Appendix for Band 13

Appendix A: Average Power Output Data

Test Result

Channel Bandwidth: 5 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	23.67	PASS
		1	12	23.98	PASS
		1	24	23.73	PASS
		12	0	22.72	PASS
		12	6	22.79	PASS
		12	13	22.90	PASS
		25	0	22.81	PASS
	MCH	1	0	23.71	PASS
		1	12	24.07	PASS
		1	24	23.70	PASS
		12	0	22.67	PASS
		12	6	22.83	PASS
		12	13	22.81	PASS
		25	0	22.78	PASS
	HCH	1	0	23.78	PASS
		1	12	24.09	PASS
		1	24	23.75	PASS
		12	0	22.77	PASS
		12	6	22.82	PASS
		12	13	22.70	PASS
		25	0	22.75	PASS
16QAM	LCH	1	0	22.86	PASS
		1	12	23.13	PASS
		1	24	22.98	PASS
		12	0	21.71	PASS
		12	6	21.77	PASS
		12	13	21.92	PASS
		25	0	21.83	PASS
	MCH	1	0	22.87	PASS
		1	12	23.37	PASS
		1	24	22.96	PASS

		12	0	21.75	PASS
		12	6	21.95	PASS
		12	13	21.91	PASS
		25	0	21.79	PASS
	HCH	1	0	22.94	PASS
		1	12	23.26	PASS
		1	24	22.87	PASS
		12	0	21.71	PASS
		12	6	21.80	PASS
		12	13	21.66	PASS
		25	0	21.76	PASS

Channel Bandwidth: 10 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	MCH	1	0	23.70	PASS
		1	24	24.11	PASS
		1	49	23.70	PASS
		25	0	23.15	PASS
		25	12	23.17	PASS
		25	25	23.11	PASS
		50	0	23.14	PASS
16QAM	MCH	1	0	22.90	PASS
		1	24	23.18	PASS
		1	49	22.99	PASS
		25	0	21.77	PASS
		25	12	21.83	PASS
		25	25	21.80	PASS
		50	0	21.73	PASS

Appendix B: Peak-to-Average Ratio

Test Result

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	3.6	<13	PASS
		1	12	3.58	<13	PASS
		1	24	4.88	<13	PASS
		12	0	4.68	<13	PASS
		12	6	4.73	<13	PASS
		12	13	5.21	<13	PASS
		25	0	5.21	<13	PASS
	MCH	1	0	4.01	<13	PASS
		1	12	5.1	<13	PASS
		1	24	4.86	<13	PASS
		12	0	5.38	<13	PASS
		12	6	5.55	<13	PASS
		12	13	5.49	<13	PASS
		25	0	5.36	<13	PASS
	HCH	1	0	5.08	<13	PASS
		1	12	4.44	<13	PASS
		1	24	4.52	<13	PASS
		12	0	5.42	<13	PASS
		12	6	5.2	<13	PASS
		12	13	5.15	<13	PASS
		25	0	5.36	<13	PASS
16QAM	LCH	1	0	4.33	<13	PASS
		1	12	4.48	<13	PASS
		1	24	5.89	<13	PASS
		12	0	5.54	<13	PASS
		12	6	5.6	<13	PASS
		12	13	6.07	<13	PASS
		25	0	5.93	<13	PASS
	MCH	1	0	4.77	<13	PASS
		1	12	5.75	<13	PASS
		1	24	5.68	<13	PASS
		12	0	6.3	<13	PASS
		12	6	6.47	<13	PASS

		12	13	6.41	<13	PASS
		25	0	6.13	<13	PASS
	HCH	1	0	5.96	<13	PASS
		1	12	5.27	<13	PASS
		1	24	5.45	<13	PASS
		12	0	6.2	<13	PASS
		12	6	6.08	<13	PASS
		12	13	5.97	<13	PASS
		25	0	6.21	<13	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	MCH	1	0	3.57	<13	PASS
		1	24	4.92	<13	PASS
		1	49	4.39	<13	PASS
		25	0	5.28	<13	PASS
		25	12	5.32	<13	PASS
		25	25	5.36	<13	PASS
		50	0	5.27	<13	PASS
16QAM	MCH	1	0	4.47	<13	PASS
		1	24	5.84	<13	PASS
		1	49	5.26	<13	PASS
		25	0	6.07	<13	PASS
		25	12	6.22	<13	PASS
		25	25	6.25	<13	PASS
		50	0	6.09	<13	PASS

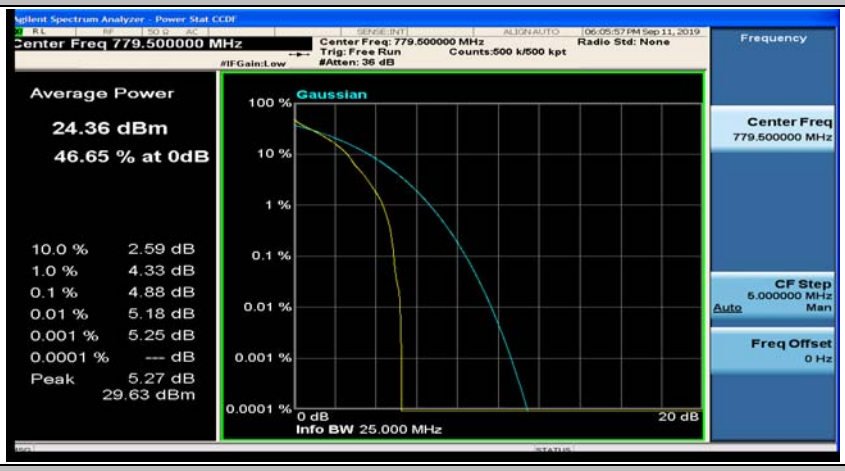
Test Graphs

Channel Bandwidth: 5 MHz

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0

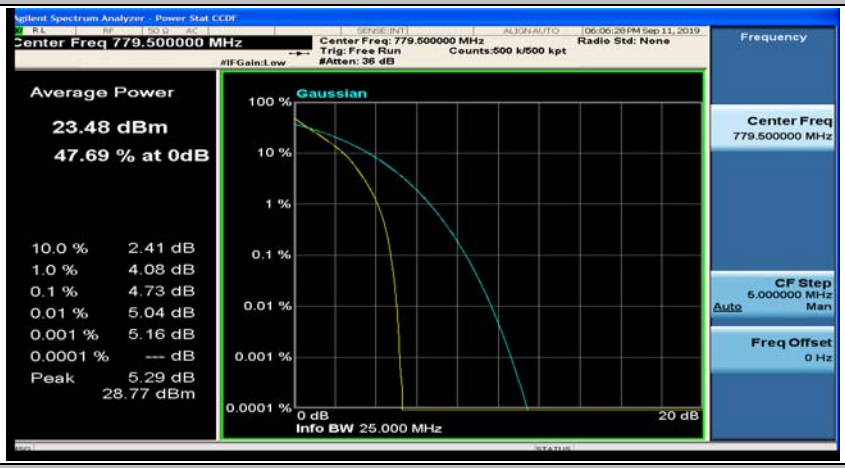
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24

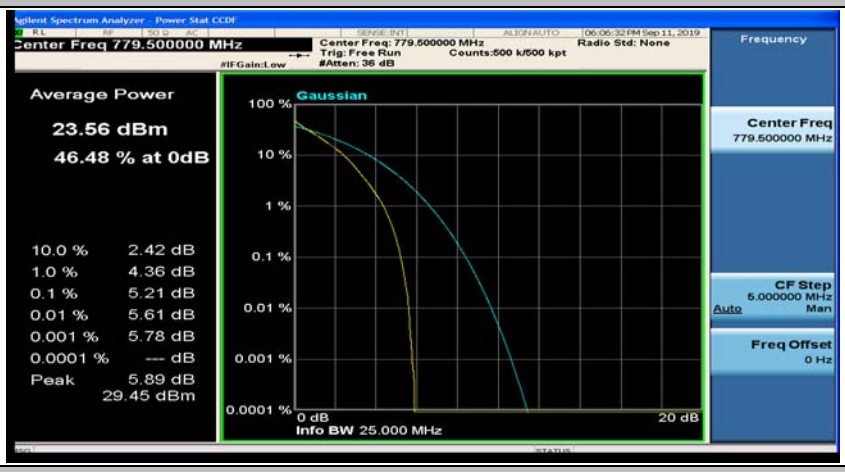


(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0

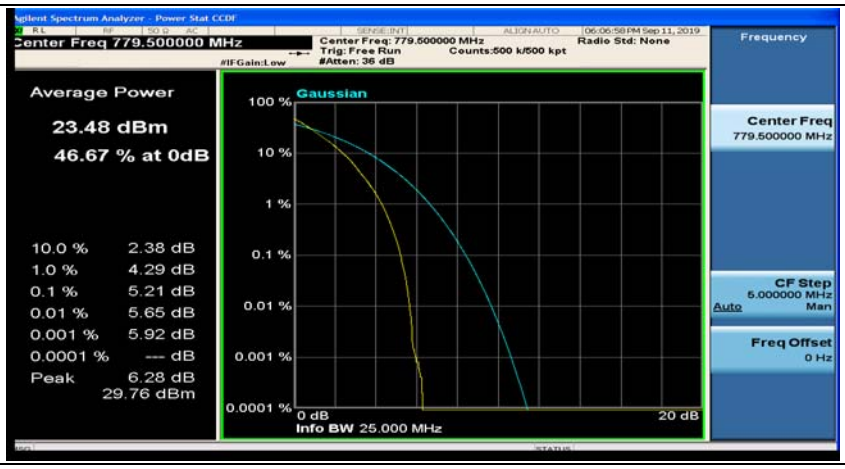
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#6



(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13

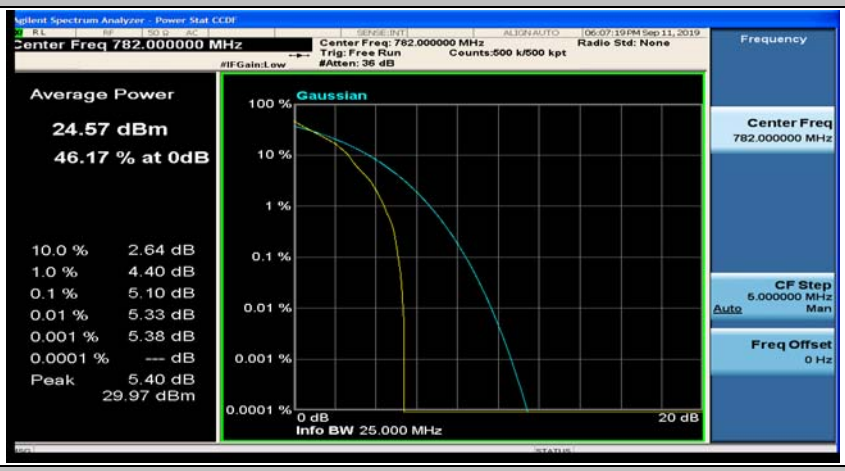


(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0

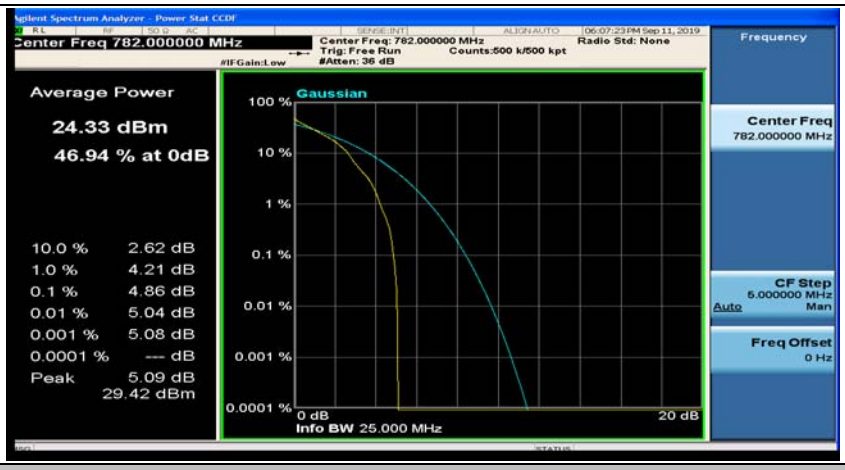


(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0

(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12

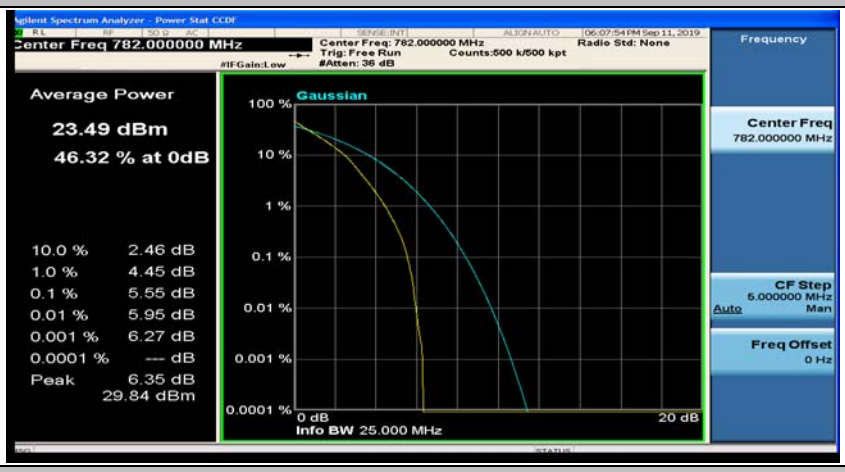


(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24

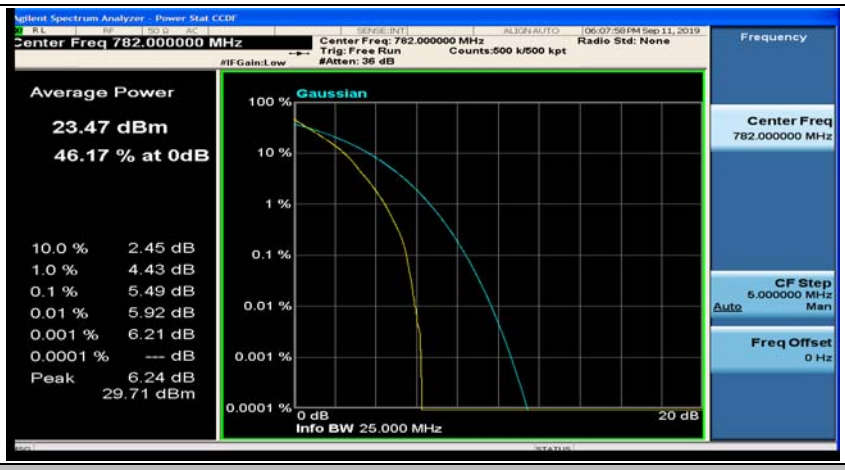


(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#0

(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#6

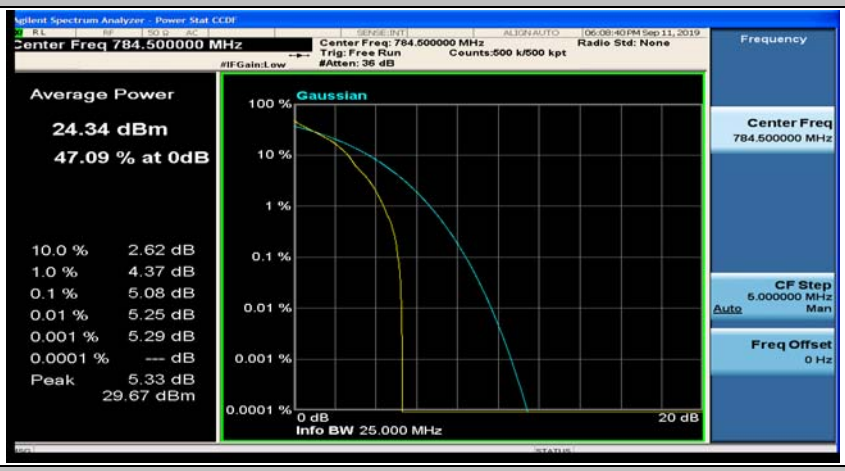


(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#13

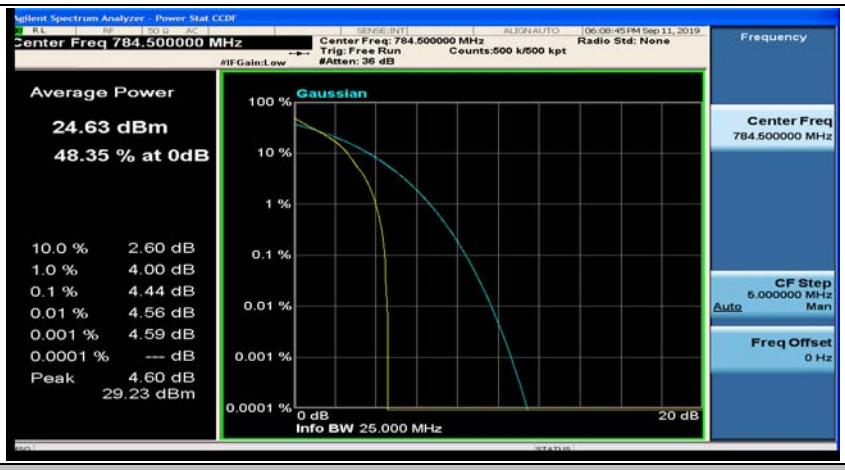


(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0

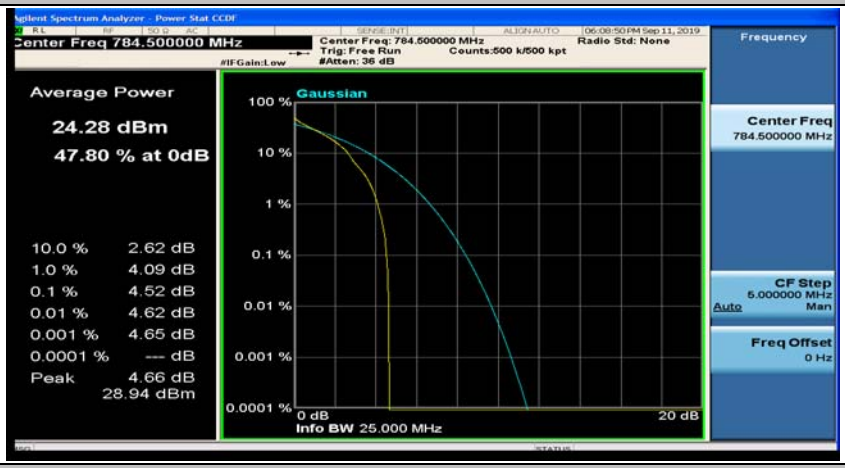
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



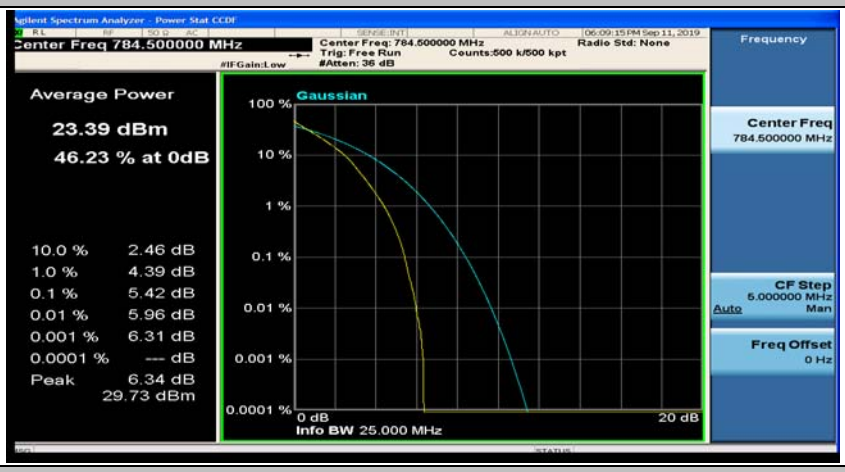
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



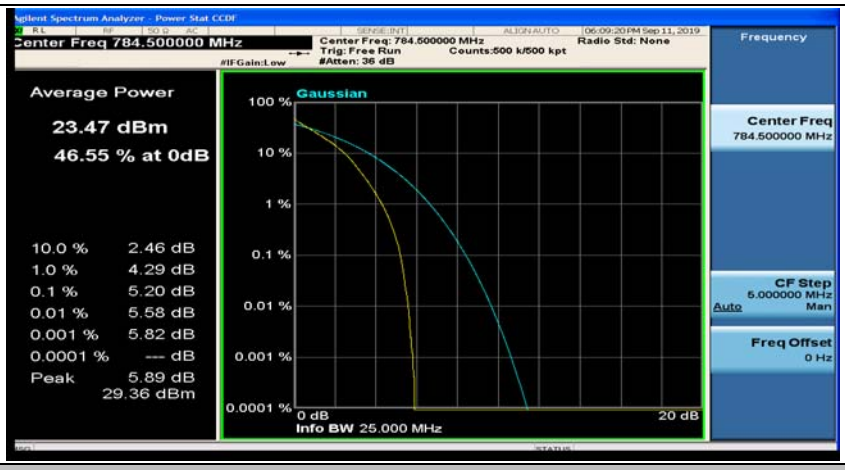
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24



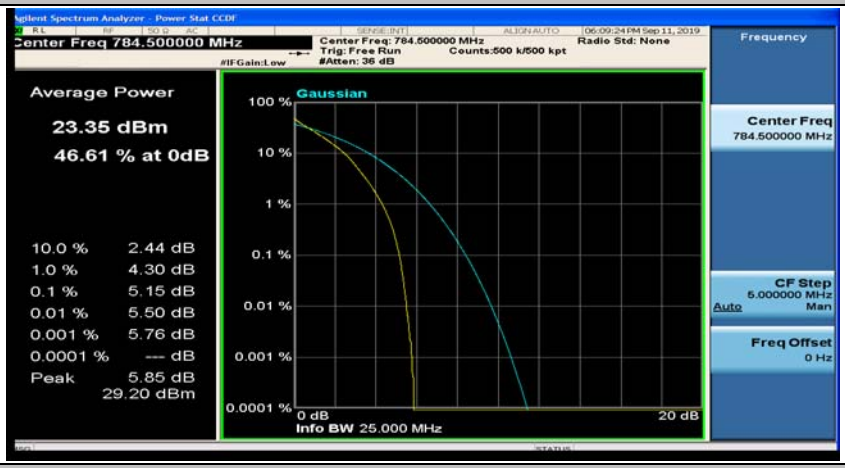
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0



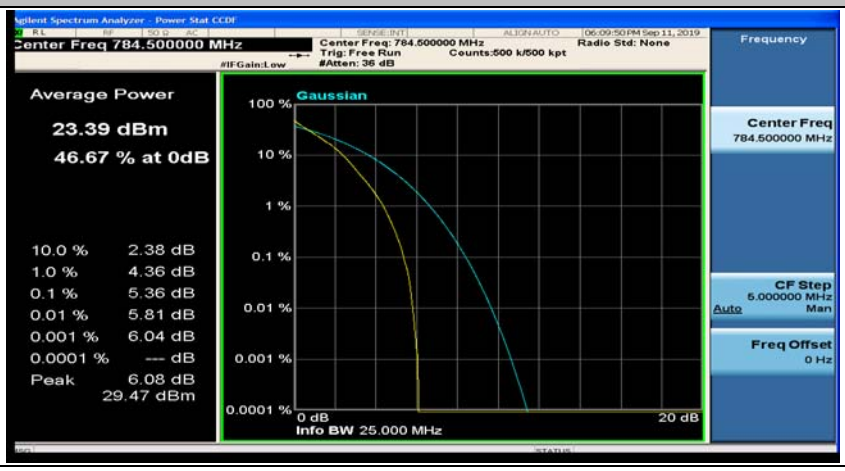
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6



(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13

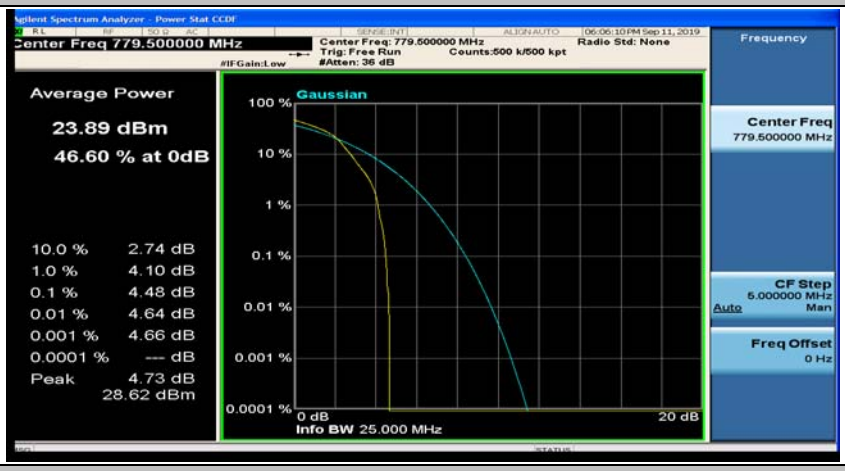


(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0

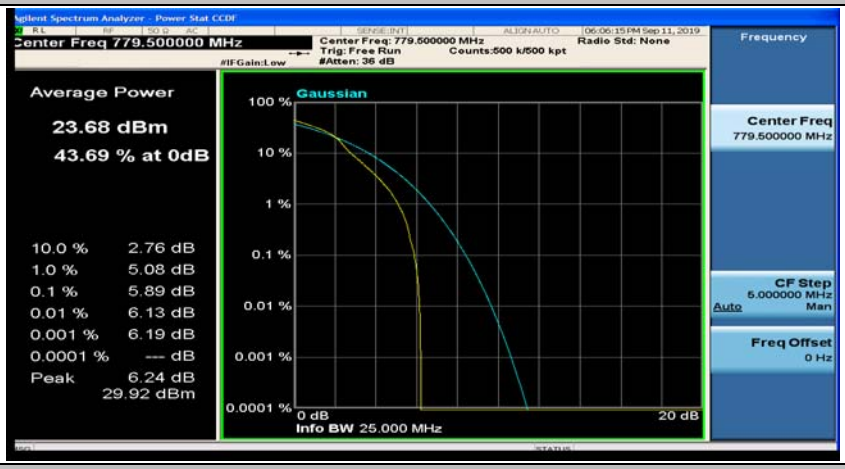


(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0

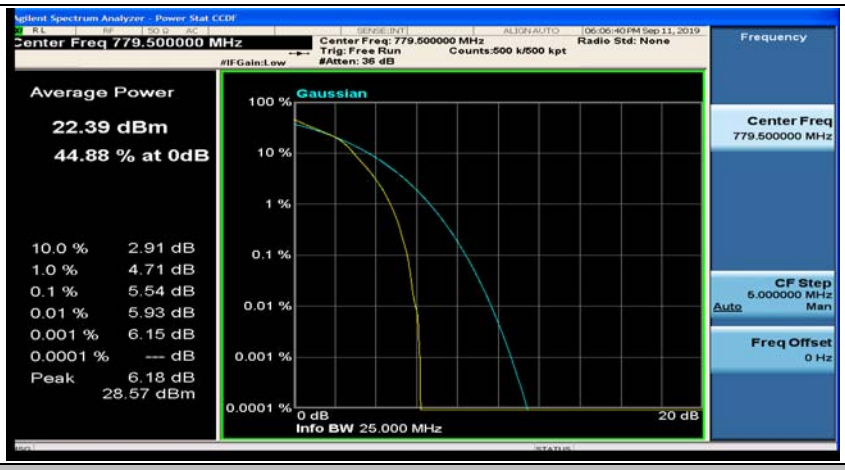
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12



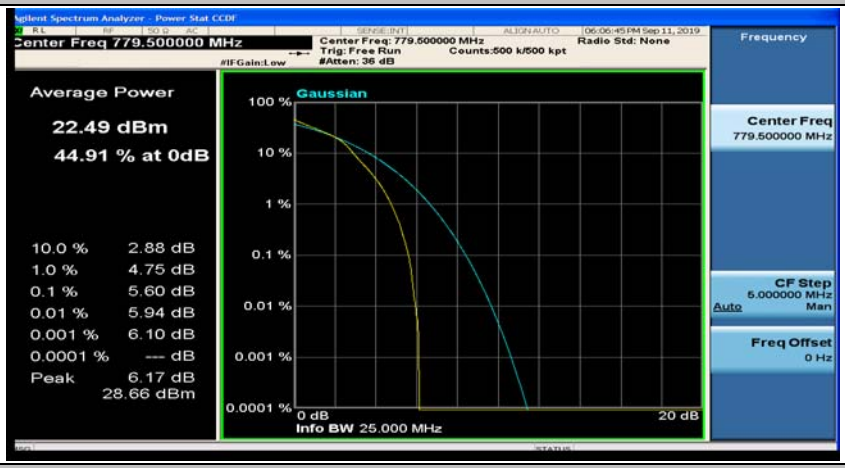
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24



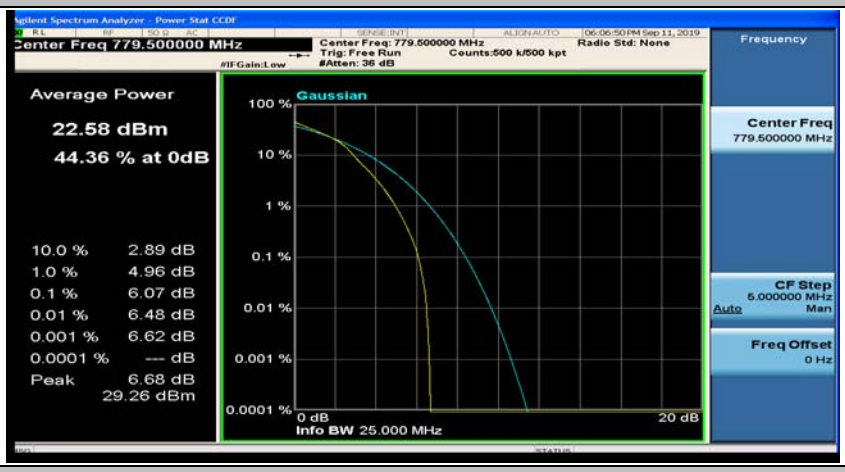
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0



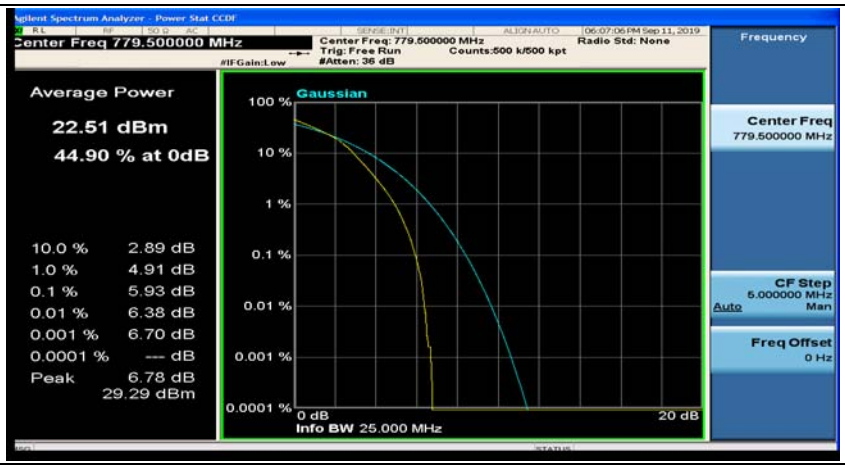
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#6



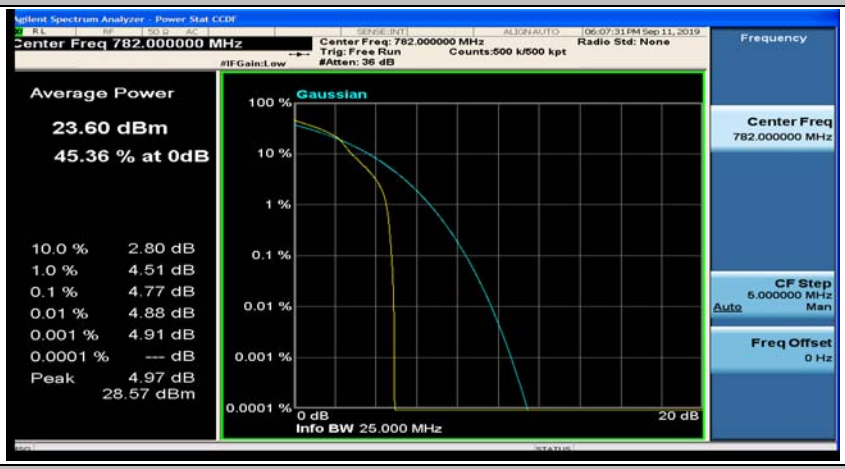
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#13



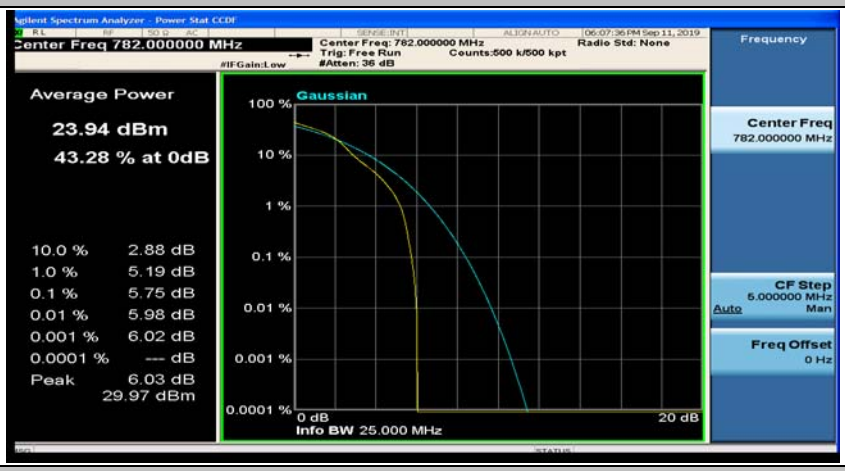
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12



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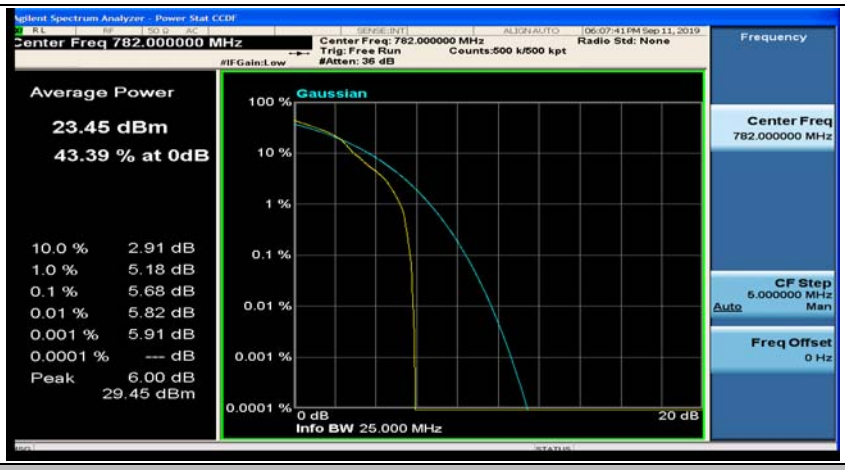
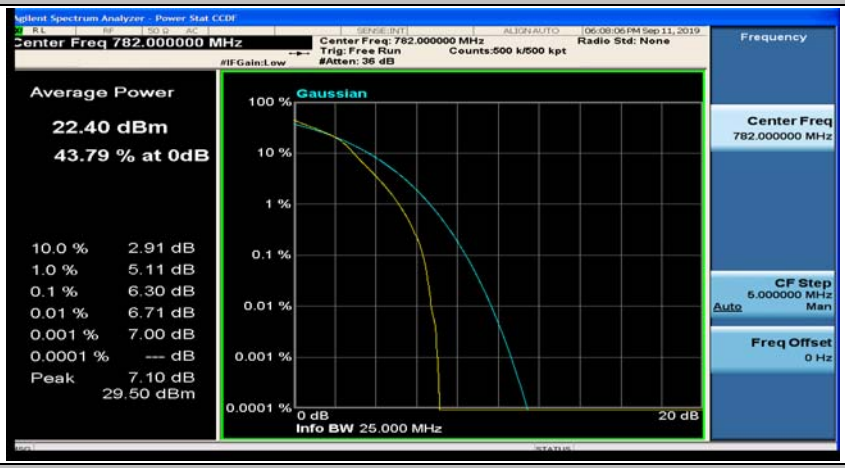


(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#0

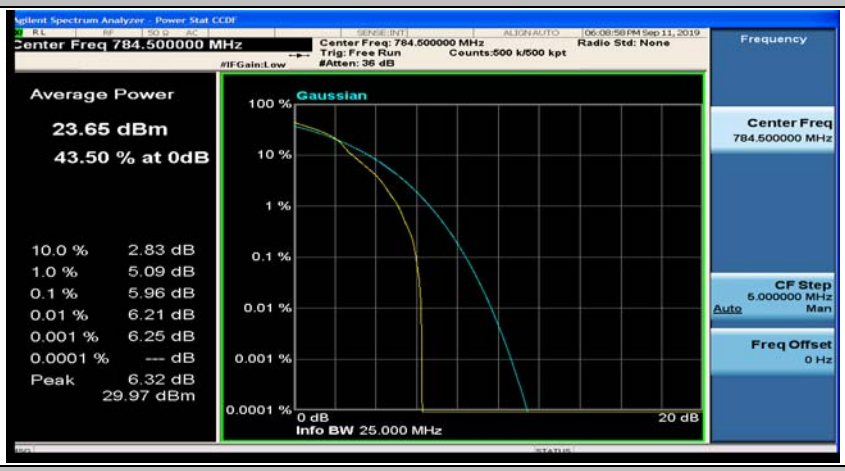


(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#6

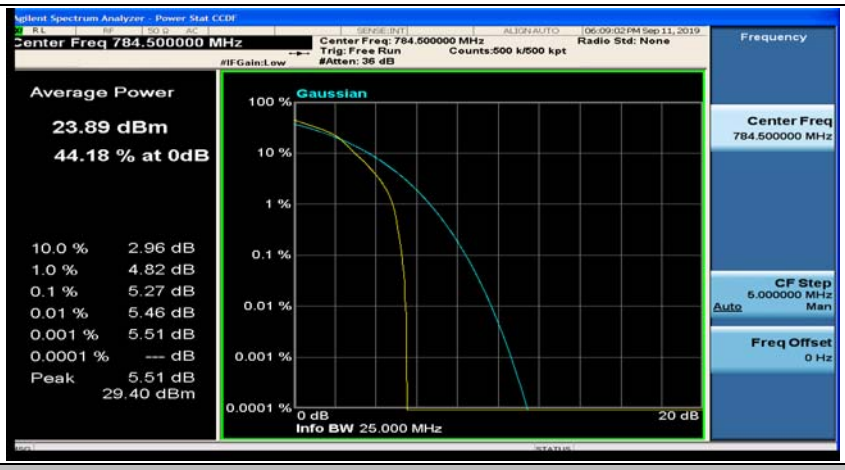
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#13

(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0

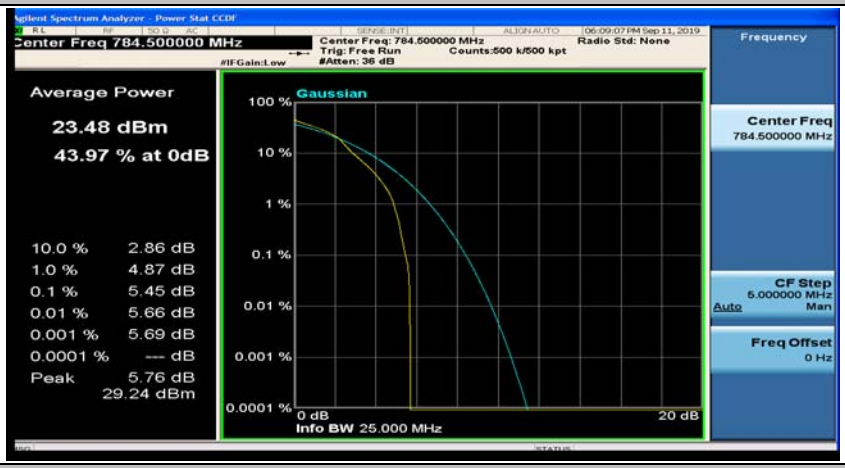
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



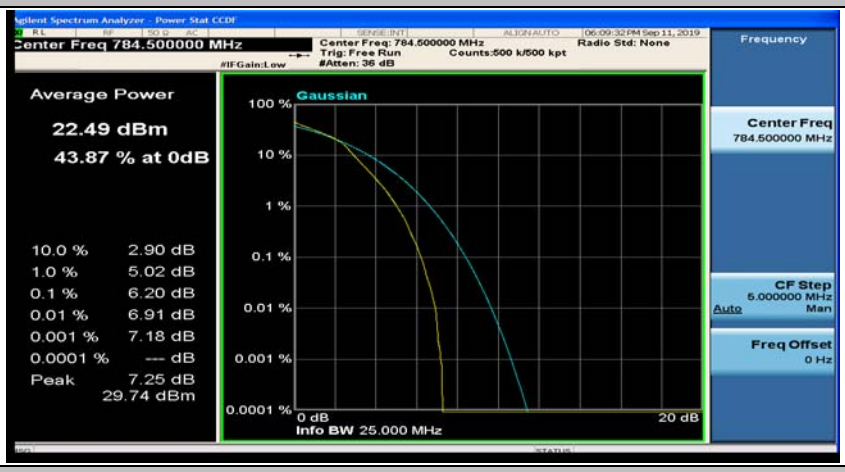
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



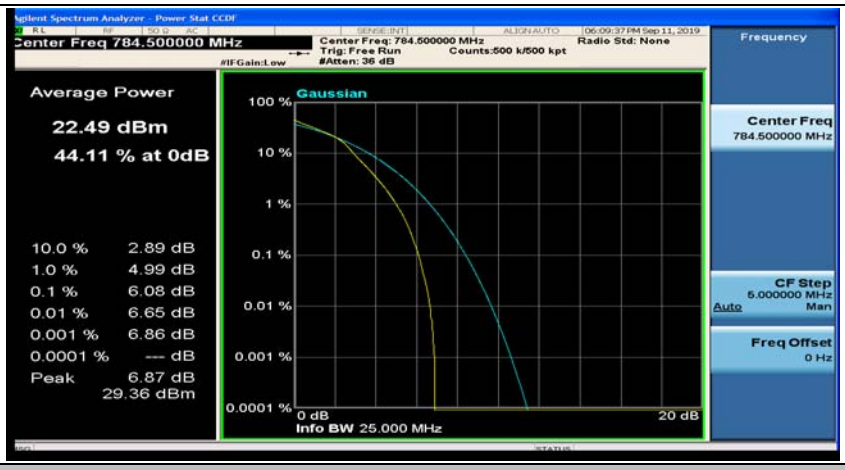
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24



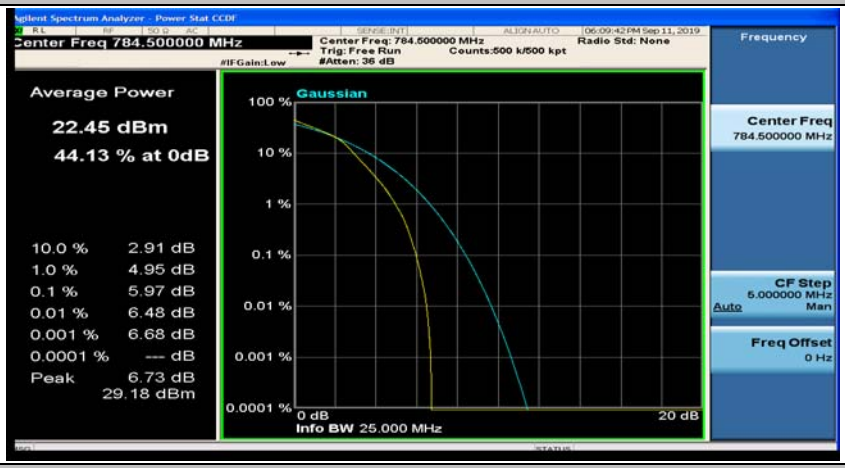
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#0



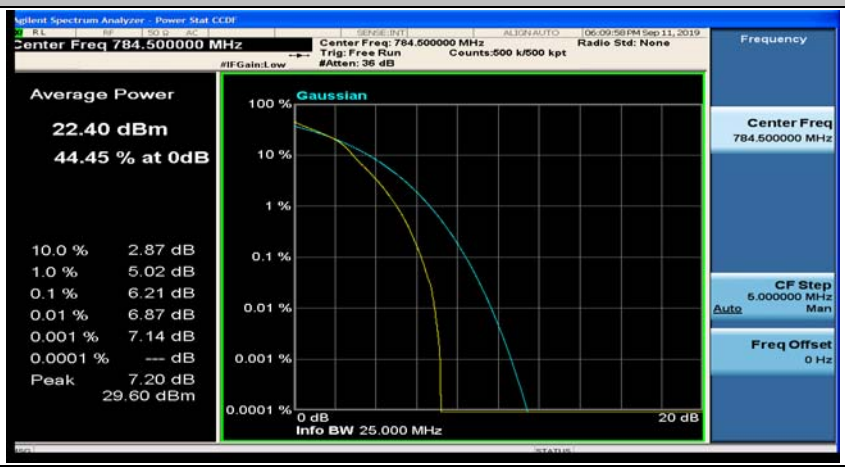
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#6



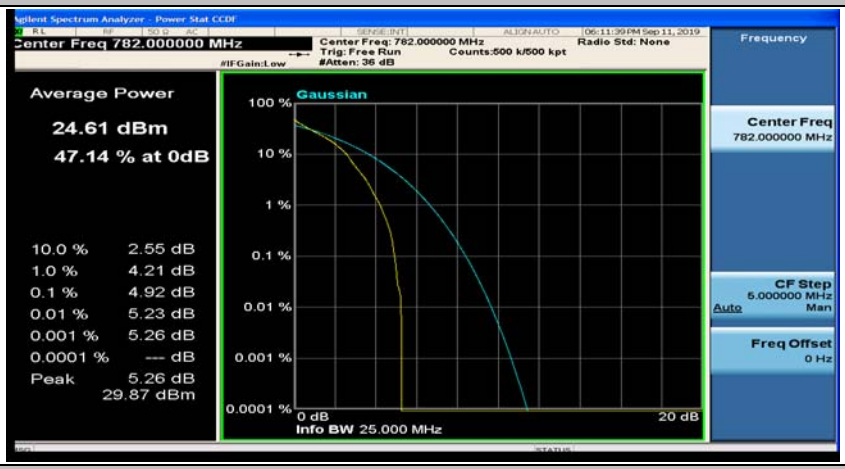
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#13

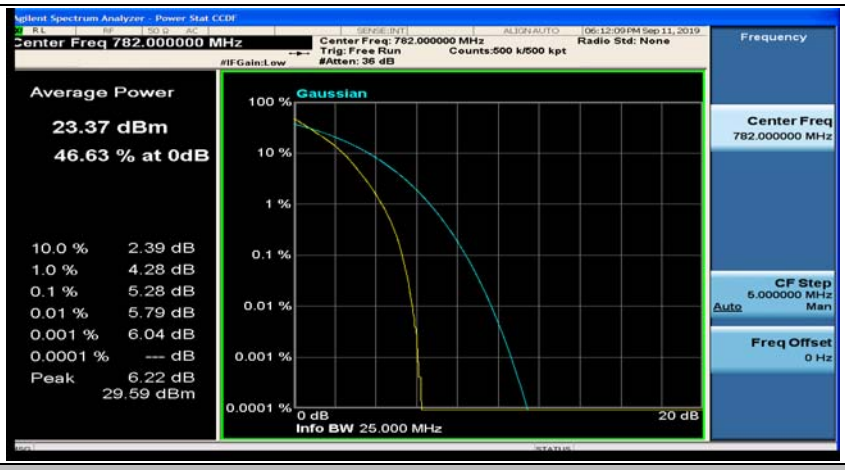


(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0

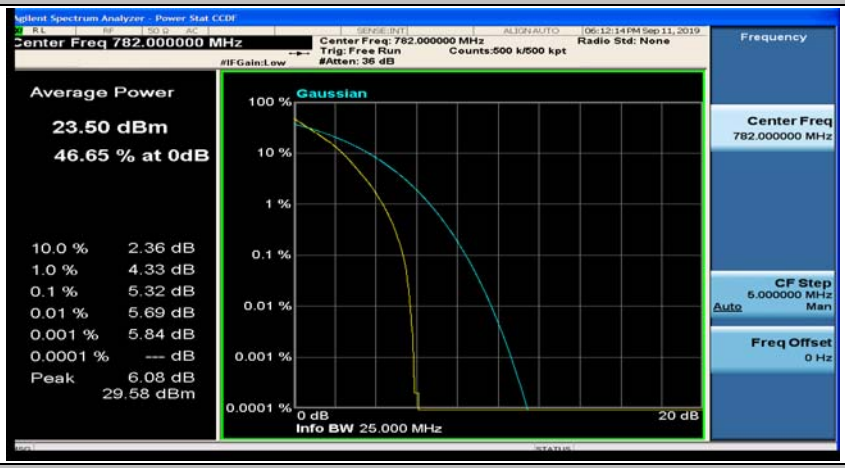


Channel Bandwidth: 10 MHz

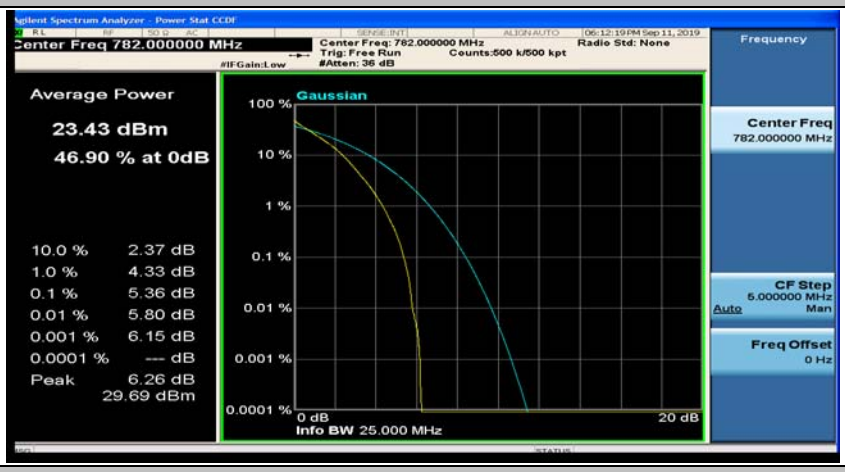
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#0



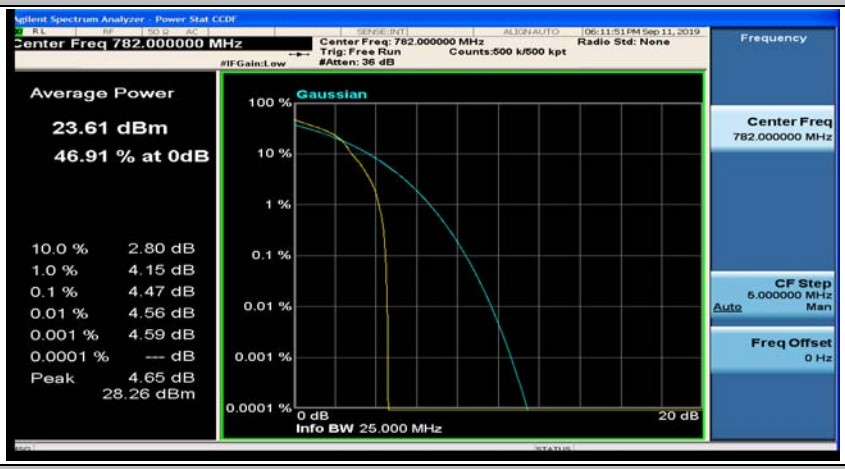
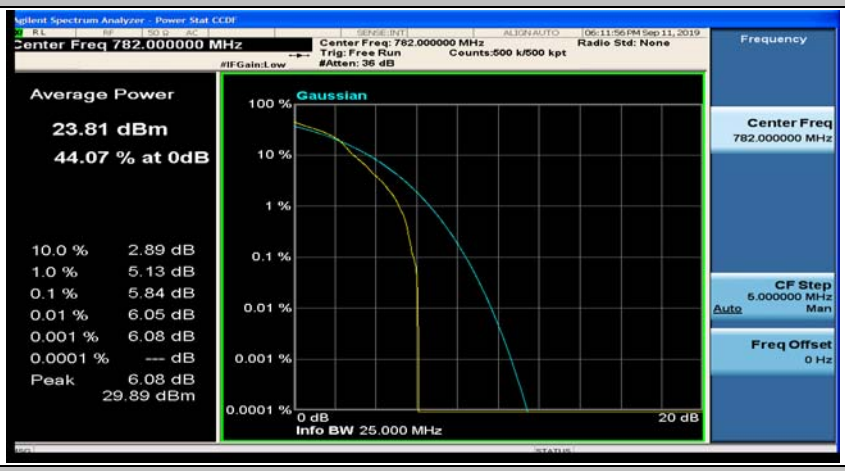
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12

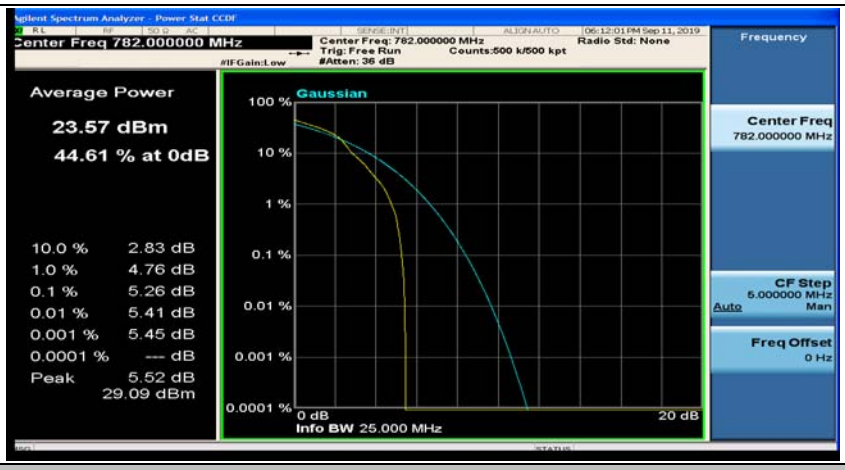


Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25



Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12

Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#25

Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0

Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	25	0	4.4730	4.900	PASS
	MCH	25	0	4.4711	4.851	PASS
	HCH	25	0	4.4774	4.883	PASS
16QAM	LCH	25	0	4.4821	4.861	PASS
	MCH	25	0	4.4764	4.812	PASS
	HCH	25	0	4.4661	4.819	PASS

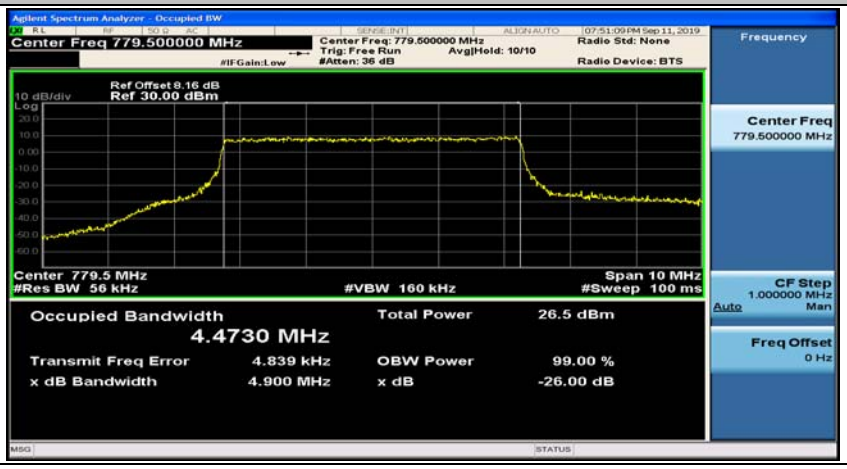
Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	MCH	50	0	8.9360	9.529	PASS
16QAM	MCH	50	0	8.9331	9.463	PASS

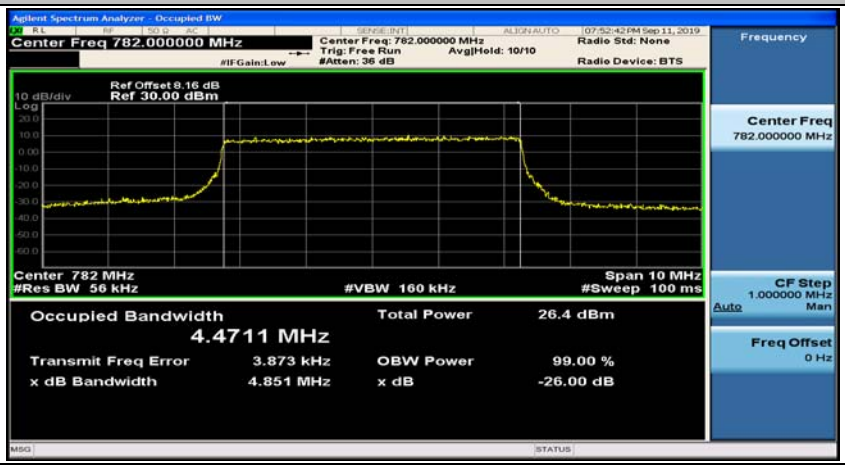
Test Graphs

Channel Bandwidth: 5 MHz

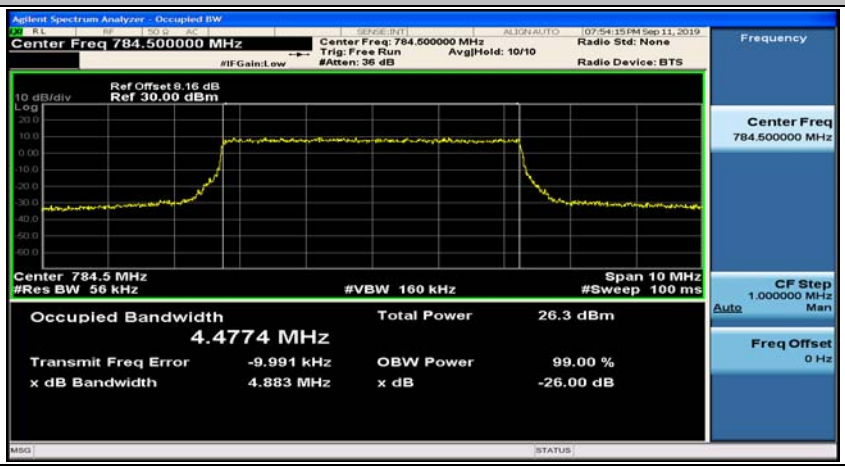
(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



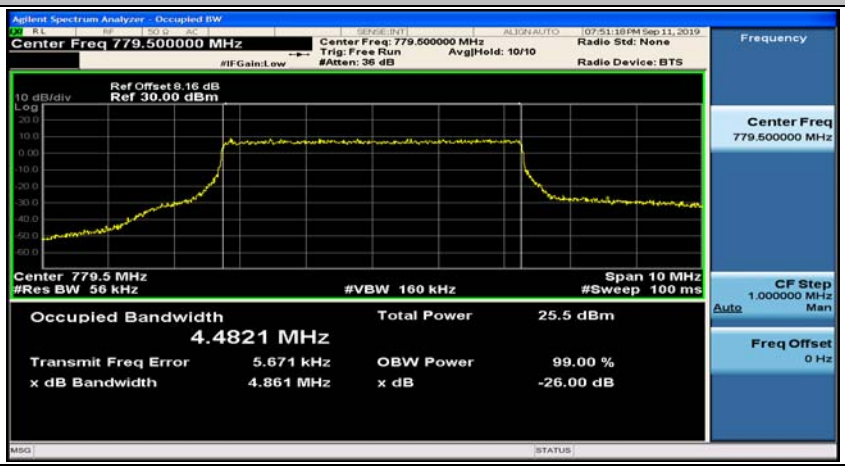
(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0



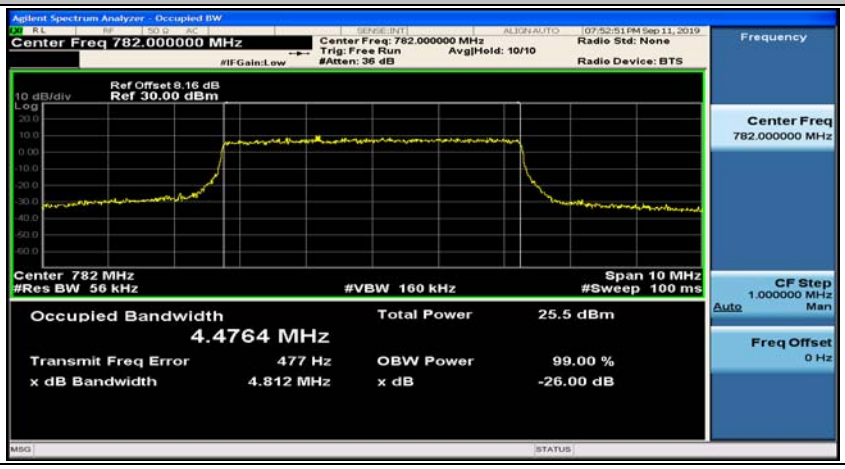
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



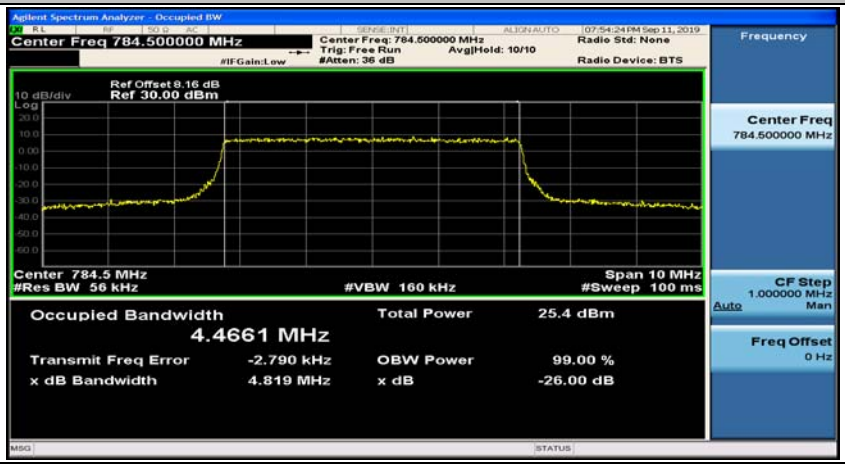
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0

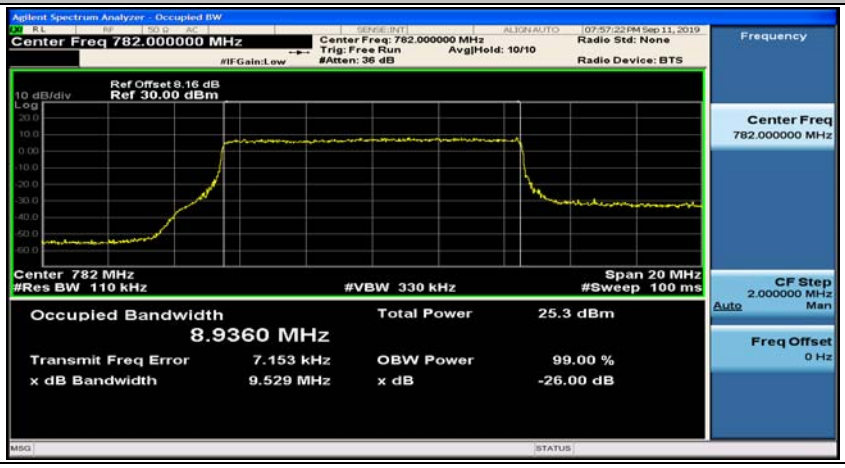


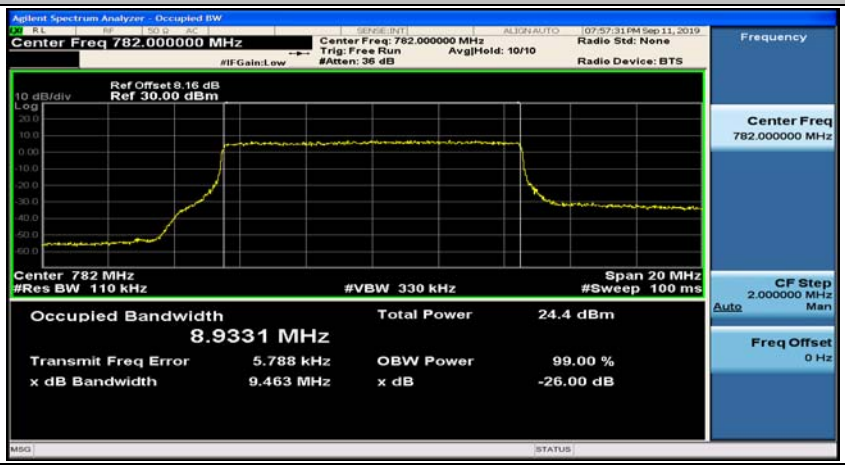
(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0



Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0



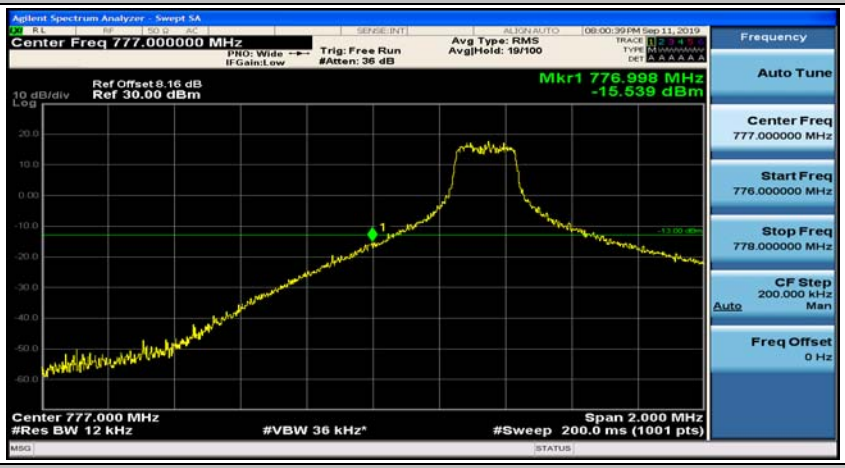
Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0


Appendix D: Band Edge

Test Graphs

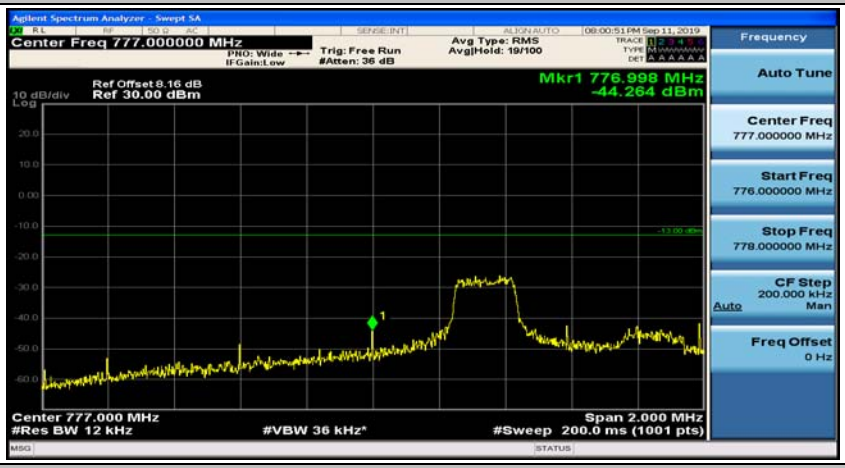
Channel Bandwidth: 5 MHz

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0

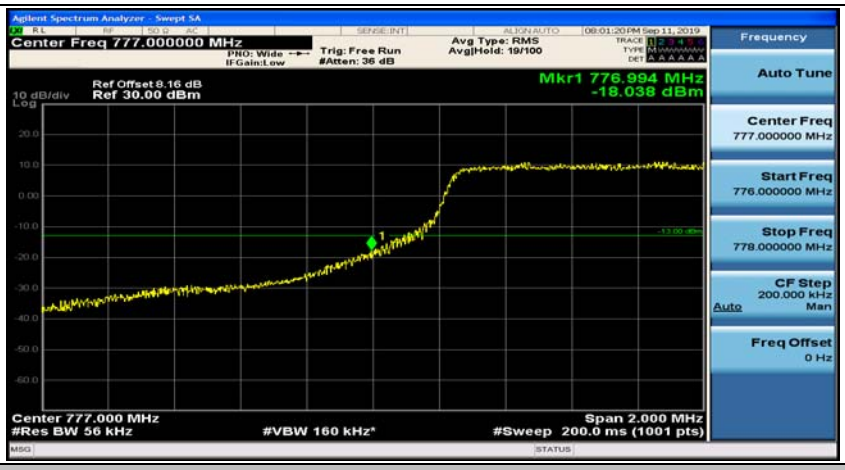


(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



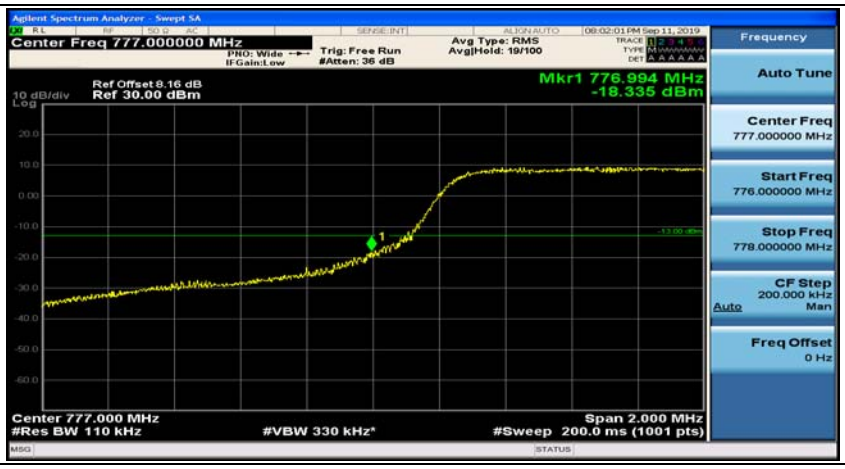
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0



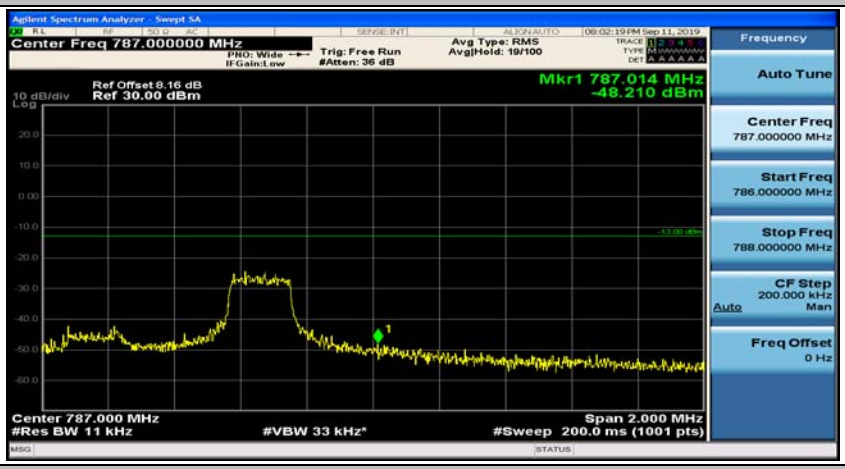
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#6

(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13

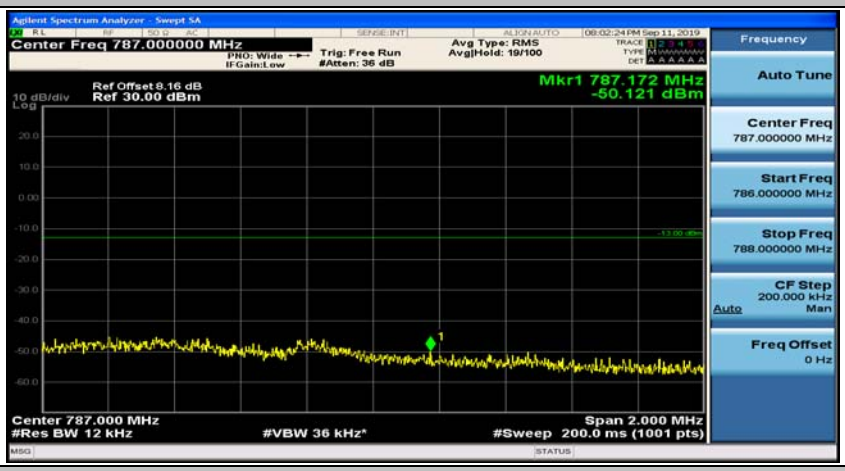
(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



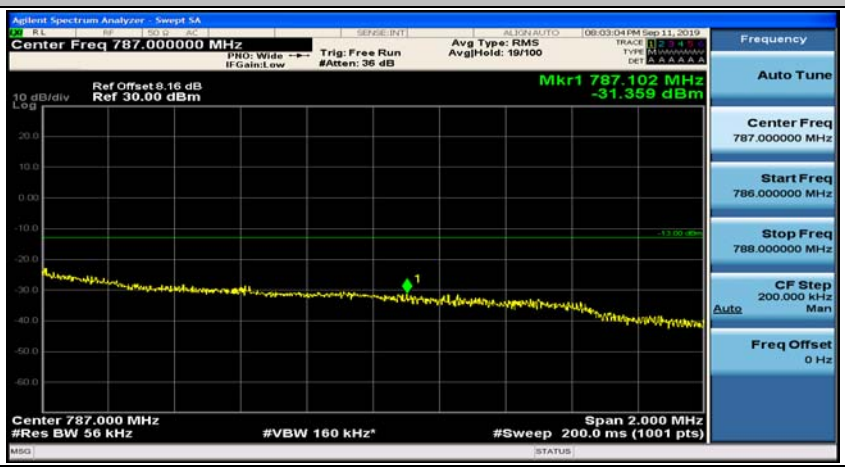
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24

(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0

(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6

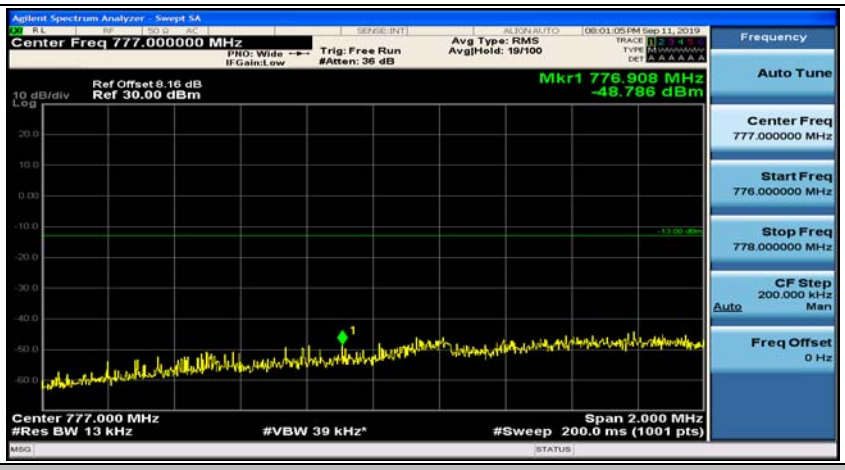


(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13

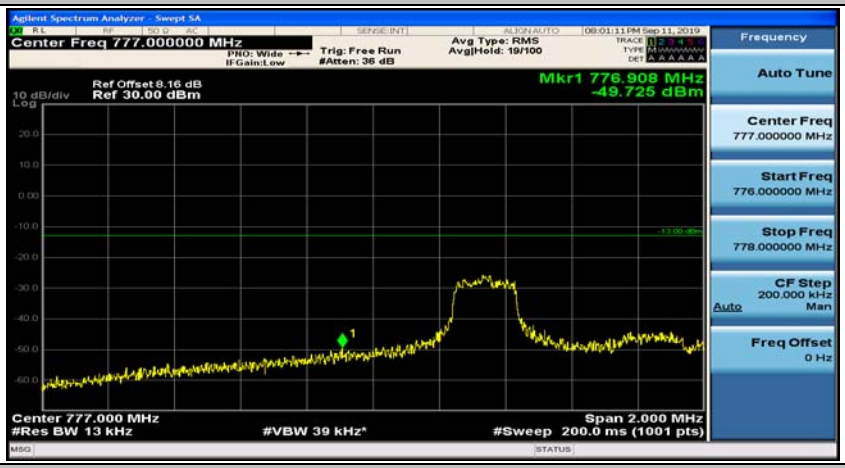
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0

(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0

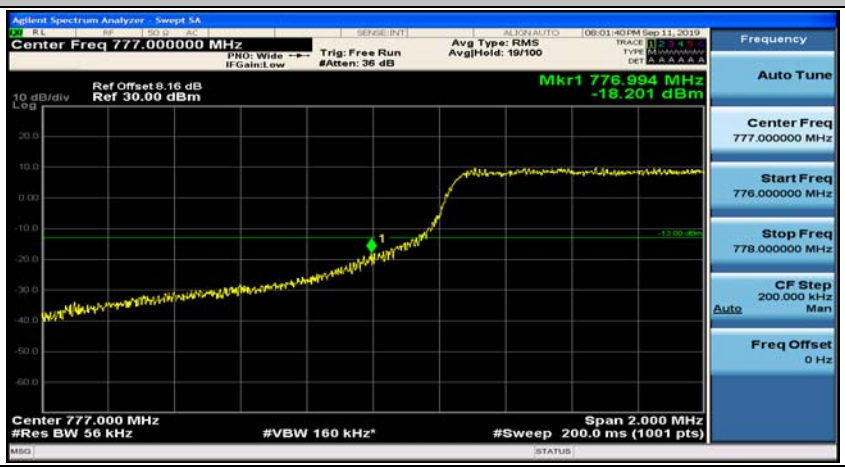
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12



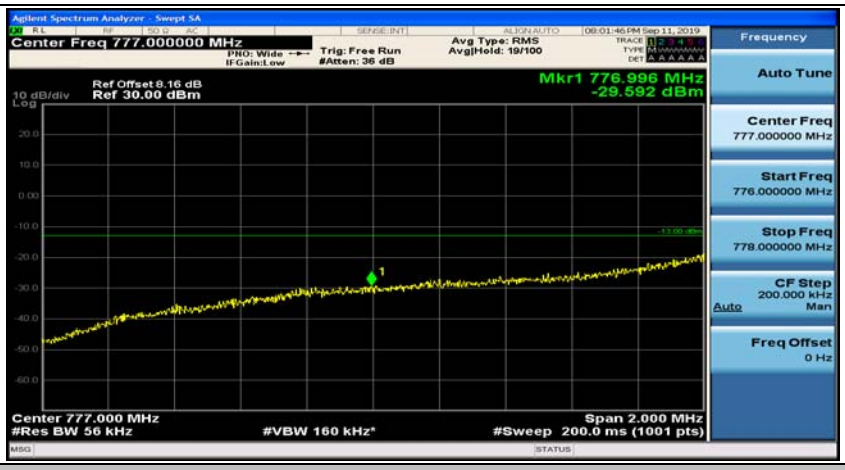
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24



(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0

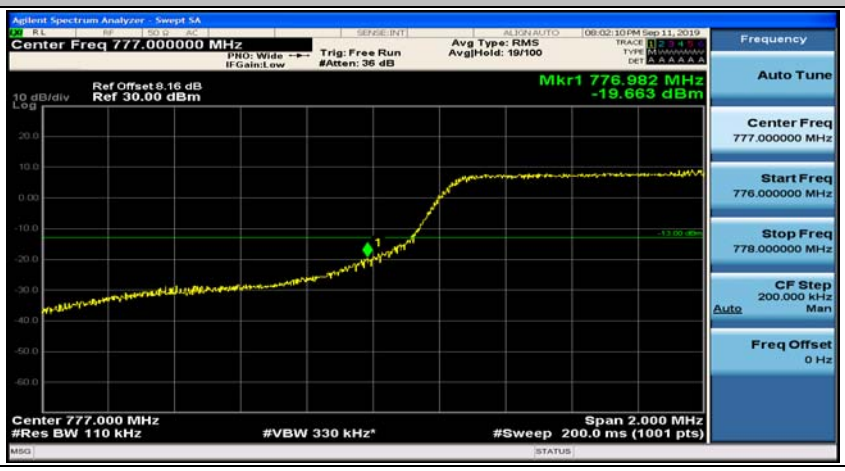


(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#6

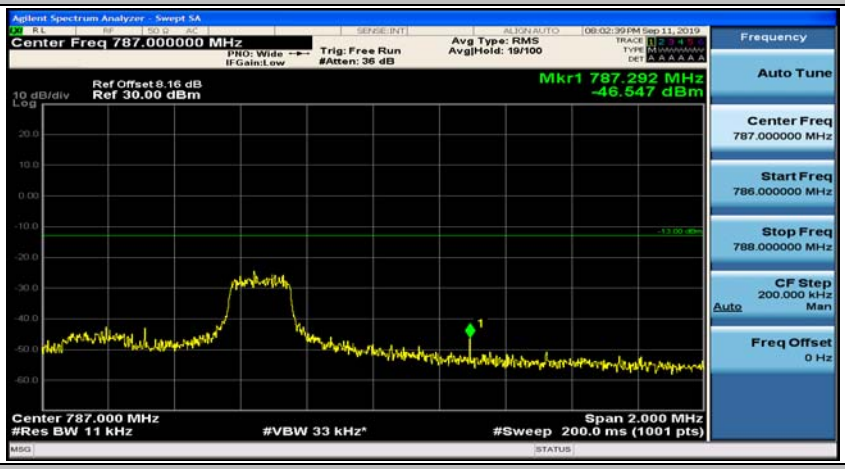


(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#13

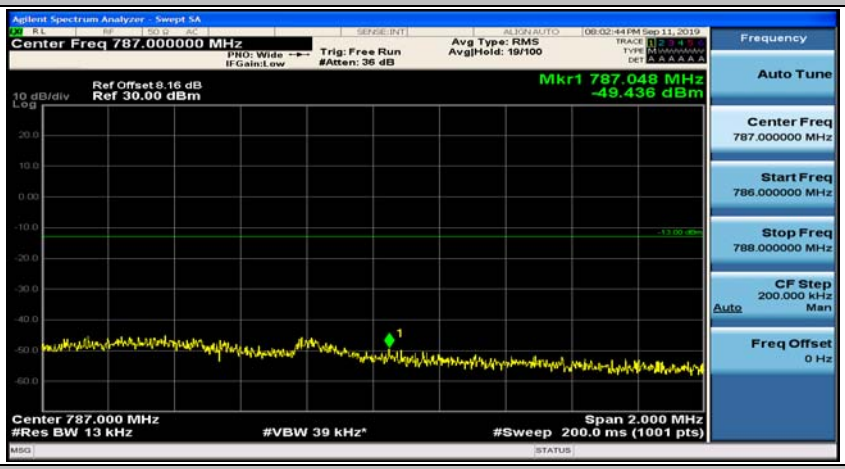
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



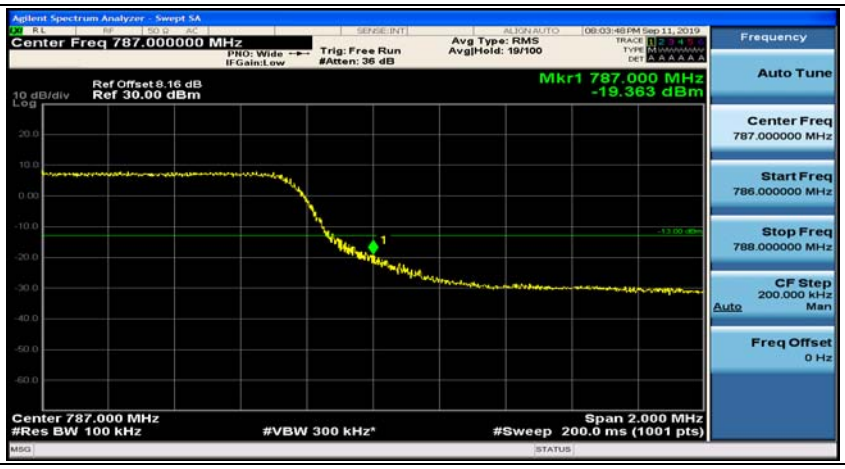
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24

(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#0

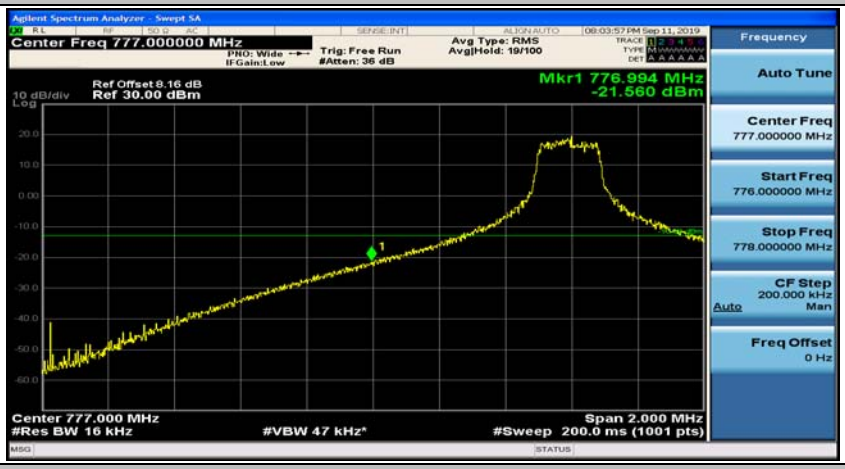
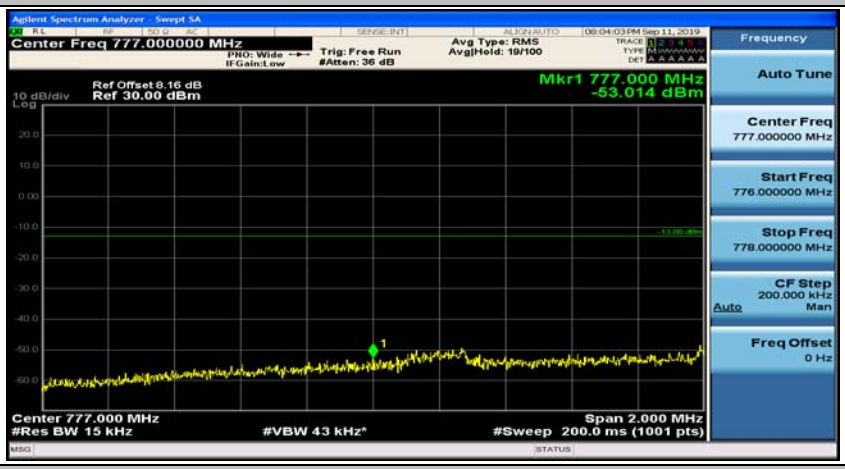
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#6

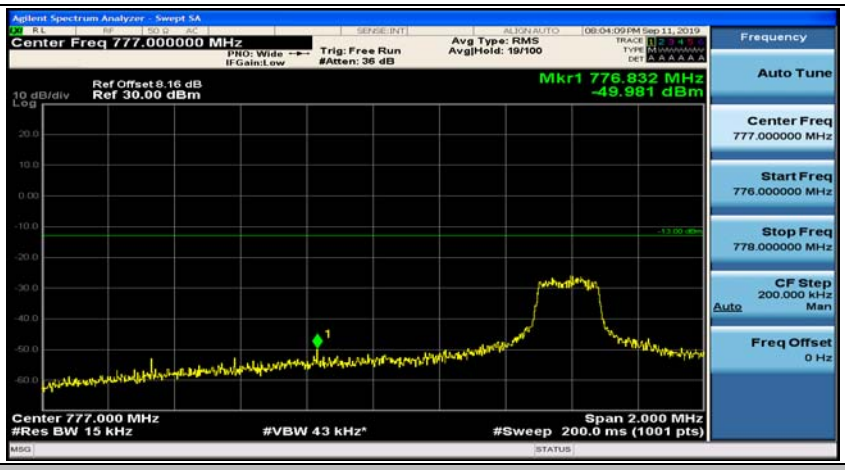
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#13

(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0

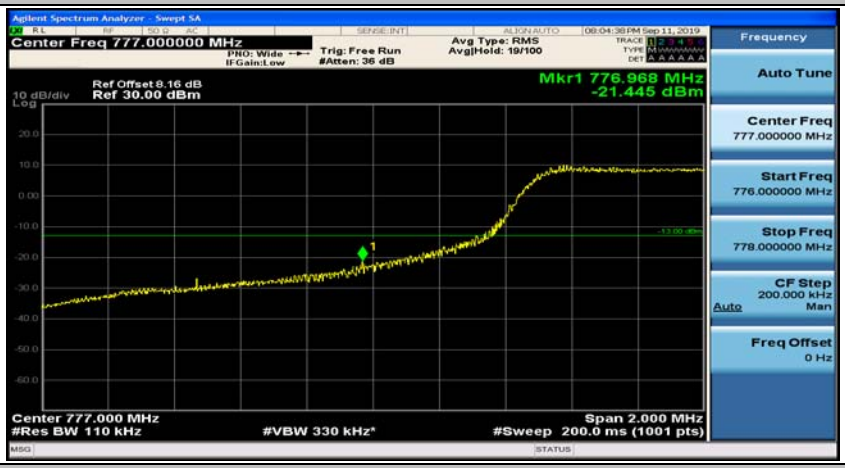


Channel Bandwidth: 10 MHz

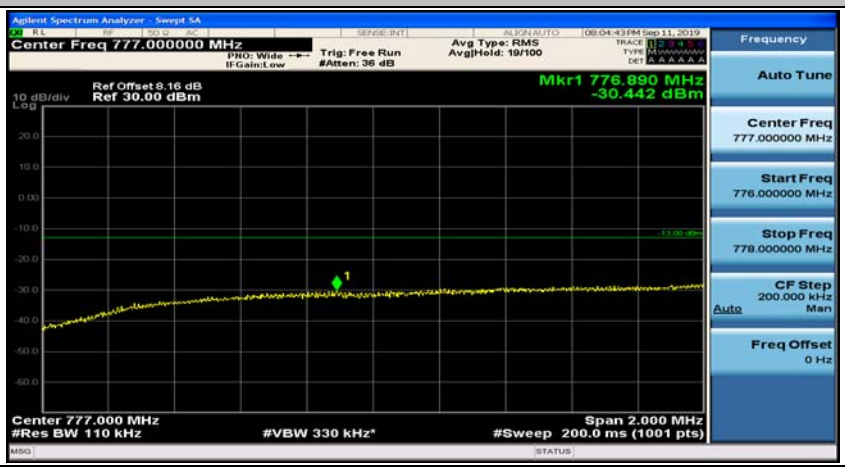
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49



Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#0

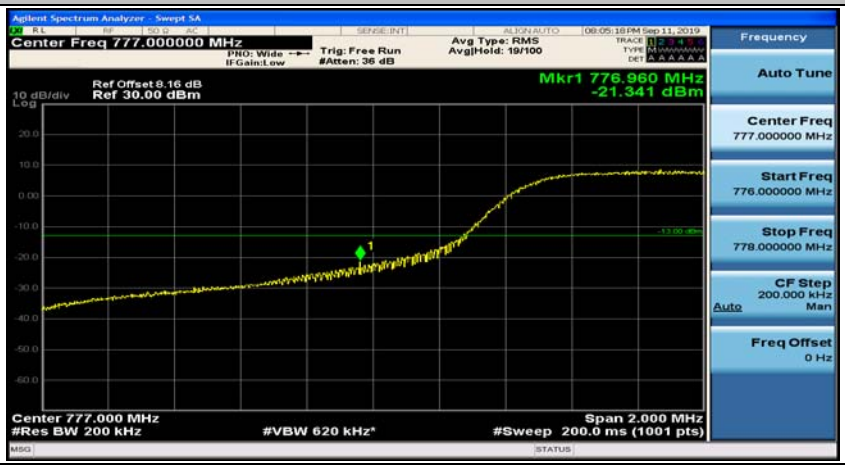


Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12



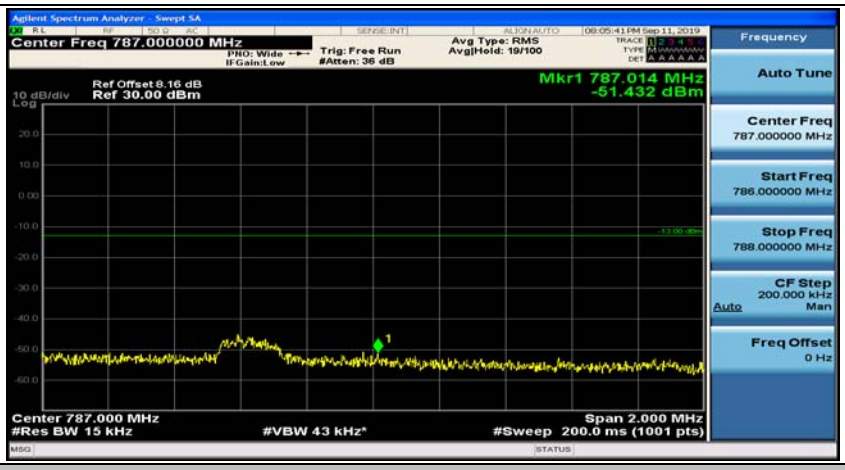
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25

Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0



Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0

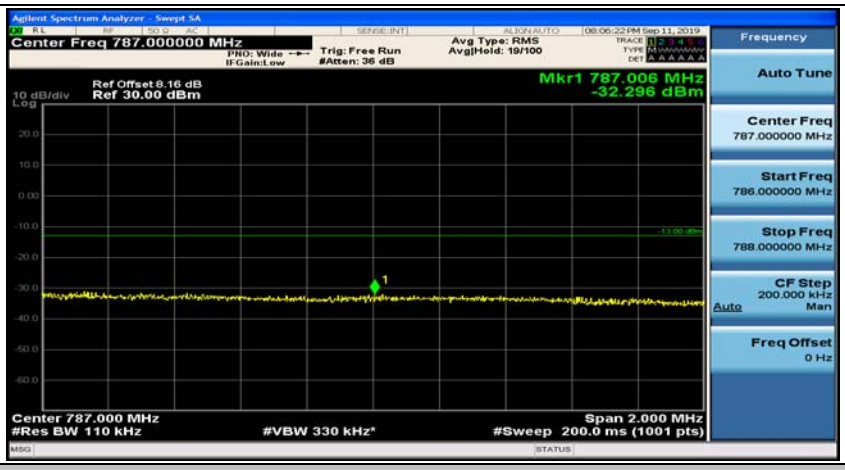
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24



Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49

Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#0

Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12

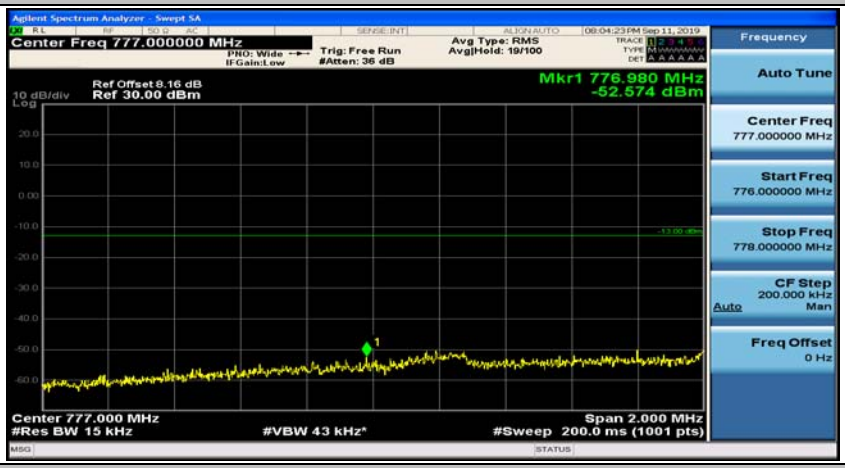


Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25

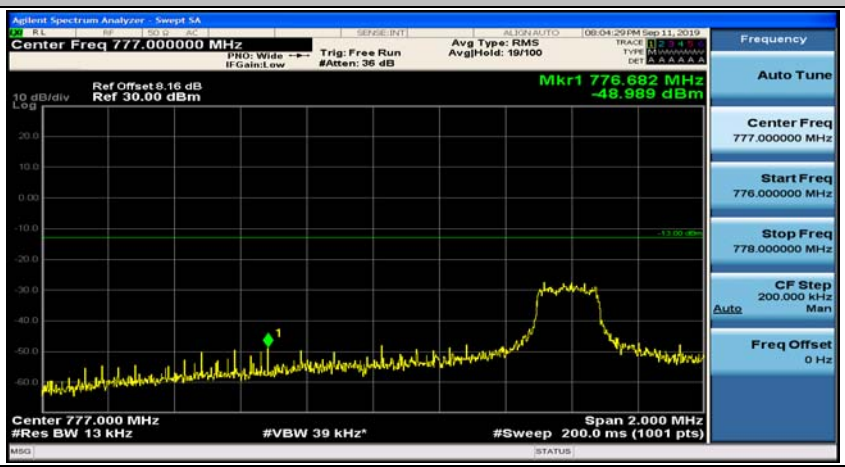
Channel Bandwidth: 10 MHz_MCH__QPSK_50RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24

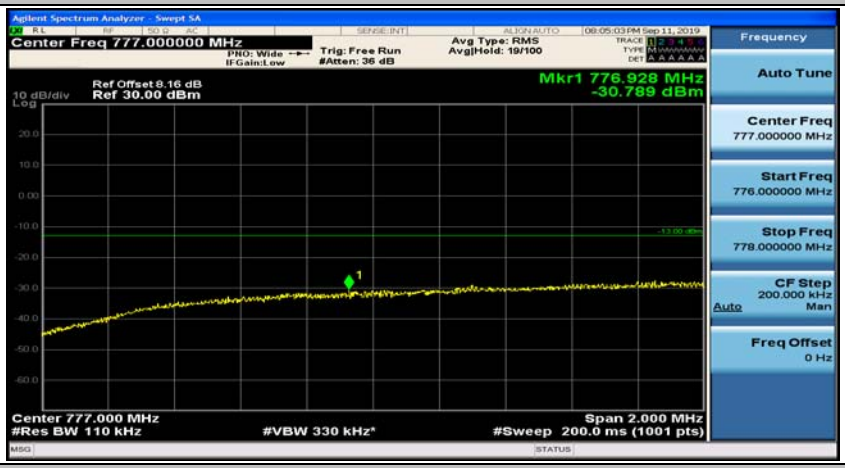


Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#0

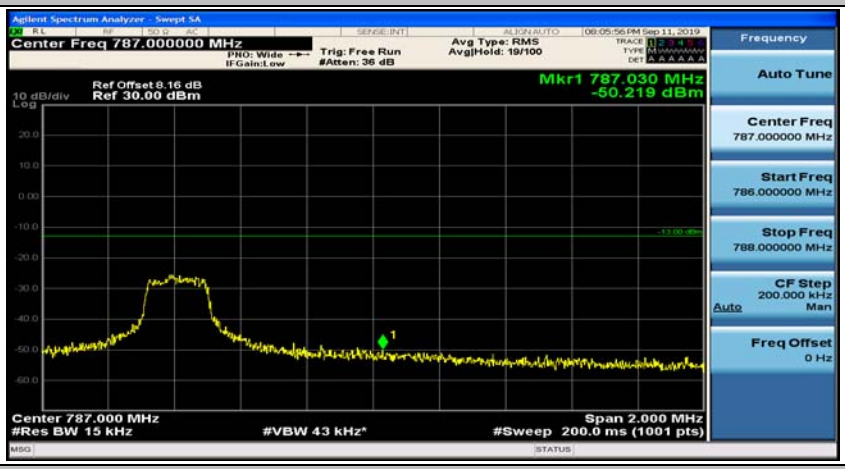
Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12



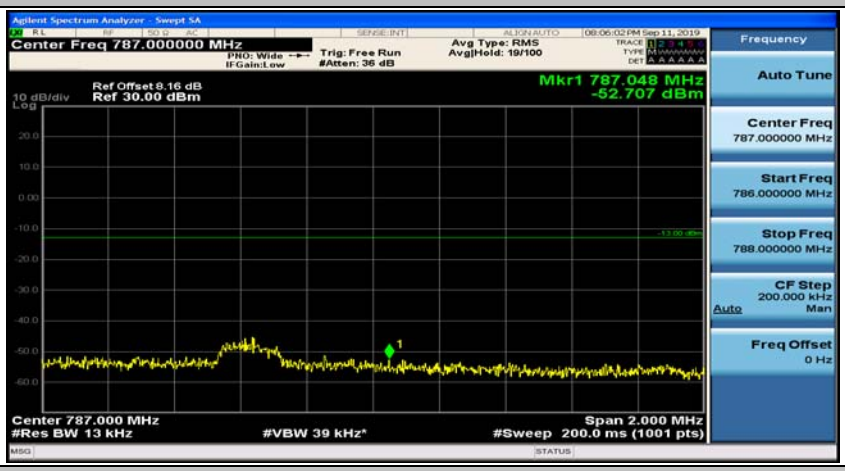
Channel Bandwidth: 10 MHz_LCH_16QAM_25RB#25

Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0

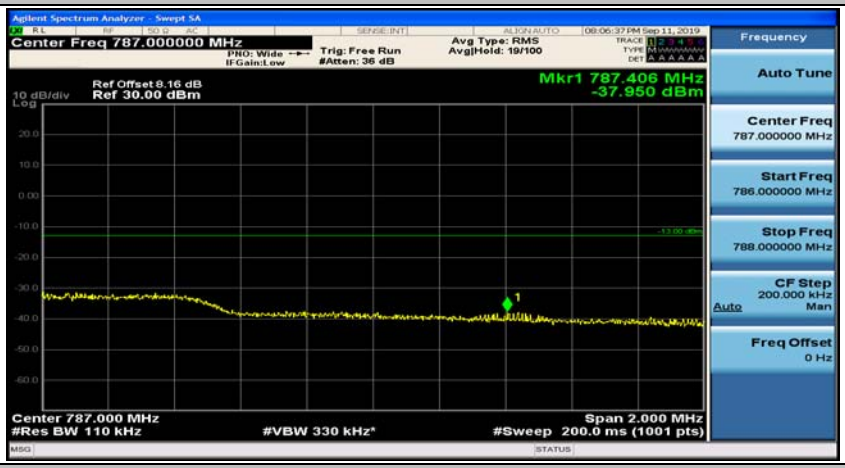


Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#24

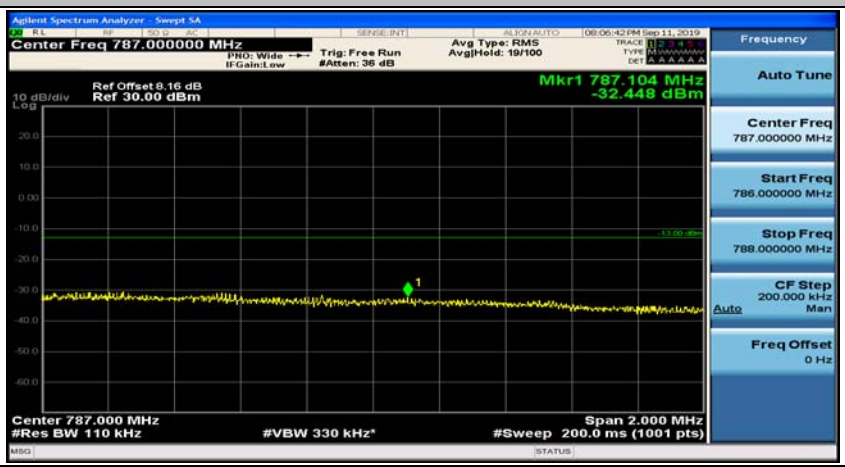


Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49

Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#0



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#25

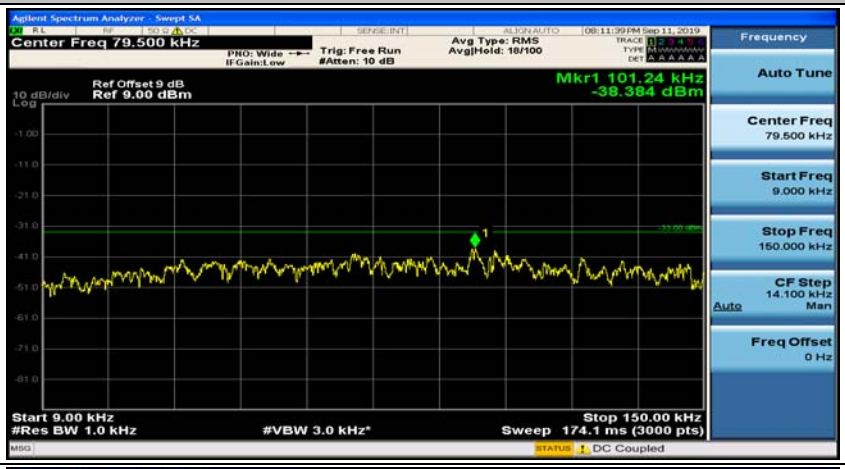
Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0

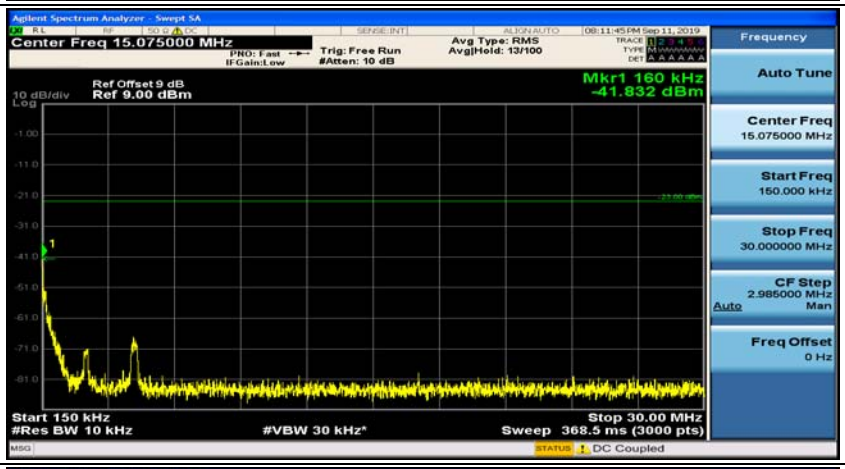
Appendix E: Conducted Spurious Emission

Test Graphs

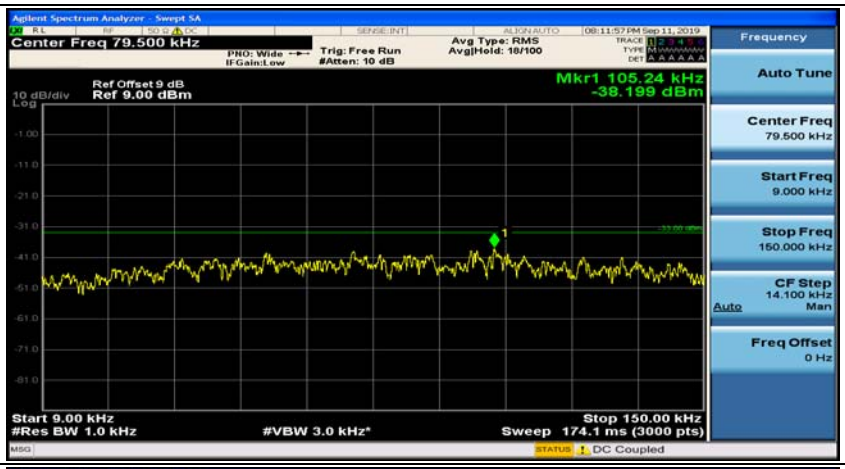
Channel Bandwidth: 5 MHz

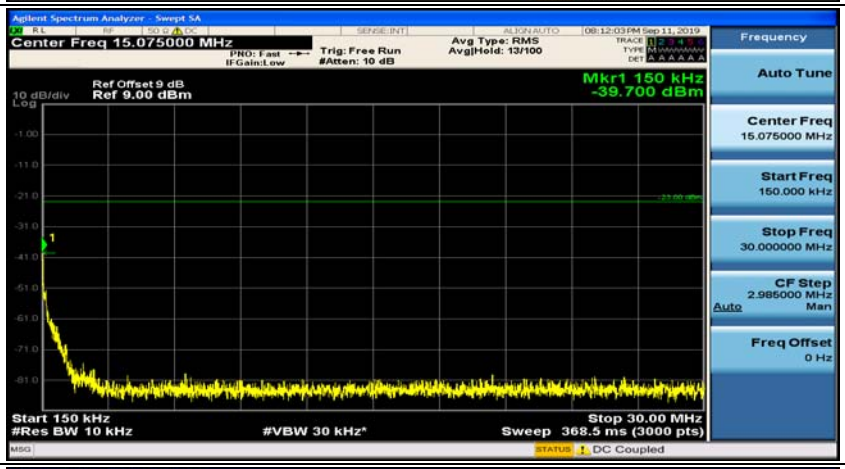
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



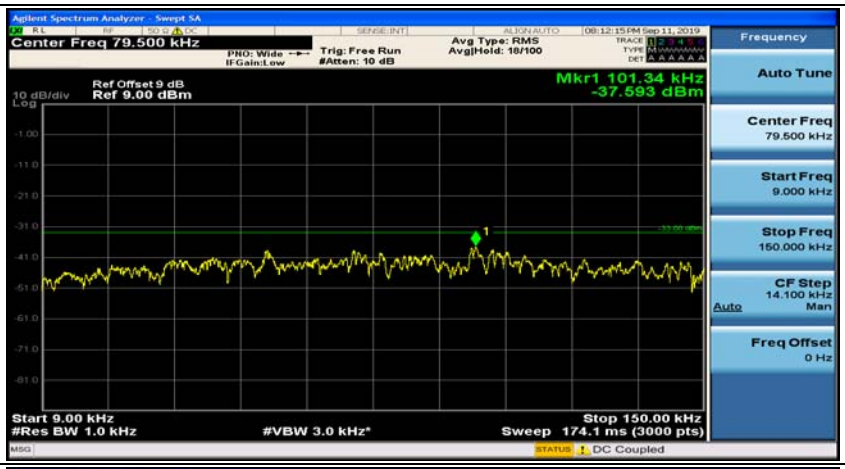


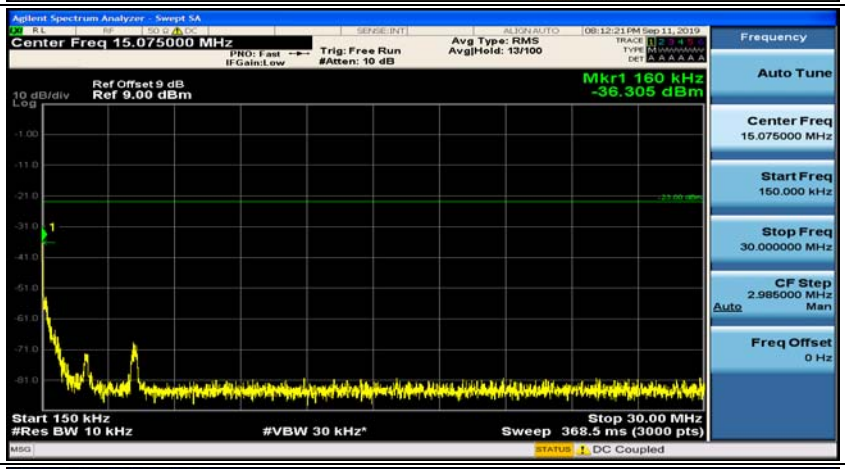
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12





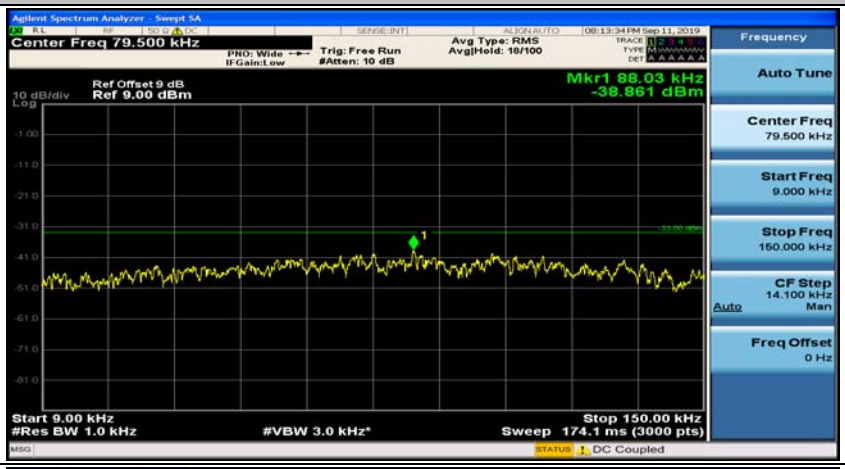
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24

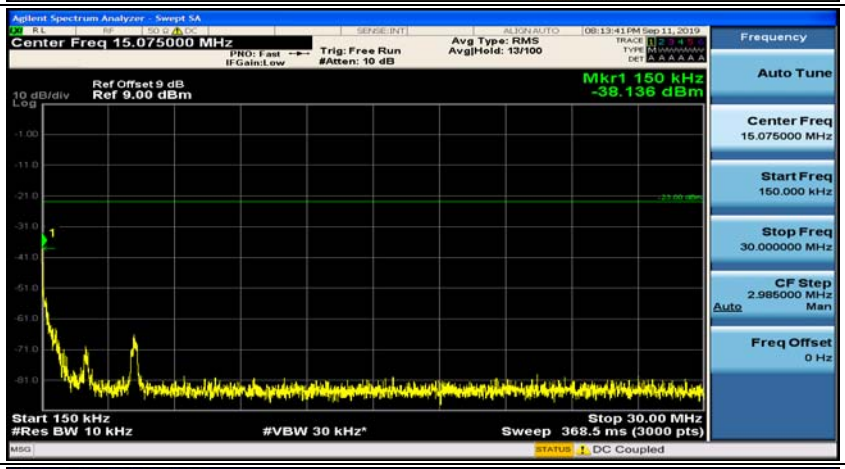

Agilent Spectrum Analyzer - Swept SA
Center Freq 79.500 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 18/100
08:12:15 PM Sep 11, 2019
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 101.34 kHz
-37.593 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*
Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 13/100
08:12:21 PM Sep 11, 2019
Ref Offset 9 dB
10 dB/div
Ref 9.00 dBm
Log
Mkr1 160 kHz
-36.305 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 368.5 ms (3000 pts)
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

Agilent Spectrum Analyzer - Swept SA
Center Freq 13.015000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 17/100
08:12:27 PM Sep 11, 2019
Ref Offset 8.95 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr2 24.831 GHz
-24.879 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 26.00 GHz
Sweep 64.98 ms (3000 pts)
Frequency
Auto Tune
Center Freq
13.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
26.000000000 GHz
CF Step
2.597000000 GHz
Auto
Man
Freq Offset
0 Hz

(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0





(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12