Appendix H: Test Data for E-UTRA Band 17

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

H.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	22.00	PASS
		1	12	22.54	PASS
		1	24	22.73	PASS
		12	0	21.48	PASS
		12	6	21.56	PASS
		12	13	21.85	PASS
		25	0	21.68	PASS
	MCH	1	0	22.63	PASS
		1	12	**22.91**	PASS
		1	24	22.72	PASS
		12	0	21.69	PASS
		12	6	21.91	PASS
		12	13	21.83	PASS

		25	0	21.79	PASS
	HCH	1	0	22.76	PASS
		1	12	22.67	PASS
		1	24	22.19	PASS
		12	0	21.94	PASS
		12	6	21.69	PASS
		12	13	21.58	PASS
		25	0	21.77	PASS
16QAM	LCH	1	0	21.18	PASS
		1	12	21.94	PASS
		1	24	21.73	PASS
		12	0	20.69	PASS
		12	6	20.92	PASS
		12	13	21.31	PASS
		25	0	20.88	PASS
	MCH	1	0	22.04	PASS
		1	12	22.39	PASS
		1	24	21.88	PASS
		12	0	21.08	PASS
		12	6	21.09	PASS
		12	13	21.14	PASS
		25	0	21.21	PASS
	HCH	1	0	22.09	PASS
		1	12	22.12	PASS
		1	24	21.45	PASS
		12	0	21.25	PASS
		12	6	21.00	PASS
		12	13	20.76	PASS
		25	0	21.25	PASS

Channel Bandwidth: 10 MHz

Modulation	Channel	RB Configuration		Average Power [dBm]	Verdict
		Size	Offset		
QPSK	LCH	1	0	22.19	PASS
		1	24	**22.86**	PASS
		1	49	22.72	PASS
		25	0	21.55	PASS
		25	12	21.85	PASS
		25	25	21.77	PASS
		50	0	21.71	PASS
	MCH	1	0	22.36	PASS
		1	24	22.88	PASS

		1	49	22.54	PASS
		25	0	21.52	PASS
		25	12	21.84	PASS
		25	25	21.57	PASS
		50	0	21.56	PASS
	HCH	1	0	22.55	PASS
		1	24	**22.83**	PASS
		1	49	22.33	PASS
		25	0	21.55	PASS
		25	12	21.82	PASS
		25	25	21.54	PASS
		50	0	21.56	PASS
16QAM	LCH	1	0	21.41	PASS
		1	24	22.12	PASS
		1	49	22.09	PASS
		25	0	20.80	PASS
		25	12	21.29	PASS
		25	25	21.19	PASS
		50	0	20.77	PASS
	MCH	1	0	21.47	PASS
		1	24	22.29	PASS
		1	49	21.81	PASS
		25	0	20.73	PASS
		25	12	21.26	PASS
		25	25	20.86	PASS
		50	0	20.62	PASS
	HCH	1	0	21.70	PASS
		1	24	22.29	PASS
		1	49	21.80	PASS
		25	0	21.05	PASS
		25	12	21.20	PASS
		25	25	20.97	PASS
		50	0	21.03	PASS

H.2: 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	5.4	<13	PASS
		1	12	5.07	<13	PASS
		1	24	5.16	<13	PASS
		12	0	5.63	<13	PASS
		12	6	5.48	<13	PASS
		12	13	5.39	<13	PASS
		25	0	5.5	<13	PASS
	MCH	1	0	4.85	<13	PASS
		1	12	5.3	<13	PASS
		1	24	5.85	<13	PASS
		12	0	5.49	<13	PASS
		12	6	5.68	<13	PASS
		12	13	5.94	<13	PASS
		25	0	5.66	<13	PASS
	HCH	1	0	5.48	<13	PASS
		1	12	5.5	<13	PASS
		1	24	4.74	<13	PASS
		12	0	5.98	<13	PASS
		12	6	5.89	<13	PASS
		12	13	5.59	<13	PASS
		25	0	5.74	<13	PASS
16QAM	LCH	1	0	6.56	<13	PASS
		1	12	6.12	<13	PASS
		1	24	6.16	<13	PASS
		12	0	6.52	<13	PASS
		12	6	6.37	<13	PASS
		12	13	6.22	<13	PASS
		25	0	6.28	<13	PASS
	MCH	1	0	5.91	<13	PASS
		1	12	6.27	<13	PASS
		1	24	6.64	<13	PASS
		12	0	6.2	<13	PASS

		12	6	6.44	<13	PASS
		12	13	6.59	<13	PASS
		25	0	6.41	<13	PASS
	HCH	1	0	6.64	<13	PASS
		1	12	6.5	<13	PASS
		1	24	5.47	<13	PASS
		12	0	6.68	<13	PASS
		12	6	6.55	<13	PASS
		12	13	6.21	<13	PASS
		25	0	6.4	<13	PASS

Channel Bandwidth: 10 MHz

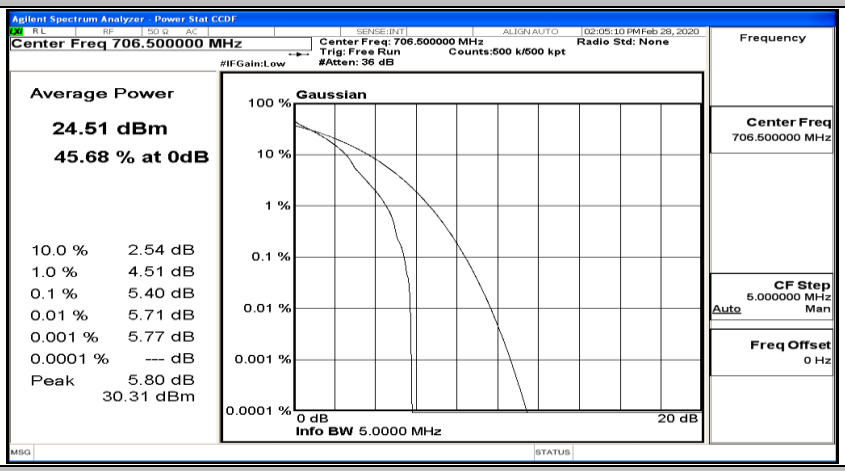
Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	5.71	<13	PASS
		1	24	5.55	<13	PASS
		1	49	5.66	<13	PASS
		25	0	5.68	<13	PASS
		25	12	5.52	<13	PASS
		25	25	6	<13	PASS
		50	0	5.62	<13	PASS
	MCH	1	0	5.45	<13	PASS
		1	24	5.65	<13	PASS
		1	49	5.48	<13	PASS
		25	0	5.59	<13	PASS
		25	12	5.75	<13	PASS
		25	25	5.95	<13	PASS
		50	0	5.81	<13	PASS
	HCH	1	0	5.16	<13	PASS
		1	24	5.91	<13	PASS
		1	49	5.05	<13	PASS
		25	0	5.54	<13	PASS
		25	12	5.83	<13	PASS
		25	25	5.84	<13	PASS
		50	0	5.88	<13	PASS
16QAM	LCH	1	0	6.91	<13	PASS
		1	24	6.68	<13	PASS
		1	49	6.98	<13	PASS
		25	0	6.29	<13	PASS
		25	12	6.16	<13	PASS
		25	25	6.4	<13	PASS
		50	0	6.41	<13	PASS
	MCH	1	0	6.76	<13	PASS
		1	24	6.76	<13	PASS
		1	49	6.43	<13	PASS
		25	0	6.23	<13	PASS
		25	12	6.4	<13	PASS
		25	25	6.46	<13	PASS
		50	0	6.45	<13	PASS
	HCH	1	0	6.4	<13	PASS
		1	24	7	<13	PASS

		1	49	5.95	<13	PASS
		25	0	6.39	<13	PASS
		25	12	6.48	<13	PASS
		25	25	6.43	<13	PASS
		50	0	6.53	<13	PASS

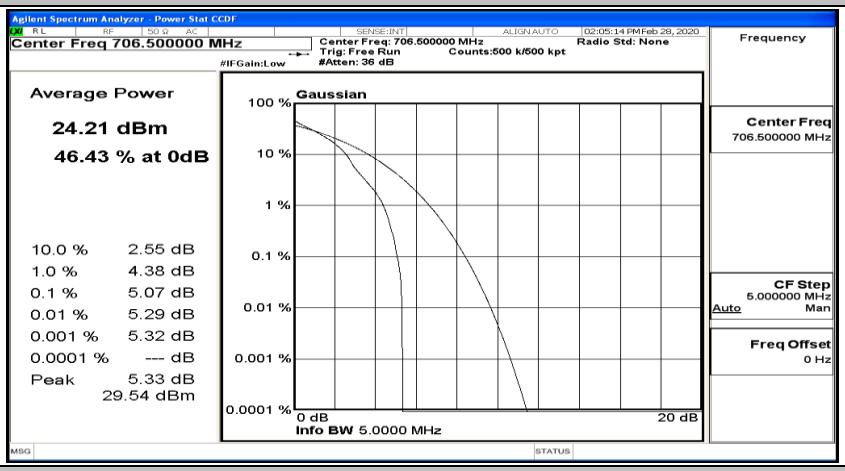
Test Graphs

Channel Bandwidth: 5 MHz

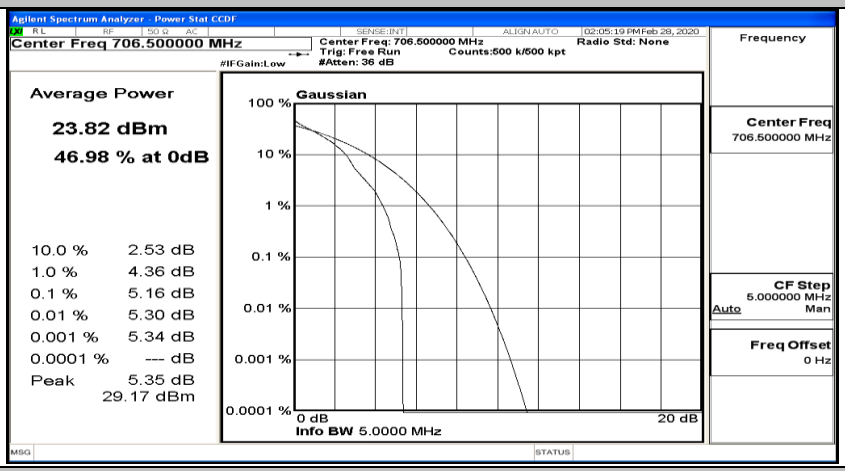
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



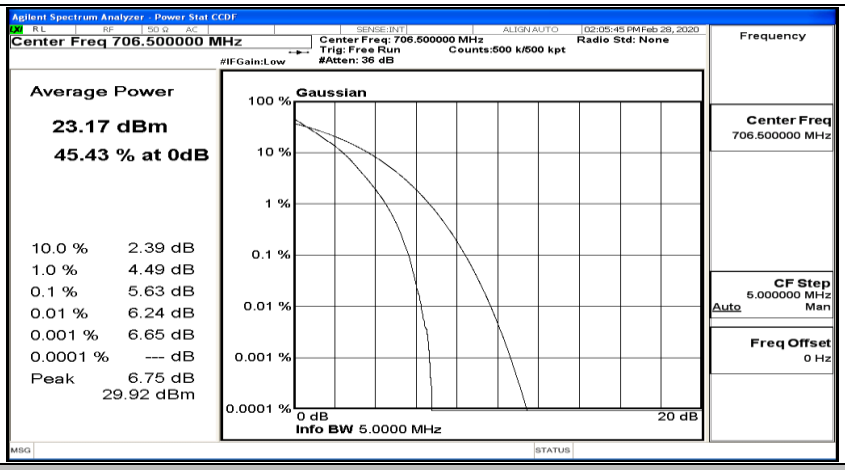
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12



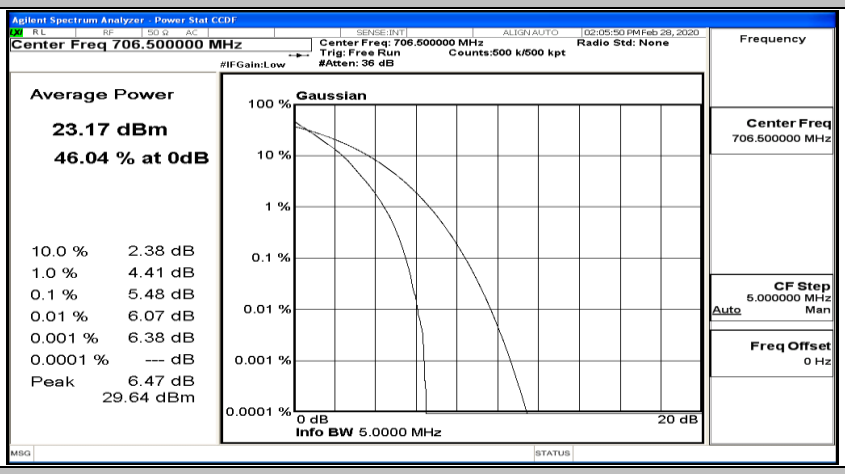
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



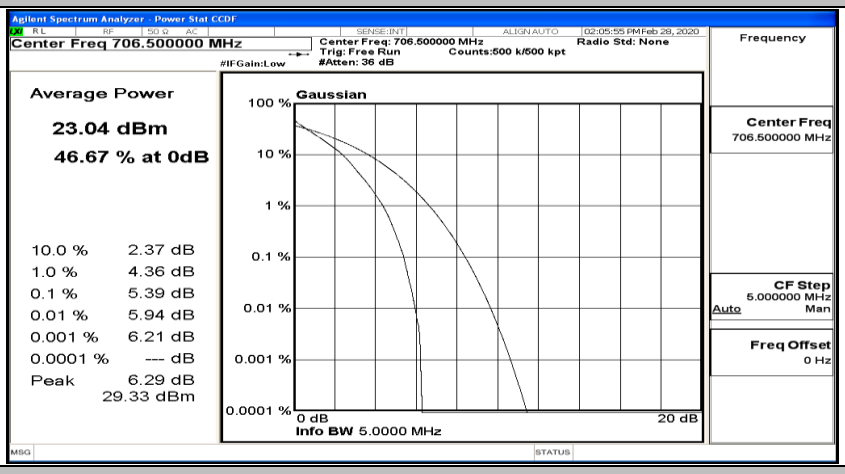
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0



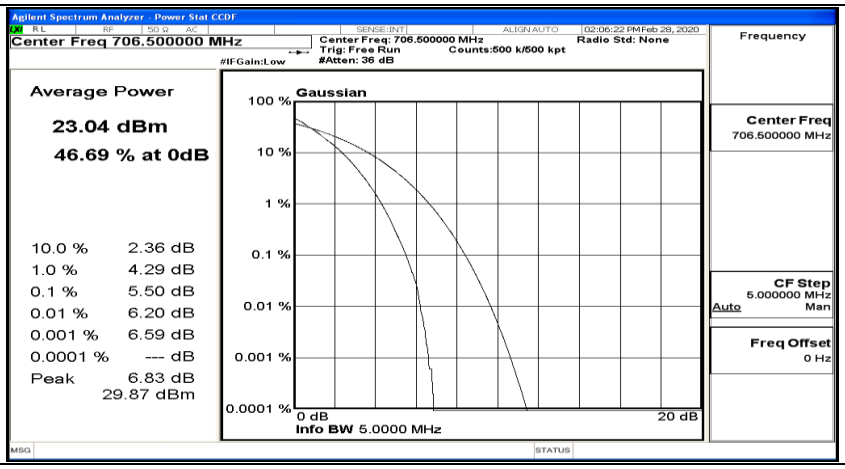
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#6



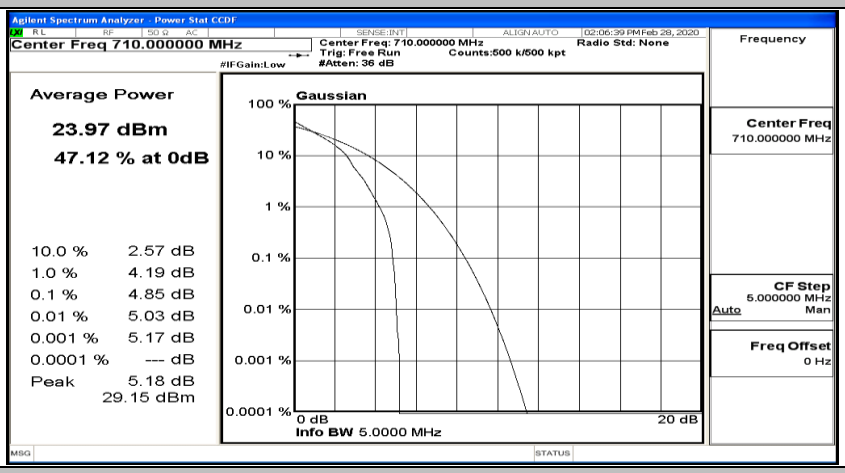
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13



(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



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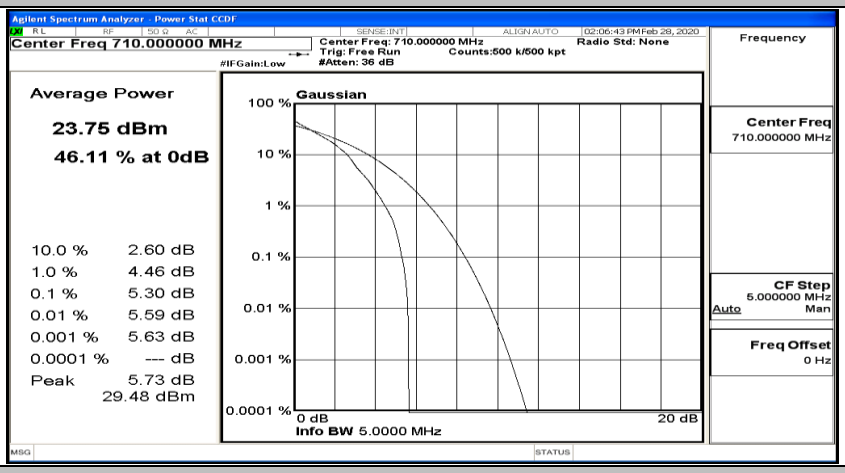

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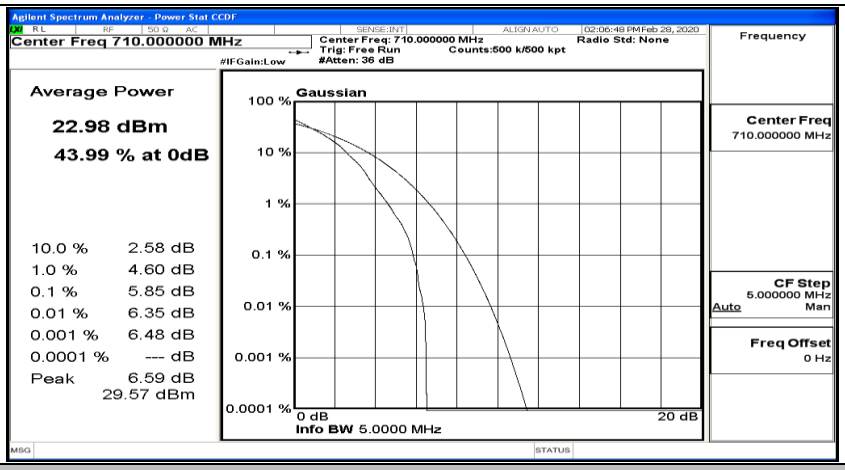
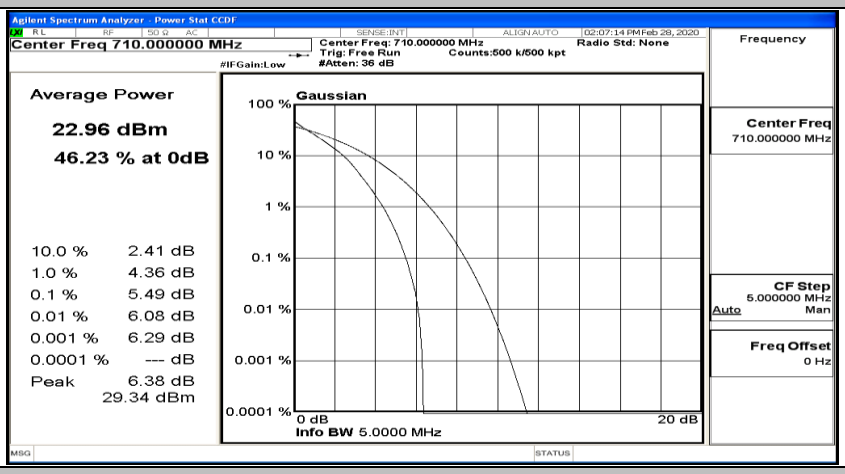
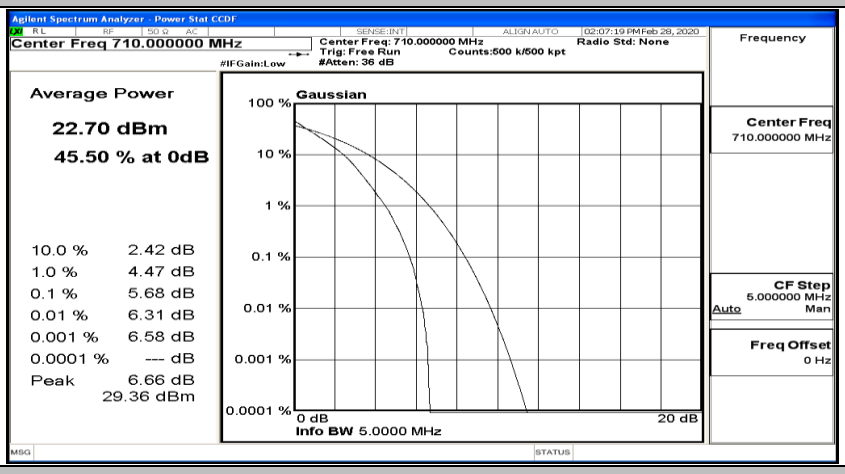


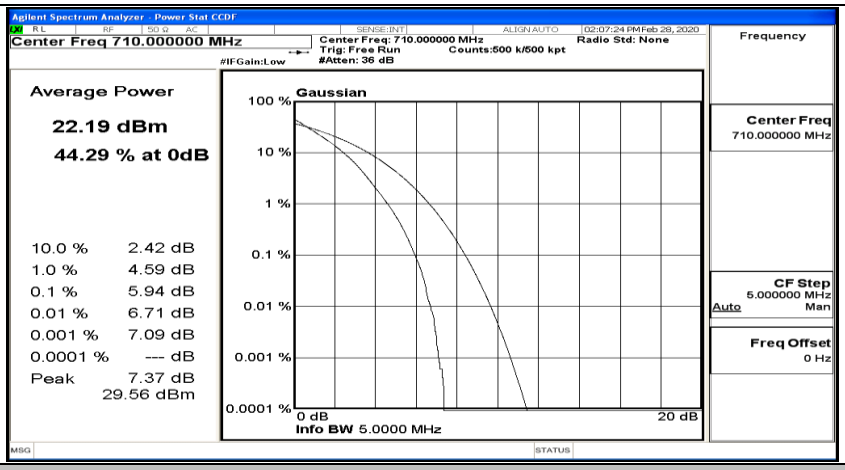
(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#0



(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#6



(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#13



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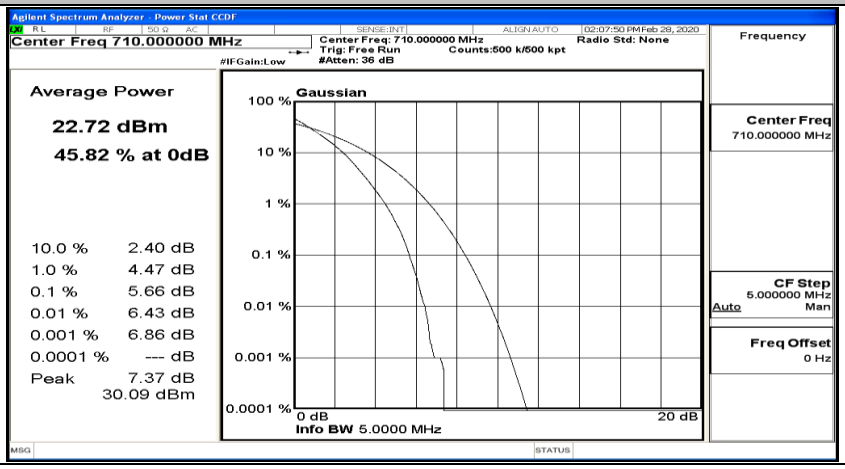
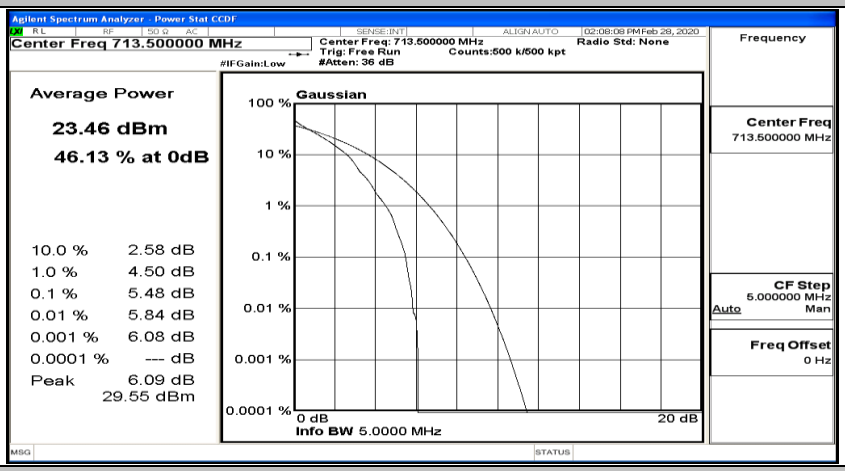
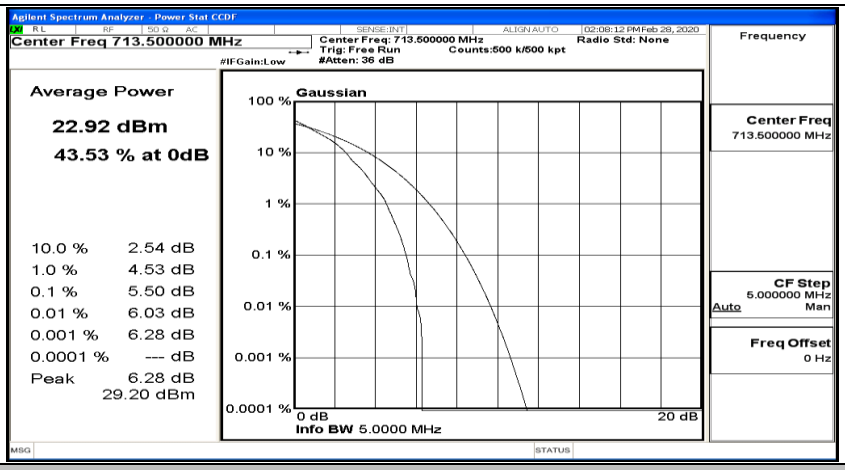


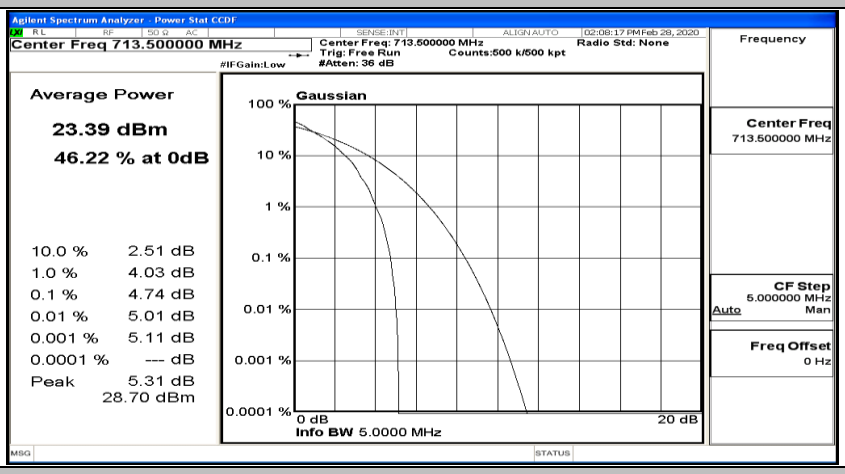
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



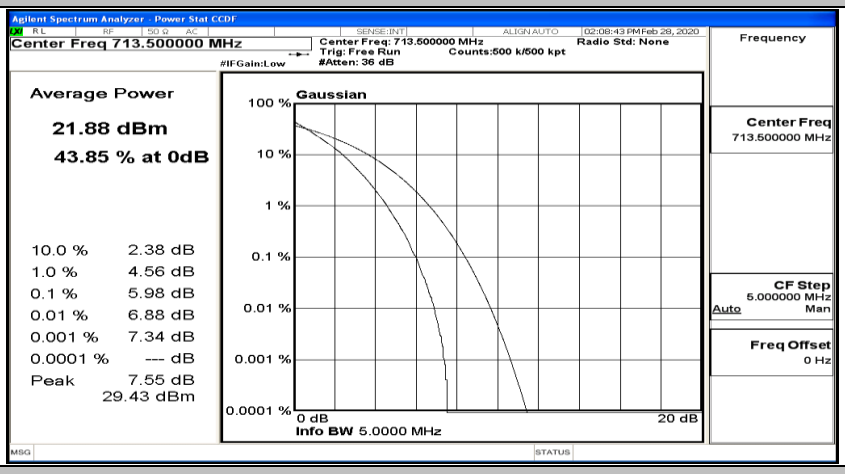
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



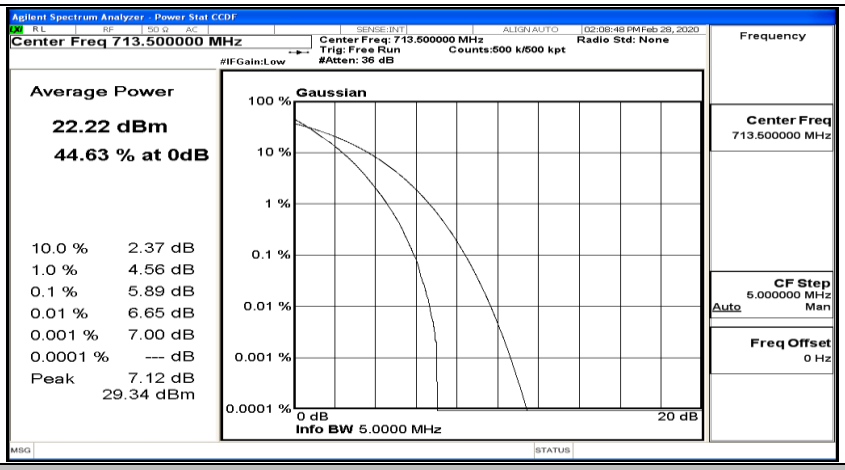
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24



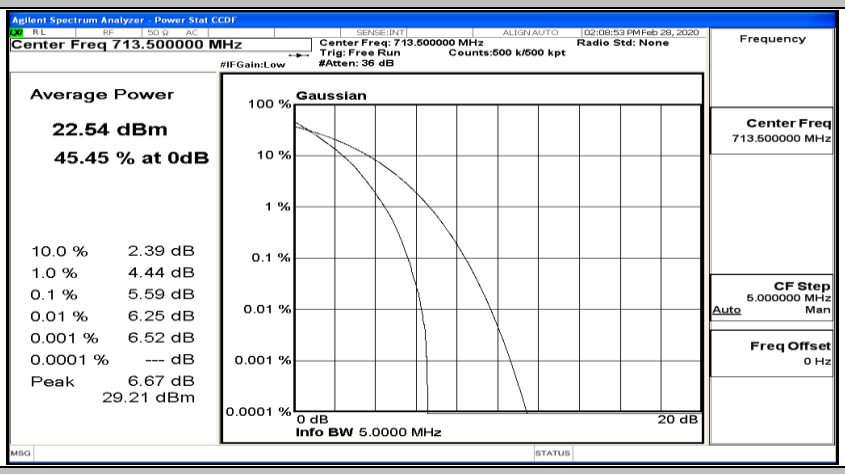
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0



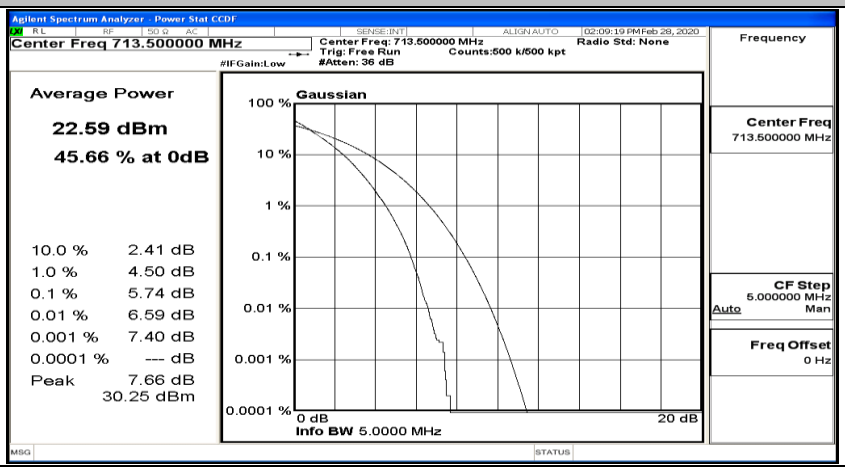
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6



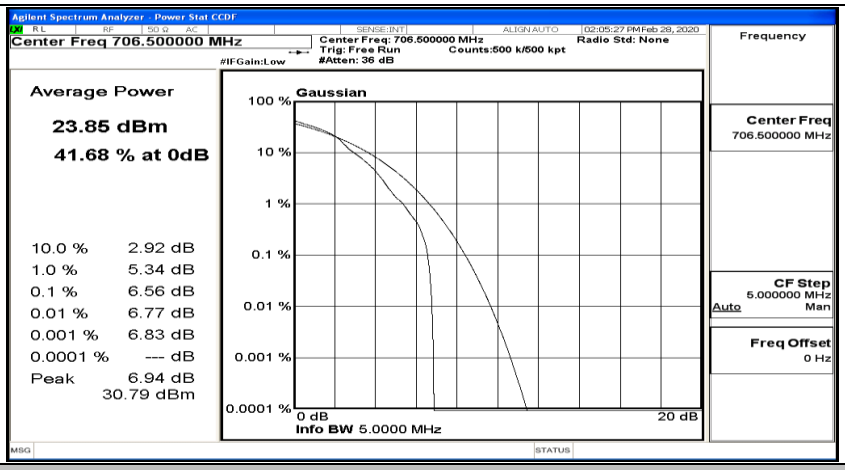
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13



(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



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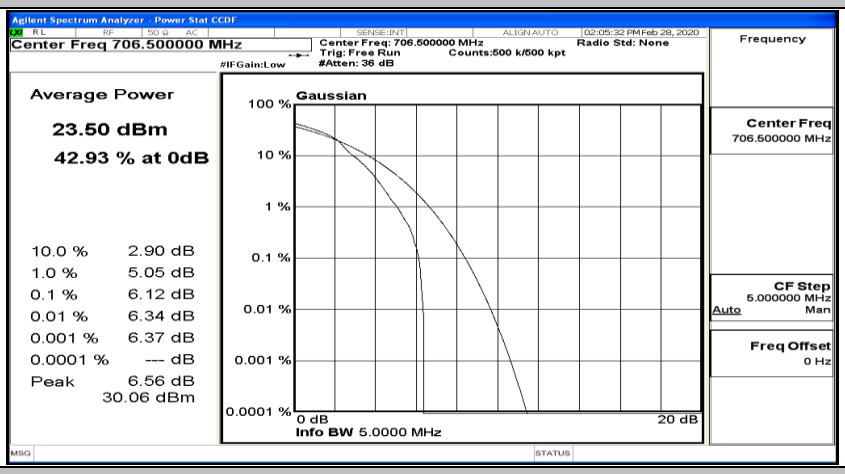

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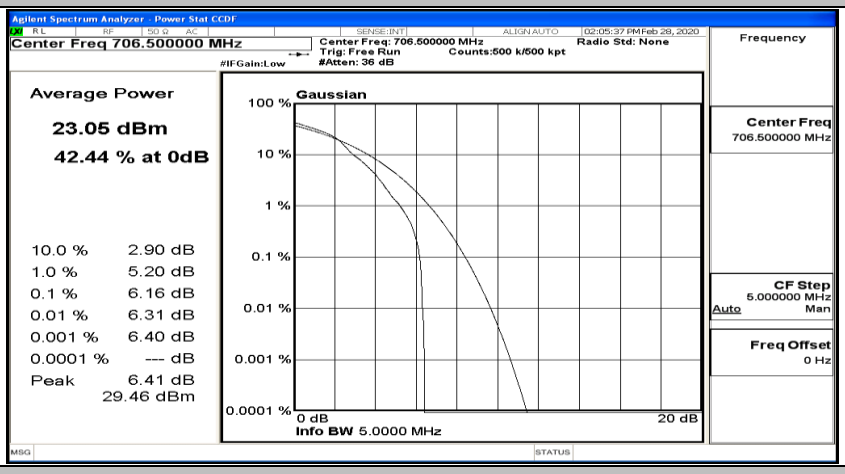
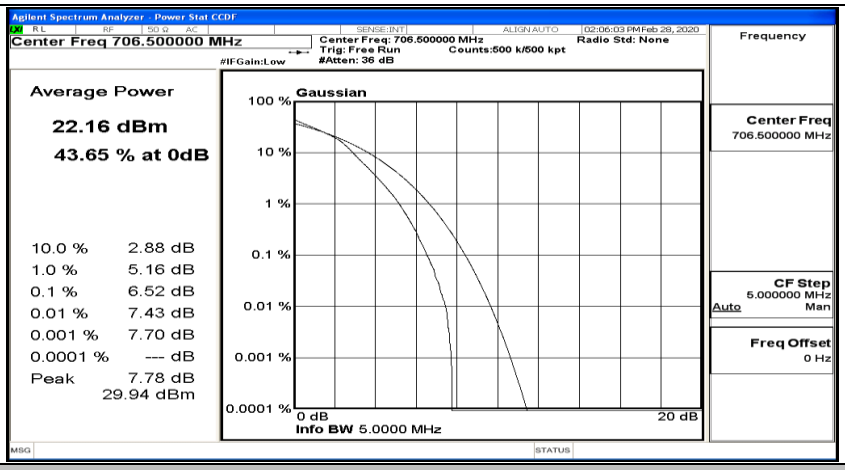


(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0



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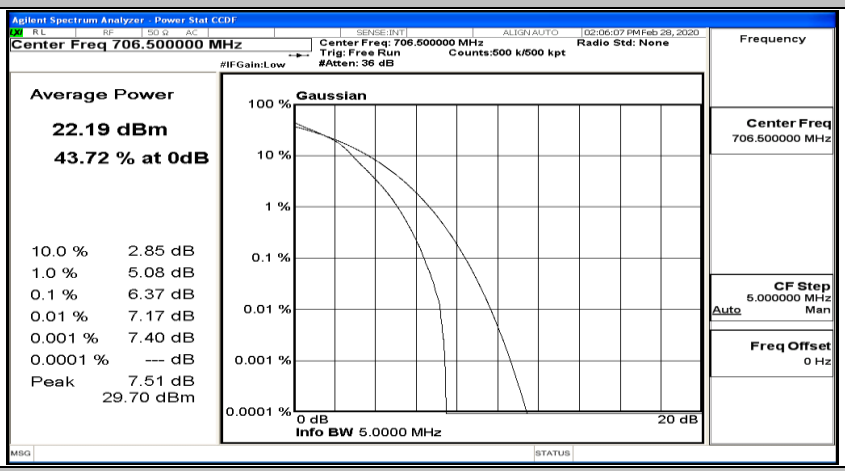
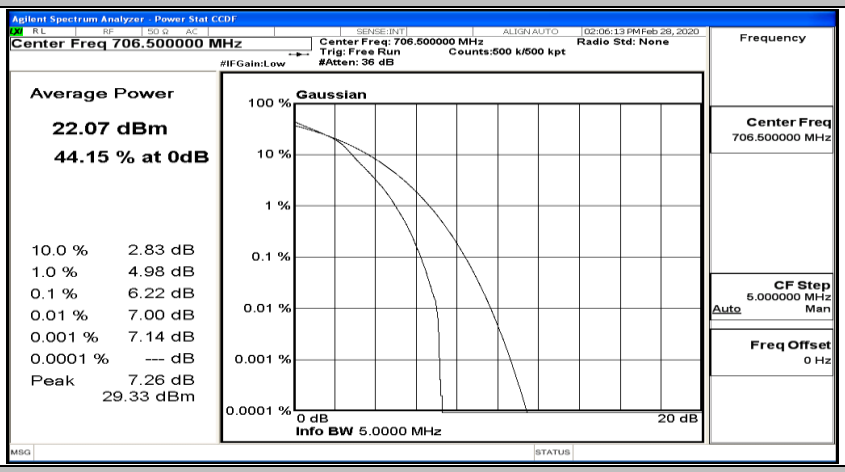
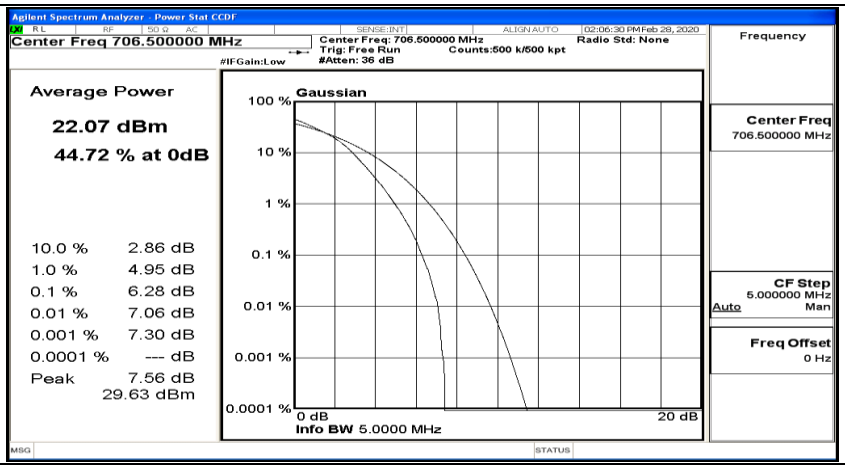


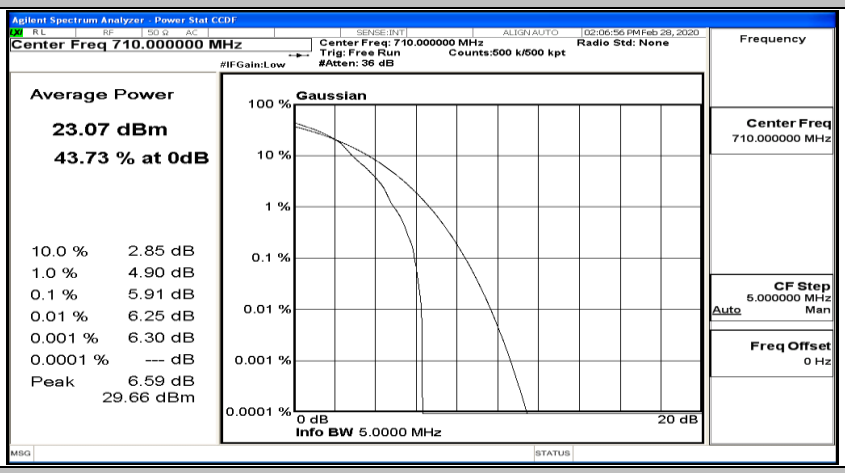
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#13



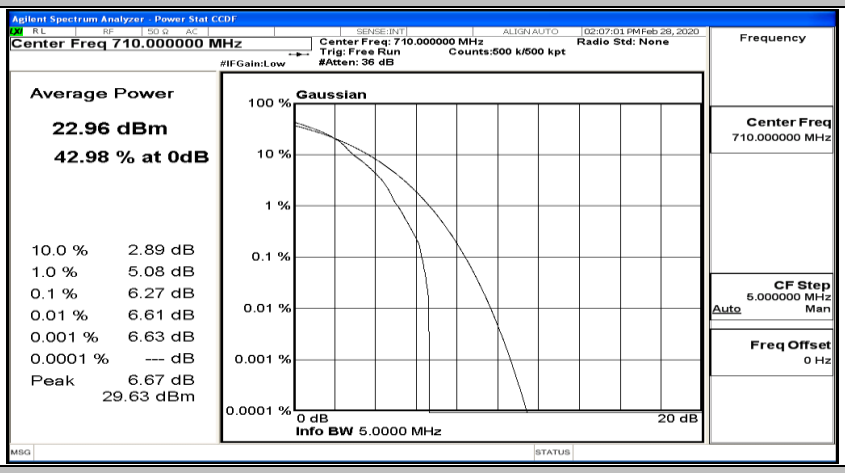
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0



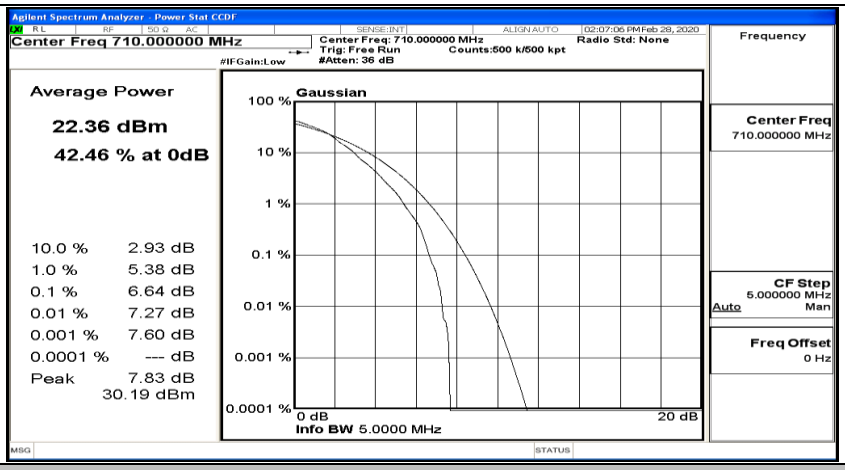
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#0



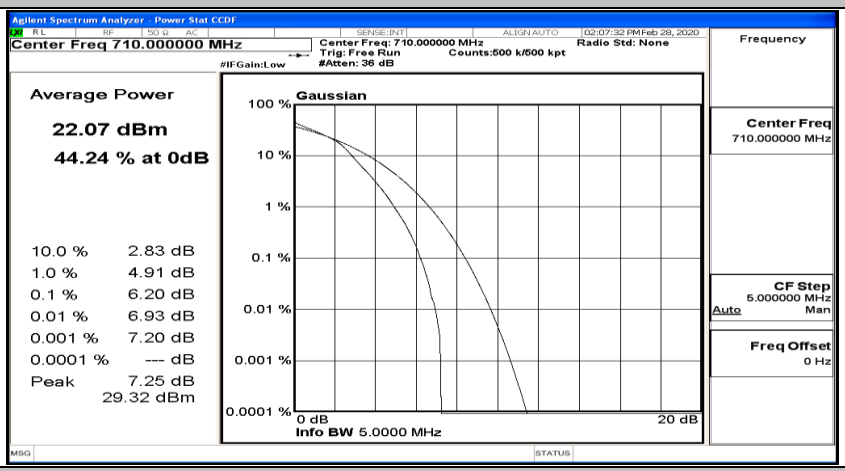
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#12



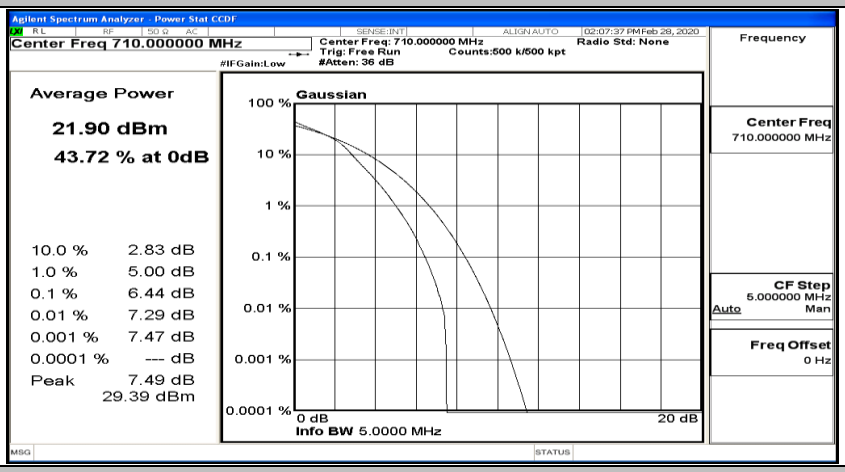
(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#24



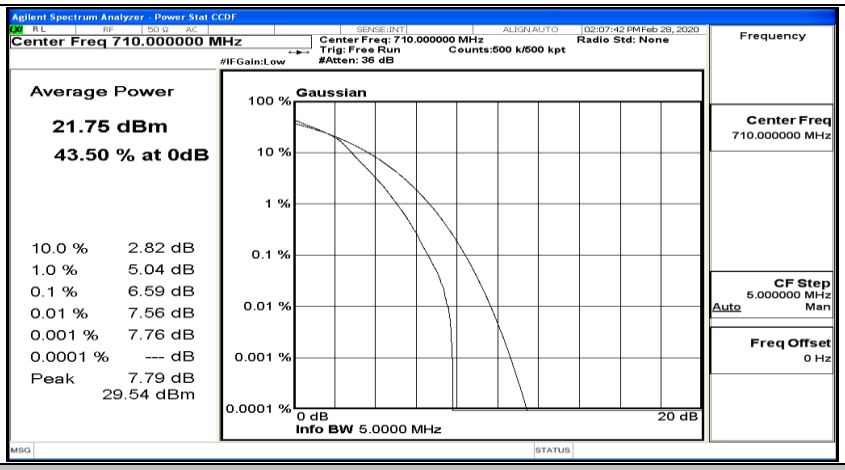
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#0



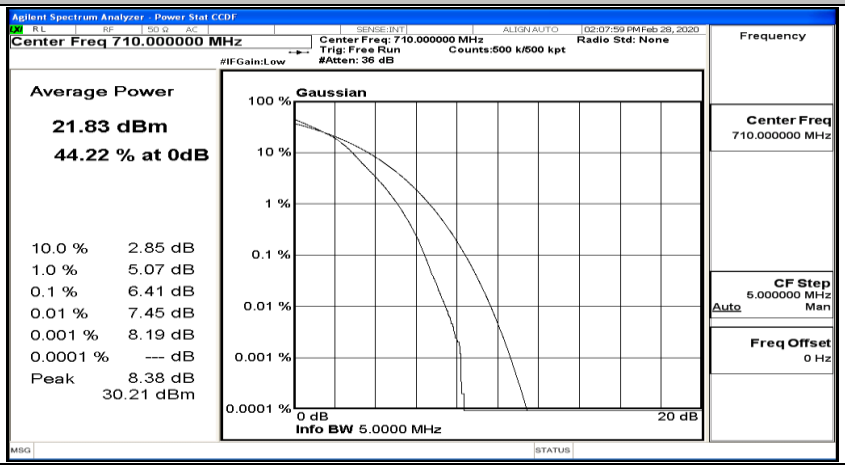
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#6



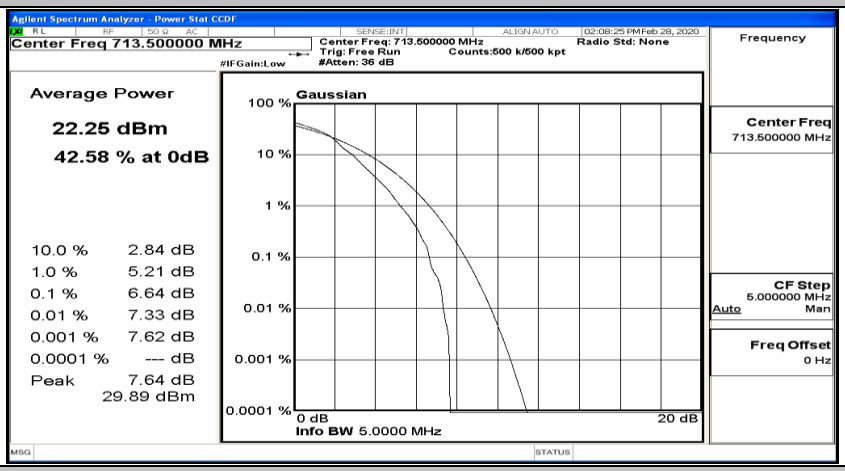
(Channel Bandwidth: 5 MHz)_MCH_16QAM_12RB#13



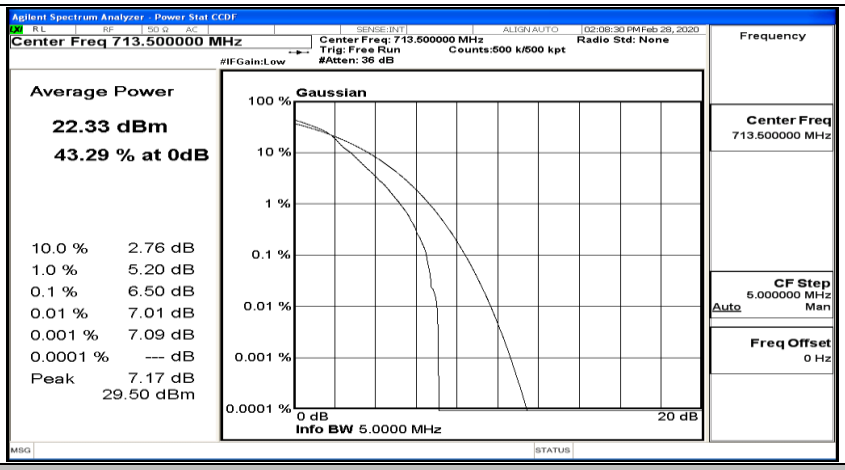
(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0



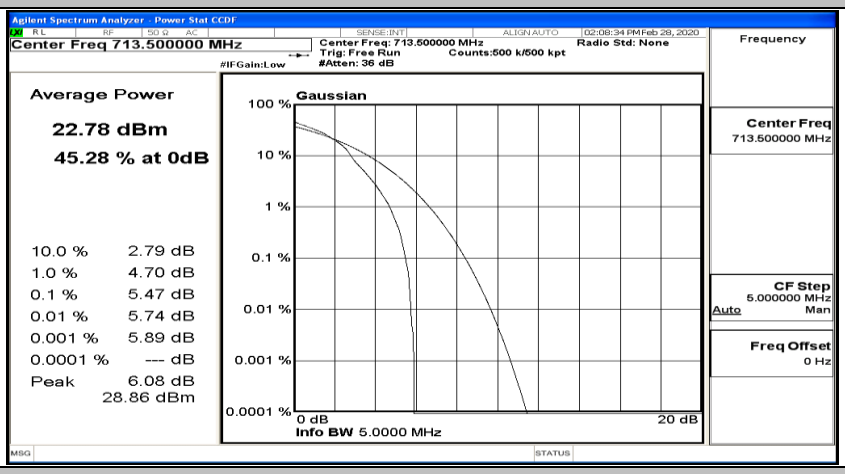
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0



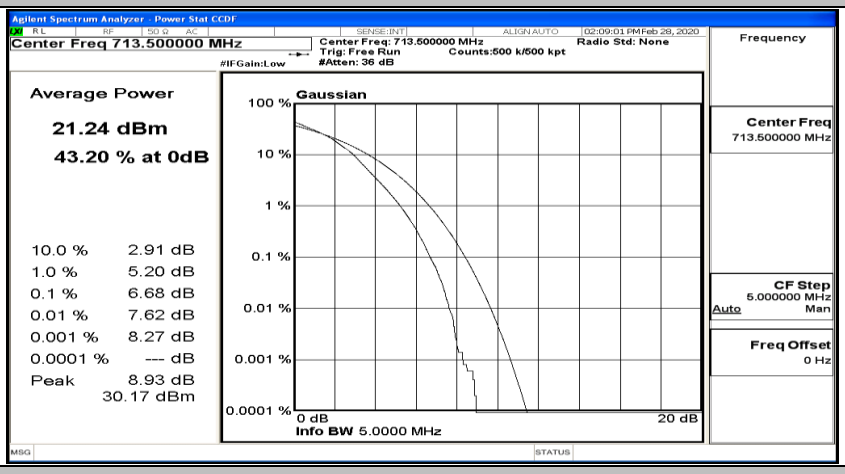
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



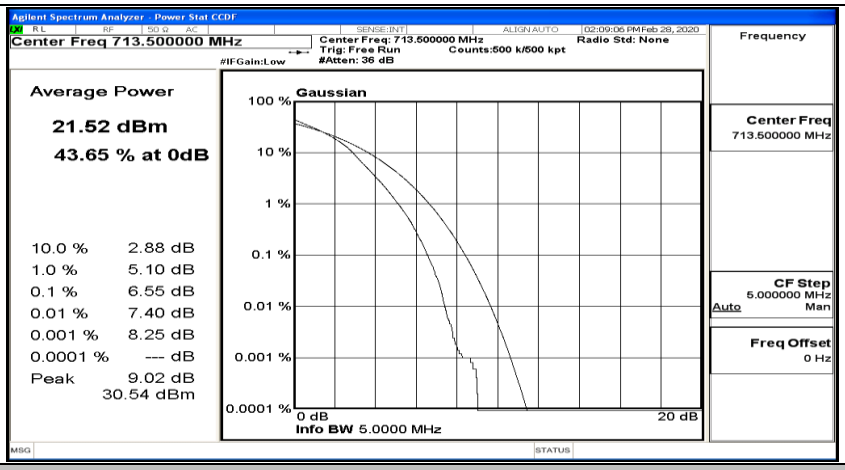
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24



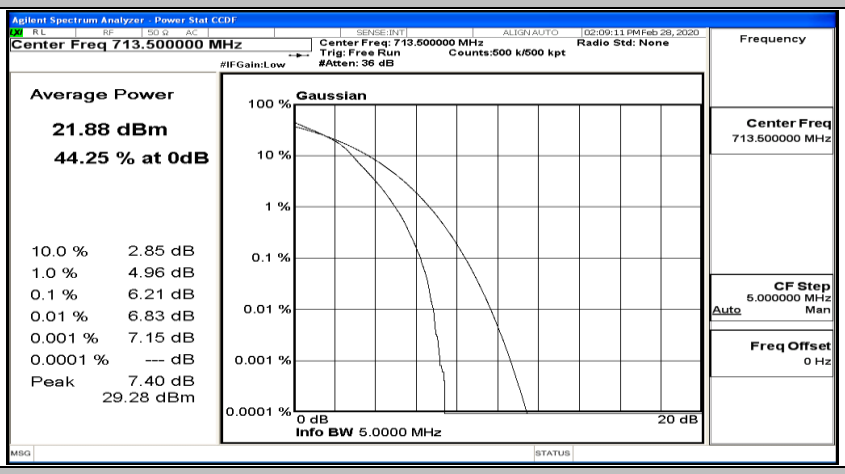
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#0



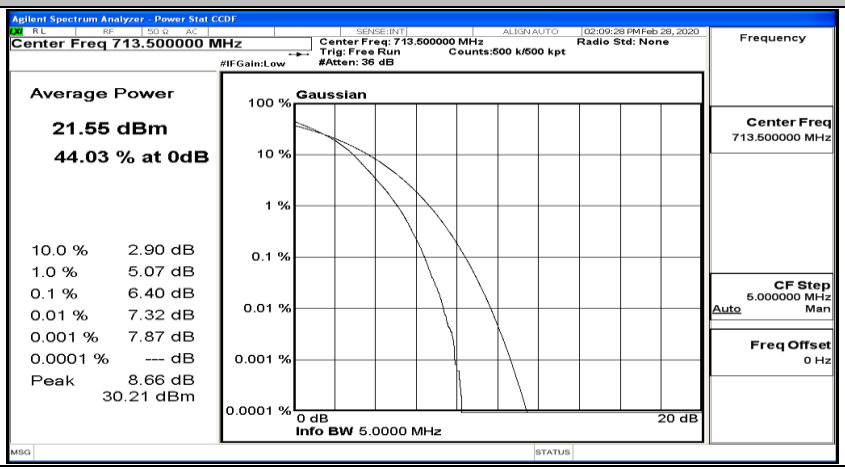
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#6



(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#13

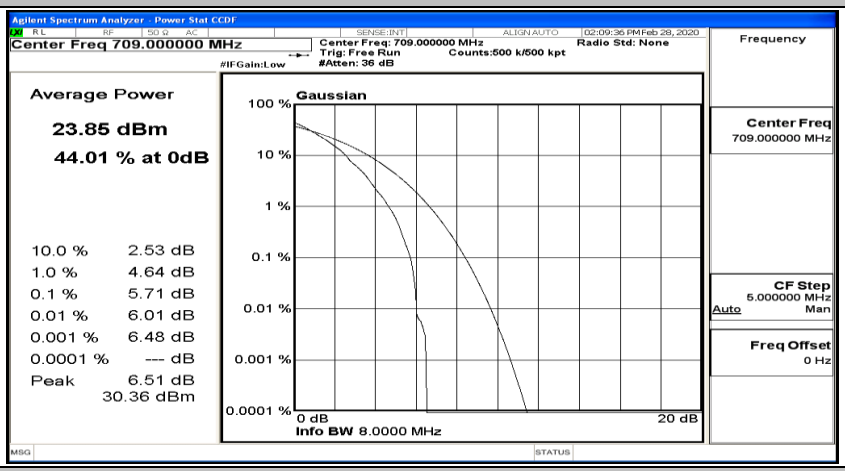


(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0

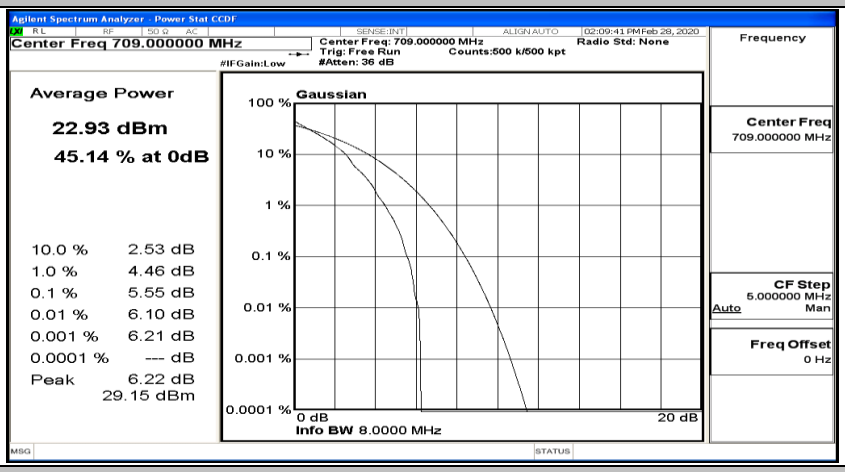


Channel Bandwidth: 10 MHz

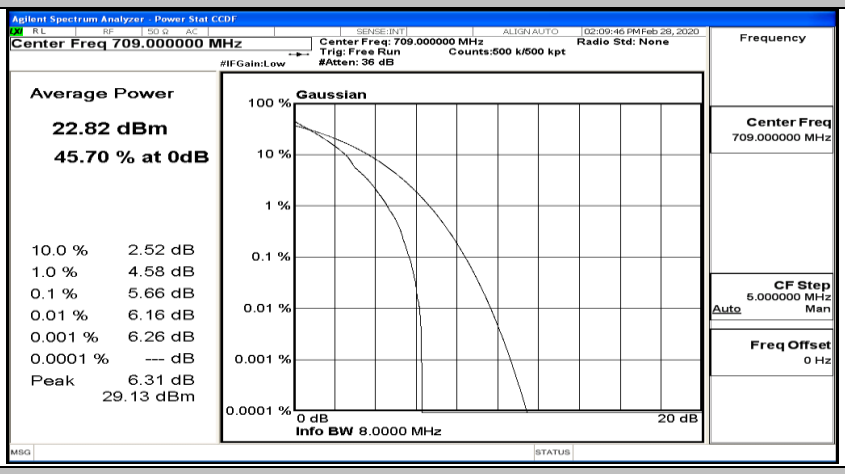
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#0



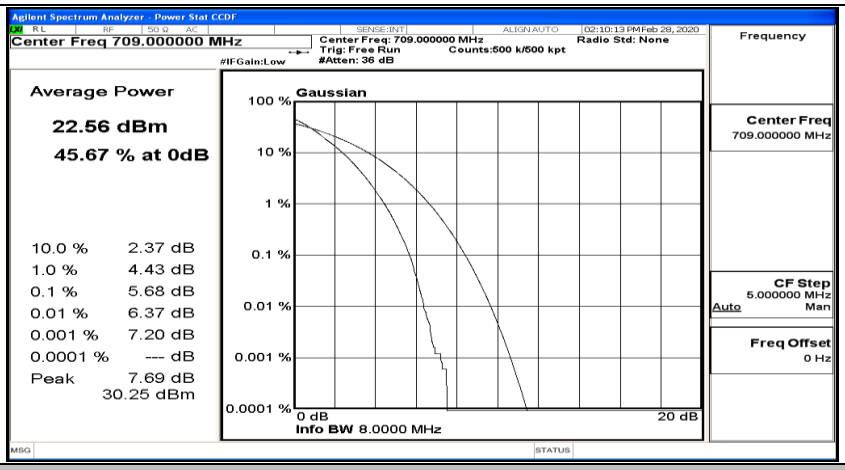
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#24



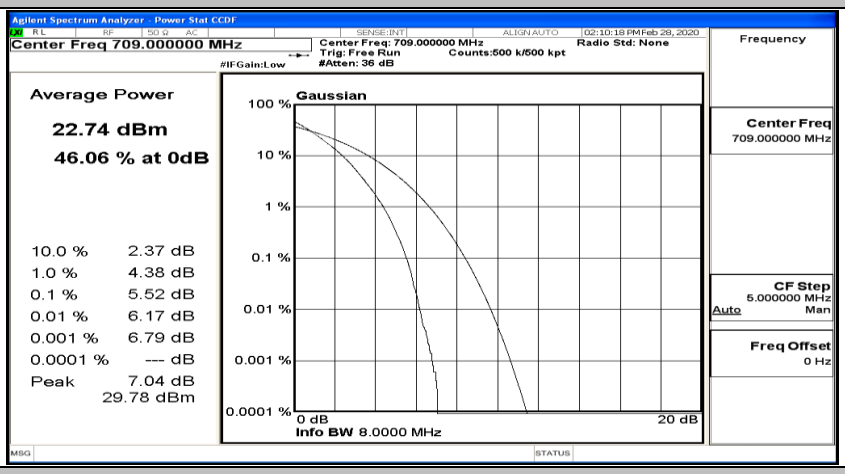
Channel Bandwidth: 10 MHz_LCH_QPSK_1RB#49



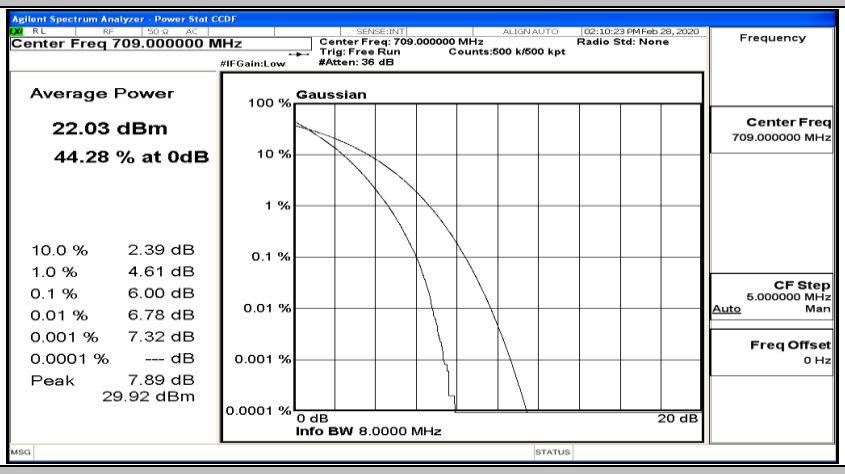
Channel Bandwidth: 10 MHz_LCH_QPSK_25RB#0



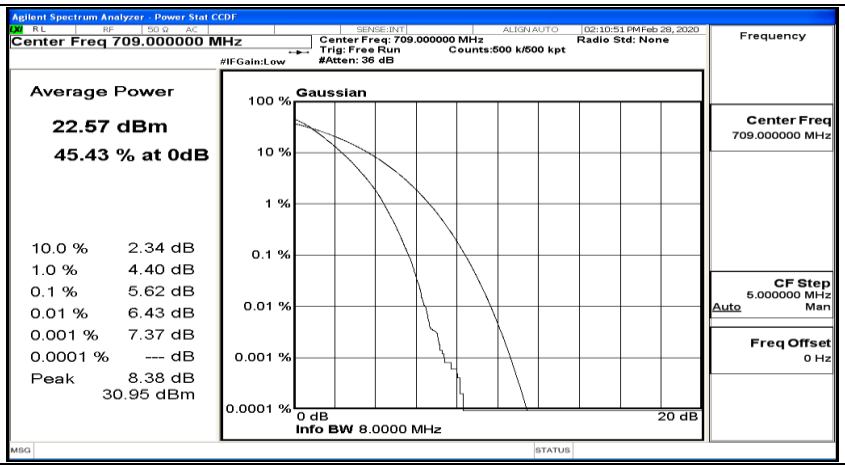
Channel Bandwidth: 10 MHz_LCH_QPSK_25RB#12



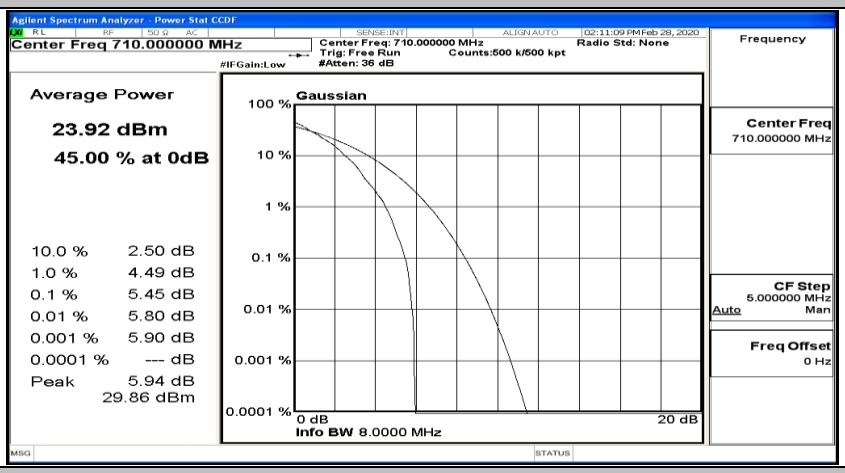
Channel Bandwidth: 10 MHz_LCH_QPSK_25RB#25



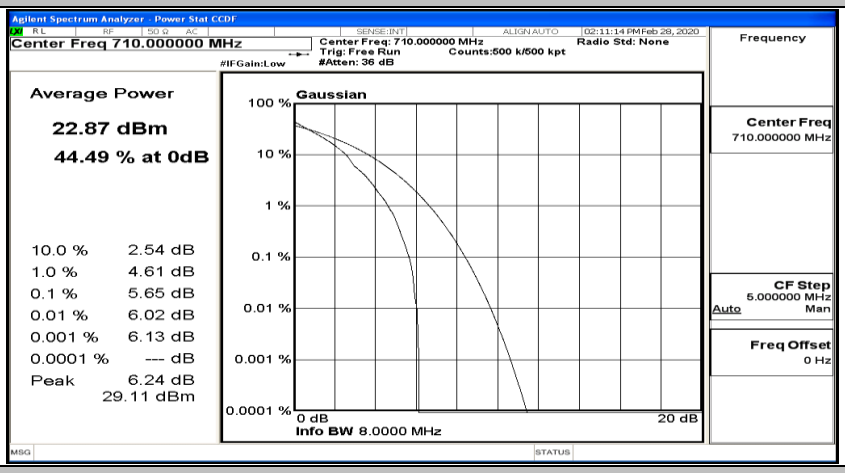
Channel Bandwidth: 10 MHz_LCH_QPSK_50RB#0



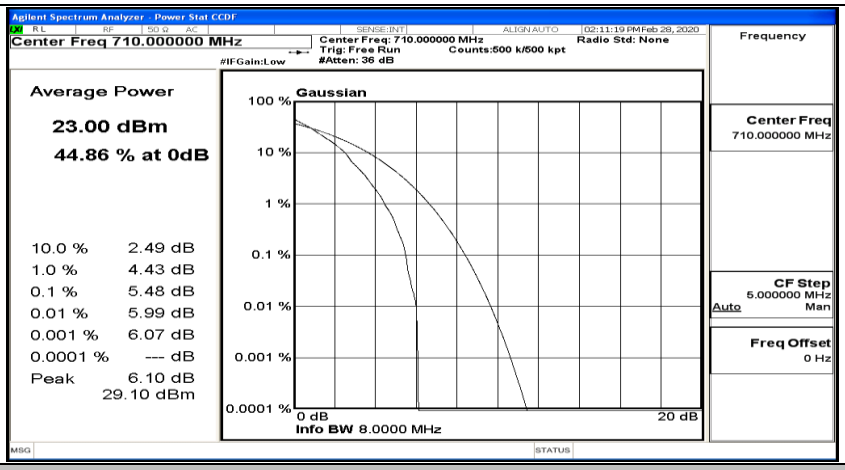
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0



Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24



Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49



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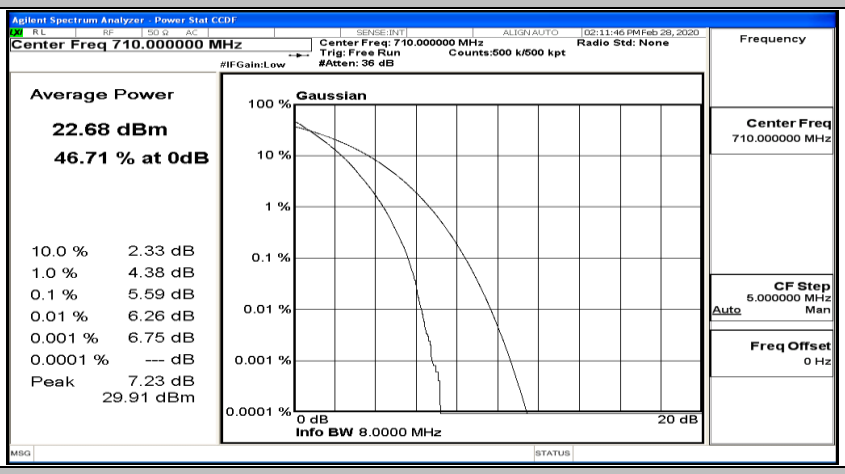
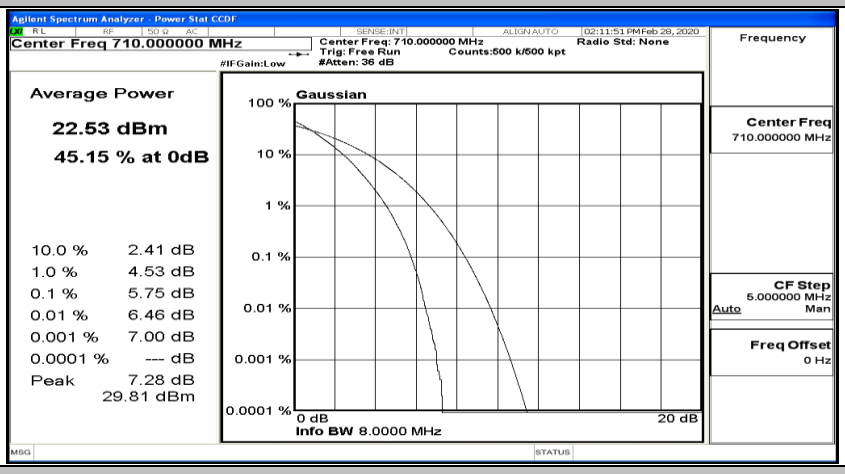
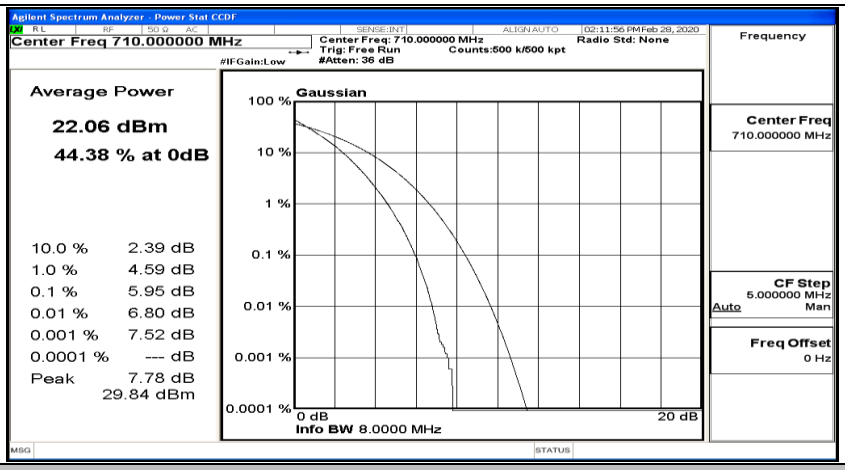


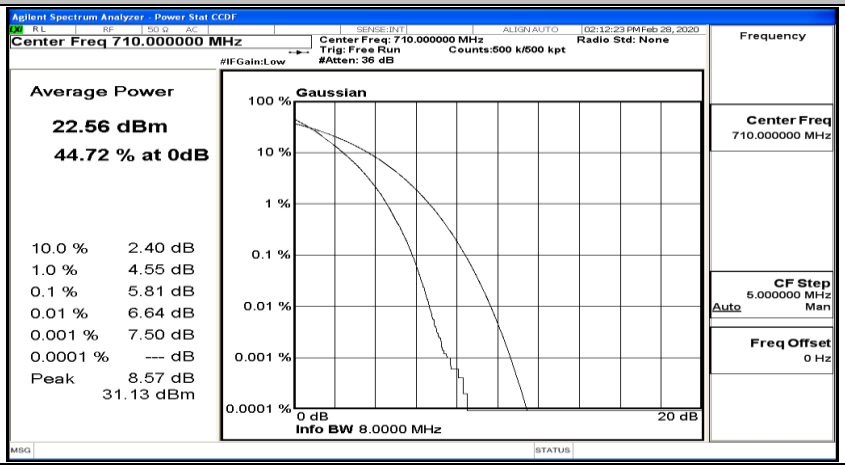
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12



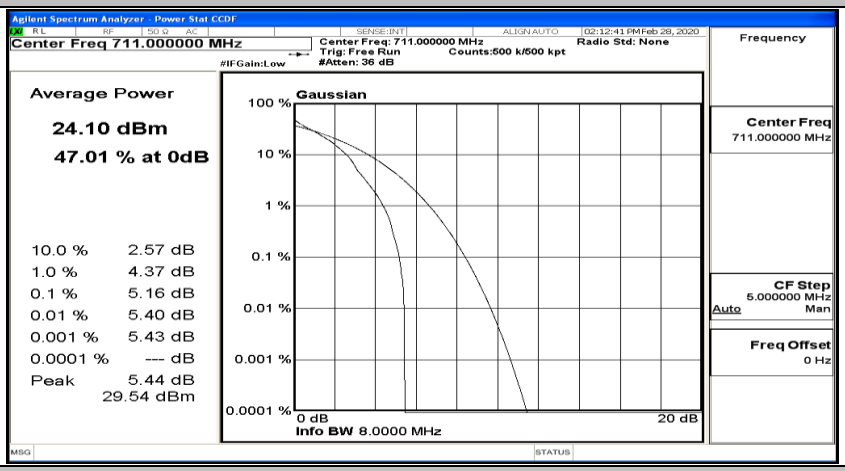
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25



Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0



Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#0



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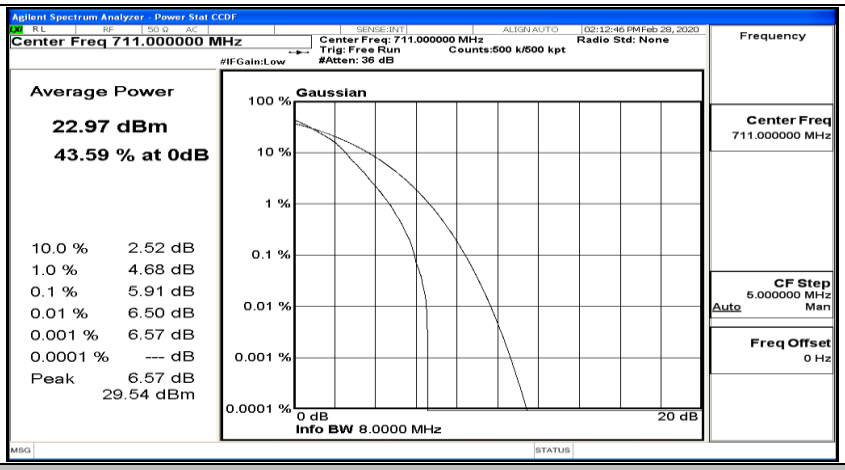

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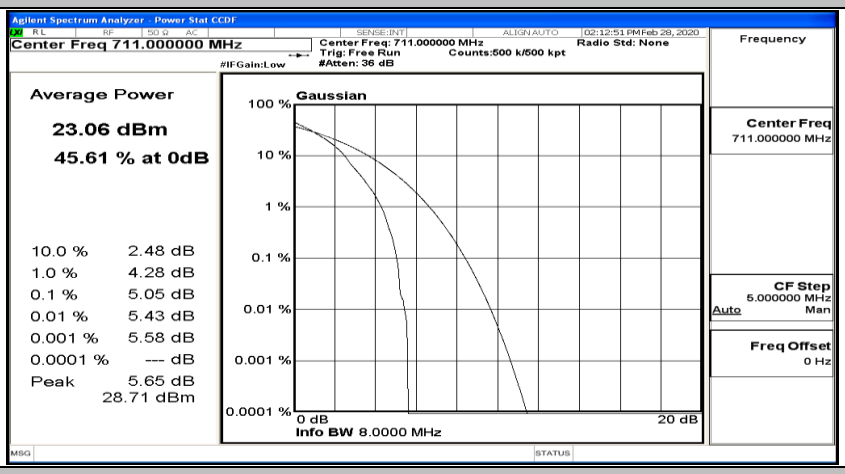
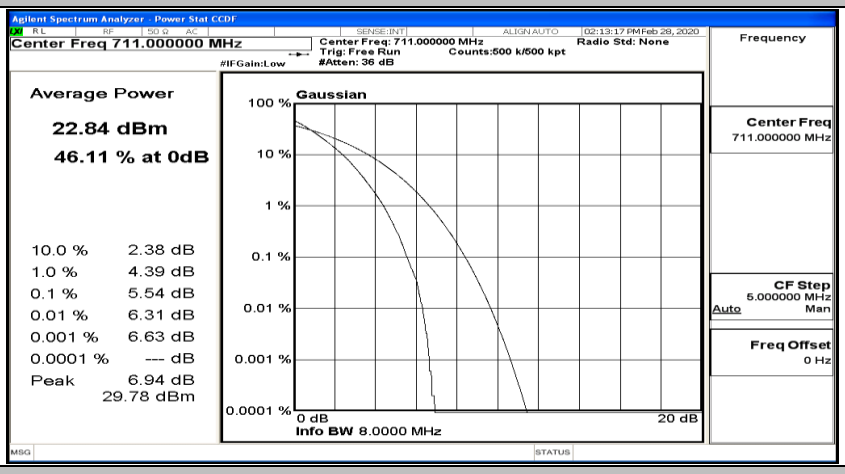
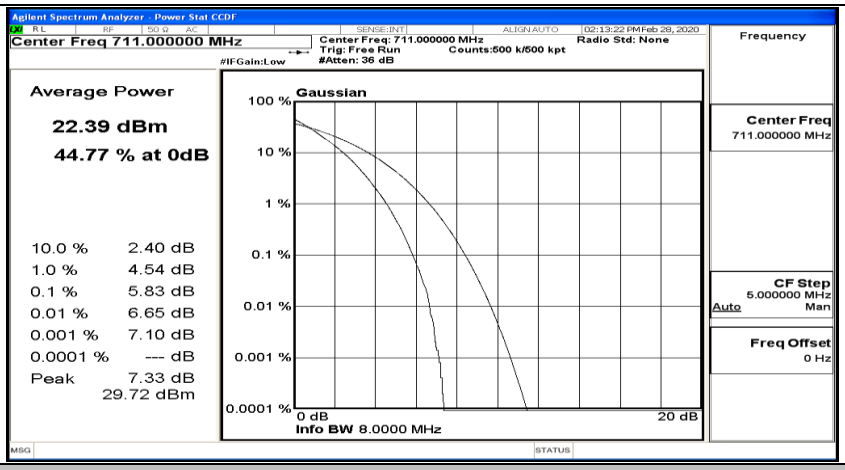


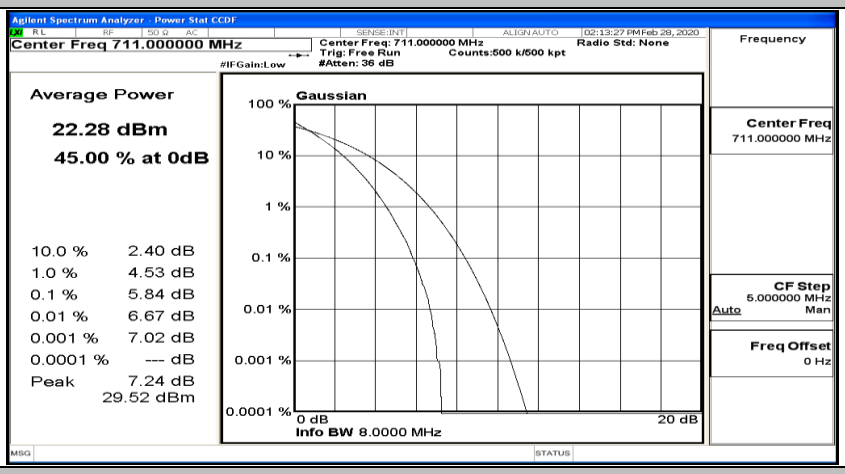
Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#0



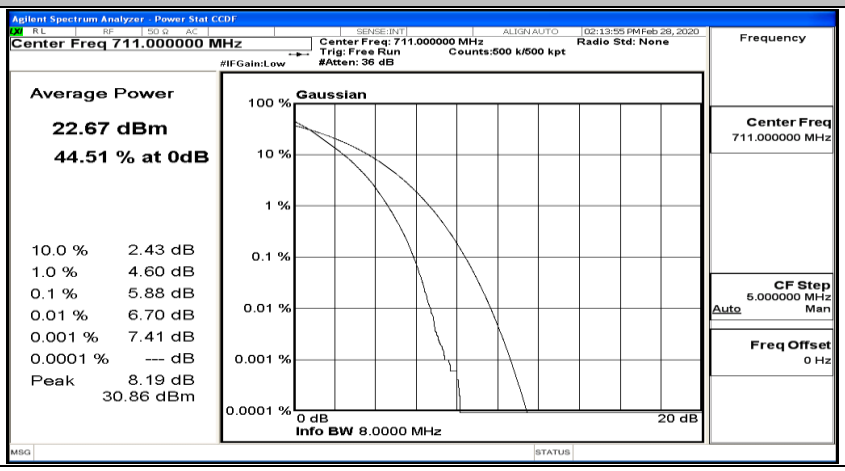
Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#12



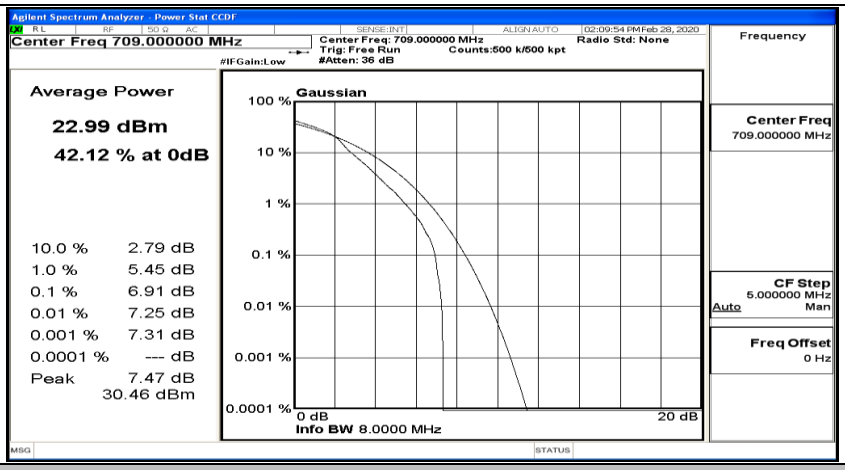
Channel Bandwidth: 10 MHz_HCH_QPSK_25RB#25



Channel Bandwidth: 10 MHz_HCH_QPSK_50RB#0



Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0



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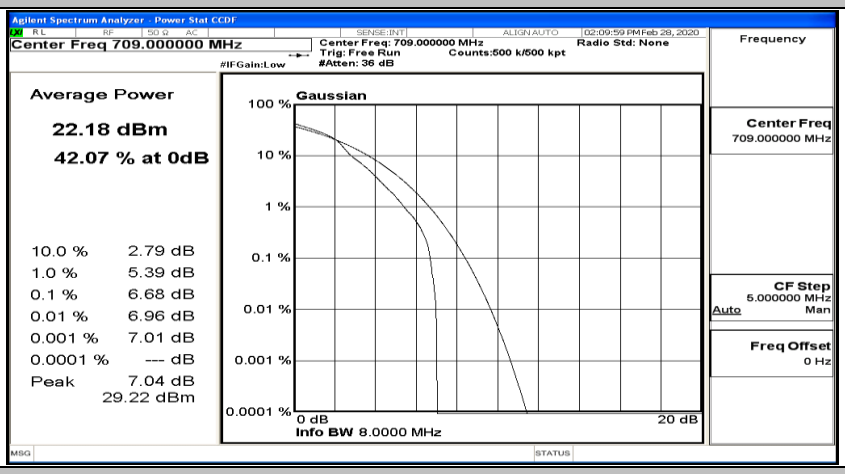

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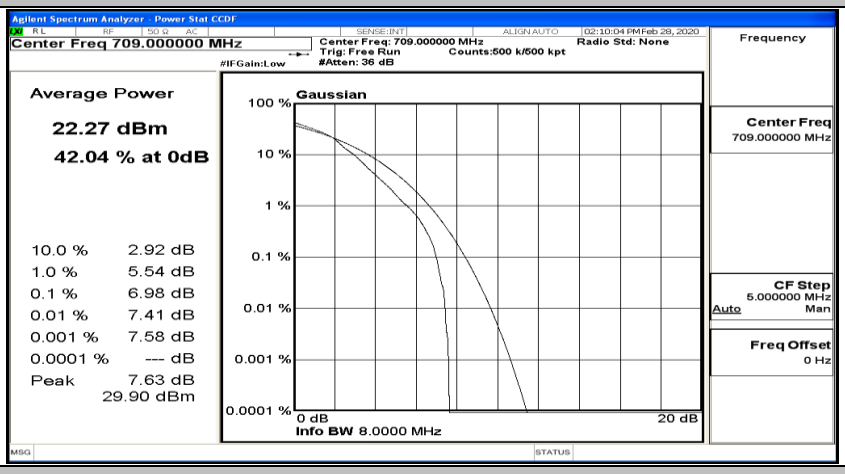

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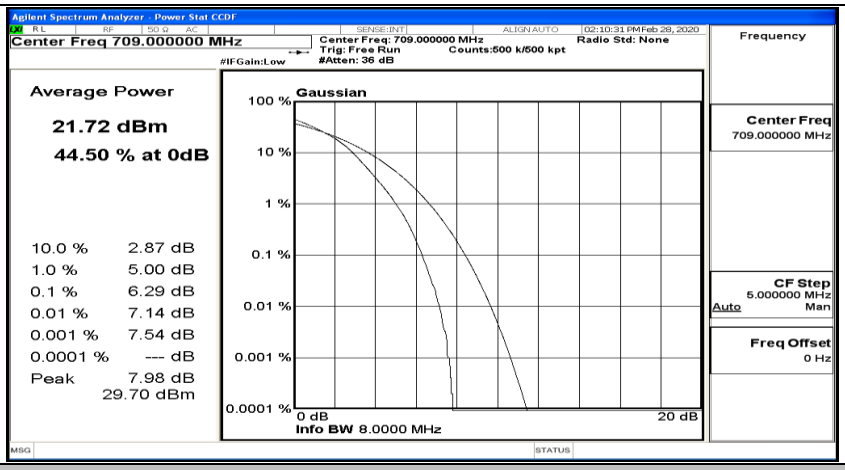

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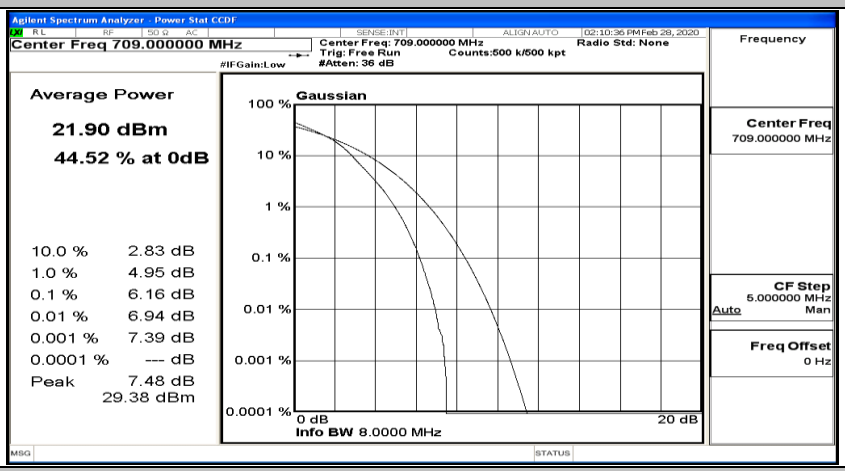

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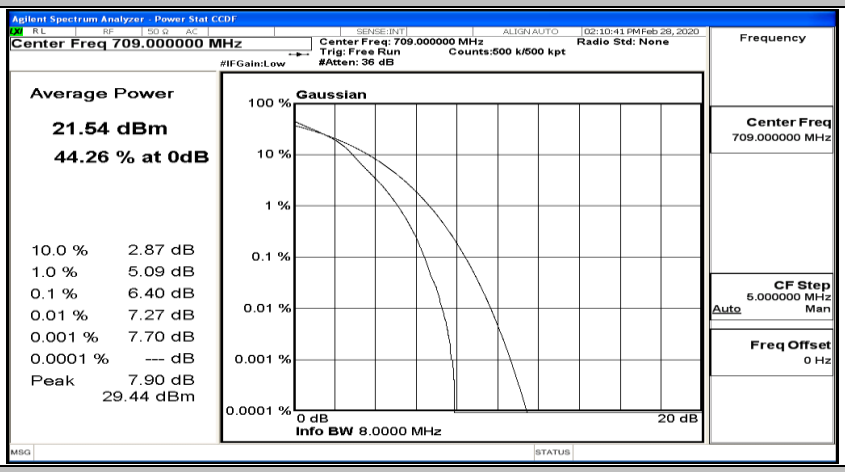
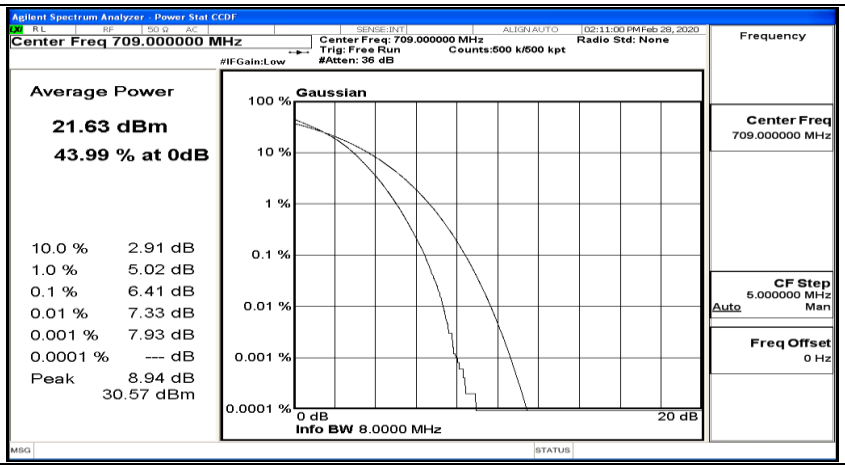


Channel Bandwidth: 10 MHz_LCH_16QAM_50RB#0



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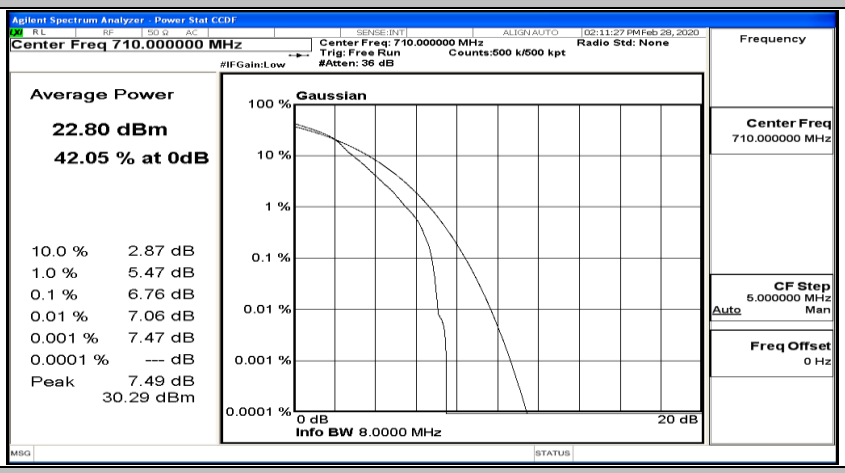

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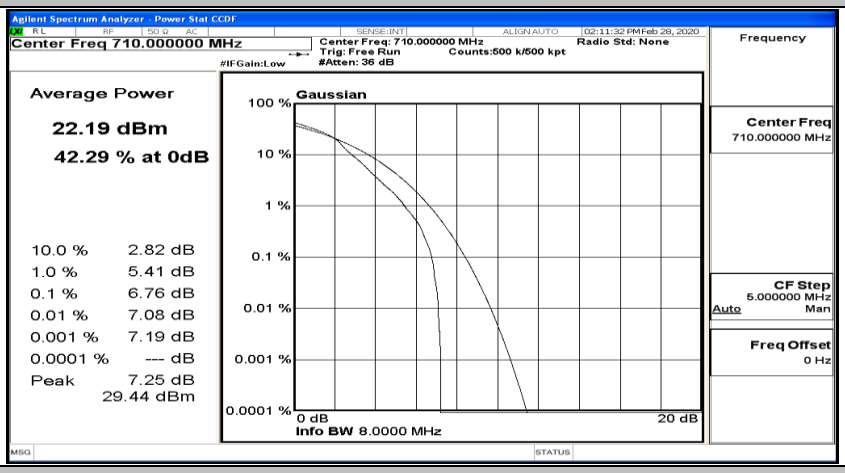

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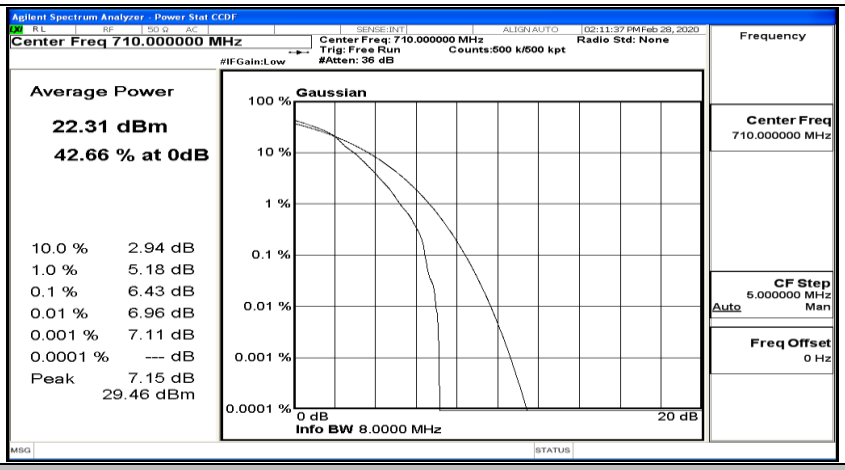

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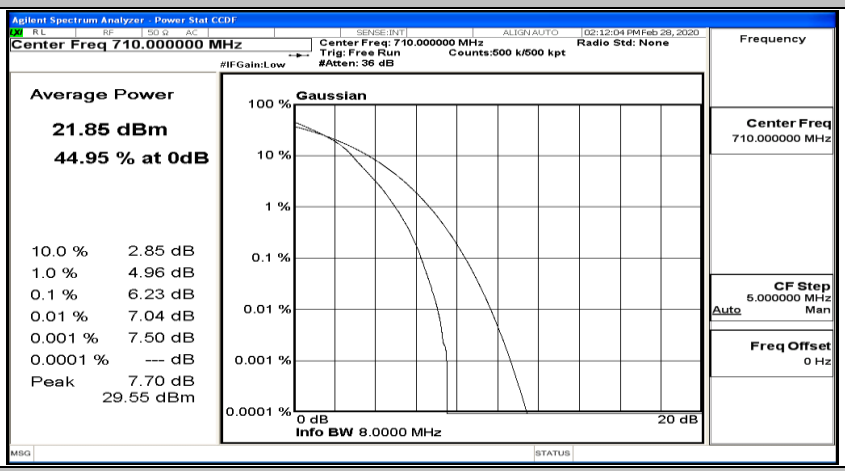
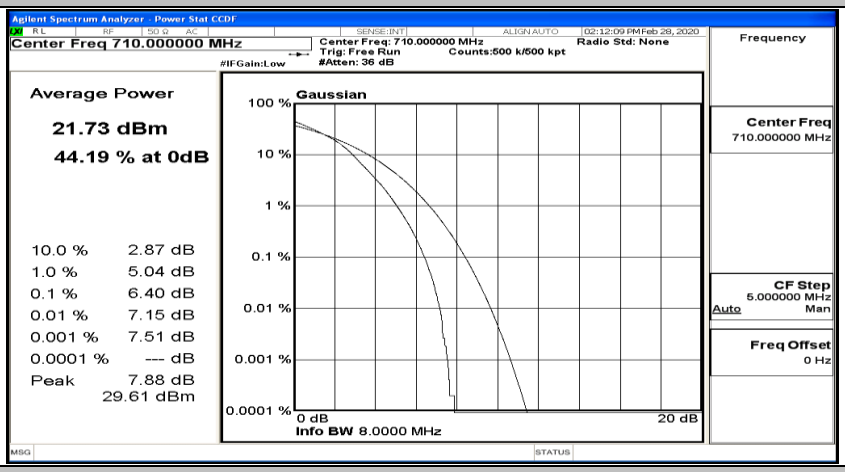


Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12



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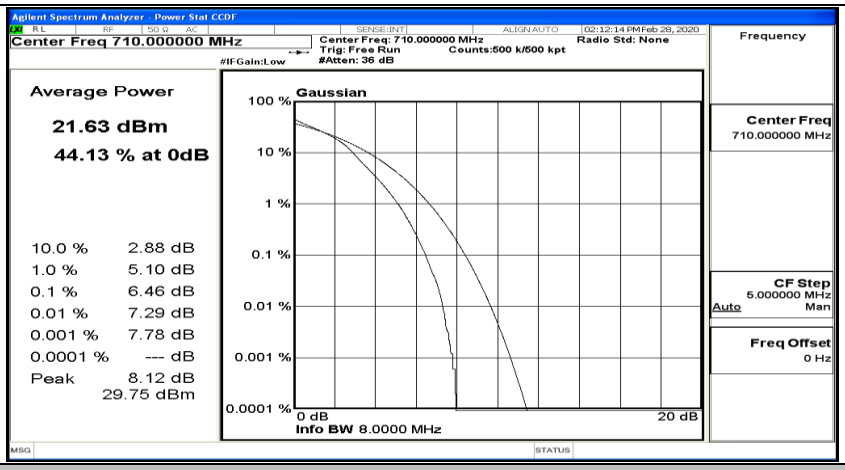
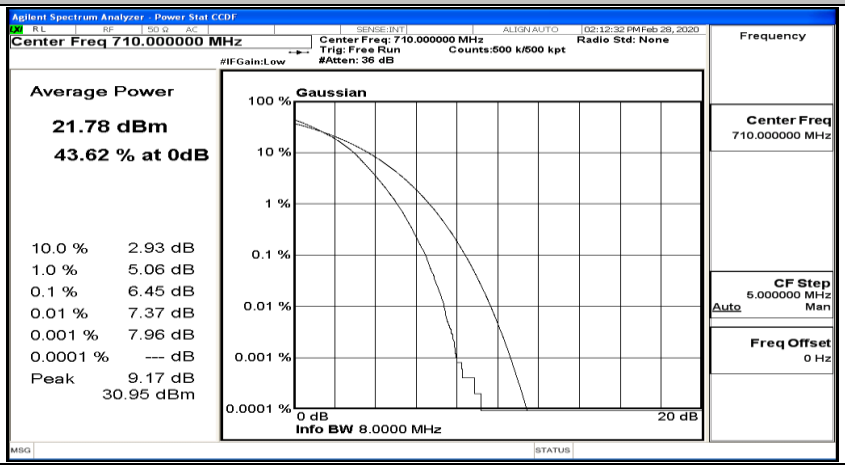
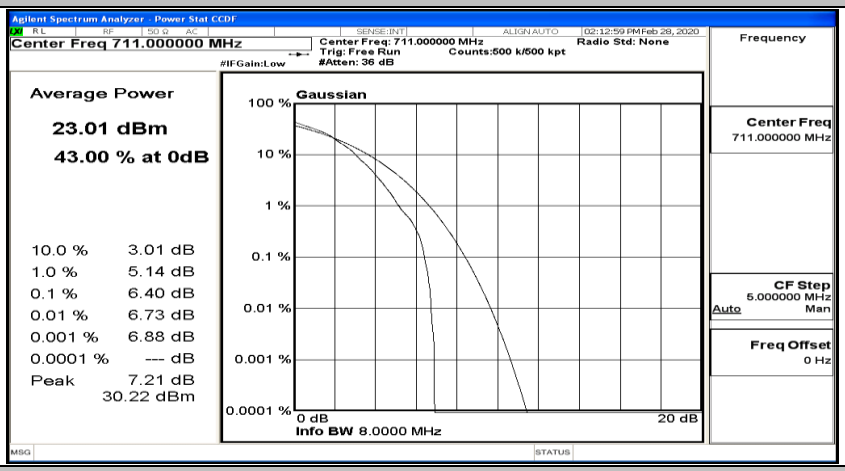


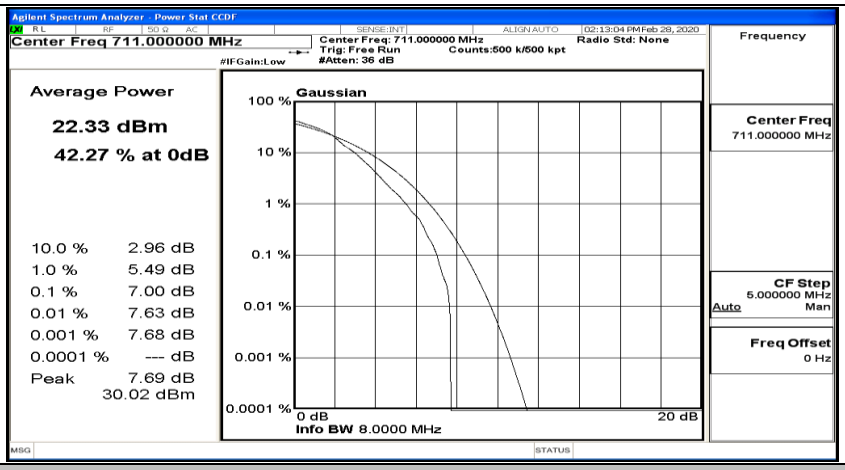
Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0



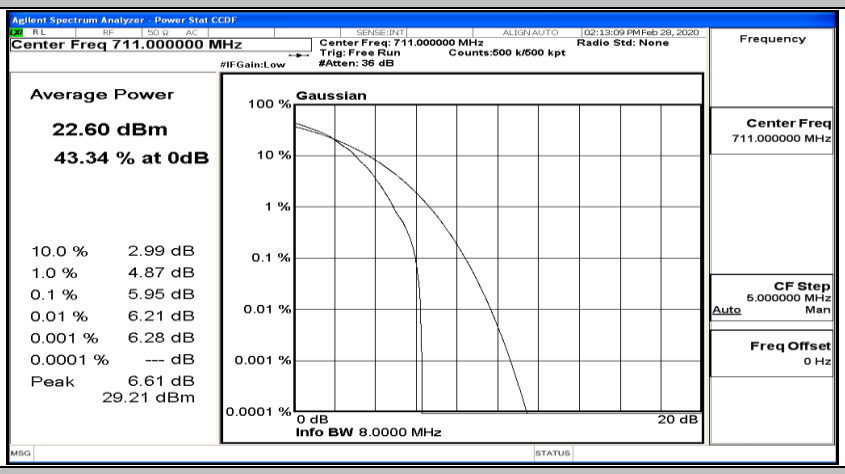
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#0



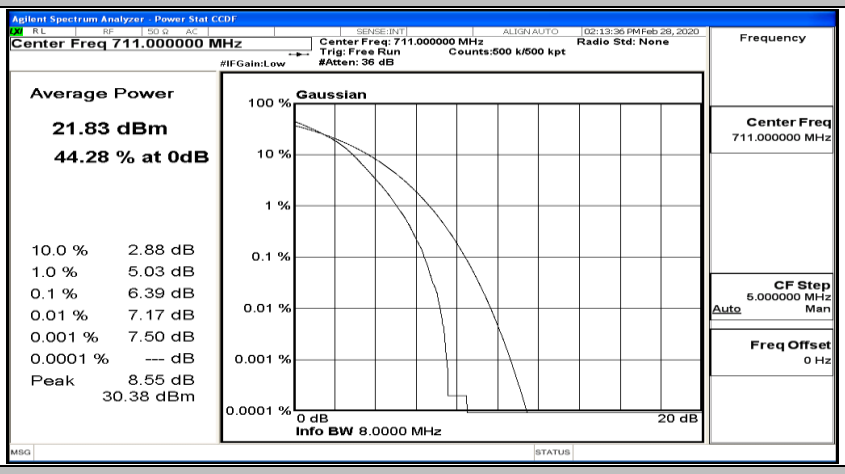
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#24



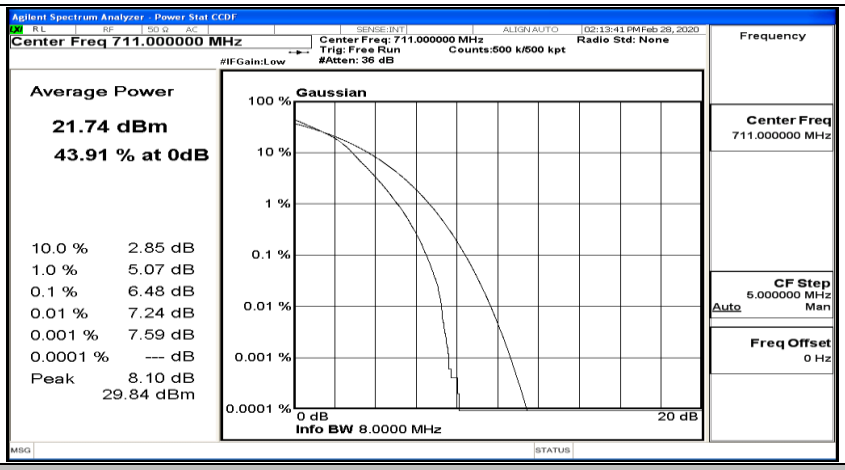
Channel Bandwidth: 10 MHz_HCH_16QAM_1RB#49



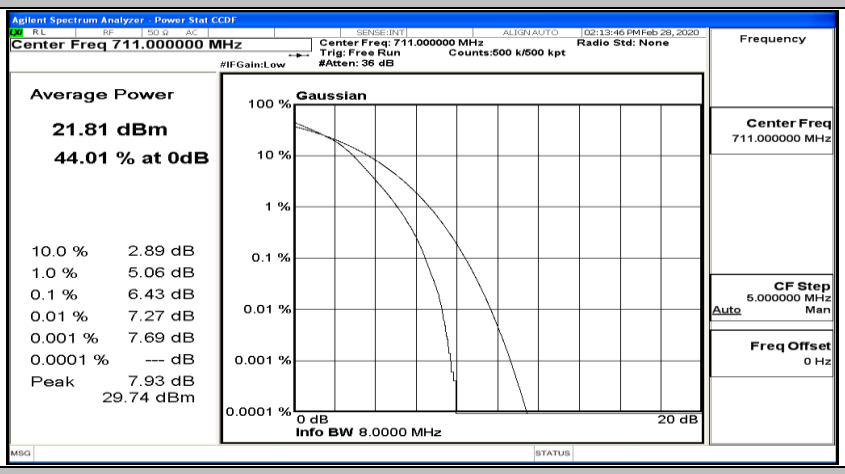
Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#0



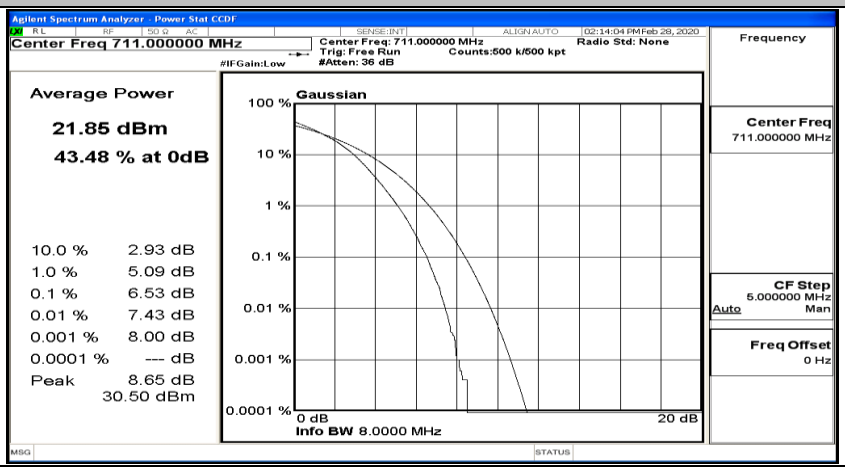
Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#12



Channel Bandwidth: 10 MHz_HCH_16QAM_25RB#25



Channel Bandwidth: 10 MHz_HCH_16QAM_50RB#0



H.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	0.32877	0.5299	PASS
		1	12	0.32580	0.5084	PASS
		1	24	0.33995	0.5456	PASS
		12	0	2.1766	2.557	PASS
		12	6	2.1703	2.654	PASS
		12	13	2.1750	2.486	PASS
		25	0	4.4580	4.776	PASS
	MCH	1	0	0.32829	0.5306	PASS
		1	12	0.34308	0.5678	PASS
		1	24	0.32546	0.5138	PASS
		12	0	2.1779	2.517	PASS
		12	6	2.1780	2.572	PASS
		12	13	2.1776	2.608	PASS
		25	0	4.4704	4.829	PASS
	HCH	1	0	0.31829	0.5345	PASS
		1	12	0.34149	0.5519	PASS
		1	24	0.32602	0.5330	PASS
		12	0	2.1769	2.569	PASS
		12	6	2.1839	2.662	PASS
		12	13	2.1795	2.615	PASS
		25	0	4.4746	4.801	PASS
16QAM	LCH	1	0	0.33033	0.5422	PASS
		1	12	0.35254	0.5592	PASS
		1	24	0.34030	0.5450	PASS
		12	0	2.1814	2.557	PASS
		12	6	2.1823	2.657	PASS
		12	13	2.1720	2.498	PASS
		25	0	4.4585	4.757	PASS
	MCH	1	0	0.34050	0.5318	PASS
		1	12	0.34636	0.5470	PASS
		1	24	0.33270	0.4935	PASS
		12	0	2.1682	2.545	PASS
		12	6	2.1756	2.560	PASS

		12	13	2.1789	2.588	PASS
		25	0	4.4700	4.773	PASS
	HCH	1	0	0.33743	0.5039	PASS
		1	12	0.34405	0.5914	PASS
		1	24	0.33949	0.5656	PASS
		12	0	2.1779	2.525	PASS
		12	6	2.1785	2.653	PASS
		12	13	2.1760	2.513	PASS
		25	0	4.4778	4.850	PASS

Channel Bandwidth: 10 MHz

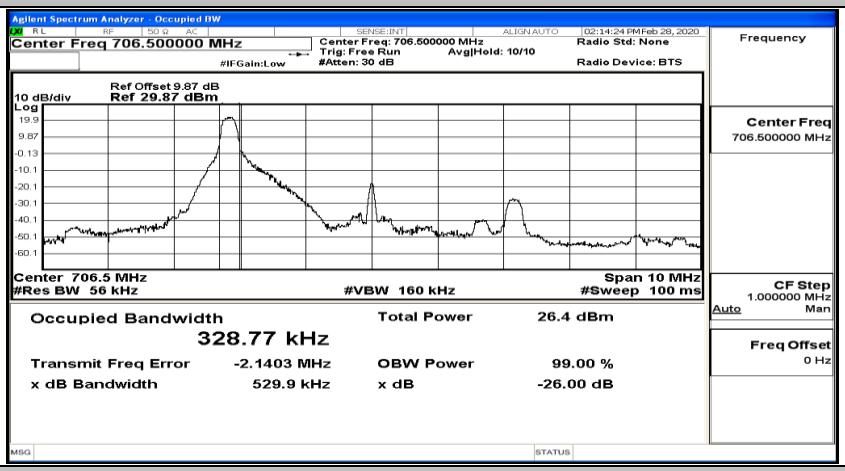
Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
		Size	Offset			
QPSK	LCH	1	0	0.43404	0.6745	PASS
		1	25	0.43319	0.6837	PASS
		1	49	0.41761	0.6239	PASS
		25	0	4.4929	5.187	PASS
		25	12	4.4957	5.167	PASS
		25	25	4.5158	4.990	PASS
		50	0	8.9356	9.358	PASS
	MCH	1	0	0.40903	0.6233	PASS
		1	25	0.42251	0.6245	PASS
		1	49	0.40898	0.6469	PASS
		25	0	4.4855	4.960	PASS
		25	12	4.5182	5.088	PASS
		25	25	4.5275	4.951	PASS
		50	0	8.9435	9.406	PASS
	HCH	1	0	0.42072	0.6603	PASS
		1	25	0.42502	0.6206	PASS
		1	49	0.41672	0.6596	PASS
		25	0	4.4976	5.094	PASS
		25	12	4.5186	5.152	PASS
		25	25	4.5134	5.108	PASS
		50	0	8.9586	9.504	PASS
16QAM	LCH	1	0	0.42262	0.6400	PASS
		1	25	0.42679	0.6445	PASS
		1	49	0.44071	0.6235	PASS
		25	0	4.5105	4.931	PASS
		25	12	4.5104	5.074	PASS
		25	25	4.5245	5.078	PASS

		50	0	8.9206	9.362	PASS
	MCH	1	0	0.42259	0.6797	PASS
		1	25	0.44360	0.6791	PASS
		1	49	0.44409	0.6818	PASS
		25	0	4.4958	5.013	PASS
		25	12	4.5140	5.038	PASS
		25	25	4.5314	5.097	PASS
		50	0	8.9385	9.460	PASS
	HCH	1	0	0.42476	0.6212	PASS
		1	25	0.43249	0.6638	PASS
		1	49	0.42550	0.6719	PASS
		25	0	4.4987	4.993	PASS
		25	12	4.5208	5.046	PASS
		25	25	4.5245	4.971	PASS
		50	0	8.9550	9.486	PASS

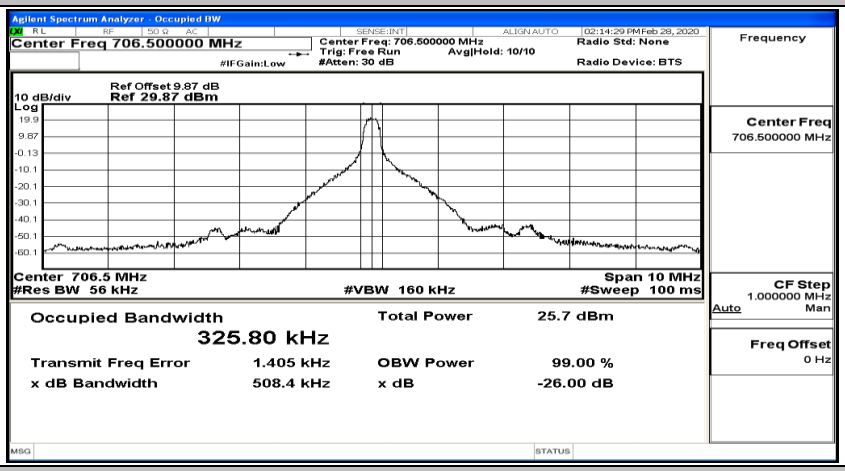
Test Graphs

Channel Bandwidth: 5 MHz

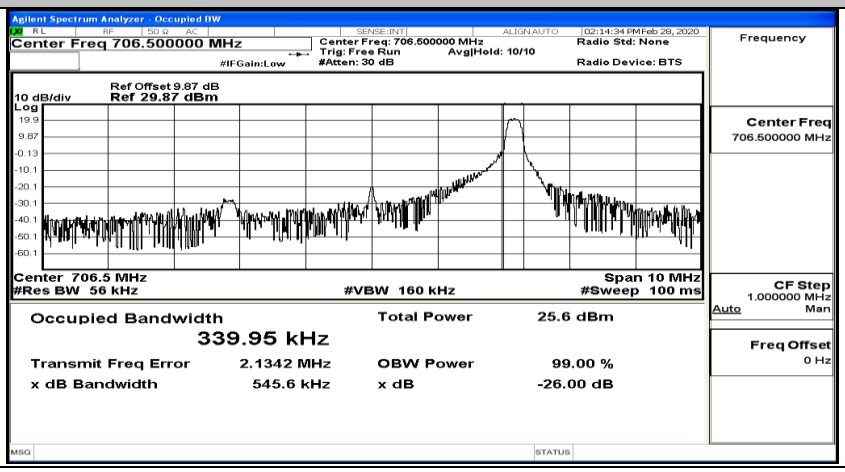
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0



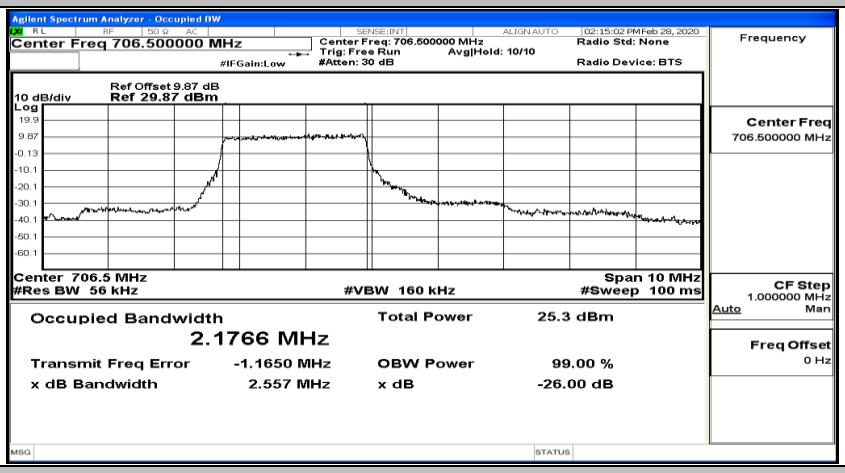
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12



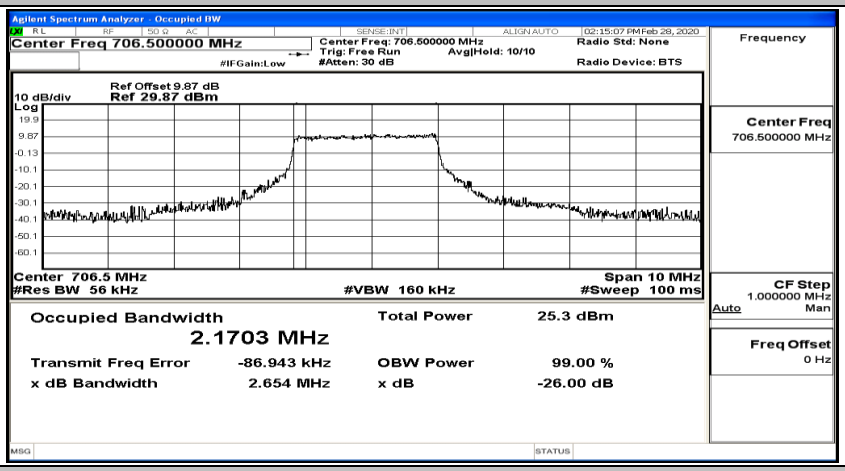
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



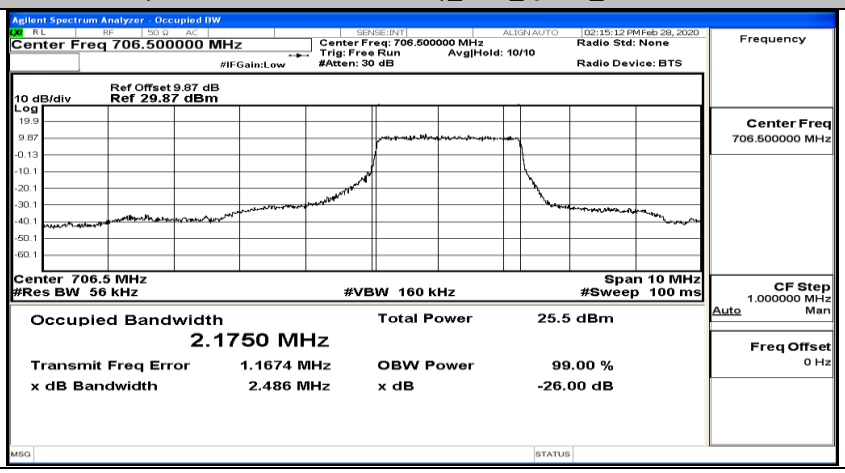
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#0



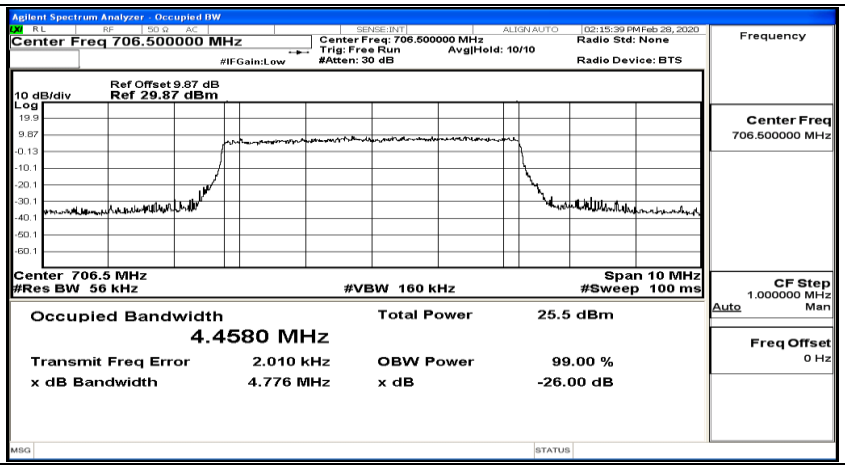
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#6



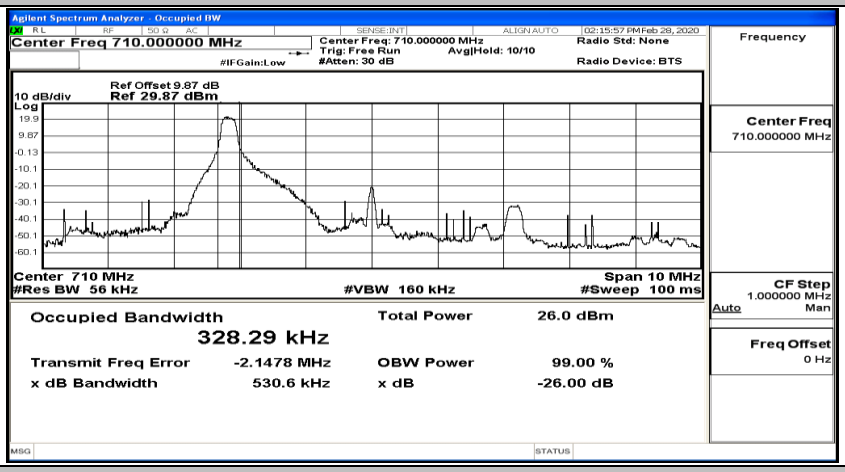
(Channel Bandwidth: 5 MHz)_LCH_QPSK_12RB#13



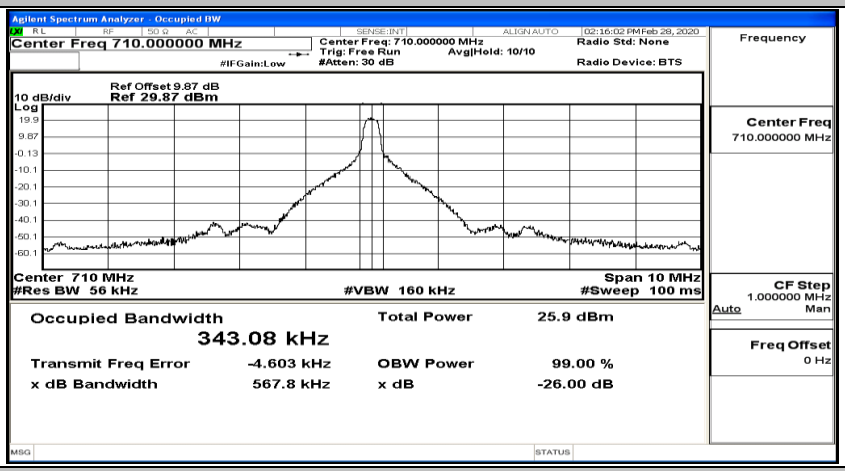
(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



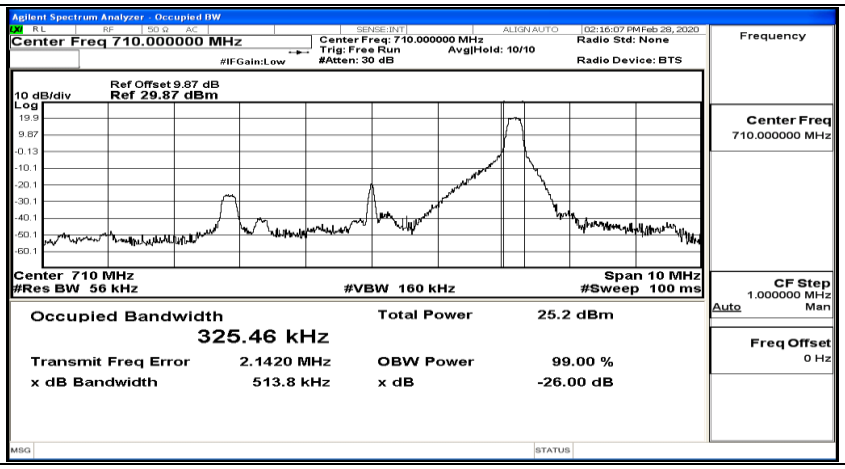
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



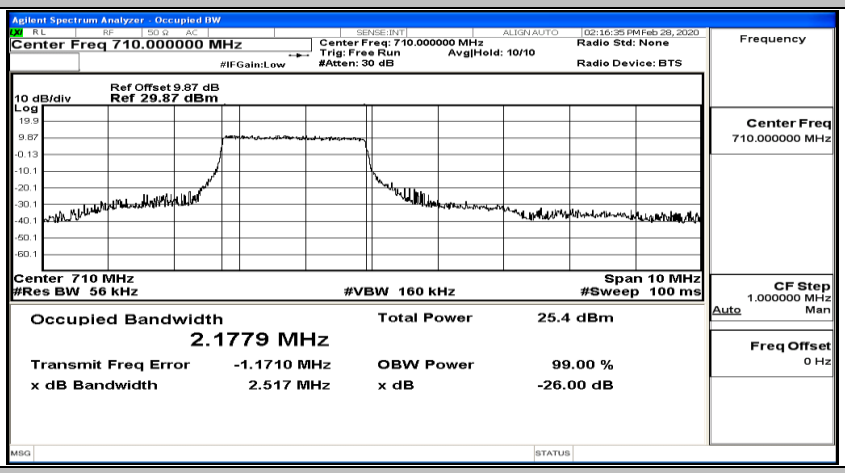
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12



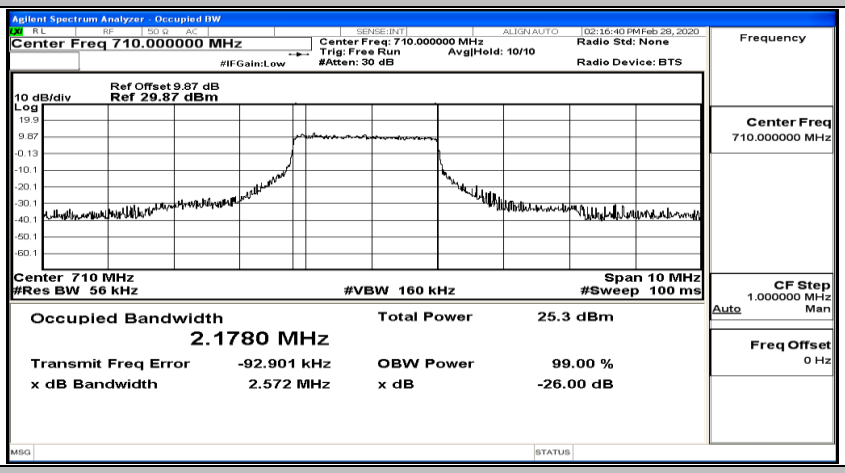
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24



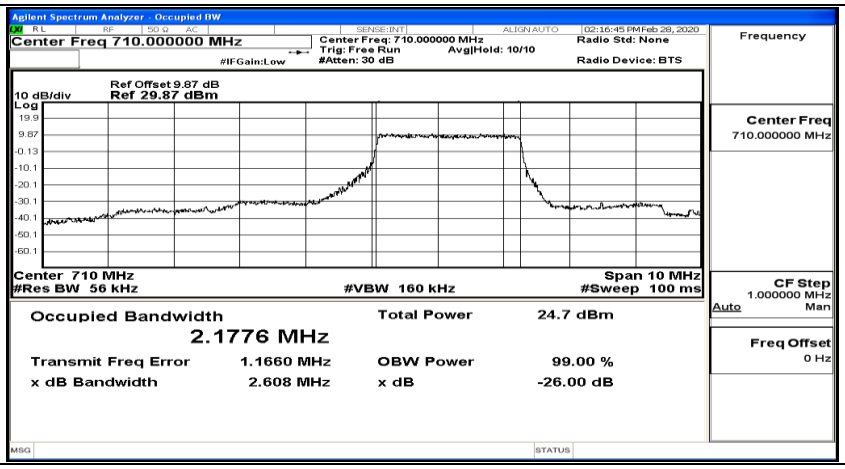
(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#0



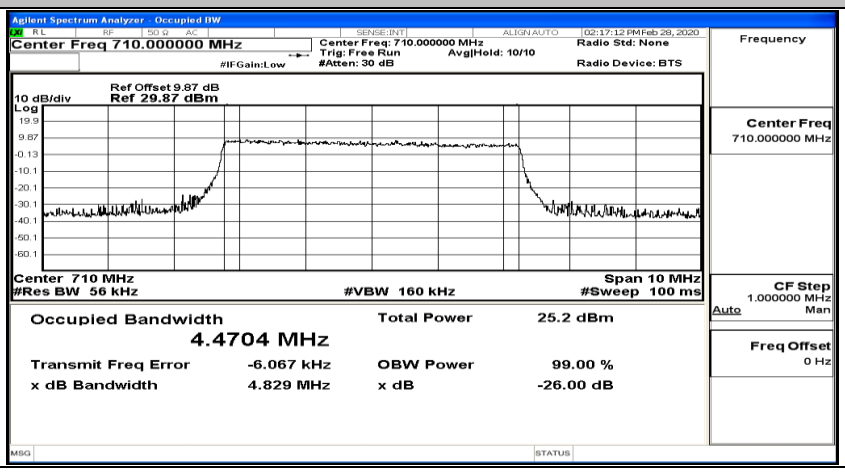
(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#6



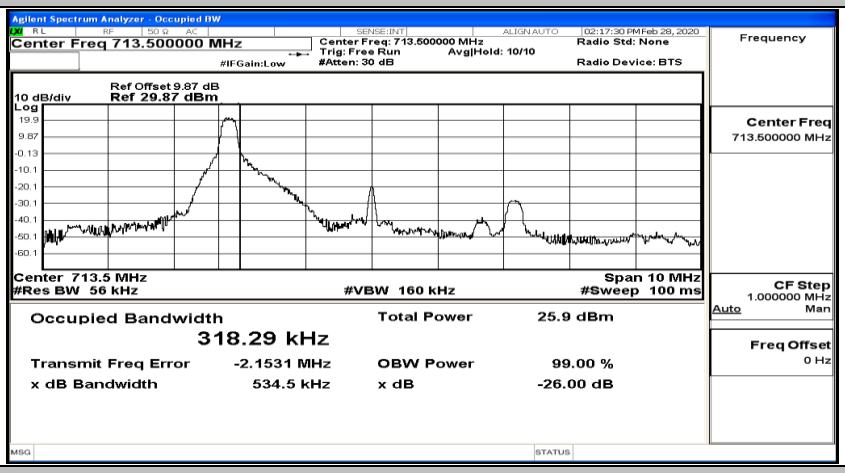
(Channel Bandwidth: 5 MHz)_MCH_QPSK_12RB#13



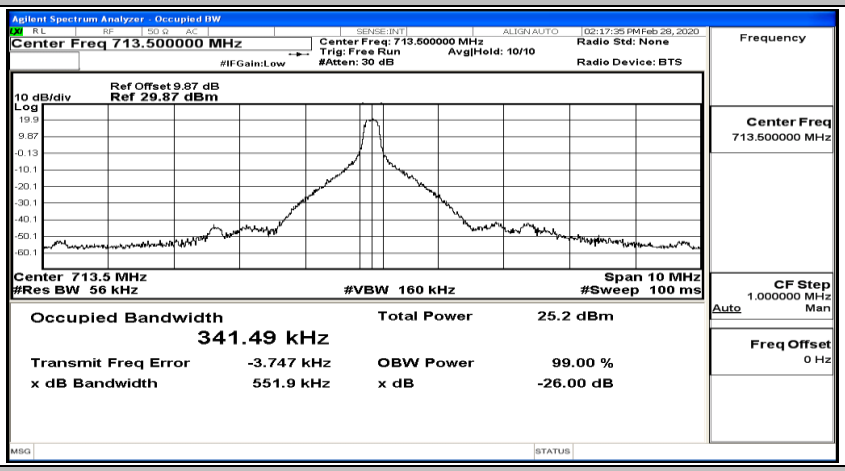
(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0



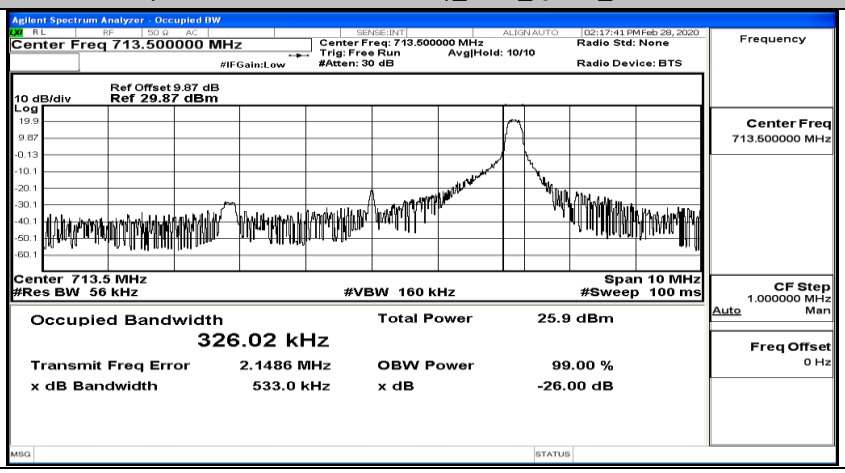
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0



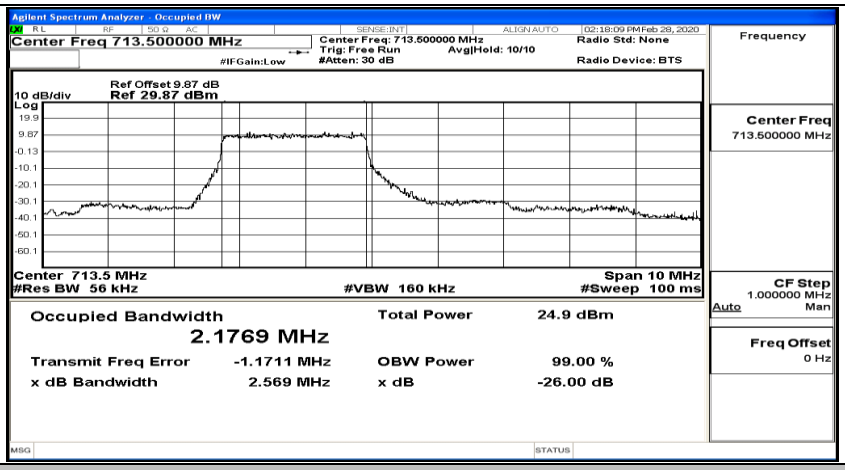
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



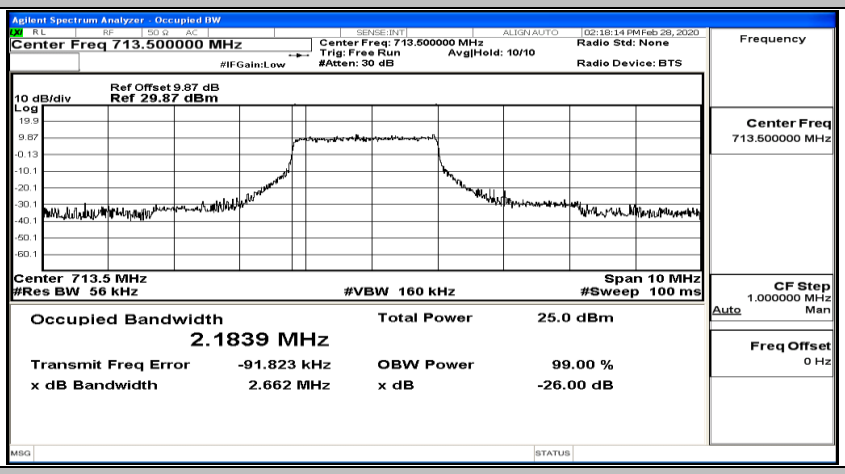
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24



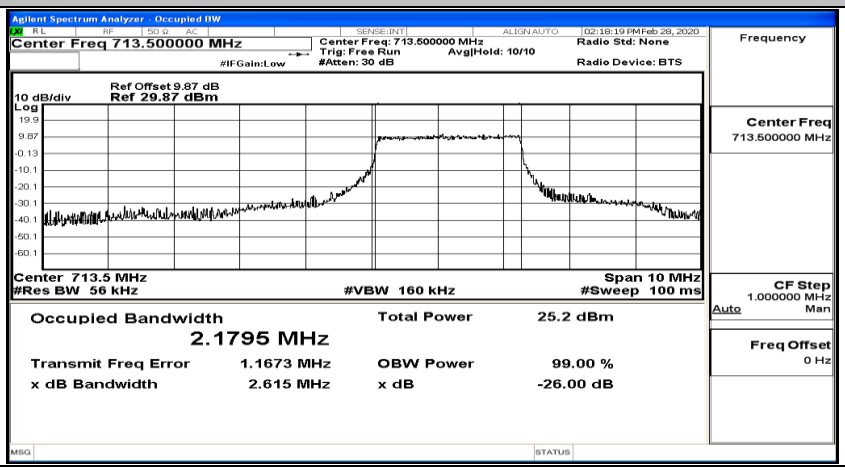
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0



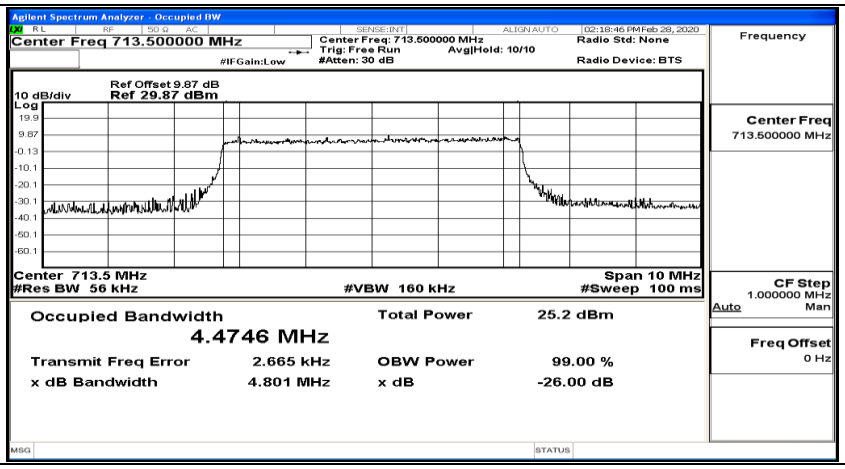
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6



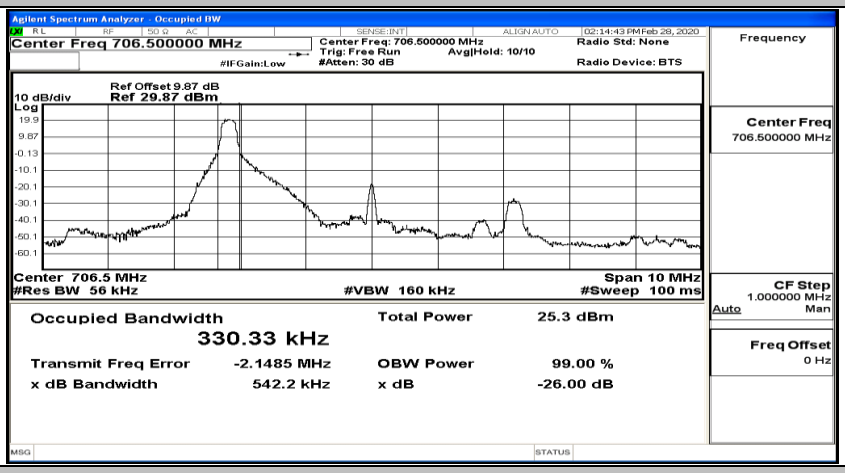
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13



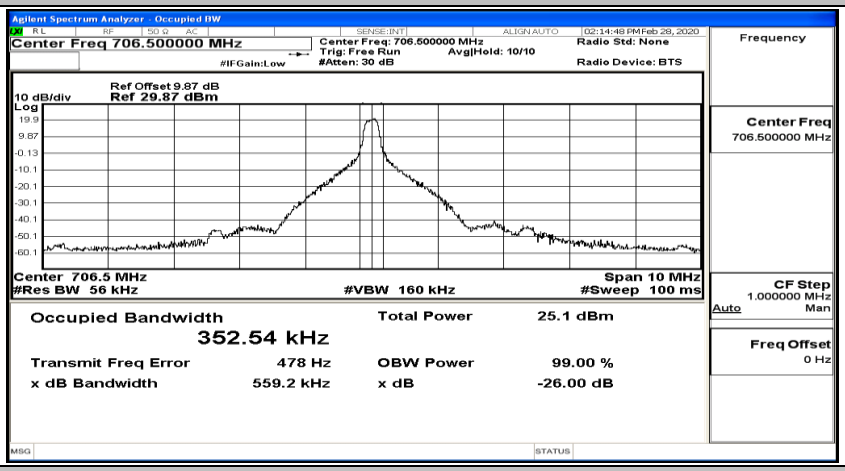
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0


Agilent Spectrum Analyzer - Occupied BW
Center Freq 713.500000 MHz
Center Freq: 713.500000 MHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
Ref Offset 9.87 dB
10 dB/div
Ref 29.87 dBm
Log
Center 713.5 MHz
#Res BW 56 kHz
#VBW 160 kHz
Span 10 MHz
#Sweep 100 ms
Occupied Bandwidth
4.4746 MHz
Total Power 25.2 dBm
Transmit Freq Error 2.665 kHz
OBW Power 99.00 %
x dB Bandwidth 4.801 MHz
x dB -26.00 dB
Frequency
Center Freq
713.500000 MHz
CF Step
1.000000 MHz
Auto Man
Freq Offset
0 Hz

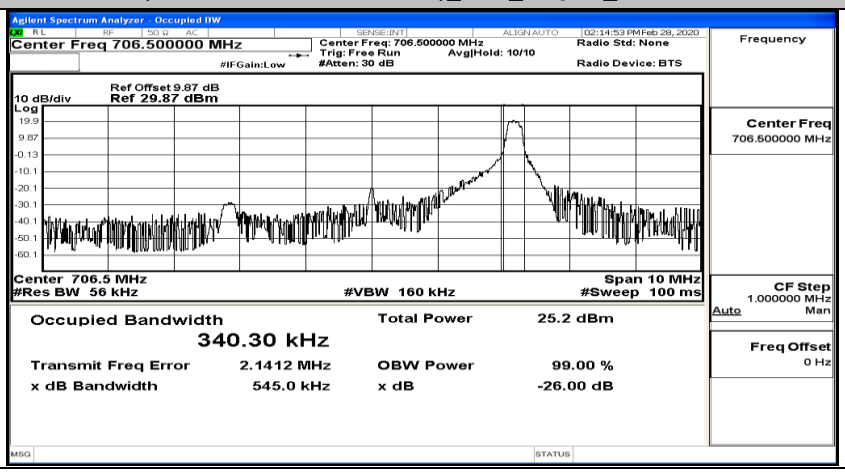
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



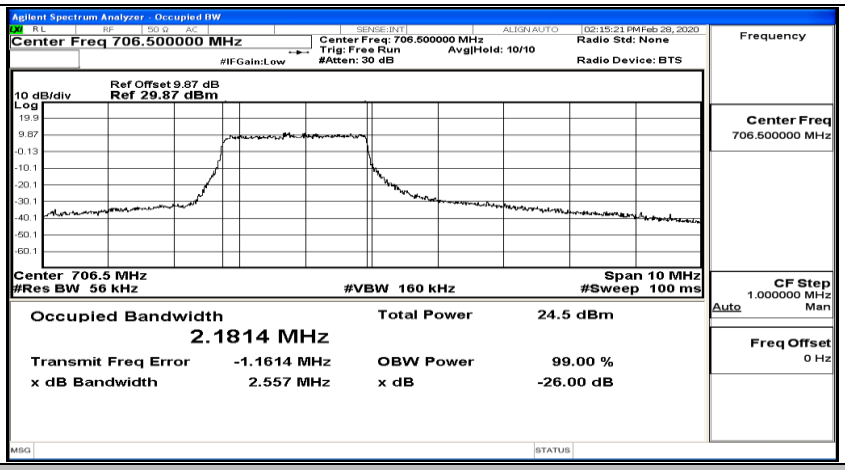
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12



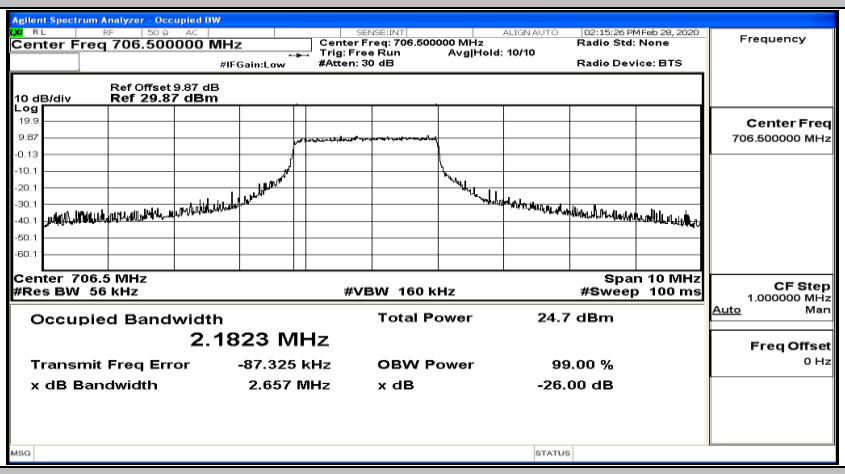
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24



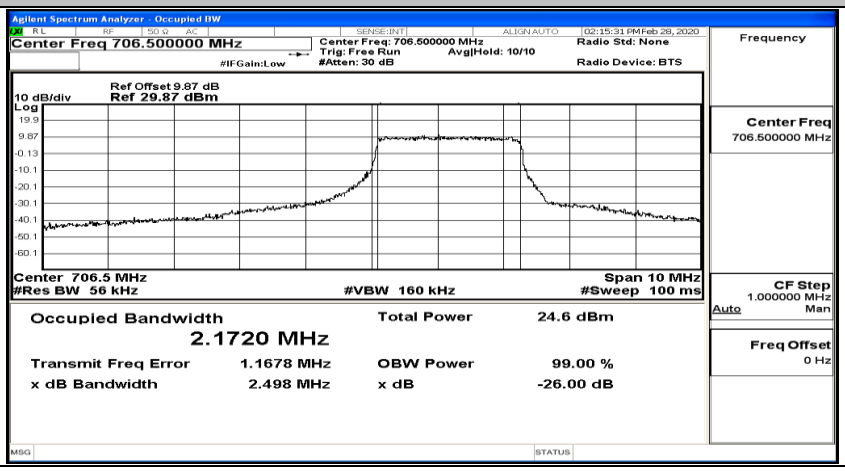
(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0



(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#6



(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#13



(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0