Appendix G: Test Data for E-UTRA Band 13

Product Name: Cellular Wi-Fi Router

Trade Mark: Connecting things Hongdian

Test Model: H8959-4GSPT

Environmental Conditions

Temperature:	22.9 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Alisa Huang
Supervised by:	Tom.Liu

G.1: Conducted Output Power Data

Test Result

Channel Bandwidth: 5 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	22.71	PASS
		1	12	22.93	PASS
		1	24	**23.48**	PASS
		12	0	22.22	PASS
		12	6	22.25	PASS
		12	13	22.37	PASS
		25	0	22.48	PASS
	MCH	1	0	23.1	PASS
		1	12	23.51	PASS
		1	24	23.44	PASS
		12	0	22.54	PASS
		12	6	22.72	PASS
		12	13	22.71	PASS
		25	0	22.56	PASS
	HCH	1	0	23.67	PASS

		1	12	**24.26**	PASS
		1	24	23.89	PASS
		12	0	22.64	PASS
		12	6	22.98	PASS
		12	13	22.86	PASS
		25	0	22.78	PASS
16QAM	LCH	1	0	22.42	PASS
		1	12	22.64	PASS
		1	24	22.72	PASS
		12	0	21.35	PASS
		12	6	21.49	PASS
		12	13	21.43	PASS
		25	0	21.42	PASS
	MCH	1	0	22.75	PASS
		1	12	23.23	PASS
		1	24	22.85	PASS
		12	0	21.64	PASS
		12	6	21.81	PASS
		12	13	21.79	PASS
		25	0	21.67	PASS
	HCH	1	0	22.99	PASS
		1	12	23.41	PASS
		1	24	23.07	PASS
		12	0	21.74	PASS
		12	6	22.01	PASS
		12	13	21.89	PASS
		25	0	21.72	PASS

Channel Bandwidth: 10 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	MCH	1	0	23.42	PASS
		1	24	**23.92**	PASS
		1	49	23.88	PASS
		25	0	22.6	PASS
		25	12	22.74	PASS
		25	25	22.98	PASS
		50	0	22.57	PASS
16QAM	MCH	1	0	22.91	PASS
		1	24	23.30	PASS
		1	49	23.44	PASS
		25	0	21.55	PASS
		25	12	21.70	PASS
		25	25	21.80	PASS
		50	0	21.68	PASS

G.2: Peak-to-Average Ratio

Test Result

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio	Limit	Verdict
		Size	Offset	[dB]	[dB]	
QPSK	LCH	1	0	2.77	<13	PASS
		1	12	2.51	<13	PASS
		1	24	3.17	<13	PASS
		12	0	3.32	<13	PASS
		12	6	3.4	<13	PASS
		12	13	3.92	<13	PASS
		25	0	4.23	<13	PASS
	MCH	1	0	2.83	<13	PASS
		1	12	3.24	<13	PASS
		1	24	3.46	<13	PASS
		12	0	3.88	<13	PASS
		12	6	4.08	<13	PASS
		12	13	4.35	<13	PASS
		25	0	4.63	<13	PASS
	HCH	1	0	3.49	<13	PASS
		1	12	3.32	<13	PASS
		1	24	2.95	<13	PASS
		12	0	4.34	<13	PASS
		12	6	4.08	<13	PASS
		12	13	3.91	<13	PASS
		25	0	4.54	<13	PASS
16QAM	LCH	1	0	3.51	<13	PASS
		1	12	3.43	<13	PASS
		1	24	4.18	<13	PASS
		12	0	8.39	<13	PASS
		12	6	4.25	<13	PASS
		12	13	4.81	<13	PASS
		25	0	5.01	<13	PASS
	MCH	1	0	3.73	<13	PASS
		1	12	4.1	<13	PASS
		1	24	4.42	<13	PASS
		12	0	4.84	<13	PASS

		12	6	5.02	<13	PASS
		12	13	5.24	<13	PASS
		25	0	5.43	<13	PASS
	HCH	1	0	4.35	<13	PASS
		1	12	4.13	<13	PASS
		1	24	3.52	<13	PASS
		12	0	5.31	<13	PASS
		12	6	5.01	<13	PASS
		12	13	4.93	<13	PASS
		25	0	5.39	<13	PASS

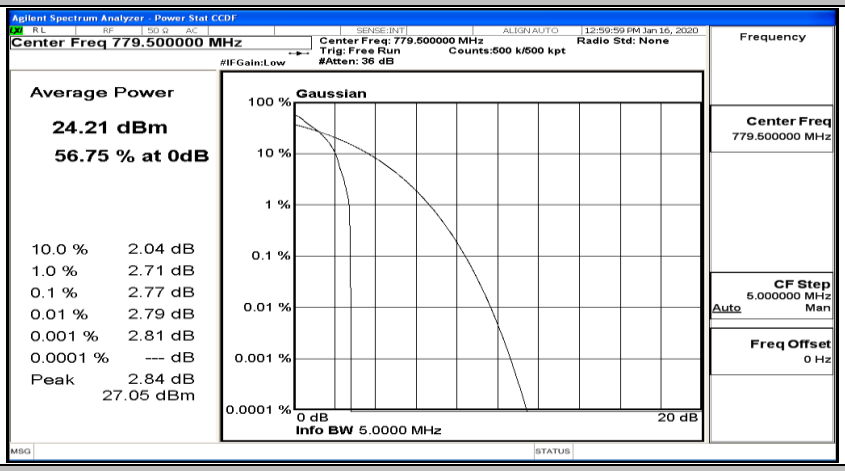
Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	MCH	1	0	8.42	<13	PASS
		1	24	3.3	<13	PASS
		1	49	2.76	<13	PASS
		25	0	3.88	<13	PASS
		25	12	4.07	<13	PASS
		25	25	4.37	<13	PASS
		50	0	4.58	<13	PASS
16QAM	MCH	1	0	3.08	<13	PASS
		1	24	3.54	<13	PASS
		1	49	3.6	<13	PASS
		25	0	4.76	<13	PASS
		25	12	5.09	<13	PASS
		25	25	5.27	<13	PASS
		50	0	5.41	<13	PASS

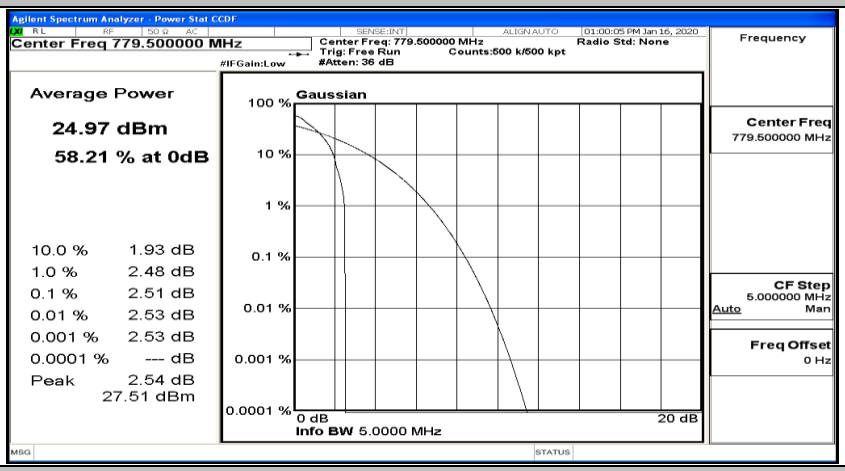
Test Graphs

Channel Bandwidth: 5 MHz

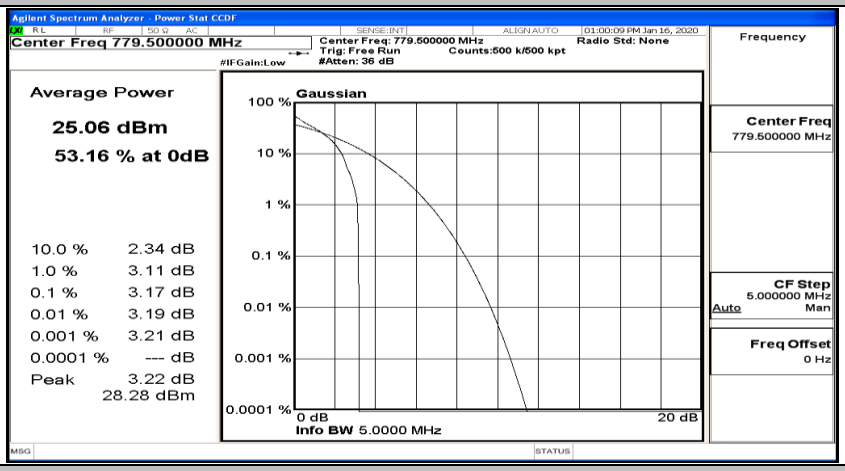
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



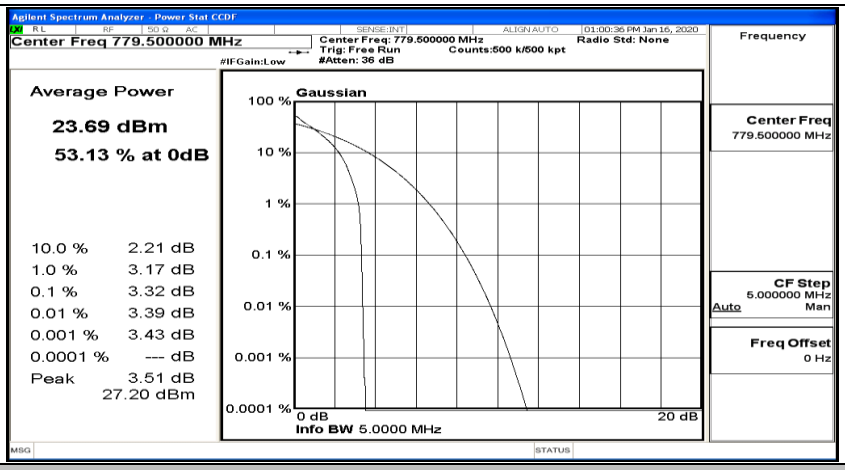
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12



(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0



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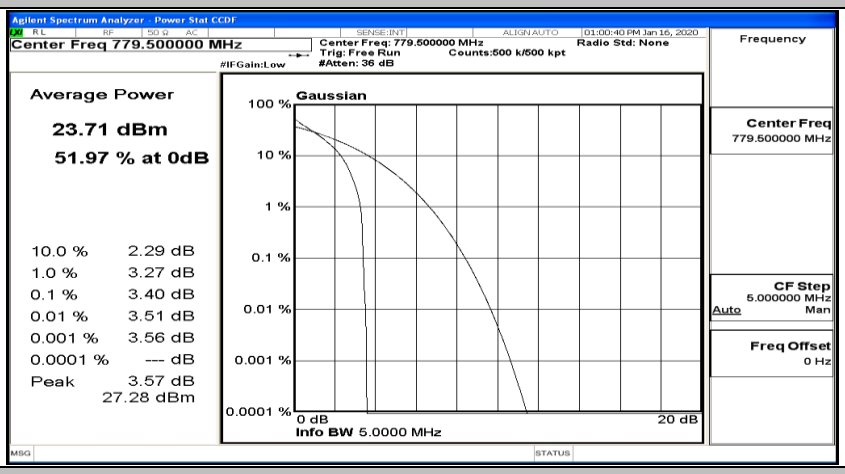
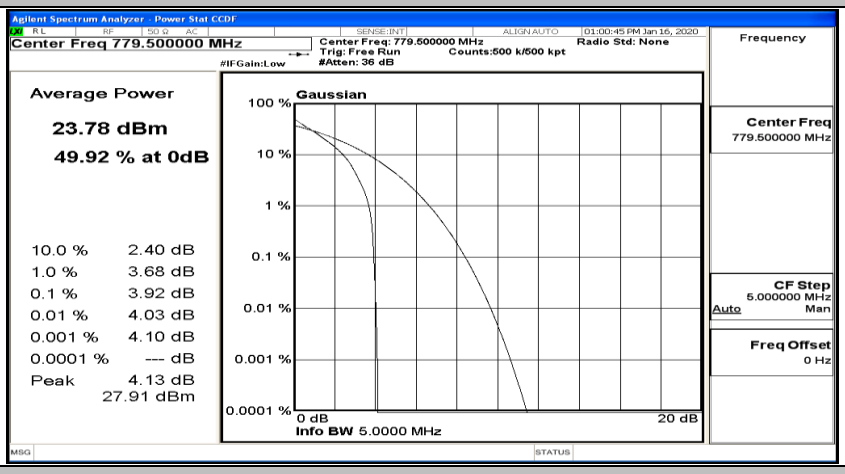
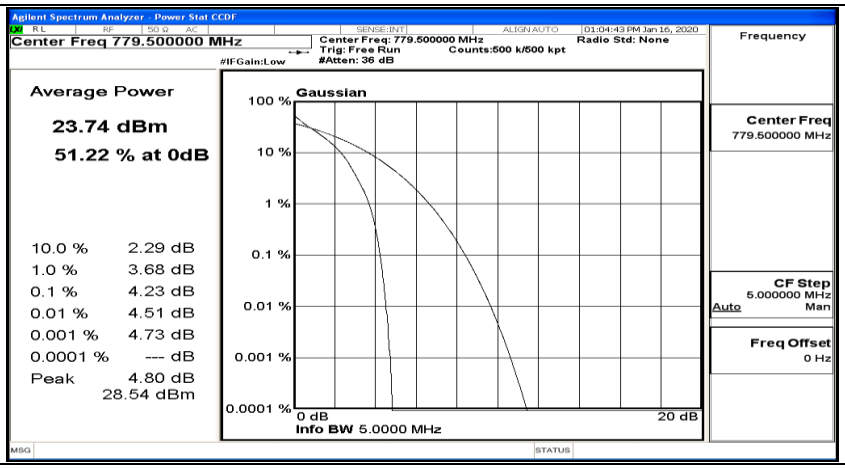


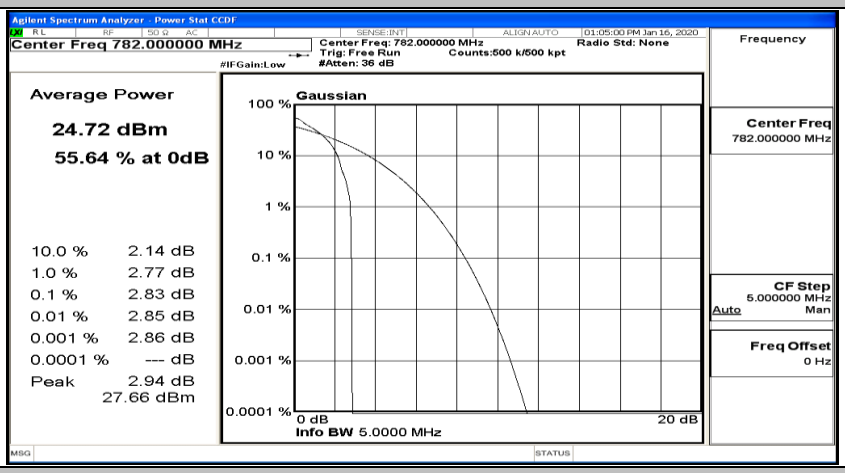
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13



(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



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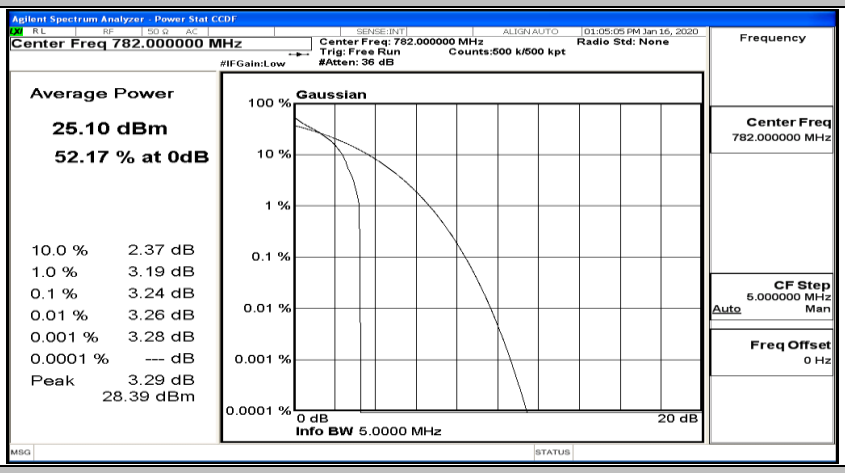

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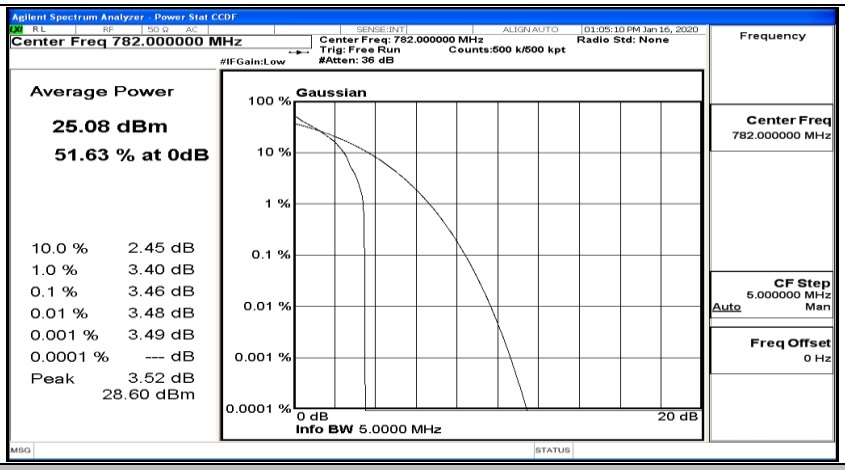
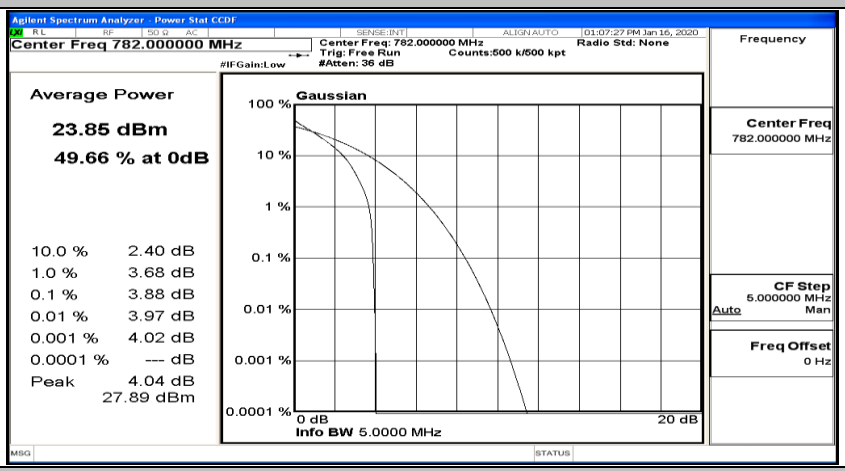
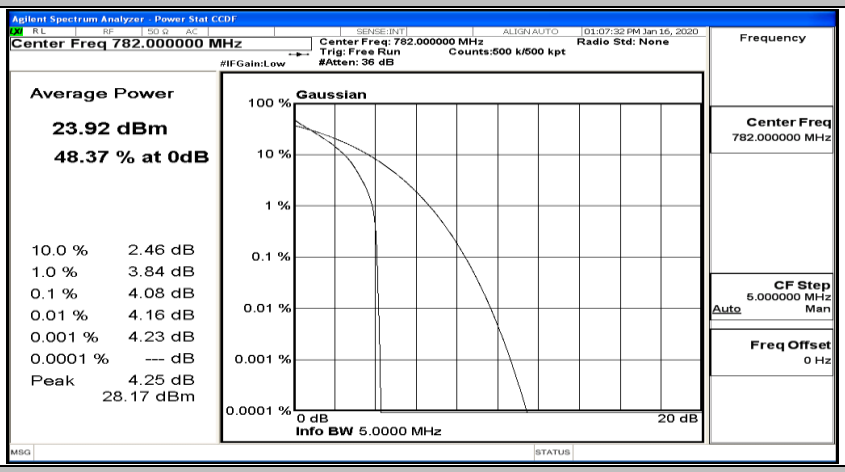


(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#6



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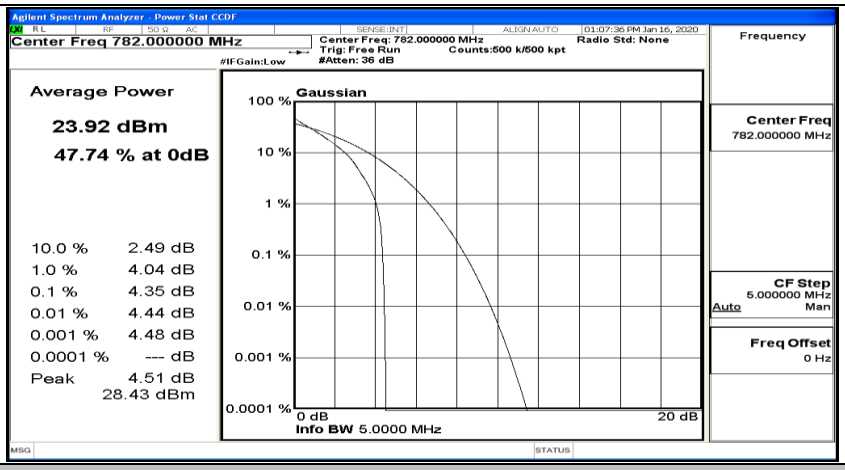
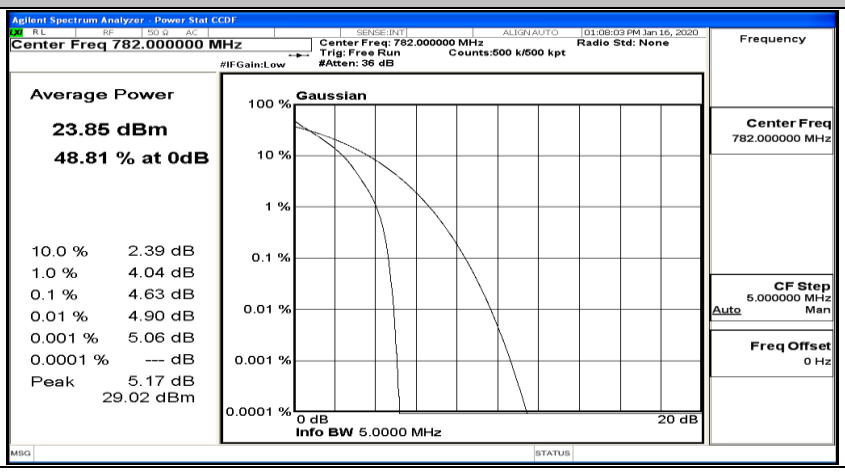
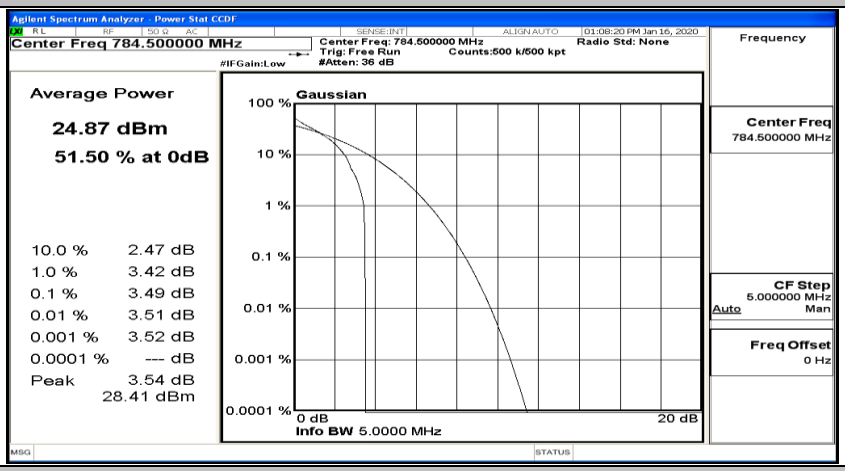


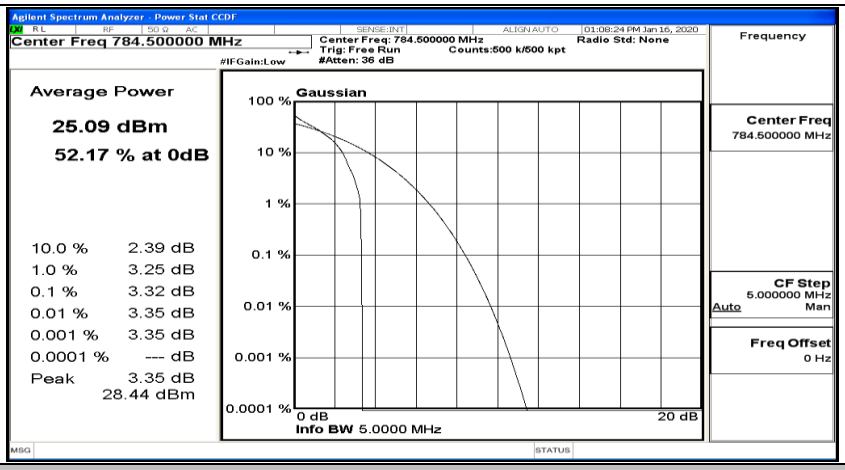
(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



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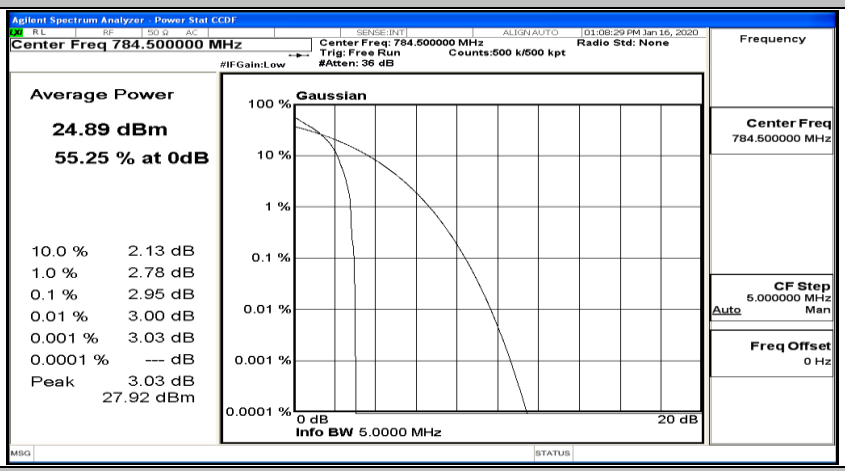
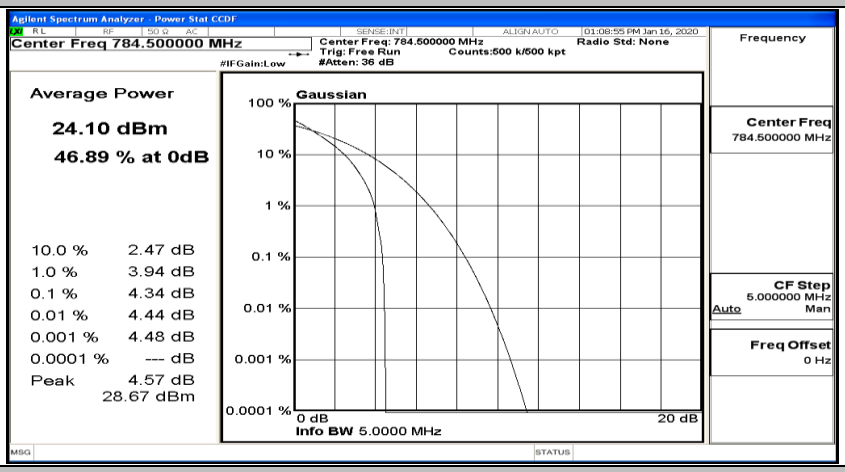
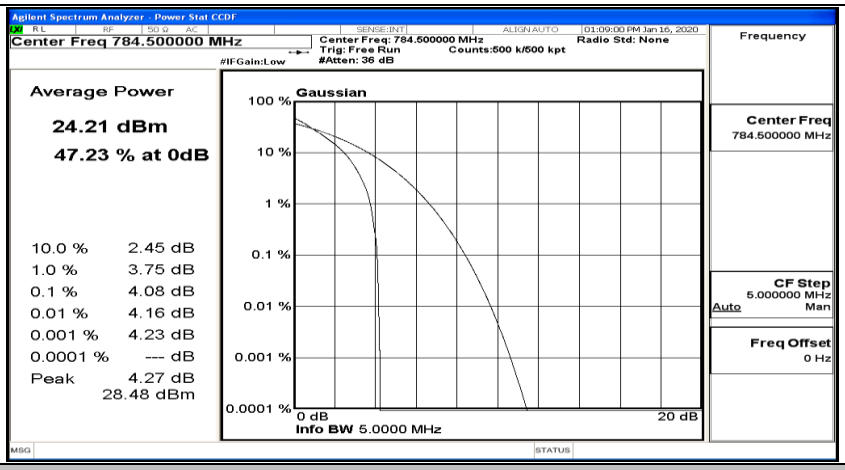


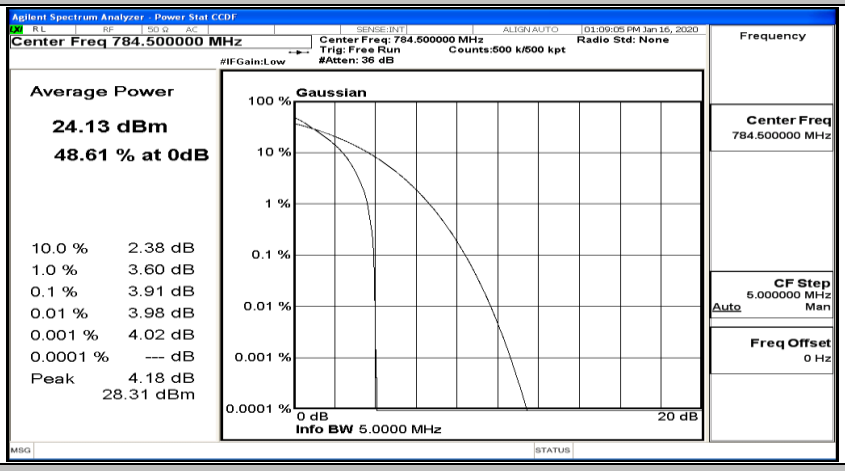
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6



(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13



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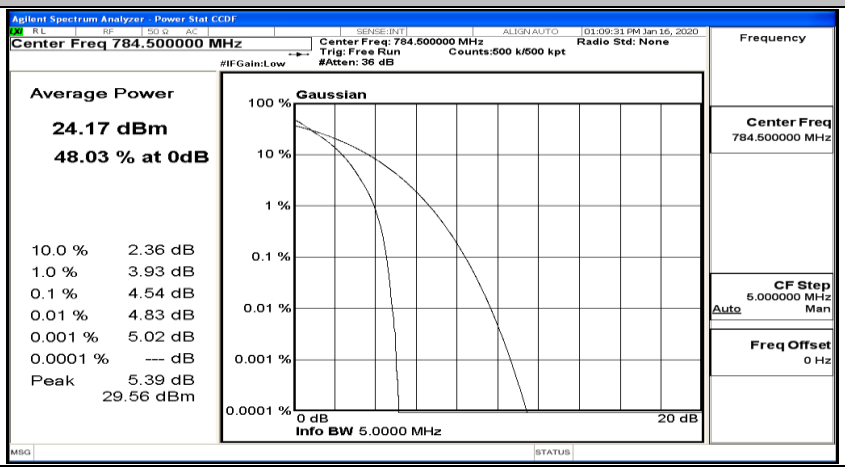
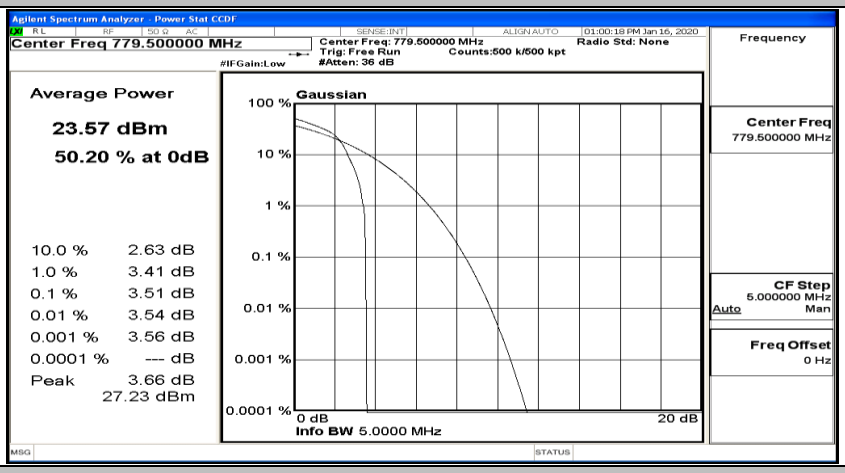


(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



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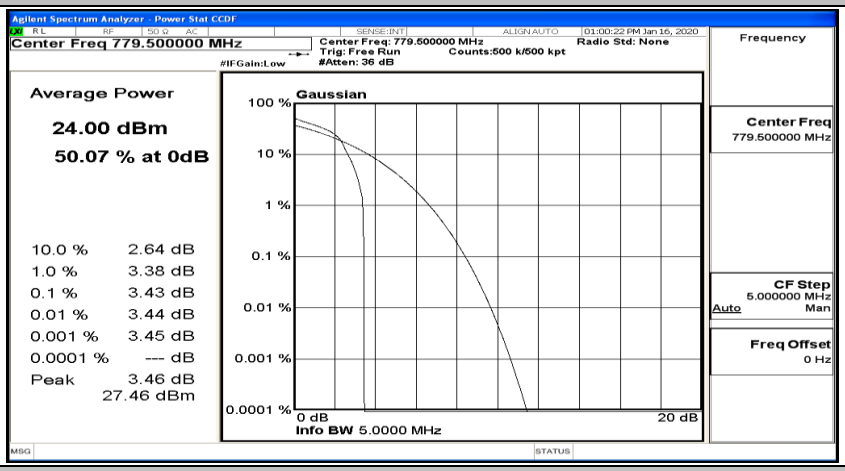

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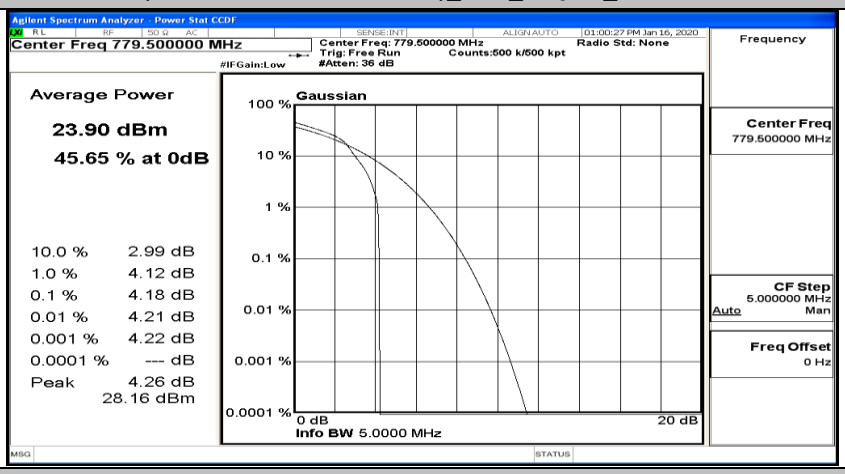
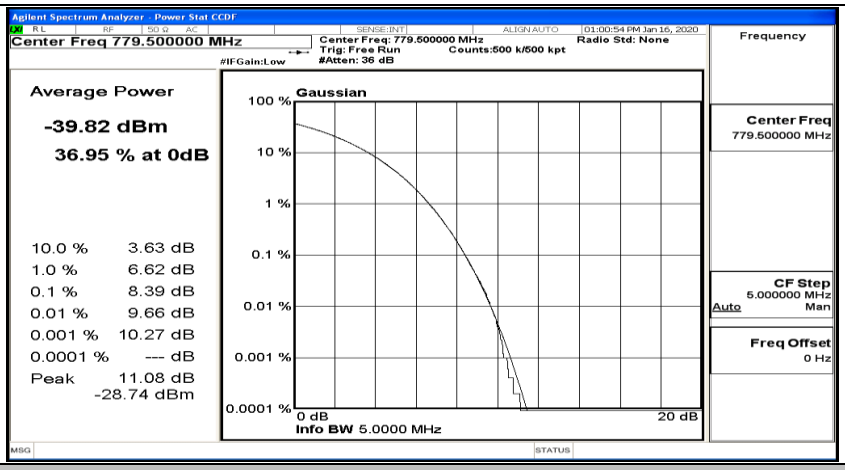
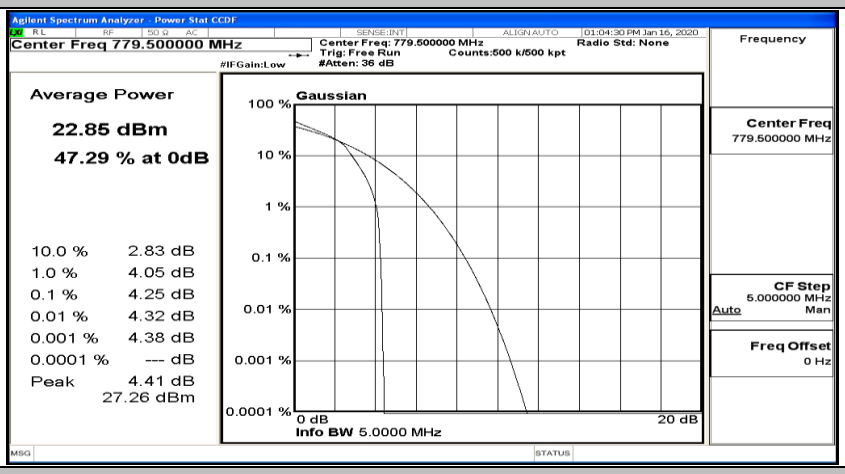


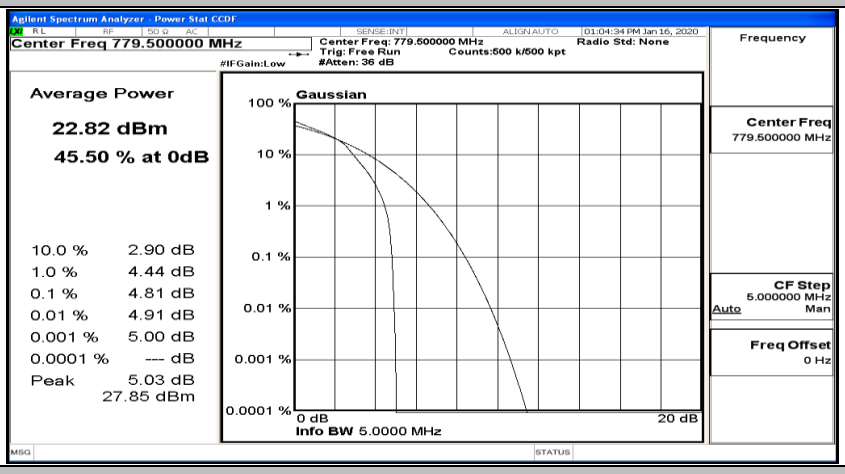
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0



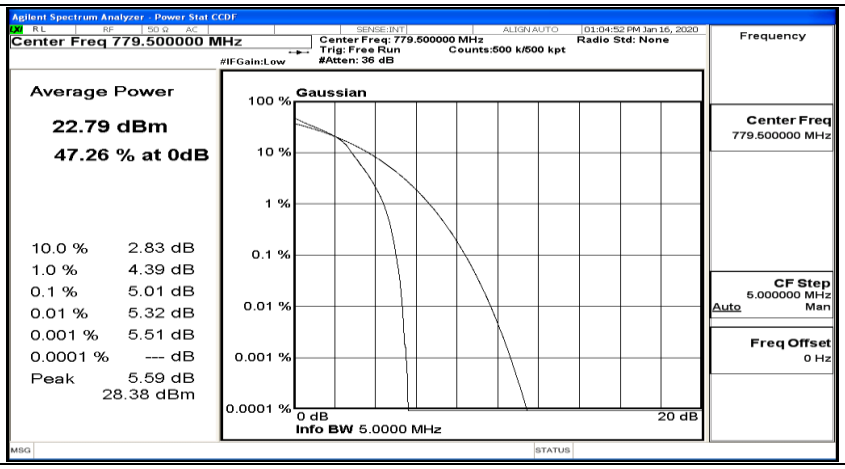
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#6



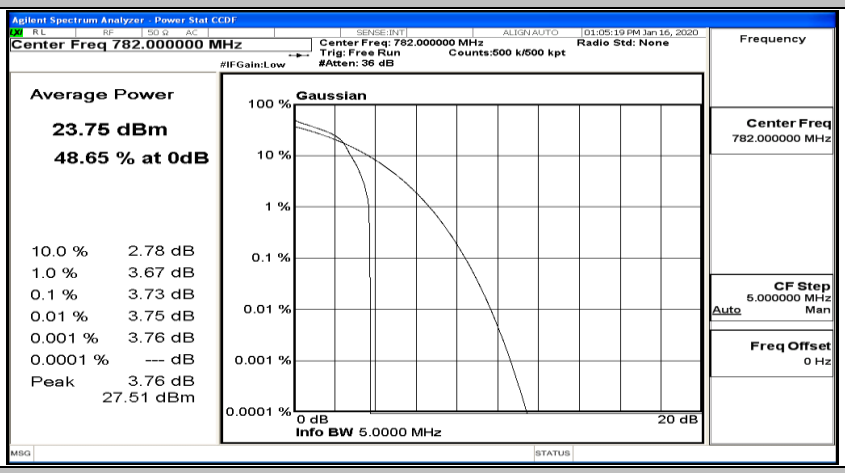
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#13



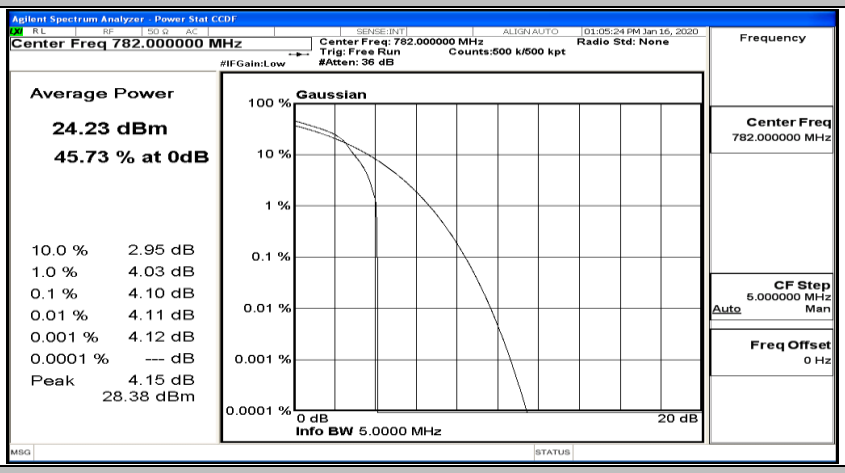
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12



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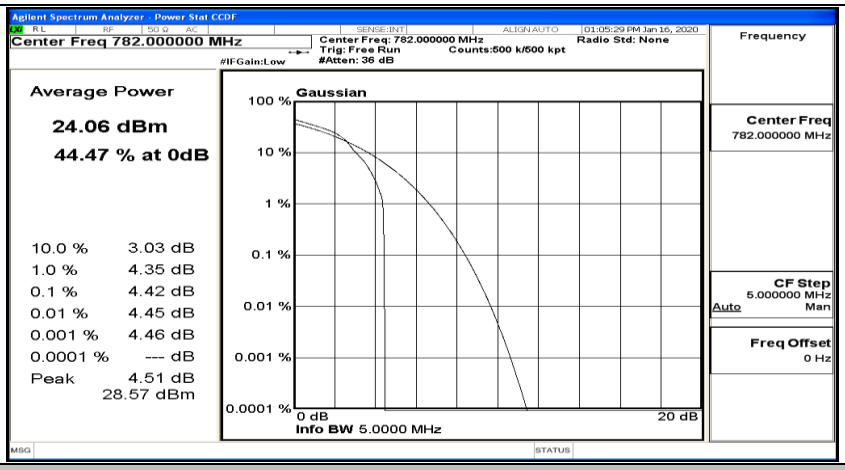
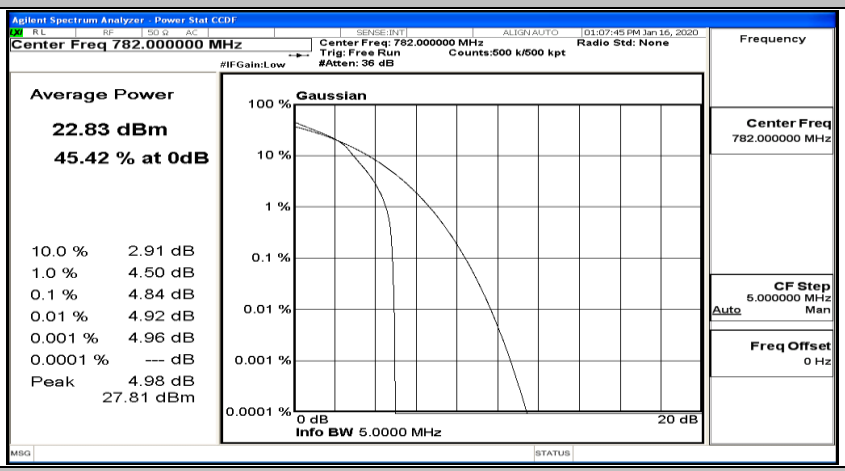


(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#0



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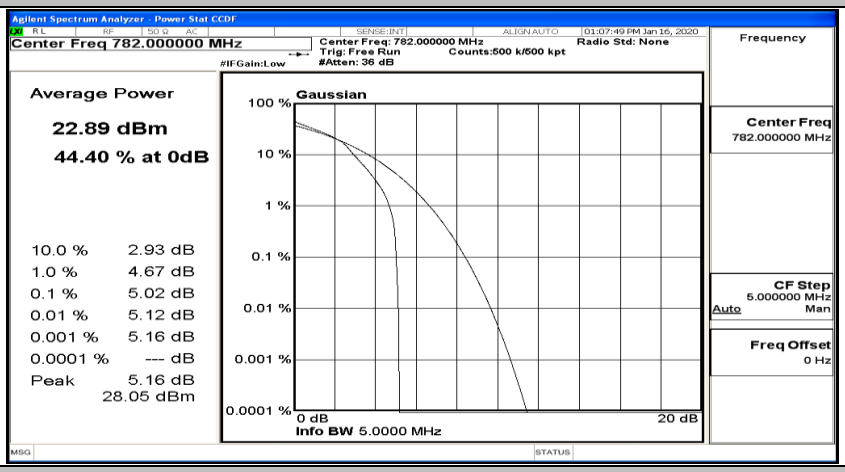
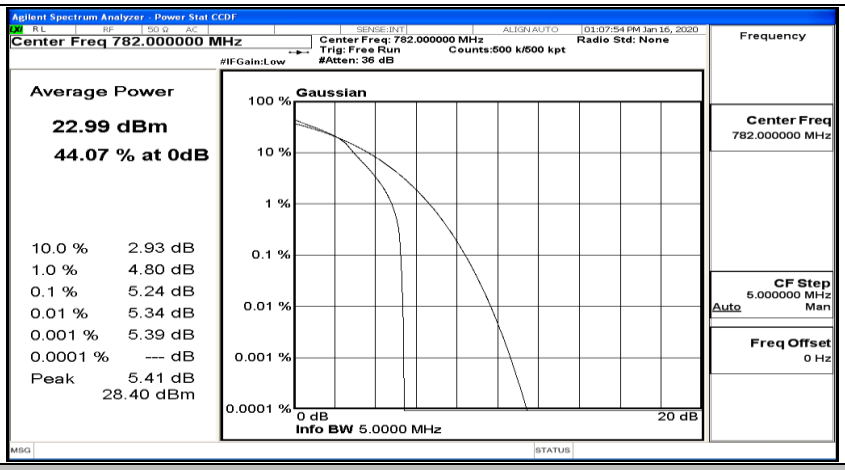
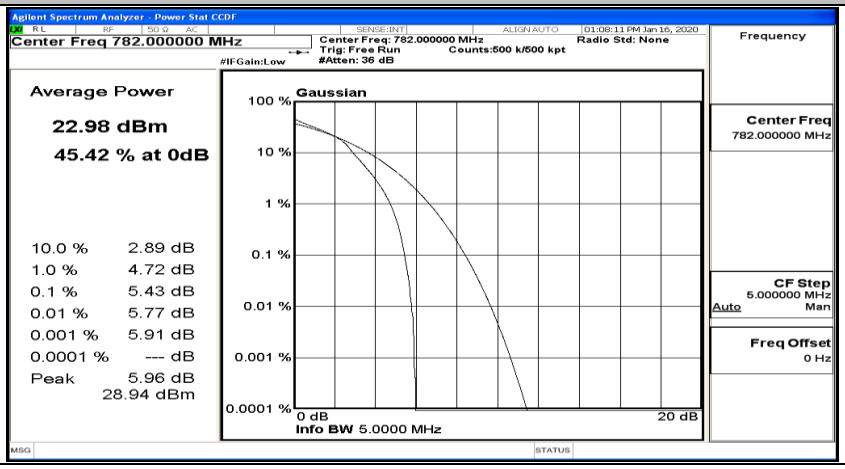


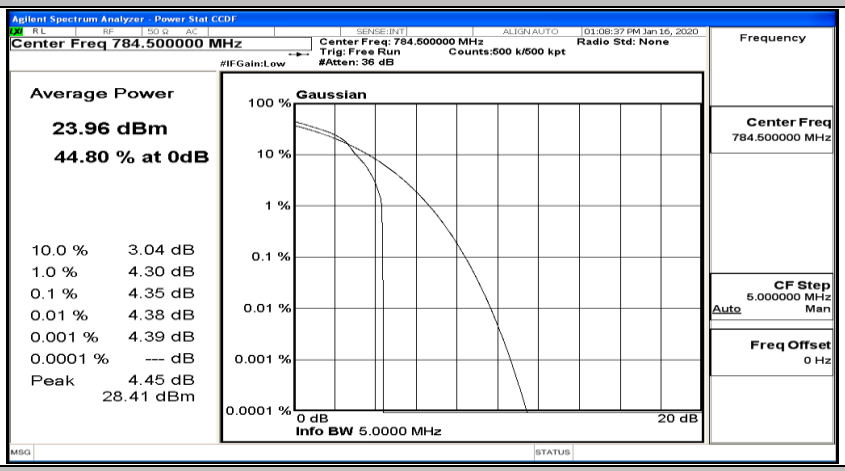
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#13



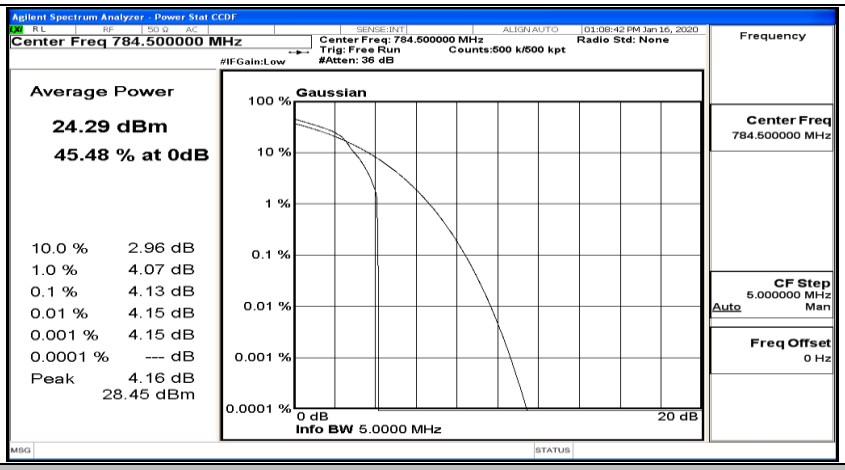
(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0



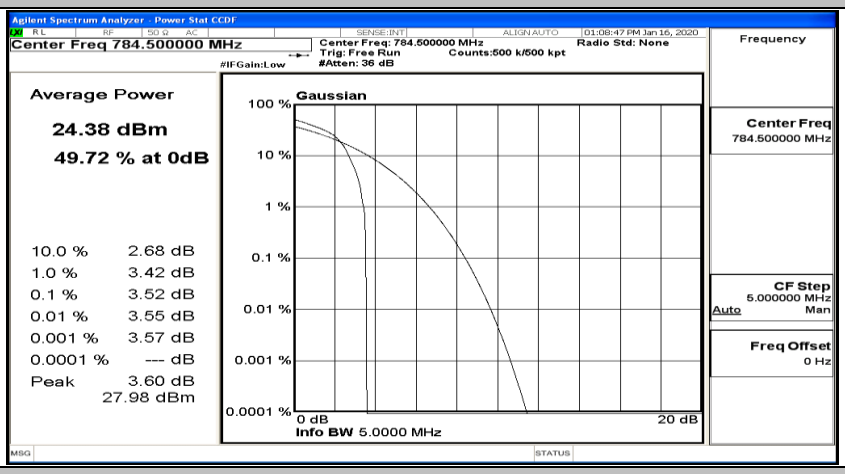
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



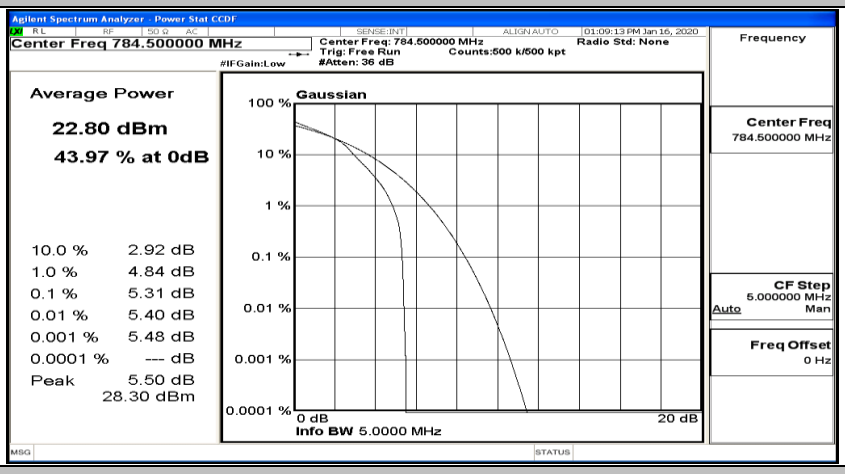
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



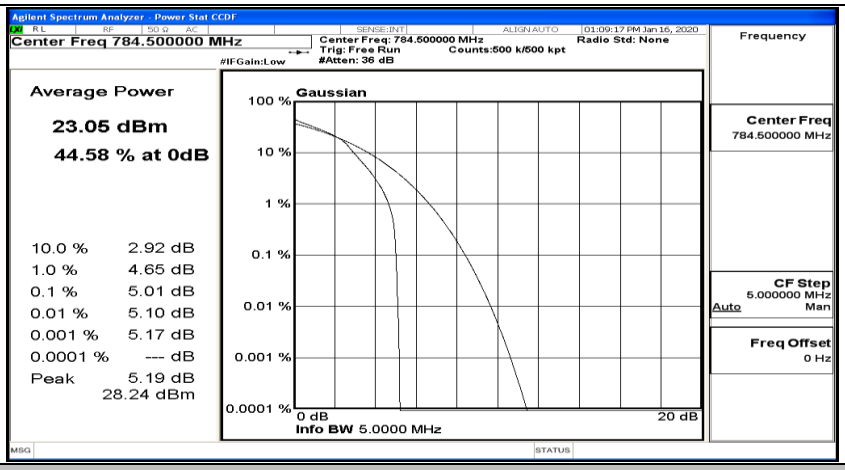
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24



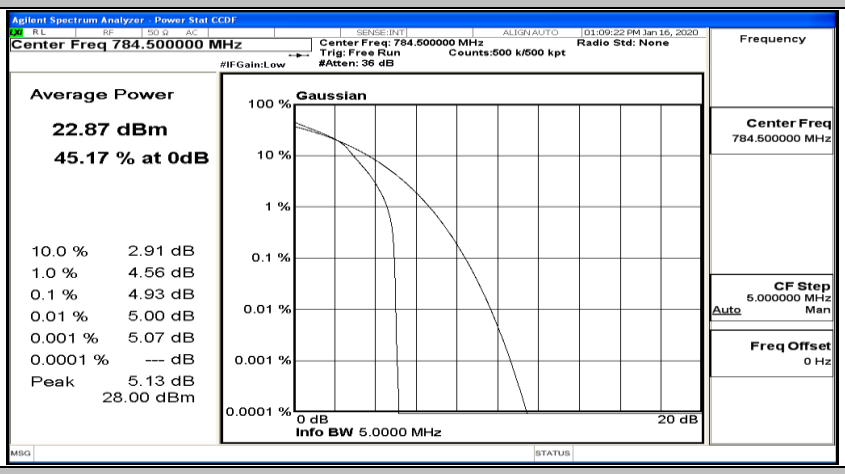
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#0



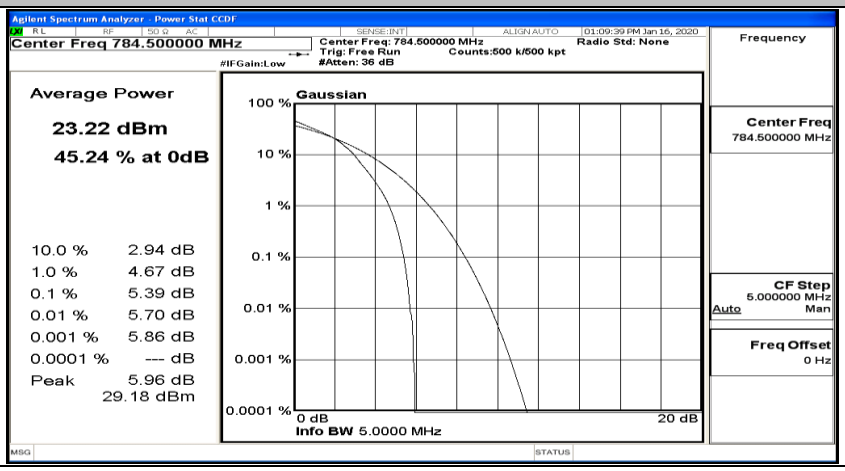
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#6



(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#13

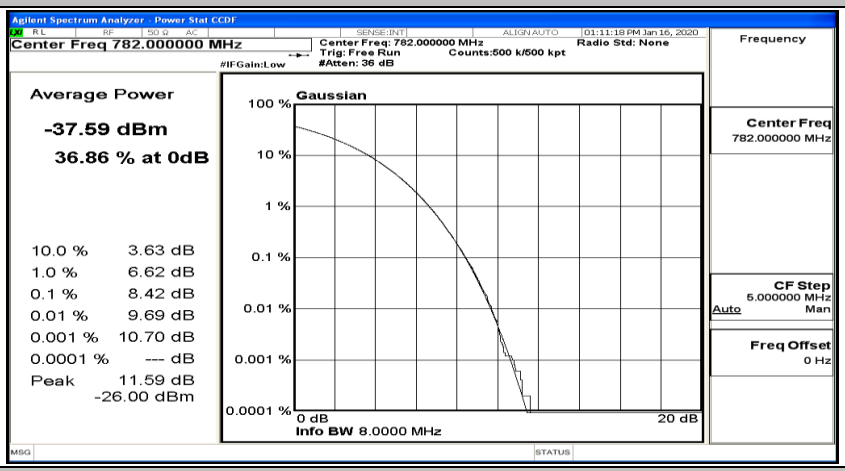


(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0

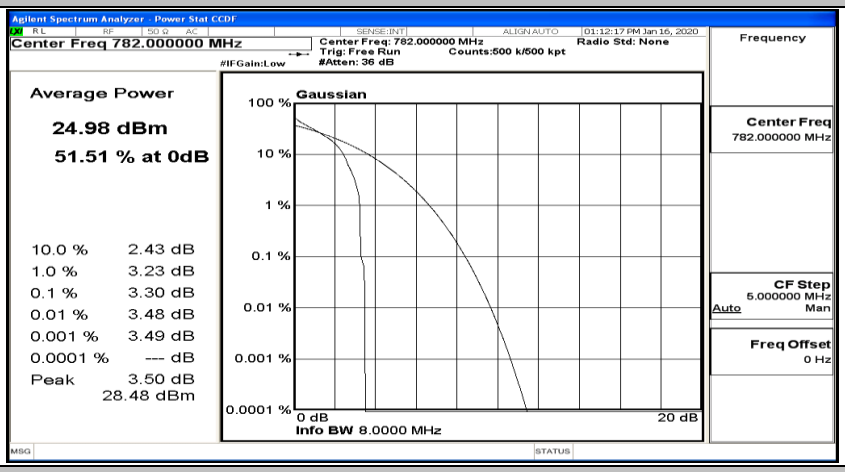


Channel Bandwidth: 10 MHz

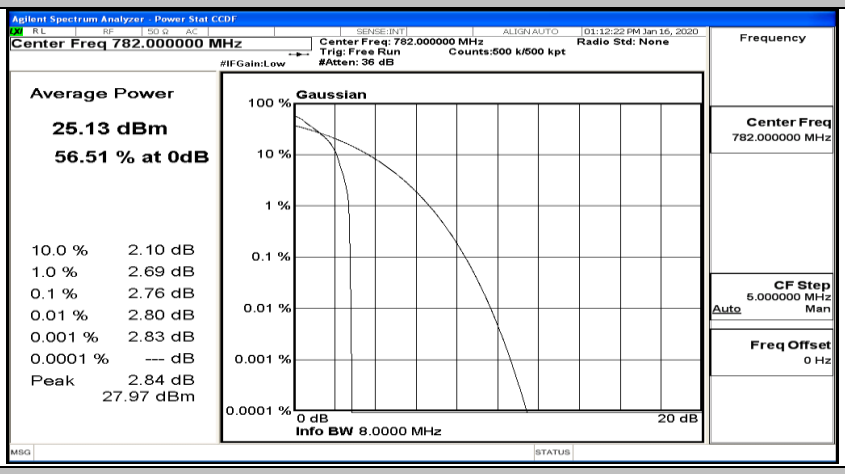
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0



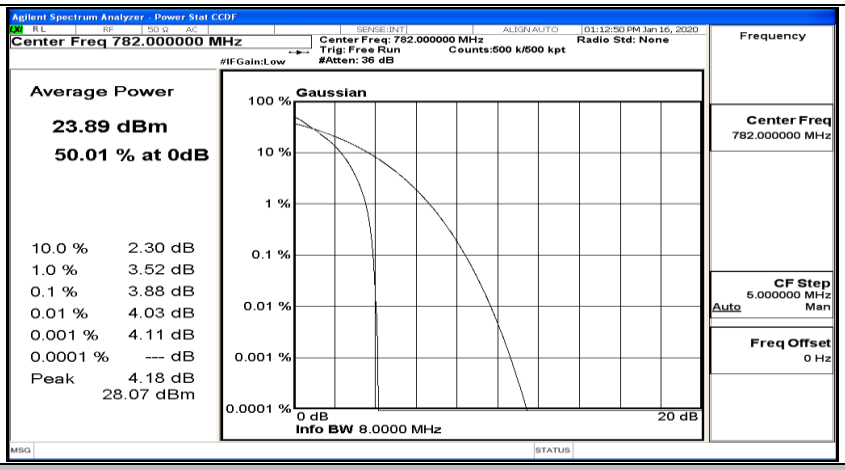
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24



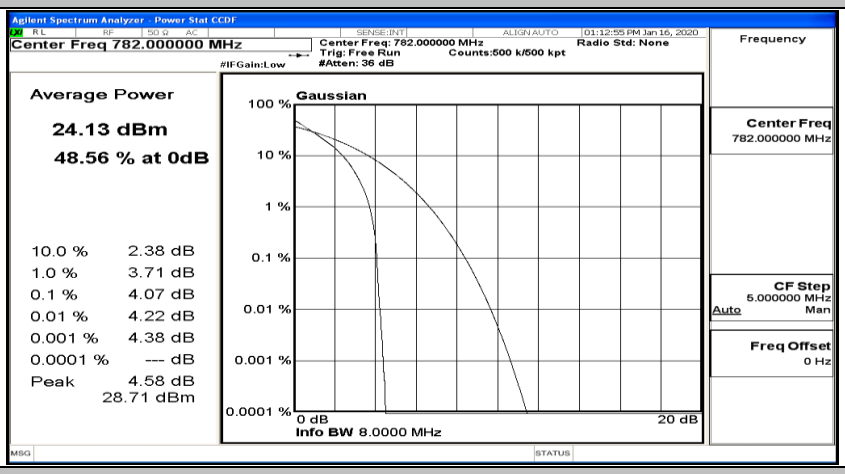
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49



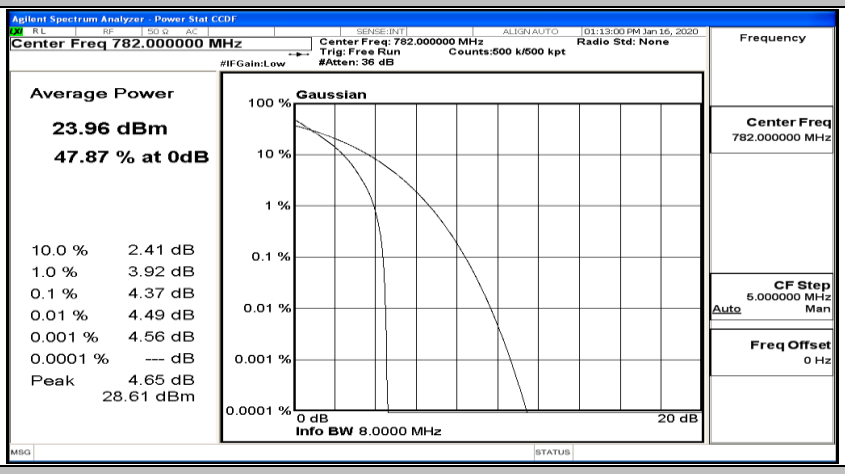
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#0



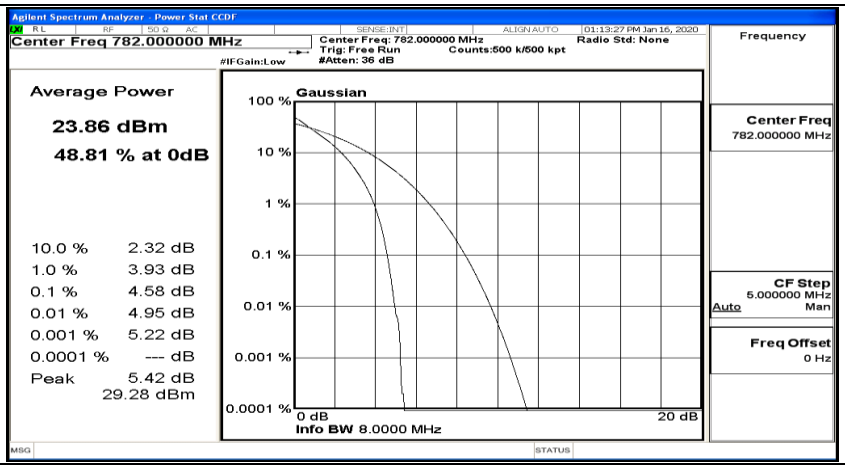
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12



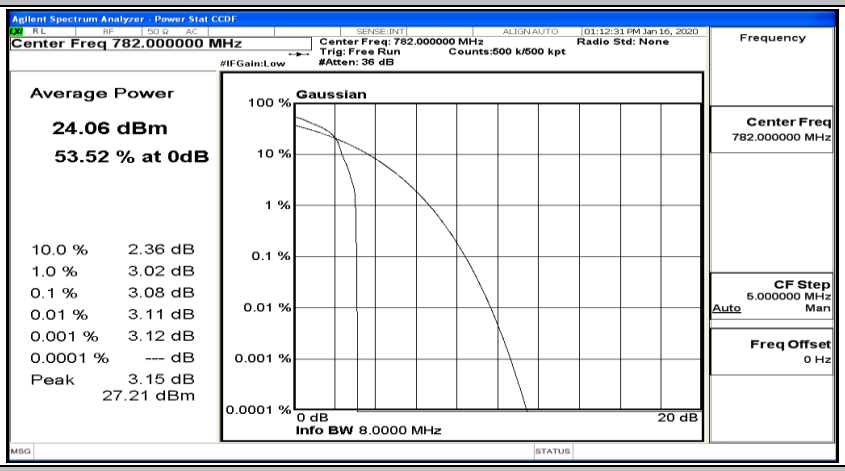
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25



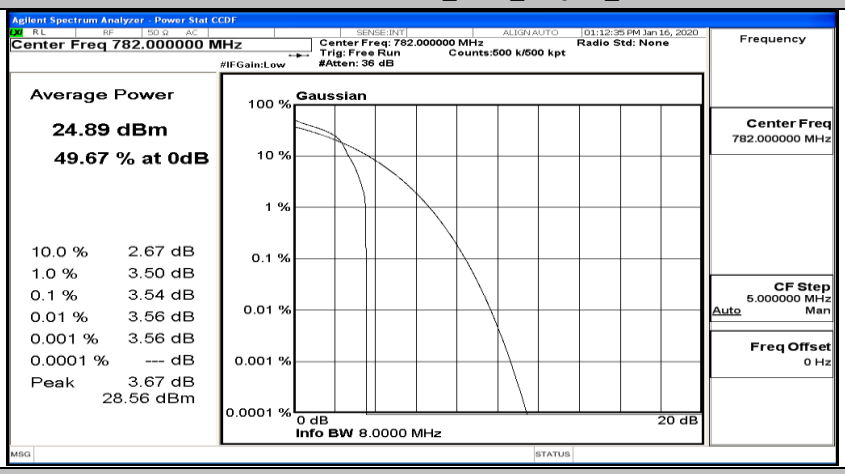
Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0



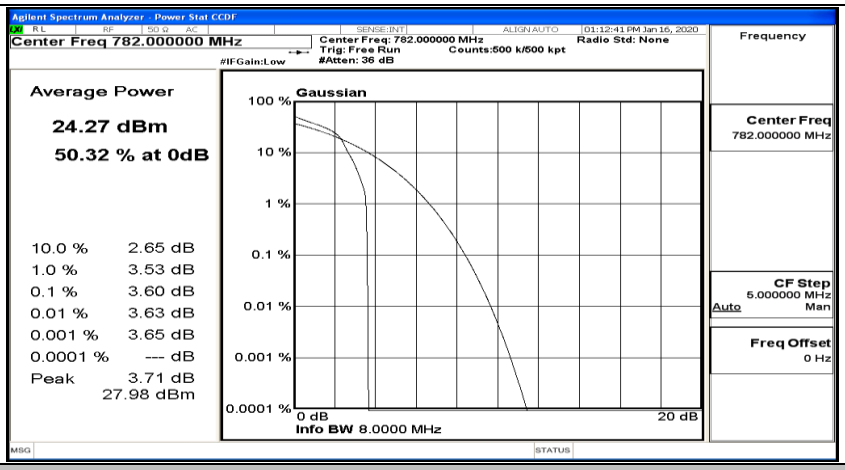
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0



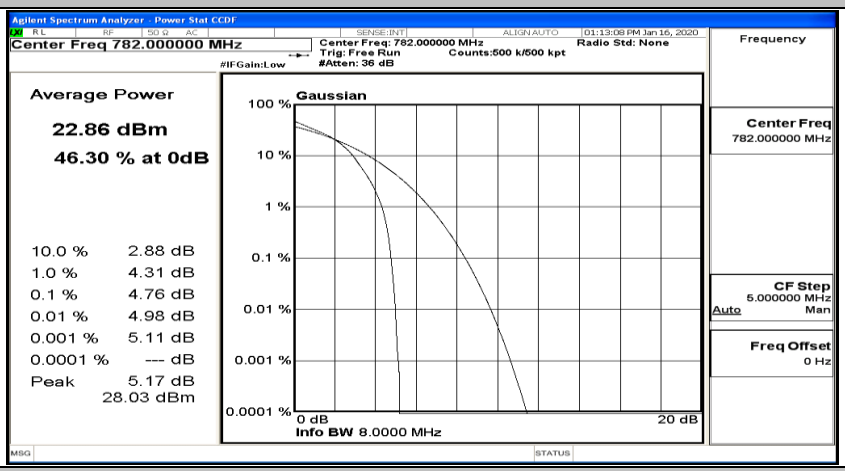
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24



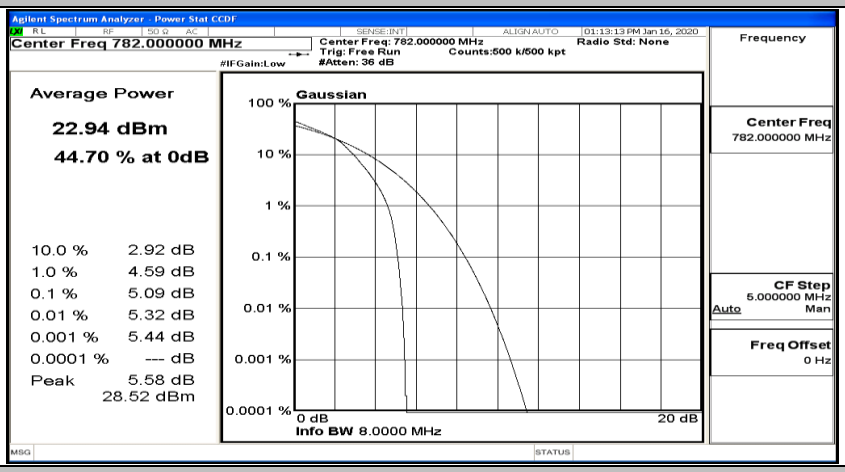
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49



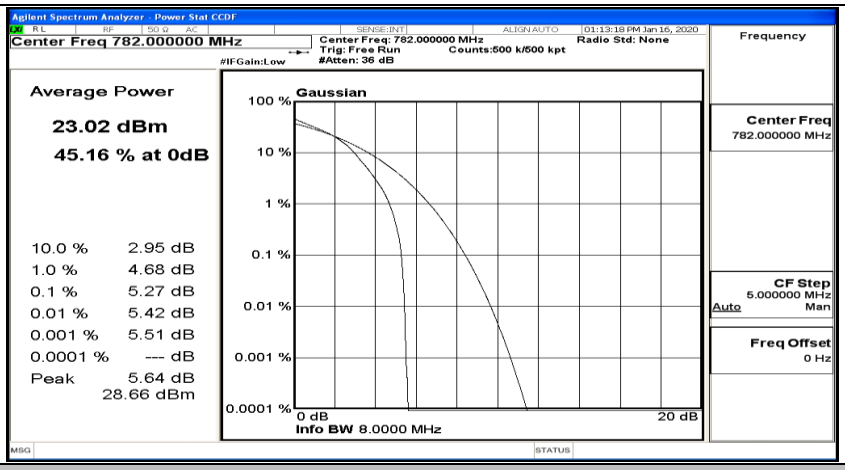
Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#0



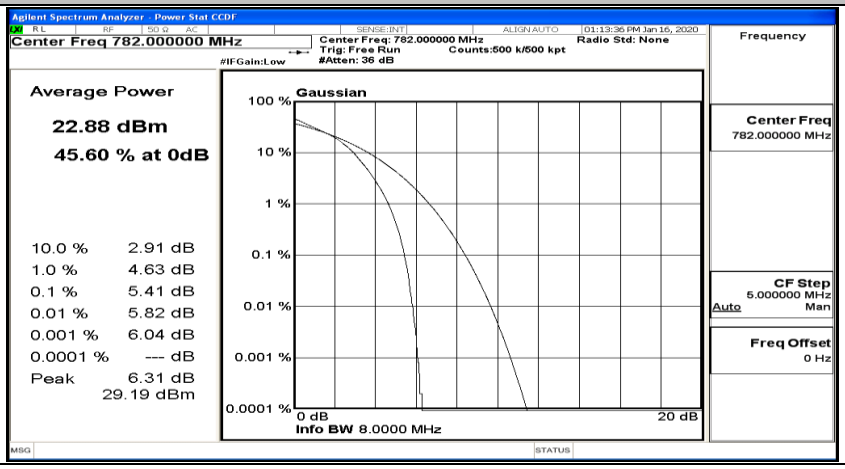
Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#25



Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0



G.3: 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	1	0	0.29468	0.4739	PASS
		1	12	0.38994	0.5993	PASS
		1	24	0.28593	0.4637	PASS
		12	0	2.1757	2.652	PASS
		12	6	2.1836	2.844	PASS
		12	13	2.1744	2.553	PASS
		25	0	4.4826	4.985	PASS
	MCH	1	0	0.29747	0.5169	PASS
		1	12	0.40610	0.6294	PASS
		1	24	0.28847	0.4541	PASS
		12	0	2.1768	2.581	PASS
		12	6	2.1846	2.680	PASS
		12	13	2.1733	2.516	PASS
		25	0	4.4732	4.868	PASS
	HCH	1	0	0.29886	0.4806	PASS
		1	12	0.41951	0.6250	PASS
		1	24	0.28994	0.4565	PASS
		12	0	2.1817	2.503	PASS
		12	6	2.1845	2.923	PASS
		12	13	2.1788	2.557	PASS
		25	0	4.4714	4.816	PASS
16QAM	LCH	1	0	0.29853	0.5038	PASS
		1	12	0.41507	0.6144	PASS
		1	24	0.29693	0.4587	PASS
		12	0	2.1761	2.635	PASS
		12	6	2.1756	2.927	PASS
		12	13	2.1715	2.531	PASS
		25	0	4.4691	4.856	PASS
	MCH	1	0	0.30346	0.4650	PASS
		1	12	0.42274	0.6158	PASS
		1	24	0.30174	0.4599	PASS

		12	0	2.1796	2.558	PASS
		12	6	2.1831	2.680	PASS
		12	13	2.1795	2.585	PASS
		25	0	4.4815	4.894	PASS
	HCH	1	0	0.28451	0.4304	PASS
		1	12	0.42842	0.6421	PASS
		1	24	0.29288	0.4317	PASS
		12	0	2.1728	2.540	PASS
		12	6	2.1824	2.635	PASS
		12	13	2.1739	2.501	PASS
		25	0	4.4734	4.824	PASS

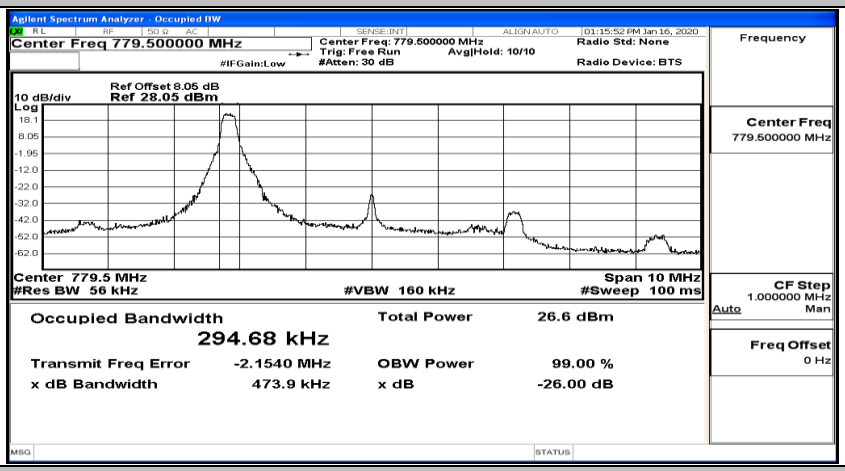
Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	MCH	1	0	0.38802	0.5908	PASS
		1	25	0.44397	0.6902	PASS
		1	49	0.38837	0.5831	PASS
		25	0	4.5223	5.084	PASS
		25	12	4.5279	5.214	PASS
		25	25	4.5121	5.040	PASS
		50	0	8.9263	9.581	PASS
16QAM	MCH	1	0	0.38729	0.5841	PASS
		1	25	0.44980	0.6374	PASS
		1	49	0.39155	0.6046	PASS
		25	0	4.5124	5.006	PASS
		25	12	4.5187	5.135	PASS
		25	25	4.5100	5.014	PASS
		50	0	8.9359	9.457	PASS

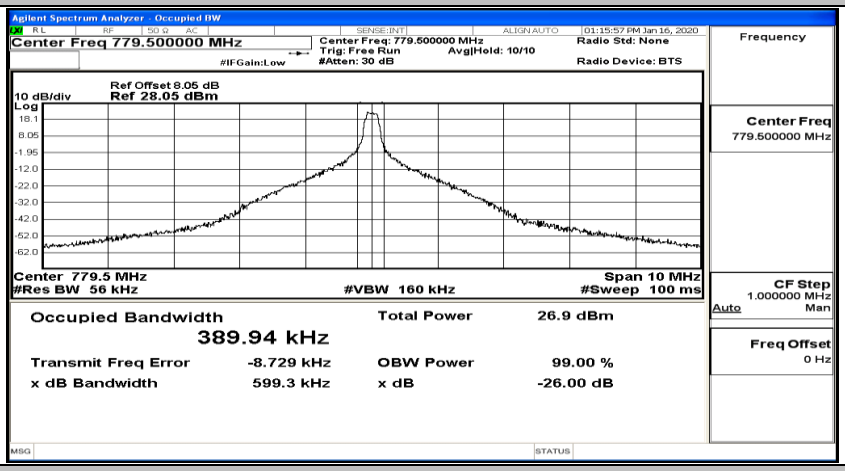
Test Graphs

Channel Bandwidth: 5 MHz

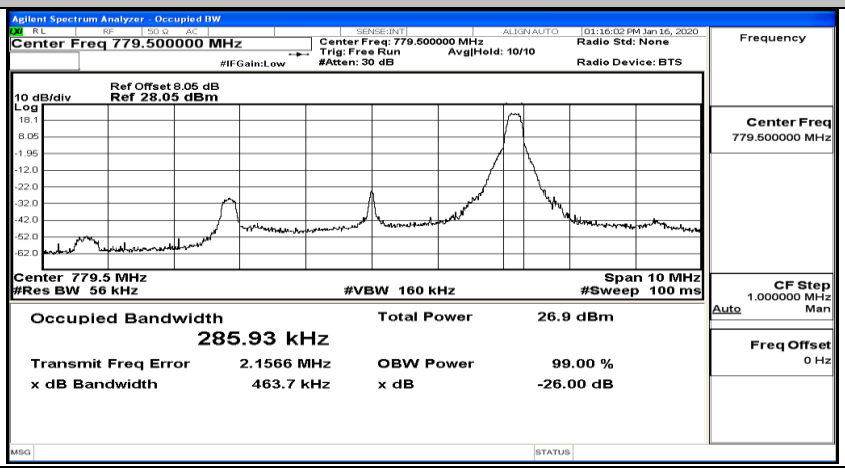
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



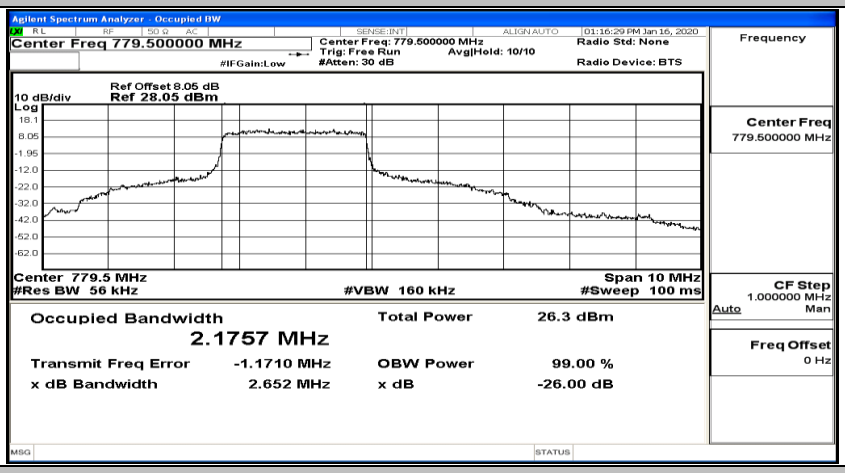
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12



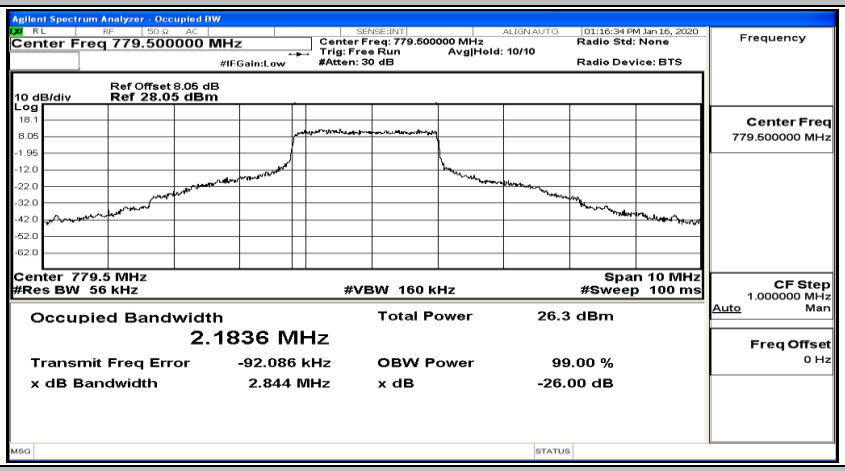
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



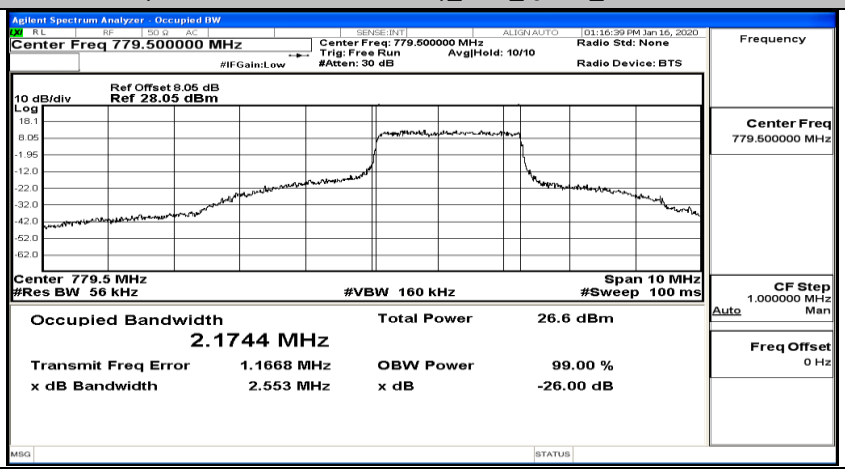
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0



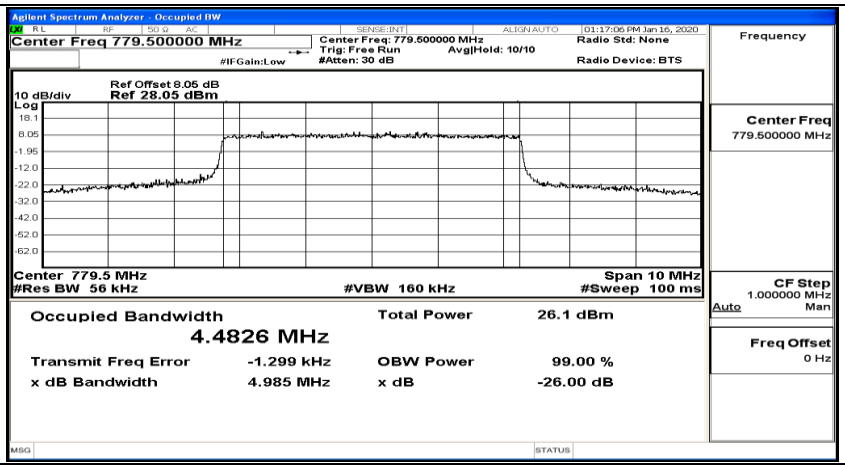
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#6



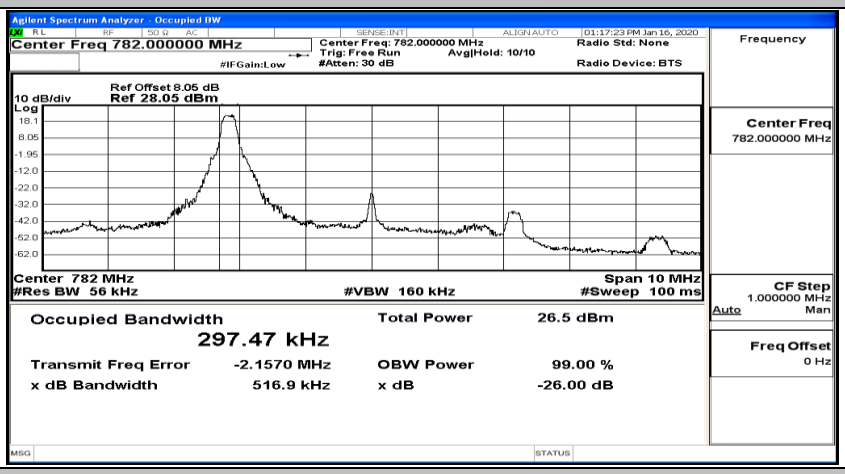
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13



(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



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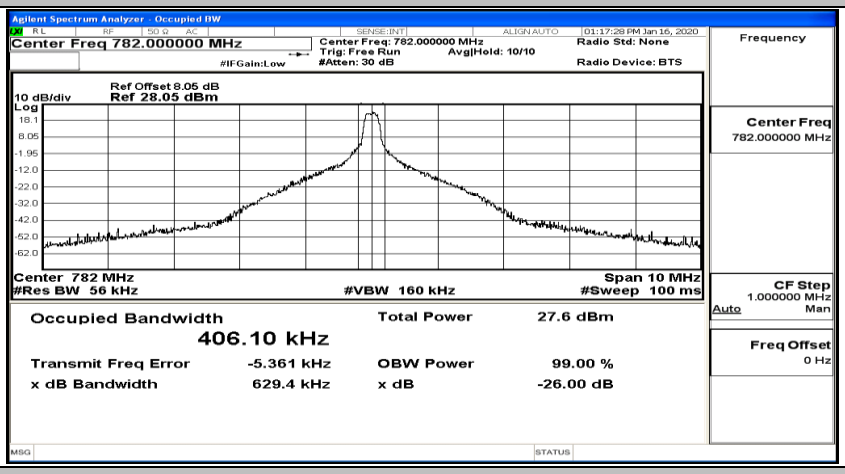
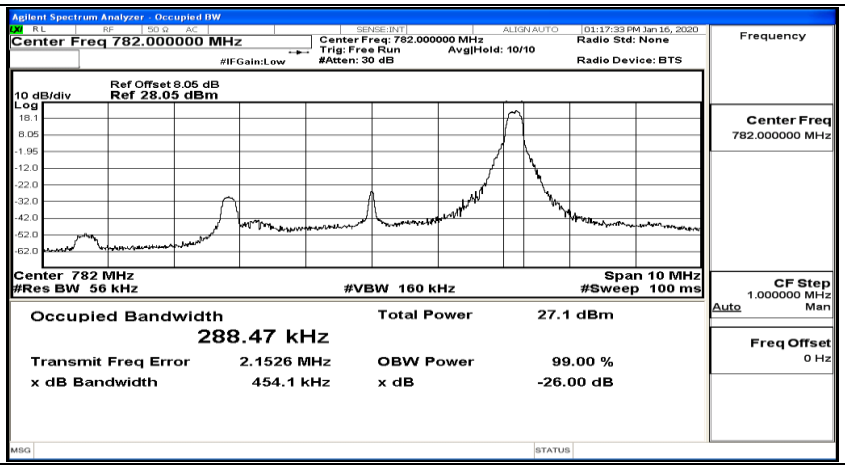
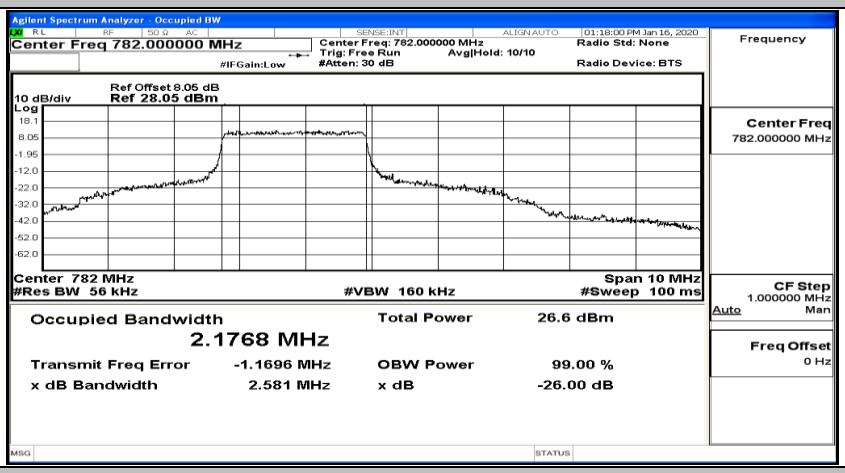


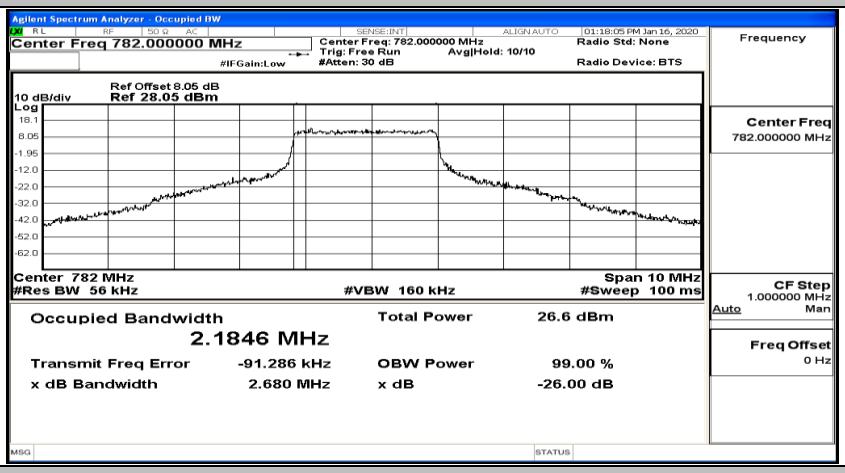
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24



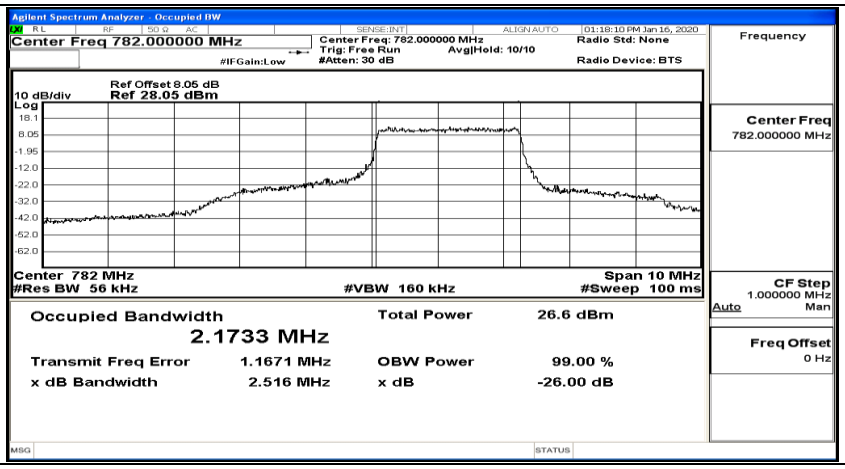
(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#0



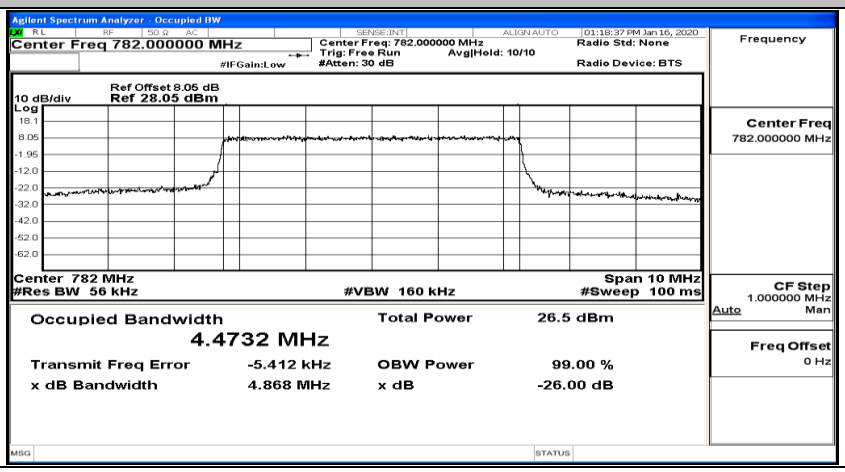
(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#6



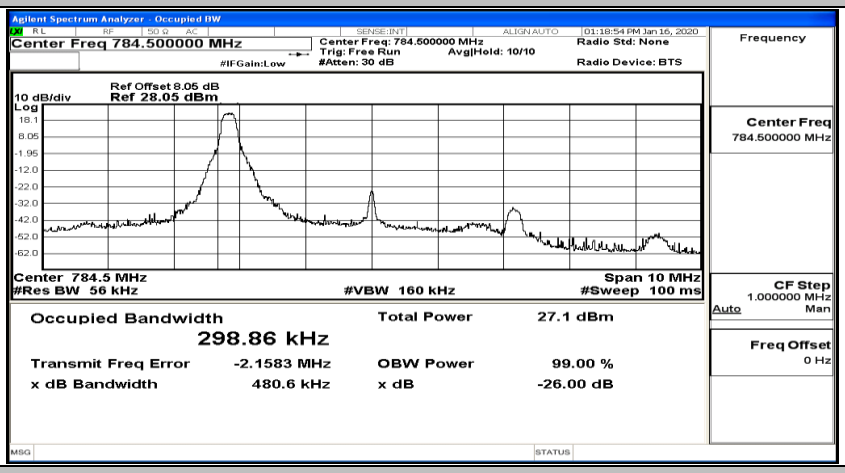
(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#13



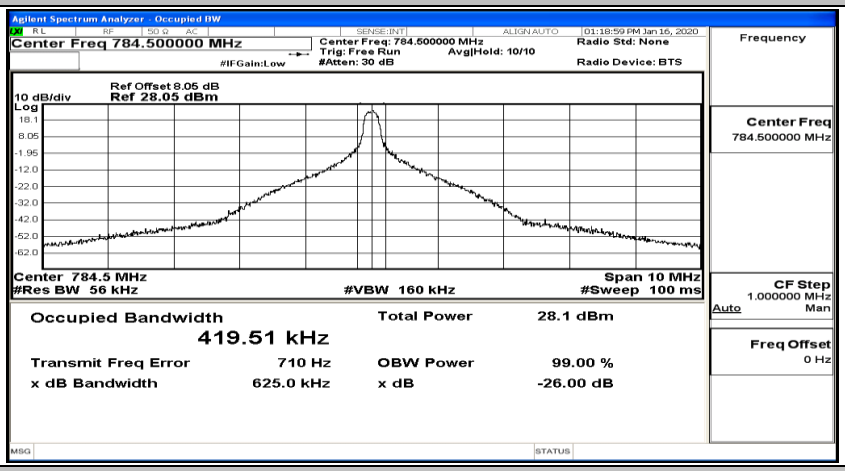
(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



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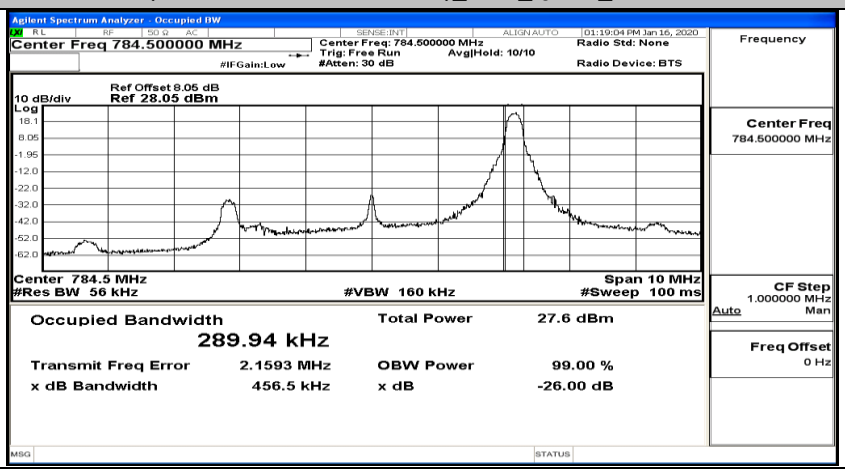
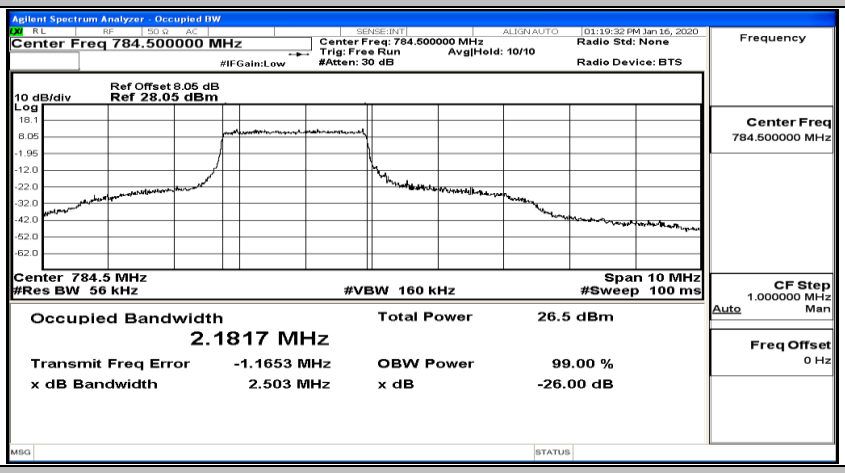
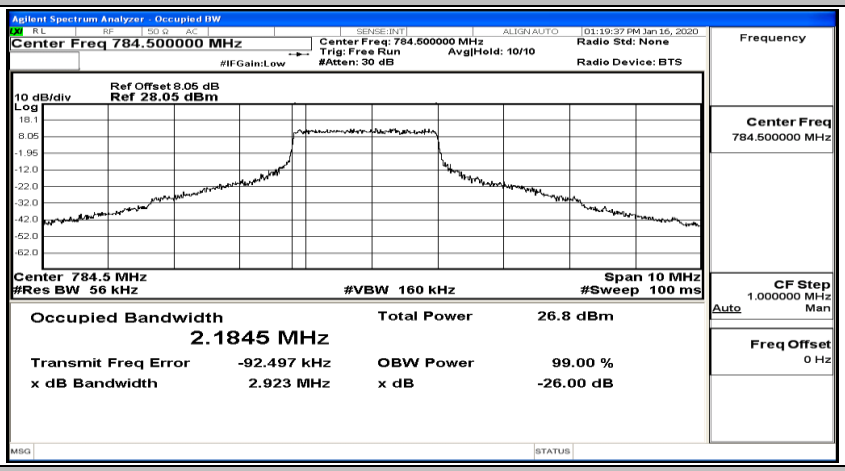


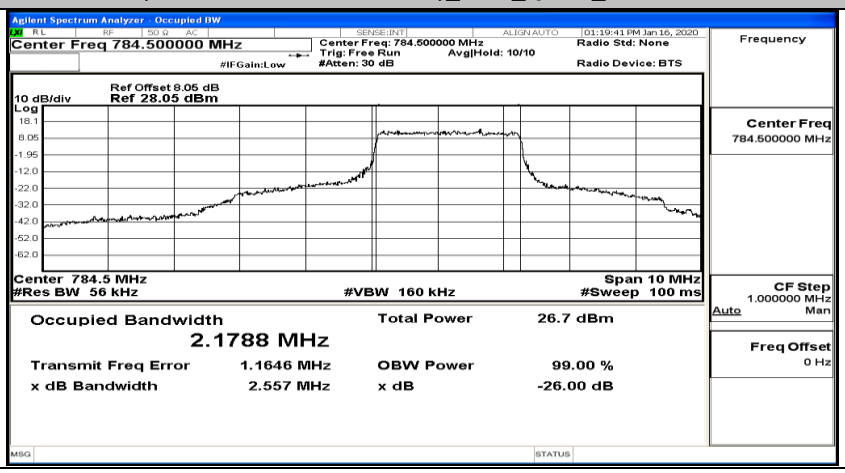
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0



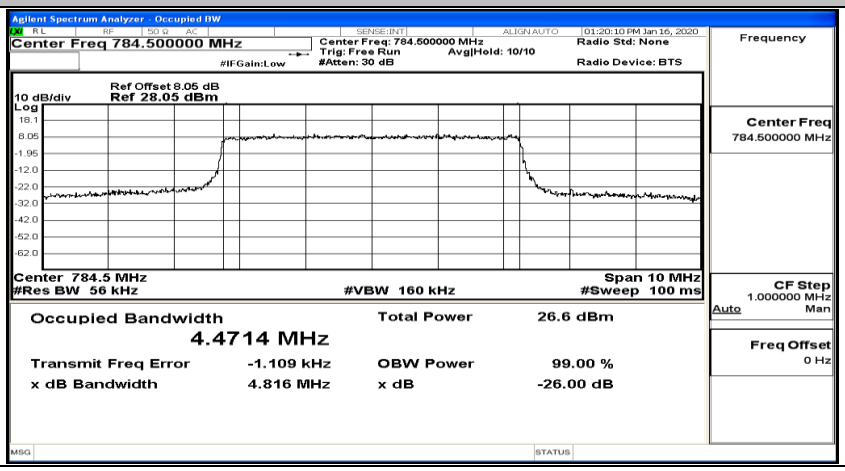
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6



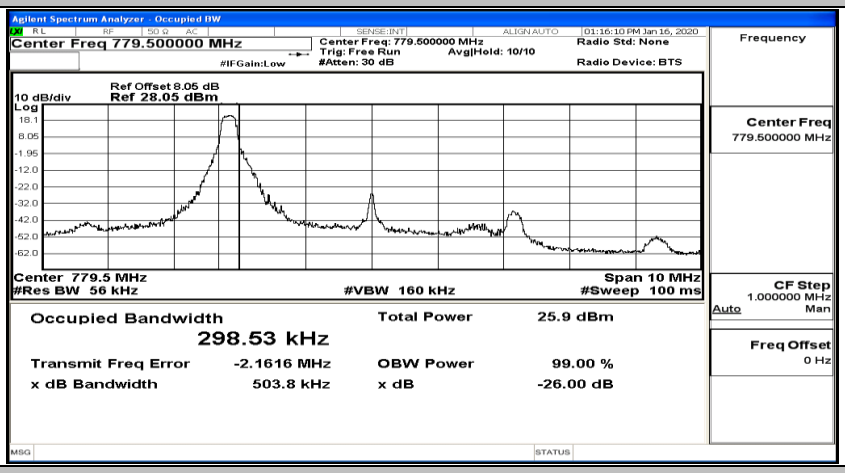
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13



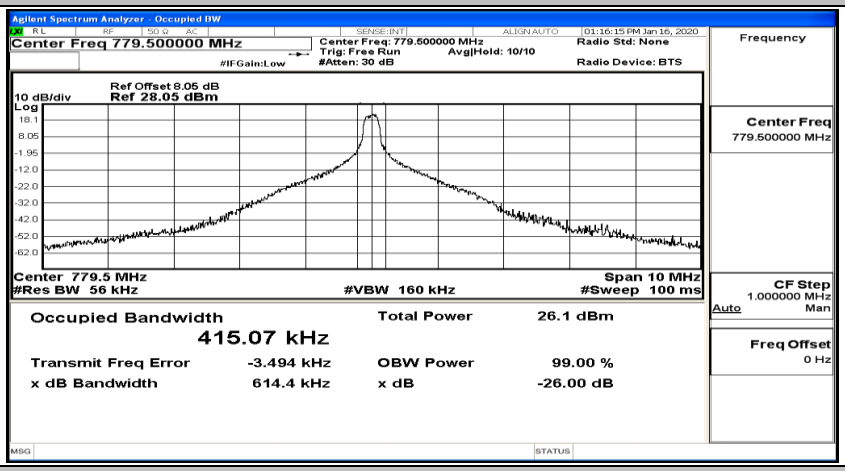
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



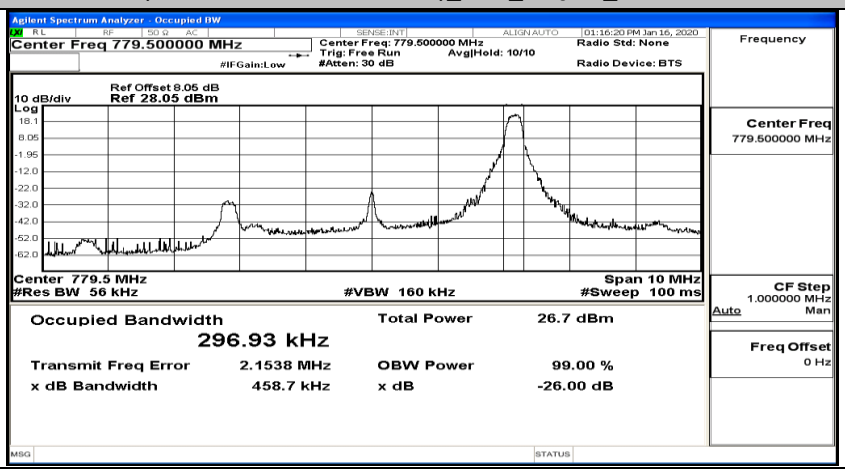
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



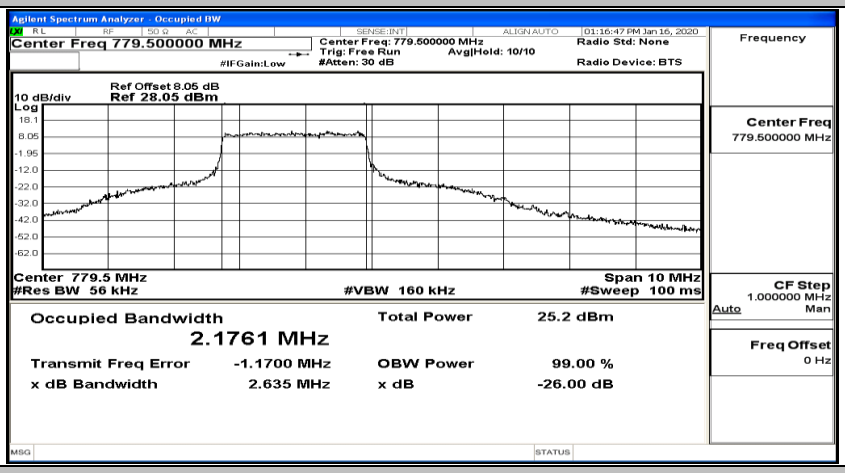
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12



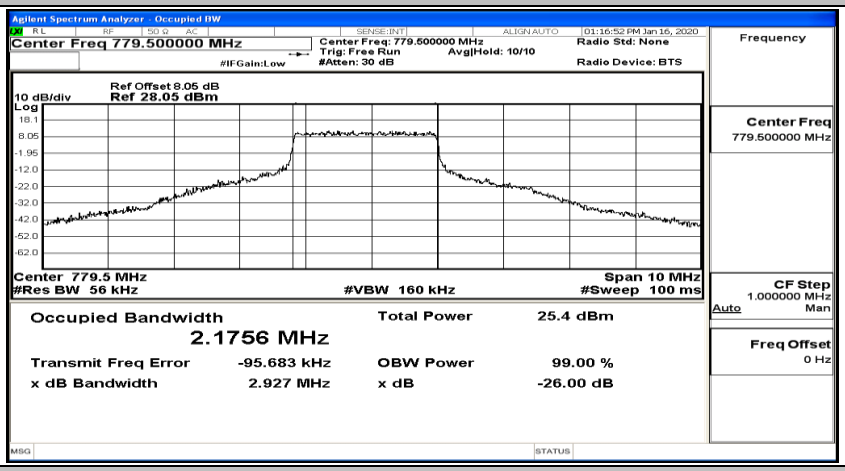
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24



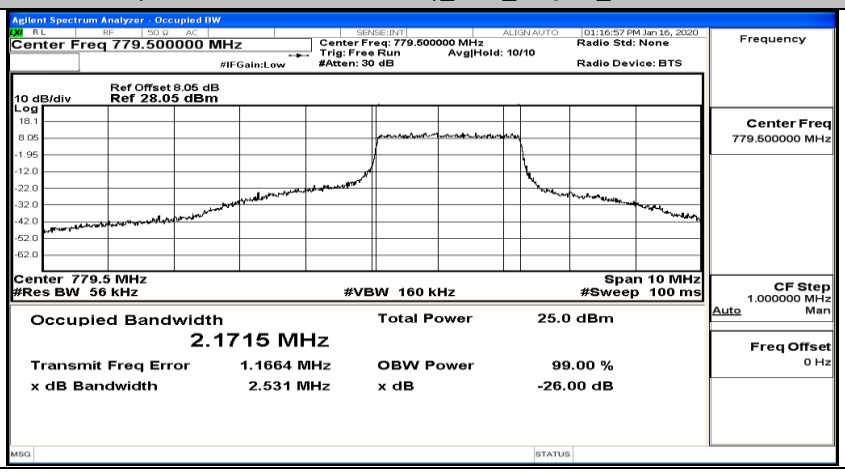
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0



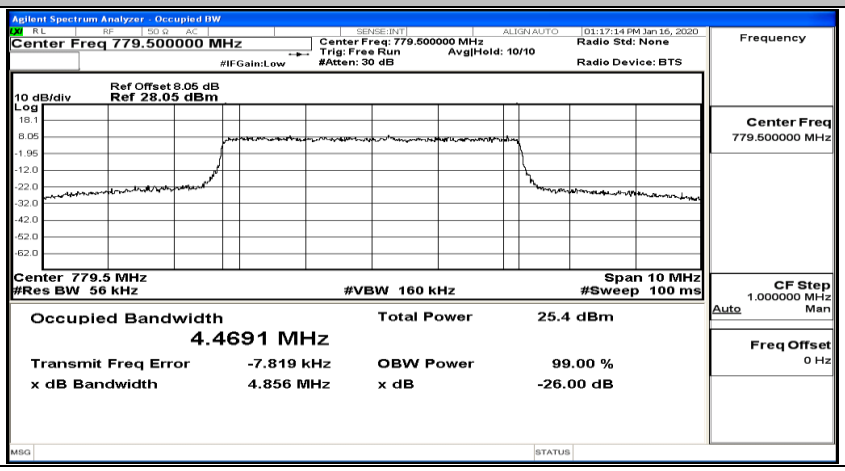
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#6



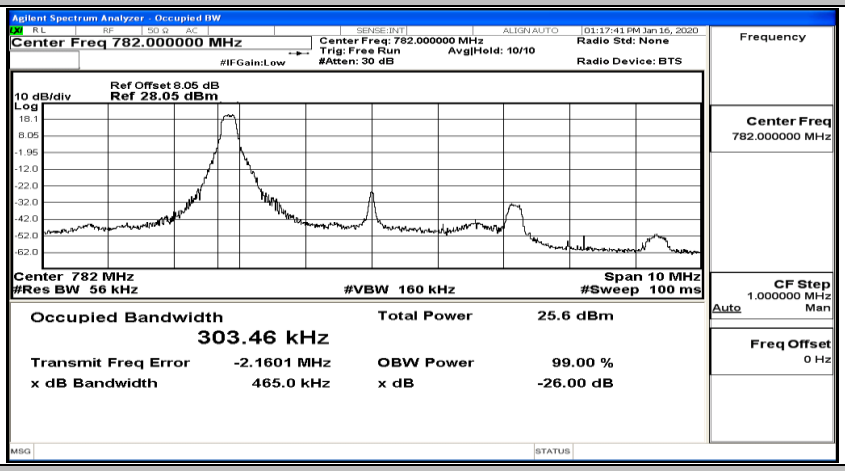
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#13



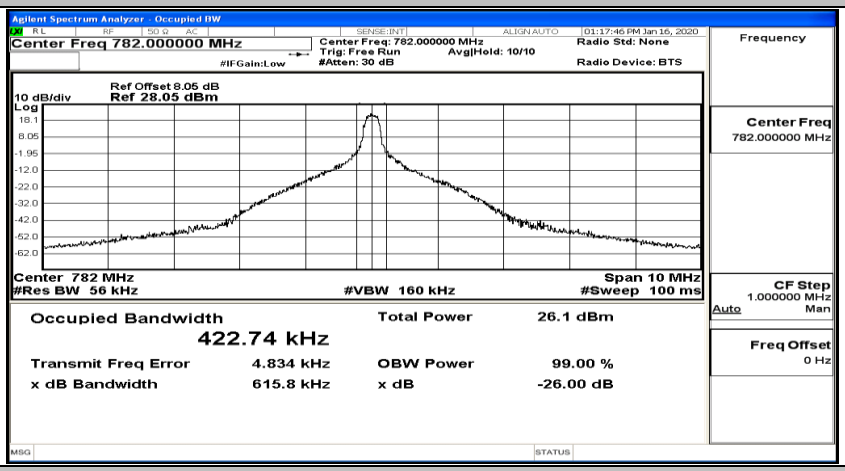
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



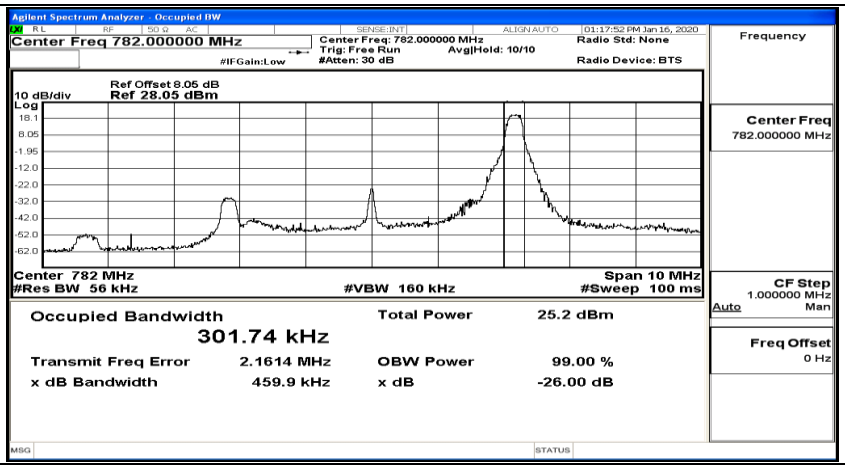
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



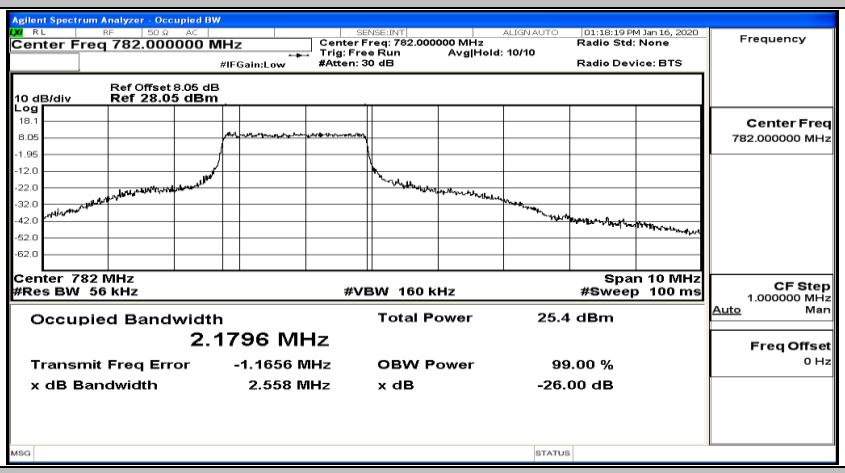
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12



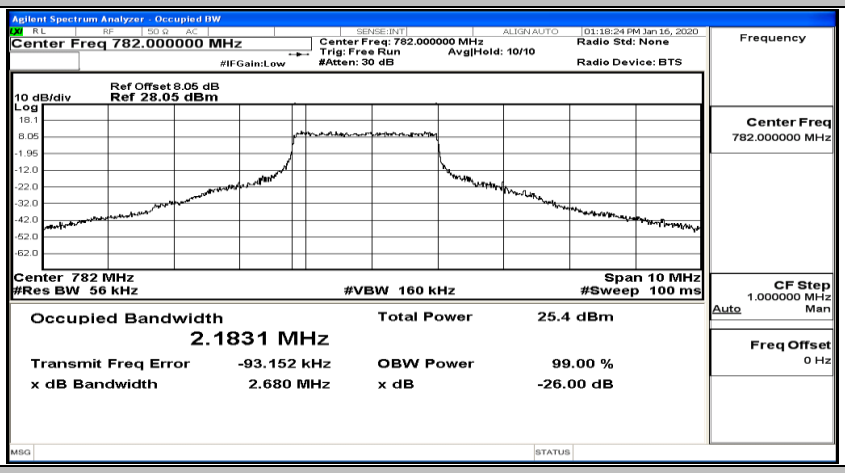
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#24



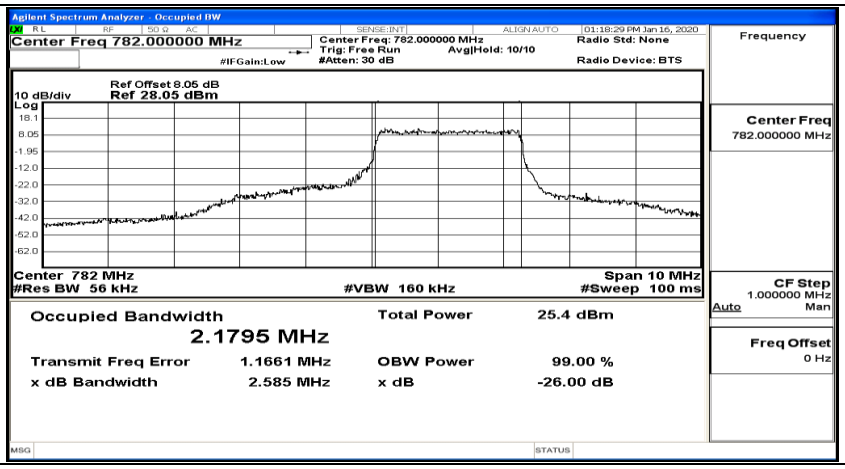
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#0



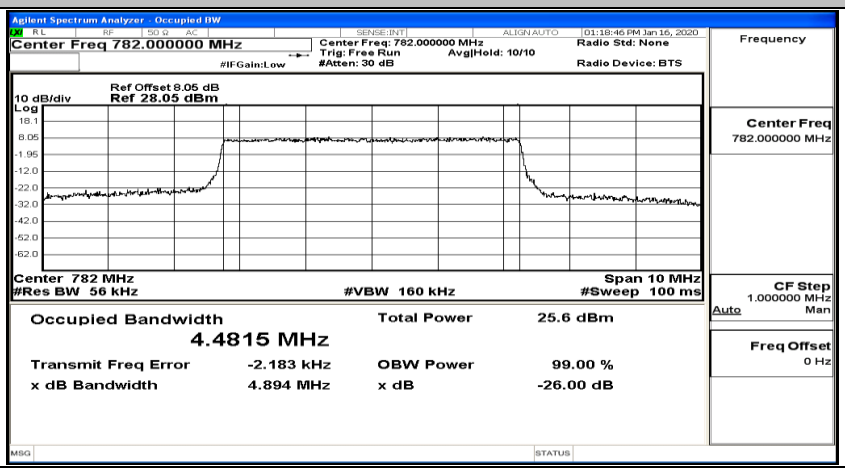
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#6



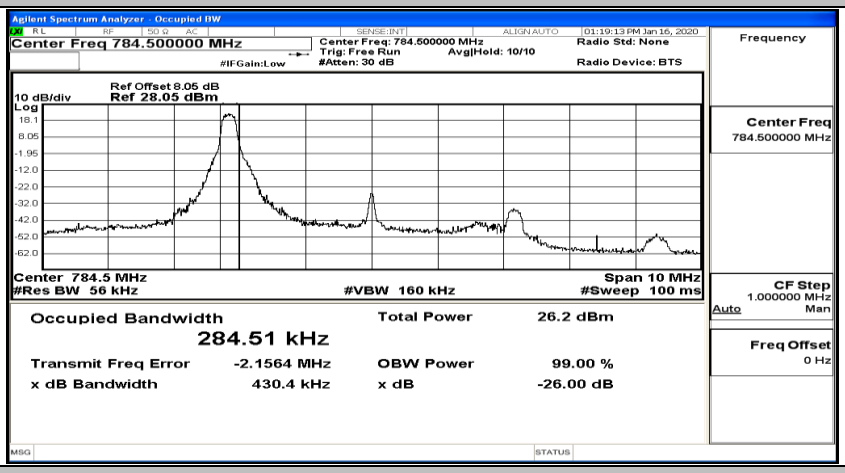
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#13



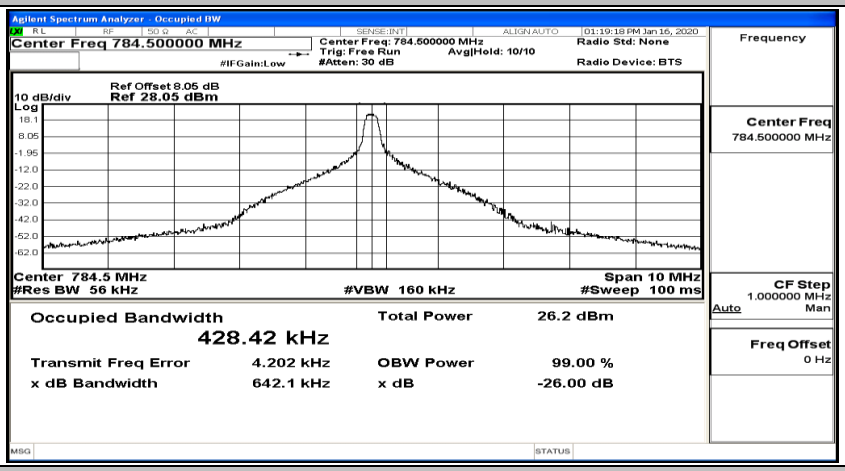
(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0



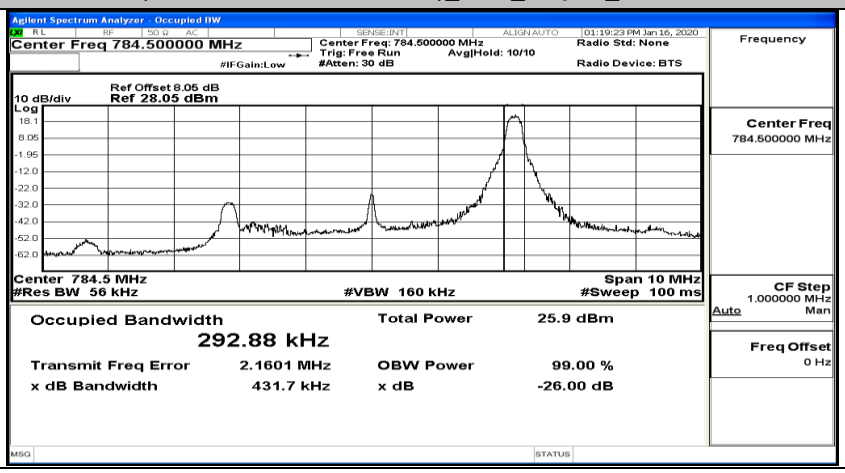
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



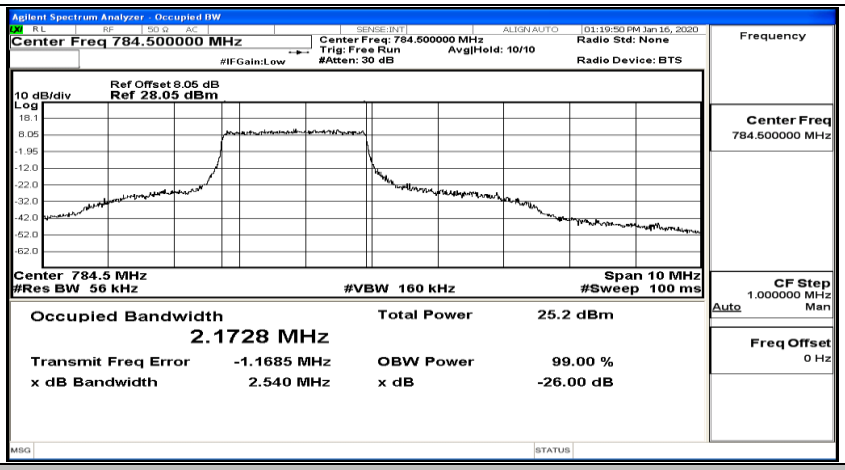
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



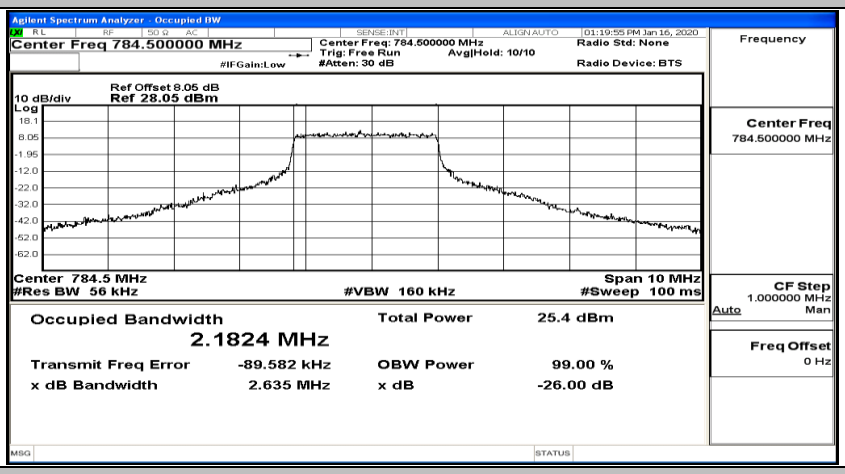
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24



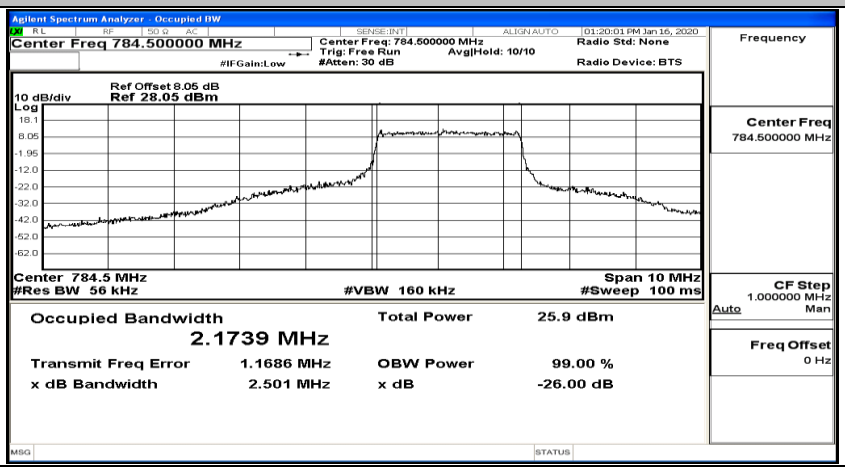
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#0



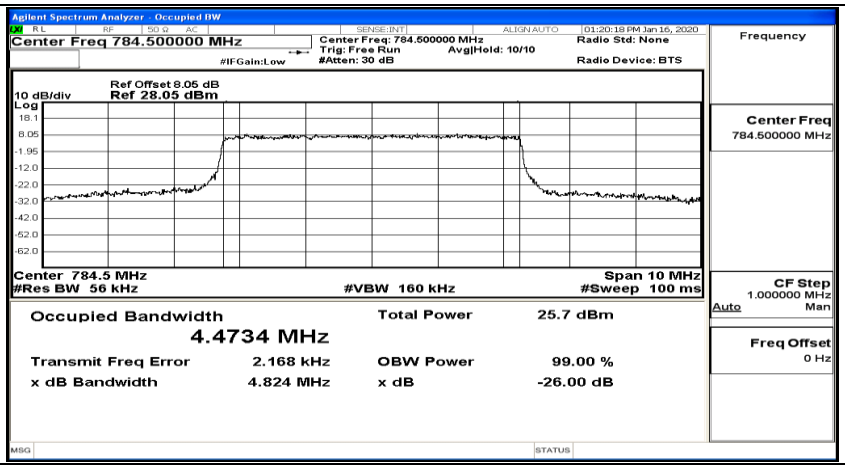
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#6



(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#13

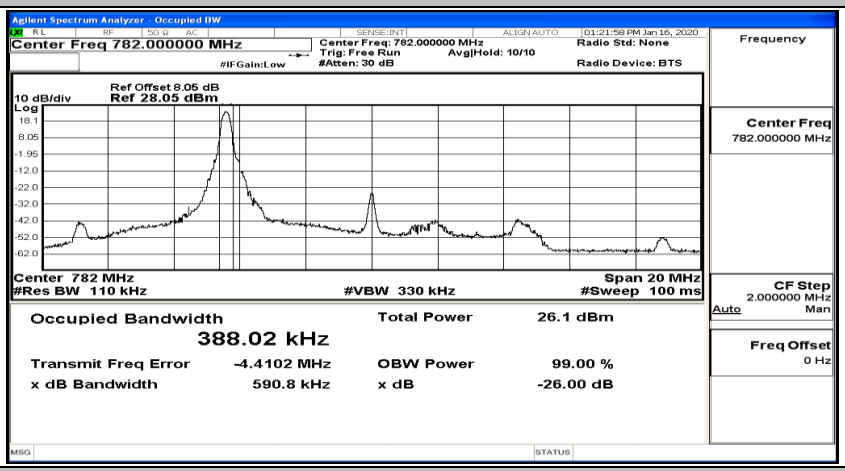


(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0

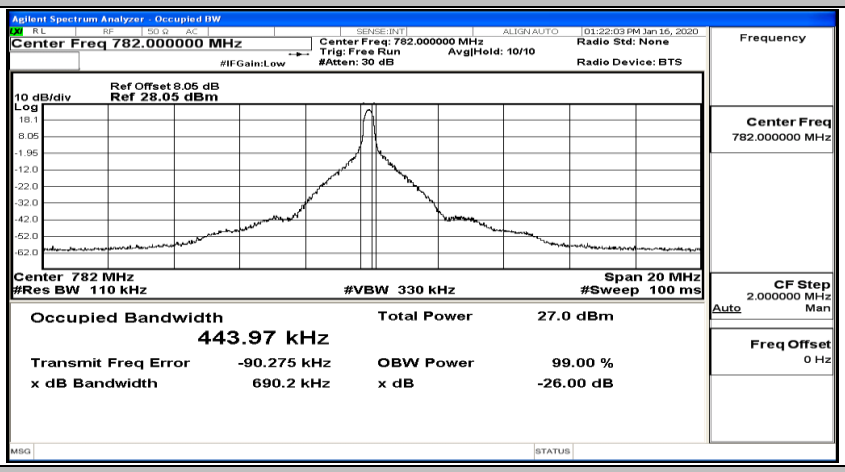

Agilent Spectrum Analyzer - Occupied BW
Center Freq 784.500000 MHz
Center Freq: 784.500000 MHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
01:20:18 PM Jan 16, 2020
Frequency
Ref Offset 8.05 dB
10 dB/div
Ref 28.05 dBm
Log
Center Freq
784.500000 MHz
Center 784.5 MHz
#Res BW 56 kHz
#VBW 160 kHz
Span 10 MHz
#Sweep 100 ms
CF Step
1.000000 MHz
Auto
Man
Occupied Bandwidth
4.4734 MHz
Total Power
25.7 dBm
Transmit Freq Error
2.168 kHz
OBW Power
99.00 %
x dB Bandwidth
4.824 MHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

Channel Bandwidth: 10 MHz

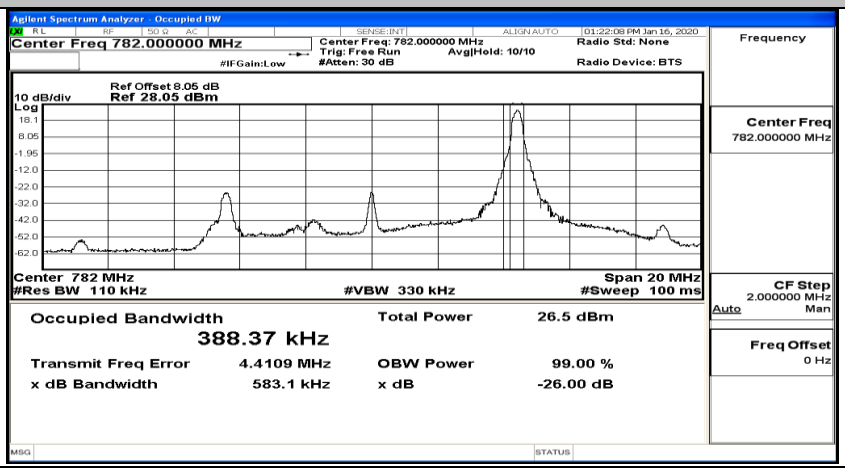
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0



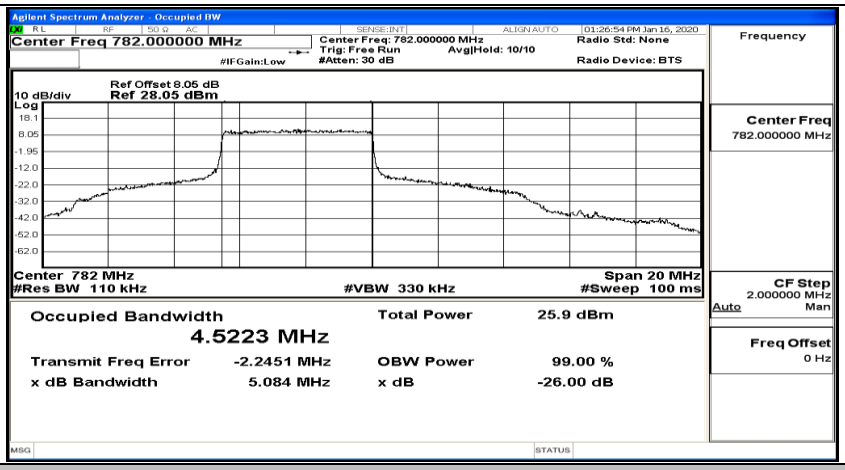
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#25



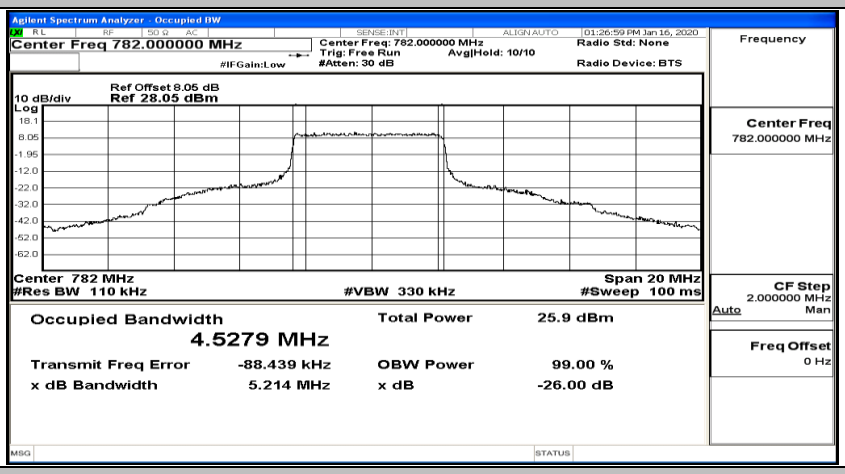
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49



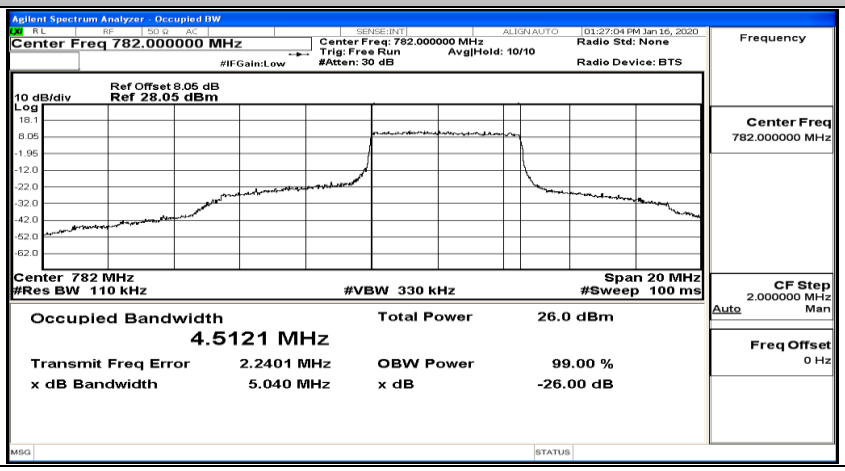
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#0



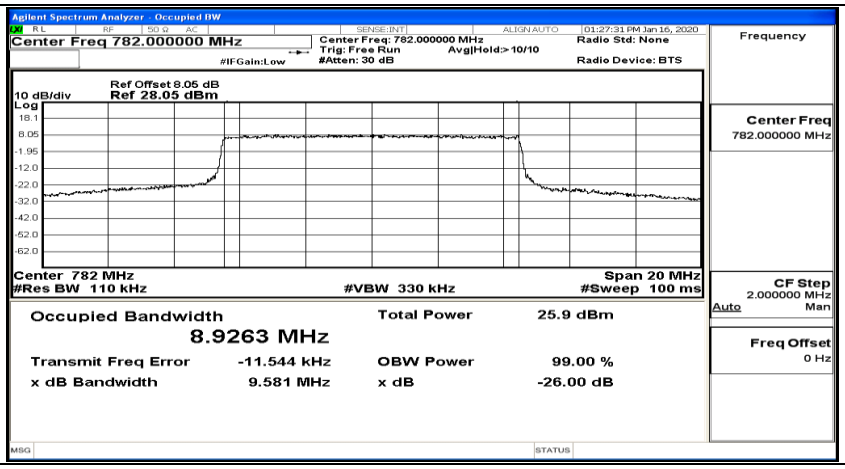
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12



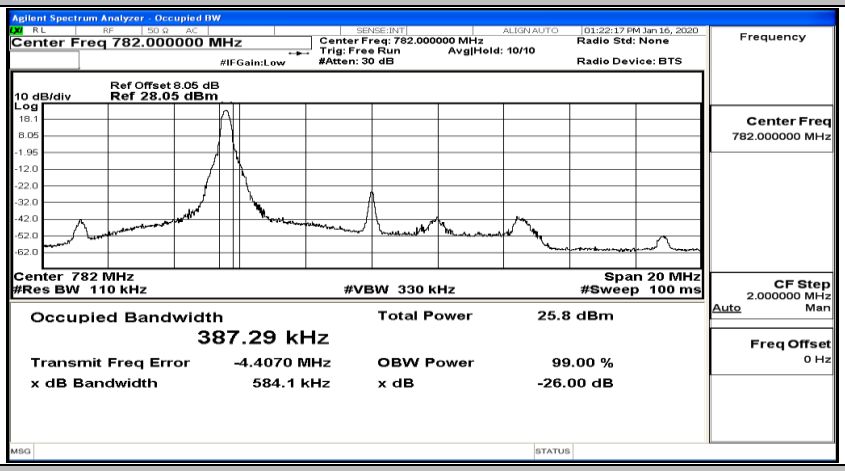
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25



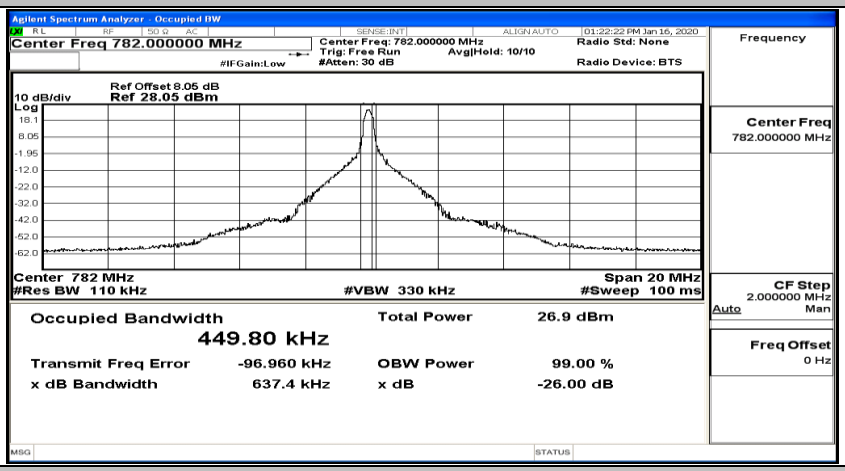
Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0



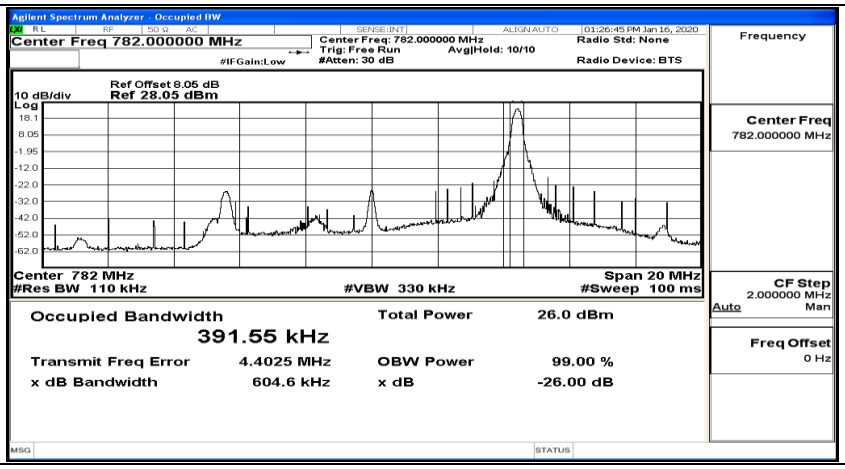
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0



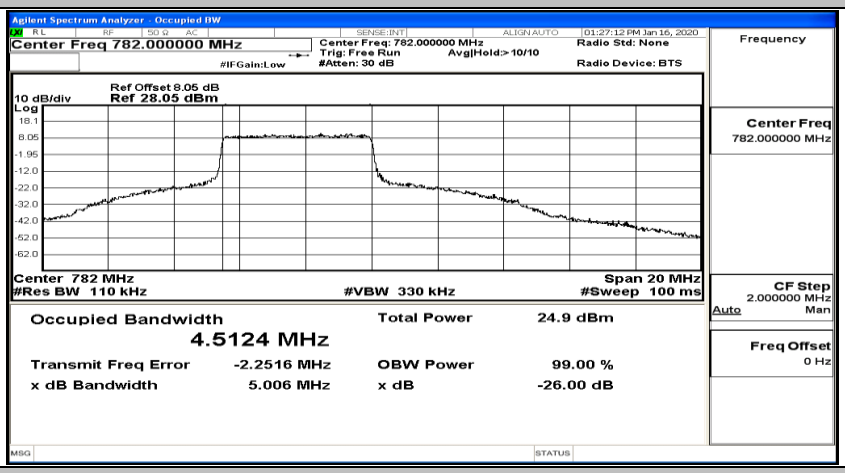
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#25



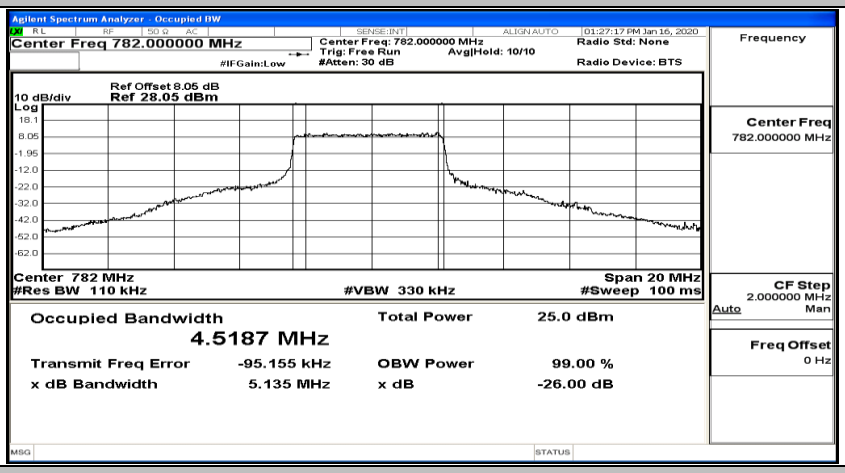
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49



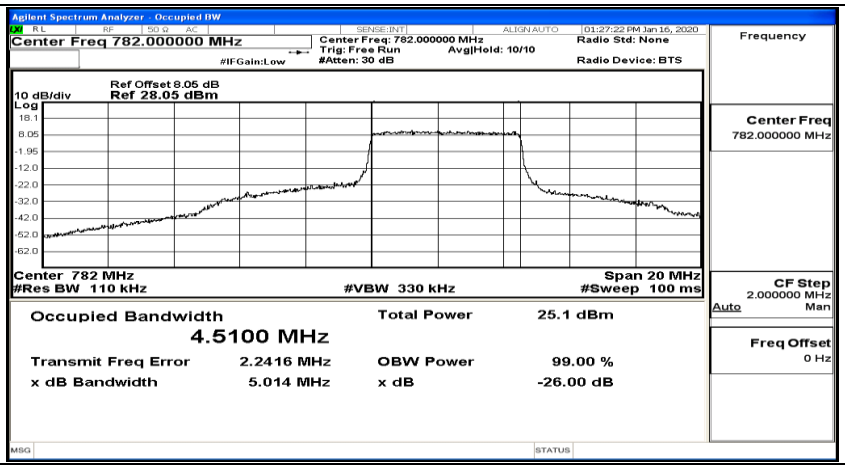
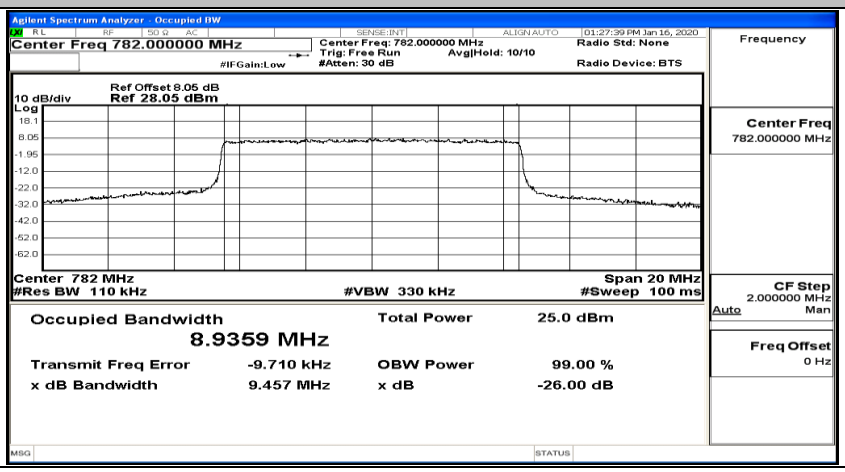
Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#25



Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0