

## Appendix C: Test Data for E-UTRA Band 12

**Product Name: Battery Operated LTE Cellular GPS Tracker**  
**Test Model: CUT-4LH**

### Environmental Conditions

Temperature:	23.8 ° C
Relative Humidity:	52.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Wang Chuang

### C.1 Conducted Output Power

Conducted Output Power Test Result (Channel Bandwidth: 1.4 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]		Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	23.29	22.68	PASS
		1	3	23.34	22.72	PASS
		1	5	23.35	22.55	PASS
		3	0	23.37	22.46	PASS
		3	2	23.40	22.47	PASS
		3	3	23.37	22.46	PASS
		6	0	22.32	21.25	PASS
	MCH	1	0	22.73	22.08	PASS
		1	3	22.77	22.21	PASS
		1	5	22.80	22.13	PASS
		3	0	23.78	22.74	PASS
		3	2	23.72	22.77	PASS
		3	3	23.70	22.75	PASS
		6	0	22.74	21.66	PASS
	HCH	1	0	23.06	22.08	PASS
		1	3	23.08	22.62	PASS
		1	5	23.65	22.18	PASS
		3	0	22.98	22.02	PASS
		3	2	22.97	22.11	PASS
		3	3	22.99	22.00	PASS
		6	0	22.99	22.13	PASS

Conducted Output Power Test Result (Channel Bandwidth: 3 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	23.33	22.64	PASS
		1	7	23.39	22.54	PASS
		1	14	23.04	22.22	PASS
		8	0	22.41	21.49	PASS
		8	4	22.34	21.40	PASS
		8	7	22.43	21.40	PASS
		15	0	22.39	21.33	PASS
	MCH	1	0	22.72	22.09	PASS
		1	7	22.82	22.18	PASS
		1	14	22.76	22.08	PASS
		8	0	22.75	21.77	PASS
		8	4	22.74	21.84	PASS
		8	7	22.83	21.82	PASS
		15	0	22.75	21.71	PASS
	HCH	1	0	23.02	22.36	PASS
		1	7	22.86	22.32	PASS
		1	14	22.90	22.14	PASS
		8	0	22.94	21.88	PASS
		8	4	23.01	21.98	PASS
		8	7	23.03	22.05	PASS
		15	0	23.07	21.91	PASS

Conducted Output Power Test Result (Channel Bandwidth: 5 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	23.40	22.82	PASS
		1	12	23.24	22.34	PASS
		1	24	22.95	22.39	PASS
		12	0	22.46	21.64	PASS
		12	6	22.44	21.51	PASS
		12	13	22.56	21.75	PASS
		25	0	22.52	21.53	PASS
	MCH	1	0	22.81	22.03	PASS
		1	12	22.96	22.45	PASS
		1	24	22.89	22.22	PASS
		12	0	22.80	21.90	PASS
		12	6	22.78	21.92	PASS
		12	13	22.83	21.97	PASS
		25	0	22.75	21.75	PASS
	HCH	1	0	23.05	22.11	PASS
		1	12	22.84	22.12	PASS
		1	24	22.93	22.04	PASS
		12	0	22.94	22.03	PASS
		12	6	22.91	21.96	PASS
		12	13	22.95	21.92	PASS
		25	0	23.03	22.04	PASS

Conducted Output Power Test Result (Channel Bandwidth: 10 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	23.81	22.89	PASS
		1	24	23.12	22.47	PASS
		1	49	23.00	22.29	PASS
		25	0	22.51	21.59	PASS
		25	12	22.61	21.52	PASS
		25	25	22.82	21.81	PASS
		50	0	22.63	21.64	PASS
	MCH	1	0	23.75	22.75	PASS
		1	24	23.26	22.26	PASS
		1	49	22.84	22.13	PASS
		25	0	22.72	21.76	PASS
		25	12	22.79	21.86	PASS
		25	25	22.89	21.91	PASS
		50	0	22.81	21.79	PASS
	HCH	1	0	22.95	22.35	PASS
		1	24	23.03	22.41	PASS
		1	49	22.82	22.17	PASS
		25	0	22.83	21.92	PASS
		25	12	22.93	22.00	PASS
		25	25	22.84	21.93	PASS
		50	0	22.96	21.95	PASS

**C.2 Peak-to-Average Ratio**

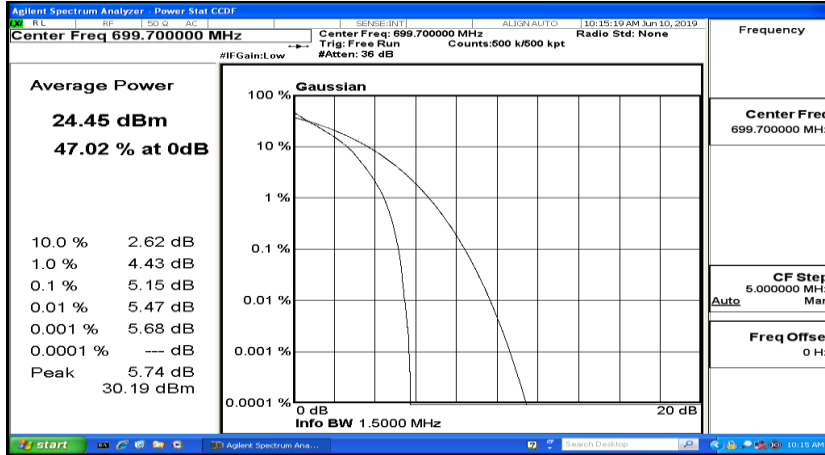
Peak-to Average Ratio Test Result (Channel Bandwidth: 1.4 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	5.15	<13	PASS
	MCH	5.3	<13	PASS
	HCH	4.66	<13	PASS
16QAM	LCH	5.98	<13	PASS
	MCH	6.16	<13	PASS
	HCH	5.47	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 3 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.96	<13	PASS
	MCH	5.33	<13	PASS
	HCH	4.86	<13	PASS
16QAM	LCH	5.85	<13	PASS
	MCH	6.21	<13	PASS
	HCH	5.62	<13	PASS

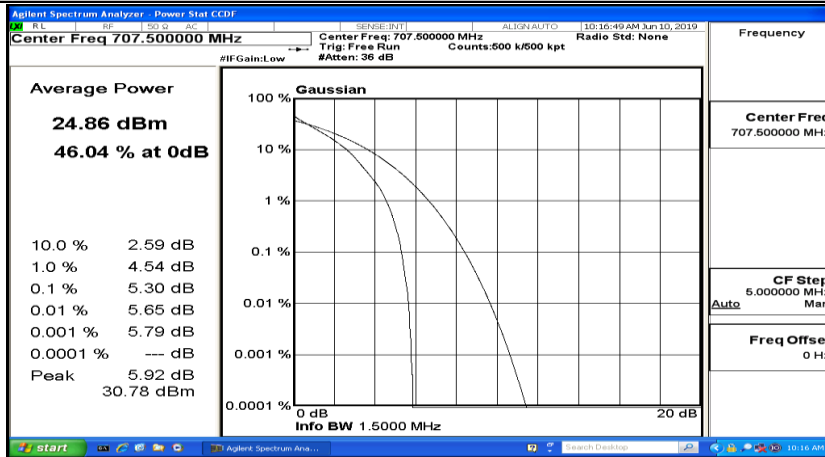
Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.83	<13	PASS
	MCH	5.28	<13	PASS
	HCH	4.83	<13	PASS
16QAM	LCH	5.63	<13	PASS
	MCH	6.13	<13	PASS
	HCH	5.73	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	5.17	<13	PASS
	MCH	5.21	<13	PASS
	HCH	5.05	<13	PASS
16QAM	LCH	5.85	<13	PASS
	MCH	6	<13	PASS
	HCH	5.85	<13	PASS

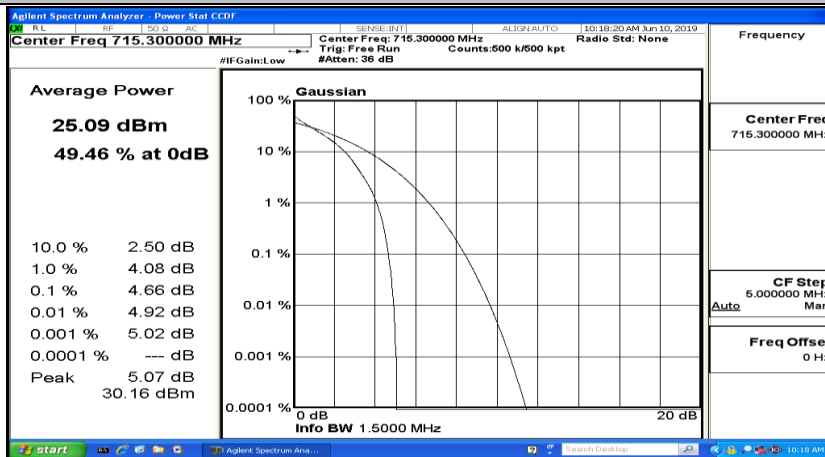
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_LCH\_QPSK



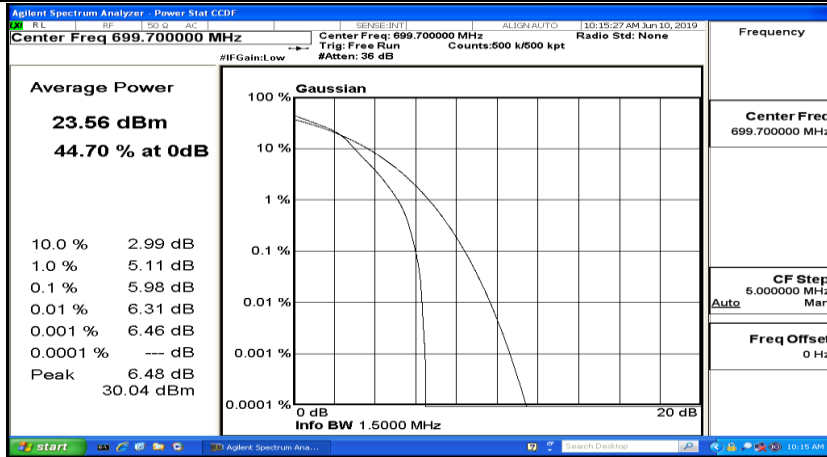
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_MCH\_QPSK



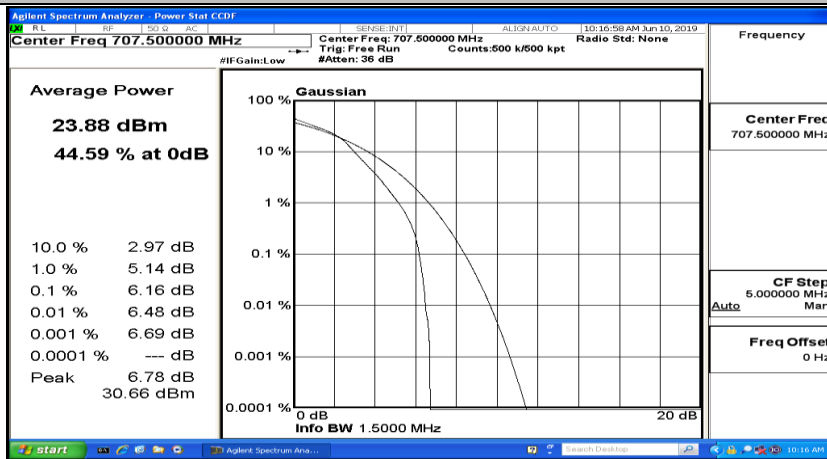
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_HCH\_QPSK



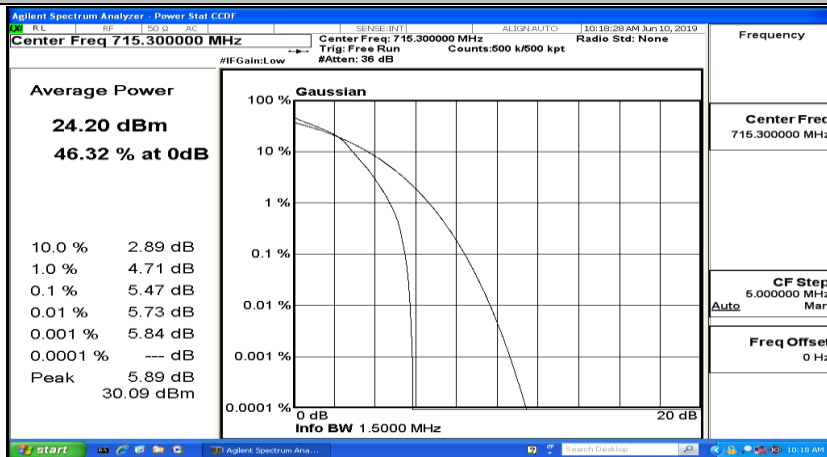
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_LCH\_16QAM



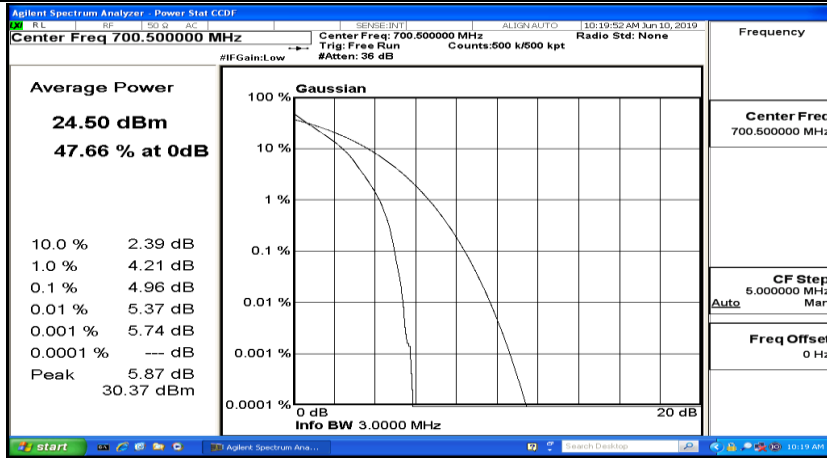
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_MCH\_16QAM



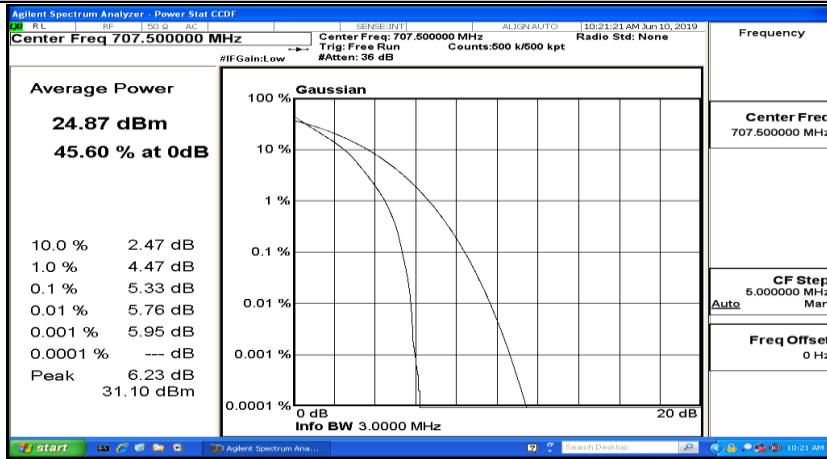
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_HCH\_16QAM



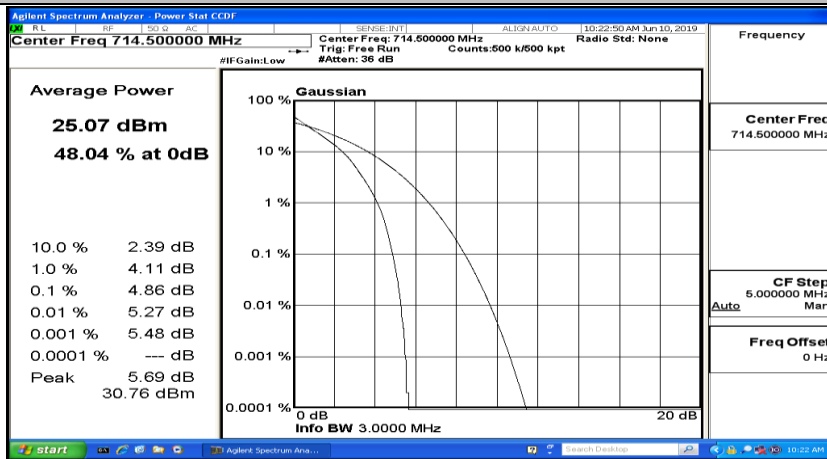
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)\_LCH\_QPSK



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)\_MCH\_QPSK

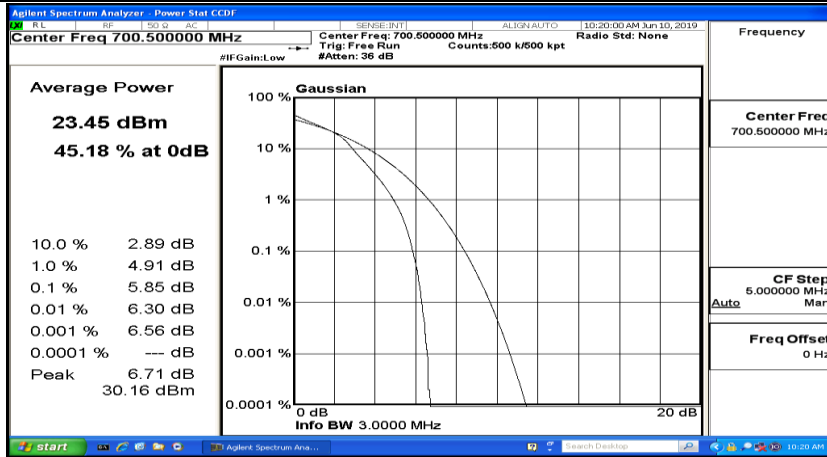


Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)\_HCH\_QPSK

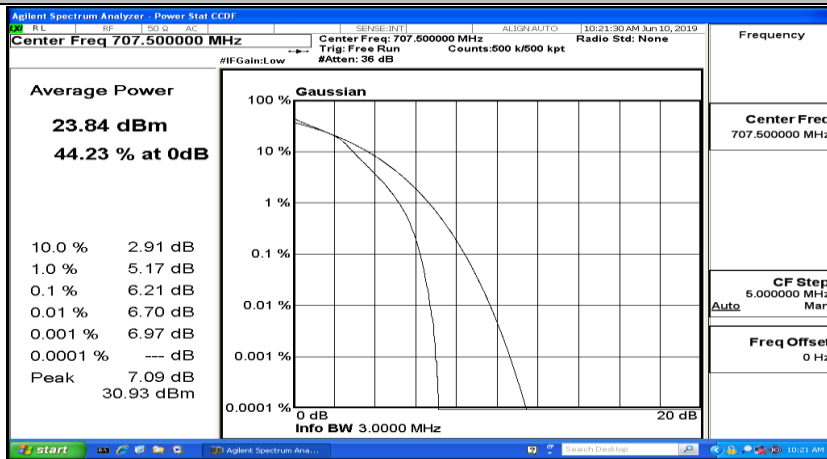




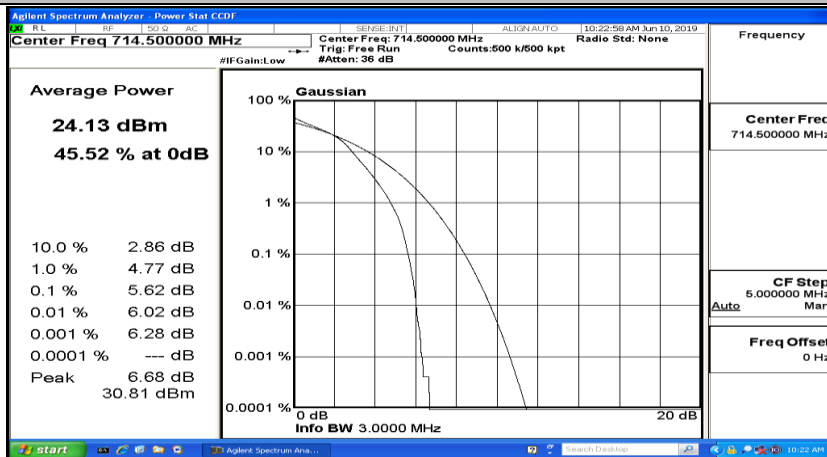
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)\_LCH\_16QAM



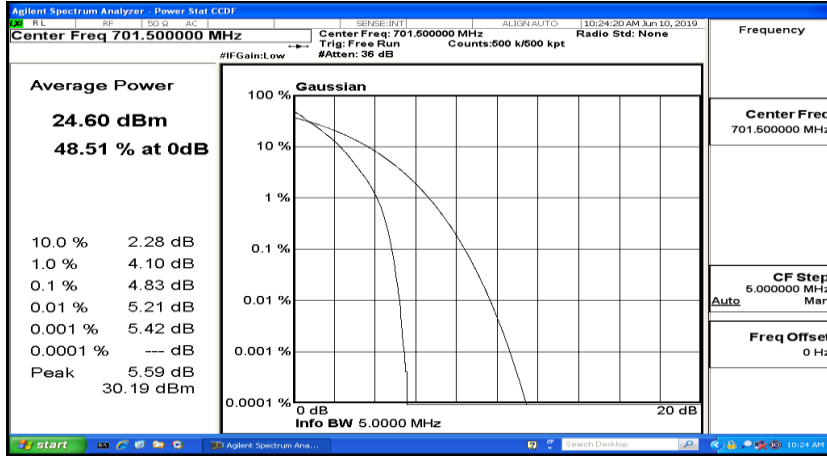
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)\_MCH\_16QAM



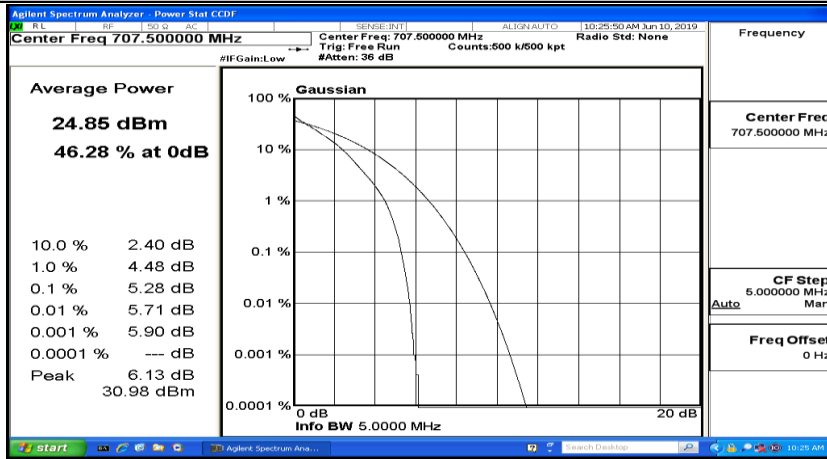
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)\_HCH\_16QAM



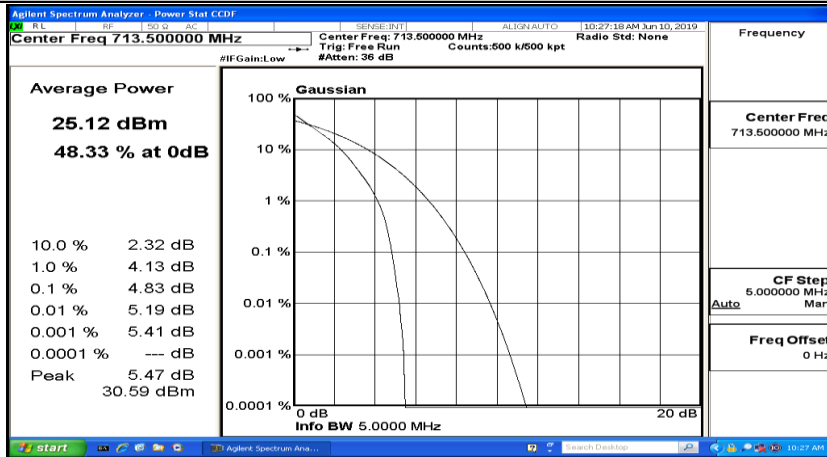
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)\_LCH\_QPSK



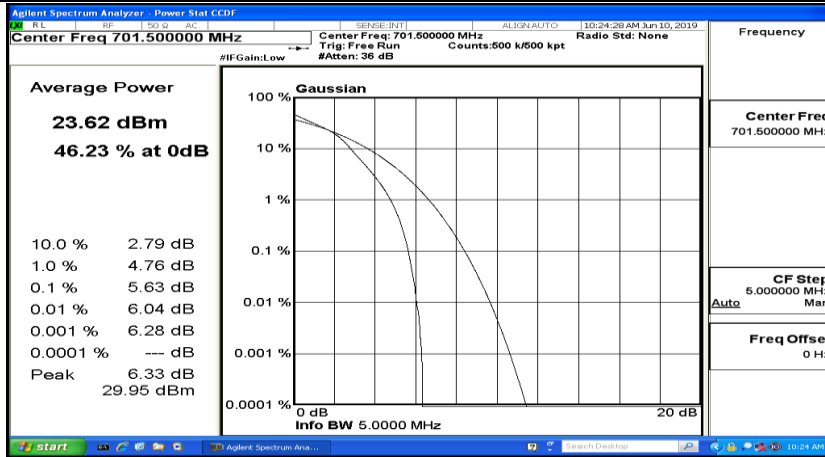
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)\_MCH\_QPSK



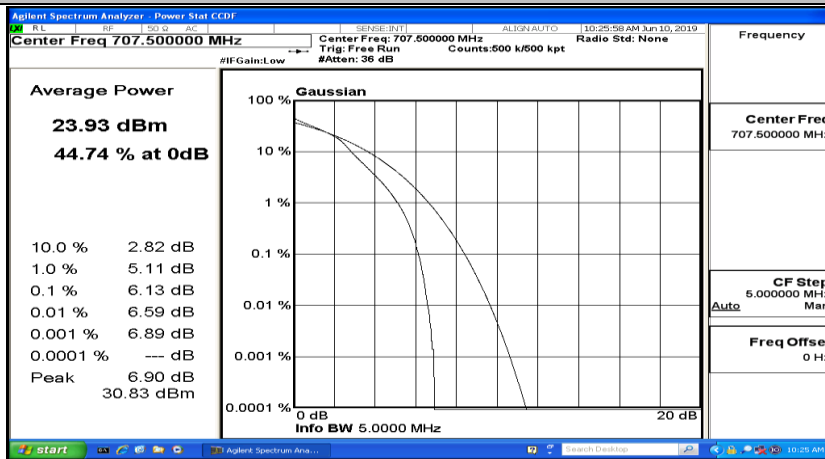
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)\_HCH\_QPSK



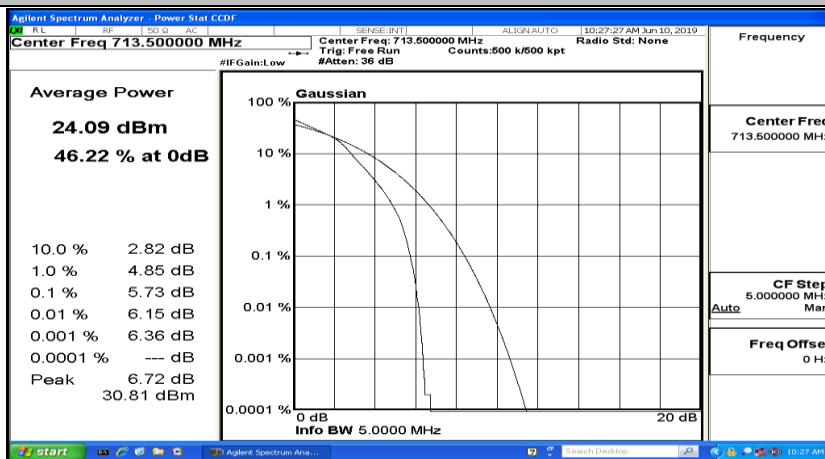
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)\_LCH\_16QAM



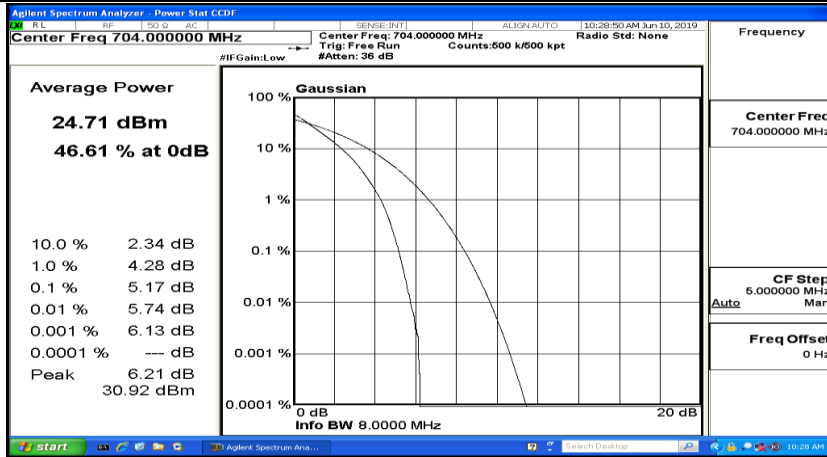
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)\_MCH\_16QAM



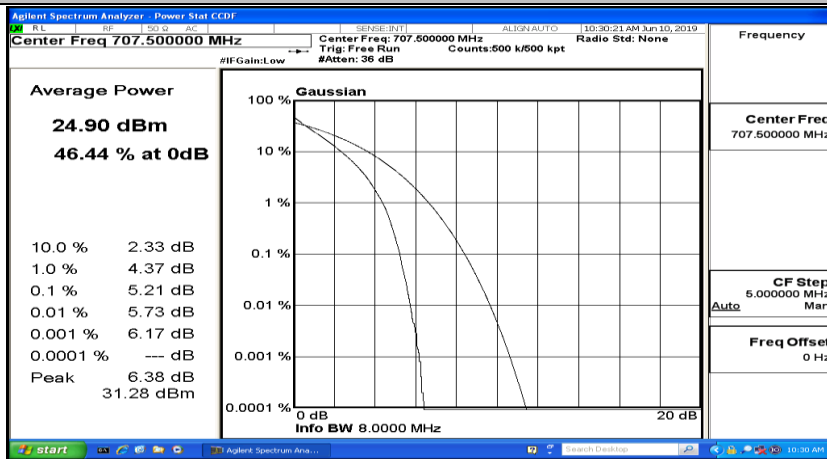
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)\_HCH\_16QAM



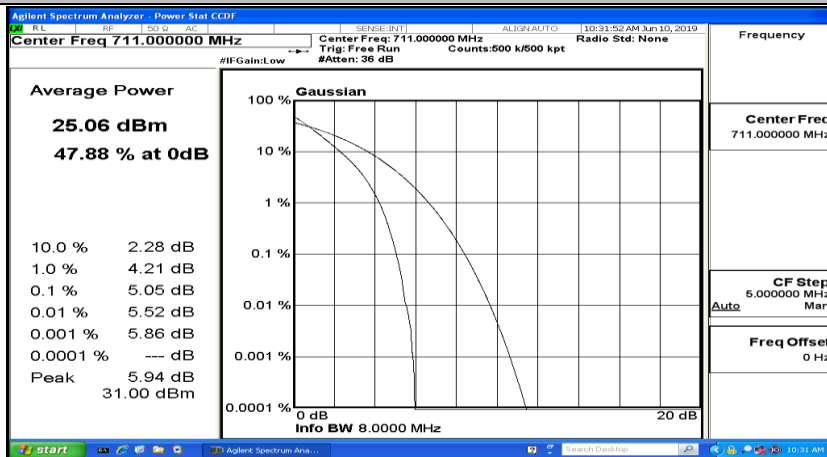
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz) LCH\_QPSK



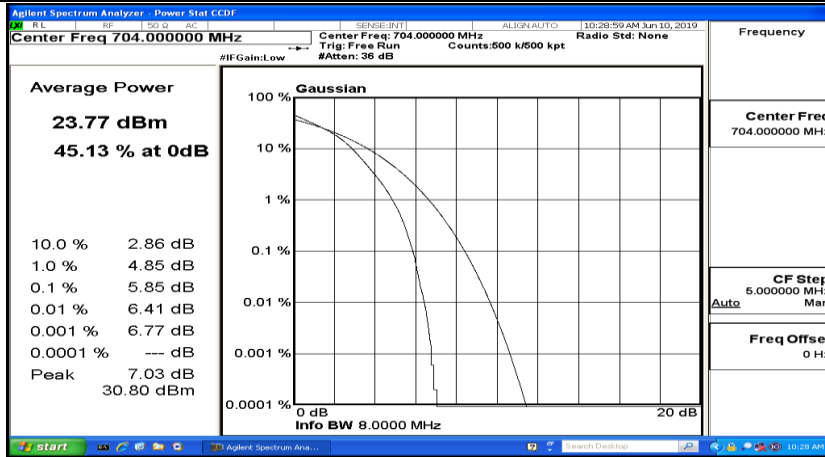
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz) MCH\_QPSK



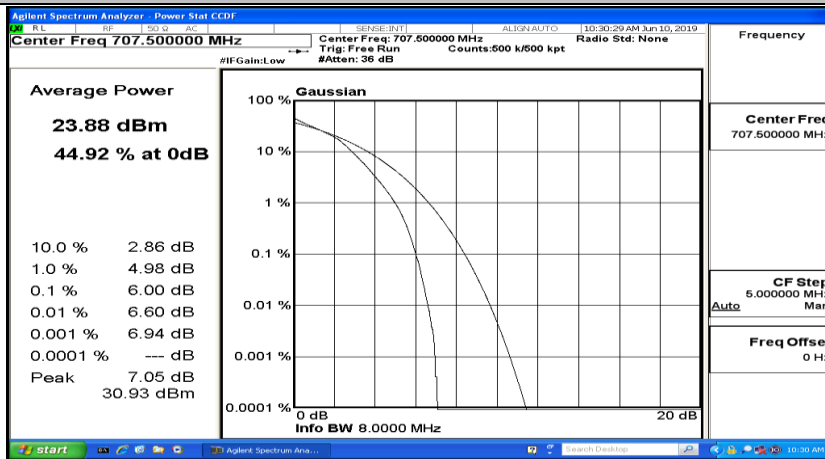
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz) HCH\_QPSK



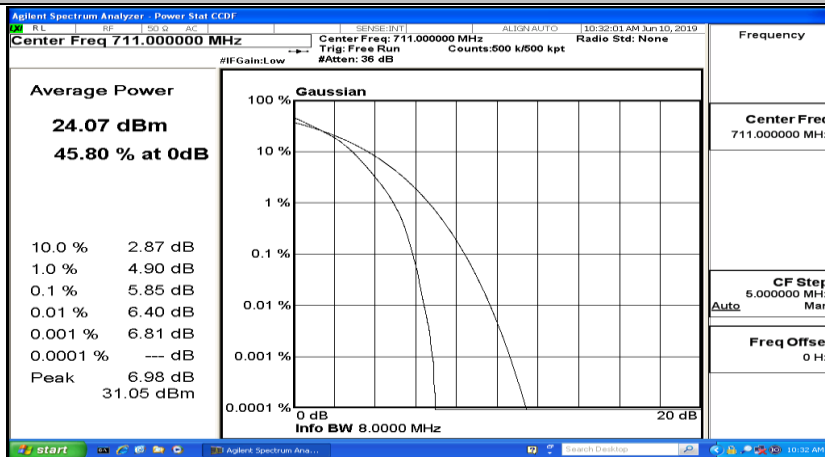
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)\_LCH\_16QAM



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)\_MCH\_16QAM



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)\_HCH\_16QAM



**C.3 26dB Bandwidth and Occupied Bandwidth**

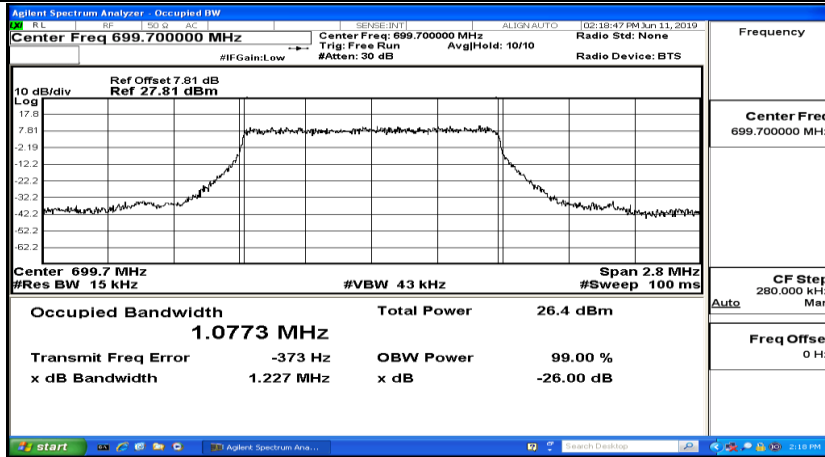
<b>EBW &amp; OBW Test Result (Channel Bandwidth: 1.4 MHz)</b>				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	1.0773	1.227	PASS
	MCH	1.0760	1.224	PASS
	HCH	1.0783	1.229	PASS
16QAM	LCH	1.0799	1.245	PASS
	MCH	1.0783	1.234	PASS
	HCH	1.0788	1.224	PASS

<b>EBW &amp; OBW Test Result (Channel Bandwidth: 3 MHz)</b>				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	2.6814	2.886	PASS
	MCH	2.6875	2.880	PASS
	HCH	2.6831	2.896	PASS
16QAM	LCH	2.6804	2.897	PASS
	MCH	2.6807	2.891	PASS
	HCH	2.6886	2.900	PASS

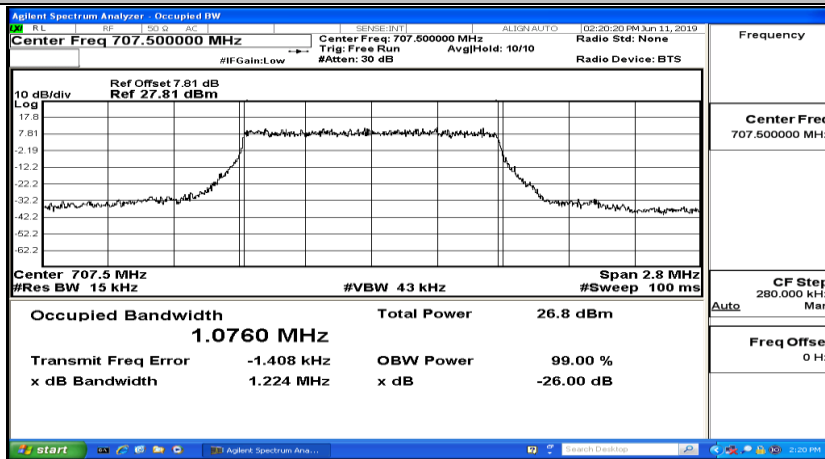
<b>EBW &amp; OBW Test Result (Channel Bandwidth: 5 MHz)</b>				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	4.4602	4.739	PASS
	MCH	4.4811	4.828	PASS
	HCH	4.4639	4.804	PASS
16QAM	LCH	4.4587	4.796	PASS
	MCH	4.4639	4.828	PASS
	HCH	4.4771	4.812	PASS

<b>EBW &amp; OBW Test Result (Channel Bandwidth: 10 MHz)</b>				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	8.9426	9.481	PASS
	MCH	8.9478	9.556	PASS
	HCH	8.9102	9.439	PASS
16QAM	LCH	8.9277	9.390	PASS
	MCH	8.9422	9.437	PASS
	HCH	8.9287	9.427	PASS

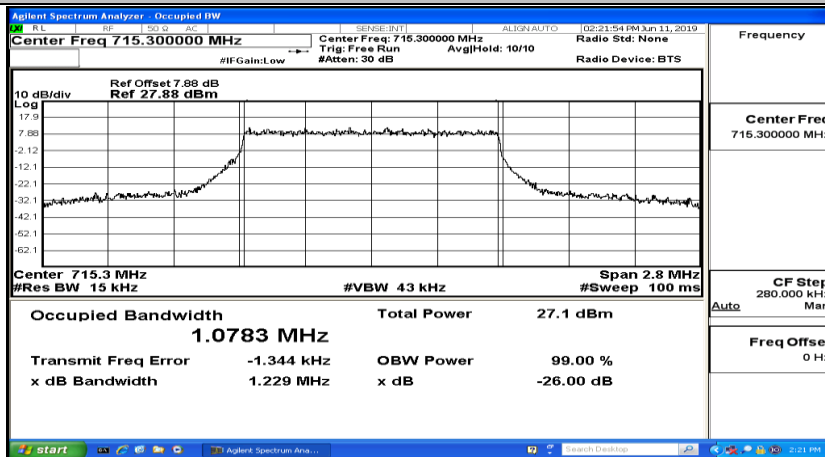
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_LCH\_QPSK



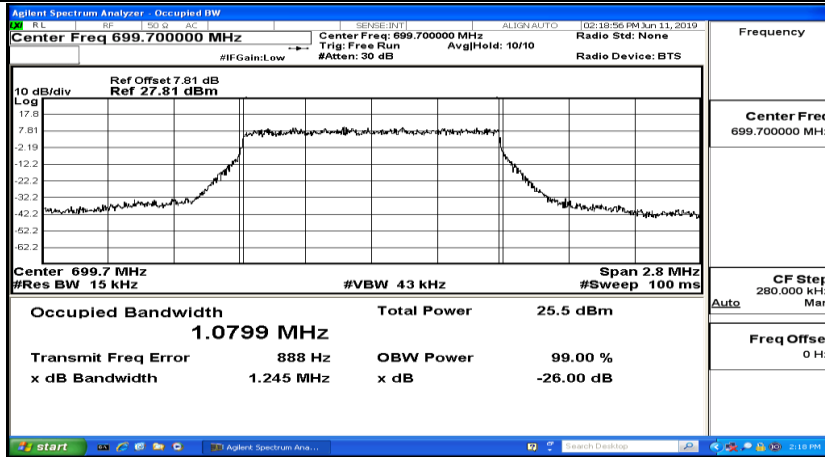
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_MCH\_QPSK



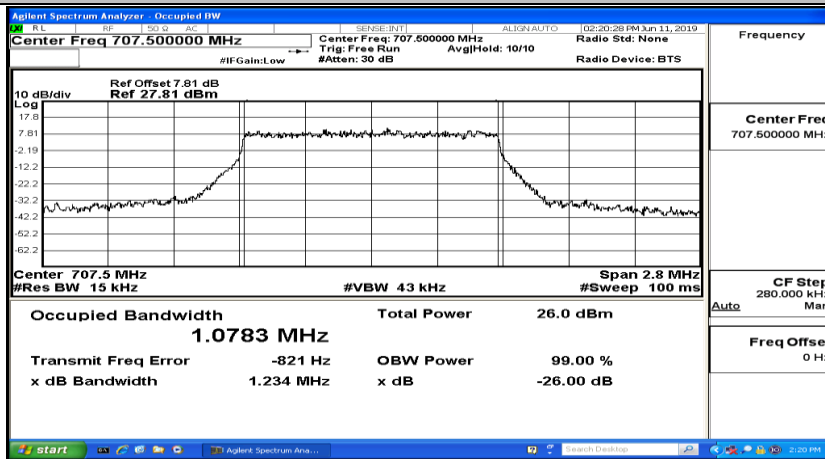
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_HCH\_QPSK



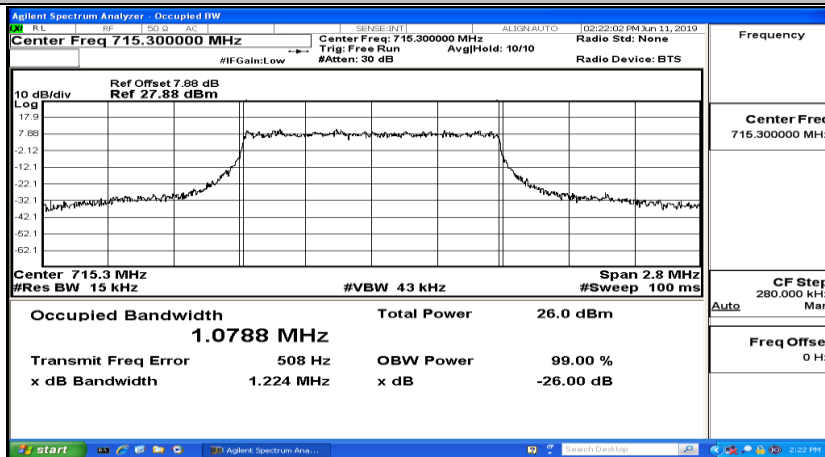
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_LCH\_16QAM



EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_MCH\_16QAM

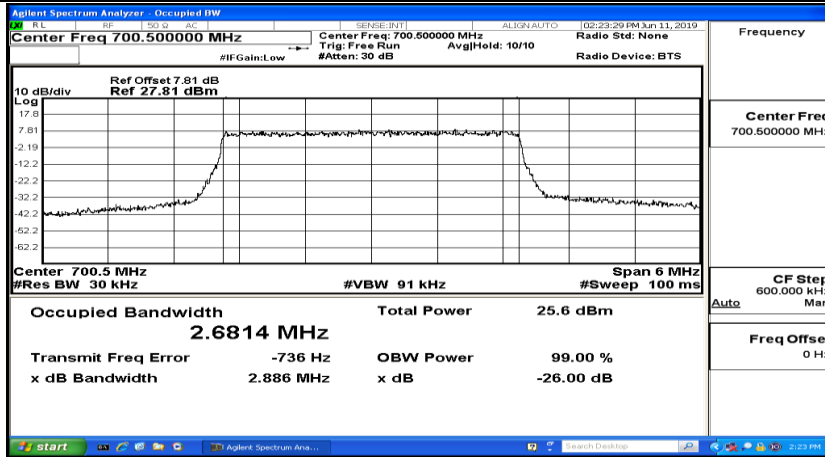


EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_HCH\_16QAM

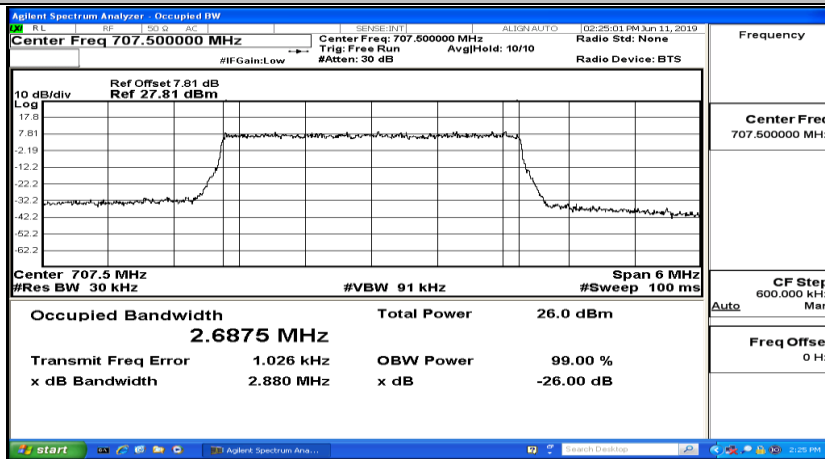




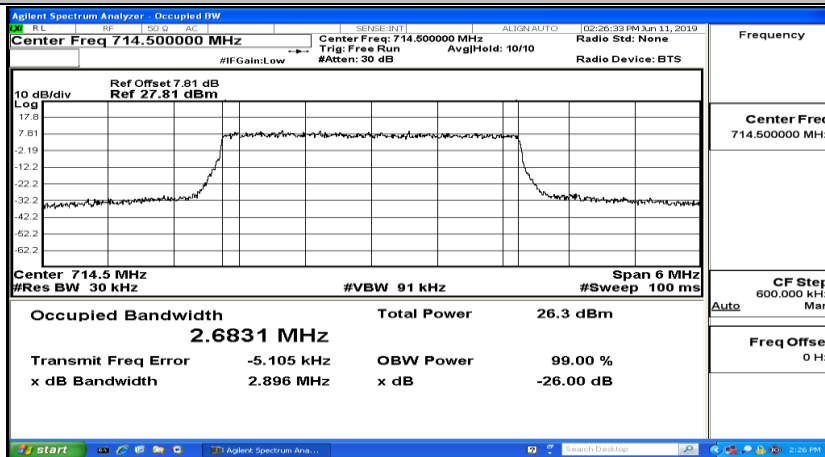
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)\_LCH\_QPSK



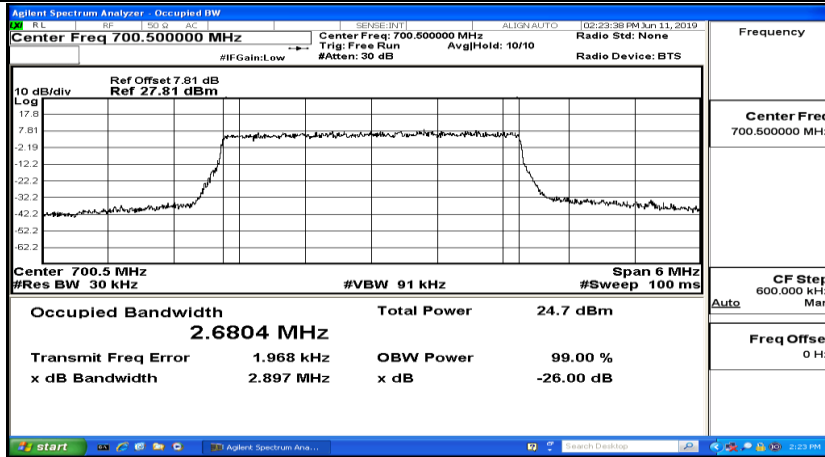
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)\_MCH\_QPSK



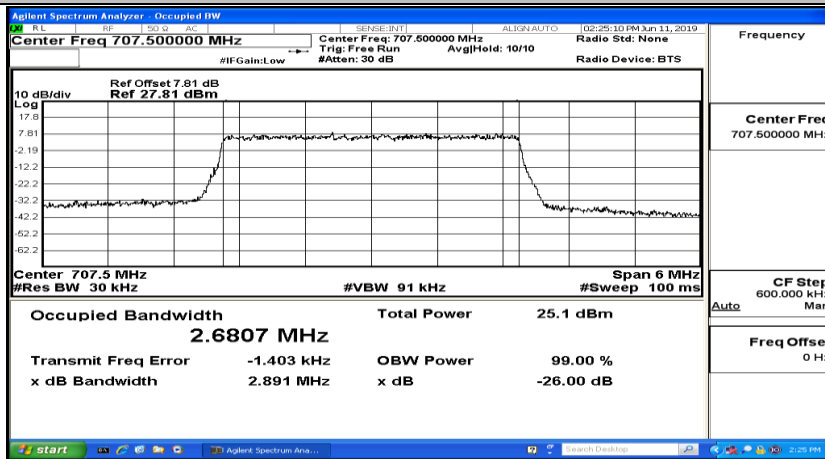
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)\_HCH\_QPSK



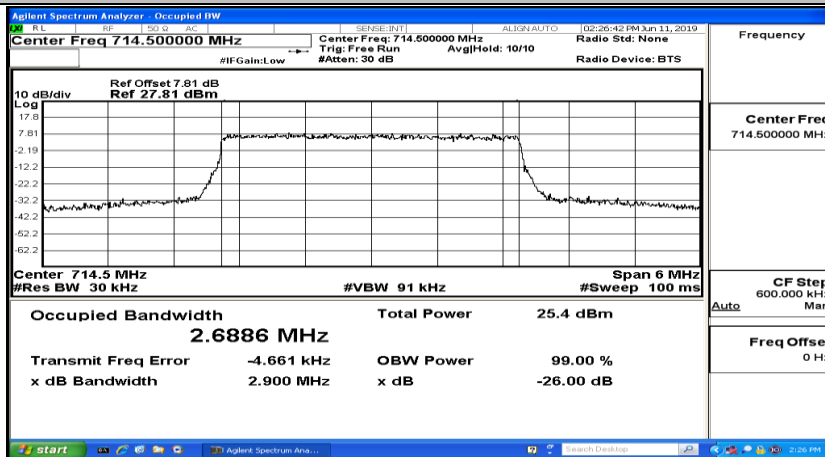
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)\_LCH\_16QAM



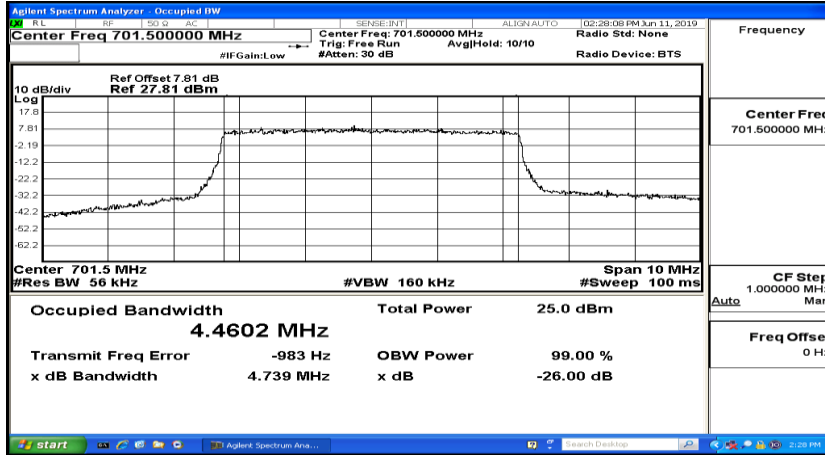
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)\_MCH\_16QAM



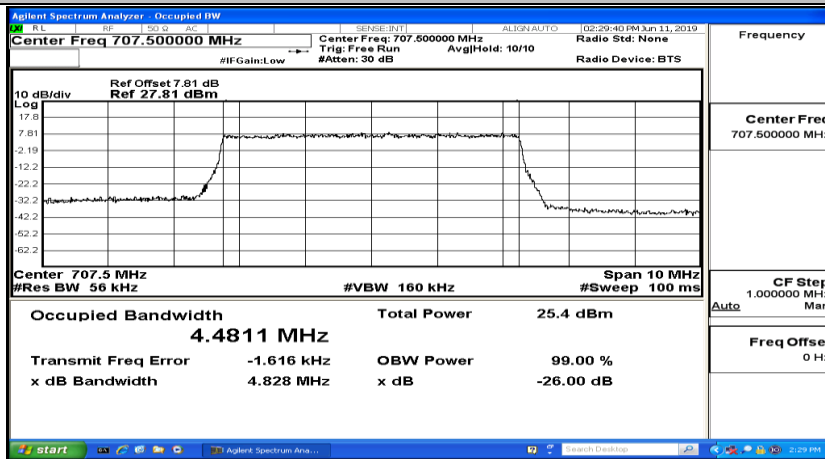
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)\_HCH\_16QAM



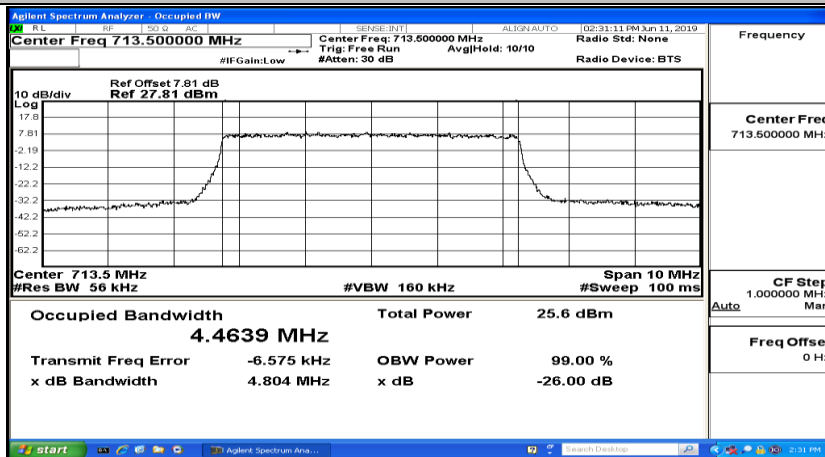
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)\_LCH\_QPSK



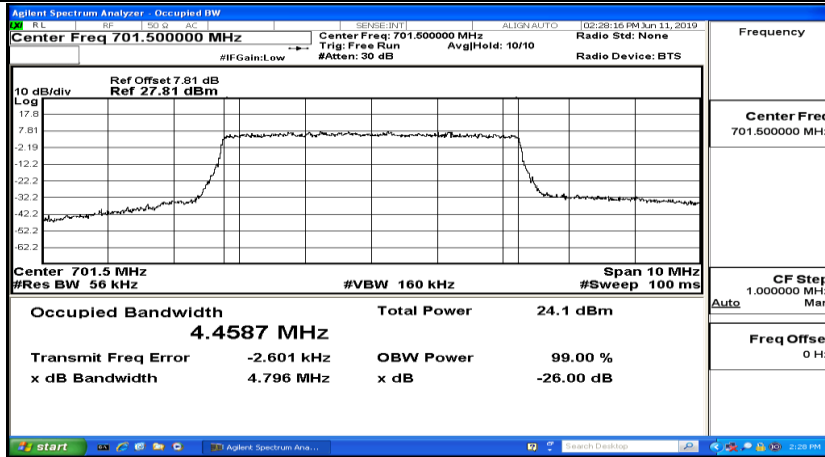
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)\_MCH\_QPSK



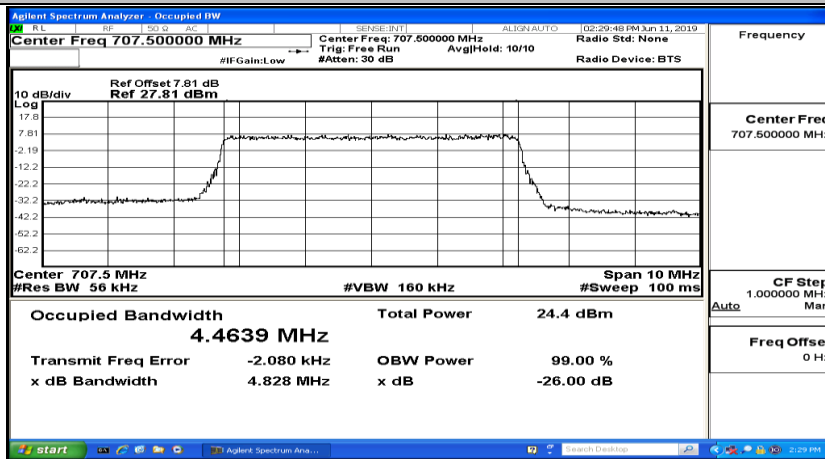
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)\_HCH\_QPSK



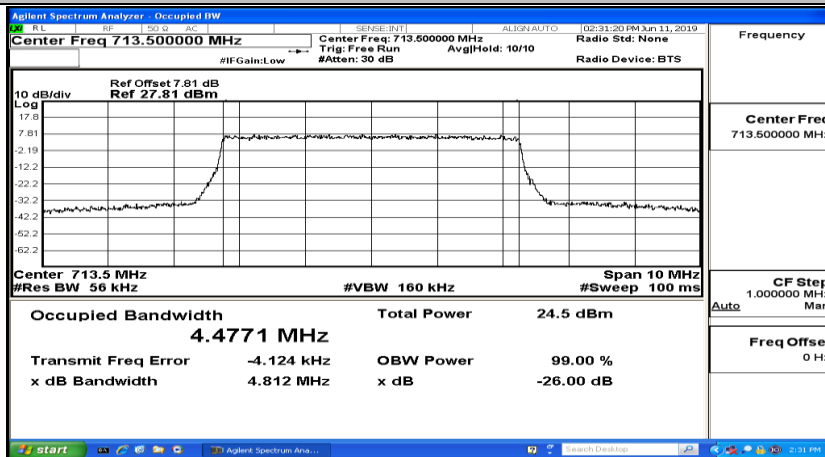
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)\_LCH\_16QAM



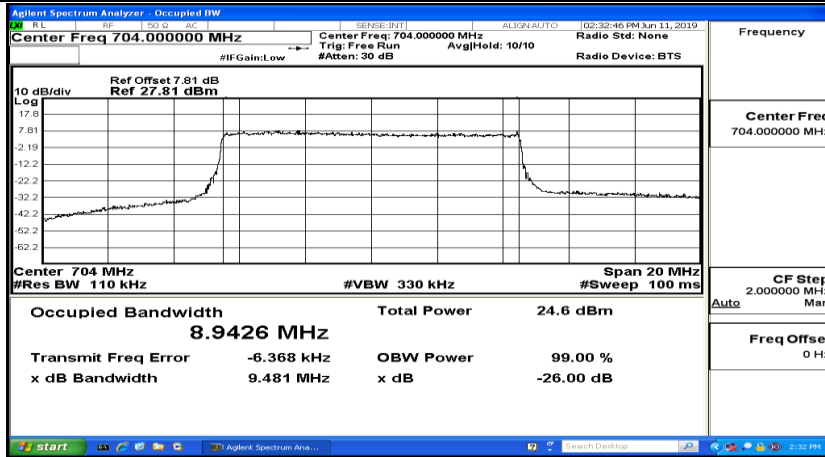
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)\_MCH\_16QAM



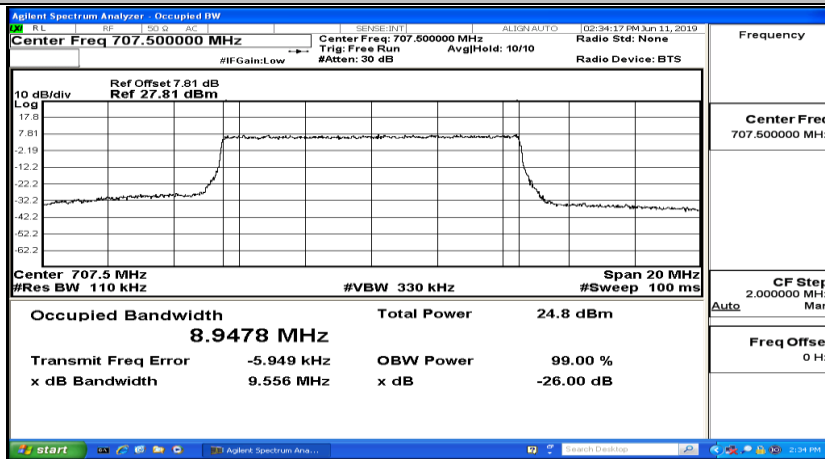
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)\_HCH\_16QAM



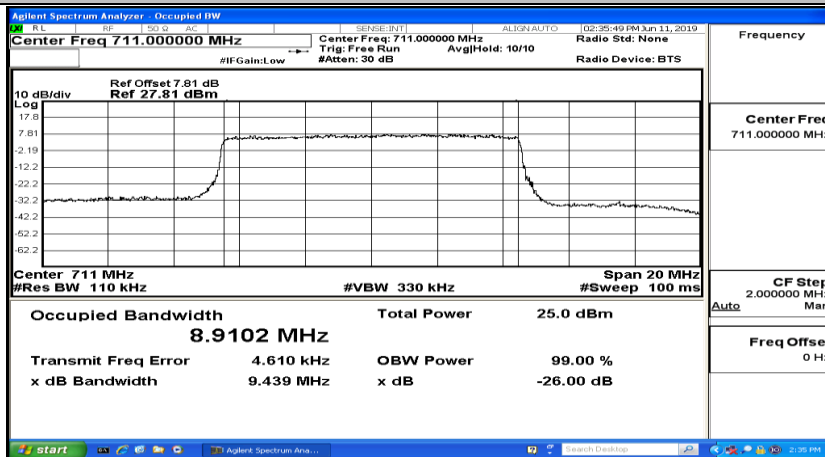
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)\_LCH\_QPSK



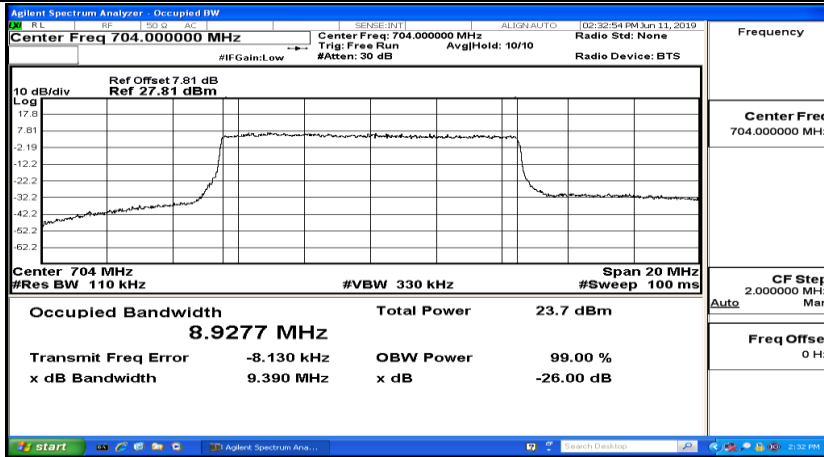
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)\_MCH\_QPSK



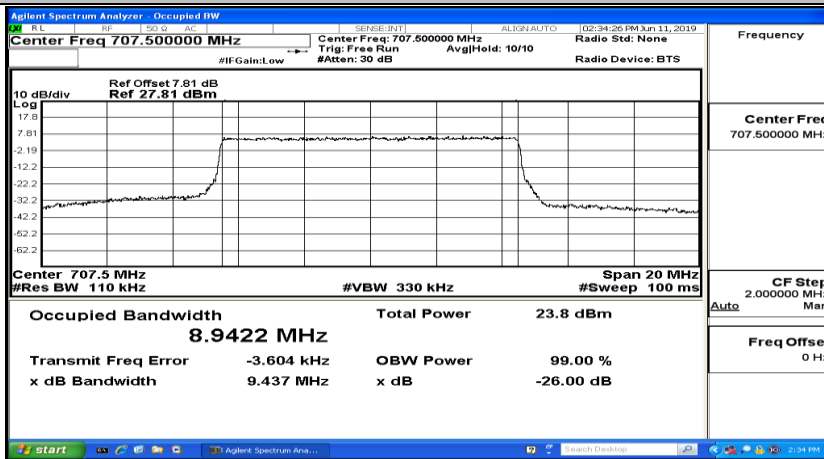
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)\_HCH\_QPSK



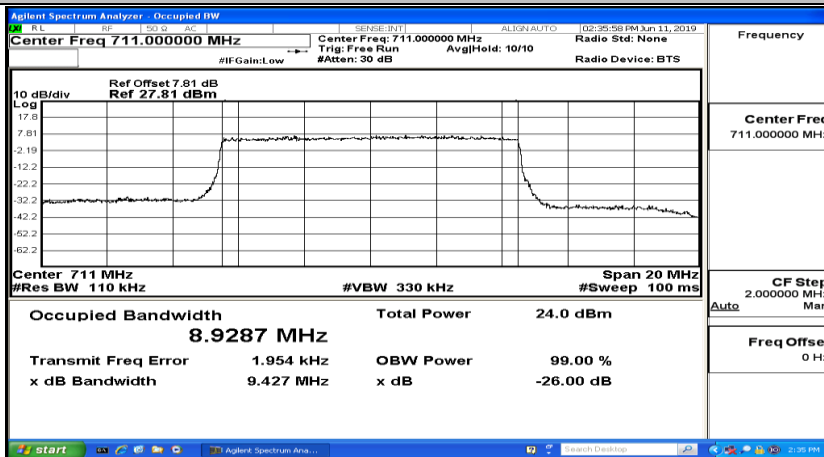
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)\_LCH\_16QAM



EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)\_MCH\_16QAM

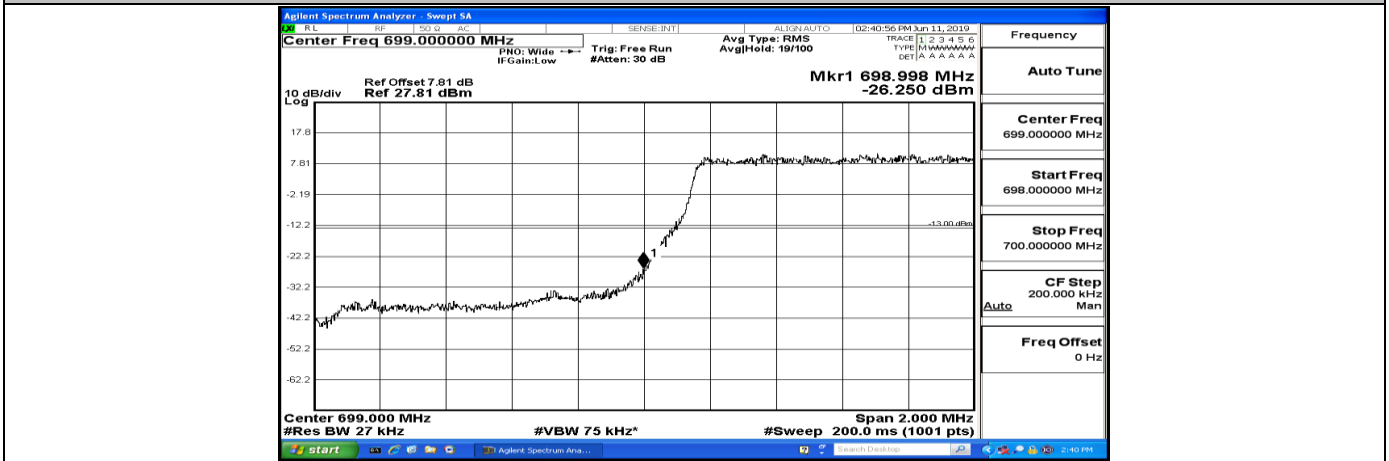


EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)\_HCH\_16QAM

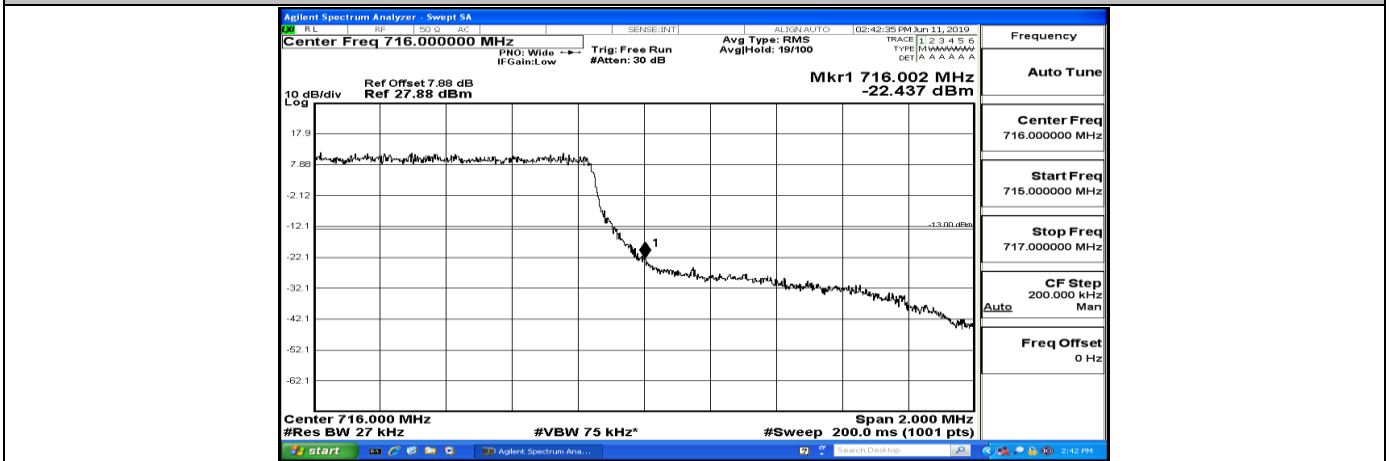


### C.4 Band Edge

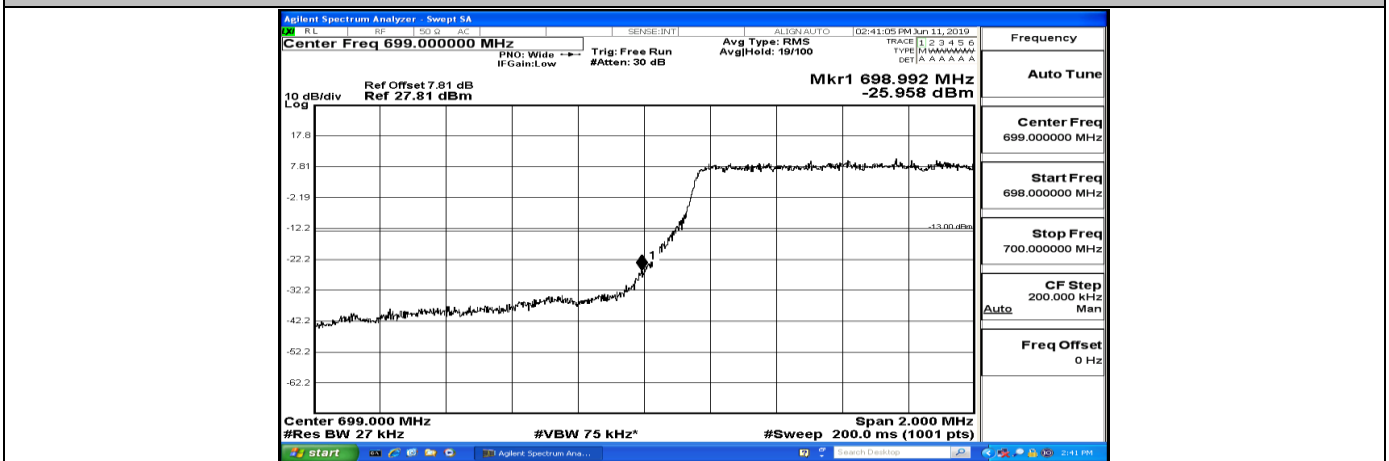
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_LCH\_QPSK



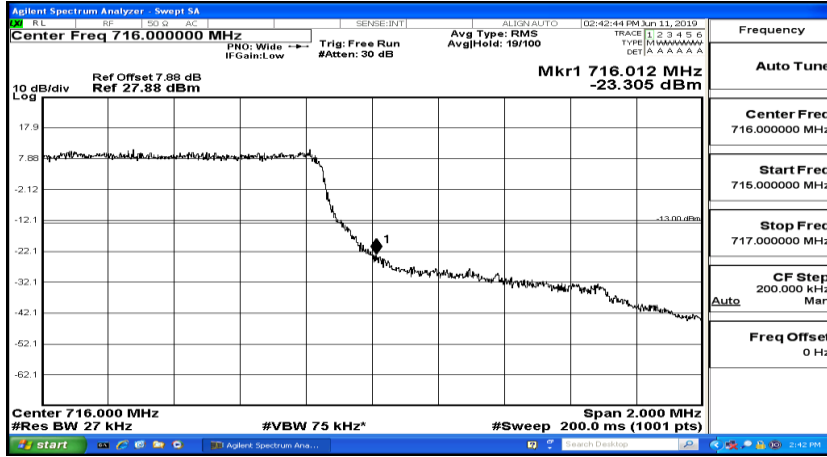
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_HCH\_QPSK



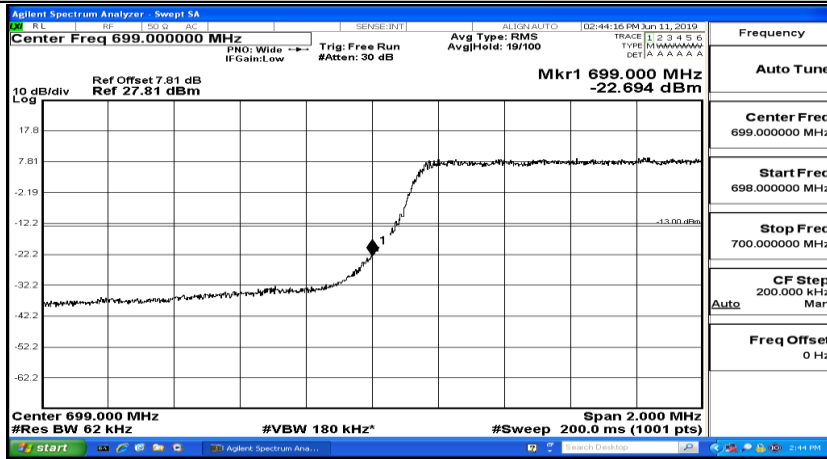
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_LCH\_16QAM



Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_HCH\_16QAM



Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)\_LCH\_QPSK

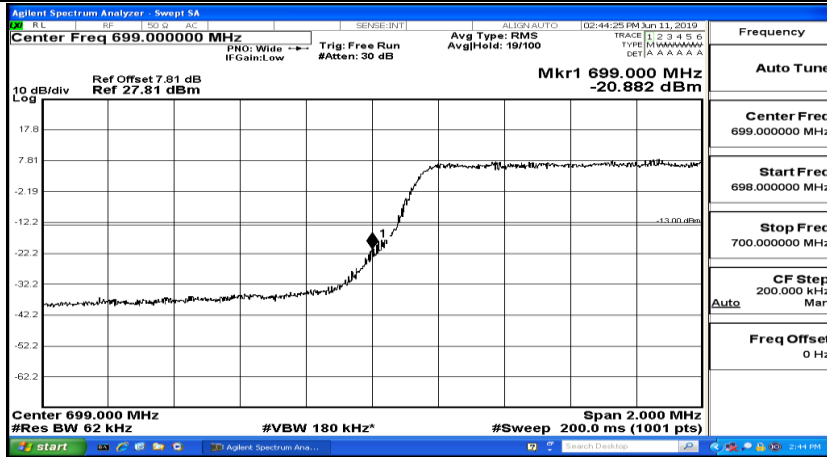


Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)\_HCH\_QPSK

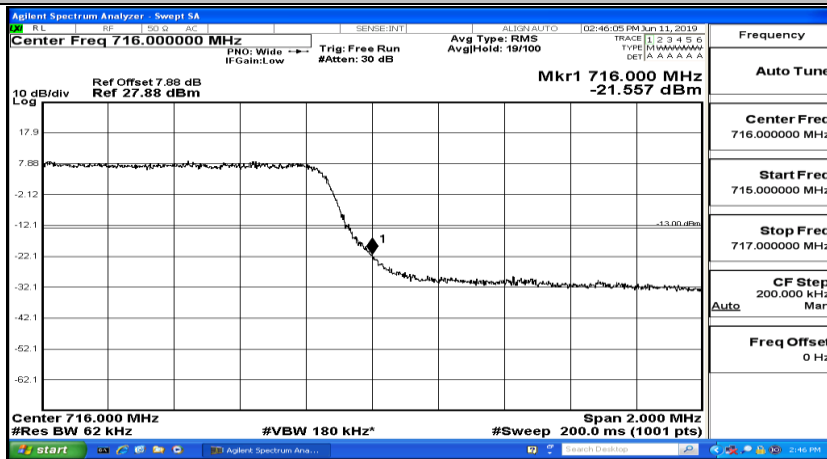




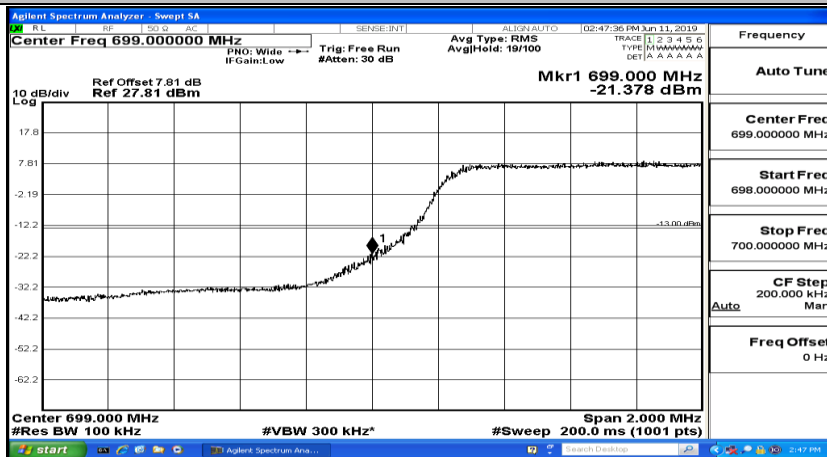
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)\_LCH\_16QAM



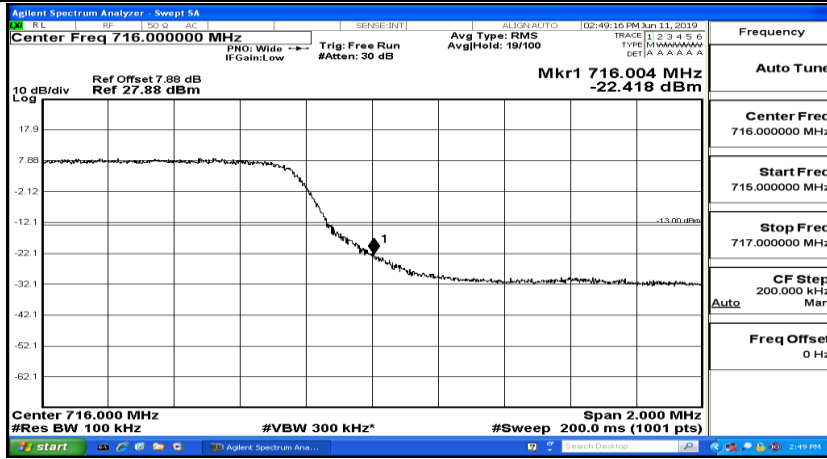
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)\_HCH\_16QAM



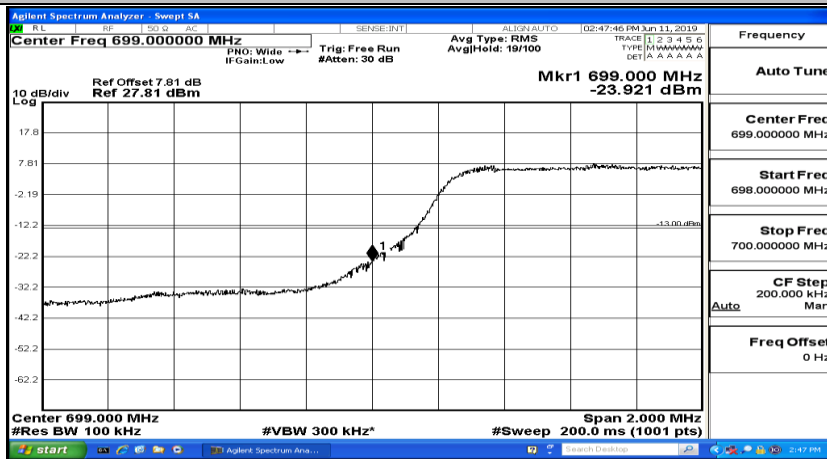
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)\_LCH\_QPSK



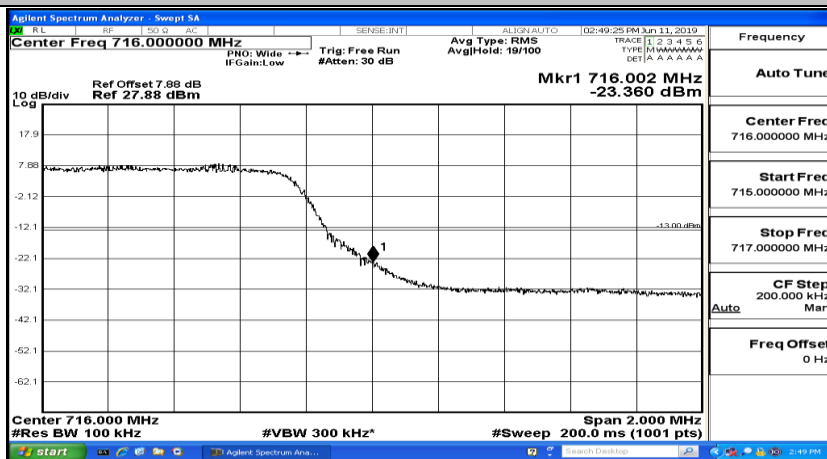
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)\_HCH\_QPSK



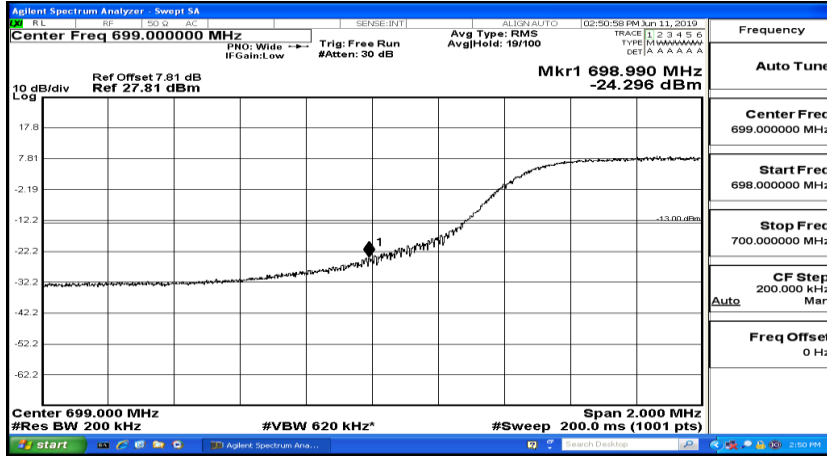
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)\_LCH\_16QAM



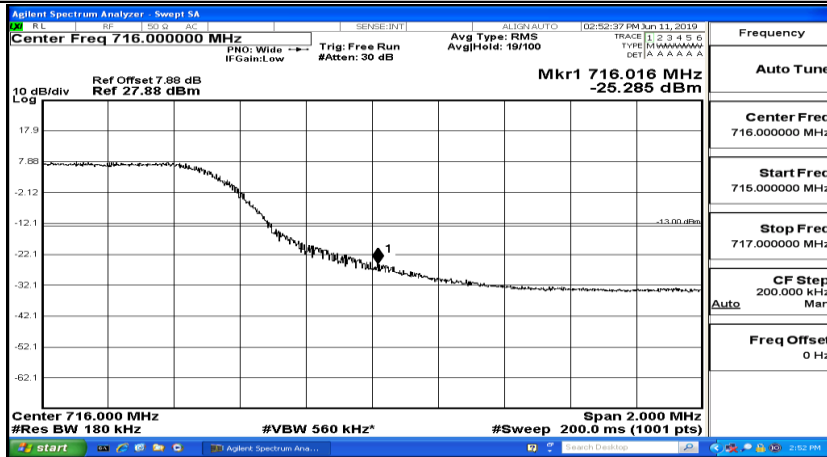
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)\_HCH\_16QAM



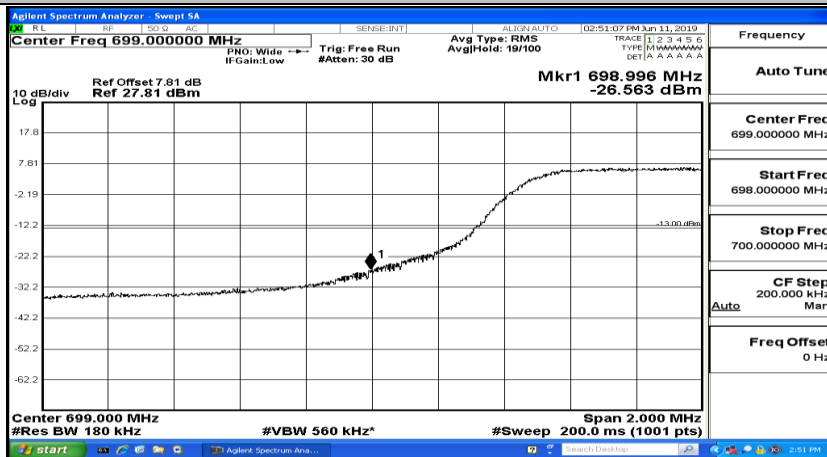
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)\_LCH\_QPSK



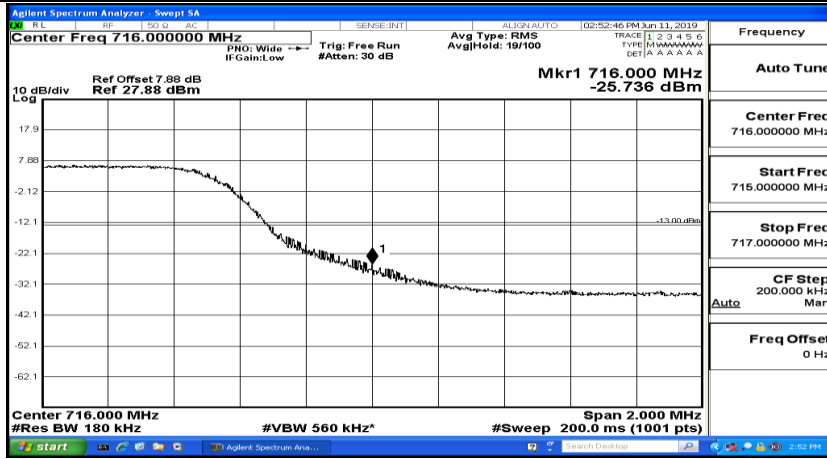
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)\_HCH\_QPSK



Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)\_LCH\_16QAM

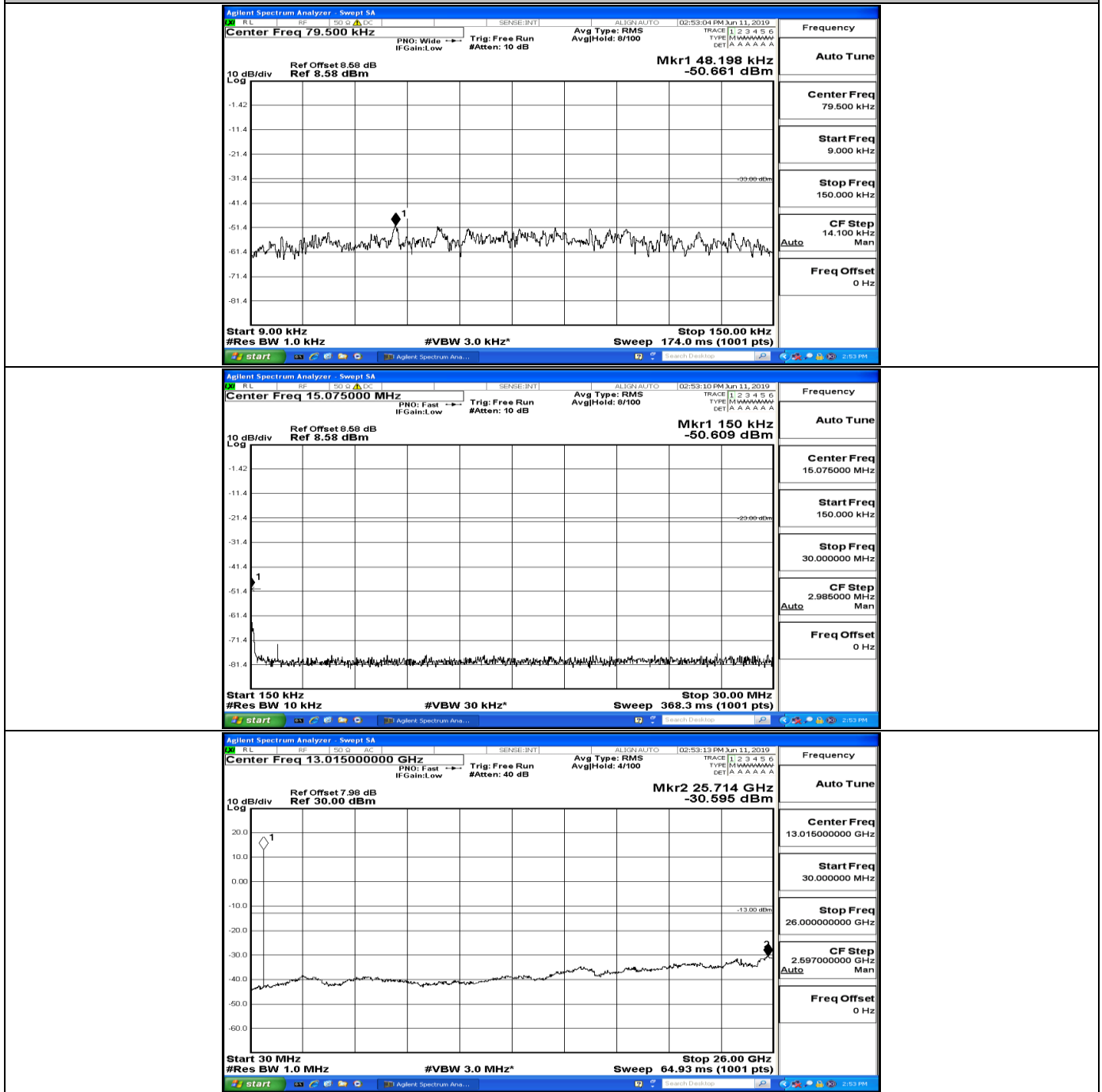


Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)\_HCH\_16QAM



### C.5 Conducted Spurious Emission

CSE Test Graph(s) (Channel Bandwidth: 1.4 MHz) \_LCH\_QPSK



CSE Test Graph(s) (Channel Bandwidth: 1.4 MHz)\_MCH\_QPSK

