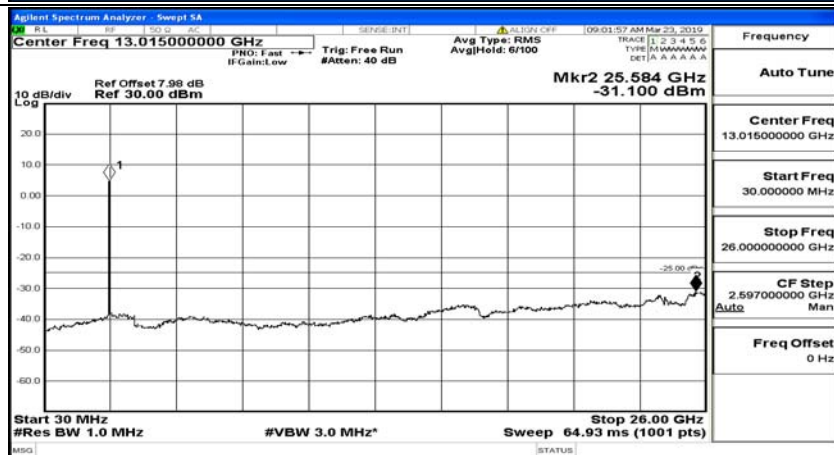
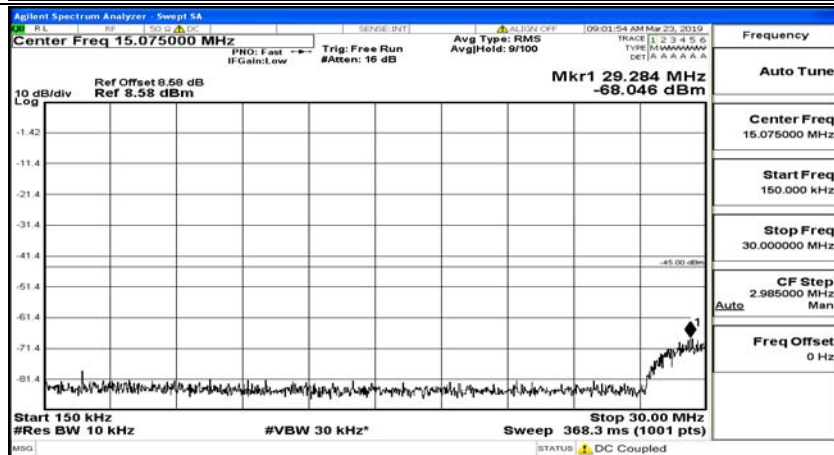
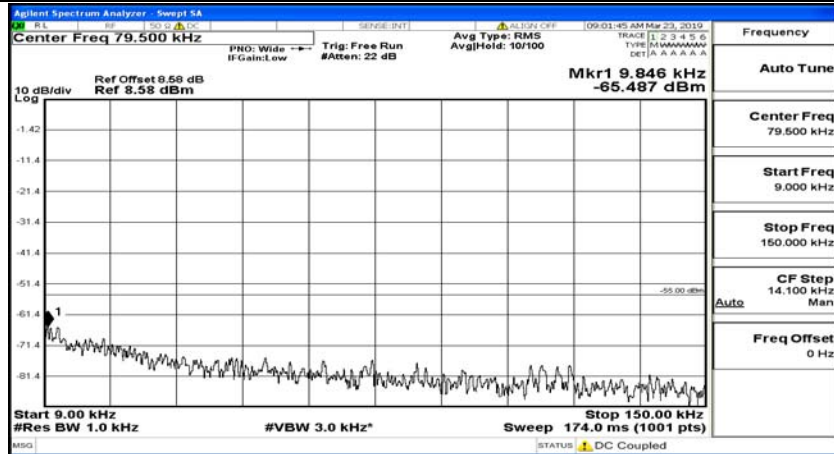
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



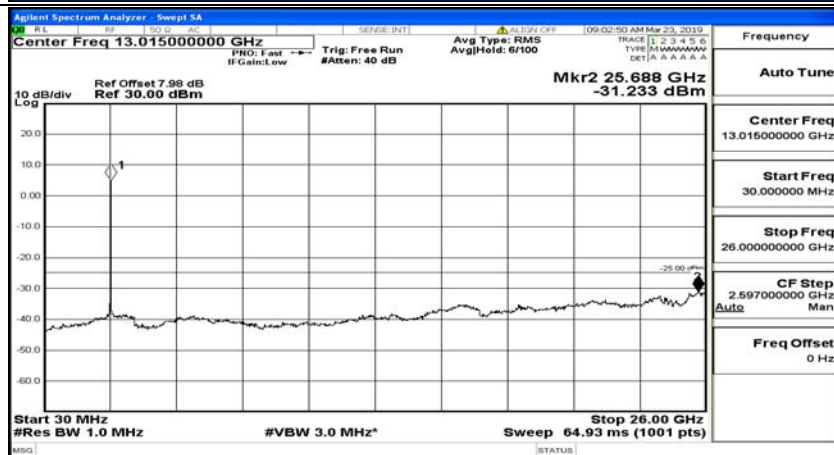
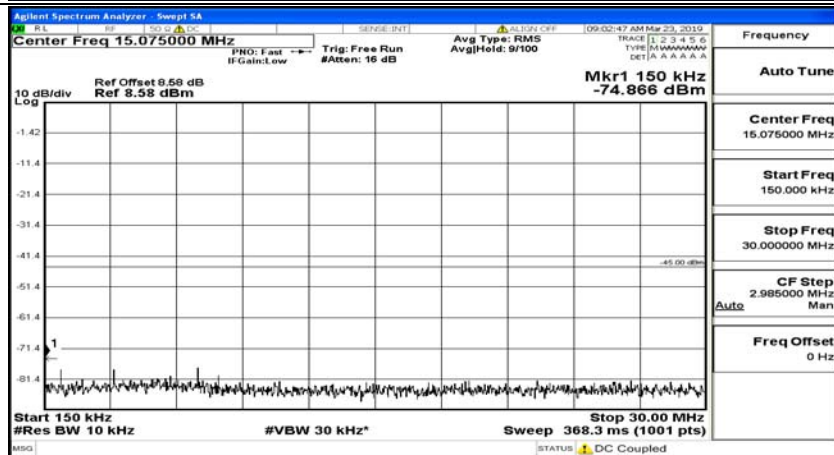
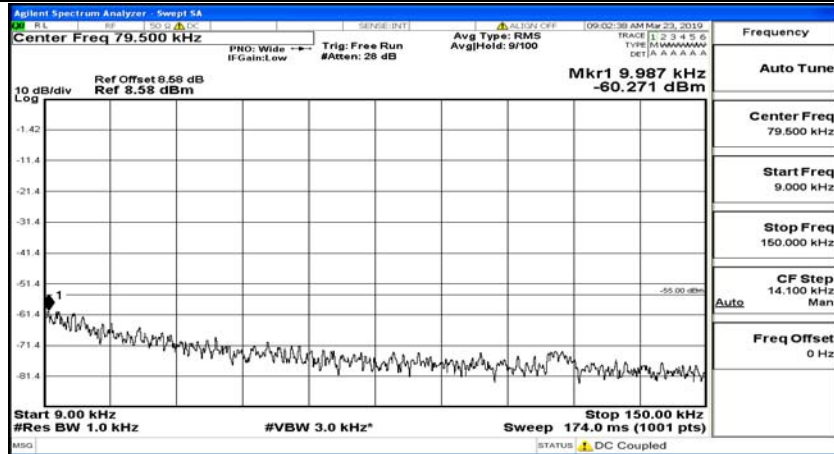
CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



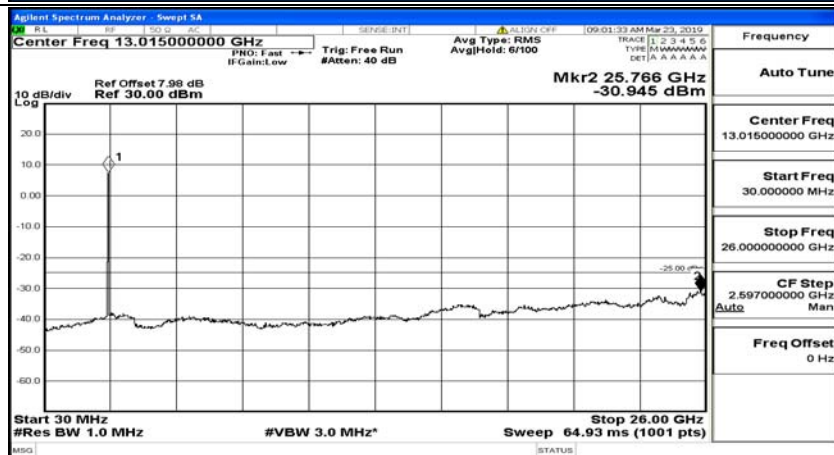
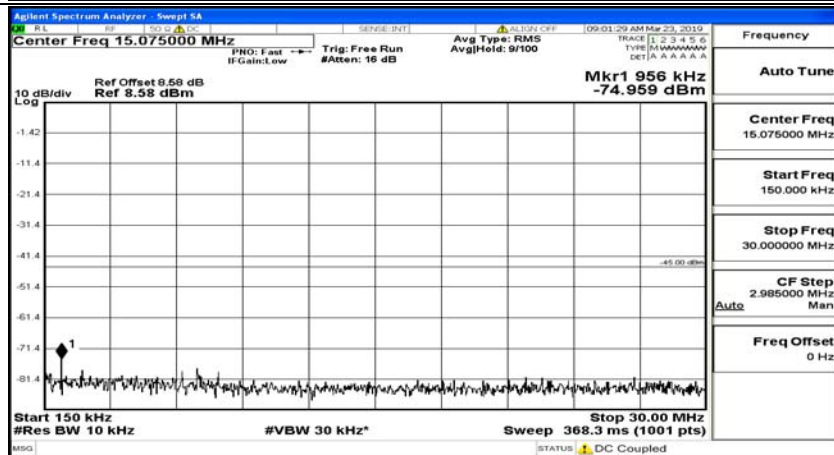
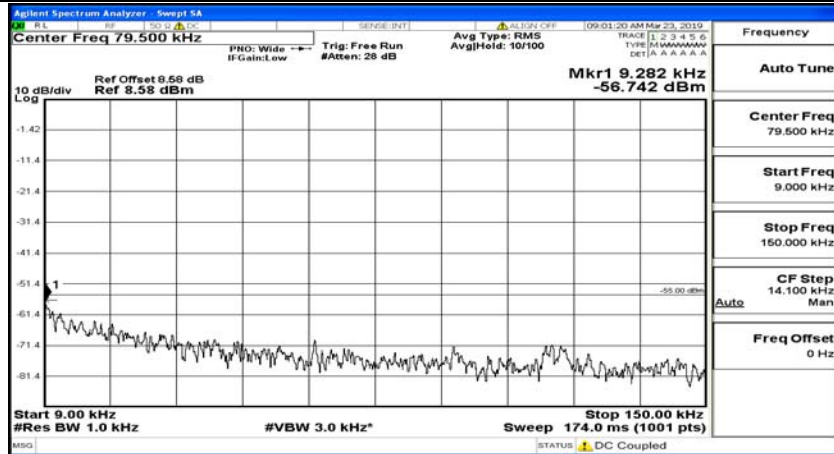
CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



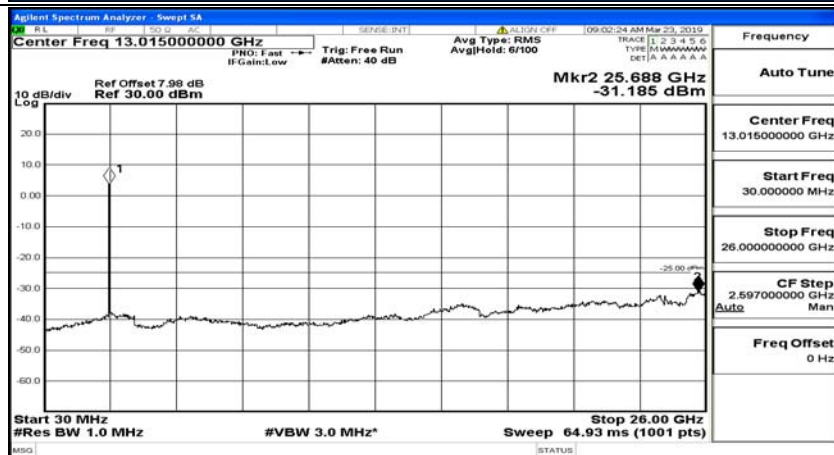
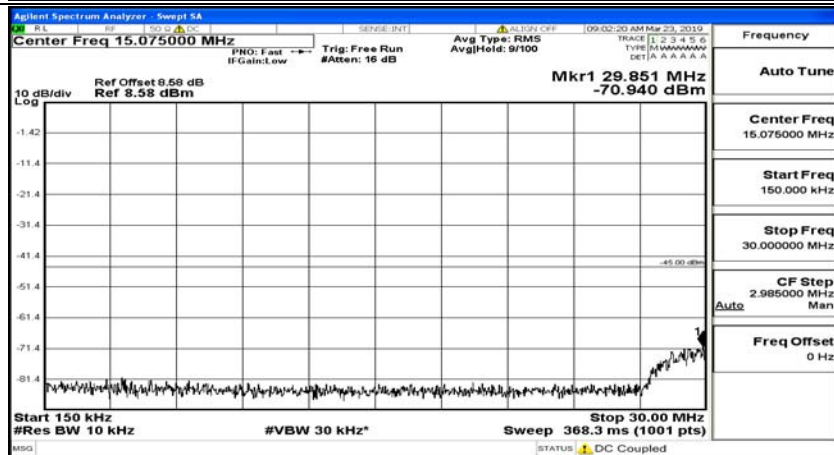
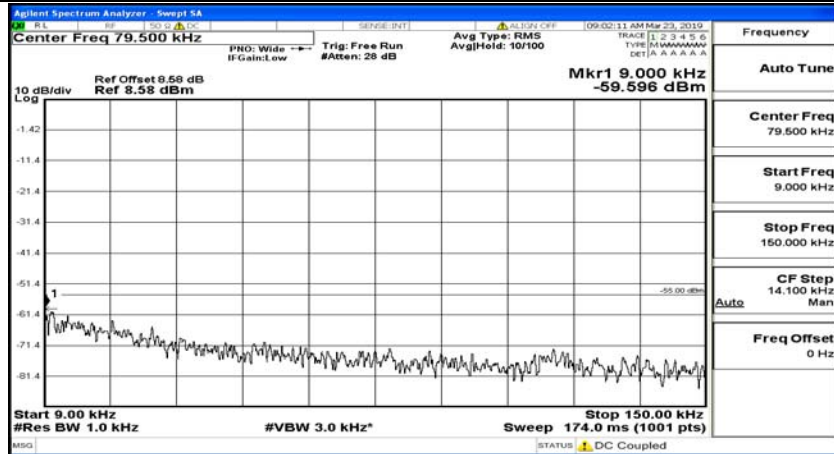
CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



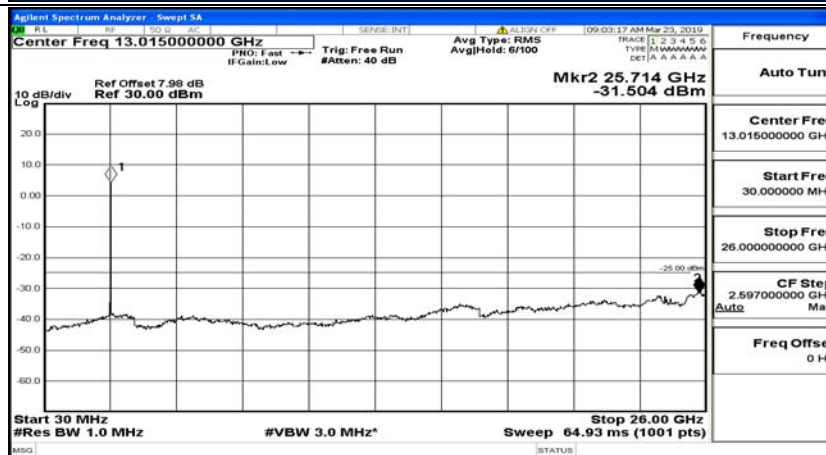
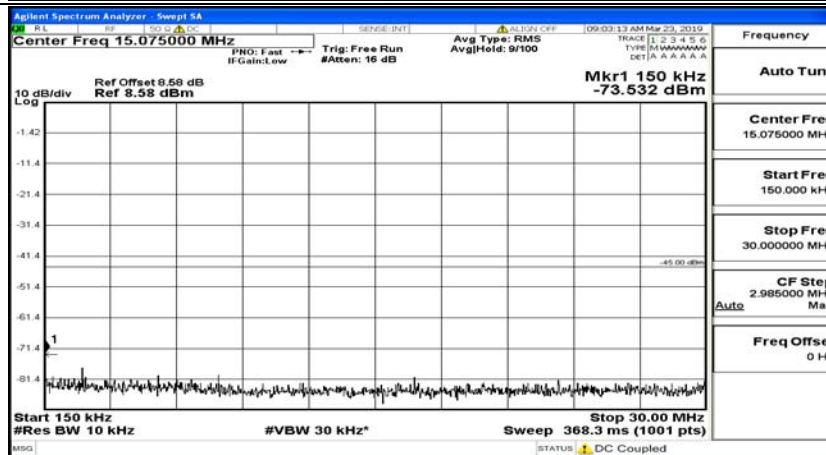
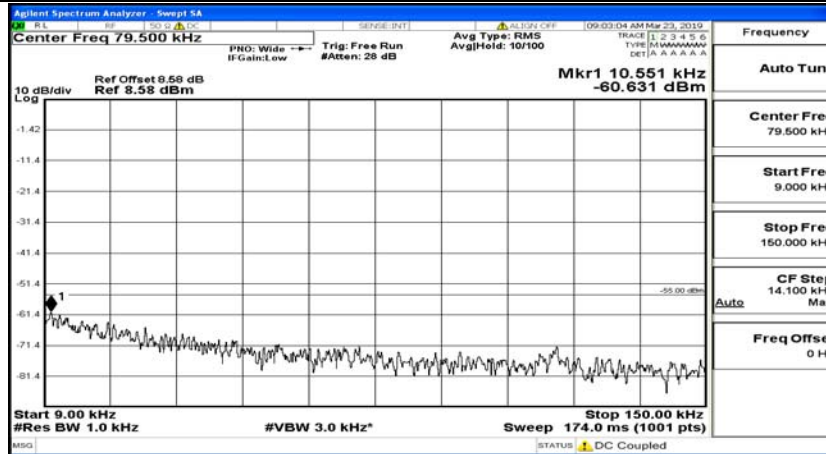
CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



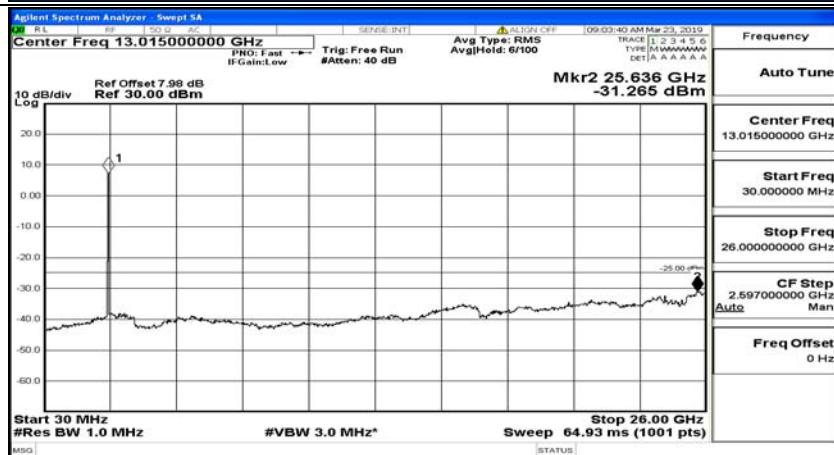
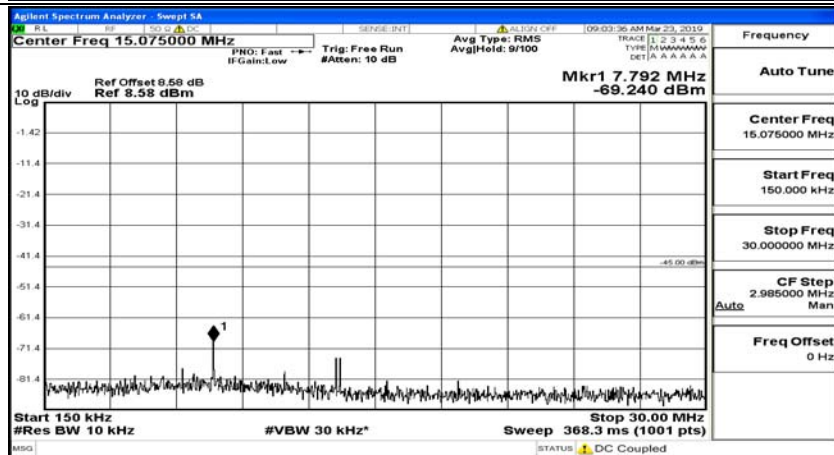
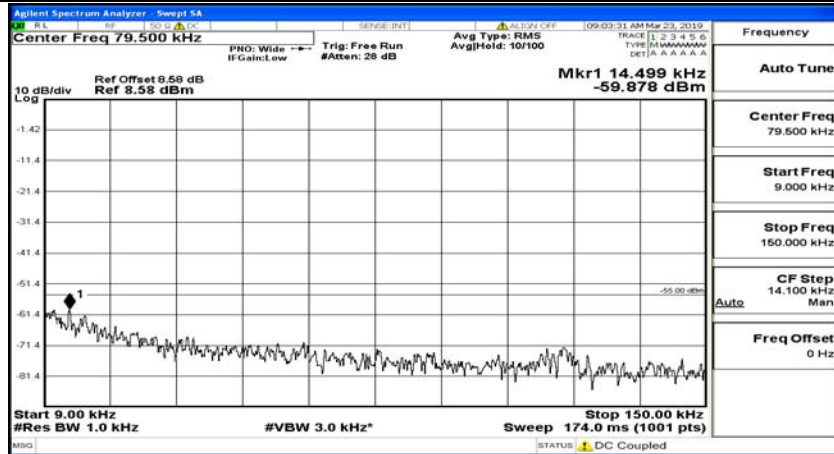
CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM



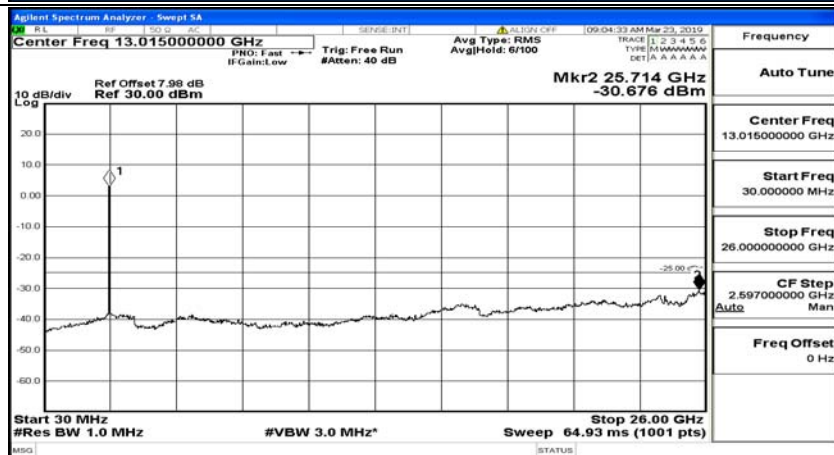
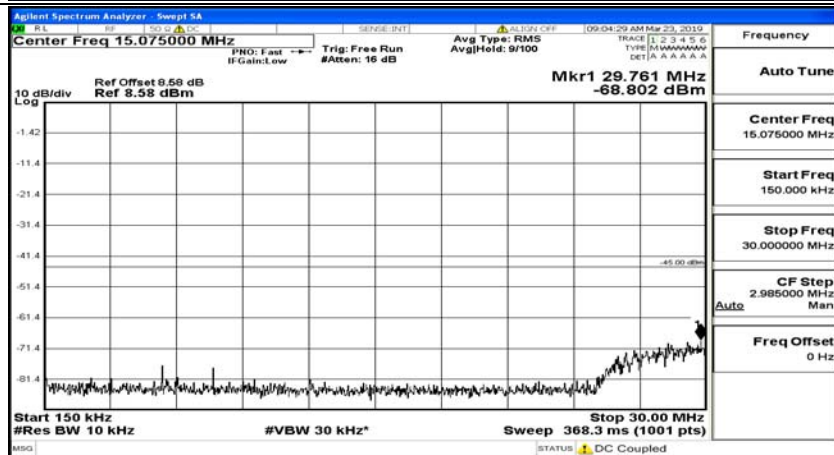
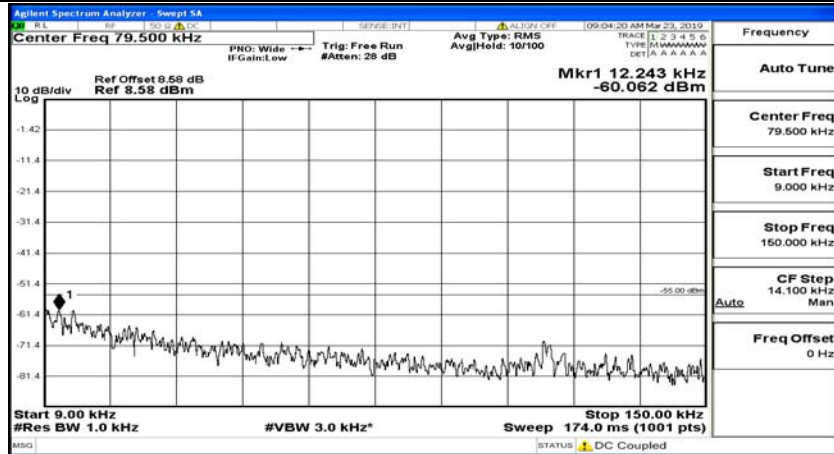
CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM



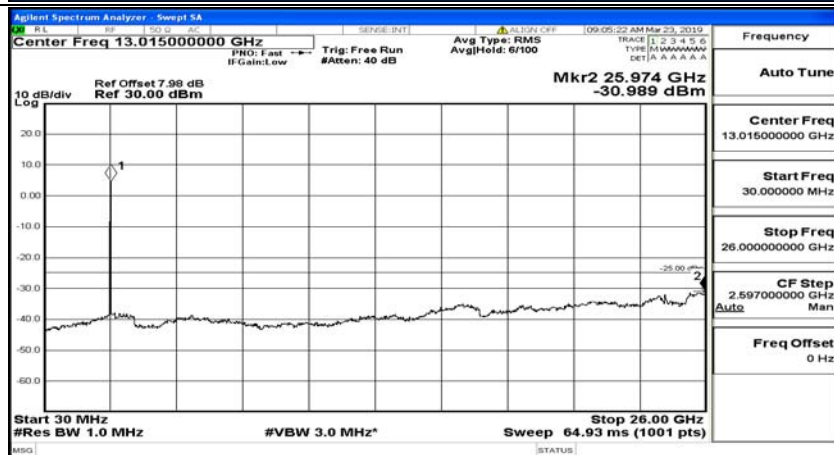
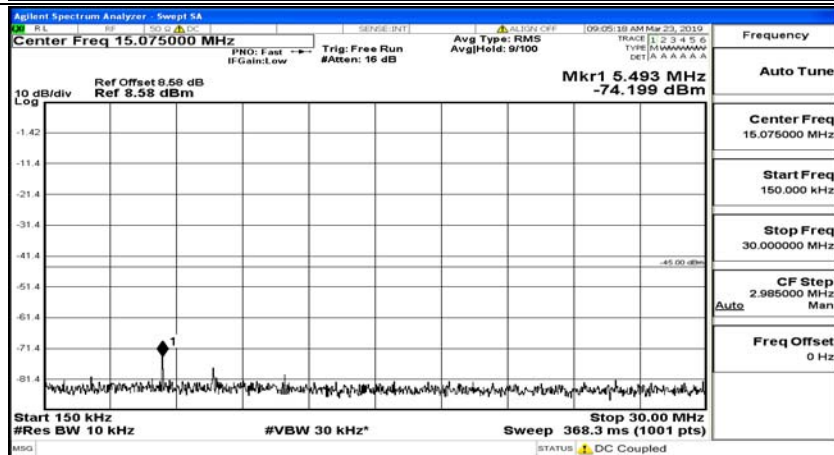
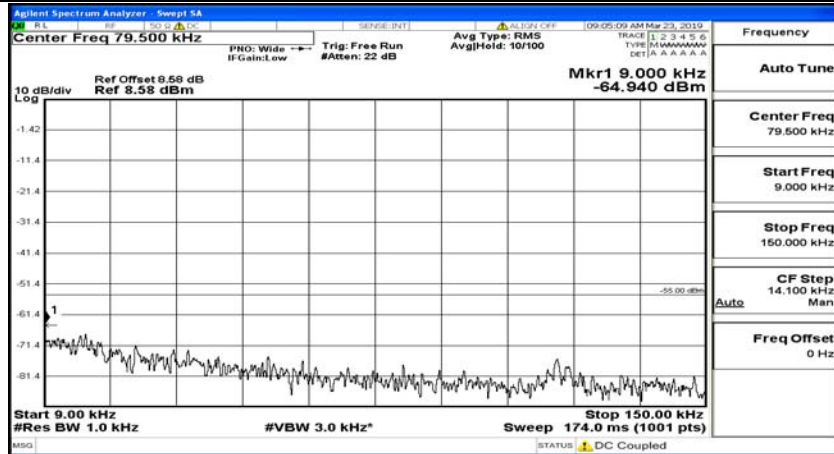
CSE Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_QPSK



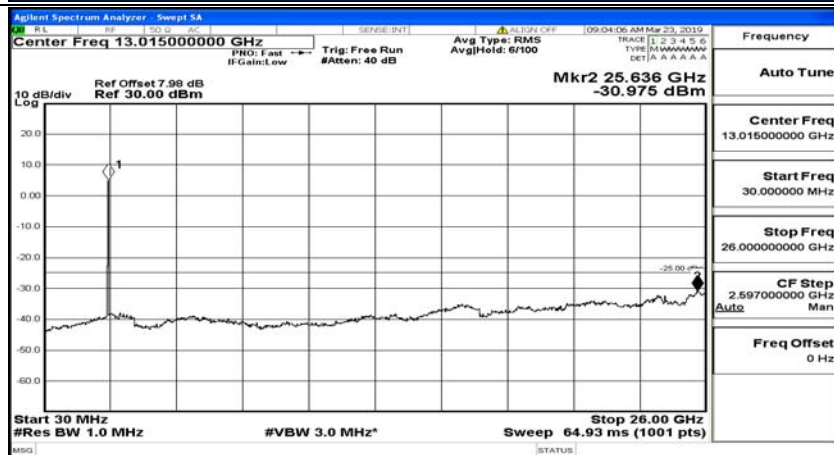
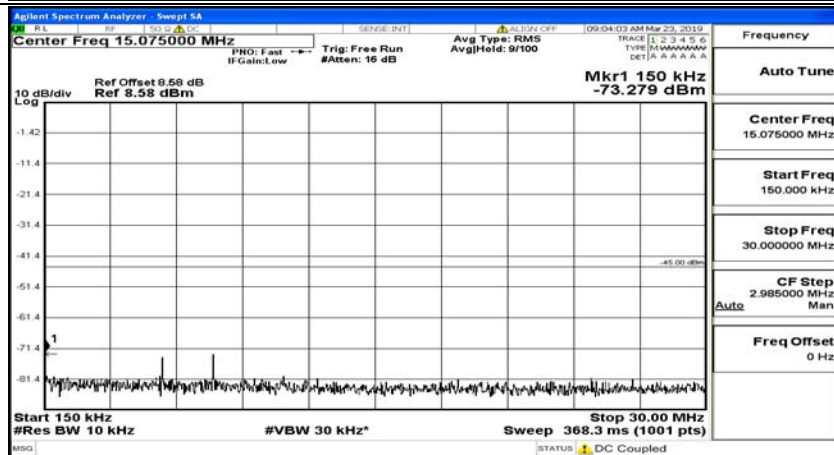
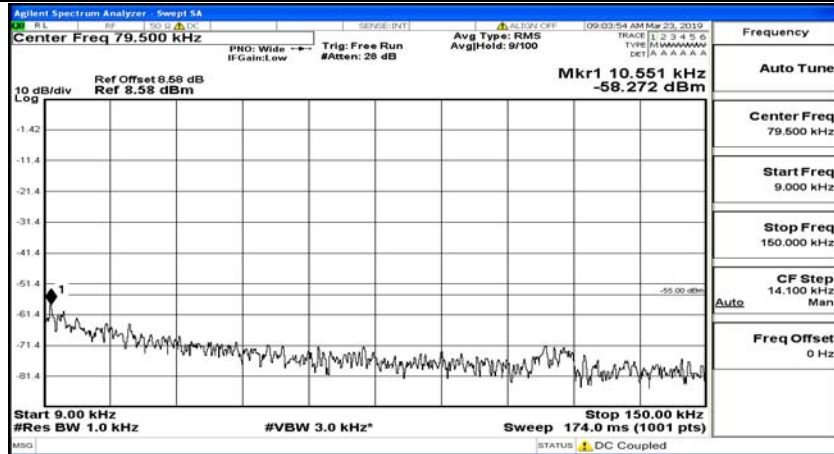
CSE Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_QPSK



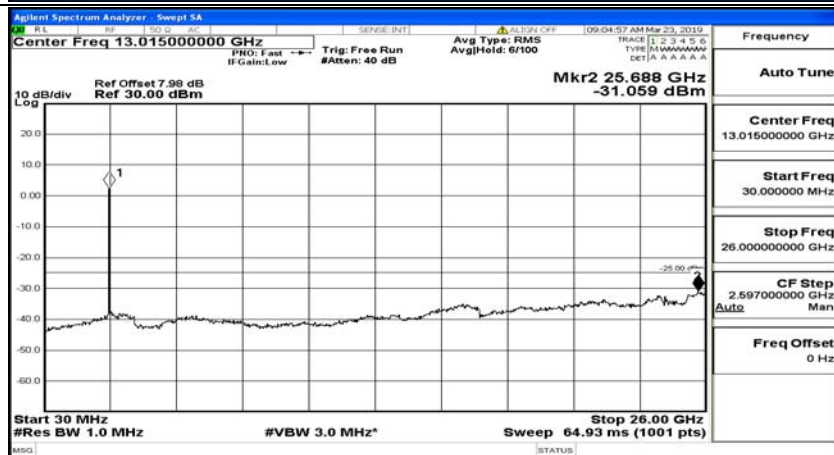
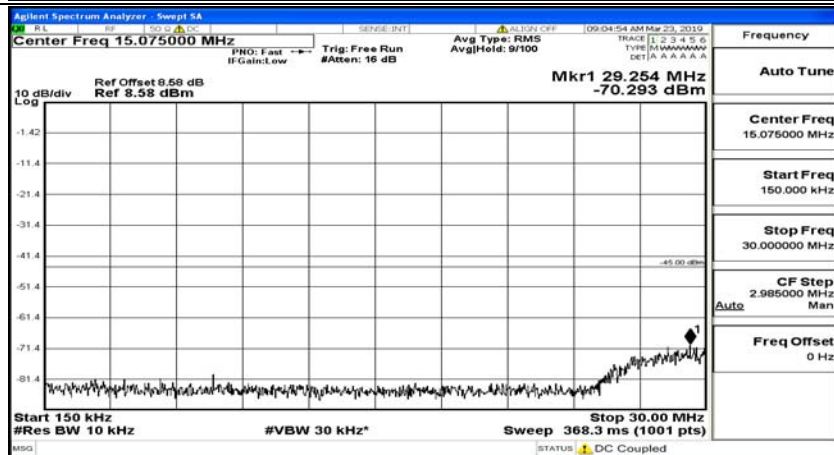
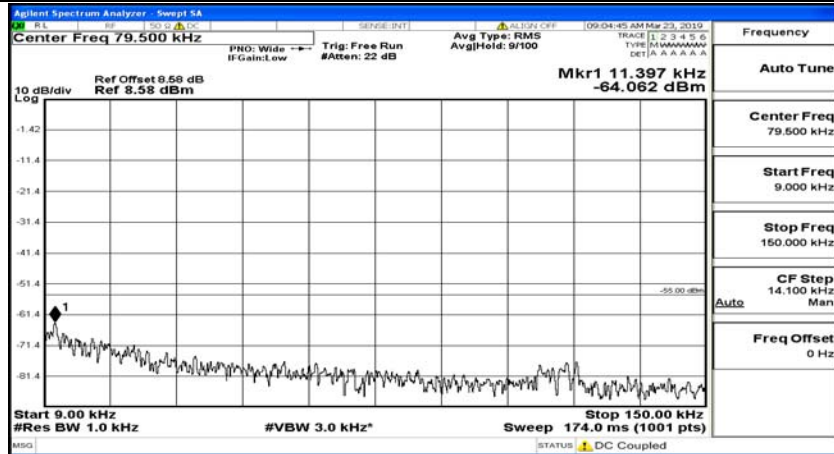
CSE Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_QPSK



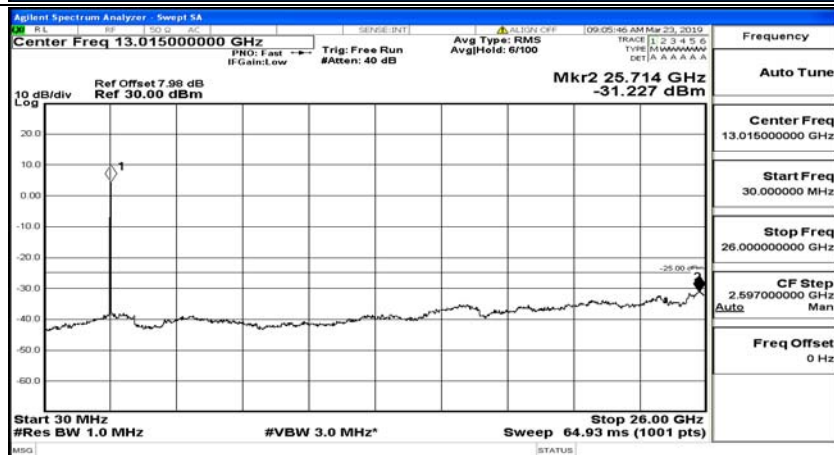
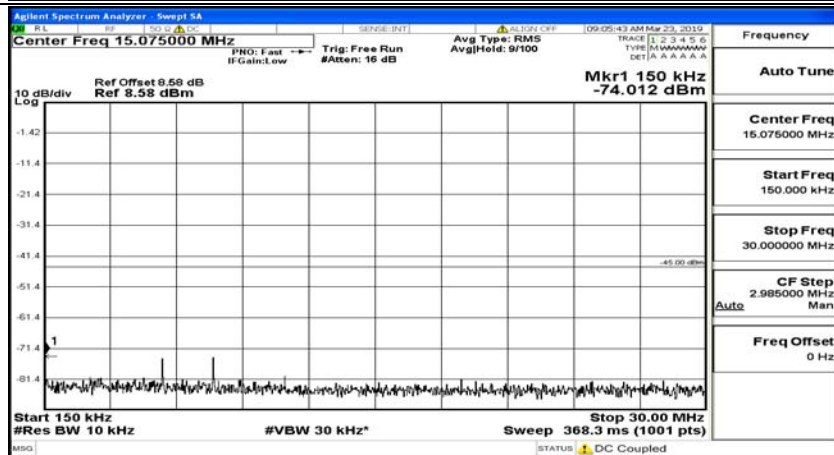
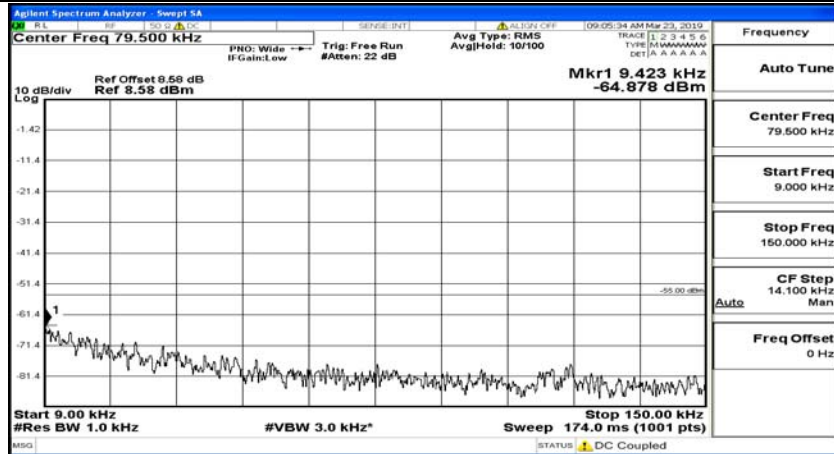
CSE Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_16QAM



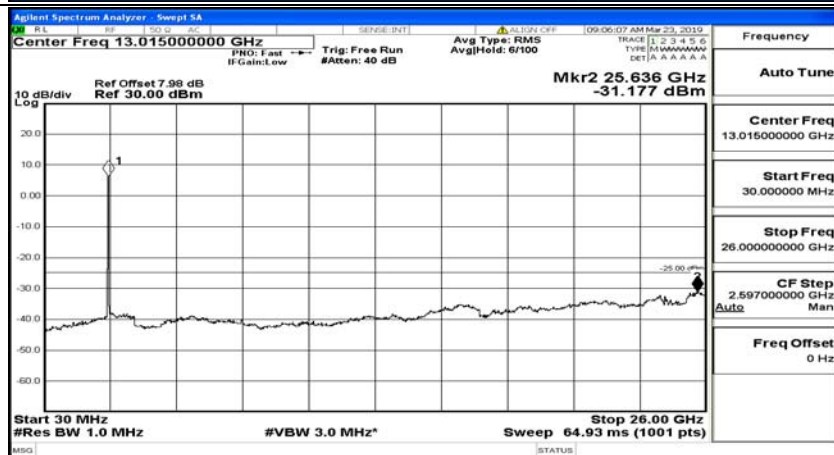
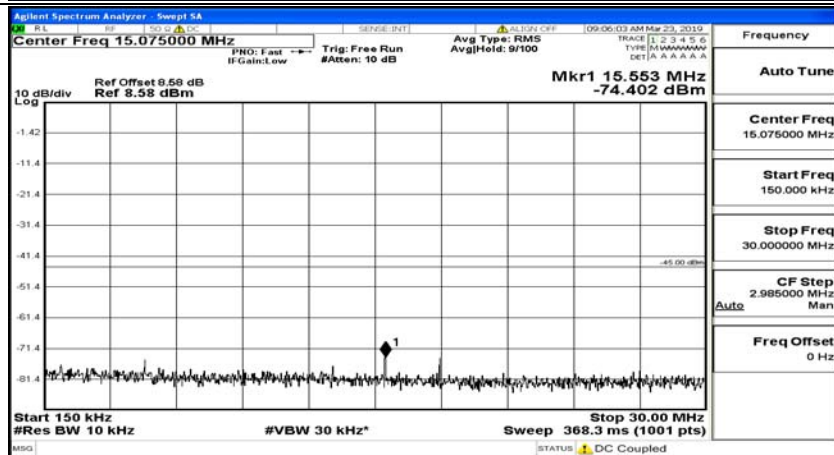
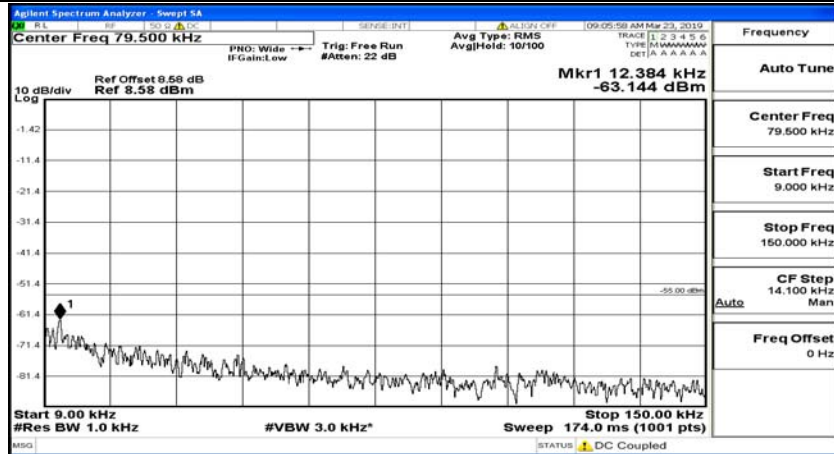
CSE Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_16QAM



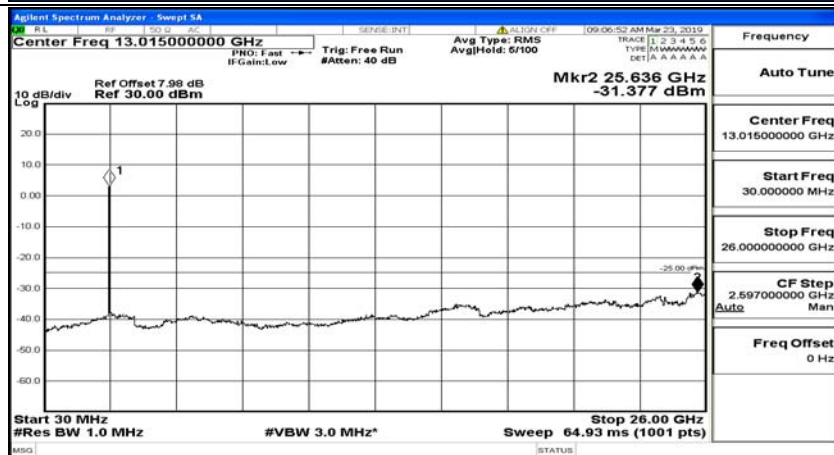
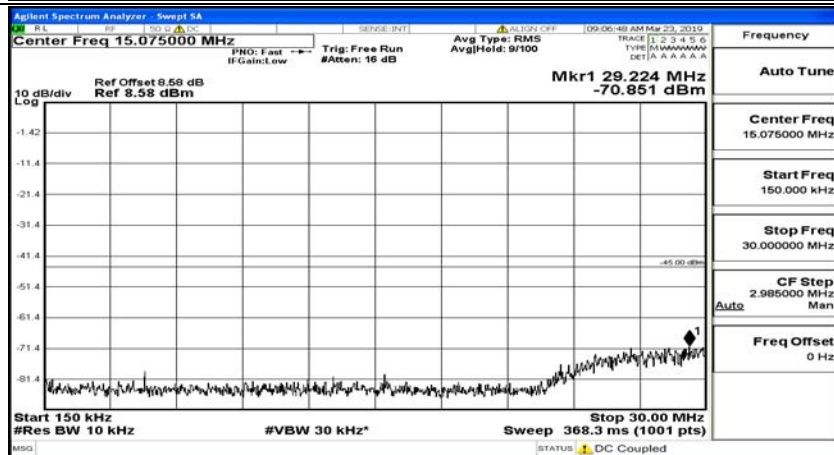
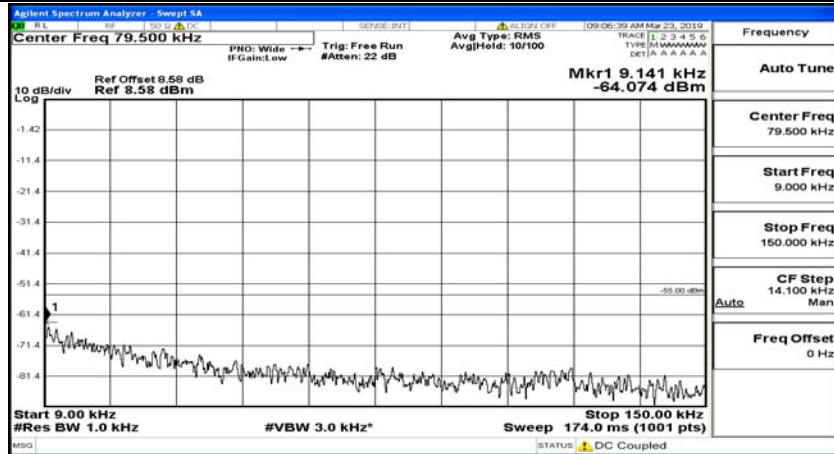
CSE Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_16QAM



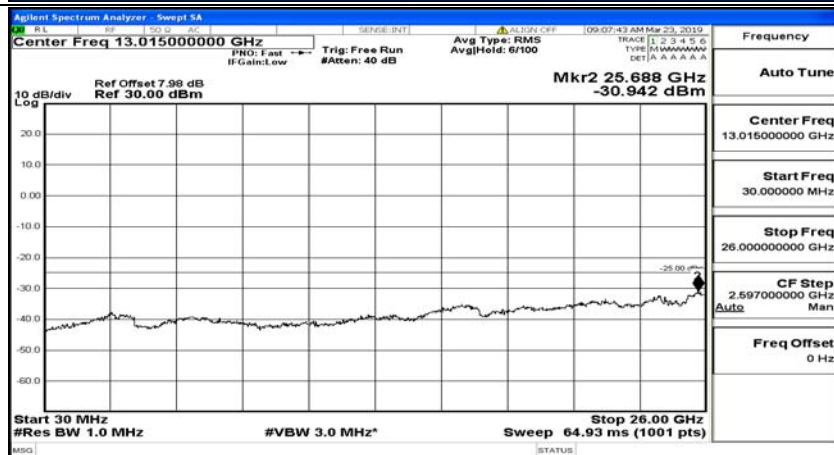
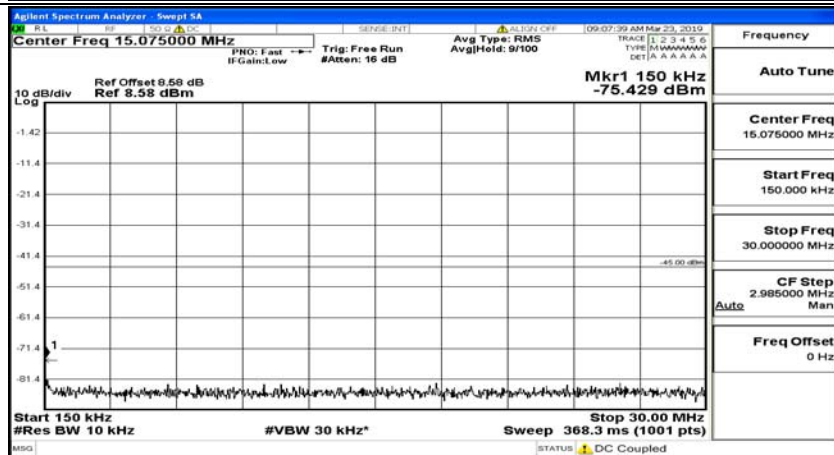
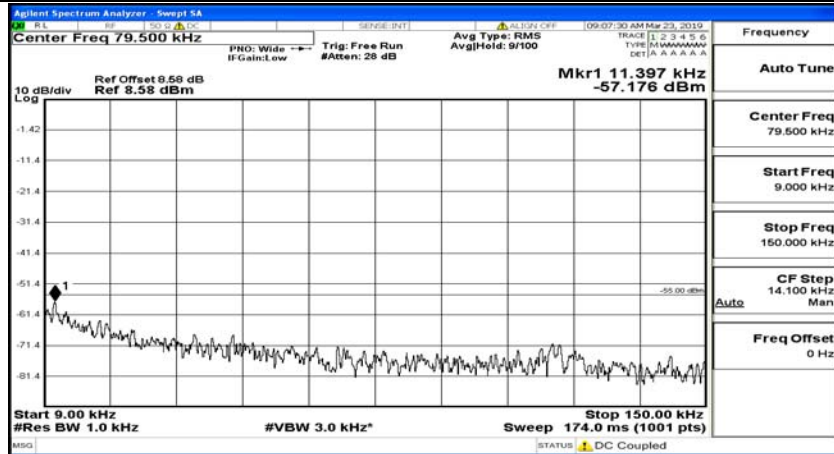
CSE Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK



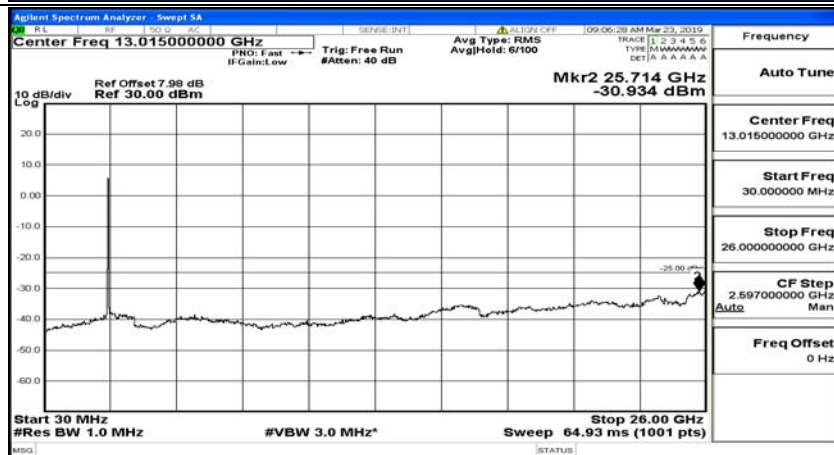
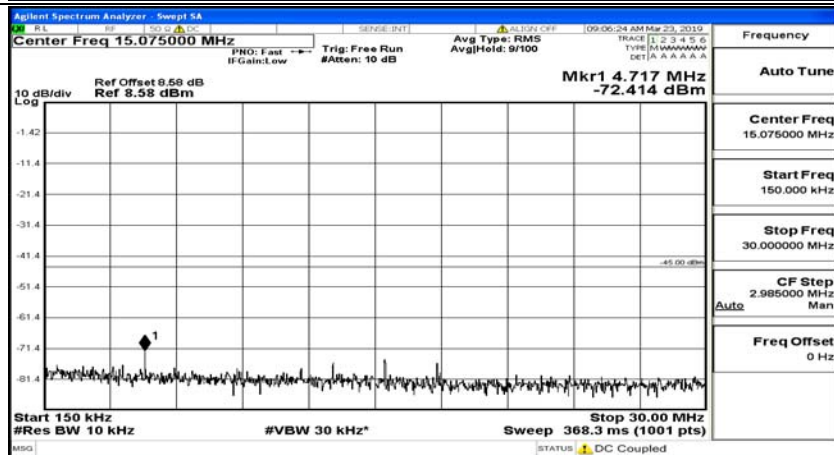
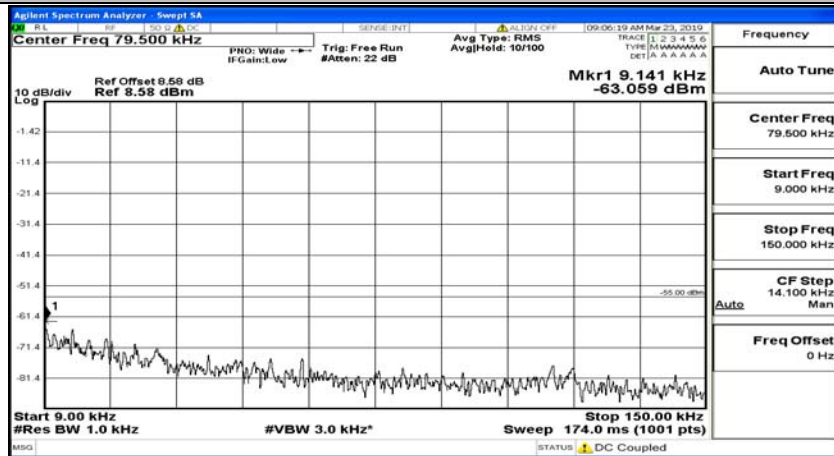
CSE Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_QPSK



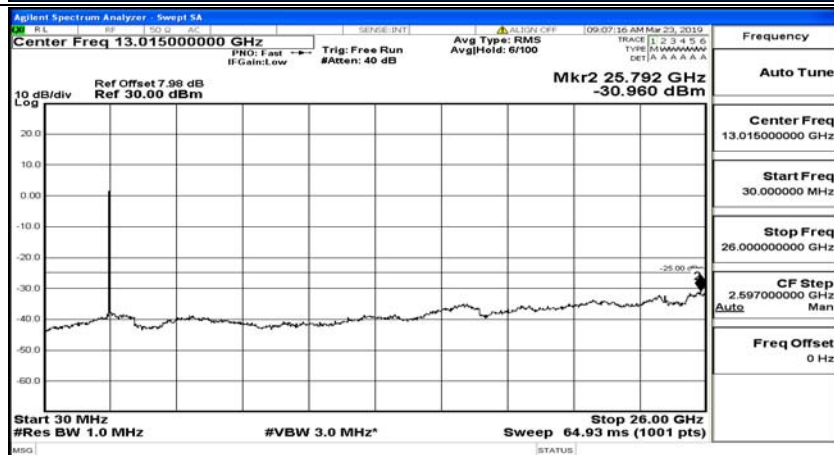
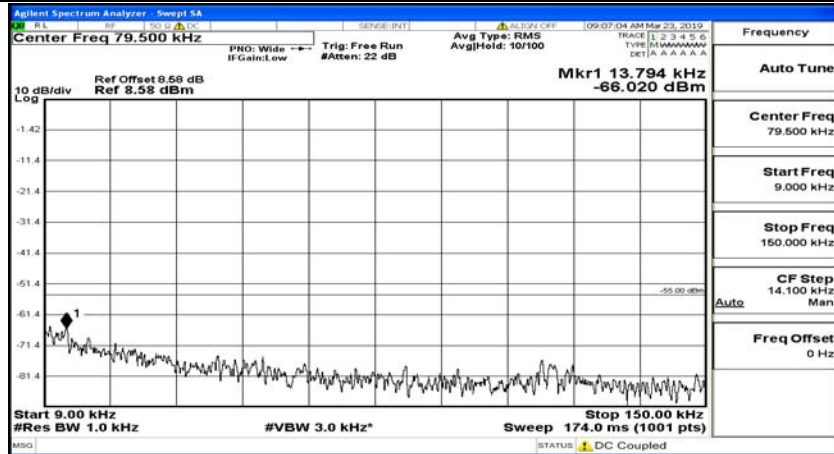
CSE Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_QPSK



CSE Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_16QAM



CSE Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_16QAM



CSE Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_16QAM

