Appendix C: Test Data for E-UTRA Band 4

Product Name: 4G Car DVR

Trade Mark: AddSecure

Test Model: AddSecure FFC LTE NA

Environmental Conditions

Temperature:	22.3° C
Relative Humidity:	53.5%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

C.1 Conducted Output Power

Conducted Output Power Test Result (Channel Bandwidth: 1.4 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm] QPSK	Average Power [dBm] 16QAM	Verdict
		Size	Offset			
QPSK / 16QAM	LCH	1	0	22.29	21.54	PASS
		1	3	22.45	21.81	PASS
		1	5	22.44	21.45	PASS
		3	0	22.26	21.52	PASS
		3	2	22.34	21.57	PASS
		3	3	22.31	21.54	PASS
		6	0	21.26	20.20	PASS
	MCH	1	0	23.05	22.50	PASS
		1	3	23.05	22.56	PASS
		1	5	23.02	22.34	PASS
		3	0	23.17	22.24	PASS
		3	2	23.13	22.23	PASS
		3	3	23.14	22.11	PASS
		6	0	22.21	21.08	PASS
	HCH	1	0	21.88	20.90	PASS
		1	3	22.15	20.49	PASS
		1	5	22.11	21.17	PASS
		3	0	22.04	20.95	PASS
		3	2	22.37	20.98	PASS
		3	3	22.33	21.04	PASS
		6	0	21.21	20.37	PASS

Conducted Output Power Test Result (Channel Bandwidth: 3 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm] QPSK	Average Power [dBm] 16QAM	Verdict
		Size	Offset			
QPSK / 16QAM	LCH	1	0	22.13	21.30	PASS
		1	7	22.49	21.86	PASS
		1	14	22.57	21.78	PASS
		8	0	21.42	20.08	PASS
		8	4	21.35	20.30	PASS
		8	7	21.39	20.44	PASS
		15	0	21.34	20.53	PASS
	MCH	1	0	23.07	22.81	PASS
		1	7	22.88	22.53	PASS
		1	14	22.72	22.53	PASS
		8	0	22.25	20.95	PASS
		8	4	22.16	20.89	PASS
		8	7	22.04	21.23	PASS
		15	0	22.02	21.28	PASS
	HCH	1	0	21.81	20.61	PASS
		1	7	22.26	21.22	PASS
		1	14	22.10	21.07	PASS
		8	0	21.12	19.95	PASS
		8	4	21.10	20.00	PASS
		8	7	21.15	20.04	PASS
		15	0	21.08	20.10	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	22.27	20.82	PASS
		1	12	22.76	21.21	PASS
		1	24	22.84	21.46	PASS
		12	0	21.27	20.22	PASS
		12	6	21.41	20.26	PASS
		12	13	21.67	20.70	PASS
		25	0	21.46	20.55	PASS
	MCH	1	0	23.30	22.20	PASS
		1	12	23.19	21.73	PASS
		1	24	22.77	21.92	PASS
		12	0	22.26	21.24	PASS
		12	6	22.21	21.07	PASS
		12	13	21.95	21.11	PASS
		25	0	21.99	21.13	PASS
	HCH	1	0	21.77	20.55	PASS
		1	12	22.15	20.39	PASS
		1	24	22.37	21.05	PASS
		12	0	21.06	20.04	PASS
		12	6	21.10	19.91	PASS
		12	13	21.35	20.26	PASS
		25	0	21.15	20.19	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	22.09	21.78	PASS
		1	24	22.70	22.33	PASS
		1	49	23.23	22.89	PASS
		25	0	21.49	20.48	PASS
		25	12	21.63	20.63	PASS
		25	25	22.07	21.04	PASS
		50	0	21.77	20.79	PASS
	MCH	1	0	23.60	23.18	PASS
		1	24	22.94	22.59	PASS
		1	49	22.26	22.26	PASS
		25	0	22.41	21.71	PASS
		25	12	22.21	21.29	PASS
		25	25	21.77	20.82	PASS
		50	0	22.03	21.02	PASS
	HCH	1	0	21.69	20.88	PASS
		1	24	21.90	20.89	PASS
		1	49	22.62	21.34	PASS
		25	0	20.97	19.85	PASS
		25	12	21.28	19.85	PASS
		25	25	21.28	20.30	PASS
		50	0	21.11	20.03	PASS

Conducted Output Power Test Result (Channel Bandwidth: 15 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	22.21	22.28	PASS
		1	37	22.89	22.56	PASS
		1	74	23.41	23.19	PASS
		37	0	21.56	20.75	PASS
		37	18	21.87	21.02	PASS
		37	38	22.26	21.38	PASS
		75	0	21.98	21.00	PASS
	MCH	1	0	23.26	23.40	PASS
		1	37	22.98	22.32	PASS
		1	74	22.06	22.02	PASS
		37	0	22.52	21.62	PASS
		37	18	22.08	21.19	PASS
		37	38	21.71	20.72	PASS
		75	0	22.13	21.14	PASS
	HCH	1	0	22.22	21.03	PASS
		1	37	22.75	20.86	PASS
		1	74	22.42	21.25	PASS
		37	0	20.98	20.05	PASS
		37	18	21.09	19.83	PASS
		37	38	21.13	20.16	PASS
		75	0	20.96	20.09	PASS

Conducted Output Power Test Result (Channel Bandwidth: 20 MHz)						
Modulation	Channel	RB Configuration		Average Power [dBm]	Average Power [dBm]	Verdict
		Size	Offset	QPSK	16QAM	
QPSK / 16QAM	LCH	1	0	22.39	20.54	PASS
		1	49	23.02	21.92	PASS
		1	99	23.66	21.96	PASS
		50	0	21.82	20.79	PASS
		50	25	22.26	21.24	PASS
		50	50	22.55	21.53	PASS
		100	0	22.18	21.18	PASS
	MCH	1	0	23.76	22.30	PASS
		1	49	23.09	21.92	PASS
		1	99	22.17	21.88	PASS
		50	0	22.47	21.45	PASS
		50	25	22.10	21.02	PASS
		50	50	21.60	20.72	PASS
		100	0	22.09	21.12	PASS
	HCH	1	0	22.68	21.31	PASS
		1	49	21.89	20.96	PASS
		1	99	22.12	21.01	PASS
		50	0	21.20	20.48	PASS
		50	25	20.95	19.96	PASS
		50	50	20.86	19.92	PASS
		100	0	21.07	20.22	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	4.84	<13	PASS
	MCH	3.94	<13	PASS
	HCH	4.75	<13	PASS
16QAM	LCH	5.87	<13	PASS
	MCH	4.79	<13	PASS
	HCH	5.77	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 3 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.98	<13	PASS
	MCH	4.2	<13	PASS
	HCH	4.92	<13	PASS
16QAM	LCH	5.95	<13	PASS
	MCH	4.98	<13	PASS
	HCH	5.77	<13	PASS

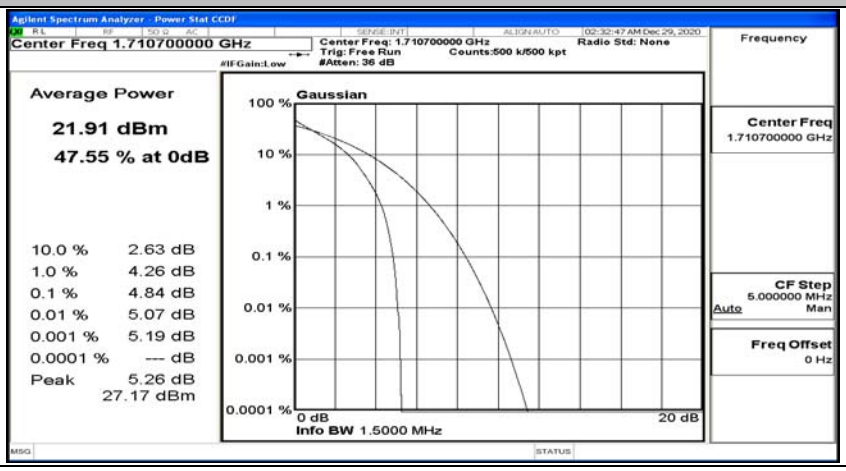
Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.88	<13	PASS
	MCH	4.17	<13	PASS
	HCH	5.13	<13	PASS
16QAM	LCH	5.64	<13	PASS
	MCH	5.08	<13	PASS
	HCH	5.79	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.74	<13	PASS
	MCH	4.42	<13	PASS
	HCH	5.07	<13	PASS
16QAM	LCH	5.56	<13	PASS
	MCH	5.2	<13	PASS
	HCH	5.93	<13	PASS

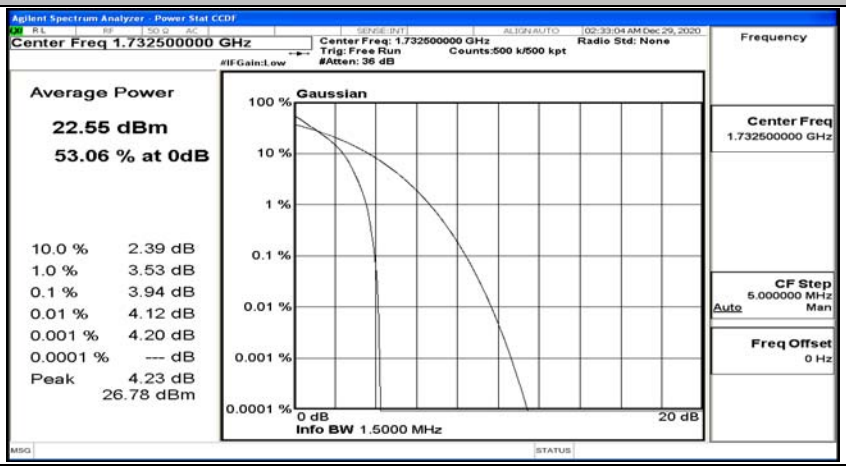
Peak-to Average Ratio Test Result (Channel Bandwidth: 15 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.93	<13	PASS
	MCH	4.86	<13	PASS
	HCH	5.03	<13	PASS
16QAM	LCH	6.03	<13	PASS
	MCH	5.88	<13	PASS
	HCH	6.28	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 20 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	5.67	<13	PASS
	MCH	5.7	<13	PASS
	HCH	6.04	<13	PASS
16QAM	LCH	6.69	<13	PASS
	MCH	6.45	<13	PASS
	HCH	6.9	<13	PASS

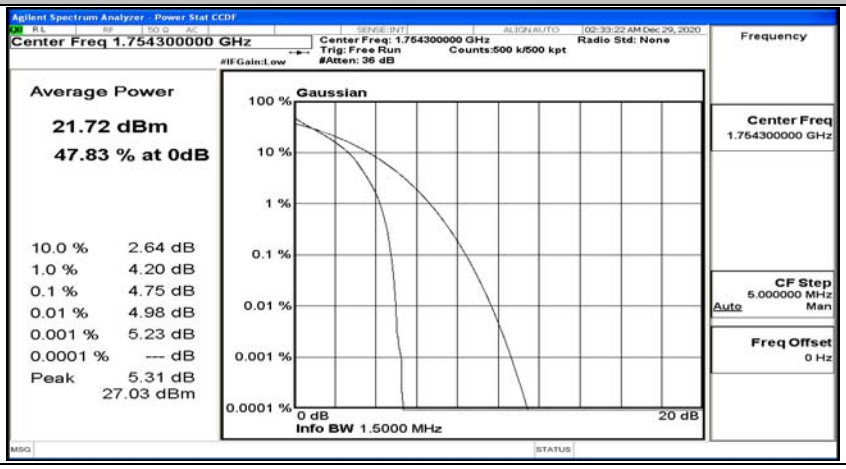
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK



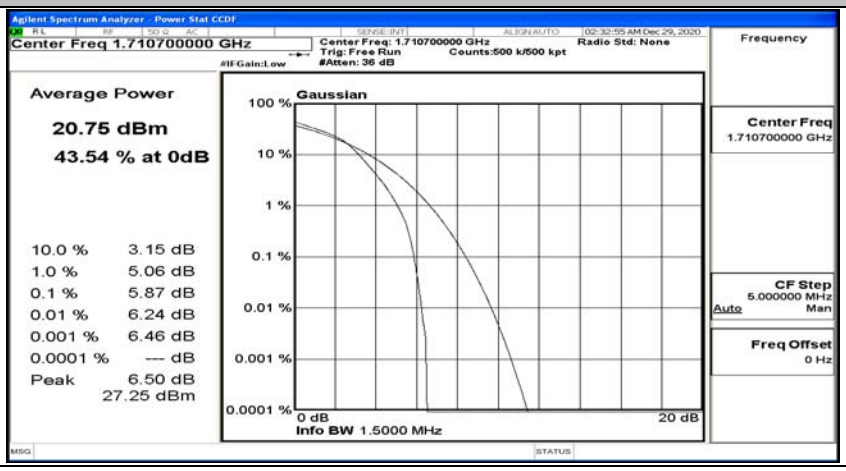
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_QPSK



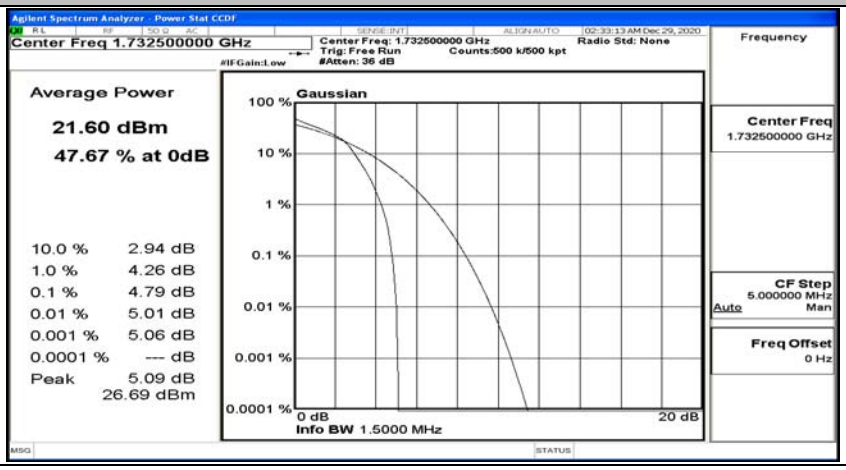
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK



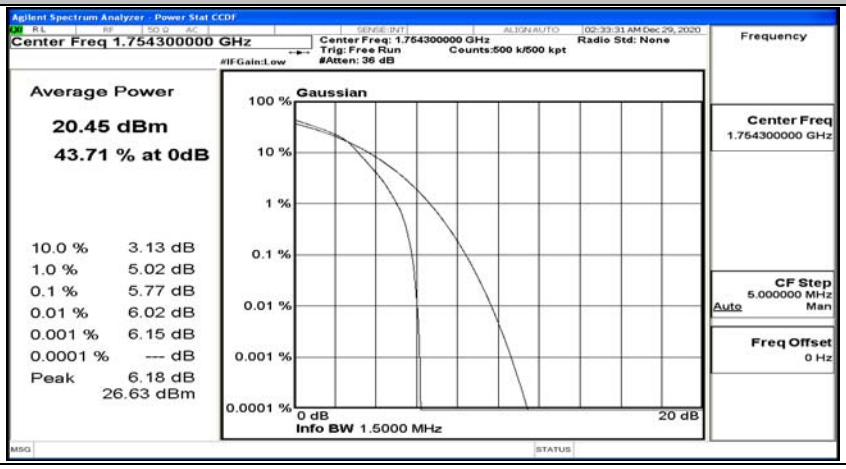
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM



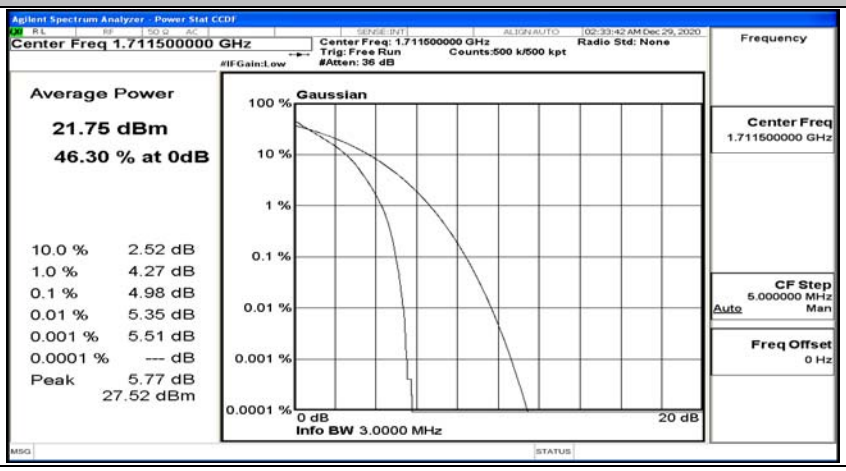
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_16QAM



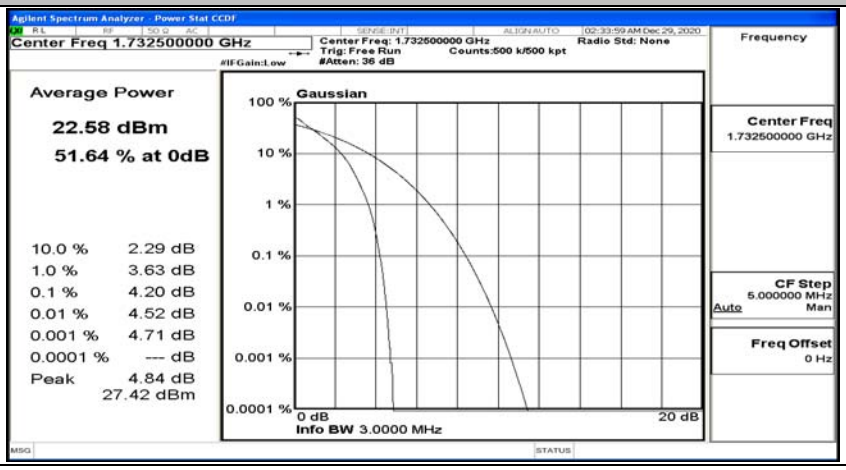
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM



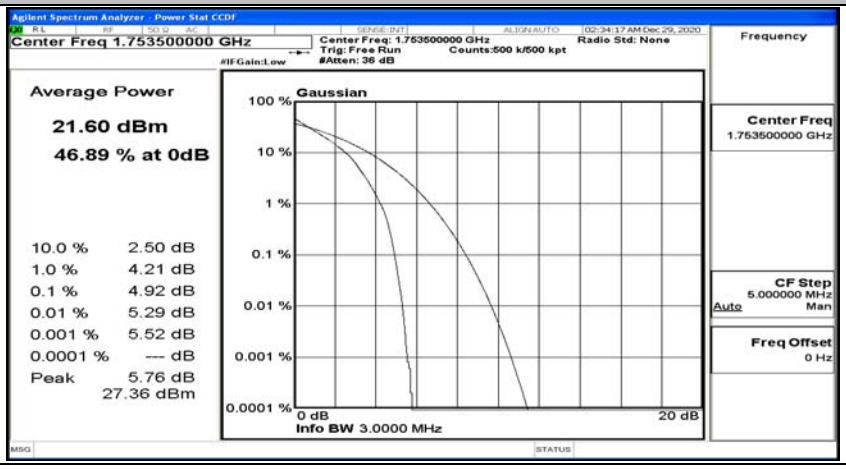
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK



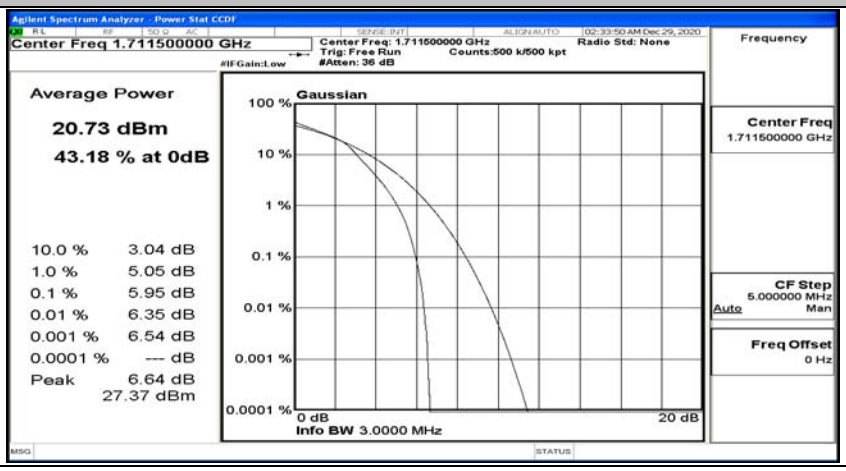
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_QPSK



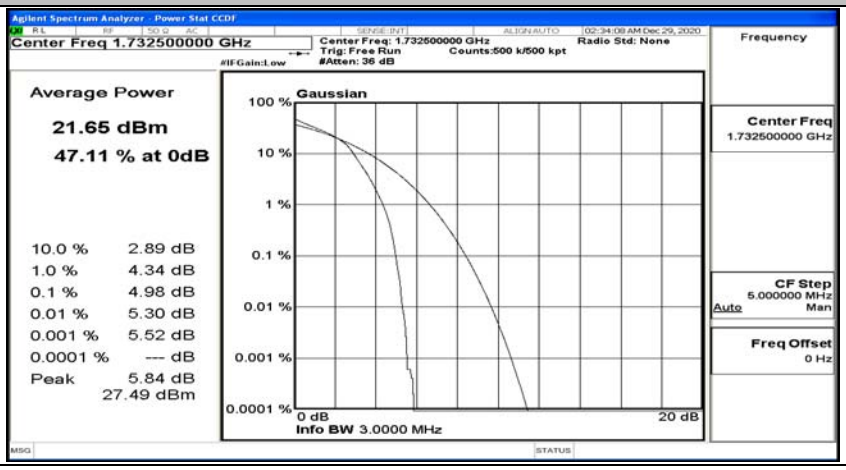
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK



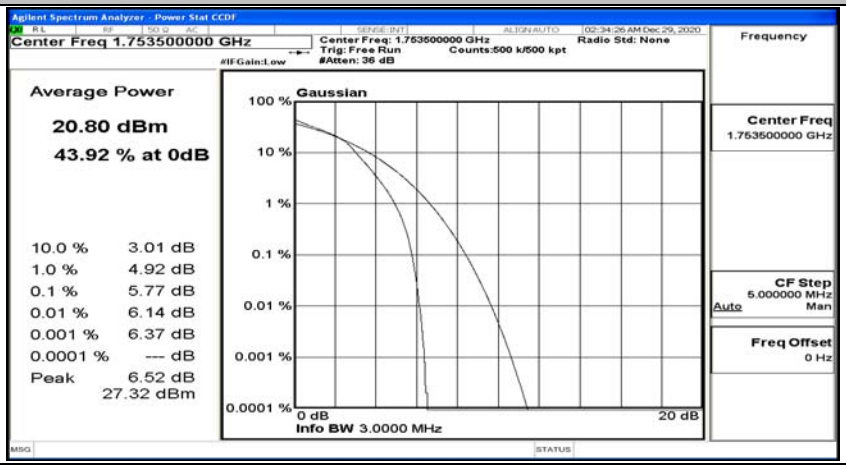
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM



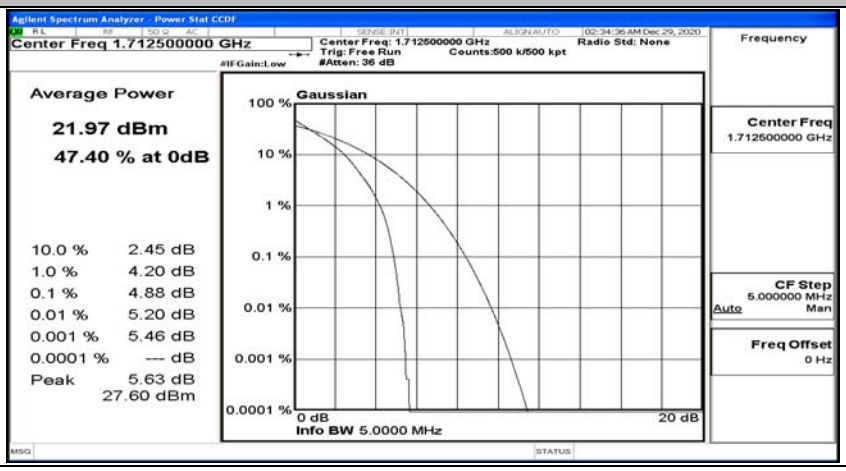
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_16QAM



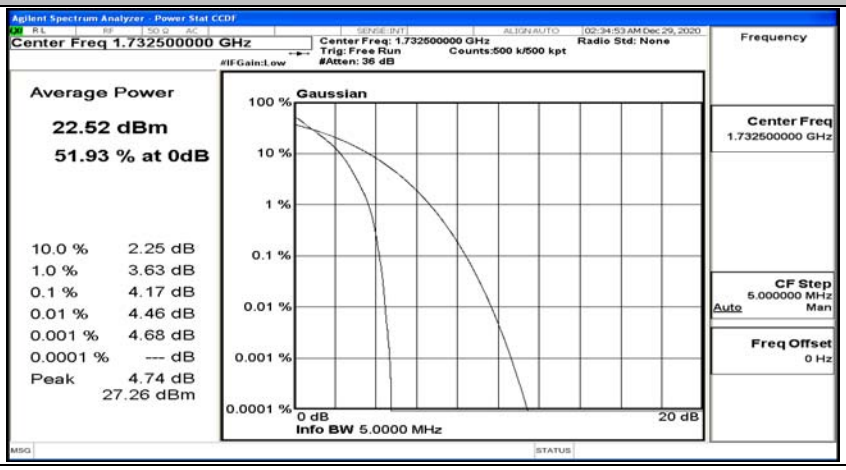
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM



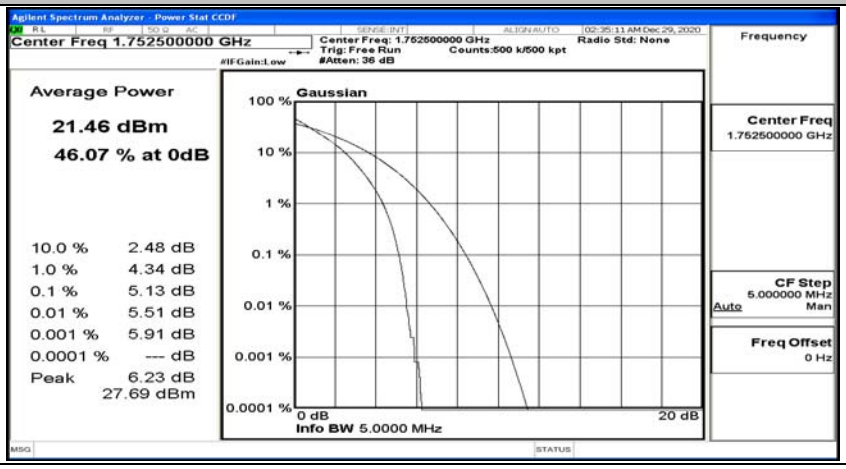
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



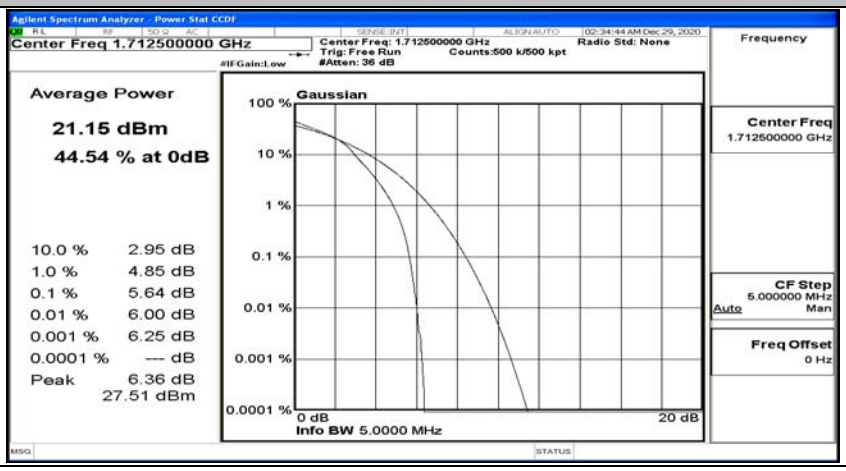
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



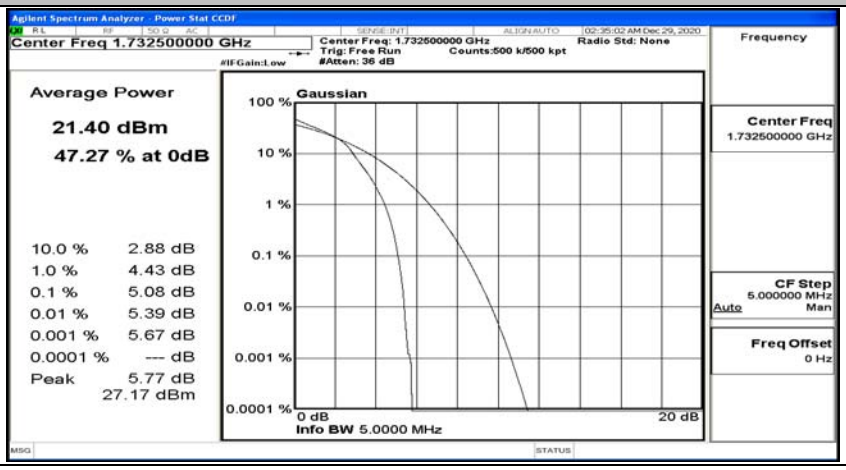
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



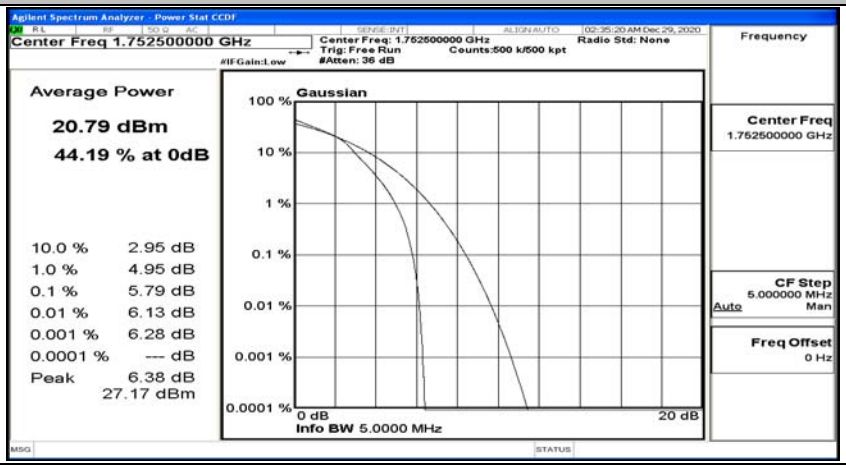
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



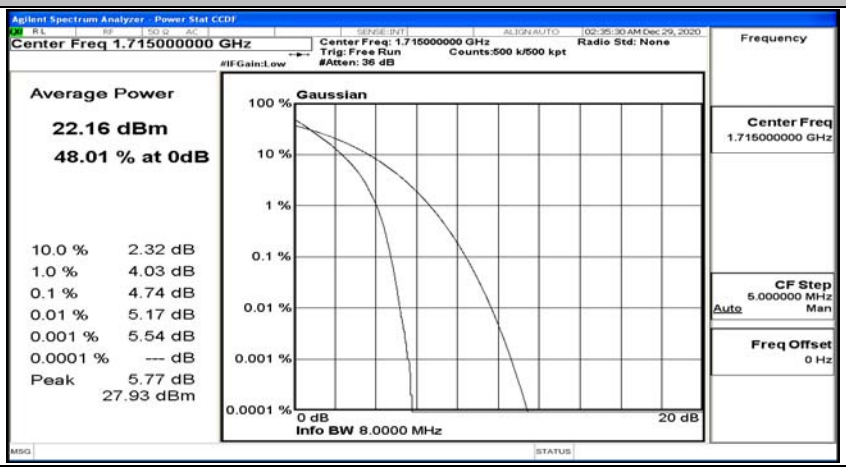
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



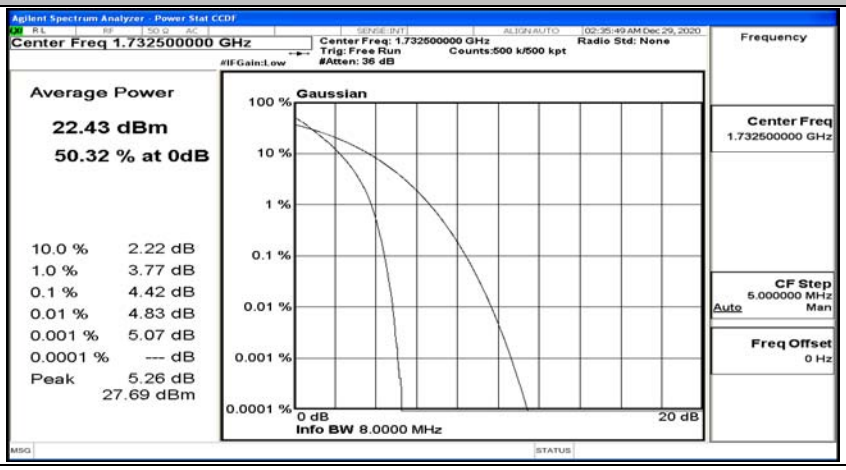
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



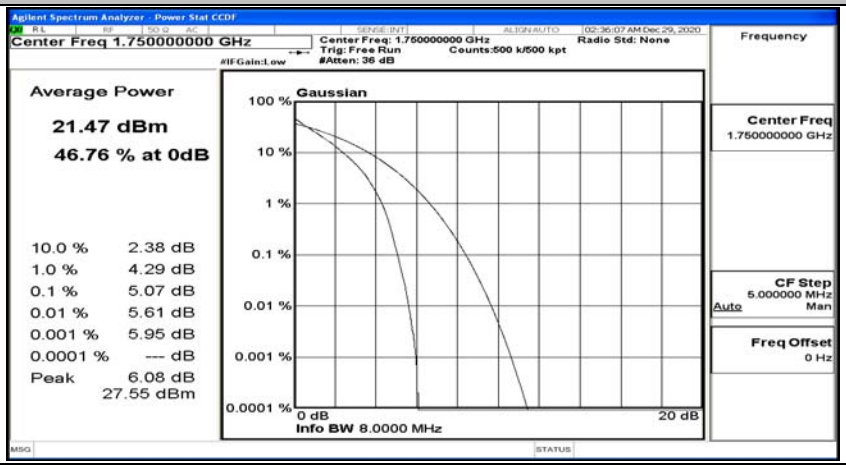
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



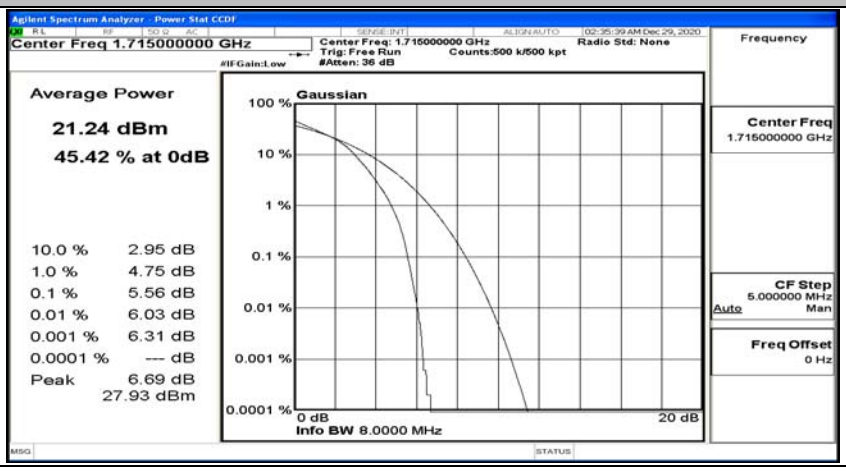
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



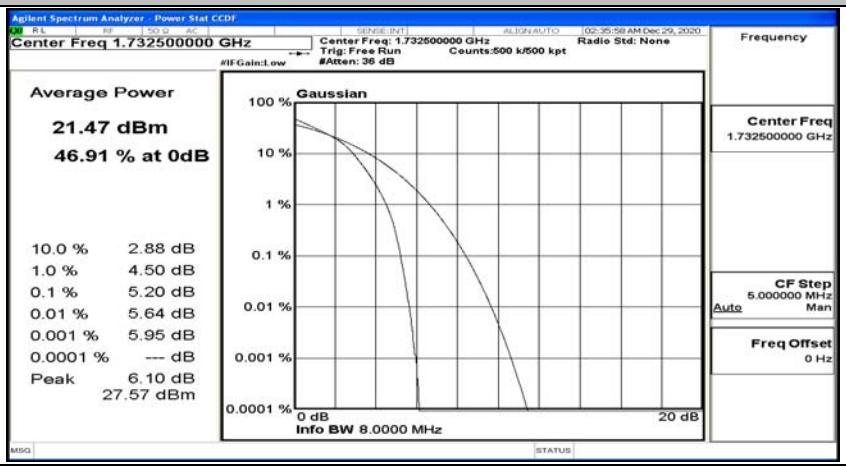
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



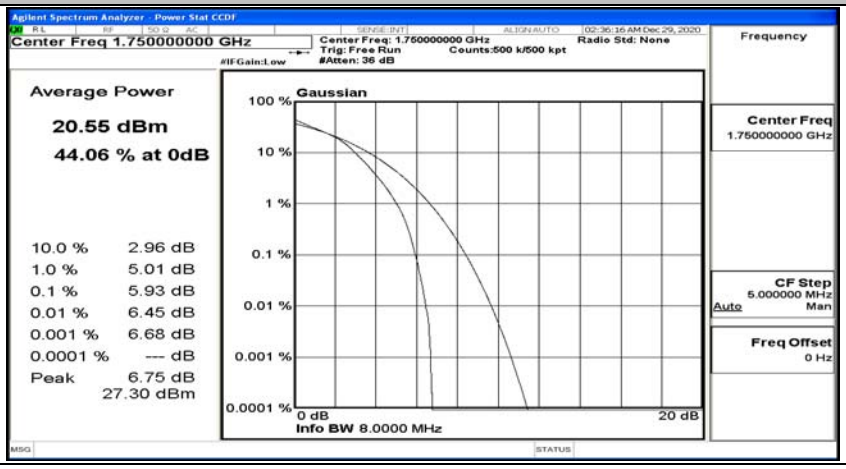
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



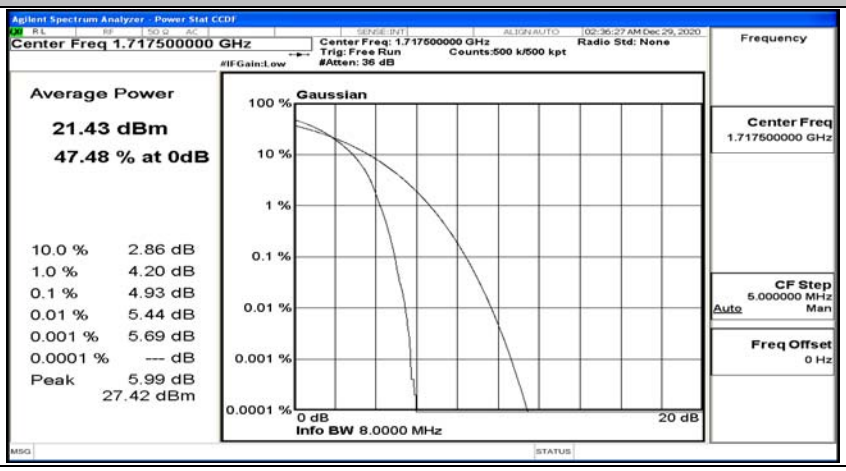
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM



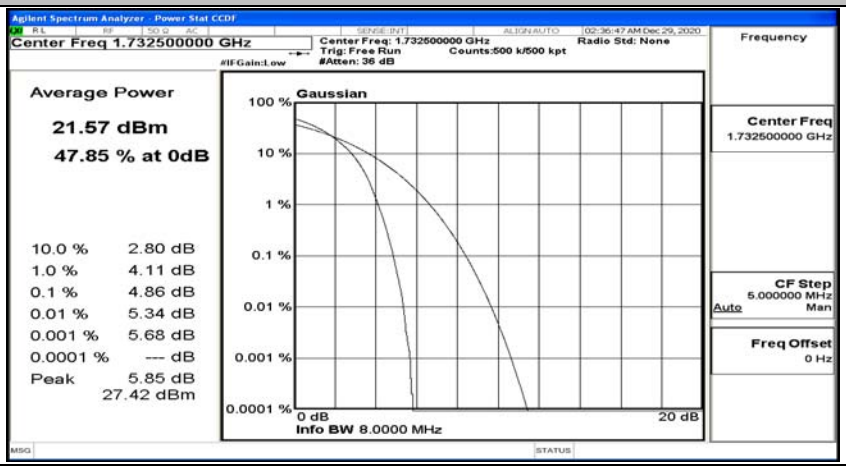
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM



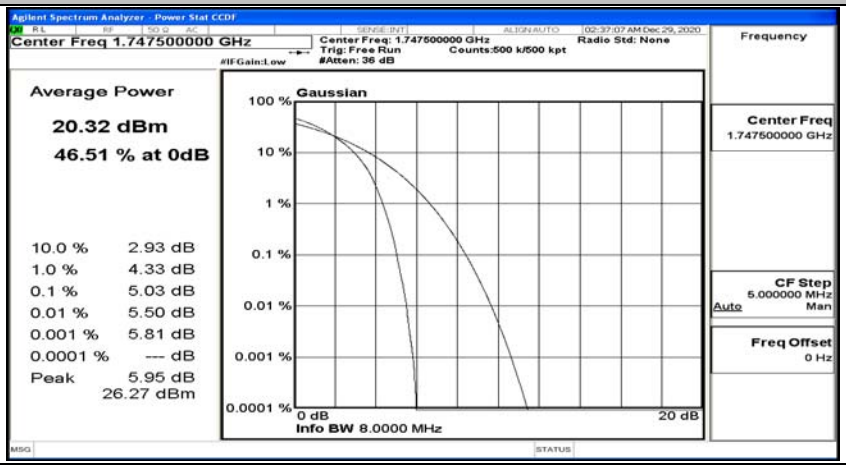
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_QPSK



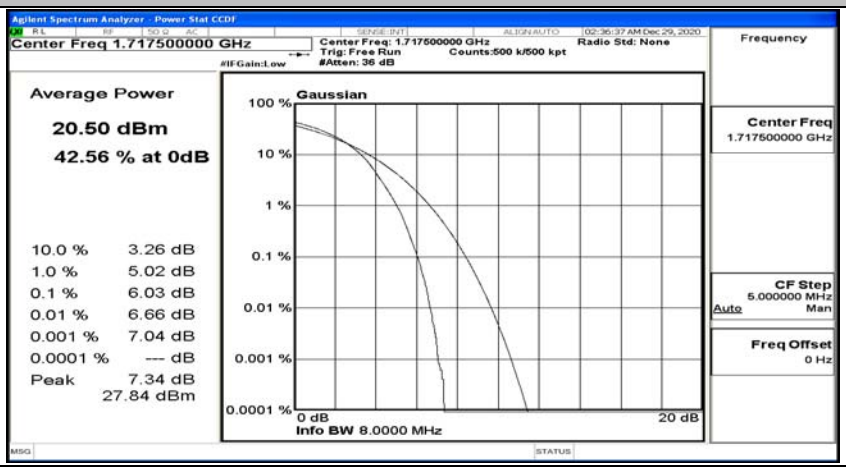
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_QPSK



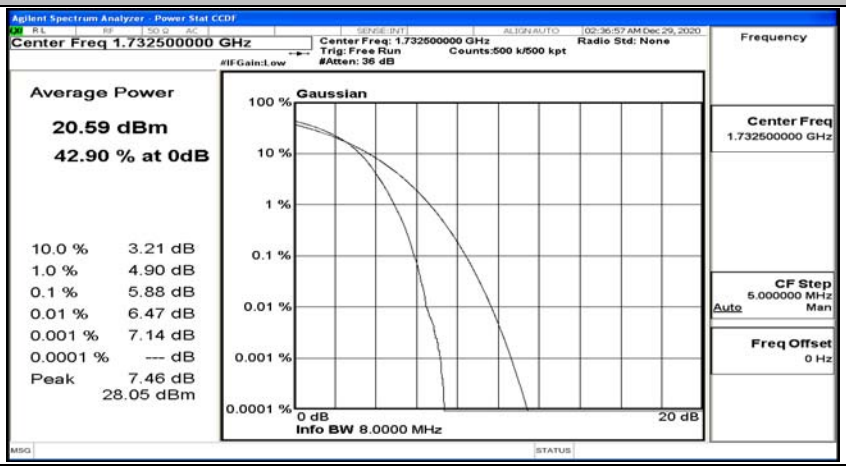
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_QPSK



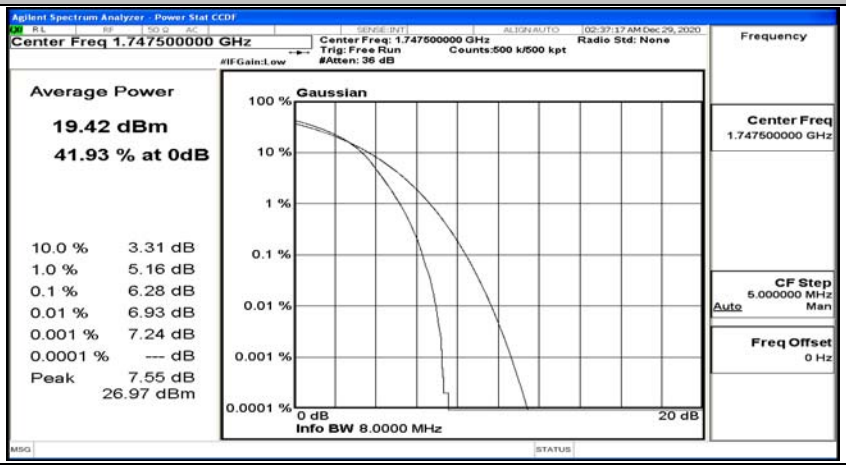
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_16QAM



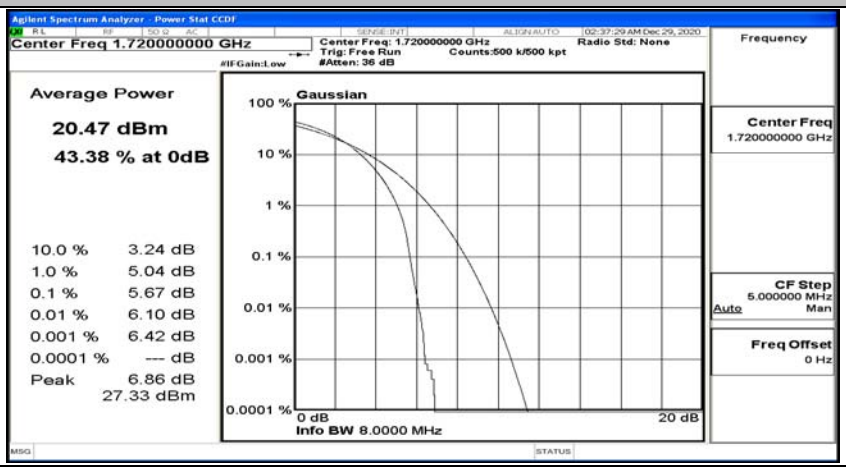
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_16QAM



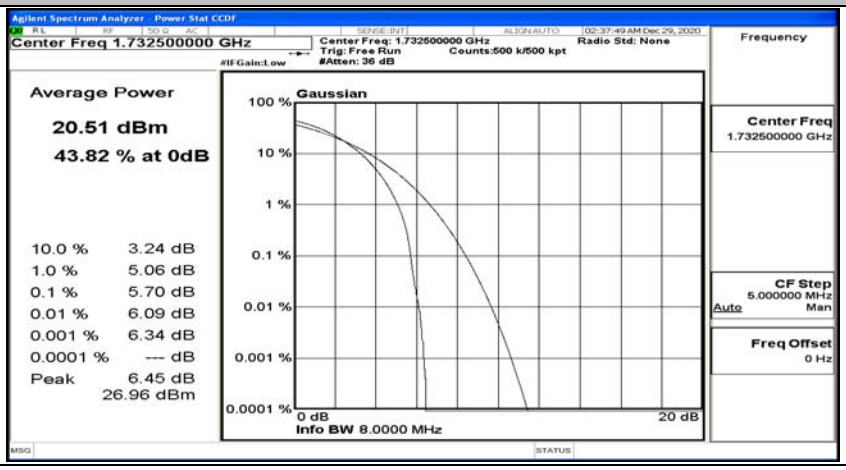
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_16QAM



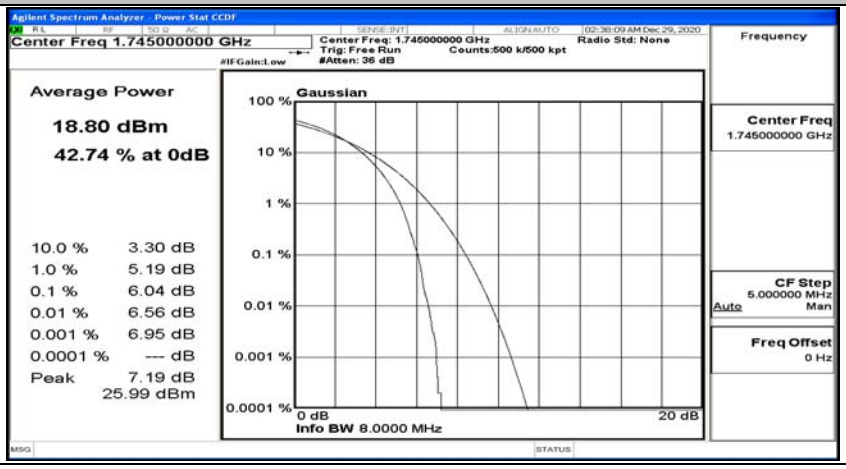
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK



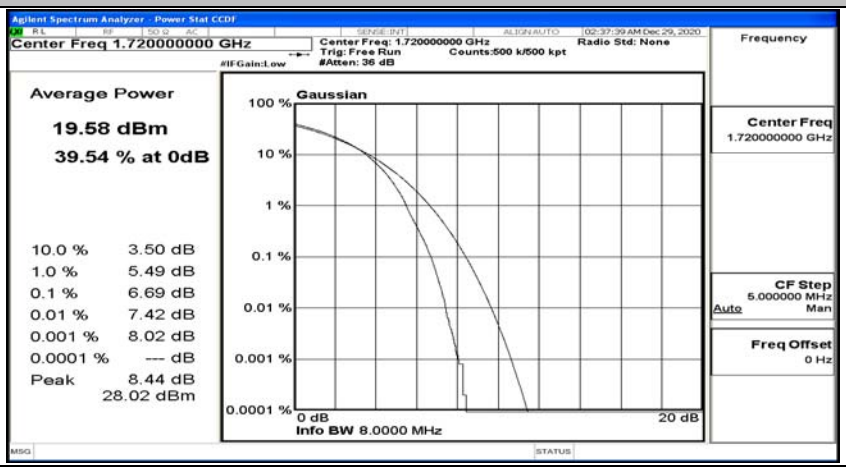
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_QPSK



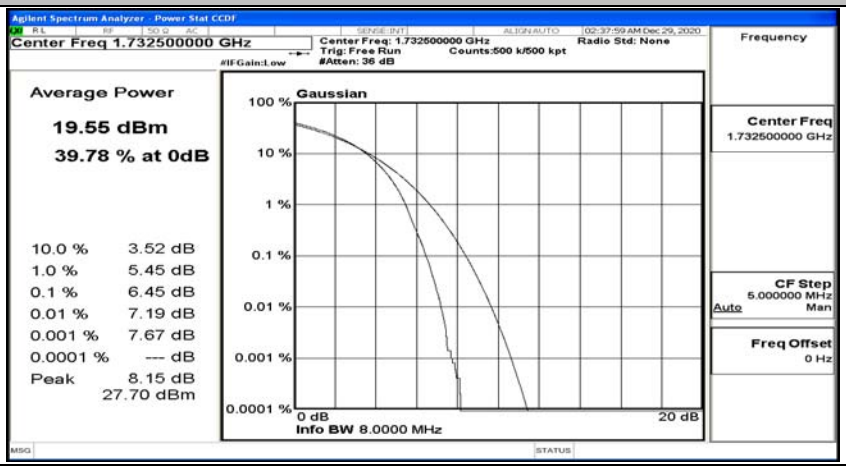
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_QPSK



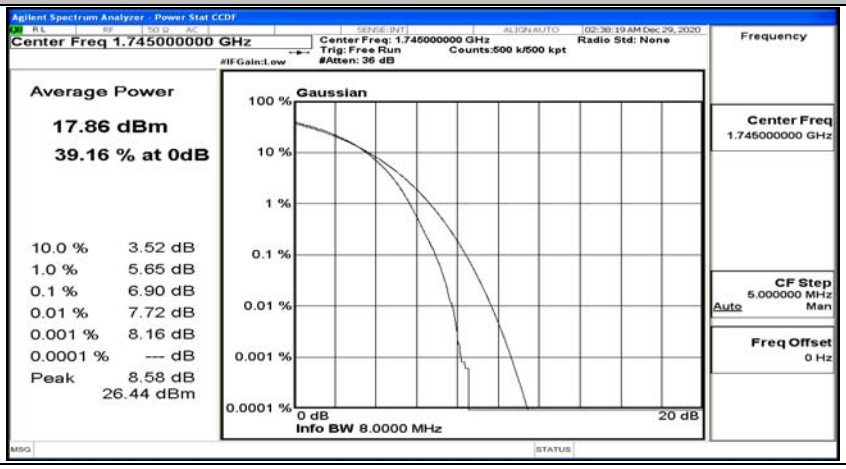
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_16QAM



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_16QAM



Peak-to Average Ratio Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_16QAM



C.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	1.0762	1.241	PASS
	MCH	1.0774	1.261	PASS
	HCH	1.0786	1.225	PASS
16QAM	LCH	1.0818	1.264	PASS
	MCH	1.0788	1.217	PASS
	HCH	1.0790	1.239	PASS

EBW & OBW Test Result (Channel Bandwidth: 3 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	2.6878	2.898	PASS
	MCH	2.6863	2.919	PASS
	HCH	2.6786	2.861	PASS
16QAM	LCH	2.6838	2.878	PASS
	MCH	2.6825	2.945	PASS
	HCH	2.6843	2.919	PASS

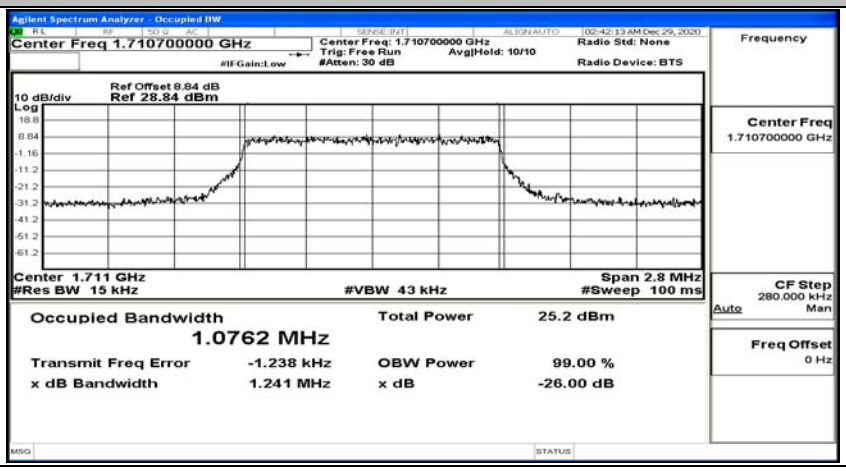
EBW & OBW Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	4.4723	4.828	PASS
	MCH	4.4723	4.828	PASS
	HCH	4.4734	4.868	PASS
16QAM	LCH	4.4768	4.793	PASS
	MCH	4.4690	4.771	PASS
	HCH	4.4817	4.818	PASS

EBW & OBW Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	8.9254	9.450	PASS
	MCH	8.9137	9.389	PASS
	HCH	8.9356	9.461	PASS
16QAM	LCH	8.9351	9.499	PASS
	MCH	8.9269	9.369	PASS
	HCH	8.9220	9.413	PASS

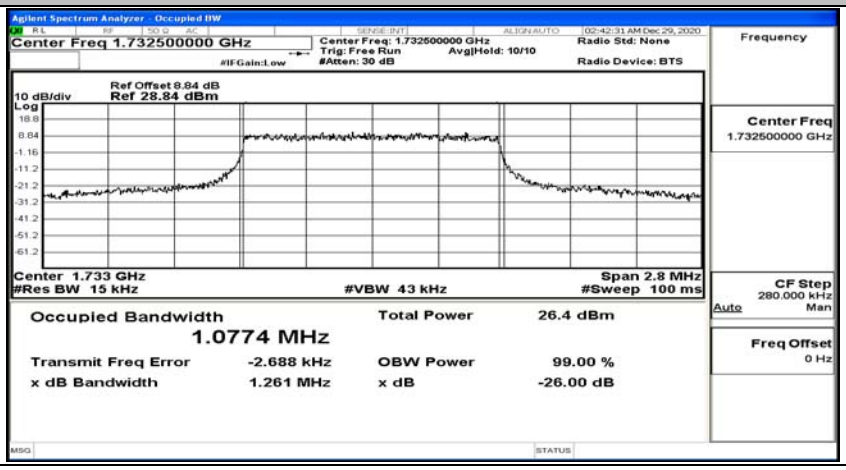
EBW & OBW Test Result (Channel Bandwidth: 15 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	13.376	13.99	PASS
	MCH	13.362	14.02	PASS
	HCH	13.409	14.08	PASS
16QAM	LCH	13.360	13.97	PASS
	MCH	13.367	14.06	PASS
	HCH	13.414	14.05	PASS

EBW & OBW Test Result (Channel Bandwidth: 20 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	17.780	18.54	PASS
	MCH	17.780	18.54	PASS
	HCH	17.871	18.74	PASS
16QAM	LCH	17.782	18.62	PASS
	MCH	17.770	18.58	PASS
	HCH	17.872	18.64	PASS

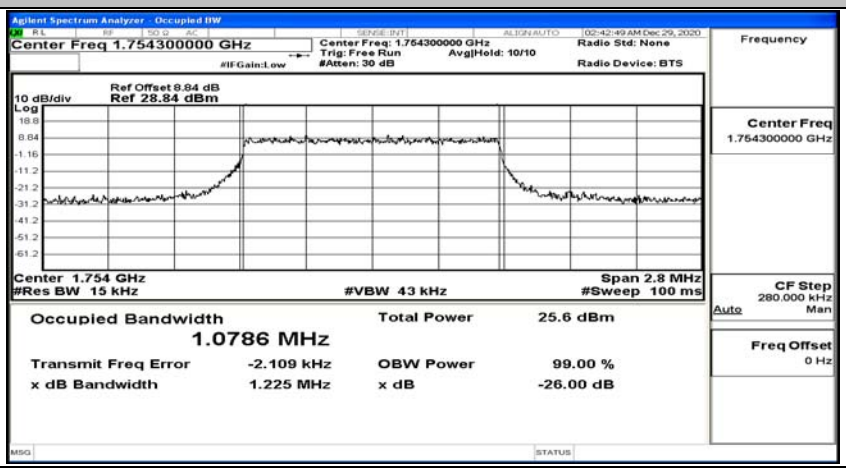
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK



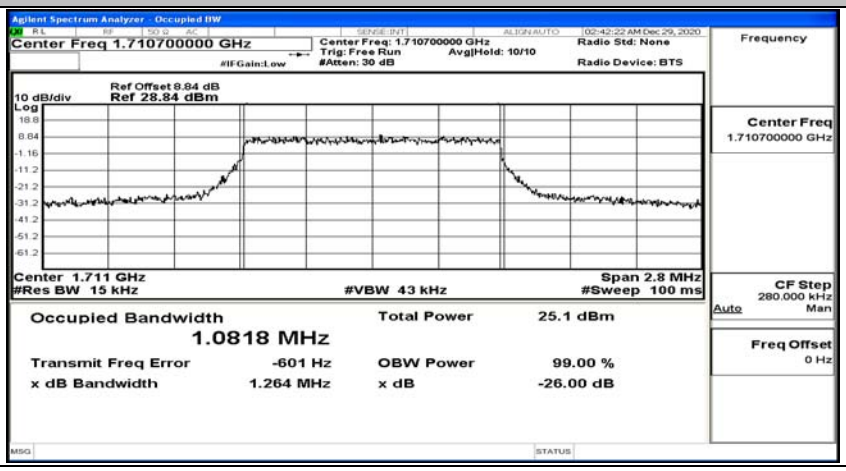
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_QPSK



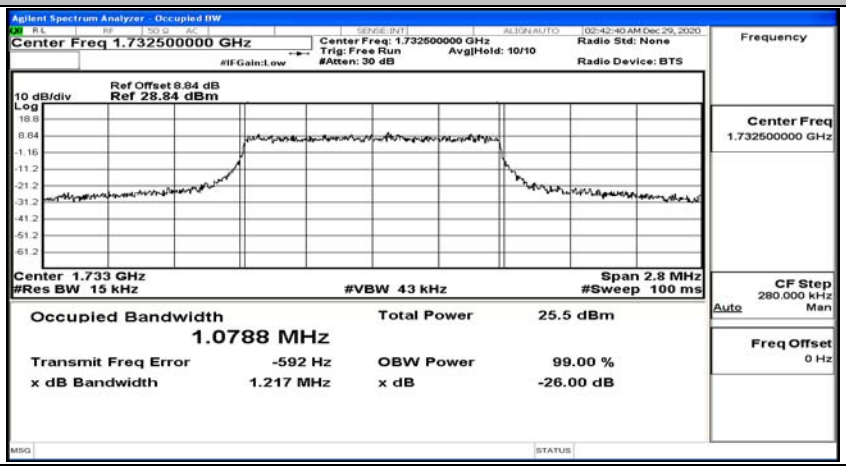
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK



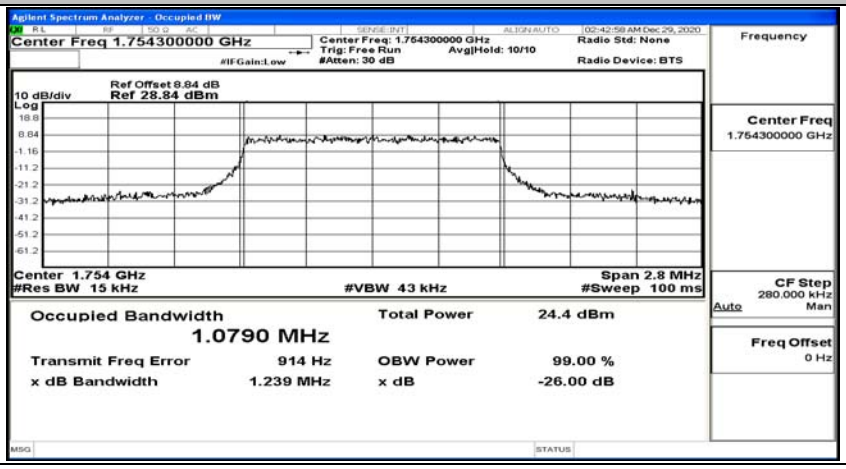
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM



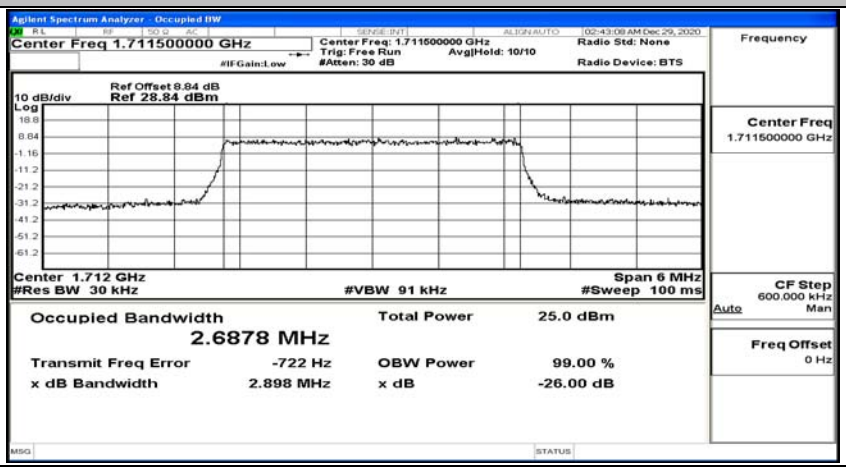
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_16QAM



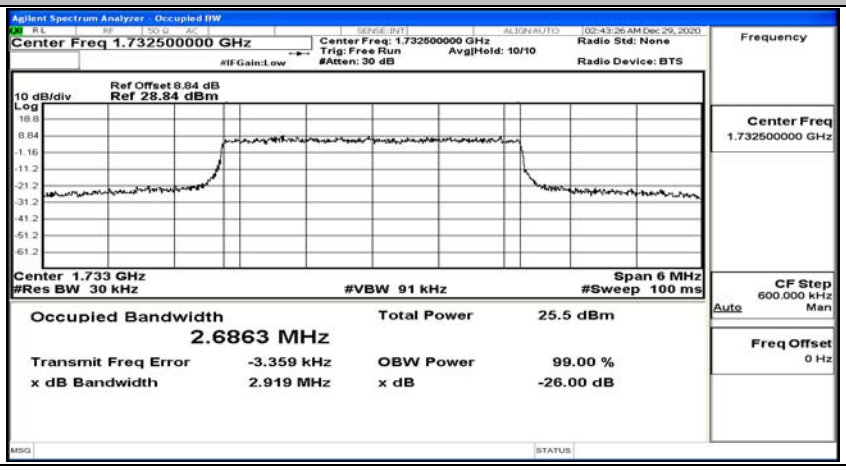
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM



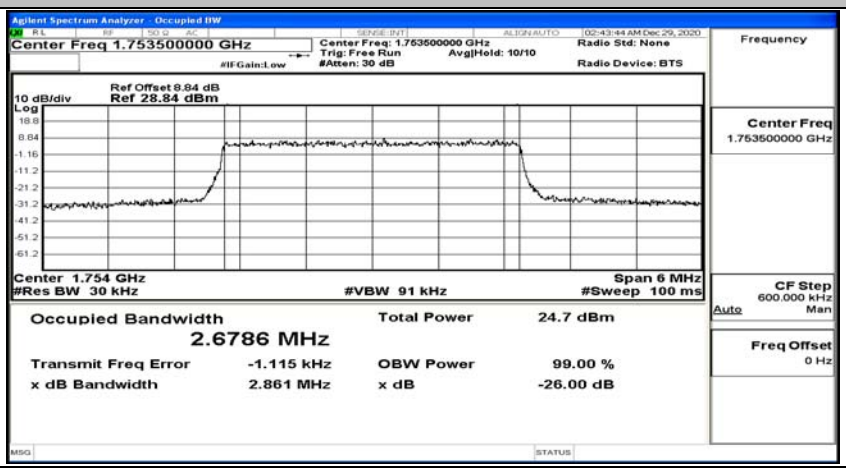
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK



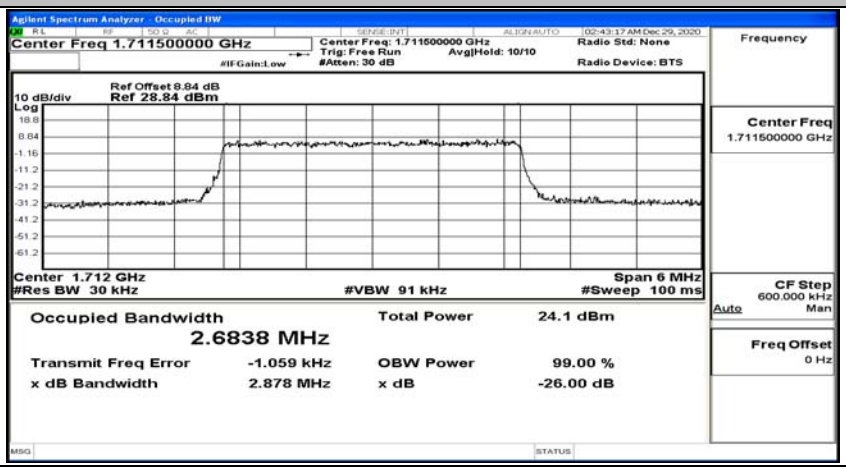
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_QPSK



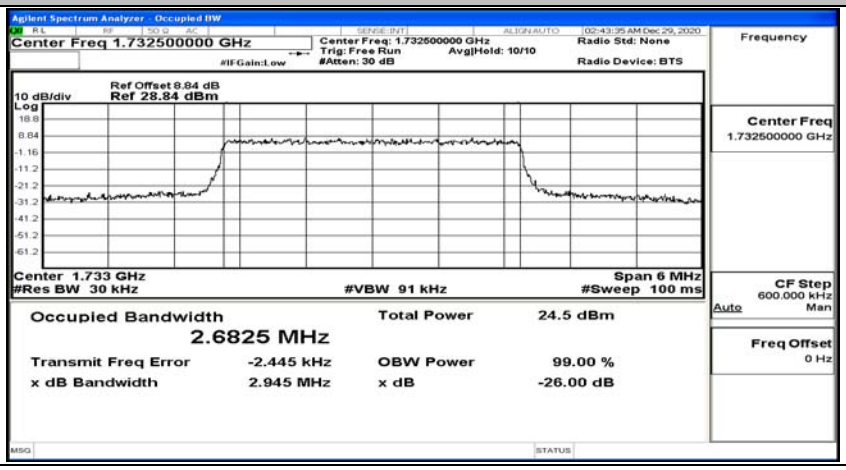
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK



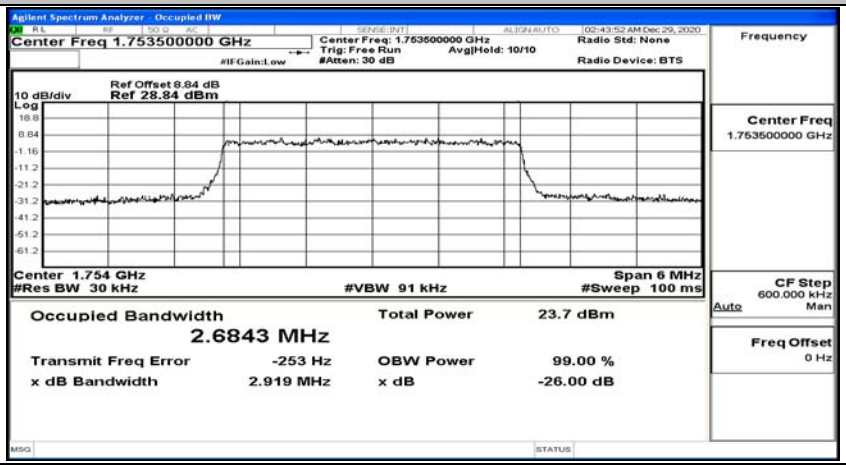
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM



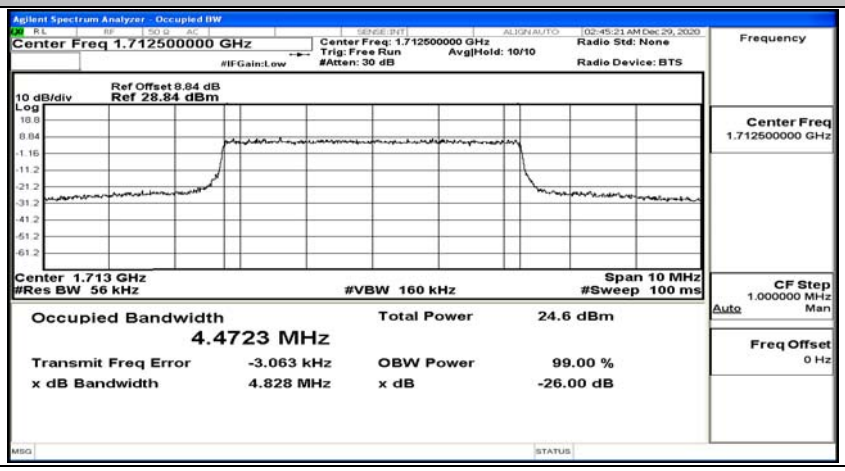
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_16QAM



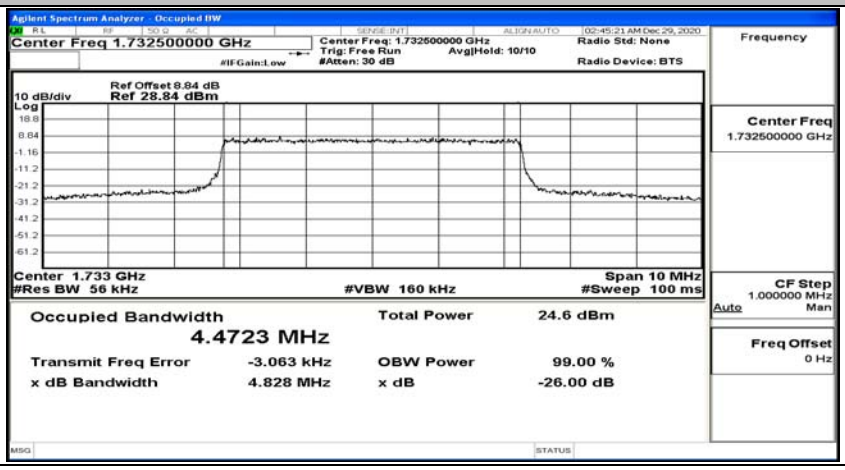
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM



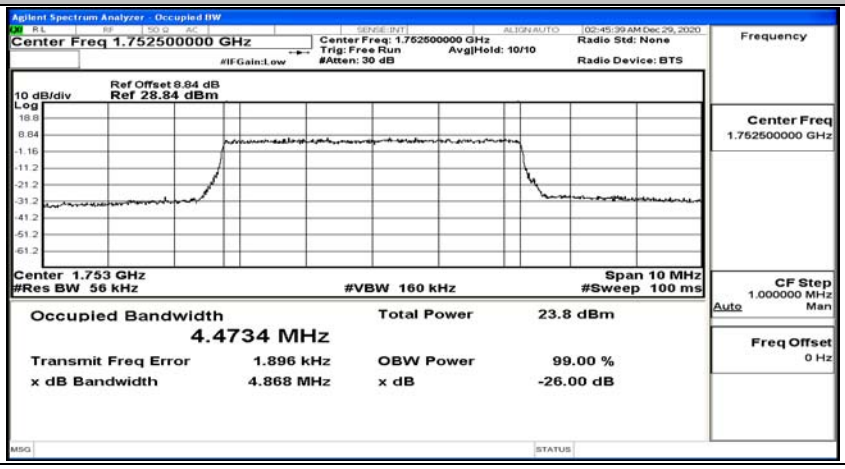
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



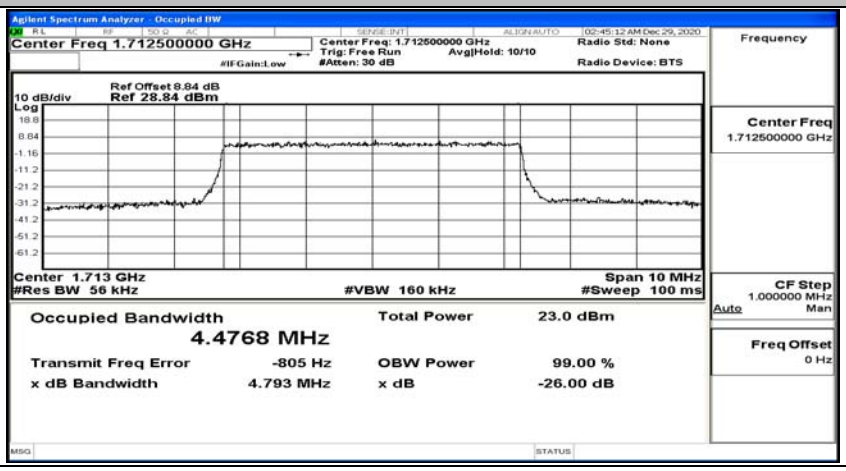
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



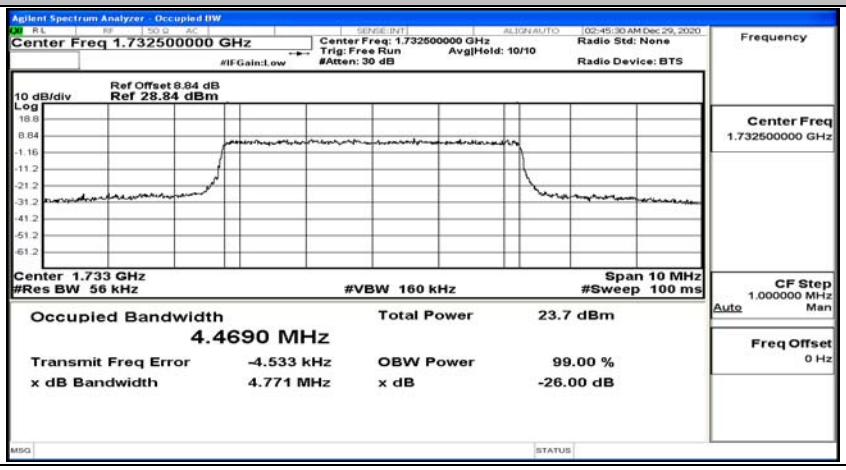
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



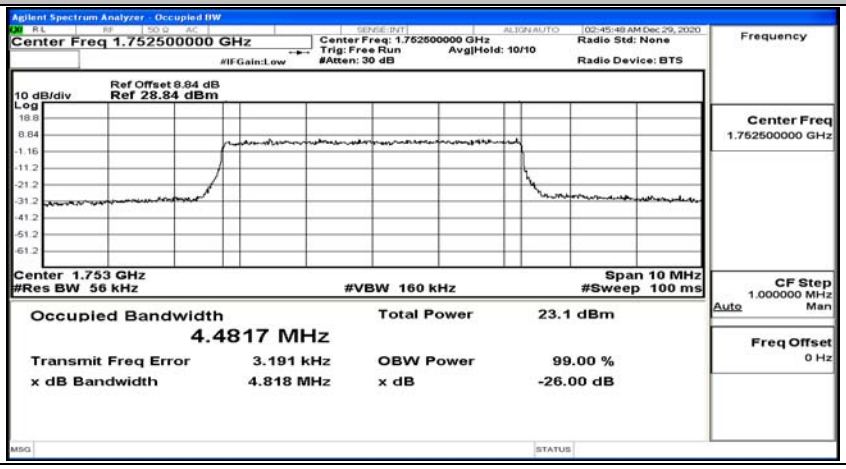
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



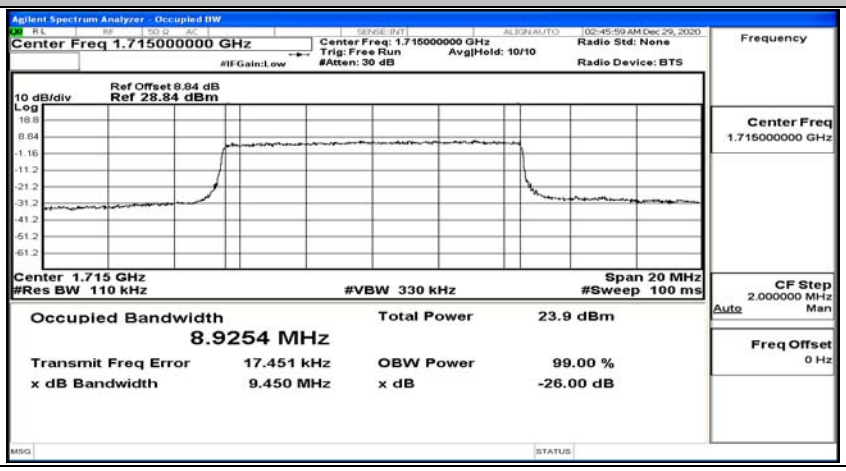
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



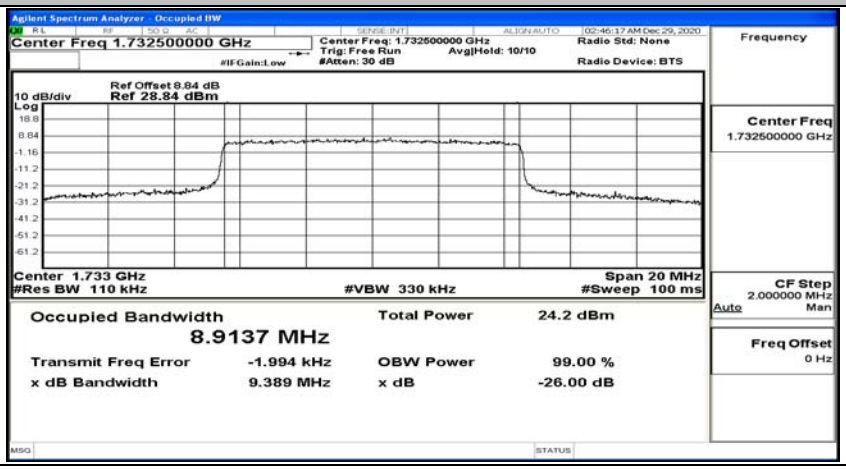
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



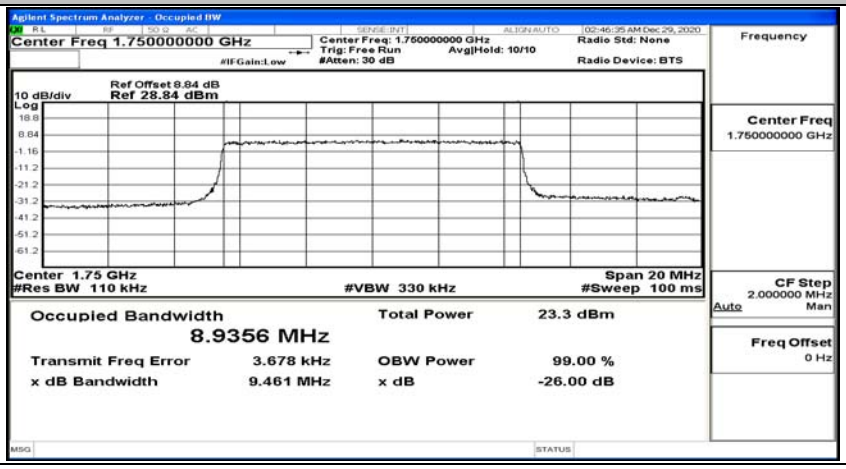
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



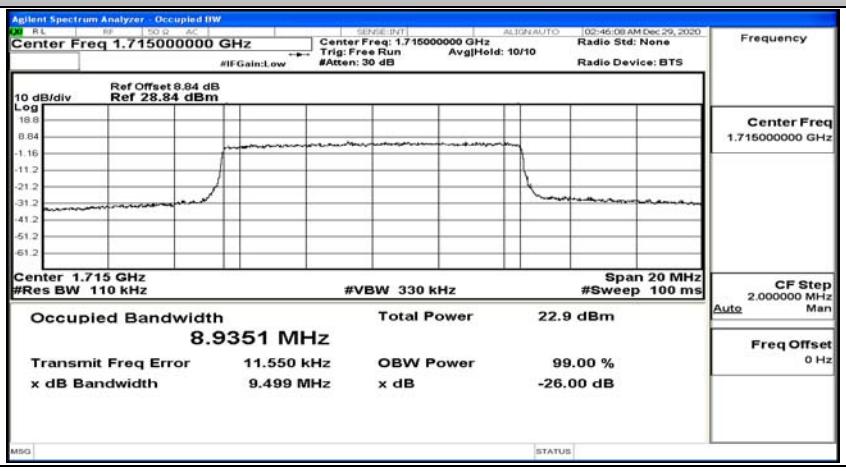
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



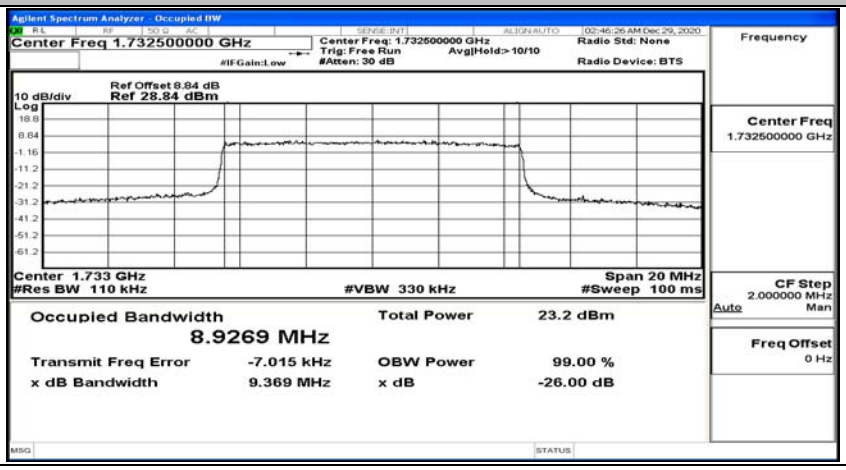
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



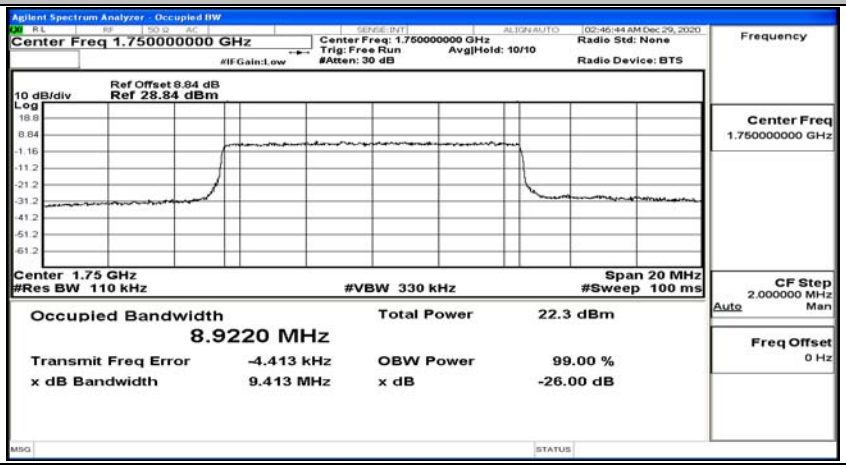
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



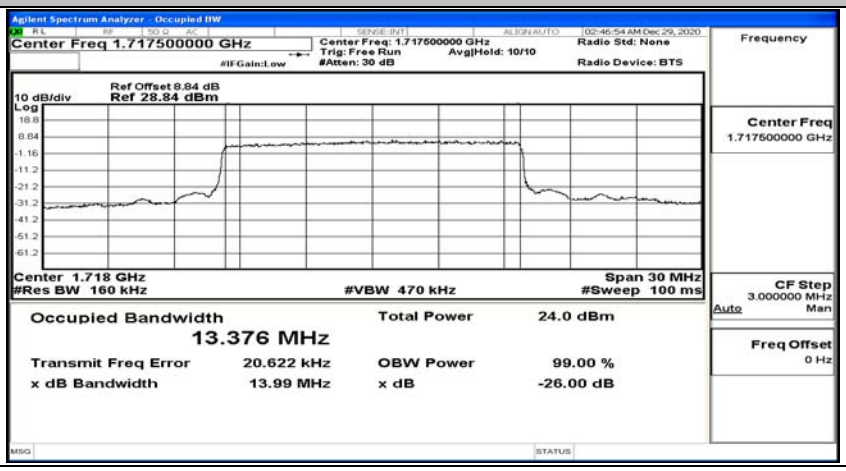
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM



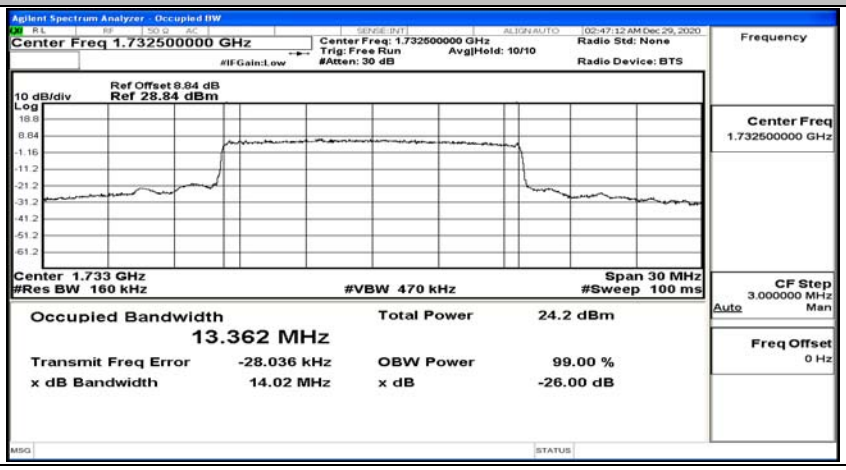
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM



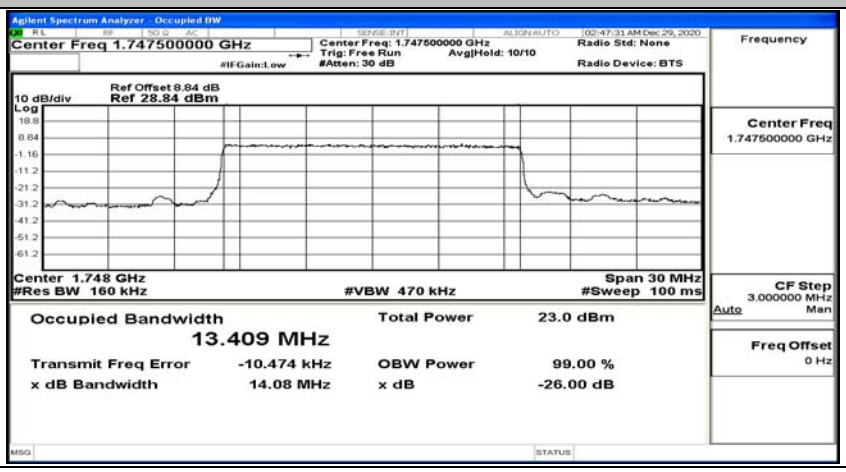
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_QPSK



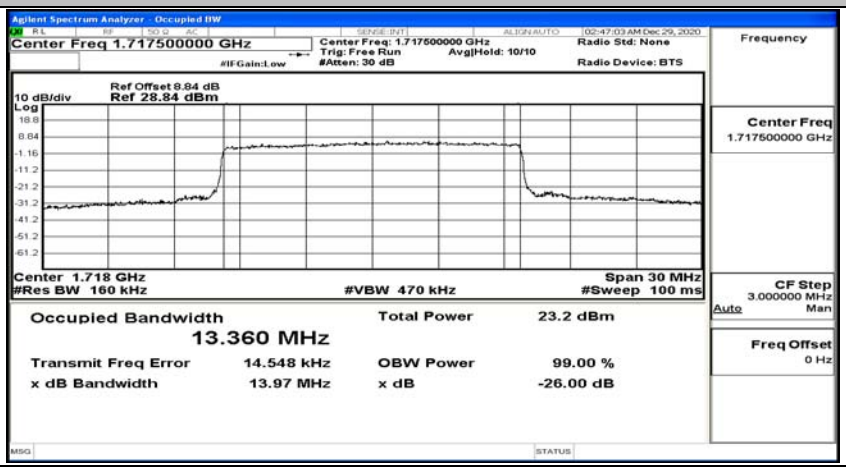
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_QPSK



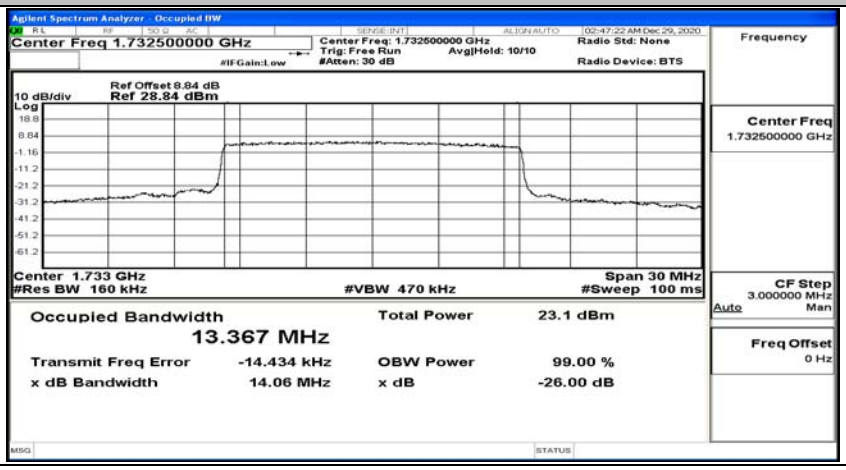
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_QPSK



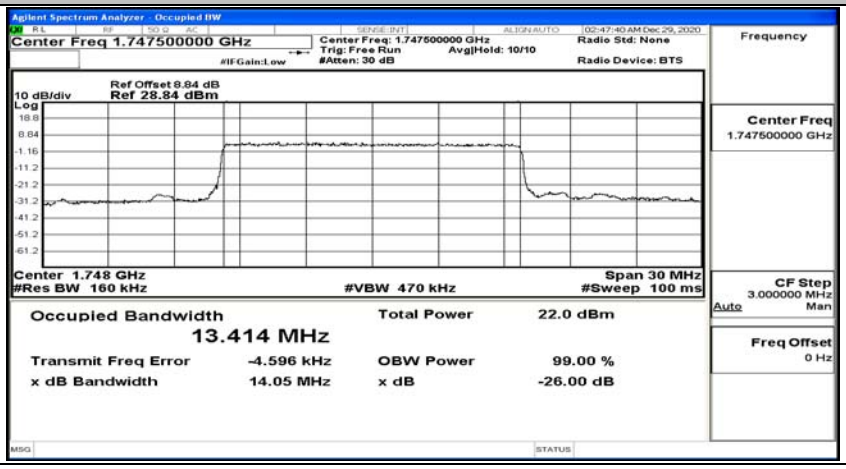
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_16QAM



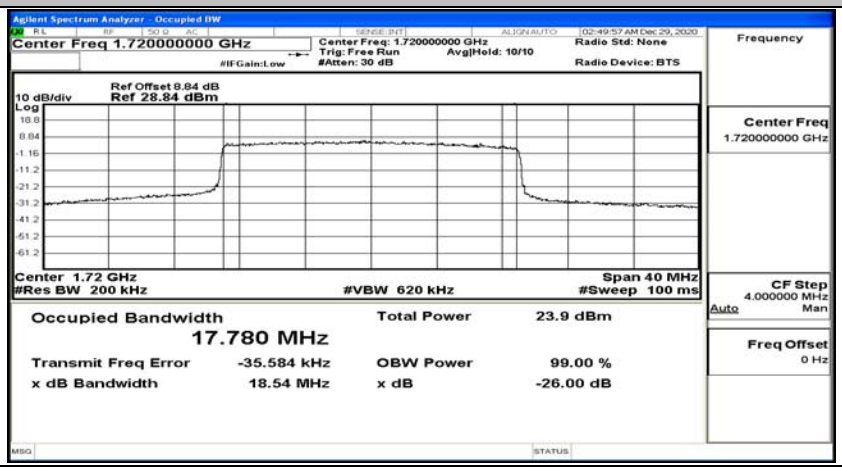
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_MCH_16QAM



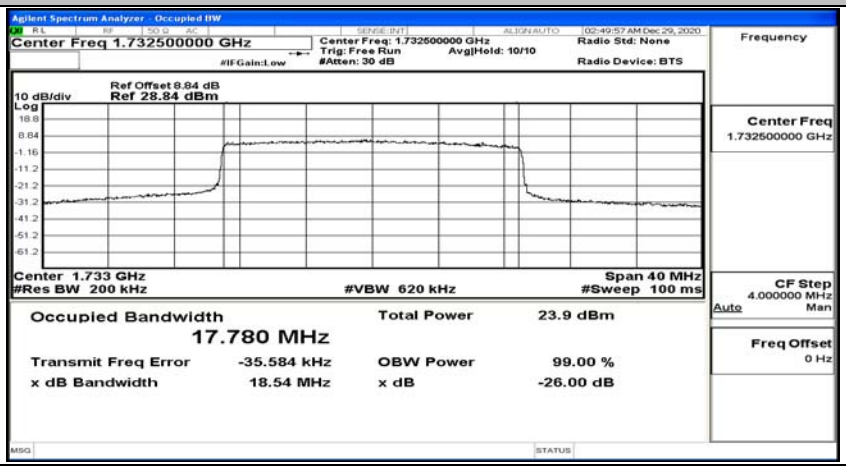
EBW & OBW Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_16QAM



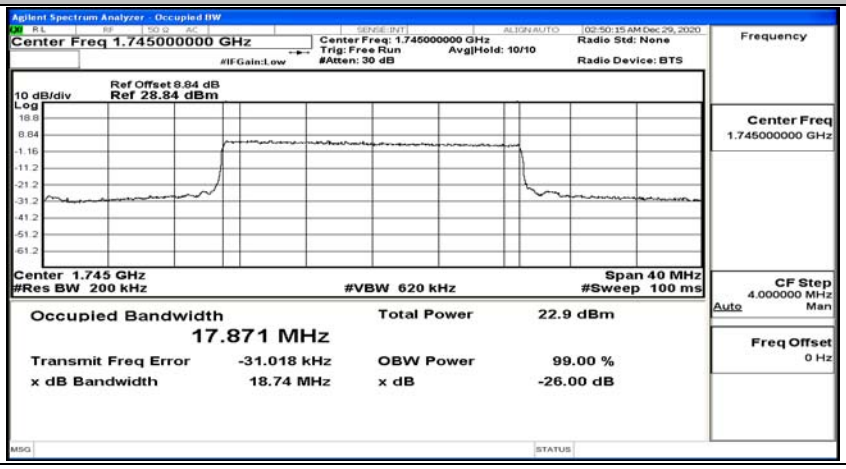
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK



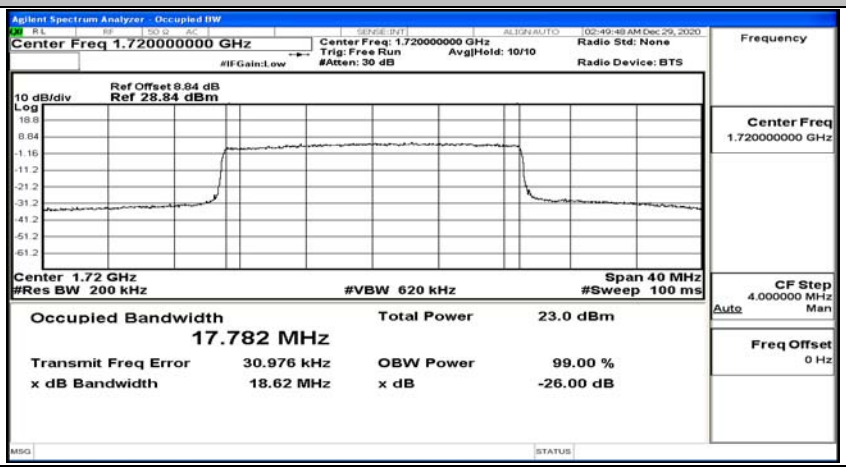
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_QPSK



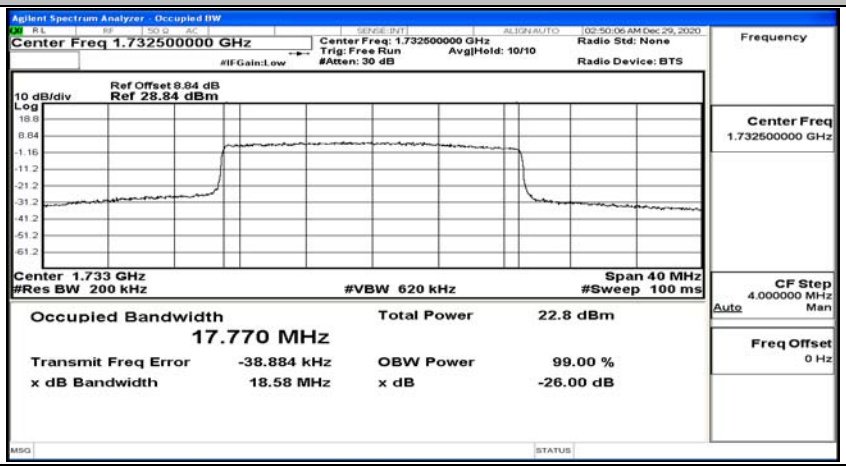
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_QPSK



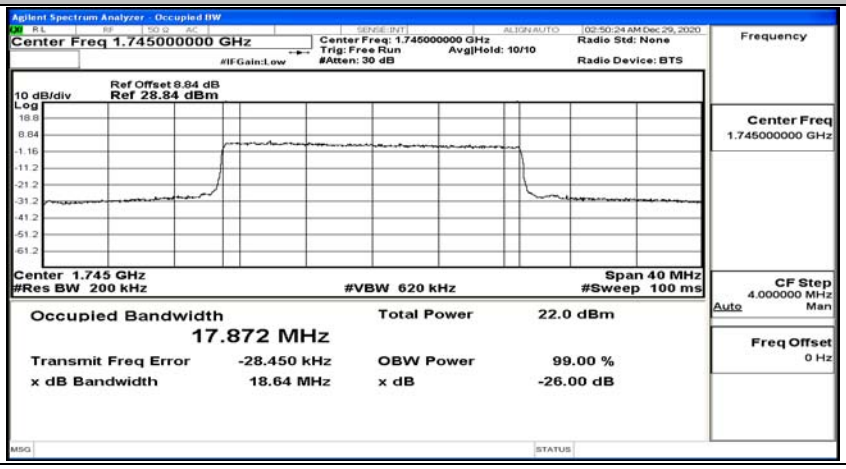
EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_16QAM



EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_MCH_16QAM

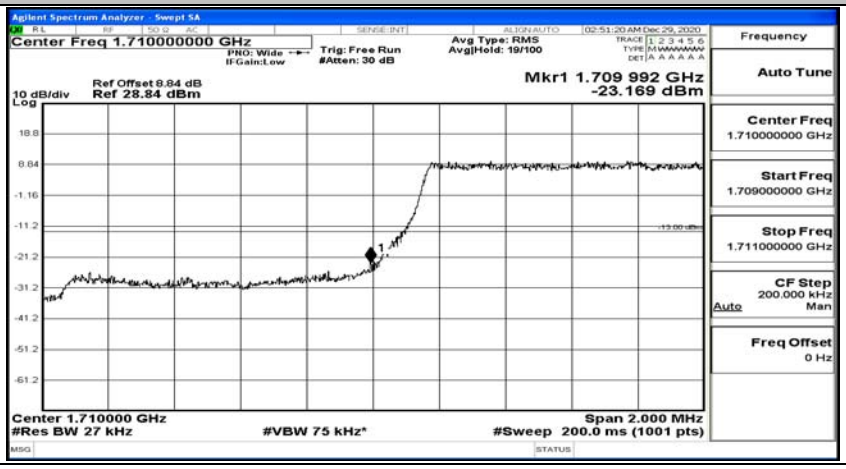


EBW & OBW Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_16QAM

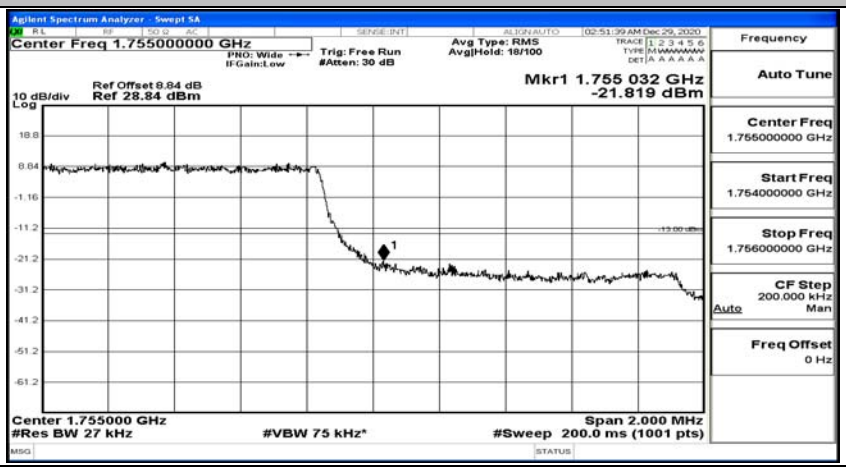


C.4 Band Edge

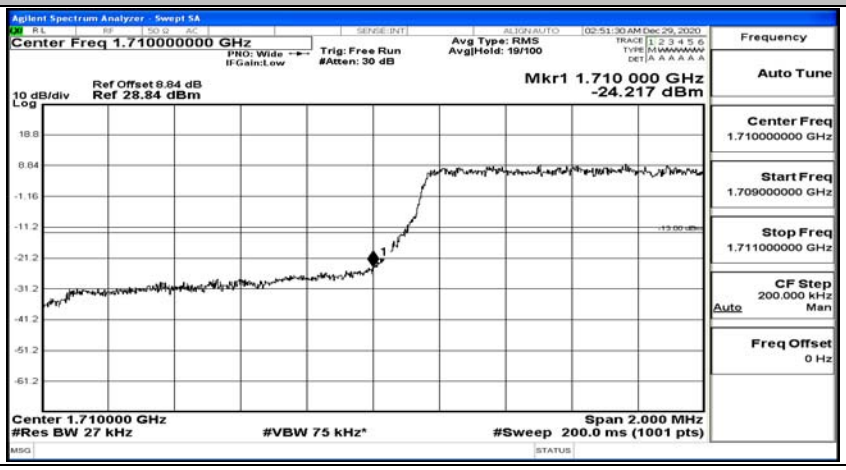
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK



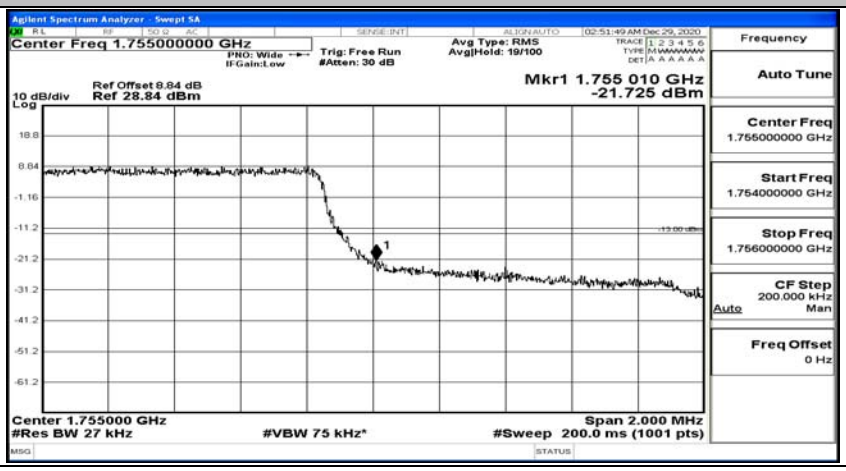
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK



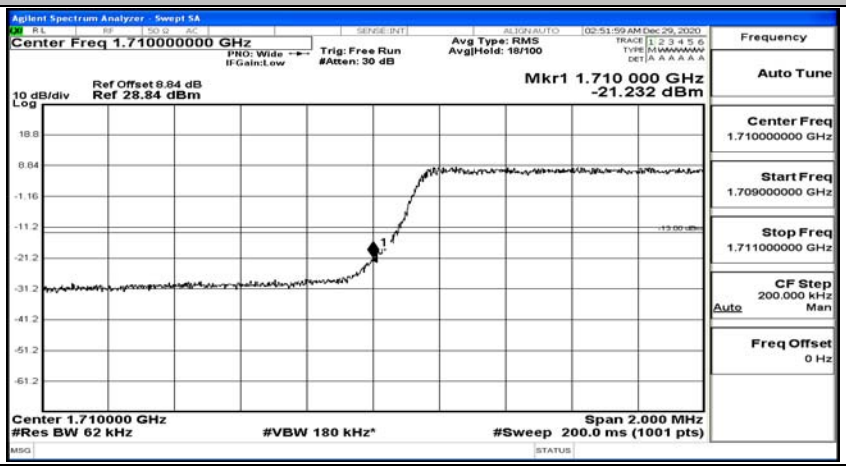
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM



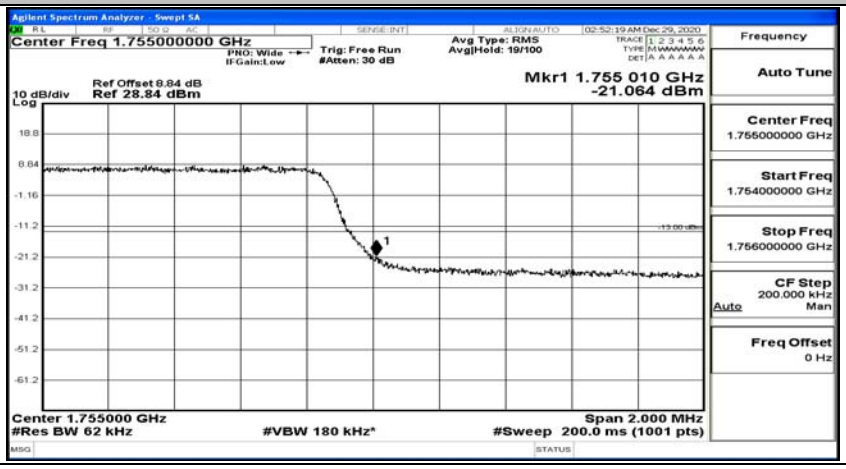
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM



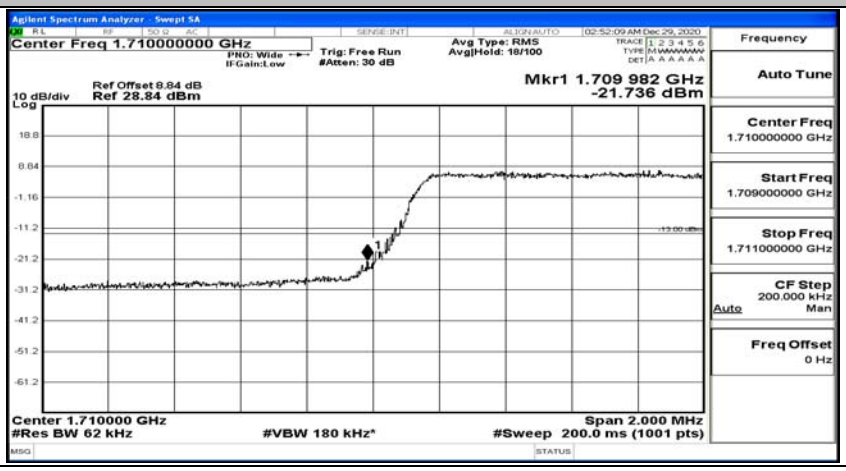
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK



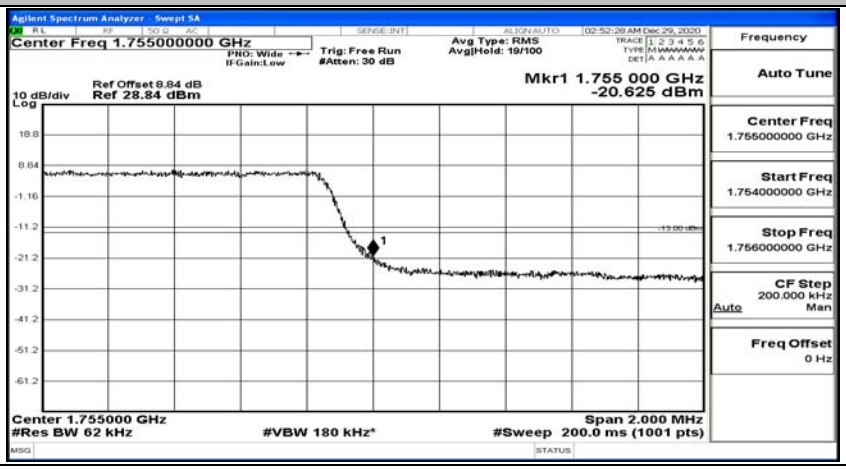
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK



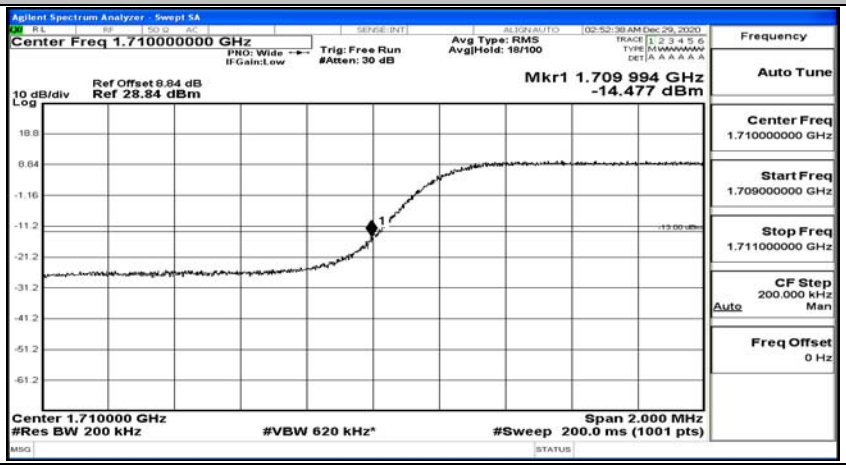
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM



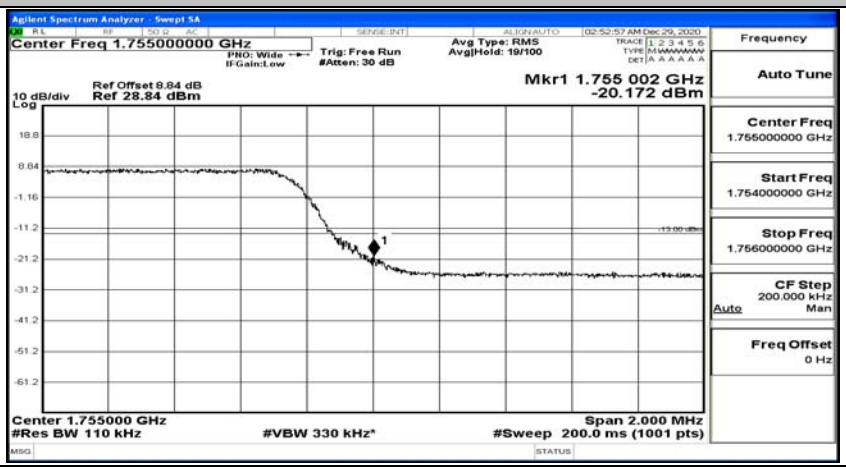
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM



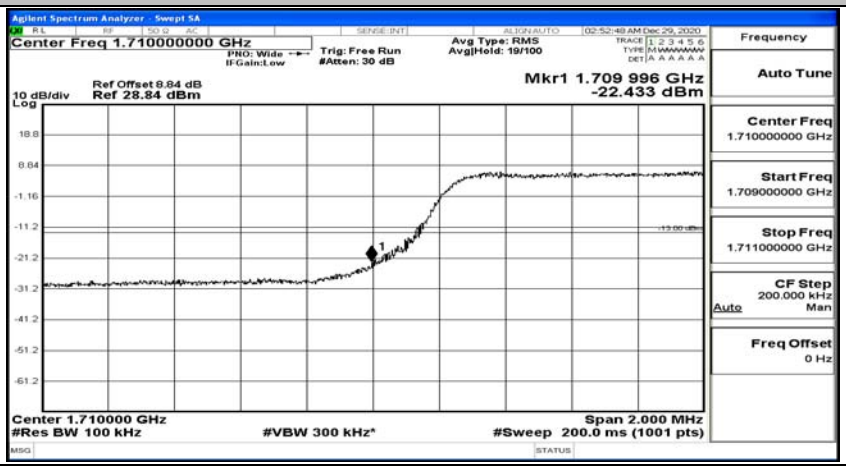
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



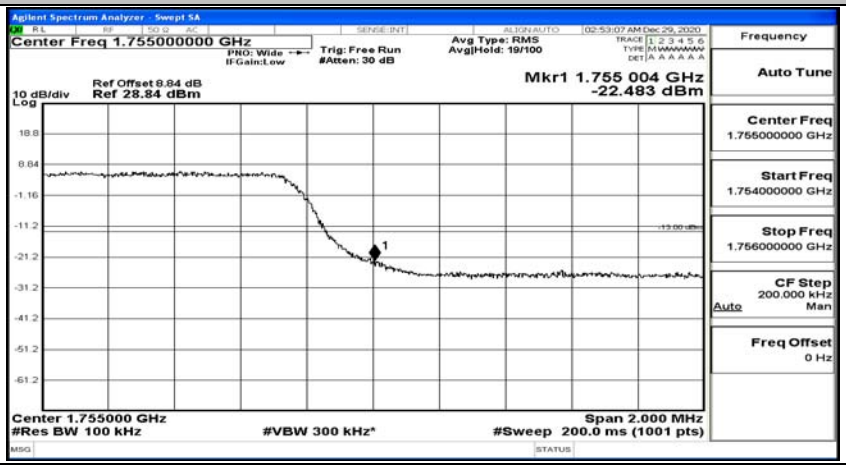
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



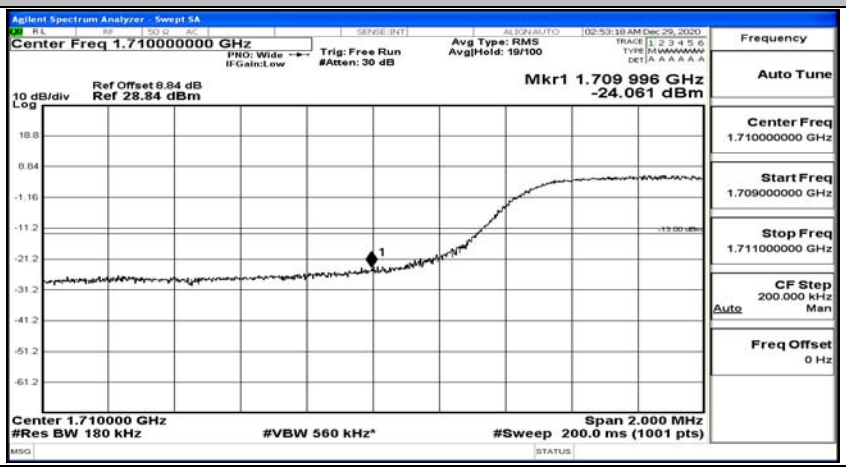
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



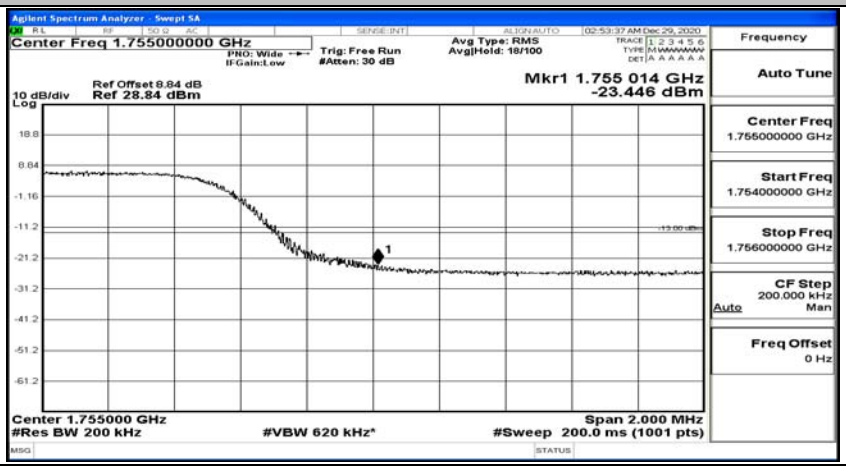
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



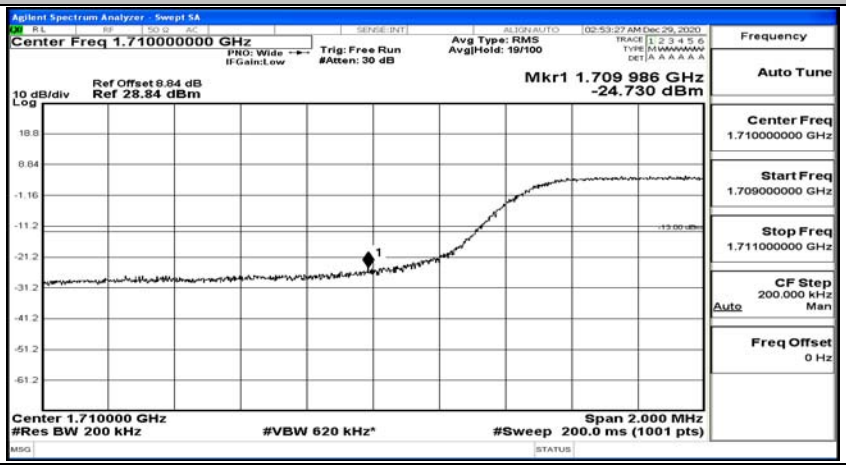
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



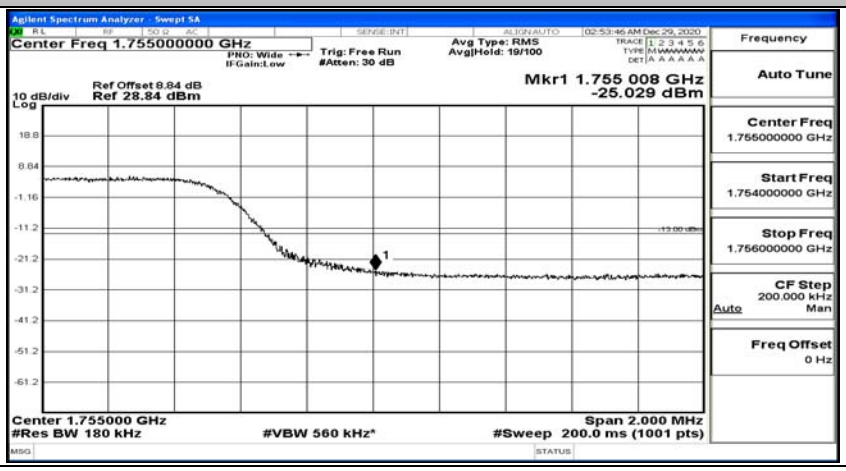
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



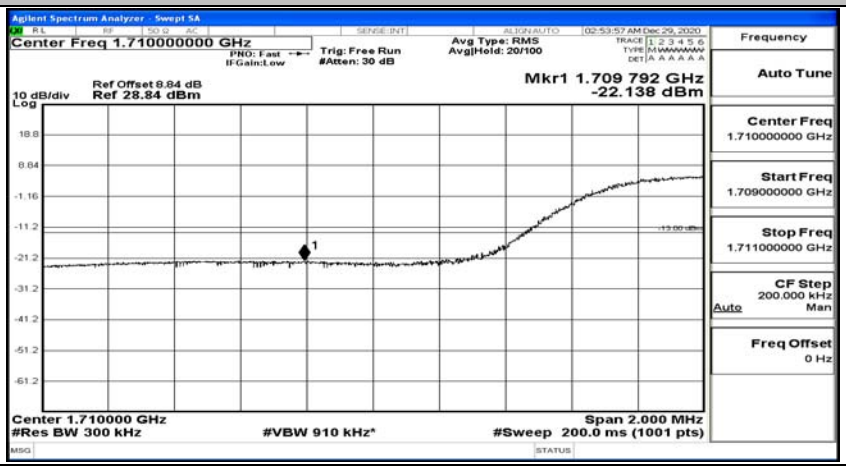
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



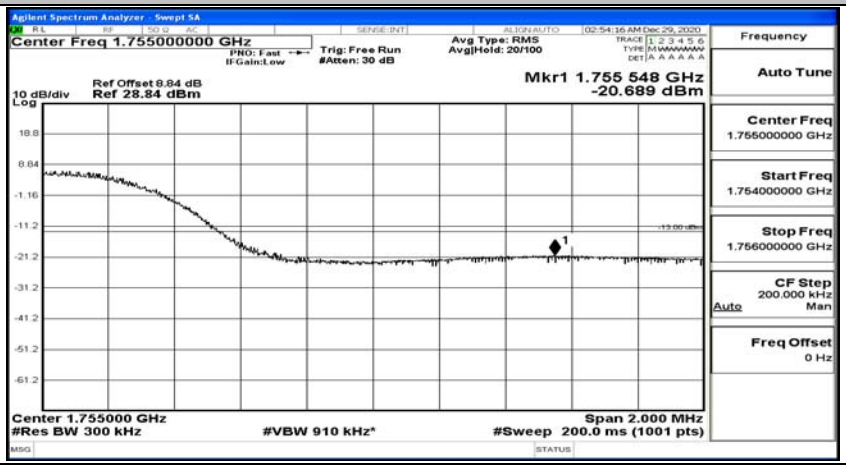
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM



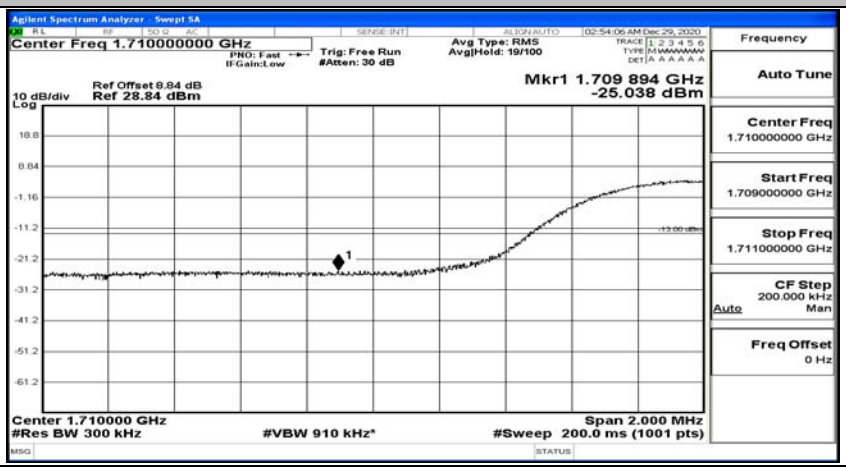
Band Edge Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_QPSK



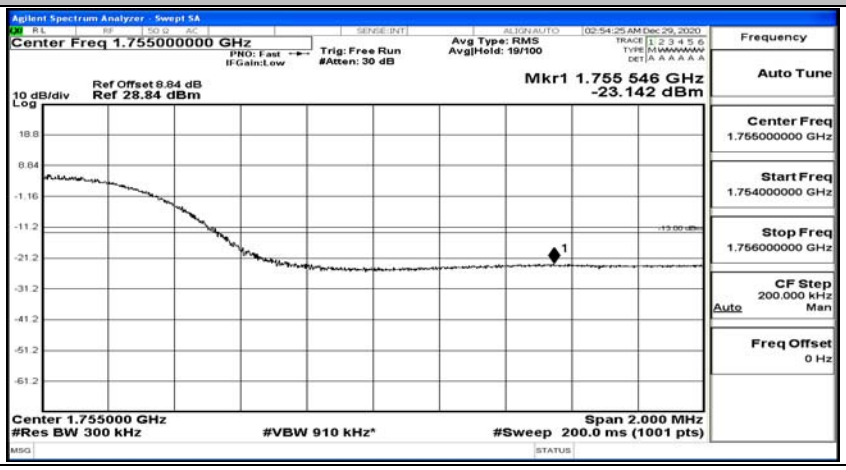
Band Edge Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_QPSK



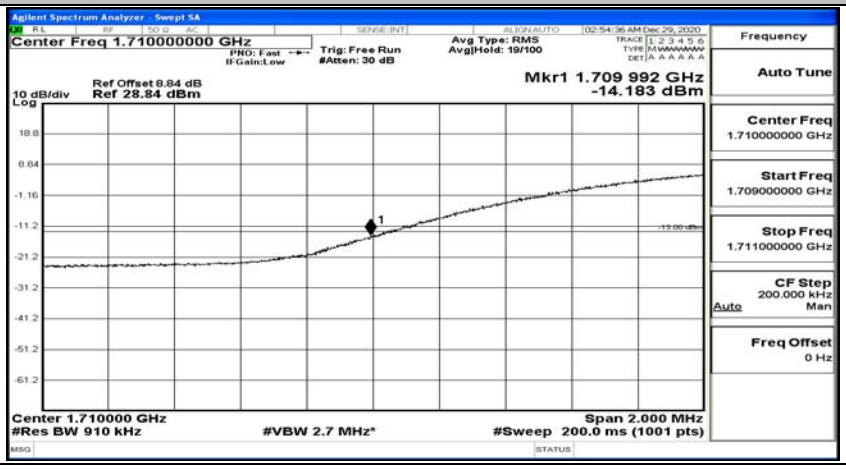
Band Edge Test Graph(s) (Channel Bandwidth:15 MHz)_LCH_16QAM



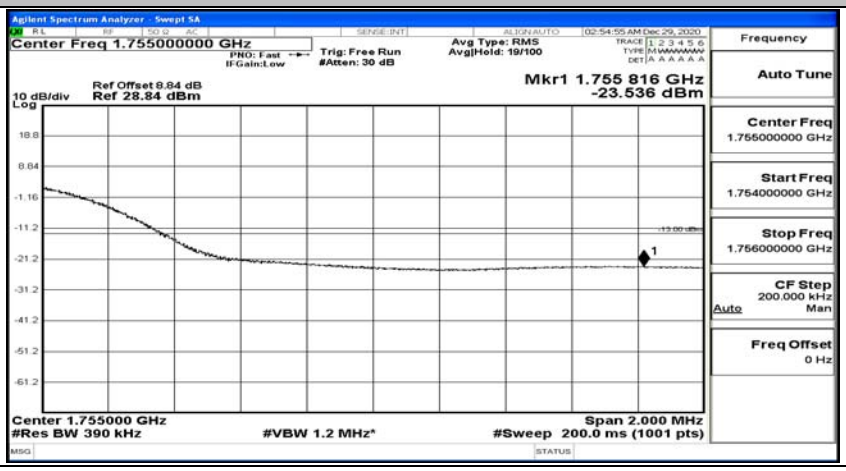
Band Edge Test Graph(s) (Channel Bandwidth:15 MHz)_HCH_16QAM



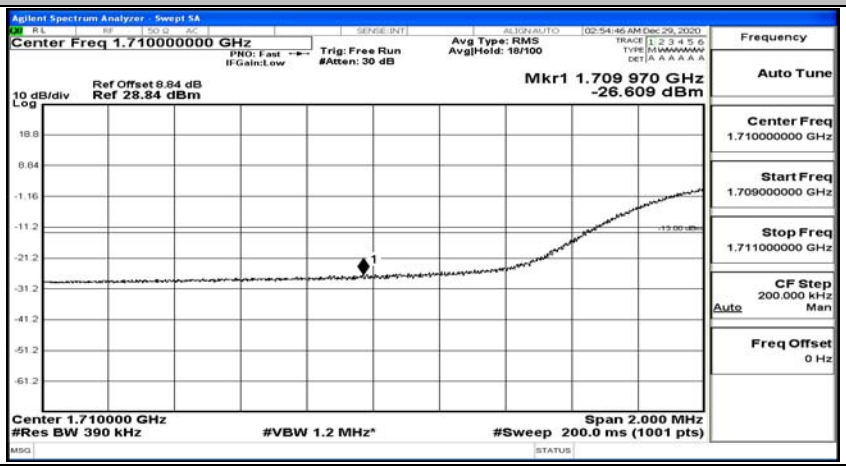
Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_LCH_QPSK



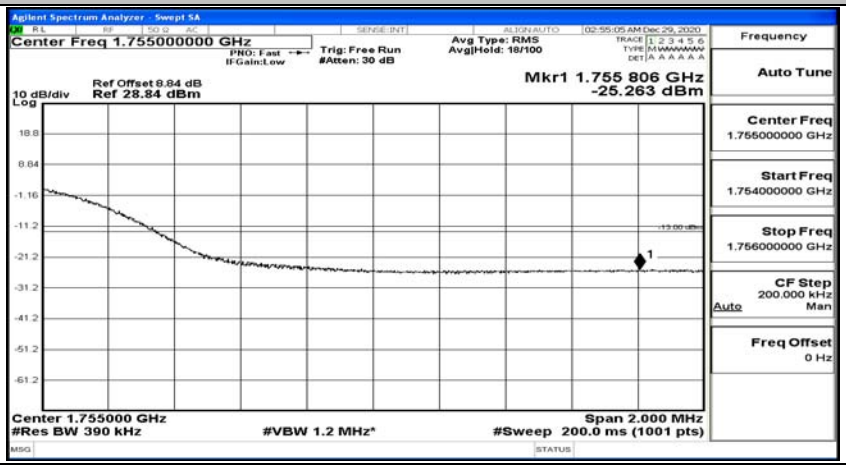
Band Edge Test Graph(s) (Channel Bandwidth:20 MHz)_HCH_QPSK



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



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



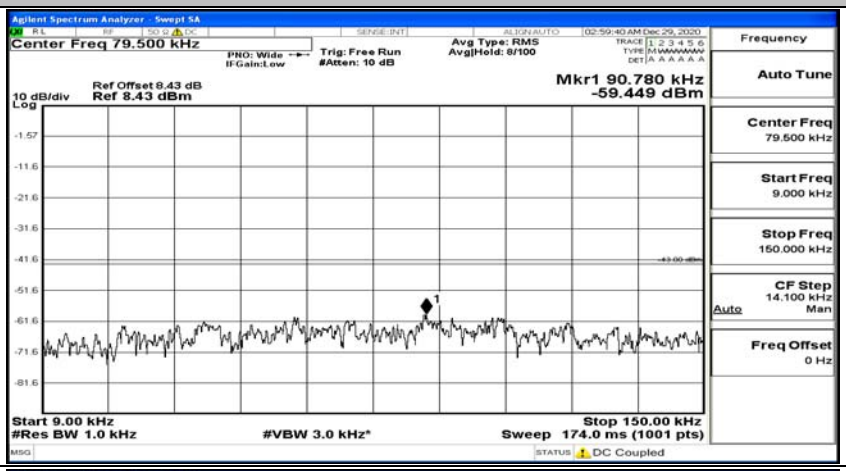
C.5 Conducted Spurious Emission

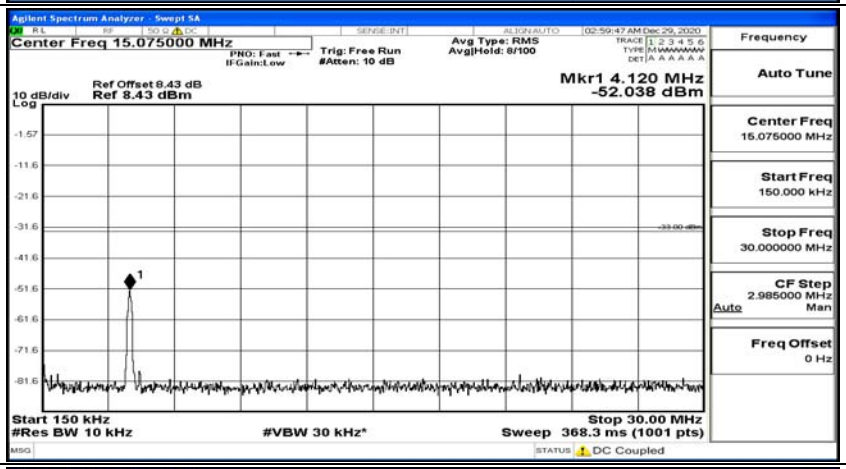
Appendix E: Conducted Spurious Emission

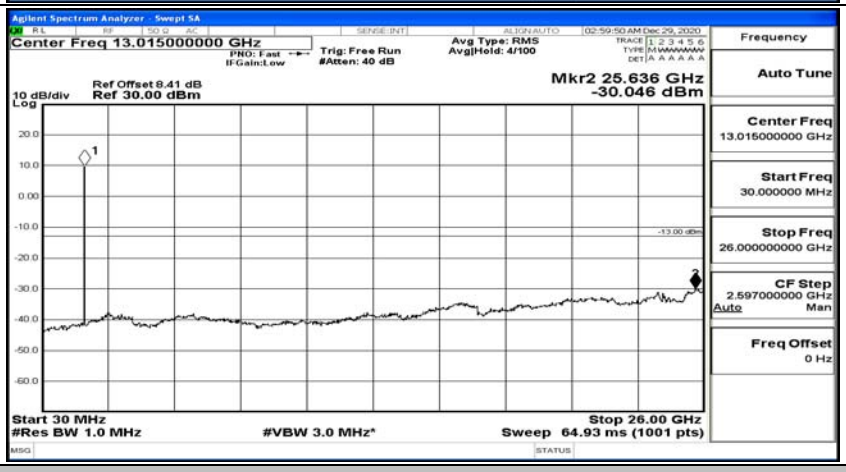
Test Graphs

Channel Bandwidth: 1.4 MHz

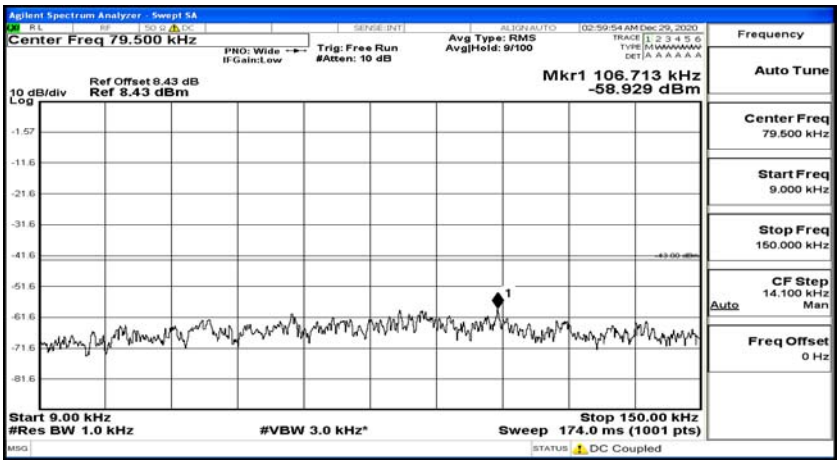
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#0

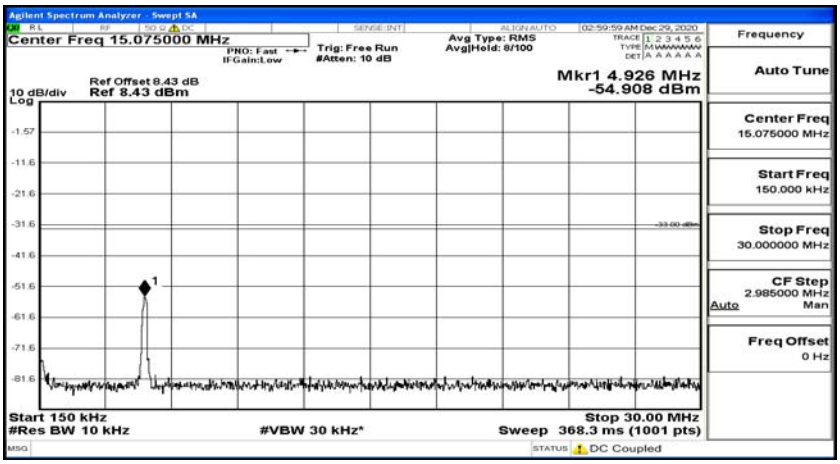


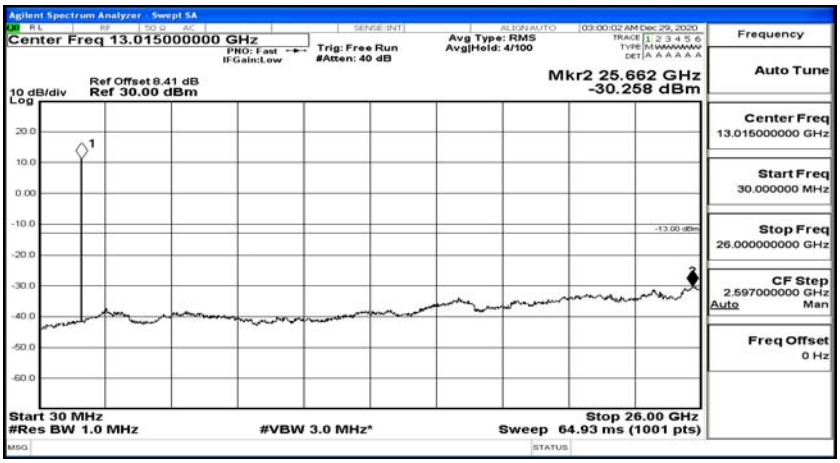




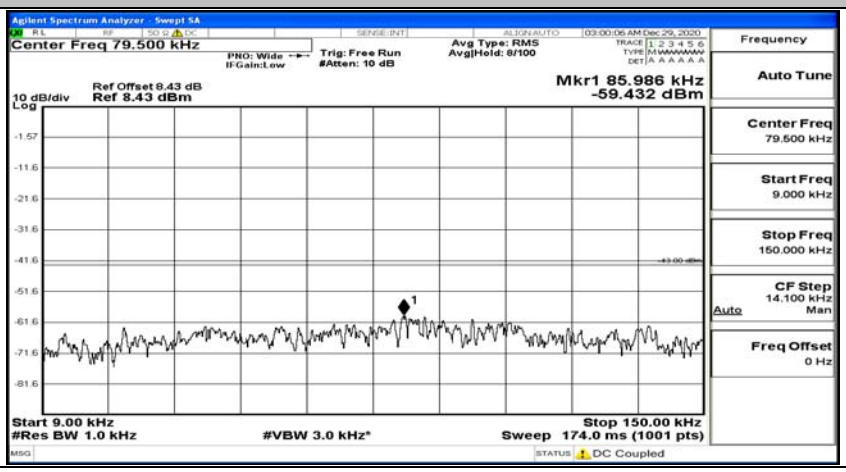
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#3

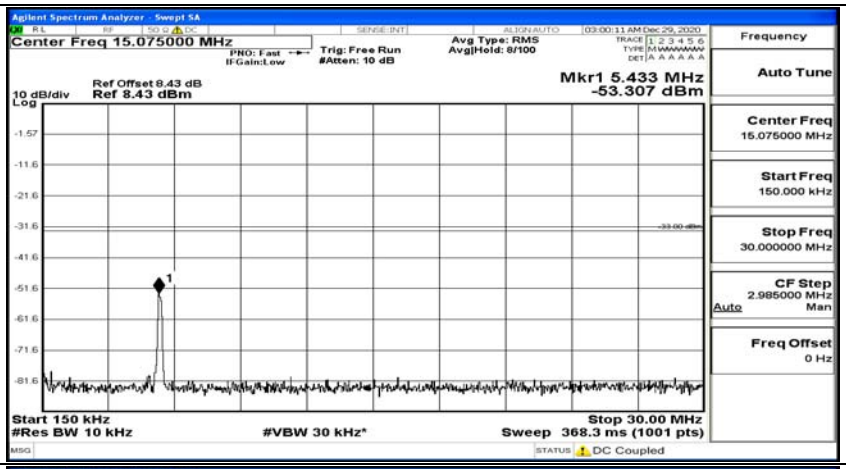




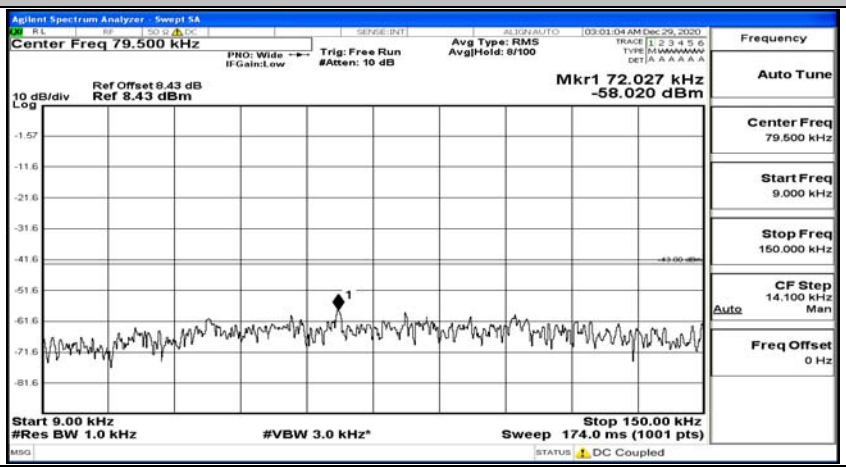


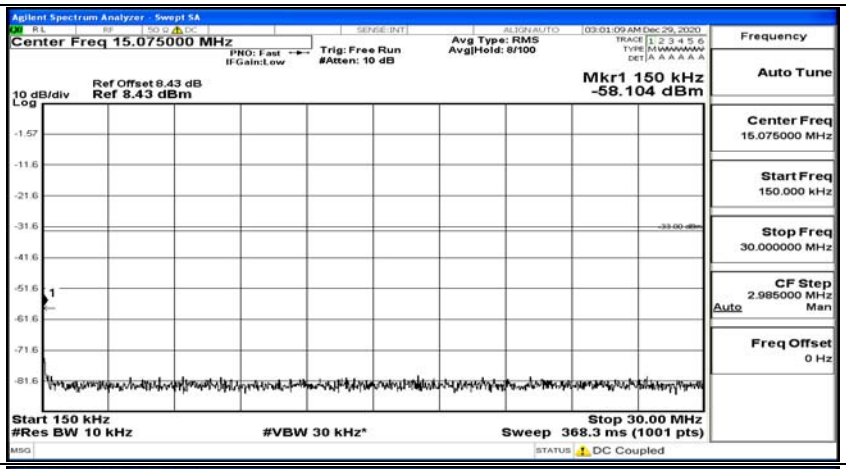
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_1RB#5

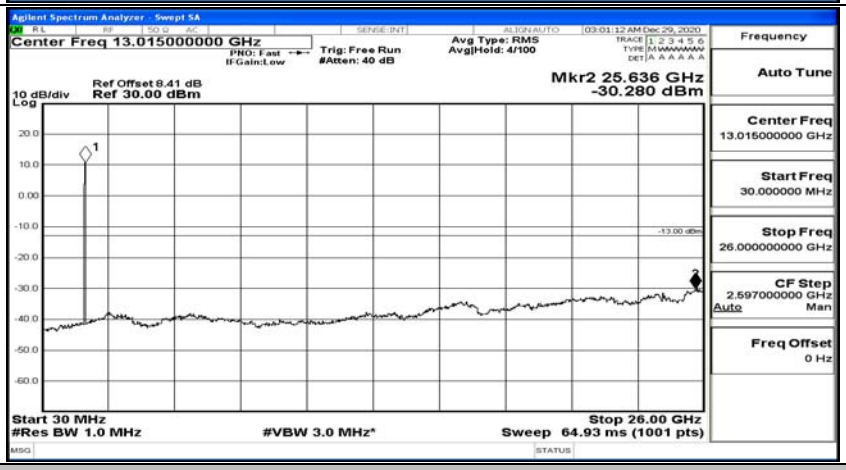




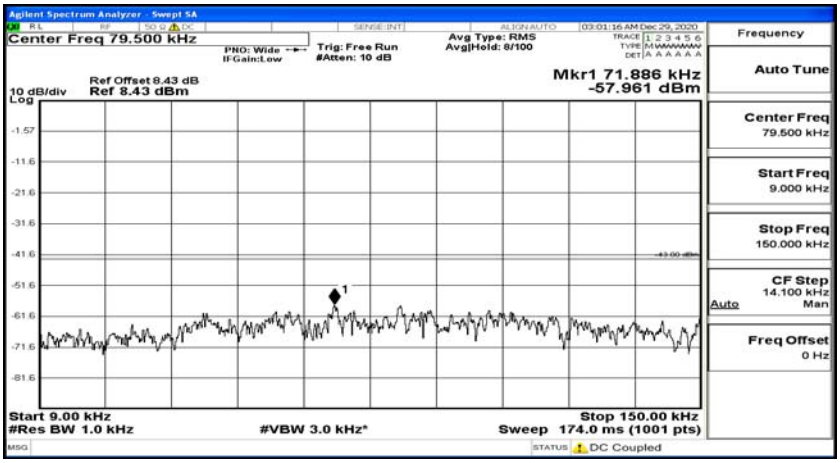
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#0

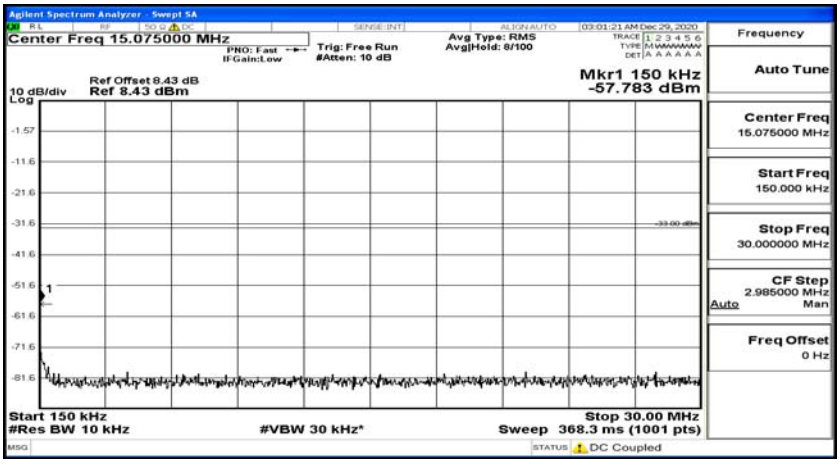


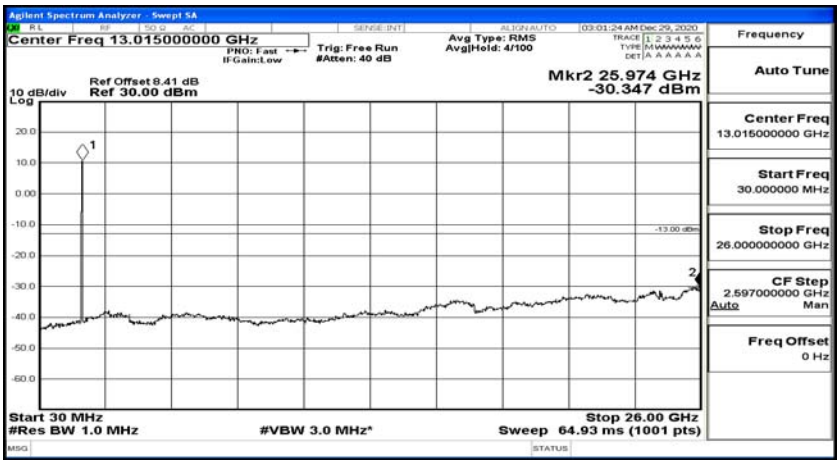




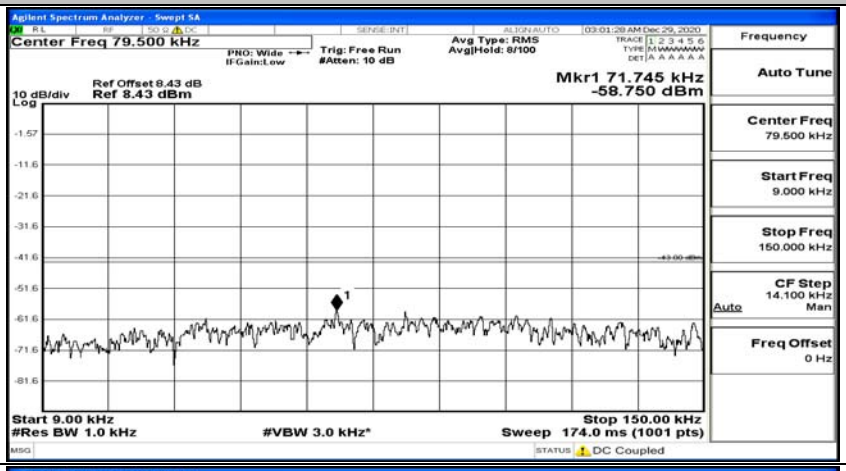
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#3

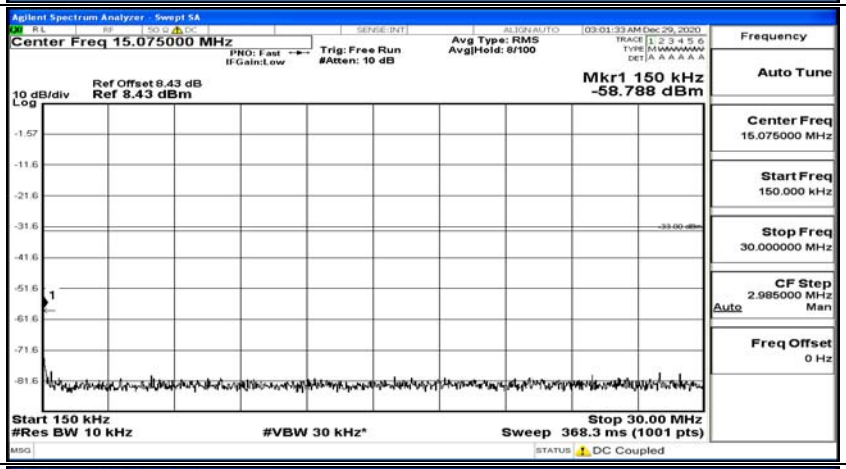




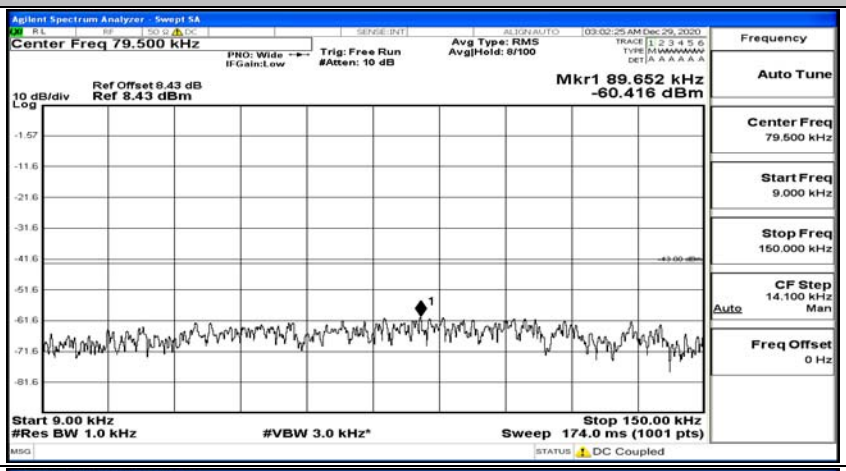


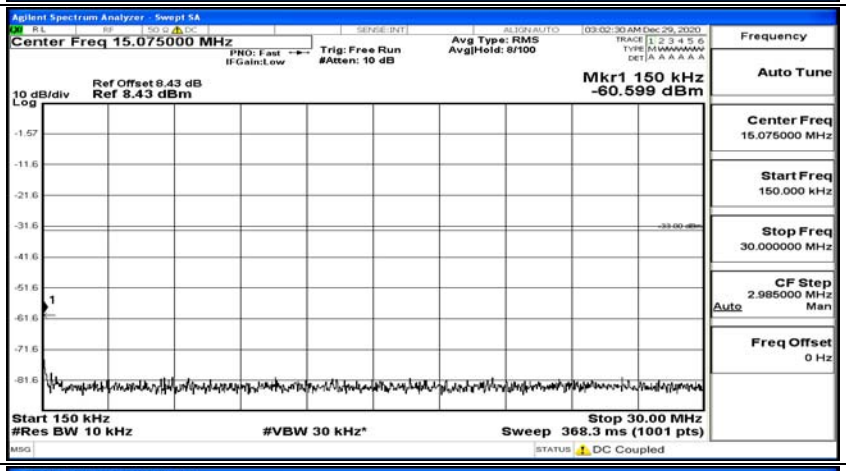
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_1RB#5

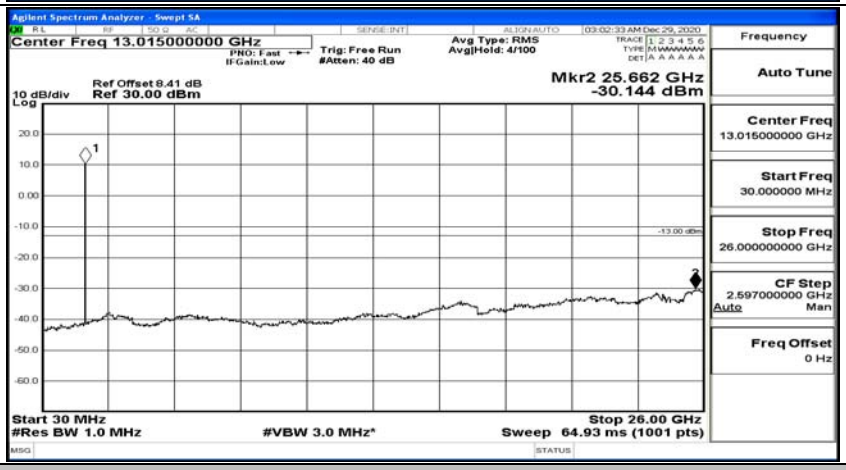




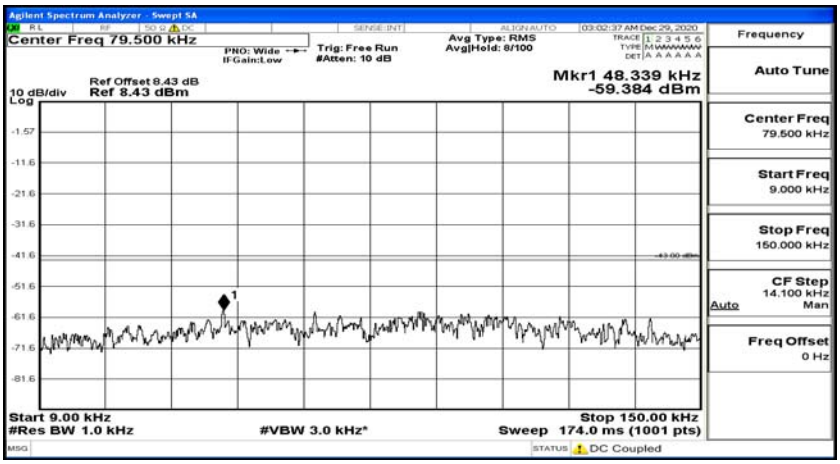
(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#0

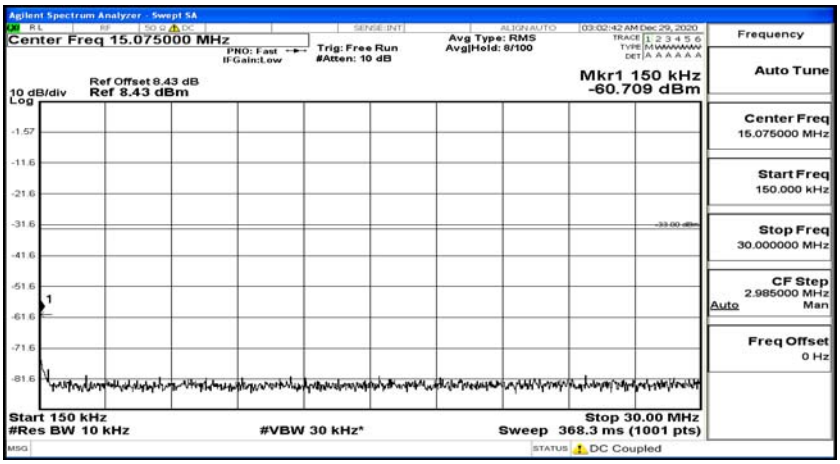




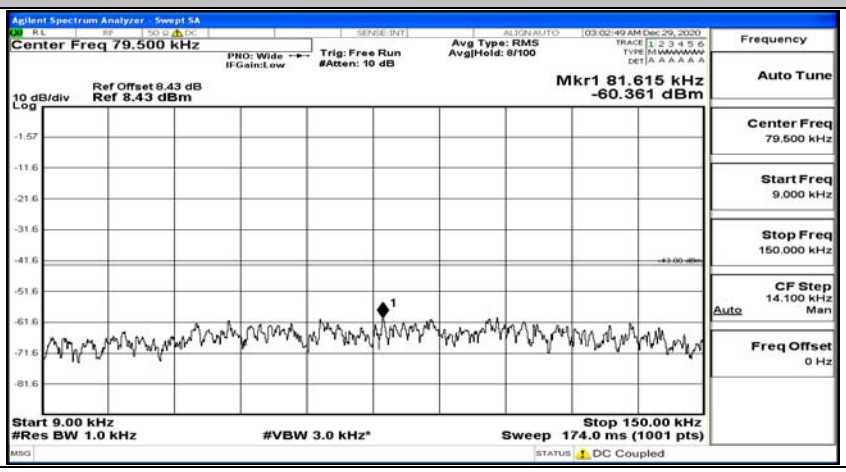


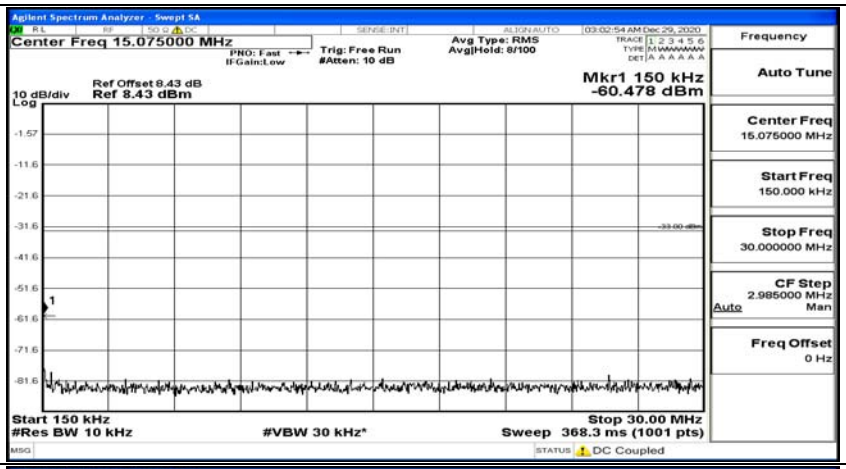
(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#3



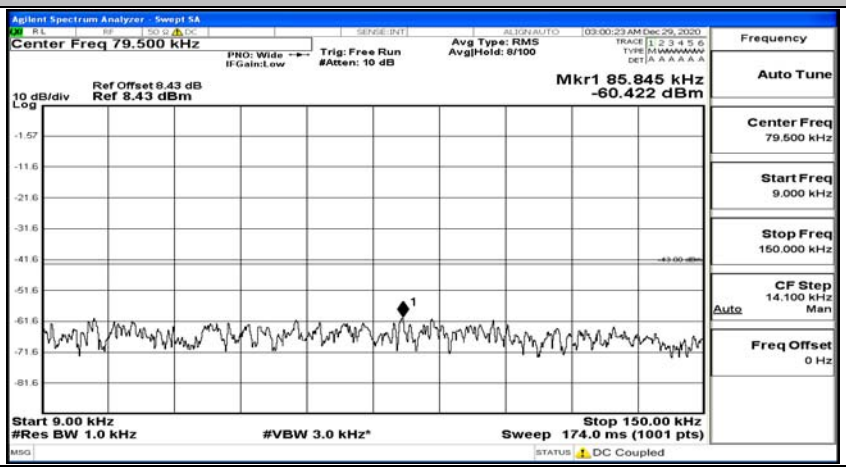


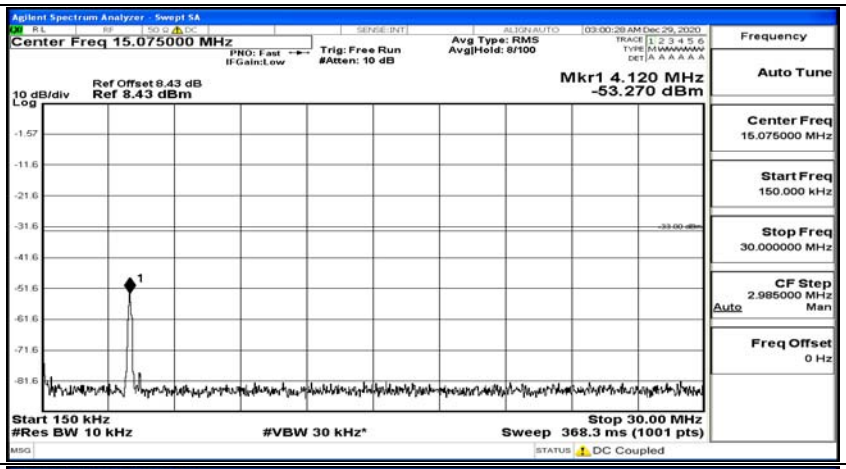
(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_1RB#5



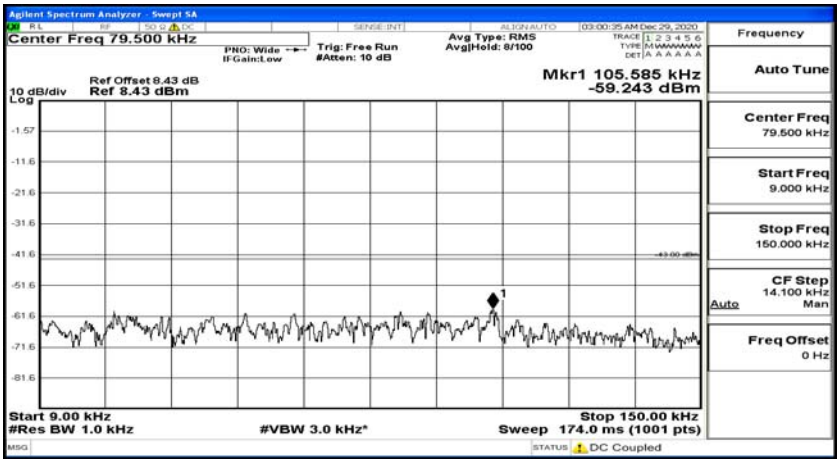


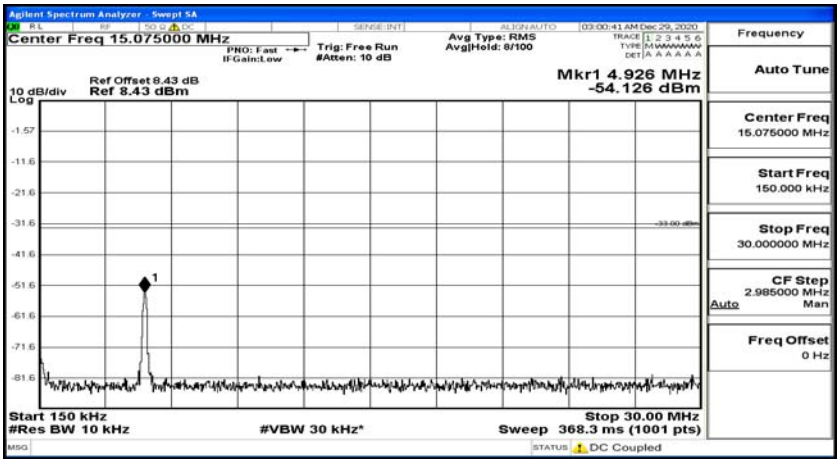
(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#0



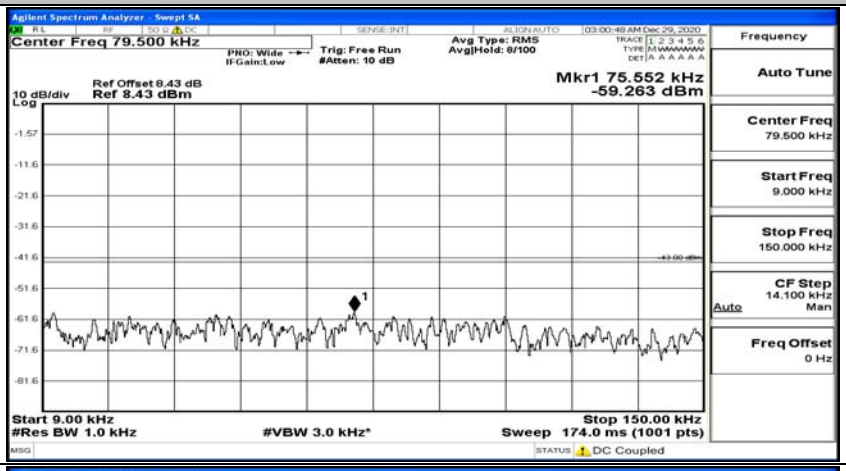


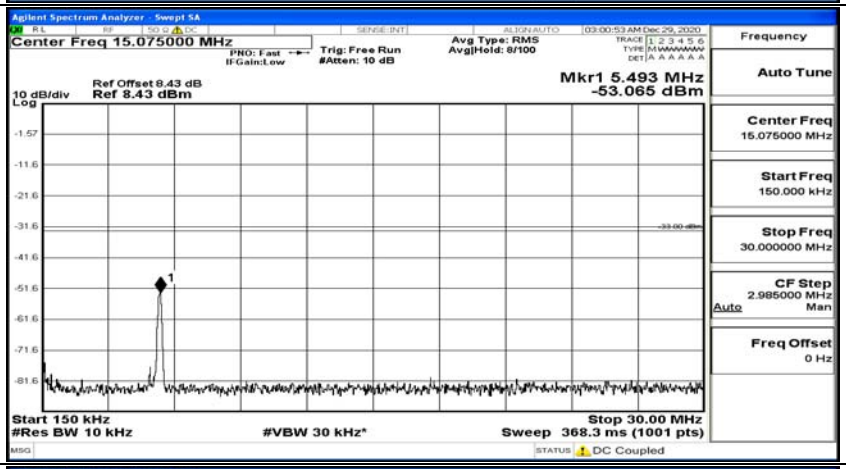
(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#3

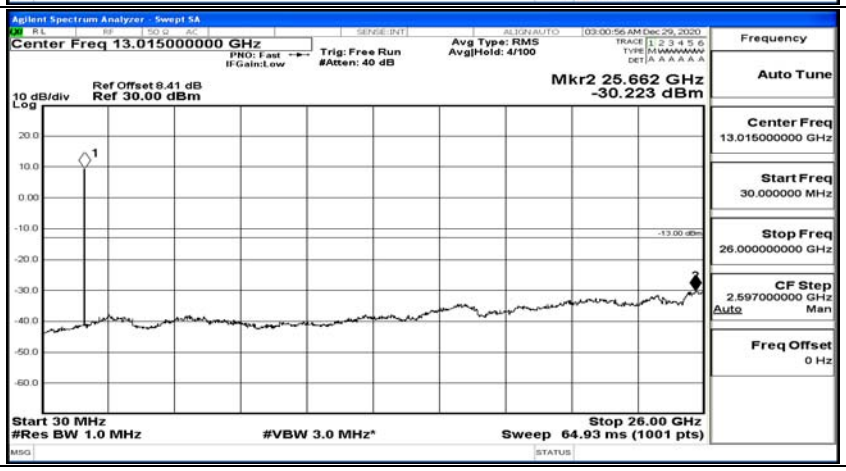




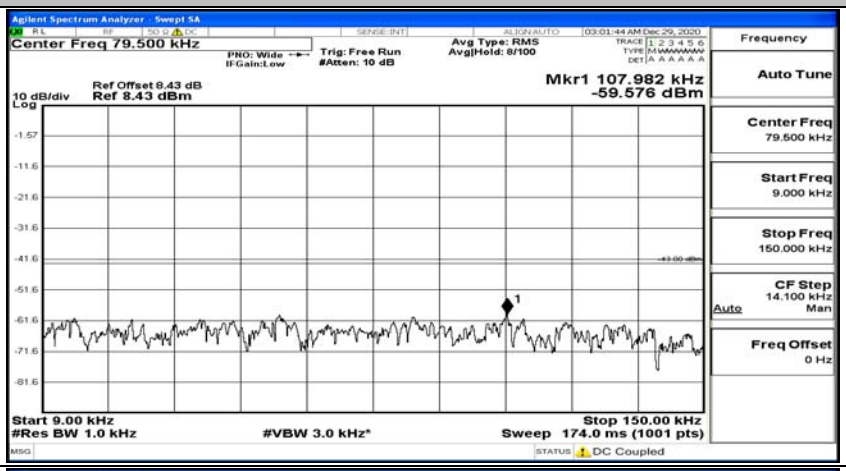
(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_1RB#5

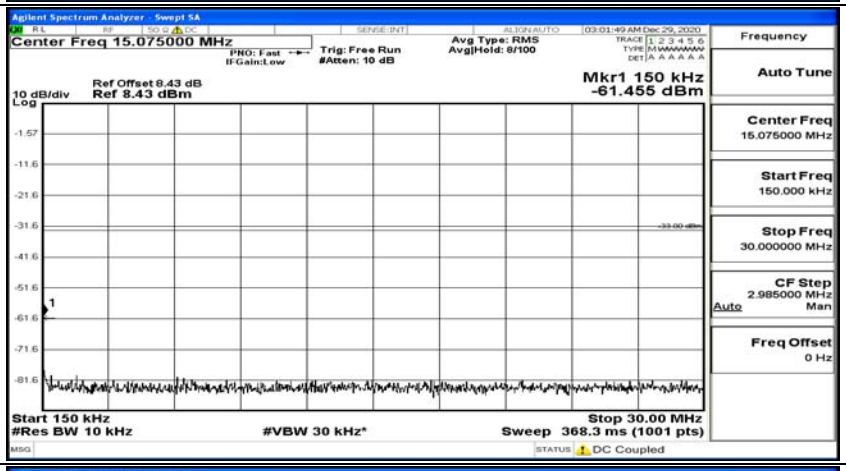




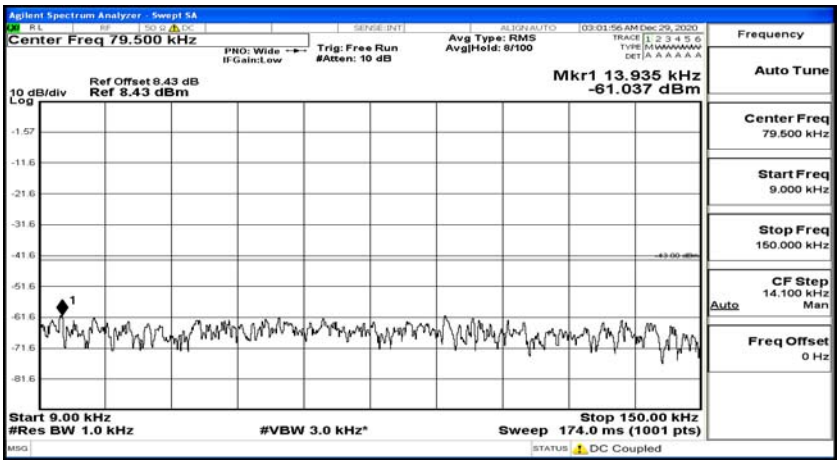


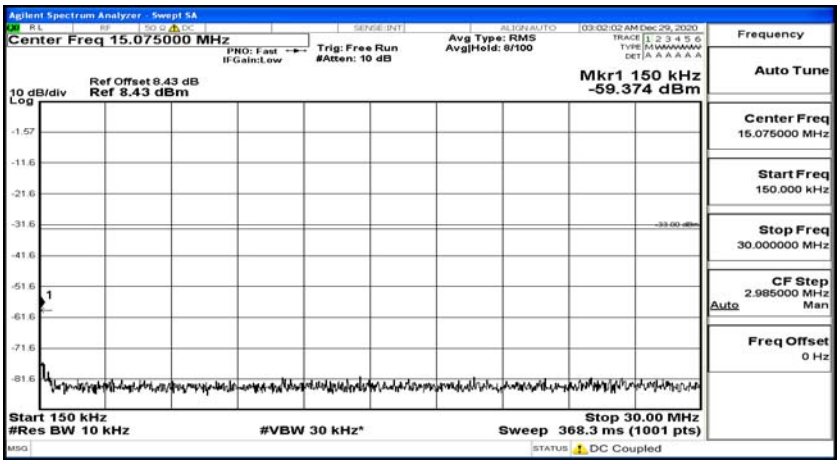
(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#0

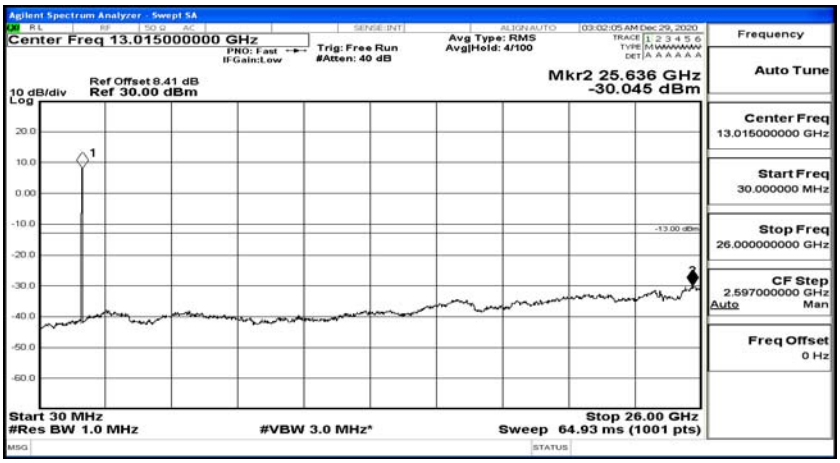




(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#3







(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_1RB#5