Appendix B: Test Data for E-UTRA Band 2

Product Name: IOT Gateway Trade Mark: N/A **Test Model: IOT-1110**

Environmental Conditions

Temperature:	24.6° C			
Relative Humidity:	54.1%			
ATM Pressure:	100.0 kPa			
Test Engineer:	Ken He			
Supervised by:	Li Huan			

B.1 Conducted Output Power

	Conducted Output Power Test Result (Channel Bandwidth: 1.4 MHz)							
Modulation	Channel	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	Verdict		
Modulation	Chamer	Size	Offset	QPSK	16QAM	verdict		
		1	0	22.90	22.23	PASS		
		1	3	22.94	22.29	PASS		
		1	5	22.93	22.17	PASS		
	LCH	3	0	22.91	22.03	PASS		
		3	2	22.97	22.16	PASS		
		3	3	22.93	22.19	PASS		
		6	0	21.88	21.76	PASS		
		1	0	23.29	22.26	PASS		
	МСН	1	3	23.15	22.19	PASS		
QPSK /		1	5	23.10	22.07	PASS		
16QAM		3	0	23.26	22.44	PASS		
IOQAW		3	2	23.25	22.48	PASS		
		3	3	23.23	22.41	PASS		
		6	0	22.24	21.32	PASS		
		1	0	23.17	22.66	PASS		
		1	3	22.98	22.48	PASS		
		1	5	22.80	22.26	PASS		
	HCH	3	0	23.04	22.17	PASS		
		3	2	22.90	22.07	PASS		
		3	3	22.75	21.91	PASS		
		6	0	22.26	21.33	PASS		

	Conducted Output Power Test Result (Channel Bandwidth: 3 MHz)								
Modulation	Channel	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	Verdict			
Modulation	Channel	Size	Offset	QPSK	16QAM	verdict			
		1	0	23.38	21.66	PASS			
		1	7	23.40	21.99	PASS			
		1	14	23.13	21.78	PASS			
	LCH	8	0	21.95	21.01	PASS			
		8	4	22.00	21.21	PASS			
		8	7	21.98	21.04	PASS			
		15	0	21.99	21.09	PASS			
		1	0	23.41	22.58	PASS			
	МСН	1	7	23.39	22.67	PASS			
QPSK /		1	14	23.31	22.67	PASS			
16QAM		8	0	22.41	21.61	PASS			
TOQAW		8	4	22.39	21.50	PASS			
		8	7	22.31	21.36	PASS			
		15	0	22.36	21.47	PASS			
		1	0	23.39	22.86	PASS			
		1	7	23.09	22.61	PASS			
		1	14	22.46	22.00	PASS			
	HCH	8	0	22.47	21.59	PASS			
		8	4	22.38	21.27	PASS			
		8	7	22.39	21.15	PASS			
		15	0	22.37	21.37	PASS			

	Conducted Output Power Test Result (Channel Bandwidth: 5 MHz)								
Modulation	Channel	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	Verdict			
Modulation	Channel	Size	Offset	QPSK	16QAM	verdict			
		1	0	23.08	22.36	PASS			
		1	12	23.16	22.01	PASS			
		1	24	22.89	21.79	PASS			
	LCH	12	0	21.87	20.86	PASS			
		12	6	21.95	20.81	PASS			
		12	13	21.94	20.94	PASS			
		25	0	21.84	21.12	PASS			
		1	0	23.12	22.02	PASS			
	МСН	1	12	23.44	21.94	PASS			
QPSK /		1	24	23.24	21.81	PASS			
16QAM		12	0	22.27	21.56	PASS			
TOQAIVI		12	6	22.26	21.26	PASS			
		12	13	22.20	21.21	PASS			
		25	0	22.27	21.47	PASS			
		1	0	23.24	21.87	PASS			
		1	12	23.39	21.90	PASS			
		1	24	22.88	21.51	PASS			
	HCH	12	0	22.33	21.23	PASS			
		12	6	22.34	21.08	PASS			
		12	13	22.27	21.06	PASS			
		25	0	22.24	21.39	PASS			

	Conducted Output Power Test Result (Channel Bandwidth: 10 MHz)								
Madulation	Channal	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	Vandiat			
Modulation	Channel	Size	Offset	QPSK	16QAM	Verdict			
		1	0	23.10	22.89	PASS			
		1	24	23.30	23.00	PASS			
		1	49	22.19	22.55	PASS			
	LCH	25	0	22.07	20.95	PASS			
		25	12	22.10	21.03	PASS			
		25	25	22.04	20.96	PASS			
		50	0	21.90	20.97	PASS			
	мсн	1	0	23.23	22.51	PASS			
		1	24	23.66	22.89	PASS			
QPSK /		1	49	22.91	22.04	PASS			
16QAM		25	0	22.36	21.37	PASS			
TOQAIVI		25	12	22.28	21.37	PASS			
		25	25	22.05	21.10	PASS			
		50	0	22.17	21.22	PASS			
		1	0	22.59	21.90	PASS			
		1	24	23.47	22.81	PASS			
		1	49	22.08	21.44	PASS			
	HCH	25	0	22.23	21.26	PASS			
		25	12	22.39	21.65	PASS			
		25	25	22.28	21.33	PASS			
		50	0	22.25	21.57	PASS			

	Conducted Output Power Test Result (Channel Bandwidth: 15 MHz)							
Modulation	Channel	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	Verdict		
Modulation	Channel	Size	Offset	QPSK	16QAM	verdict		
		1	0	23.30	22.98	PASS		
		1	37	23.48	22.88	PASS		
		1	74	22.17	21.57	PASS		
	LCH	37	0	22.12	21.11	PASS		
		37	18	22.12	21.16	PASS		
		37	38	22.14	21.09	PASS		
		75	0	22.15	21.27	PASS		
	мсн	1	0	23.50	22.92	PASS		
		1	37	24.07	23.62	PASS		
QPSK /		1	74	23.96	22.48	PASS		
16QAM		37	0	22.48	21.65	PASS		
TOQAIVI		37	18	22.49	21.66	PASS		
		37	38	22.24	21.22	PASS		
		75	0	22.44	21.56	PASS		
		1	0	21.61	20.90	PASS		
		1	37	22.66	21.99	PASS		
		1	74	21.85	21.14	PASS		
	HCH	37	0	21.77	20.82	PASS		
		37	18	22.46	21.55	PASS		
		37	38	22.73	21.54	PASS		
		75	0	22.20	21.32	PASS		

	Conducted Output Power Test Result (Channel Bandwidth: 20 MHz)								
Modulation	Channel	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	Verdict			
Modulation	Channel	Size	Offset	QPSK	16QAM	verdict			
		1	0	23.20	21.94	PASS			
		1	49	22.72	21.93	PASS			
		1	99	22.23	20.60	PASS			
	LCH	50	0	22.24	21.27	PASS			
		50	25	22.26	21.19	PASS			
		50	50	21.59	20.76	PASS			
		100	0	22.12	21.16	PASS			
		1	0	23.71	22.08	PASS			
	МСН	1	49	24.23	23.06	PASS			
ODCK /		1	99	23.89	22.69	PASS			
QPSK / 16QAM		50	0	22.40	21.45	PASS			
TOQAW		50	25	22.44	21.58	PASS			
		50	50	22.27	21.21	PASS			
		100	0	22.42	21.43	PASS			
		1	0	22.52	21.95	PASS			
		1	49	22.02	21.40	PASS			
		1	99	21.44	20.92	PASS			
	HCH	50	0	22.00	21.12	PASS			
		50	25	22.05	21.20	PASS			
		50	50	22.29	21.45	PASS			
		100	0	22.12	21.23	PASS			

B.2 Peak-to-Average Ratio

	Peak-to Average Ratio Test Result (Channel Bandwidth: 1.4 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict			
Modulation	Grianner	[dB]	[dB]	verdict			
	LCH	4.96	<13	PASS			
QPSK	MCH	5.13	<13	PASS			
	HCH	5.15	<13	PASS			
	LCH	5.77	<13	PASS			
16QAM	MCH	5.96	<13	PASS			
	HCH	5.97	<13	PASS			

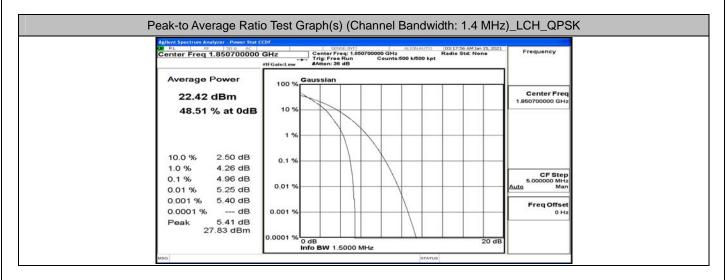
	Peak-to Average Ratio Test Result (Channel Bandwidth: 3 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict			
Modulation	Charmer	[dB]	[dB]	verdict			
	LCH	5.04	<13	PASS			
QPSK	MCH	5.26	<13	PASS			
	HCH	5.1	<13	PASS			
	LCH	5.86	<13	PASS			
16QAM	MCH	6.07	<13	PASS			
	HCH	5.98	<13	PASS			

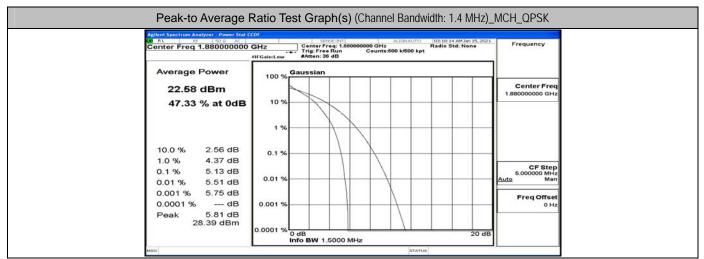
	Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict			
IVIOGUIATIOTI	Grianner	[dB]	[dB]	verdict			
	LCH	5	<13	PASS			
QPSK	MCH	5.22	<13	PASS			
	HCH	5.17	<13	PASS			
	LCH	5.72	<13	PASS			
16QAM	MCH	6.05	<13	PASS			
	HCH	5.97	<13	PASS			

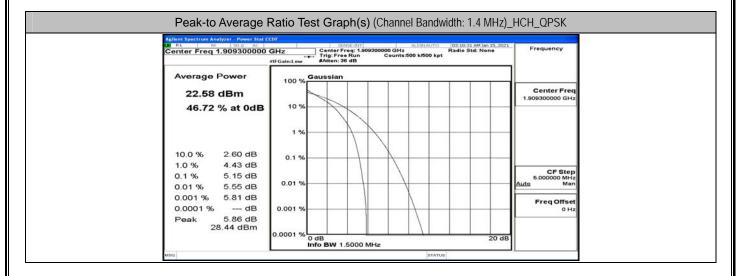
Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict		
Wodulation	Channel	[dB]	[dB]	verdict		
QPSK	LCH	5	<13	PASS		
	MCH	5.2	<13	PASS		
	HCH	5.09	<13	PASS		
16QAM	LCH	5.79	<13	PASS		
	MCH	5.95	<13	PASS		
	HCH	5.98	<13	PASS		

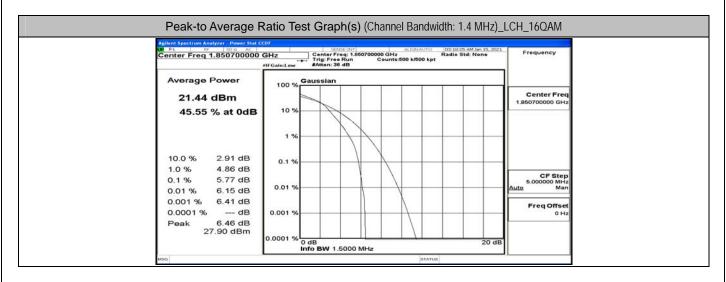
	Peak-to Average Ratio Test Result (Channel Bandwidth: 15 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict			
Modulation	Grianner	[dB]	[dB]	verdict			
	LCH	4.9	<13	PASS			
QPSK	MCH	4.86	<13	PASS			
	HCH	5.03	<13	PASS			
	LCH	6.08	<13	PASS			
16QAM	MCH	6.12	<13	PASS			
	HCH	6.28	<13	PASS			

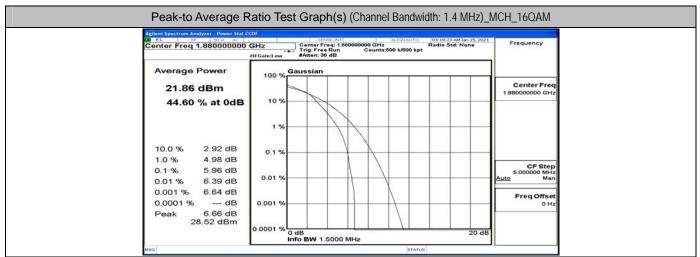
Peak-to Average Ratio Test Result (Channel Bandwidth: 20 MHz)				
Mandadatian	Channel	Peak-to-Average Ratio	Limit	Verdict
Modulation		[dB]	[dB]	
QPSK	LCH	5.75	<13	PASS
	MCH	5.74	<13	PASS
	HCH	5.83	<13	PASS
16QAM	LCH	6.68	<13	PASS
	MCH	6.69	<13	PASS
	HCH	6.78	<13	PASS

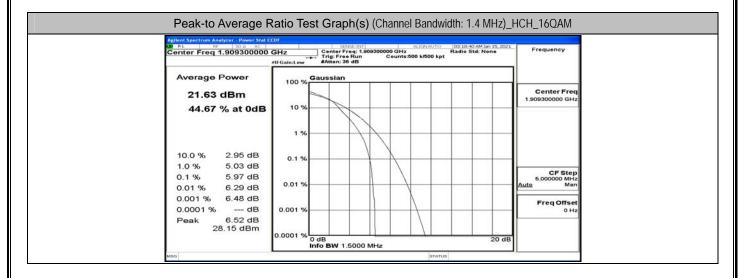


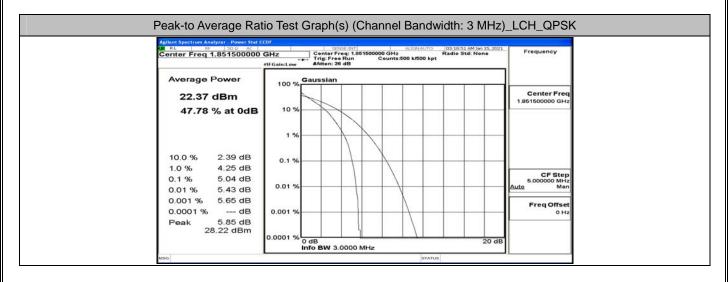


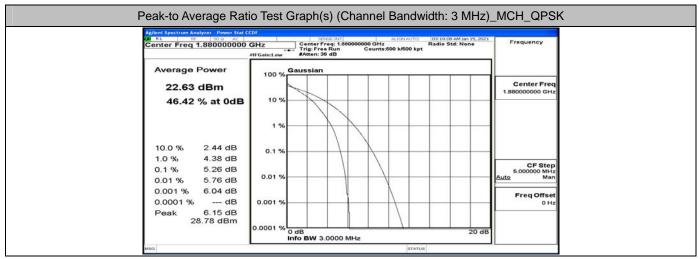


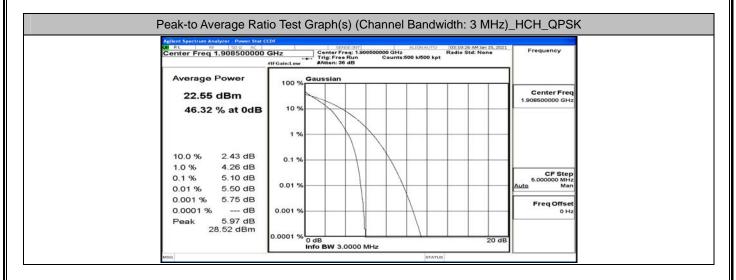


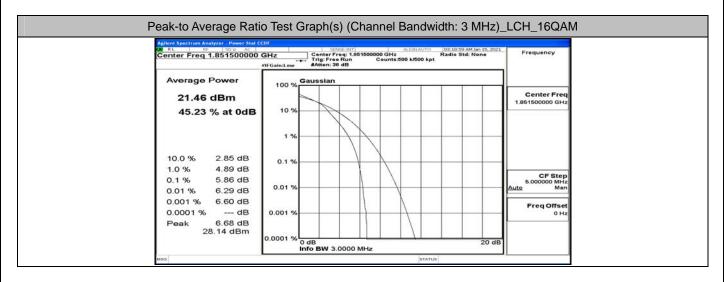


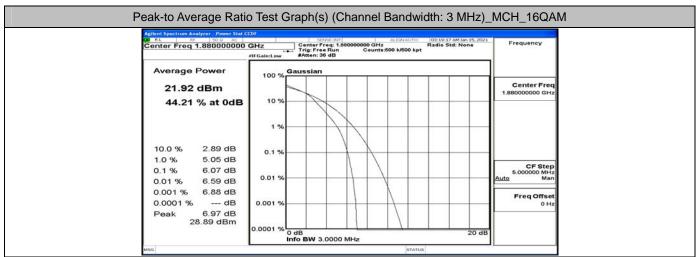


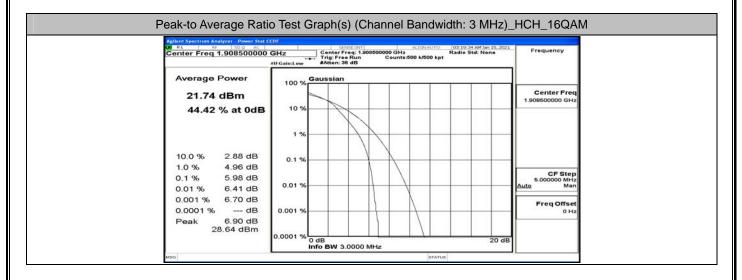


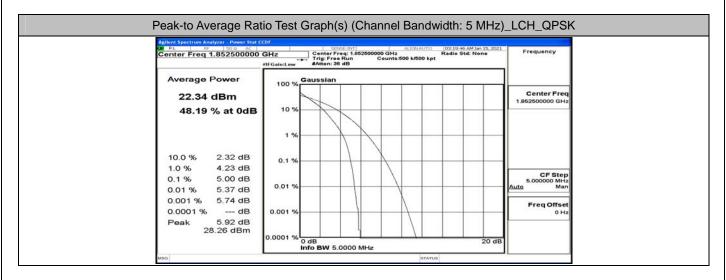


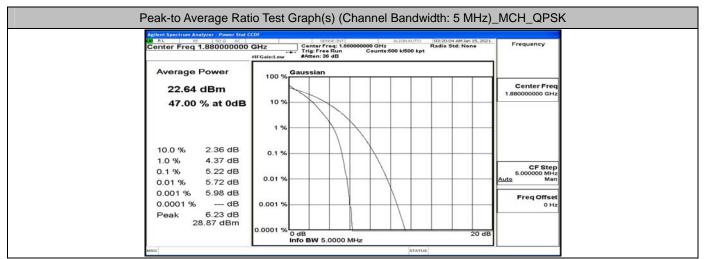


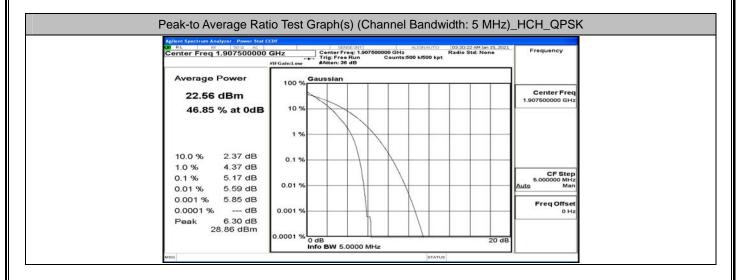


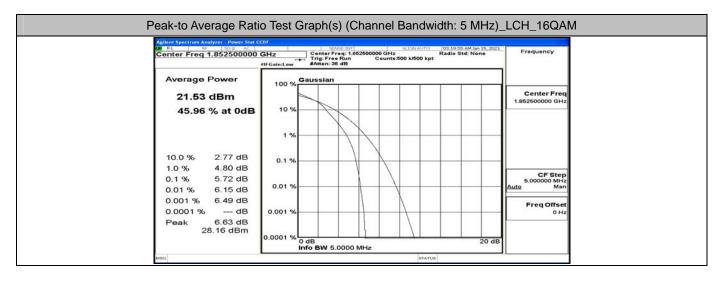


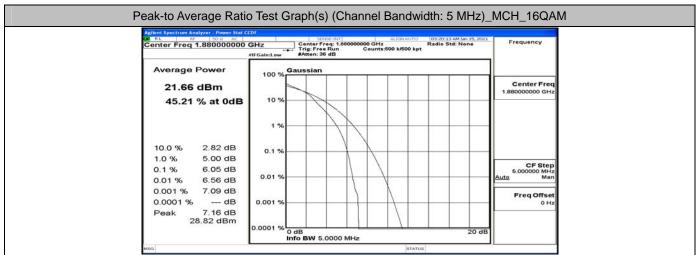


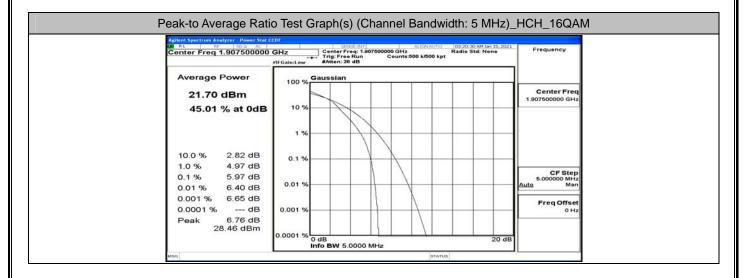


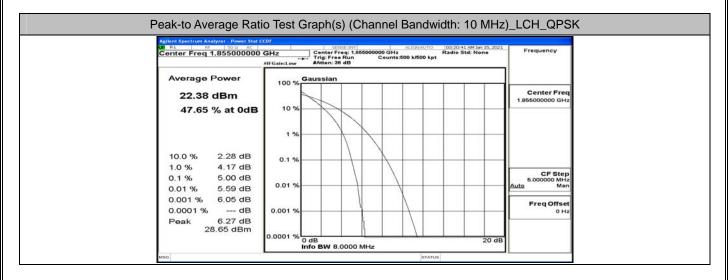


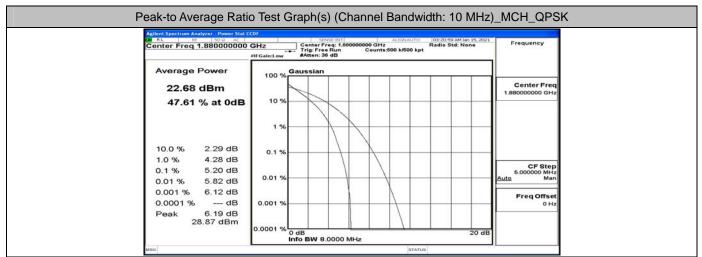


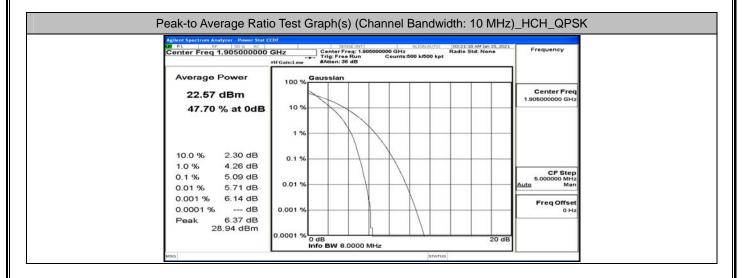


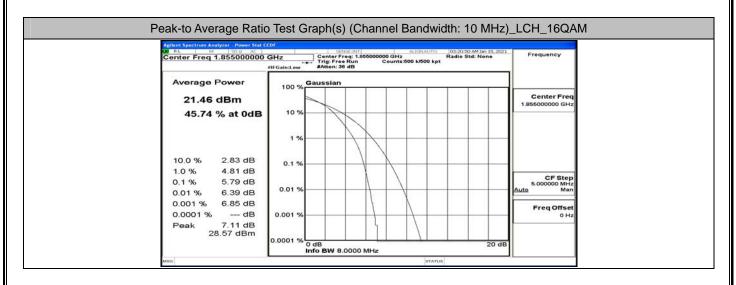


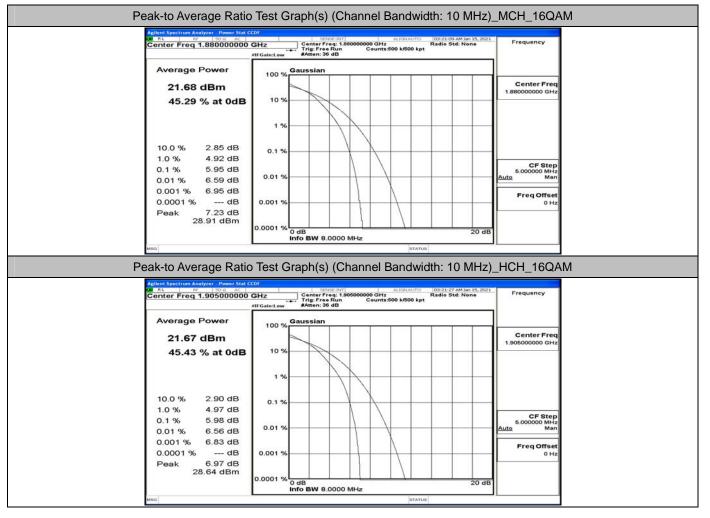


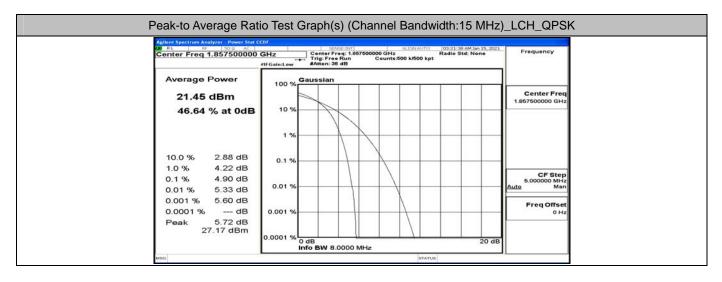


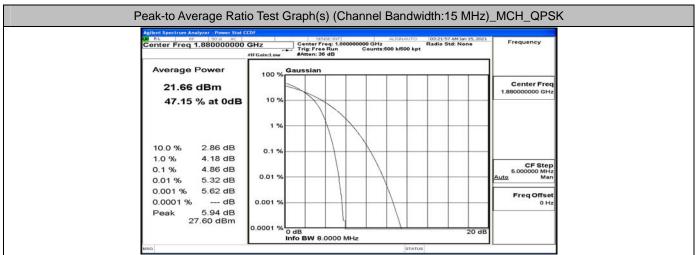


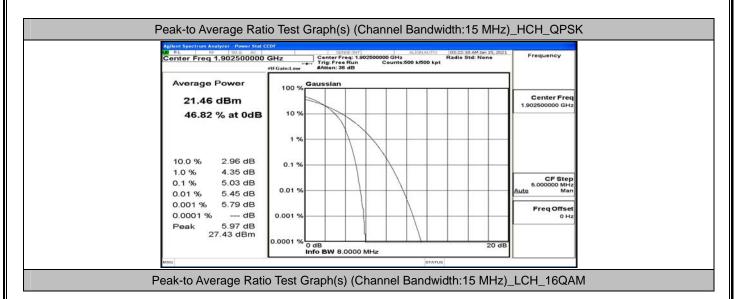




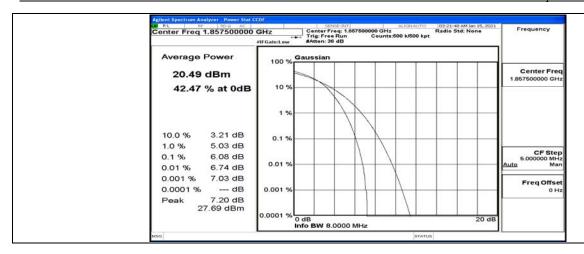


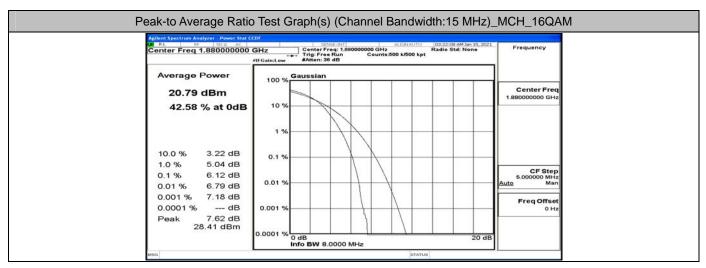


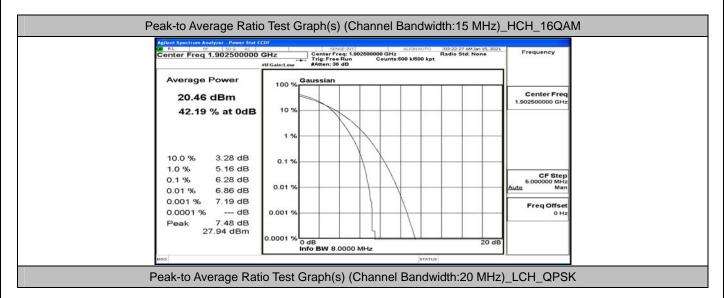




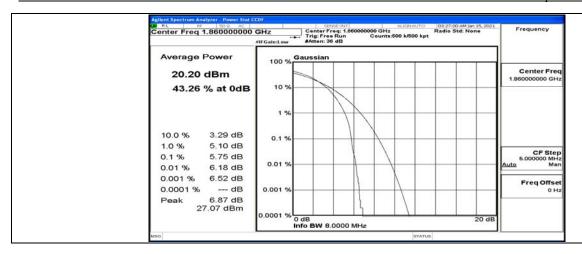
SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2AYOW-IOT-1110 Report No.: LCS201229433AEB

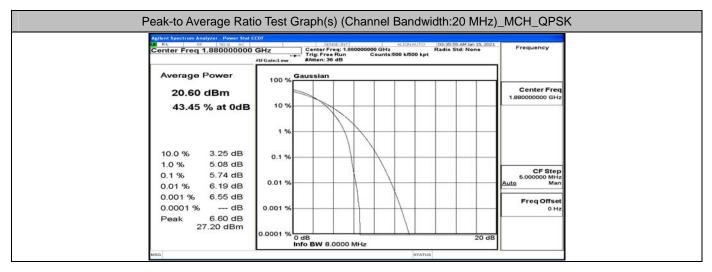


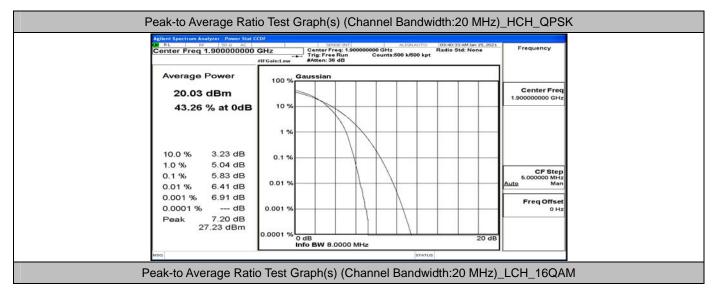




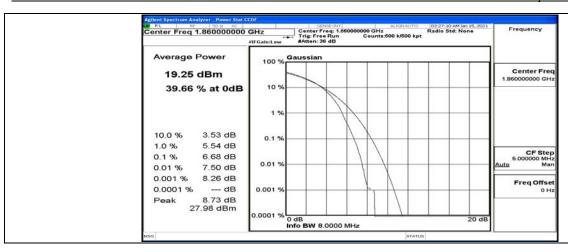
SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2AYOW-IOT-1110 Report No.: LCS201229433AEB

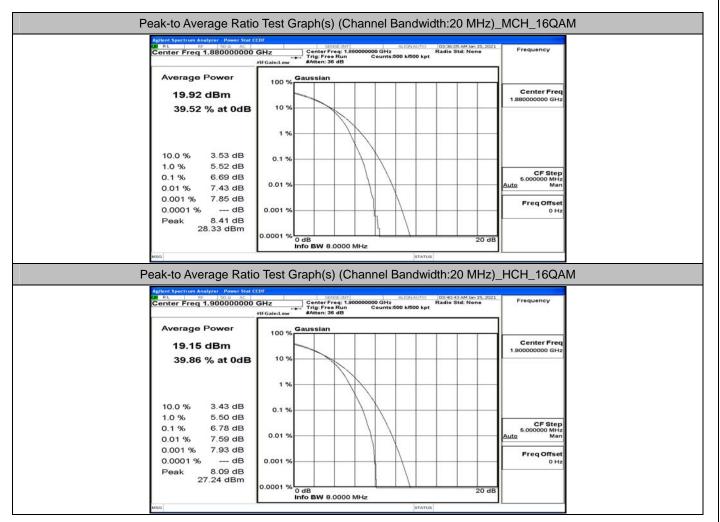






SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. FCC ID: 2AYOW-IOT-1110 Report No.: LCS201229433AEB





B.3 26dB Bandwidth and Occupied Bandwidth

EBW & OBW Test Result (Channel Bandwidth: 1.4 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	1.0792	1.236	PASS
	MCH	1.0741	1.218	PASS
	HCH	1.0769	1.232	PASS
16QAM	LCH	1.0775	1.226	PASS
	MCH	1.0769	1.234	PASS
	HCH	1.0786	1.246	PASS

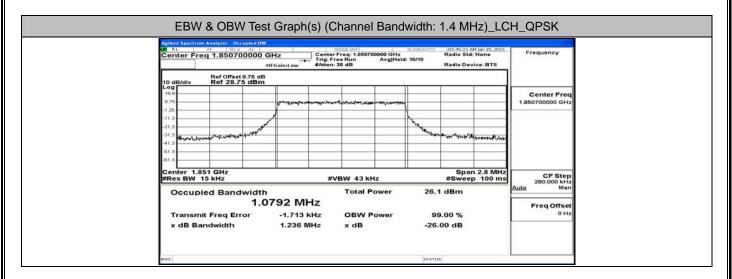
EBW & OBW Test Result (Channel Bandwidth: 3 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
Modulation		(MHz)	(MHz)	
QPSK	LCH	2.6842	2.883	PASS
	MCH	2.6868	2.890	PASS
	HCH	2.6833	2.860	PASS
16QAM	LCH	2.6847	2.902	PASS
	MCH	2.6897	2.896	PASS
	HCH	2.6820	2.874	PASS

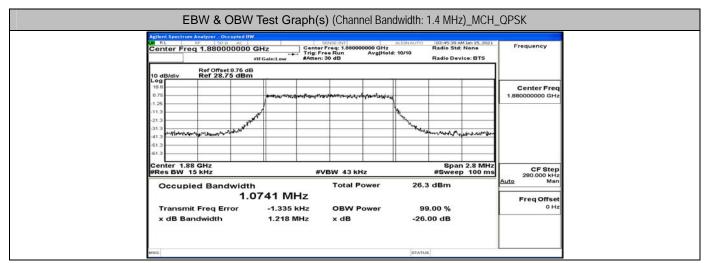
EBW & OBW Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
IVIOGUIATIOTI		(MHz)	(MHz)	
QPSK	LCH	4.4731	4.803	PASS
	MCH	4.4653	4.800	PASS
	HCH	4.4818	4.821	PASS
16QAM	LCH	4.4785	4.799	PASS
	MCH	4.4694	4.752	PASS
	HCH	4.4618	4.820	PASS

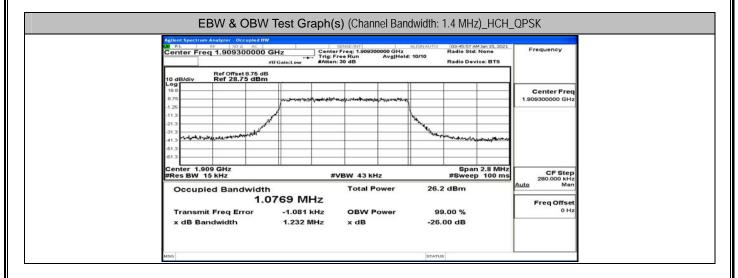
EBW & OBW Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
Modulation		(MHz)	(MHz)	
QPSK	LCH	8.9131	9.432	PASS
	MCH	8.9063	9.391	PASS
	HCH	8.9089	9.387	PASS
16QAM	LCH	8.9087	9.474	PASS
	MCH	8.9202	9.454	PASS
	HCH	8.8860	9.362	PASS

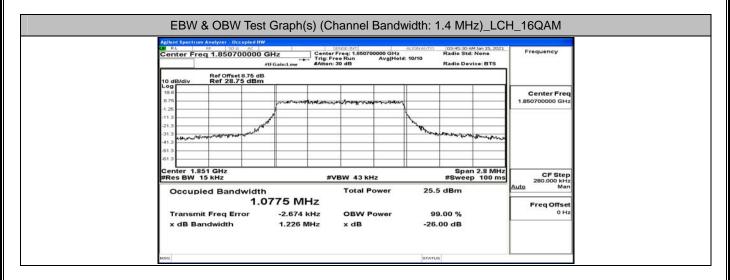
EBW & OBW Test Result (Channel Bandwidth: 15 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
Modulation		(MHz)	(MHz)	
QPSK	LCH	13.366	14.06	PASS
	MCH	13.339	13.96	PASS
	HCH	13.359	14.01	PASS
16QAM	LCH	13.367	13.98	PASS
	MCH	13.351	13.97	PASS
	HCH	13.375	13.99	PASS

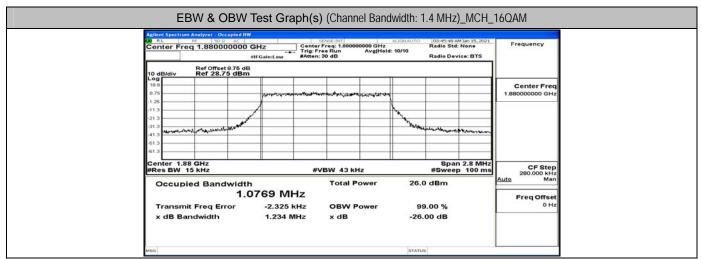
EBW & OBW Test Result (Channel Bandwidth: 20 MHz)				
Marketakan	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
Modulation		(MHz)	(MHz)	
QPSK	LCH	17.821	18.57	PASS
	MCH	17.771	18.60	PASS
	HCH	17.874	18.64	PASS
16QAM	LCH	17.842	18.57	PASS
	MCH	17.784	18.55	PASS
	HCH	17.844	18.58	PASS

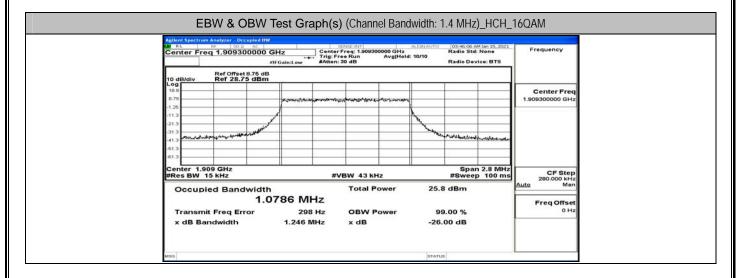


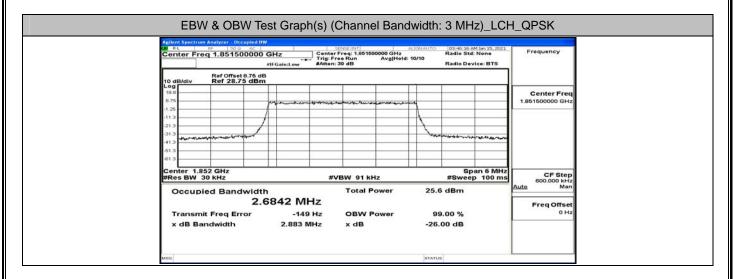


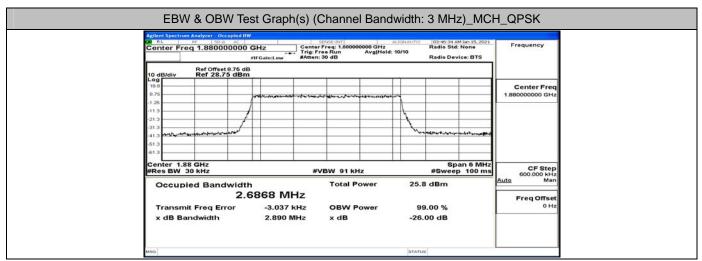


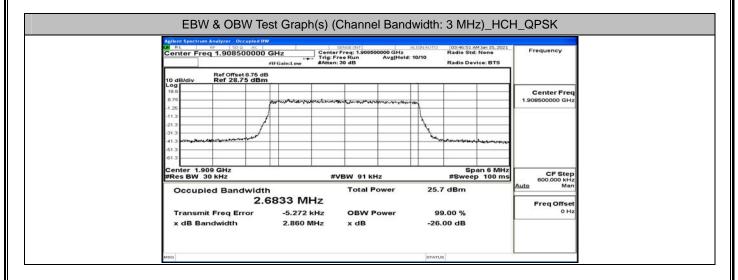


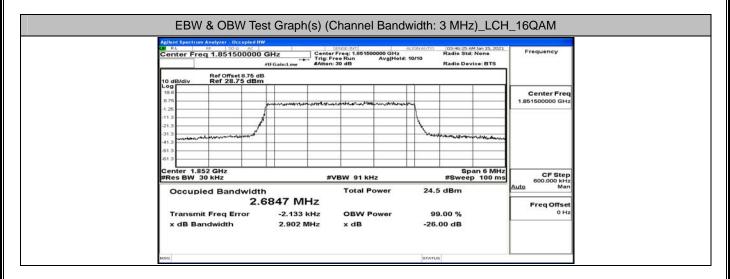


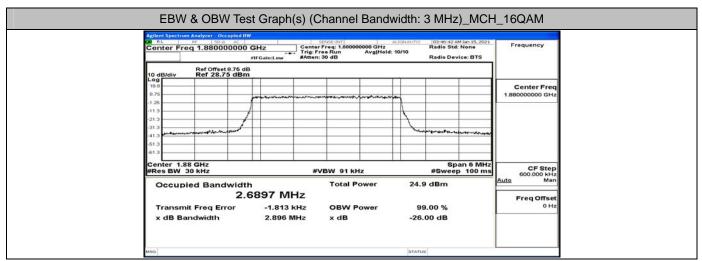


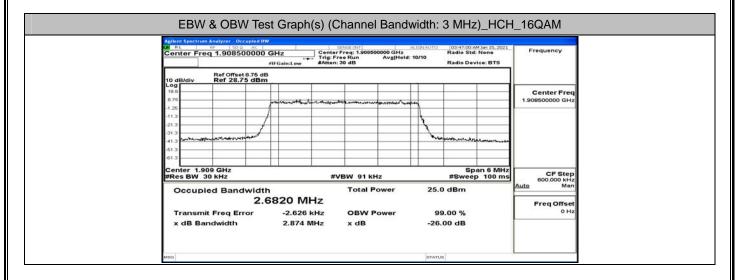


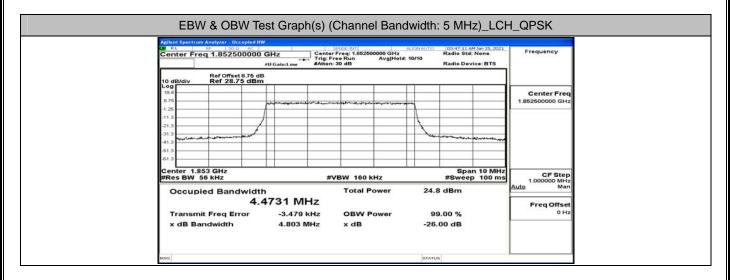


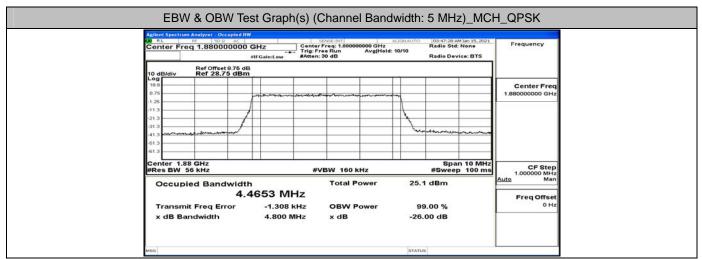


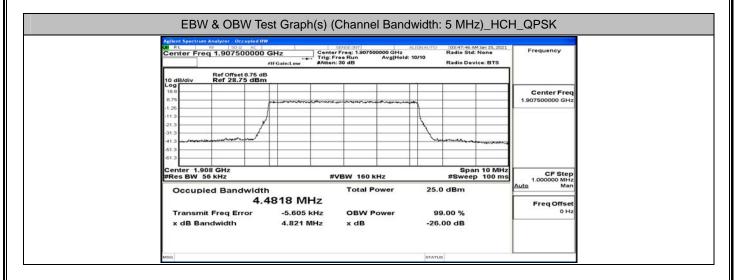


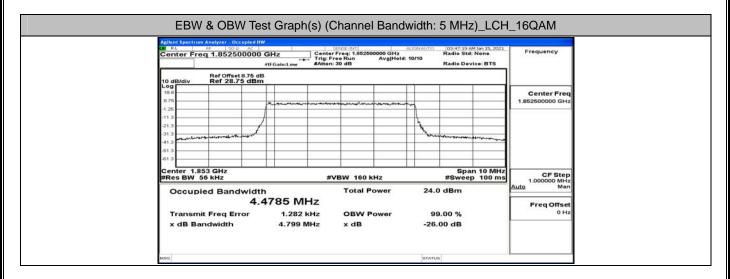


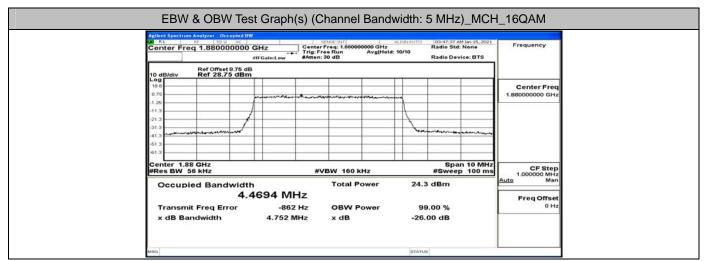


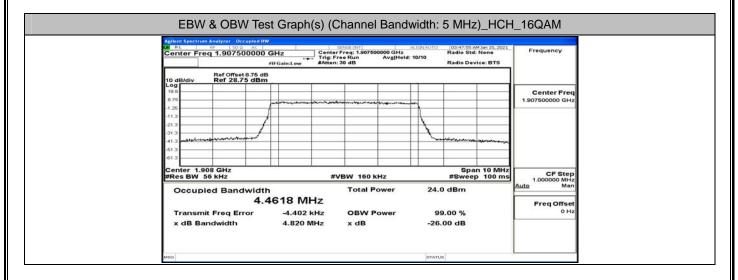


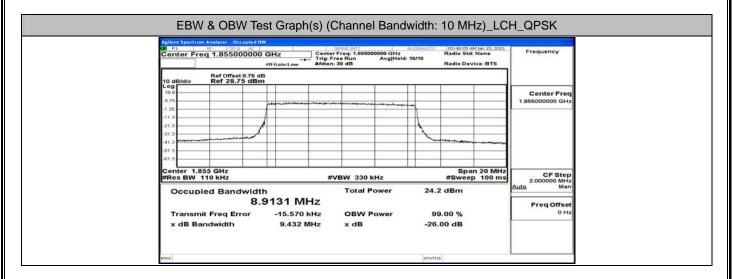


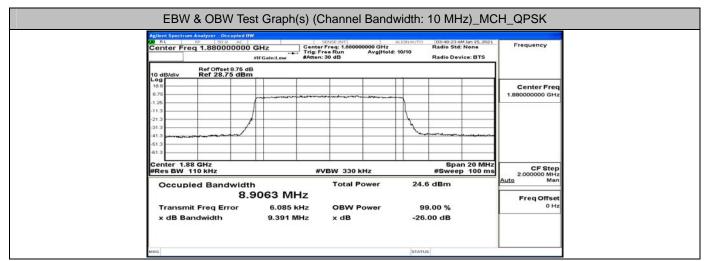


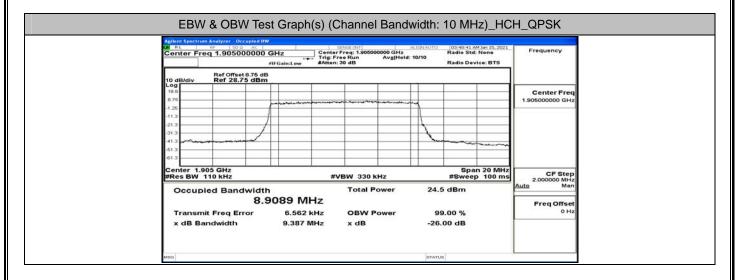


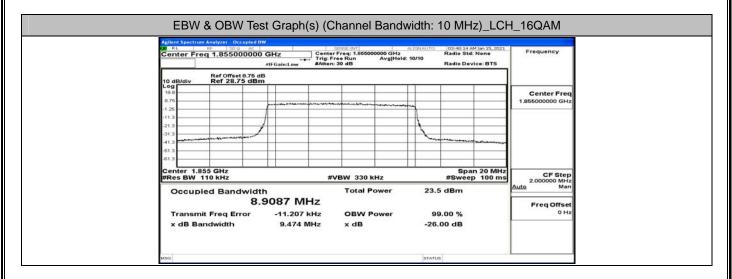


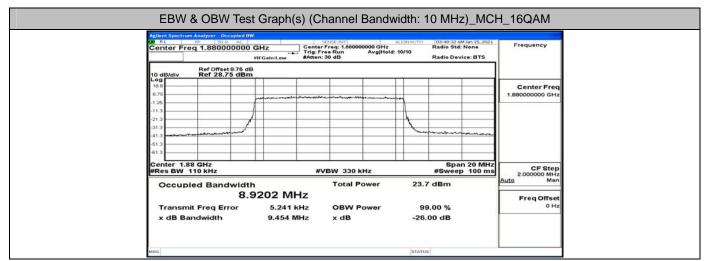


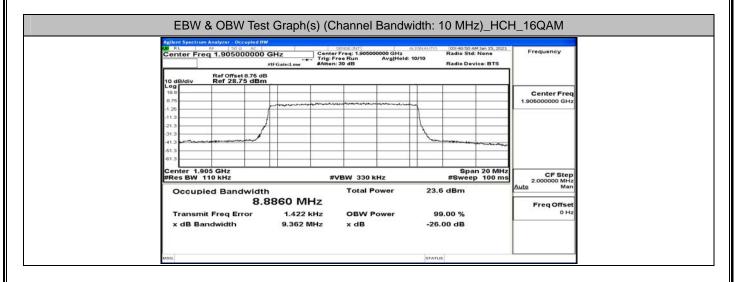


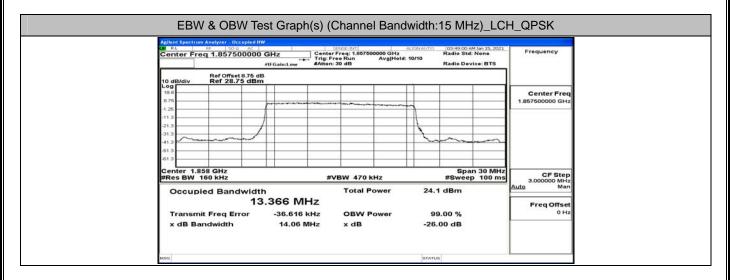


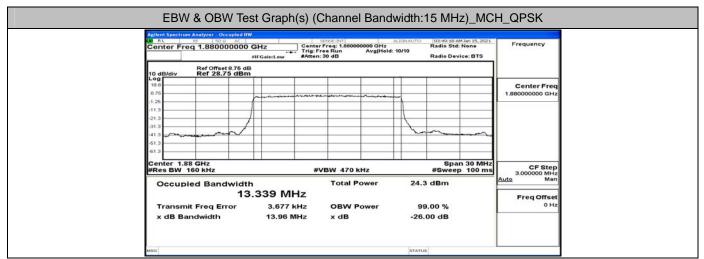


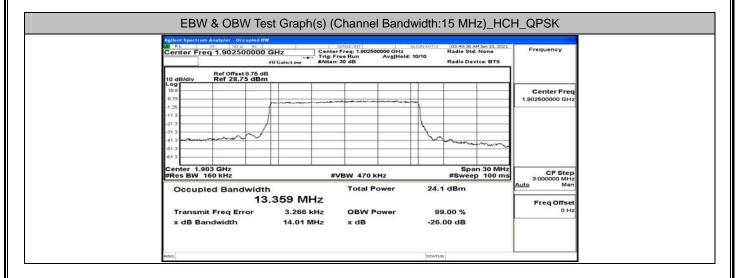


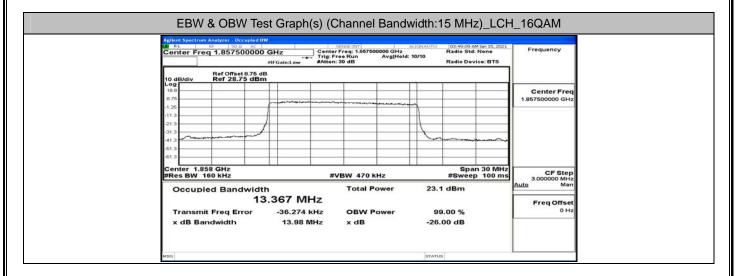


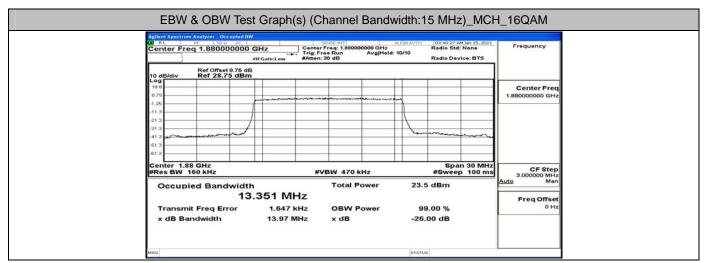


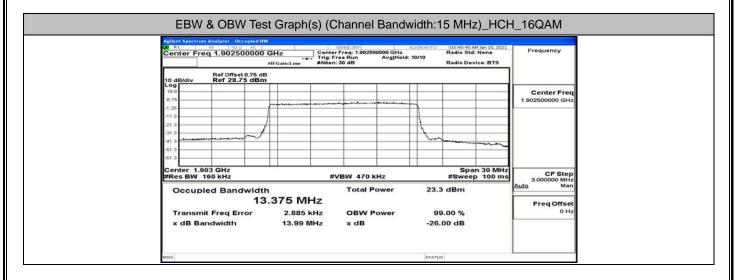


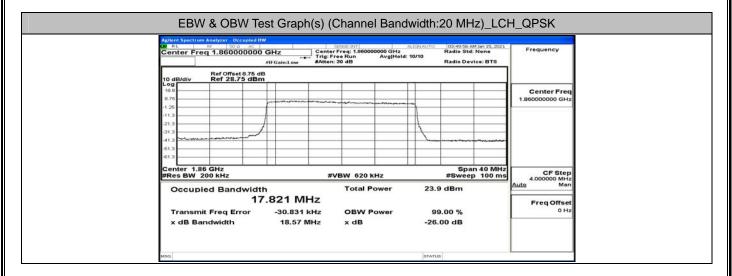


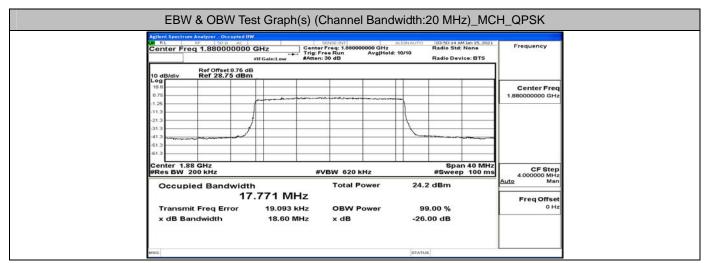


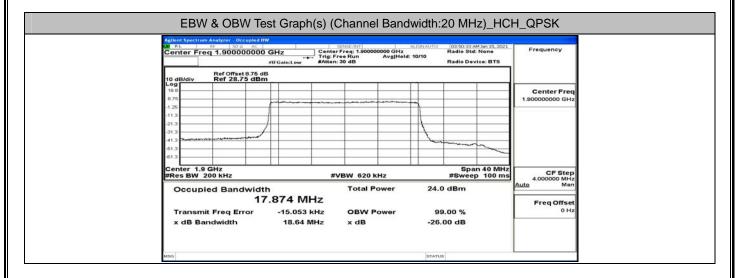


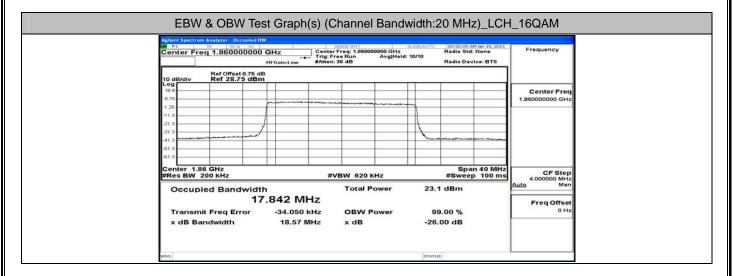


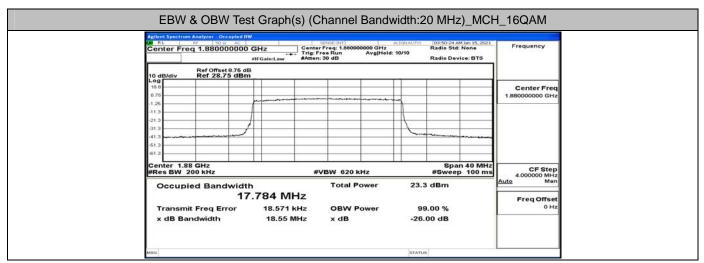


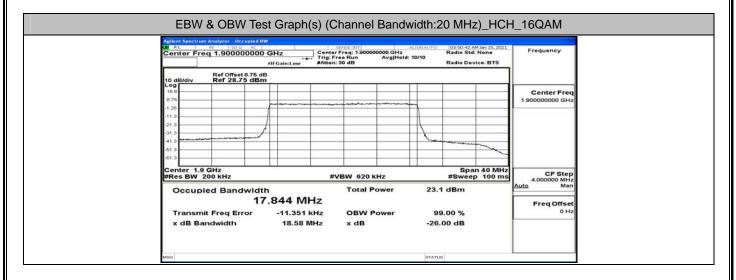




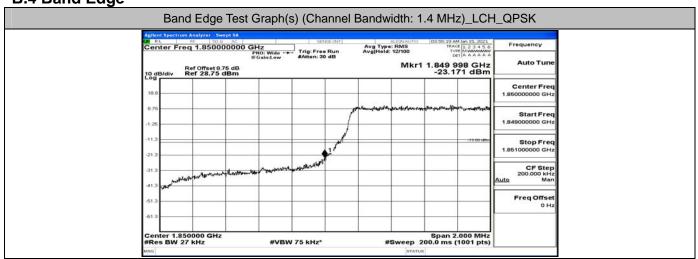


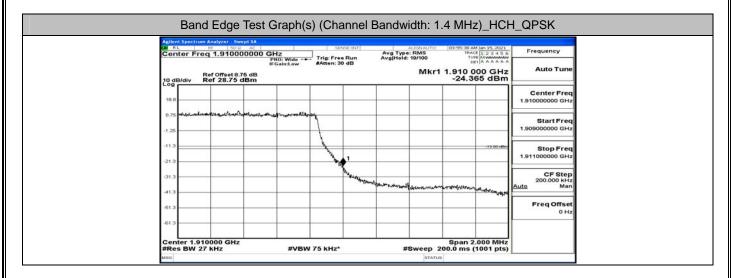


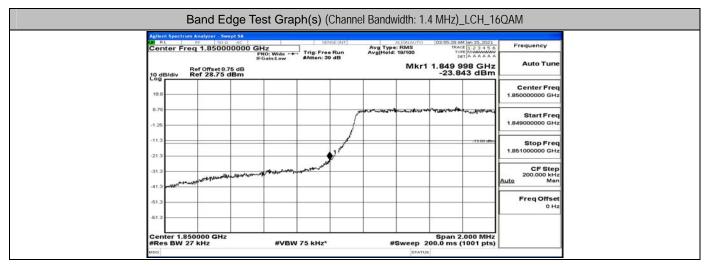


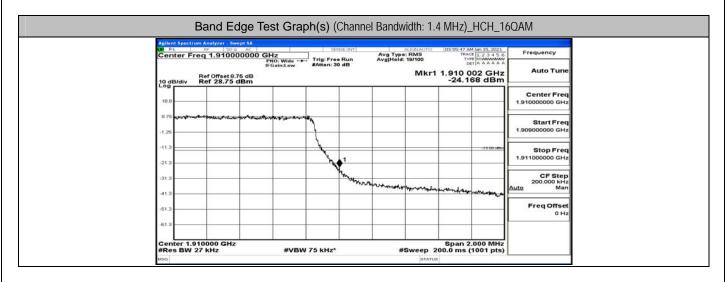


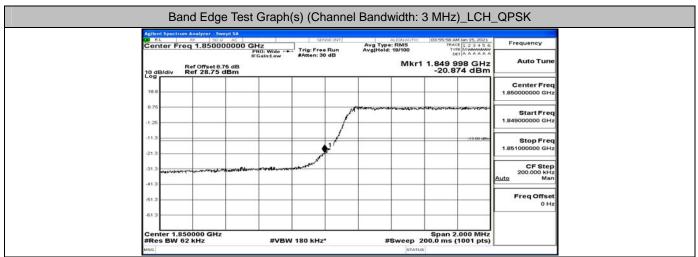
B.4 Band Edge

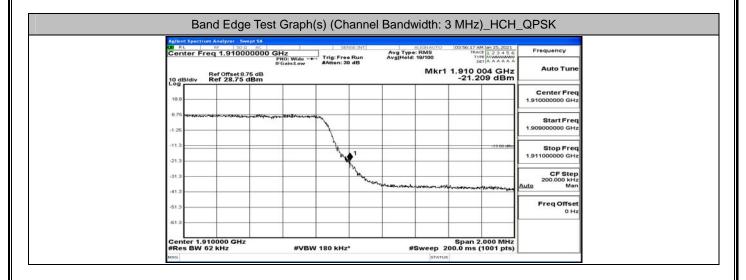


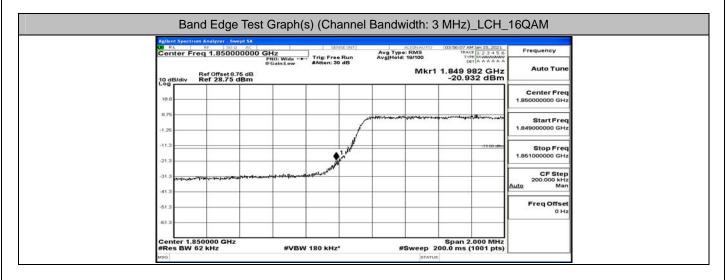


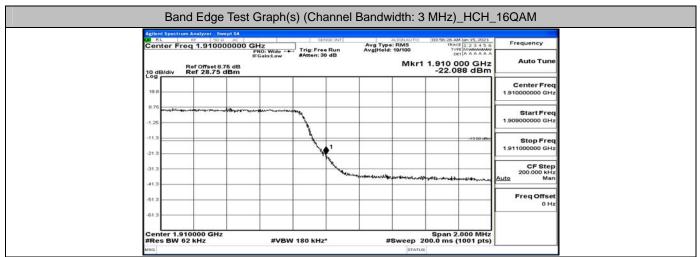


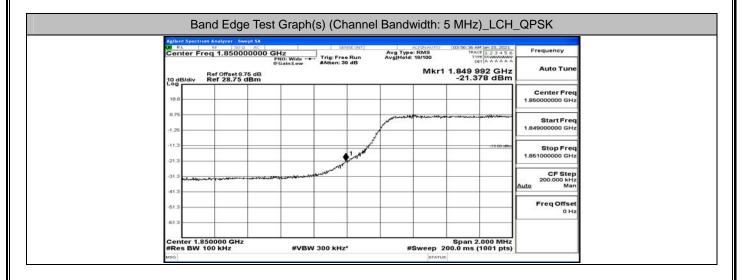


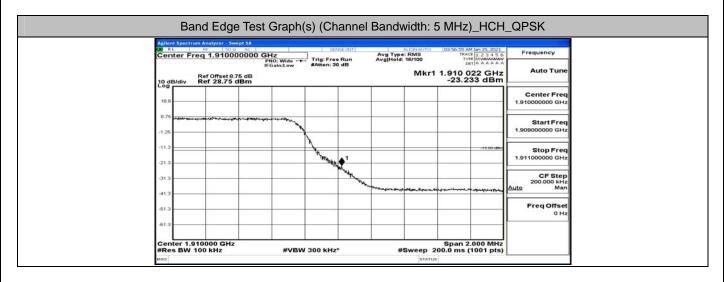


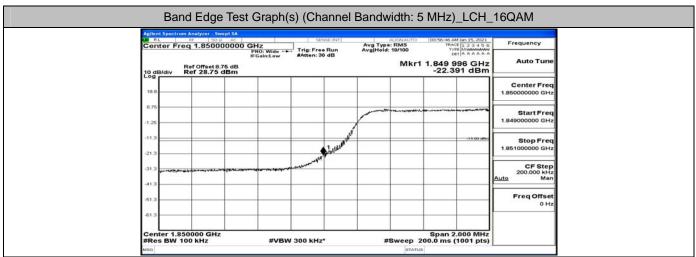


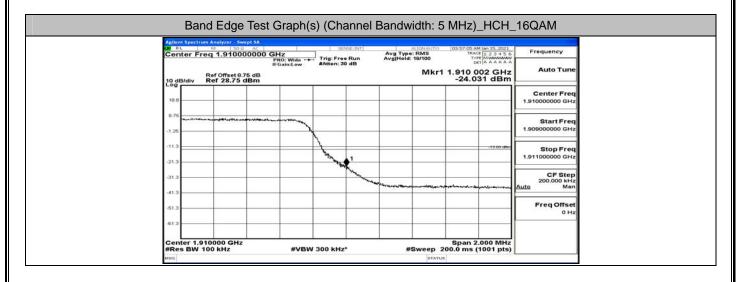


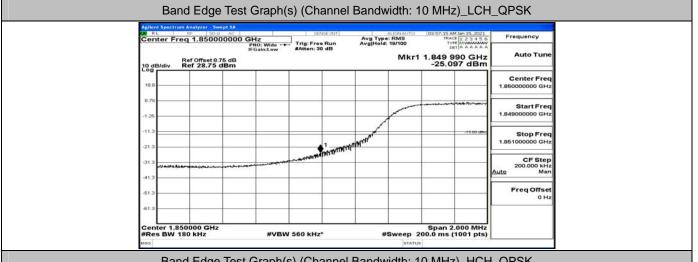








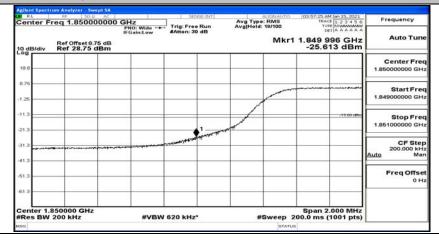


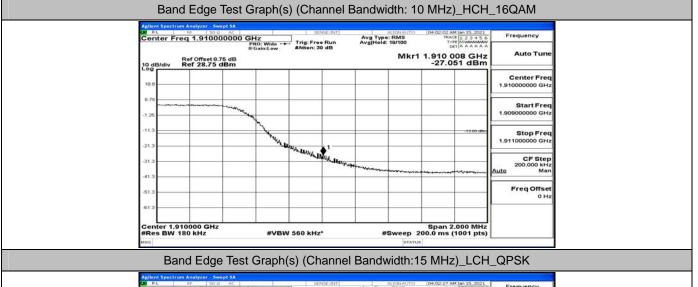


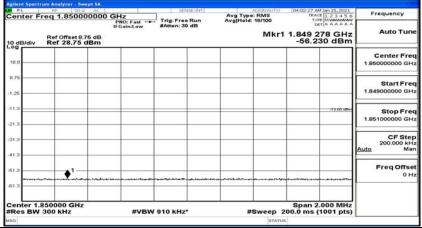
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



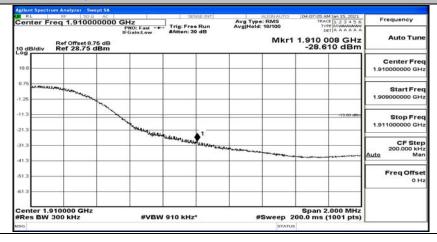
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM

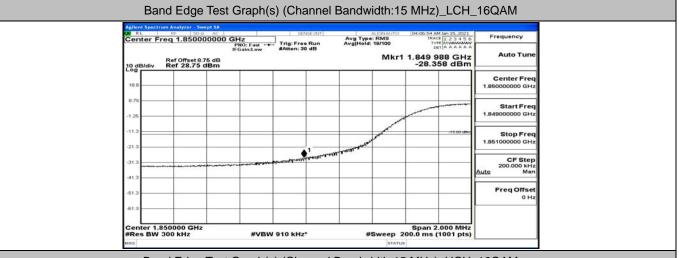




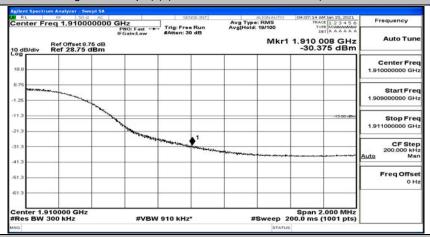


Band Edge Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_QPSK

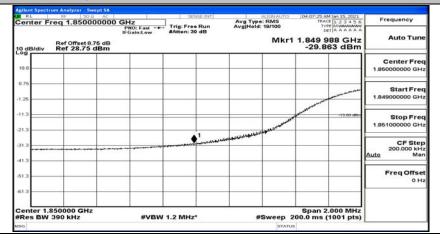


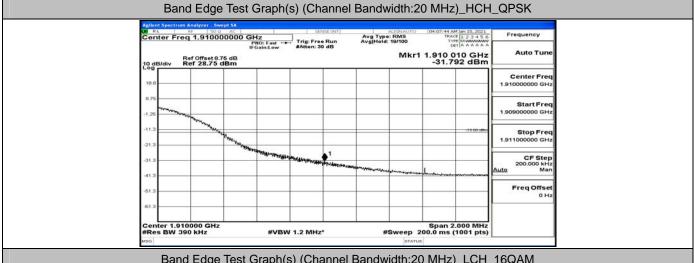


Band Edge Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_16QAM

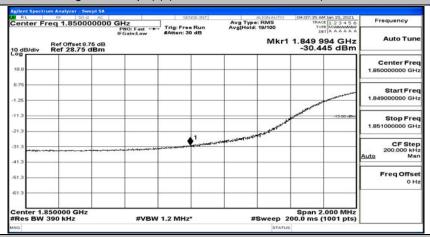


Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK

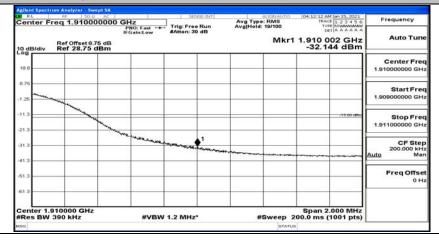




Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_16QAM

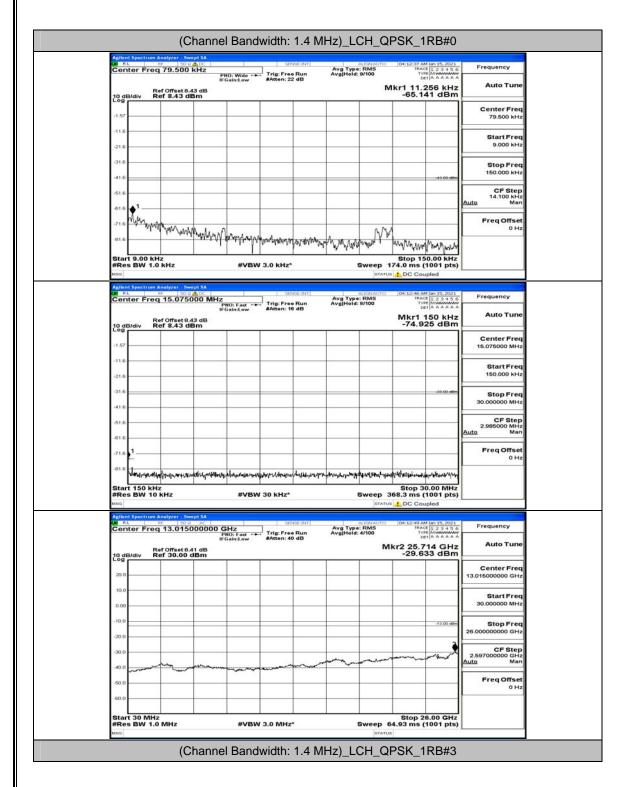


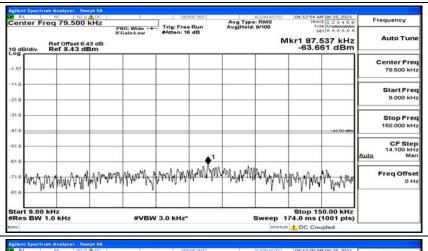
Band Edge Test Graph(s) (Channel Bandwidth: 20 MHz)_HCH_16QAM

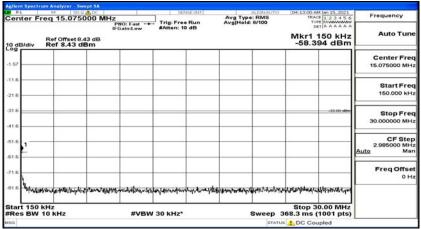


B.5 Conducted Spurious Emission

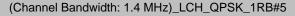
Channel Bandwidth: 1.4 MHz

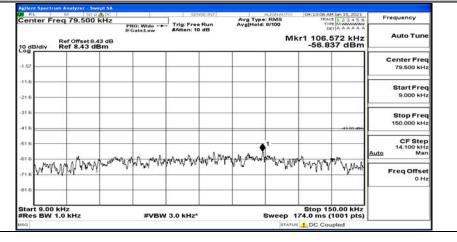












#VBW 3.0 MHz*

Stop 26.00 GHz Sweep 64.93 ms (1001 pts)

Start 30 MHz #Res BW 1.0 MHz

