Appendix C: Test Data for E-UTRA Band 4

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

C.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]	Vardiet	
Modulation	Channel	Size	Offset	QPSK	16QAM	Verdict	
		1	0	23.12	22.34	PASS	
		1	3	23.05	22.37	PASS	
		1	5	22.95	22.24	PASS	
	LCH	3	0	22.91	22.13	PASS	
		3	2	22.88	22.10	PASS	
		3	3	22.83	22.01	PASS	
		6	0	22.73	21.84	PASS	
		1	0	23.28	22.66	PASS	
	MCH	1	3	23.26	22.44	PASS	
QPSK /		1	5	23.14	22.42	PASS	
16QAM		3	0	23.34	22.46	PASS	
IOQAW		3	2	23.29	22.46	PASS	
		3	3	23.19	22.37	PASS	
		6	0	22.16	21.01	PASS	
		1	0	23.09	21.81	PASS	
		1	3	23.24	21.90	PASS	
		1	5	23.34	21.80	PASS	
	HCH	3	0	23.17	21.87	PASS	
		3	2	23.25	21.80	PASS	
		3	3	23.24	21.89	PASS	
		6	0	22.07	21.06	PASS	

Conducted Output Power Test Result (Channel Bandwidth: 3 MHz)							
Madulation	Channal	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	\/a ==li at	
Modulation	Channel	Size	Offset	QPSK	16QAM	Verdict	
		1	0	22.70	22.00	PASS	
		1	7	22.66	22.04	PASS	
		1	14	22.51	21.84	PASS	
	LCH	8	0	22.52	21.68	PASS	
		8	4	22.50	21.68	PASS	
		8	7	22.44	21.59	PASS	
		15	0	22.43	21.58	PASS	
		1	0	23.18	22.54	PASS	
	МСН	1	7	23.45	22.62	PASS	
ODCK /		1	14	23.58	22.45	PASS	
QPSK / 16QAM		8	0	22.32	21.24	PASS	
IOQAW		8	4	22.29	21.37	PASS	
		8	7	22.17	21.31	PASS	
		15	0	22.21	21.21	PASS	
		1	0	23.05	22.06	PASS	
		1	7	23.39	22.37	PASS	
		1	14	23.25	22.54	PASS	
	HCH	8	0	22.08	20.96	PASS	
		8	4	22.07	21.10	PASS	
		8	7	22.12	20.99	PASS	
		15	0	22.01	21.15	PASS	

Conducted Output Power Test Result (Channel Bandwidth: 5 MHz)								
Madulation	Channel	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	Vardiet		
Modulation	Channel	Size	Offset	QPSK	16QAM	Verdict		
		1	0	22.69	21.85	PASS		
		1	12	22.64	21.87	PASS		
		1	24	22.57	21.85	PASS		
	LCH	12	0	22.40	21.56	PASS		
		12	6	22.41	21.57	PASS		
		12	13	22.41	21.55	PASS		
		25	0	22.39	21.52	PASS		
		1	0	23.01	22.08	PASS		
	мсн	1	12	23.35	21.99	PASS		
QPSK /		1	24	23.07	21.86	PASS		
16QAM		12	0	22.26	21.34	PASS		
TOQAW		12	6	22.27	21.37	PASS		
		12	13	22.21	21.28	PASS		
		25	0	22.18	21.49	PASS		
		1	0	23.09	21.84	PASS		
		1	12	23.40	22.23	PASS		
		1	24	23.59	22.29	PASS		
	HCH	12	0	22.02	20.96	PASS		
		12	6	22.20	20.94	PASS		
		12	13	22.21	21.07	PASS		
		25	0	22.08	21.14	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	21.87	21.22	PASS	
		1	24	22.79	22.20	PASS	
		1	49	22.84	22.22	PASS	
	LCH	25	0	22.24	21.32	PASS	
		25	12	22.61	21.72	PASS	
		25	25	22.79	21.91	PASS	
		50	0	22.47	21.59	PASS	
		1	0	22.40	21.90	PASS	
	МСН	1	24	23.33	22.87	PASS	
QPSK /		1	49	23.45	22.97	PASS	
16QAM		25	0	22.27	21.50	PASS	
TOQAW		25	12	22.33	21.50	PASS	
		25	25	22.21	21.24	PASS	
		50	0	22.16	21.23	PASS	
		1	0	22.76	22.22	PASS	
		1	24	23.10	22.63	PASS	
		1	49	22.67	22.21	PASS	
	HCH	25	0	22.16	21.32	PASS	
		25	12	22.21	21.37	PASS	
		25	25	22.17	21.19	PASS	
		50	0	22.15	21.05	PASS	

	Conducted Output Power Test Result (Channel Bandwidth: 15 MHz)								
Madulation	Channal	RB Con	figuration	Average Power [dBm]	Average Power [dBm]	\/andiat			
Modulation	Channel	Size	Offset	QPSK	16QAM	Verdict			
		1	0	22.85	21.16	PASS			
		1	37	23.29	22.67	PASS			
		1	74	23.01	22.13	PASS			
	LCH	37	0	22.19	21.31	PASS			
		37	18	22.96	22.12	PASS			
		37	38	22.86	21.96	PASS			
		75	0	22.71	21.85	PASS			
	мсн	1	0	22.55	21.81	PASS			
		1	37	23.24	22.59	PASS			
QPSK /		1	74	23.49	21.90	PASS			
16QAM		37	0	22.40	21.41	PASS			
IOQAIVI		37	18	22.33	21.34	PASS			
		37	38	22.15	21.24	PASS			
		75	0	22.23	21.45	PASS			
		1	0	23.25	22.34	PASS			
		1	37	23.04	22.46	PASS			
		1	74	22.50	21.84	PASS			
	HCH	37	0	22.08	20.98	PASS			
		37	18	22.13	21.07	PASS			
		37	38	22.05	20.99	PASS			
		75	0	22.12	21.17	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	22.43	21.62	PASS			
		1	49	23.77	22.96	PASS			
		1	99	22.99	21.17	PASS			
	LCH	50	0	22.38	21.45	PASS			
		50	25	23.18	22.17	PASS			
		50	50	22.63	21.73	PASS			
		100	0	22.70	21.81	PASS			
	МСН	1	0	22.63	22.03	PASS			
		1	49	23.21	22.66	PASS			
ODCK /		1	99	23.13	21.63	PASS			
QPSK / 16QAM		50	0	22.43	21.50	PASS			
TOQAW		50	25	22.29	21.44	PASS			
		50	50	22.09	21.22	PASS			
		100	0	22.26	21.49	PASS			
		1	0	22.75	22.12	PASS			
		1	49	23.40	22.82	PASS			
		1	99	22.08	21.49	PASS			
	HCH	50	0	22.09	21.15	PASS			
		50	25	22.15	21.21	PASS			
		50	50	22.11	21.03	PASS			
		100	0	22.13	21.07	PASS			

C.2 Peak-to-Average Ratio

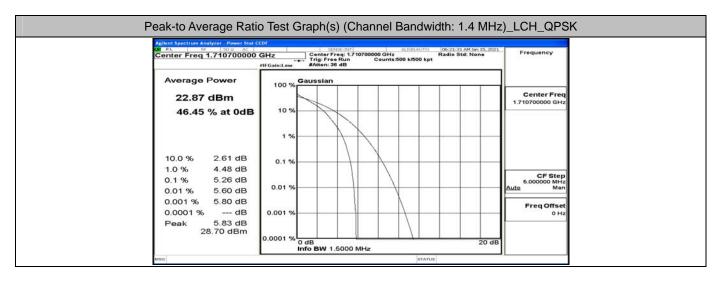
Peak-to Average Ratio Test Result (Channel Bandwidth: 1.4 MHz)							
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict			
Modulation	Grianner	[dB]	[dB]	verdict			
	LCH	5.26	<13	PASS			
QPSK	MCH	5.28	<13	PASS			
	HCH	5.21	<13	PASS			
	LCH	6.08	<13	PASS			
16QAM	MCH	6.13	<13	PASS			
	HCH	6.04	<13	PASS			

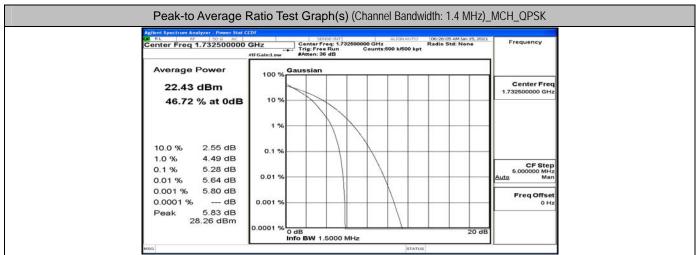
Peak-to Average Ratio Test Result (Channel Bandwidth: 3 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Vordict		
Modulation	Channel	[dB]	[dB]	Verdict		
	LCH	5.36	<13	PASS		
QPSK	MCH	5.37	<13	PASS		
	HCH	5.26	<13	PASS		
	LCH	6.23	<13	PASS		
16QAM	MCH	6.11	<13	PASS		
	HCH	6.06	<13	PASS		

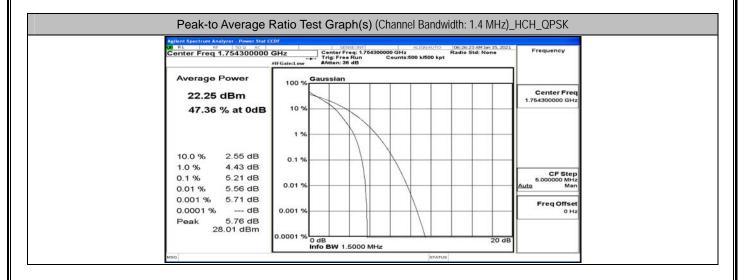
Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict		
Modulation	Charmer	[dB]	[dB]	verdict		
	LCH	5.36	<13	PASS		
QPSK	MCH	5.3	<13	PASS		
	HCH	5.32	<13	PASS		
	LCH	6.1	<13	PASS		
16QAM	MCH	6.08	<13	PASS		
	HCH	6.06	<13	PASS		

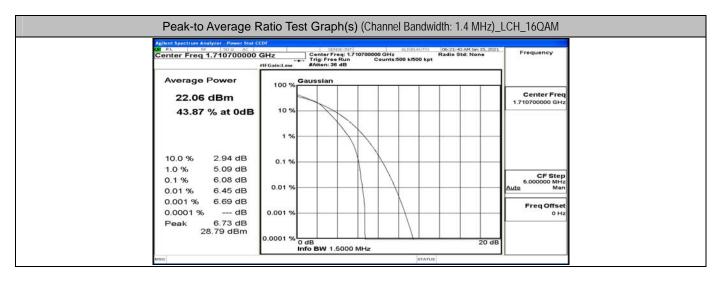
	Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict			
iviodulation	Griannei	[dB]	[dB]	verdict			
	LCH	5.31	<13	PASS			
QPSK	MCH	5.31	<13	PASS			
	HCH	5.27	<13	PASS			
	LCH	6.1	<13	PASS			
16QAM	MCH	6.05	<13	PASS			
	HCH	6.04	<13	PASS			

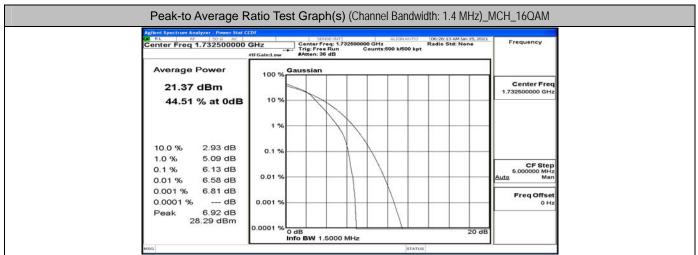
	Peak-to Average Ratio Test Result (Channel Bandwidth: 20 MHz)						
Modulation	Channel	Peak-to-Average Ratio	Limit	Verdict			
Modulation	Griannei	[dB]	[dB]	verdict			
	LCH	5.64	<13	PASS			
QPSK	MCH	5.71	<13	PASS			
	HCH	5.76	<13	PASS			
	LCH	6.74	<13	PASS			
16QAM	MCH	6.7	<13	PASS			
	HCH	6.6	<13	PASS			

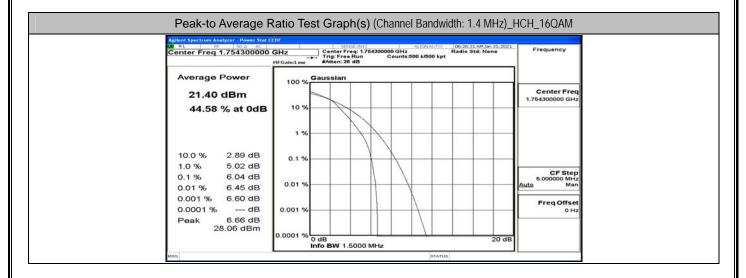


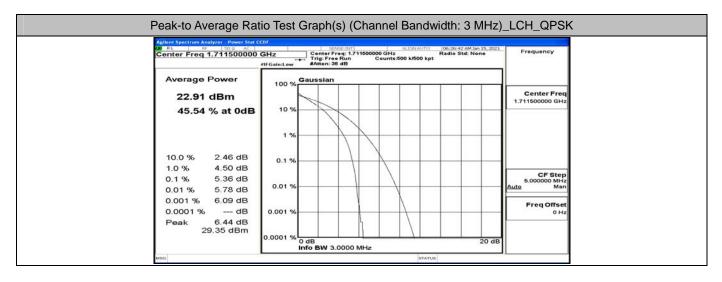


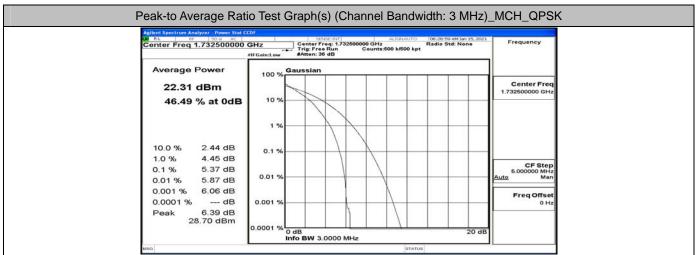


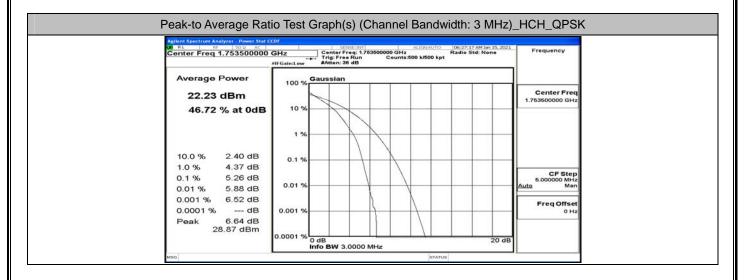


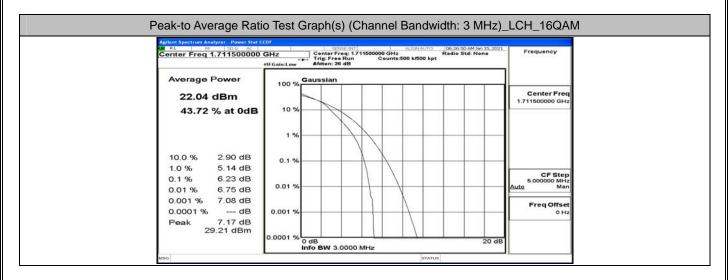


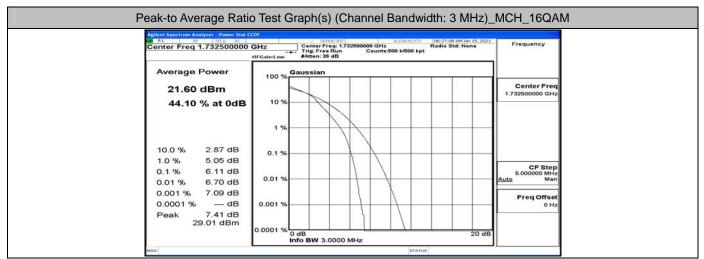


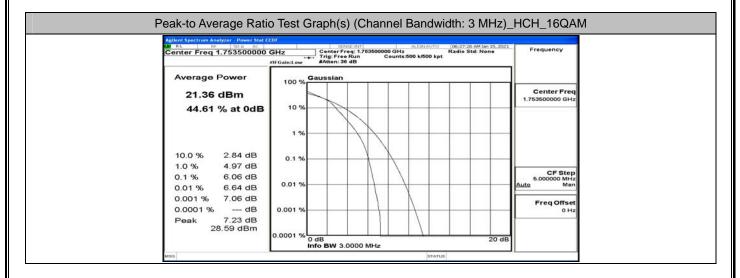


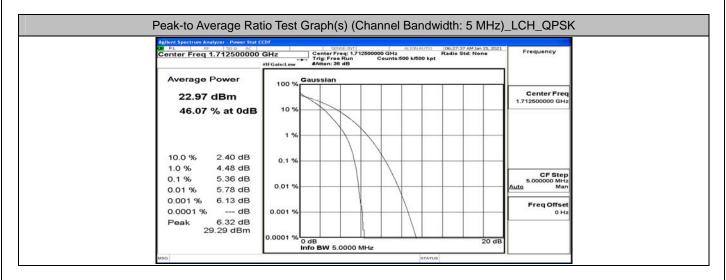


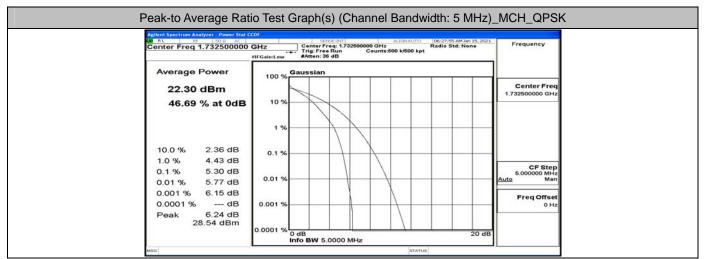


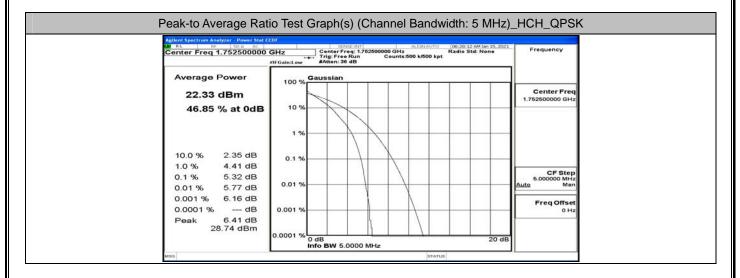


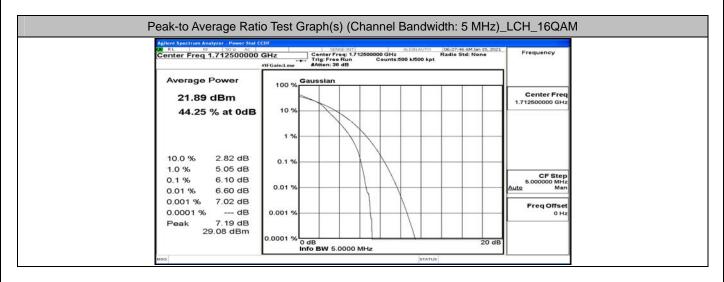


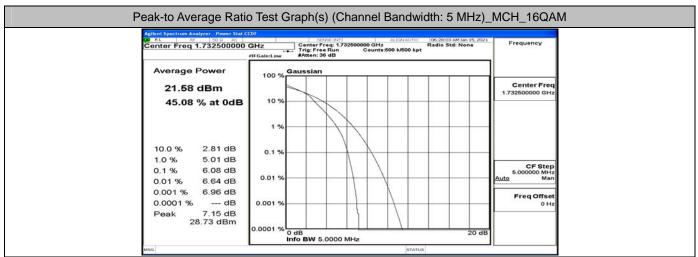


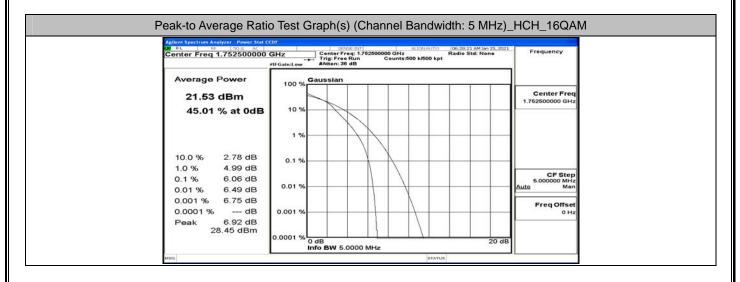


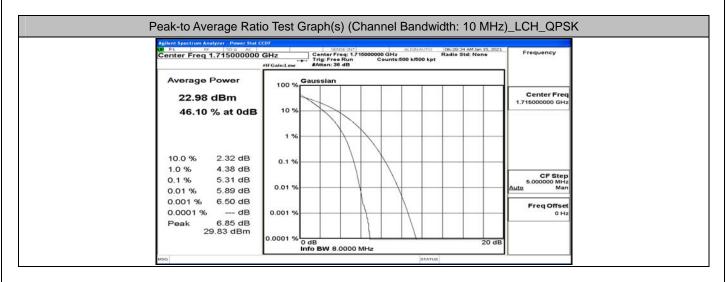


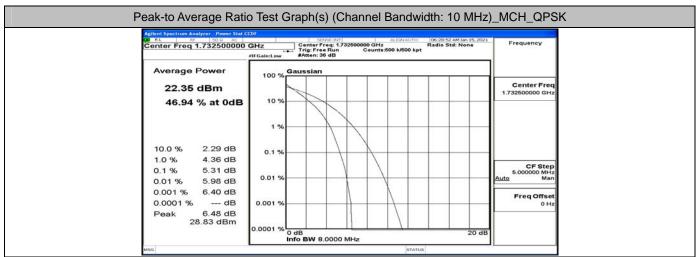


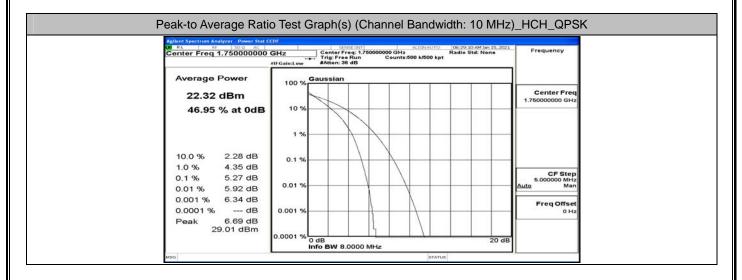


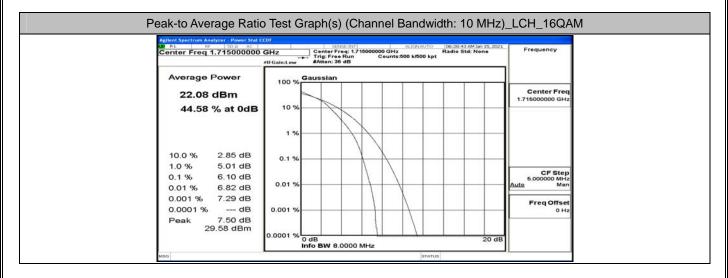


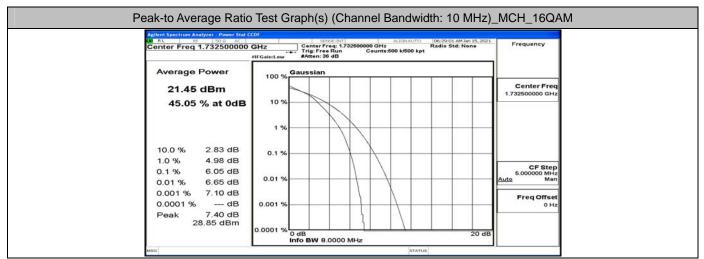


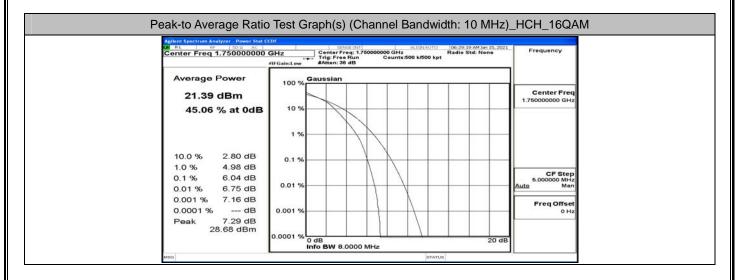


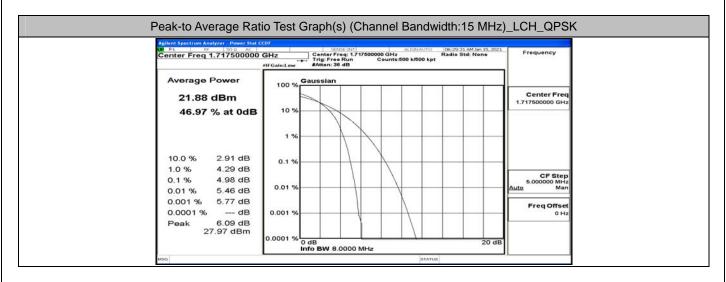


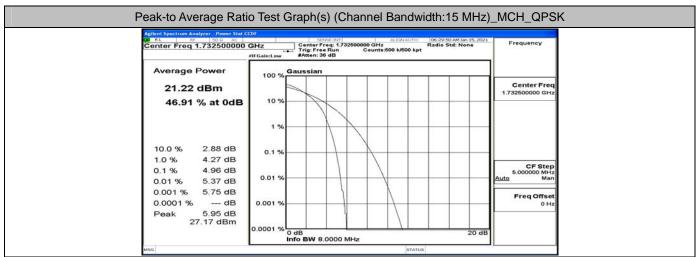


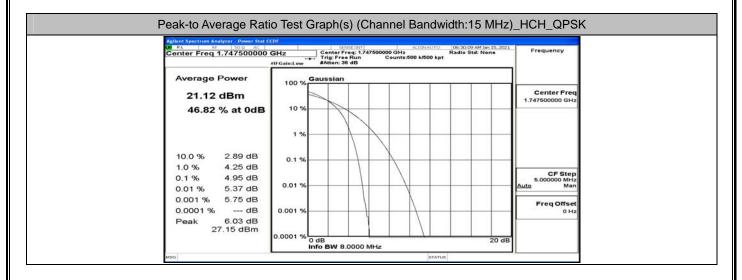


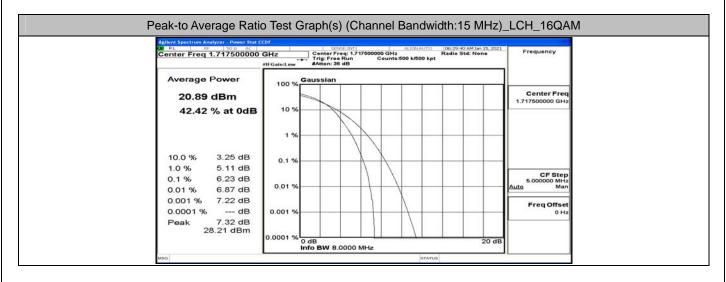


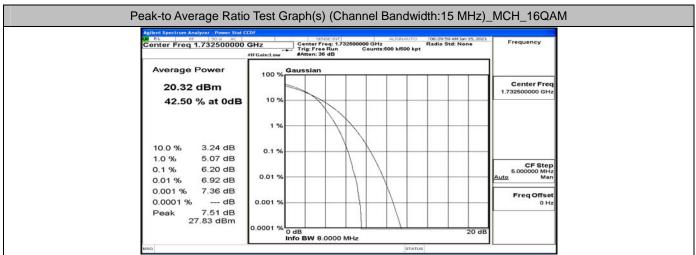


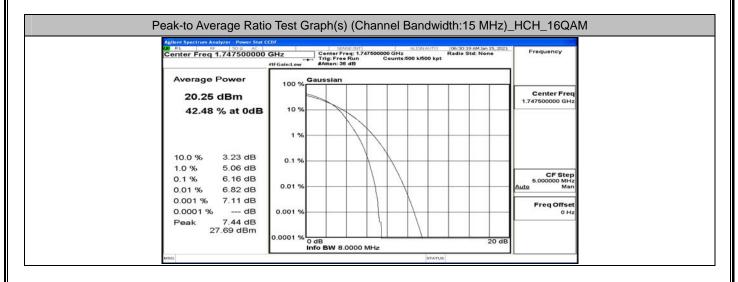


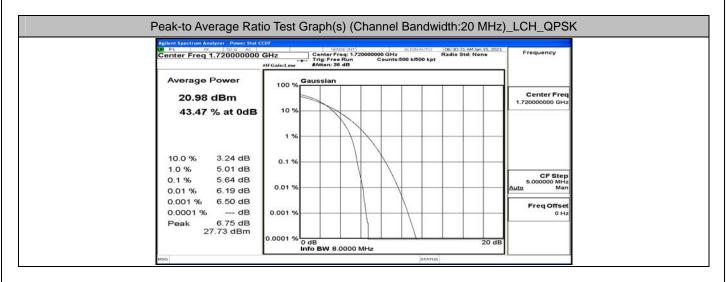


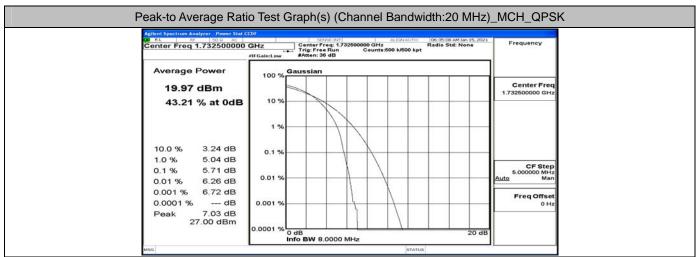


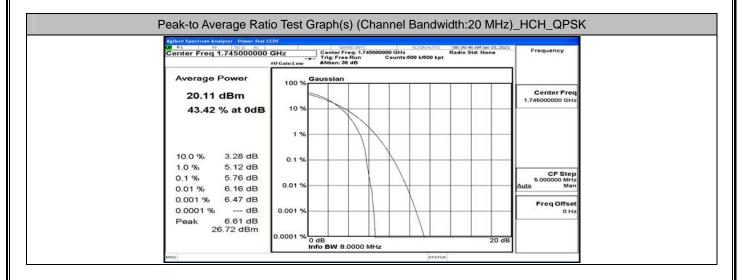


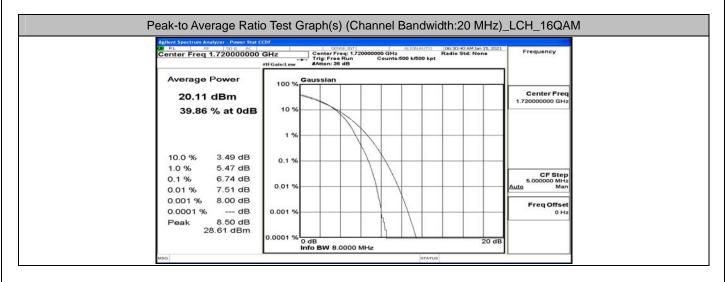


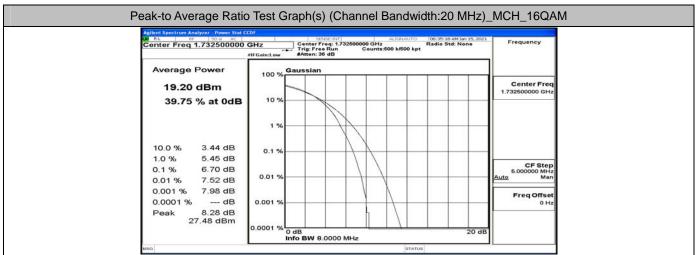


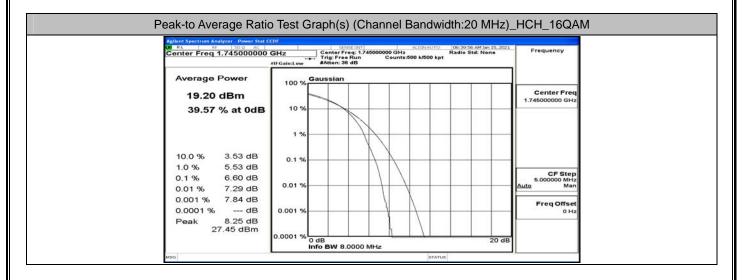












C.3 26dB Bandwidth and Occupied Bandwidth

EBW & OBW Test Result (Channel Bandwidth: 1.4 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
		(MHz)	(MHz)	
QPSK	LCH	1.0787	1.229	PASS
	MCH	1.0771	1.222	PASS
	HCH	1.0776	1.238	PASS
16QAM	LCH	1.0814	1.234	PASS
	MCH	1.0801	1.236	PASS
	HCH	1.0784	1.245	PASS

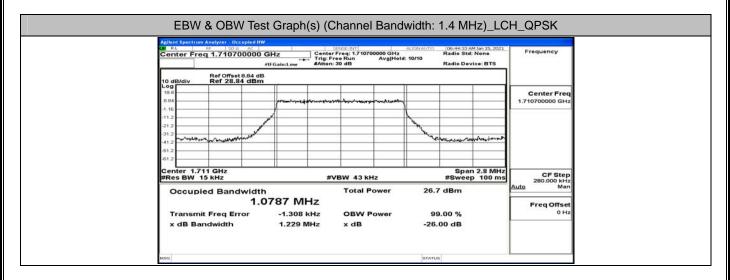
EBW & OBW Test Result (Channel Bandwidth: 3 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
		(MHz)	(MHz)	
QPSK	LCH	5.9539	6.000	PASS
	MCH	2.6855	2.893	PASS
	HCH	2.6845	2.869	PASS
16QAM	LCH	2.6841	2.887	PASS
	MCH	2.6868	2.903	PASS
	HCH	2.6767	2.907	PASS

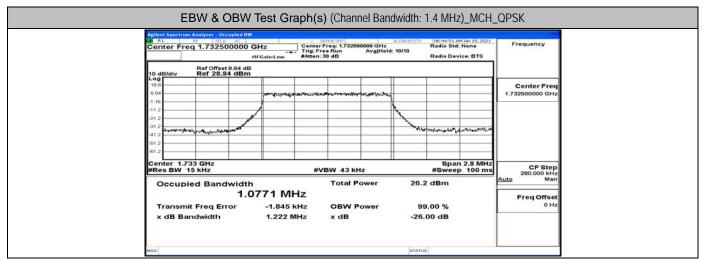
EBW & OBW Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
		(MHz)	(MHz)	
QPSK	LCH	4.4723	4.811	PASS
	MCH	4.4700	4.837	PASS
	HCH	4.4780	4.793	PASS
16QAM	LCH	4.4780	4.793	PASS
	MCH	4.4756	4.758	PASS
	HCH	4.4804	4.786	PASS

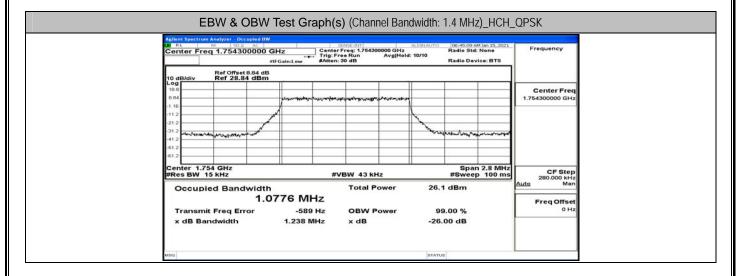
EBW & OBW Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
		(MHz)	(MHz)	
QPSK	LCH	8.9375	9.431	PASS
	MCH	8.9209	9.441	PASS
	HCH	8.9223	9.423	PASS
16QAM	LCH	8.9320	9.487	PASS
	MCH	8.9320	9.487	PASS
	HCH	8.9389	9.496	PASS

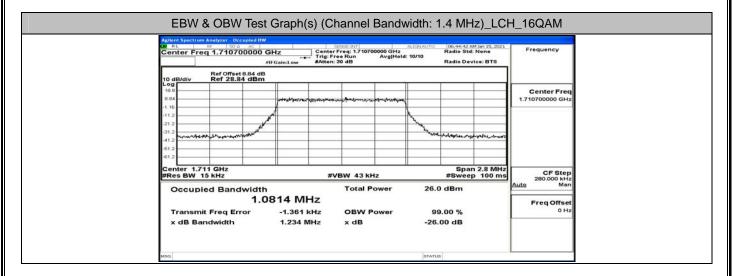
EBW & OBW Test Result (Channel Bandwidth: 15 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
	1.011	(MHz)	(MHz)	P4.00
QPSK	LCH	13.365	13.94	PASS
	MCH	13.376	13.97	PASS
	HCH	13.393	14.07	PASS
16QAM	LCH	13.368	13.92	PASS
	MCH	13.385	14.02	PASS
	HCH	13.402	14.05	PASS

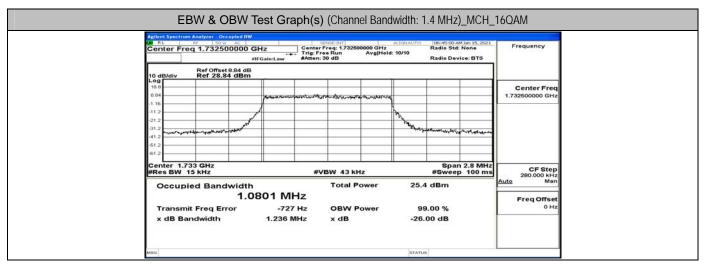
EBW & OBW Test Result (Channel Bandwidth: 20 MHz)				
Modulation	Channel	Occupied Bandwidth	26dB Bandwidth	Verdict
		(MHz)	(MHz)	
QPSK	LCH	17.778	18.52	PASS
	MCH	17.835	18.58	PASS
	HCH	17.840	18.60	PASS
16QAM	LCH	17.805	18.52	PASS
	MCH	17.846	18.64	PASS
	HCH	17.812	18.56	PASS

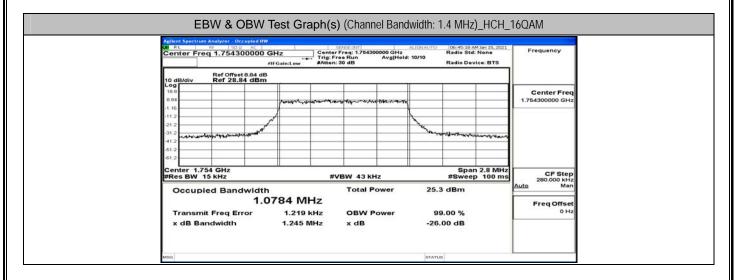


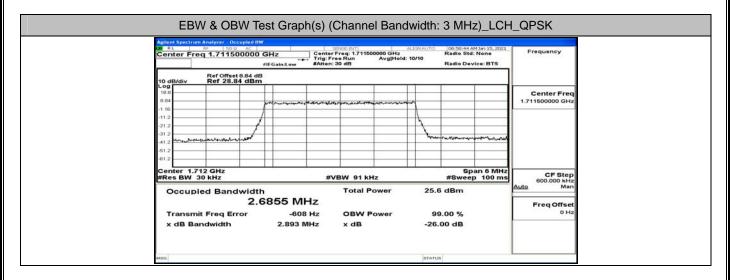


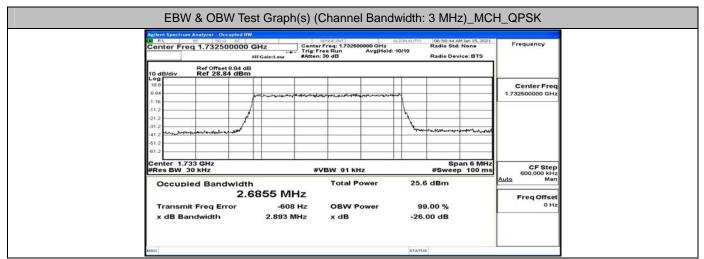


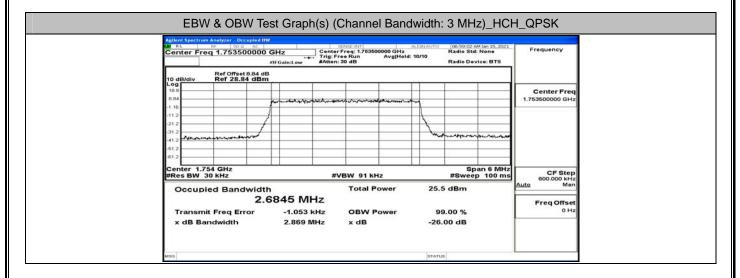


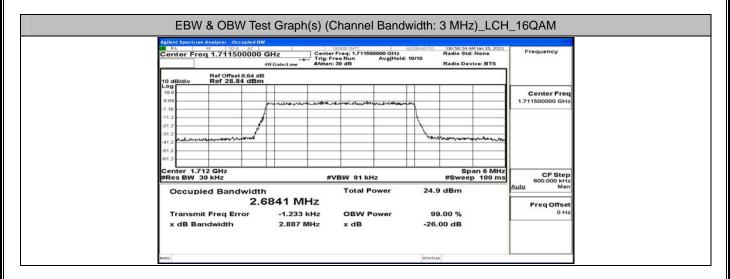


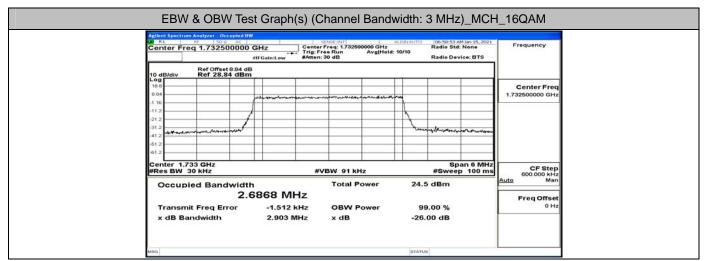


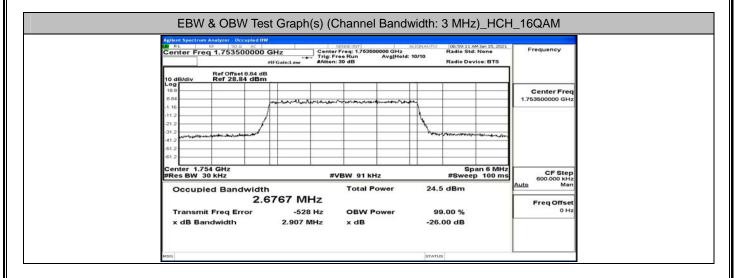


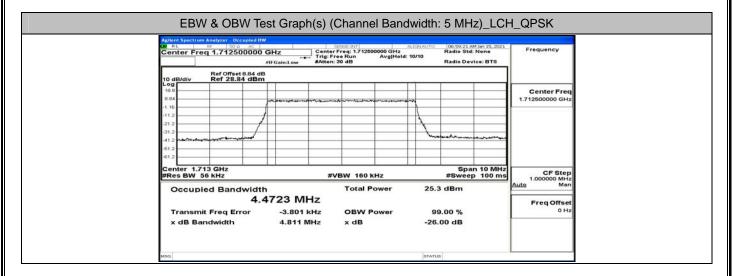


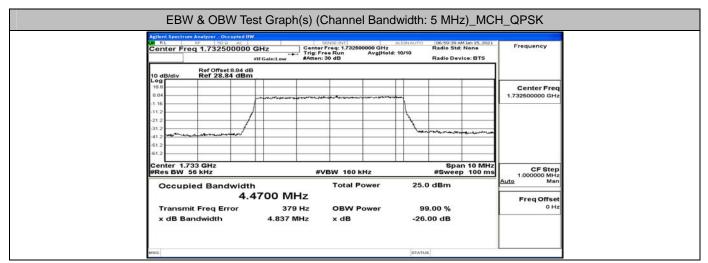


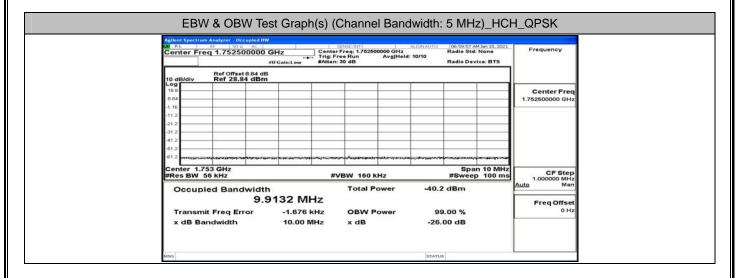


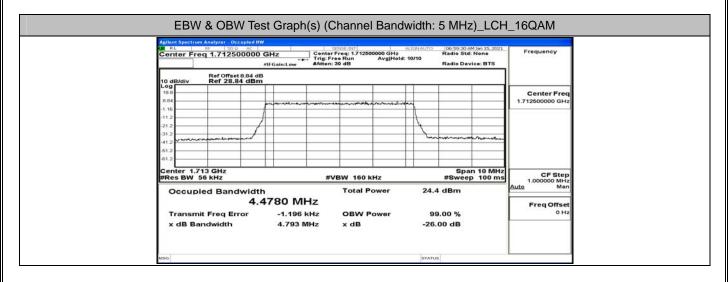


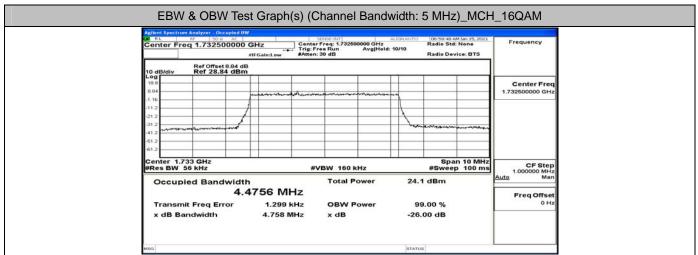


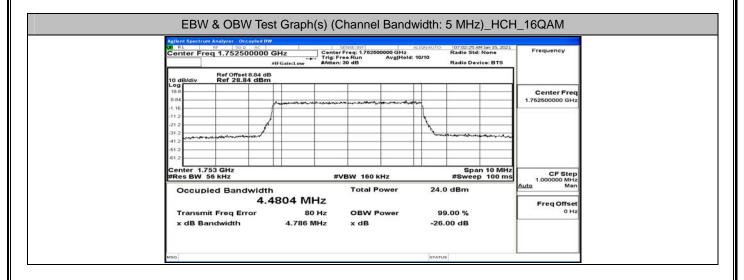


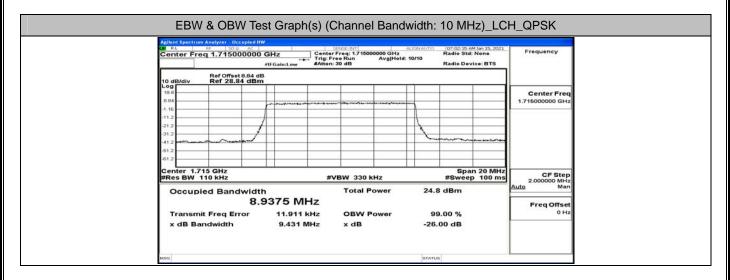


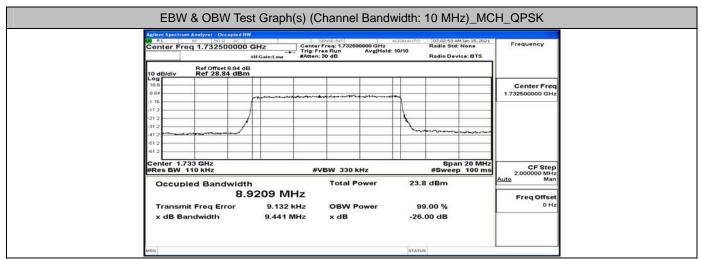


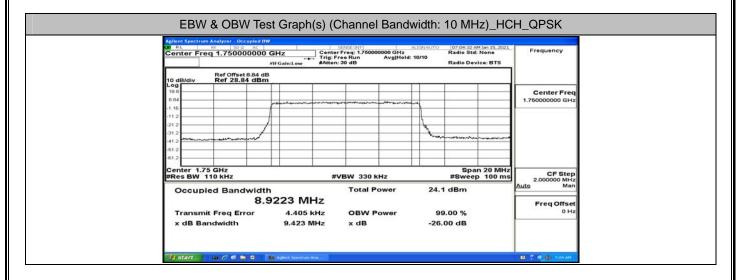


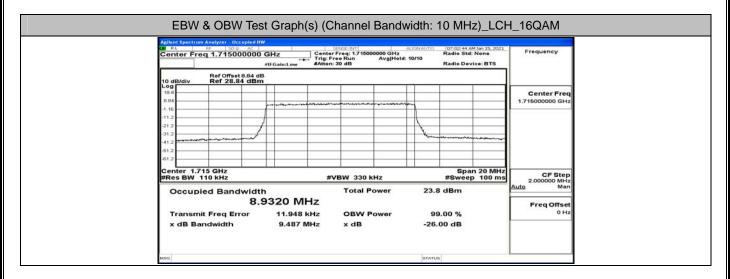


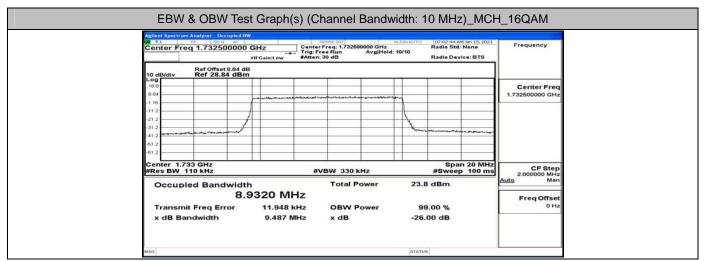


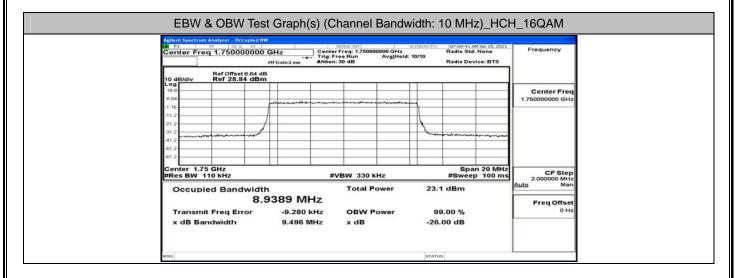


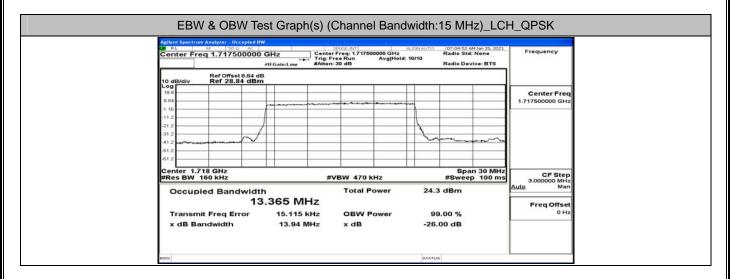


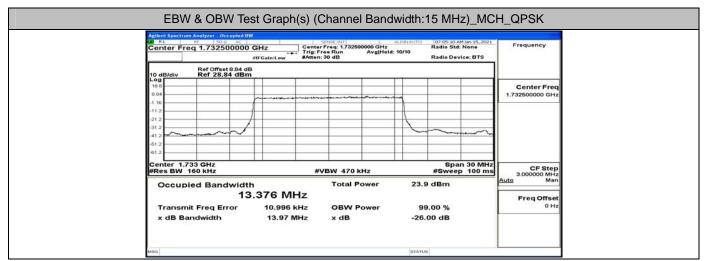


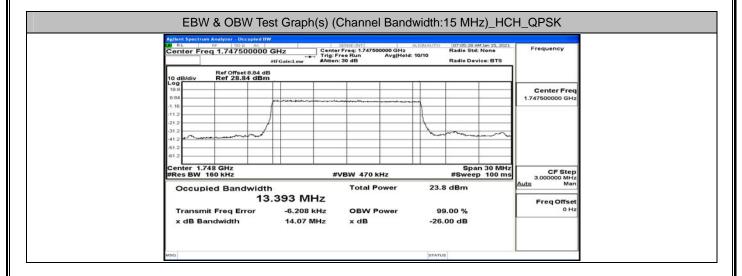


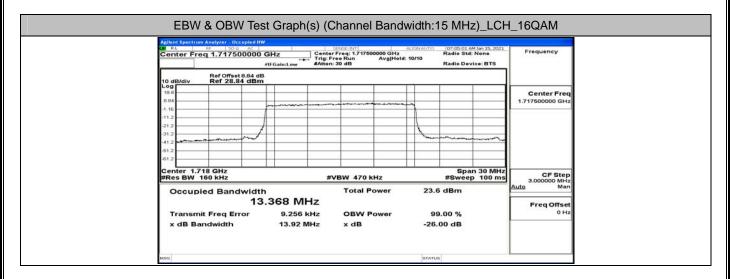


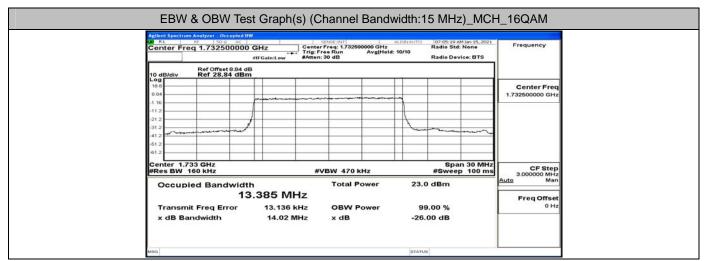


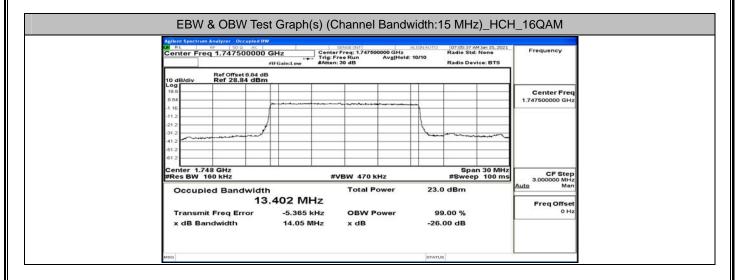


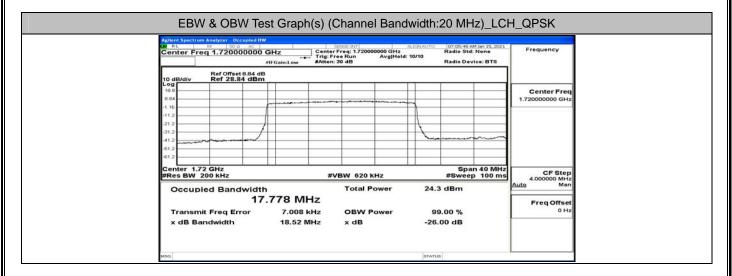


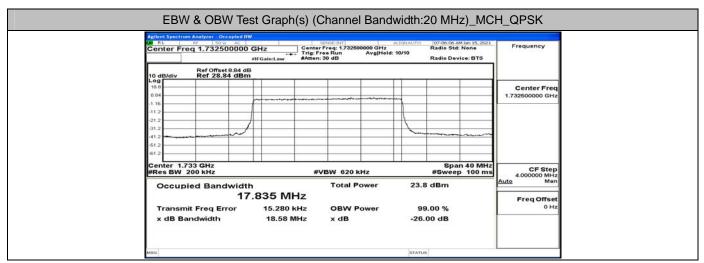


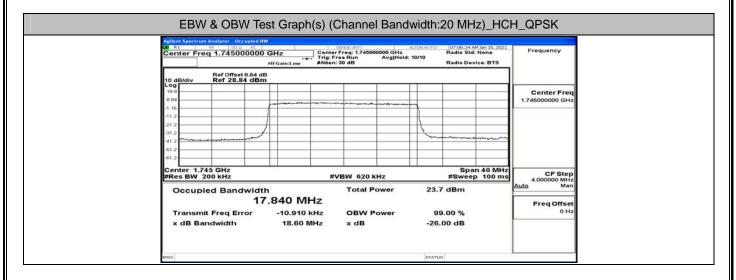


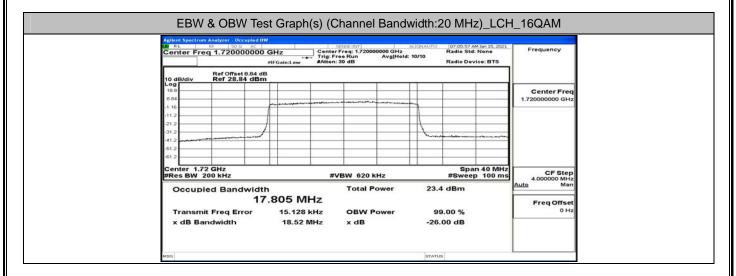


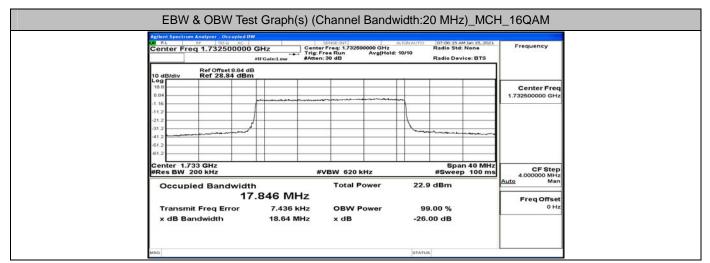


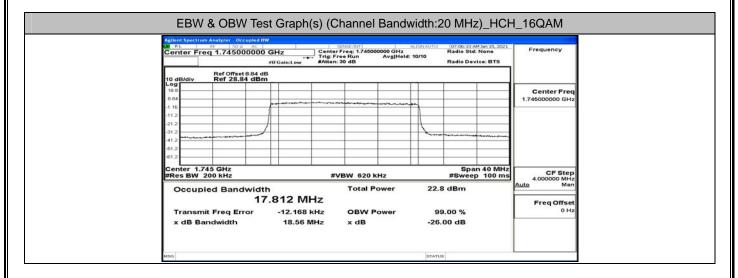




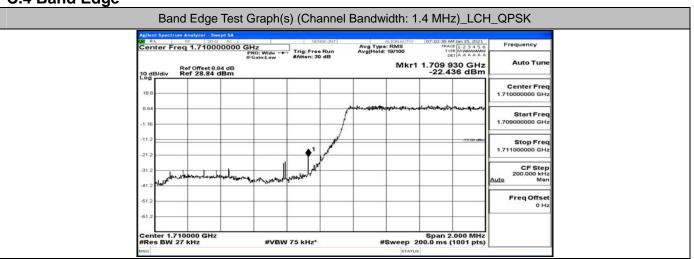


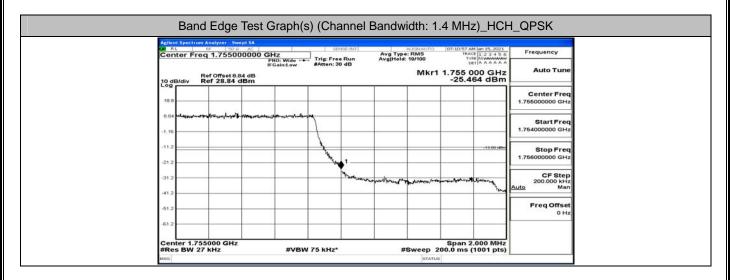


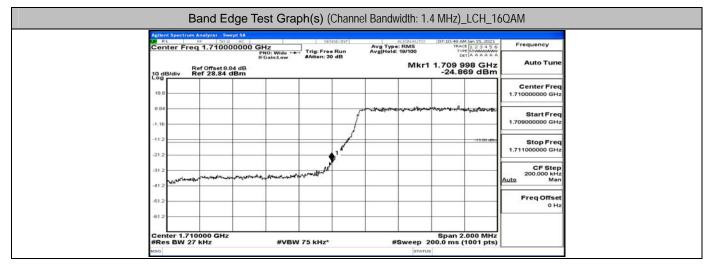


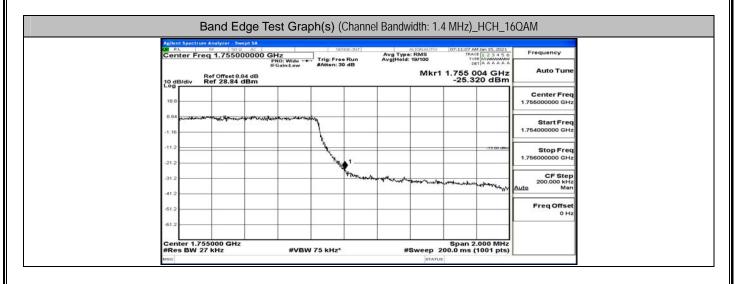


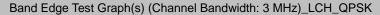
C.4 Band Edge



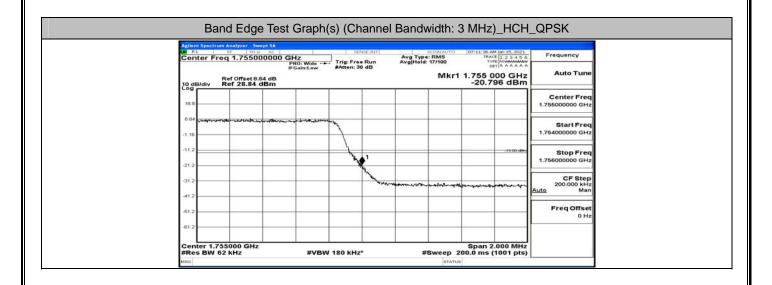


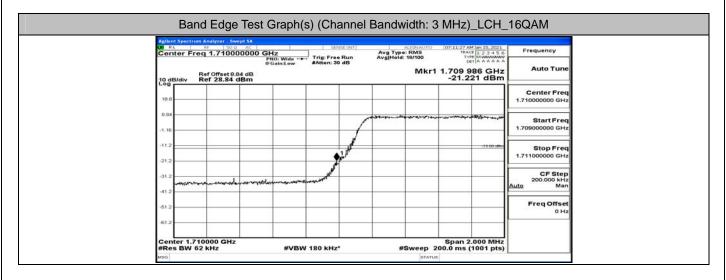


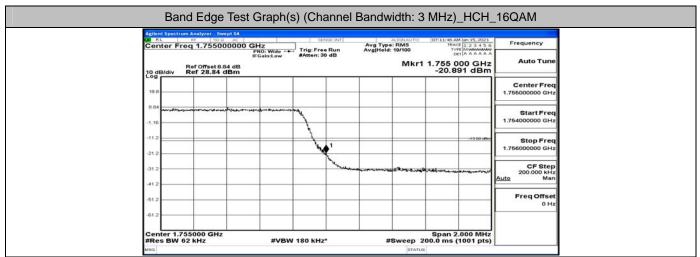


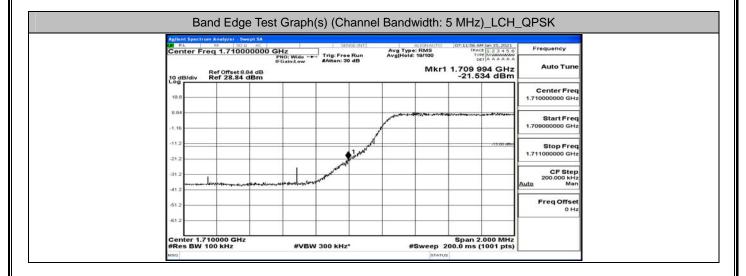


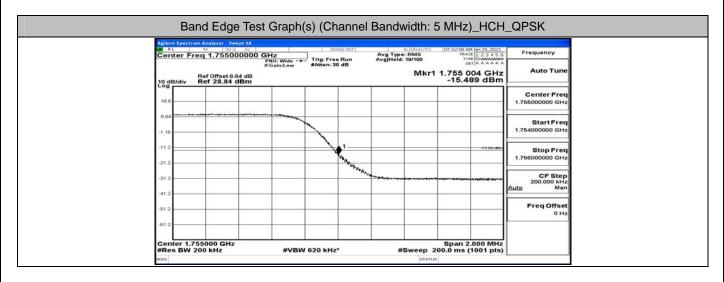
#Img-QPSK-L-3-F-L-BE

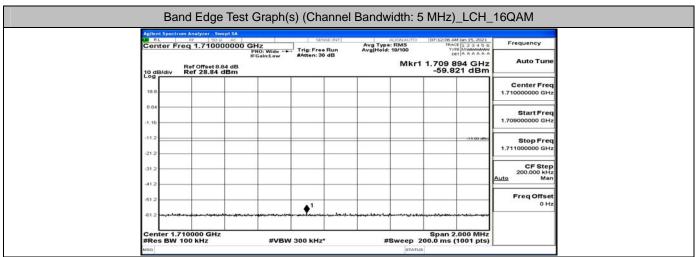


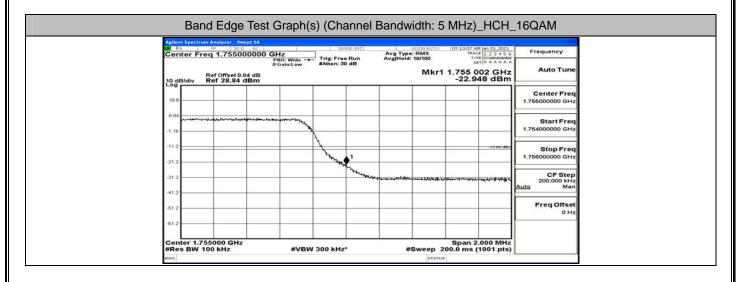


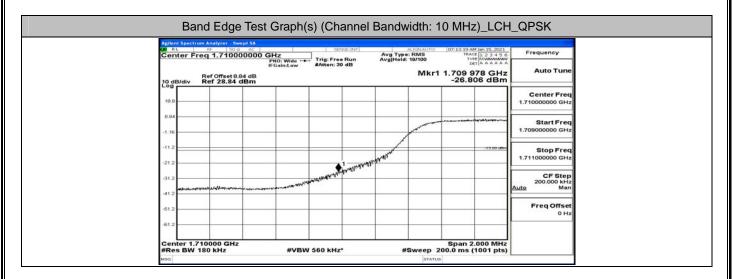


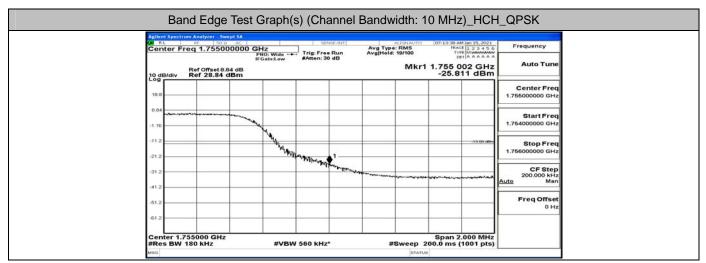


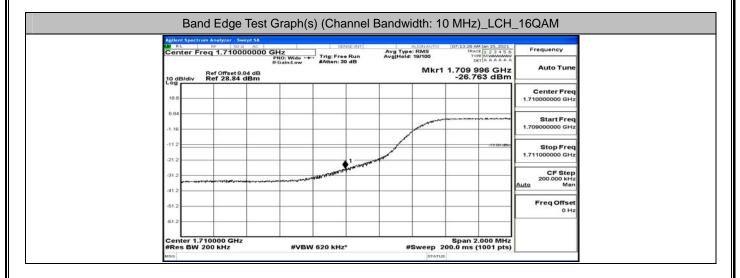


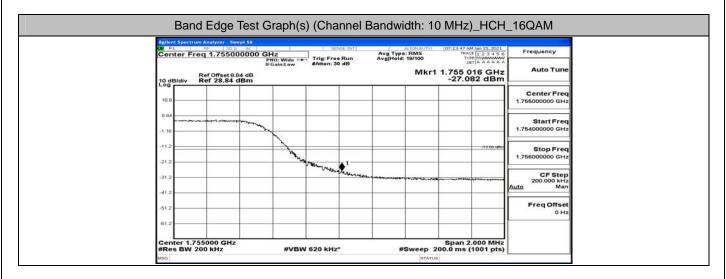


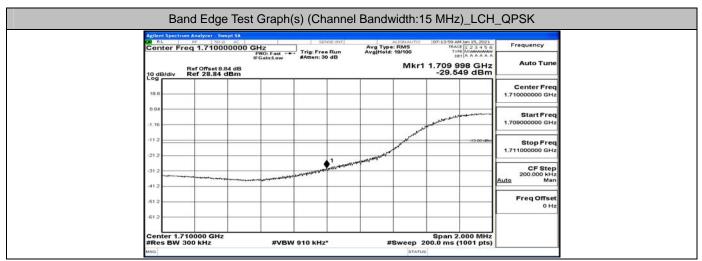


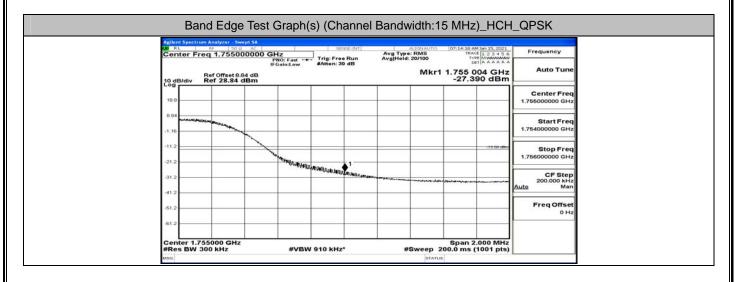


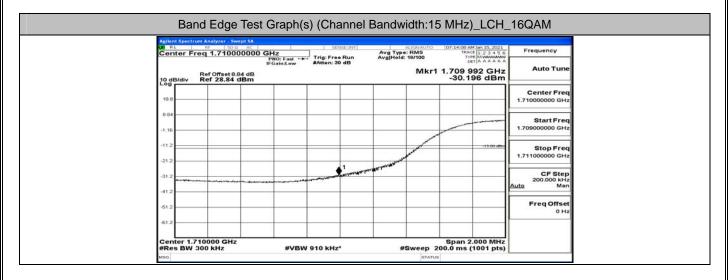


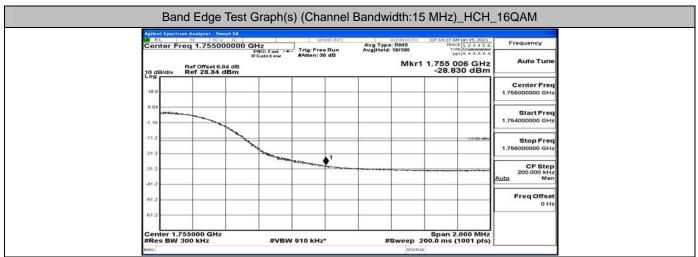


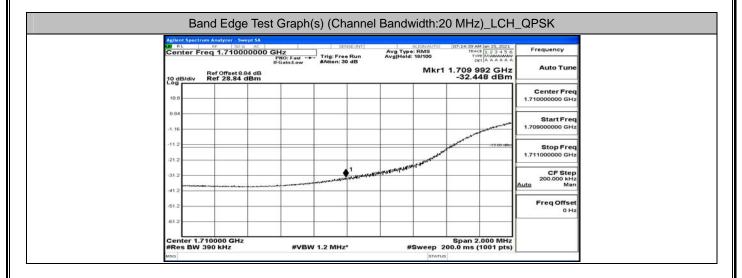


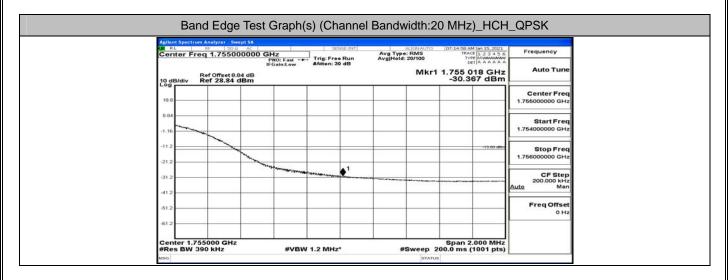


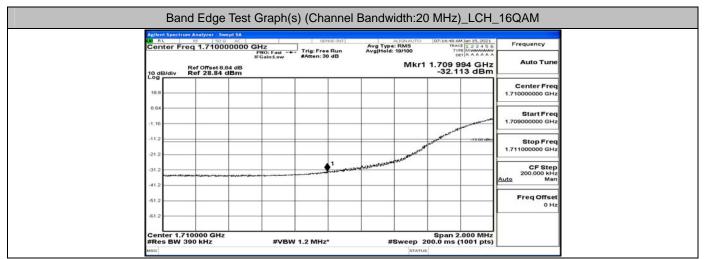


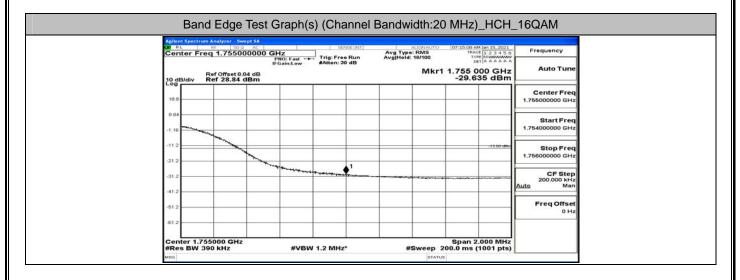






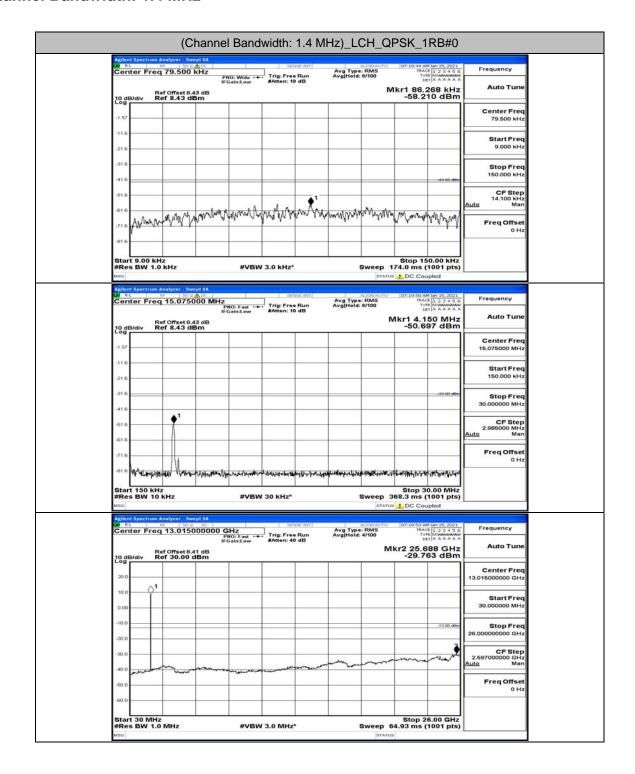


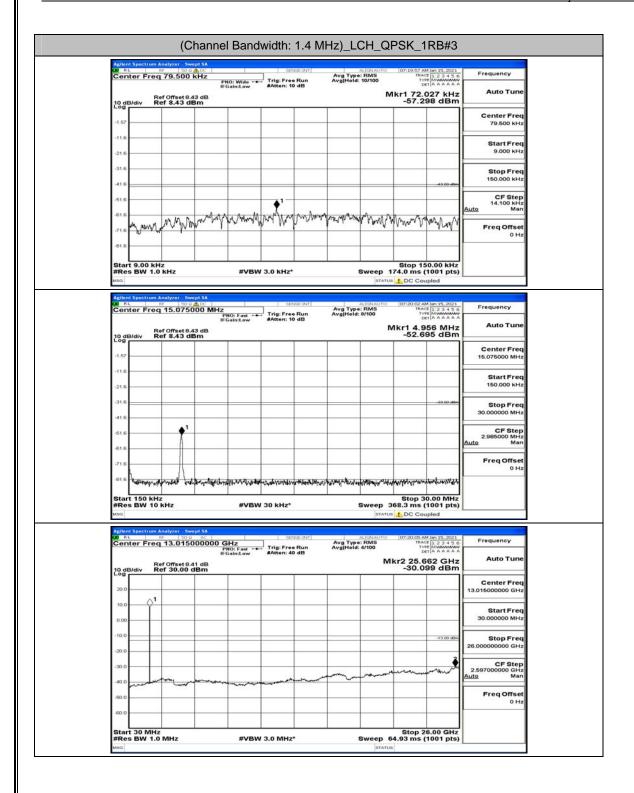


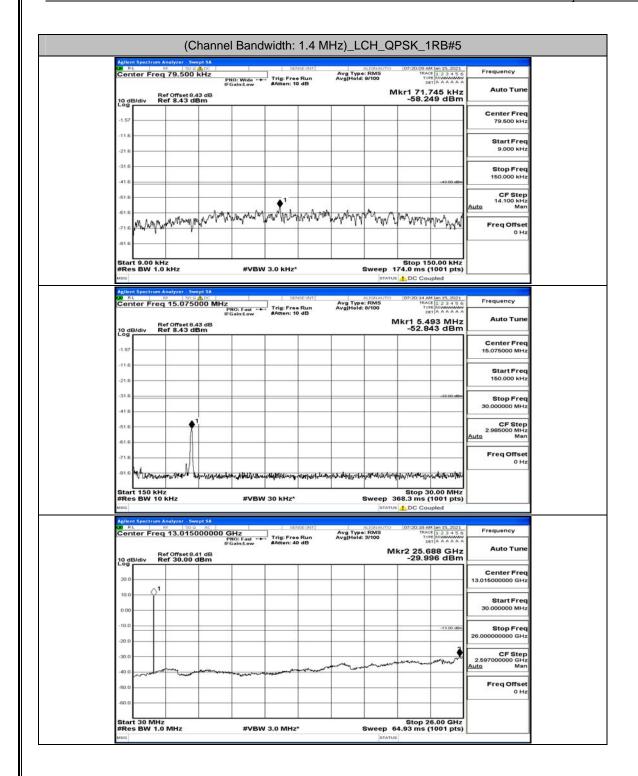


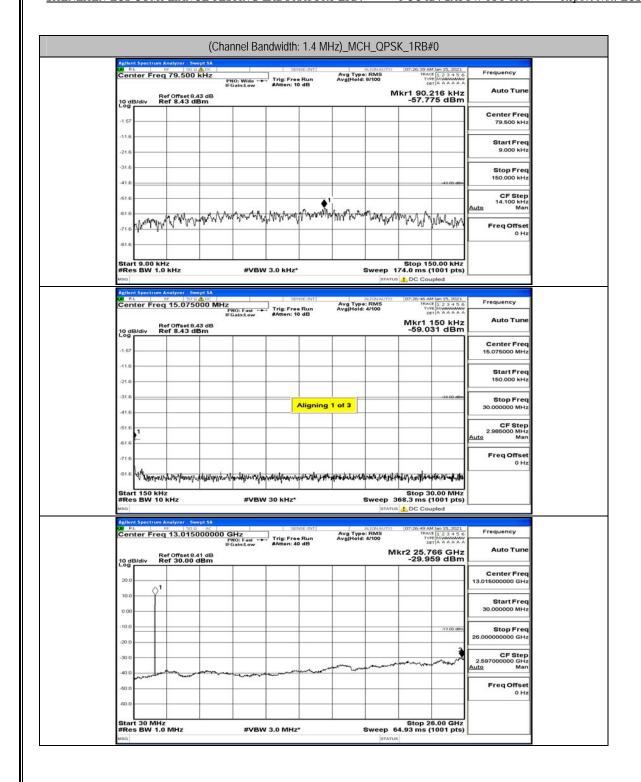
C.5 Conducted Spurious Emission

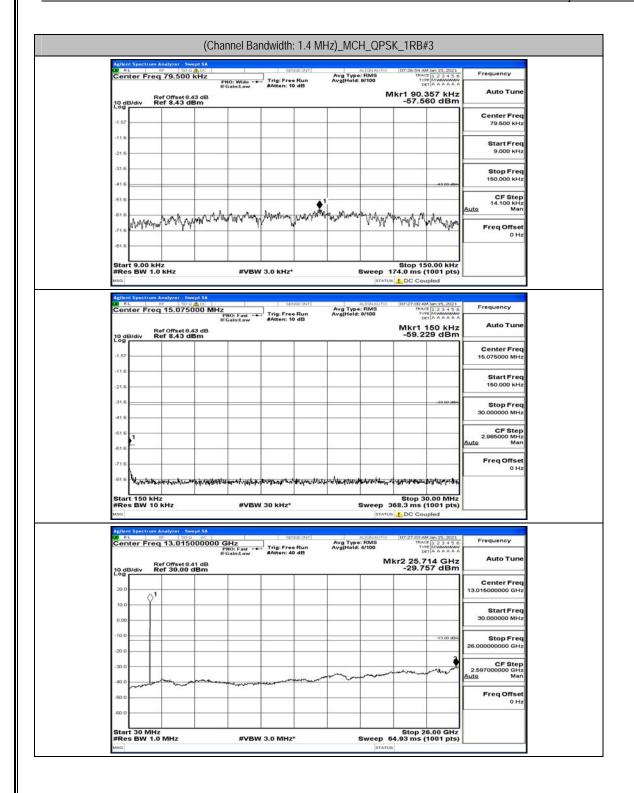
Channel Bandwidth: 1.4 MHz

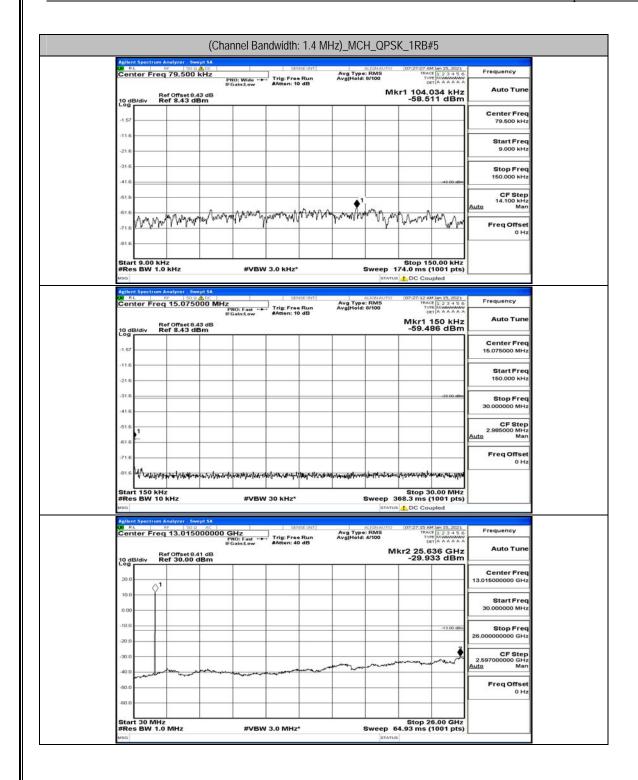


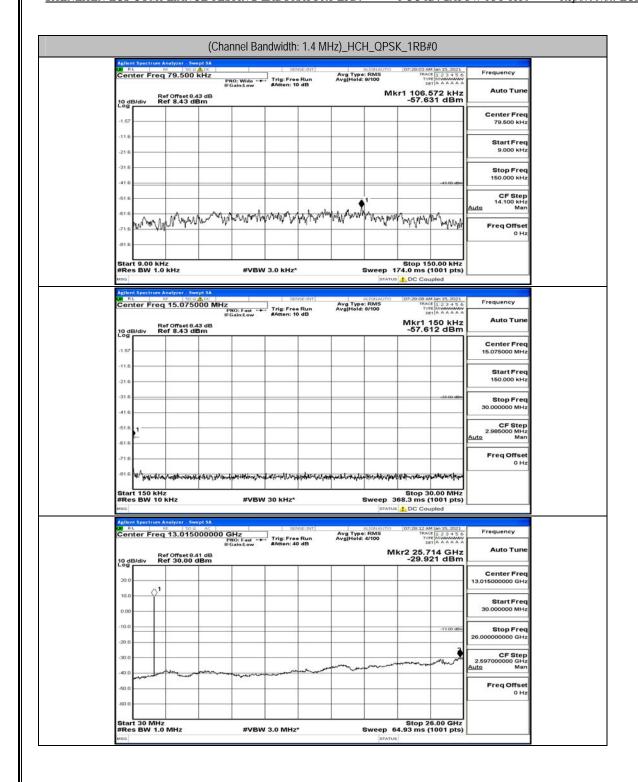


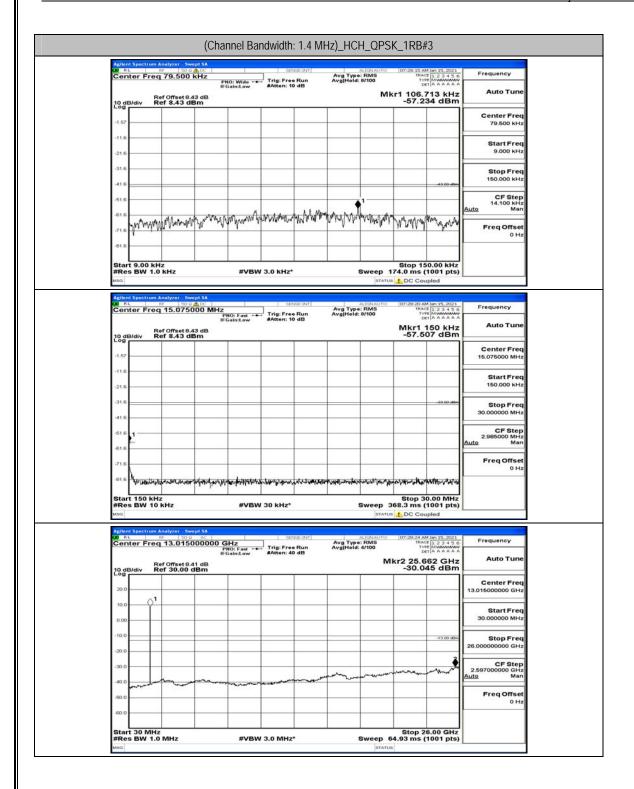


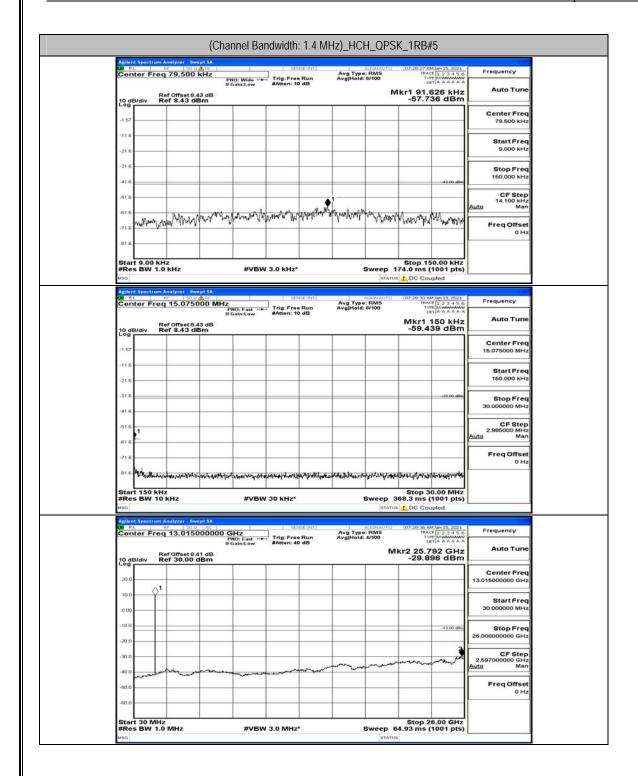


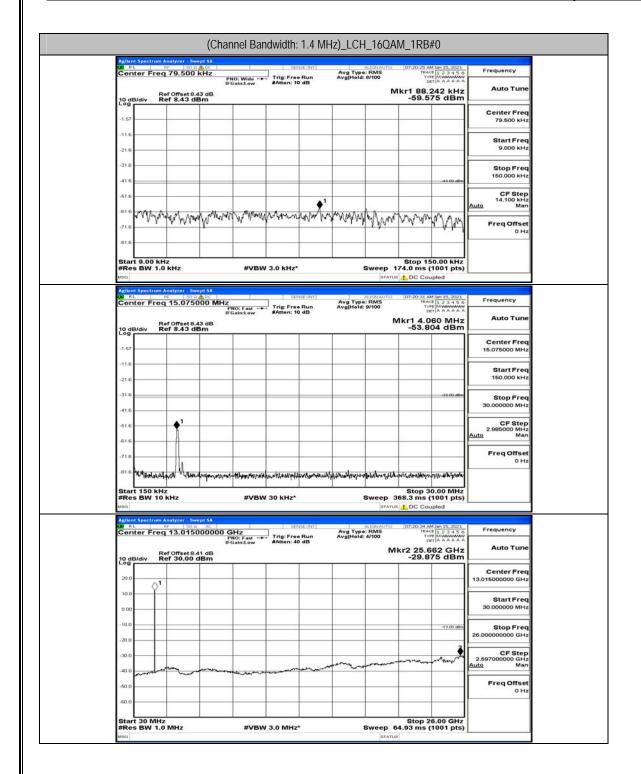


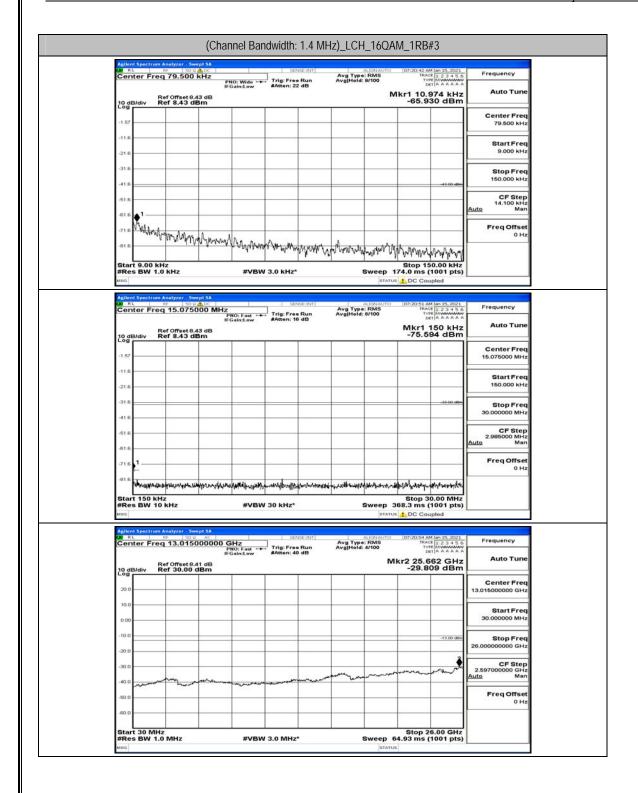


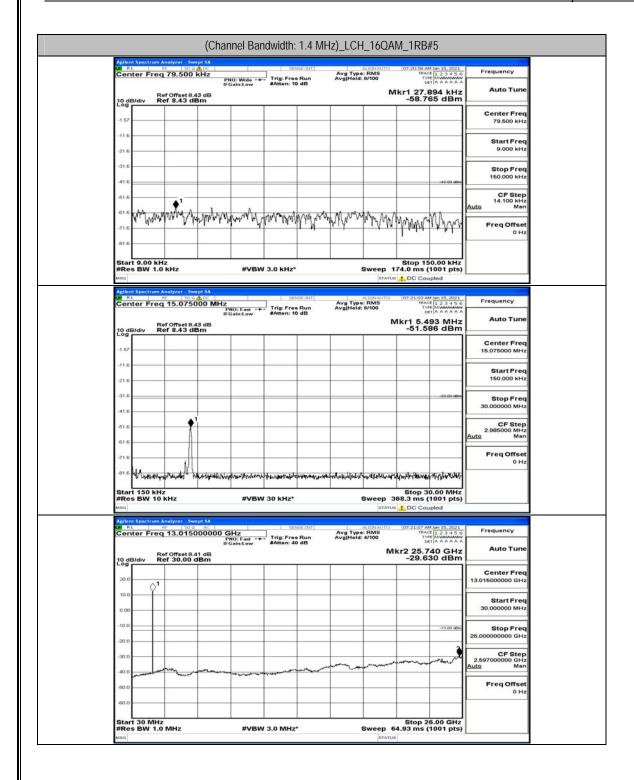


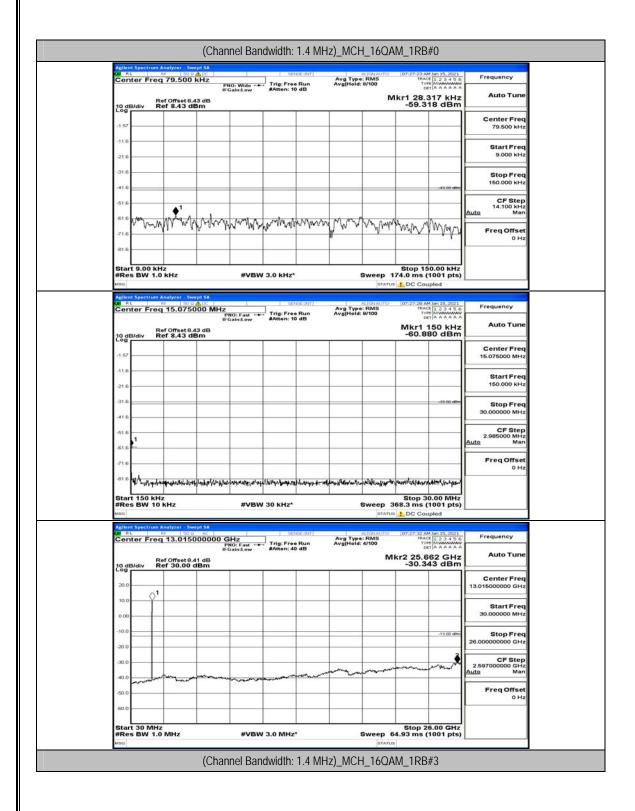


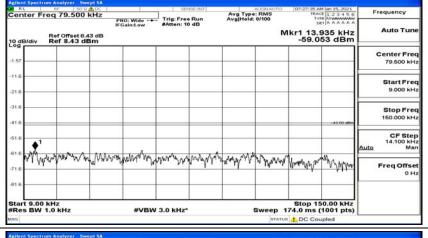


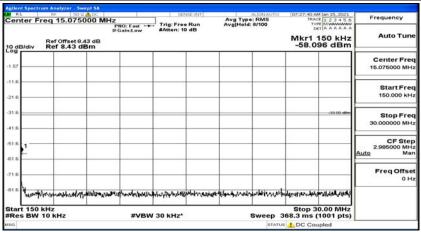




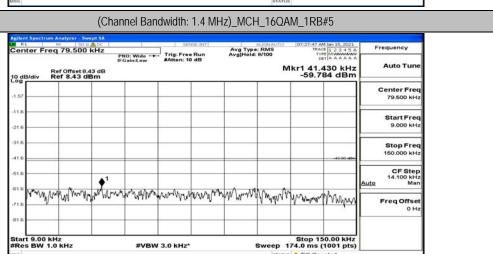












#VBW 3.0 MHz*

Stop 26.00 GHz Sweep 64.93 ms (1001 pts)

Start 30 MHz #Res BW 1.0 MHz