

Appendix I: Test Data for E-UTRA Band 13

Product Name: 3G/4G Smart Phone

Trade Mark: DOOGEE

Test Model: S88Plus

Environmental Conditions

Temperature:	22.9° C
Relative Humidity:	53.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

I.1 Conducted Output Power

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	22.84	21.88	PASS
		1	12	23.07	21.93	PASS
		1	24	22.84	21.77	PASS
		12	0	22.00	20.81	PASS
		12	6	21.96	20.79	PASS
		12	13	21.94	20.67	PASS
		25	0	21.93	20.96	PASS
	MCH	1	0	22.96	21.94	PASS
		1	12	23.15	22.31	PASS
		1	24	22.84	21.81	PASS
		12	0	22.02	20.77	PASS
		12	6	21.99	20.84	PASS
		12	13	22.06	20.95	PASS
		25	0	21.98	21.02	PASS
	HCH	1	0	23.02	21.81	PASS
		1	12	22.95	21.72	PASS
		1	24	22.84	21.16	PASS
		12	0	22.08	20.95	PASS
		12	6	22.06	20.94	PASS
		12	13	21.85	20.72	PASS
		25	0	21.96	21.06	PASS

Conducted Output Power Test Result (Channel Bandwidth: 10 MHz)

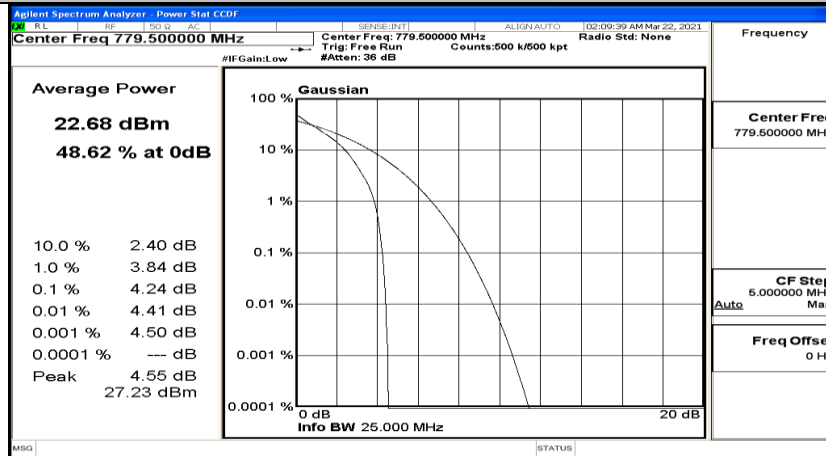
Modulation	Channel	RB Configuration		Average Power [dBm] QPSK	Average Power [dBm] 16QAM	Verdict
		Size	Offset			
QPSK / 16QAM	LCH	1	0	23.24	21.91	PASS
		1	24	23.47	22.72	PASS
		1	49	22.84	21.71	PASS
		25	0	22.10	21.07	PASS
		25	12	22.16	21.15	PASS
		25	25	22.05	21.01	PASS
		50	0	22.10	21.14	PASS
	MCH	1	0	23.04	22.15	PASS
		1	24	23.46	22.88	PASS
		1	49	22.67	21.49	PASS
		25	0	22.23	21.18	PASS
		25	12	22.32	21.17	PASS
		25	25	22.15	21.11	PASS
		50	0	22.25	21.14	PASS
	HCH	1	0	23.08	22.22	PASS
		1	24	23.52	22.89	PASS
		1	49	23.02	21.61	PASS
		25	0	22.31	21.22	PASS
		25	12	22.30	21.30	PASS
		25	25	22.05	21.06	PASS
		50	0	22.45	21.21	PASS

I.2 Peak-to-Average Ratio

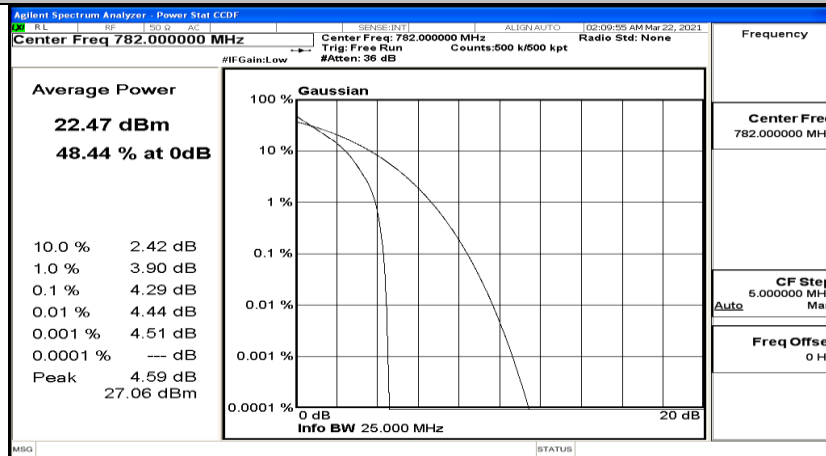
Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.24	<13	PASS
	MCH	4.29	<13	PASS
	HCH	4.29	<13	PASS
16QAM	LCH	5.18	<13	PASS
	MCH	5.21	<13	PASS
	HCH	5.17	<13	PASS

Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
QPSK	LCH	4.36	<13	PASS
	MCH	4.3	<13	PASS
	HCH	4.34	<13	PASS
16QAM	LCH	5.22	<13	PASS
	MCH	5.21	<13	PASS
	HCH	5.25	<13	PASS

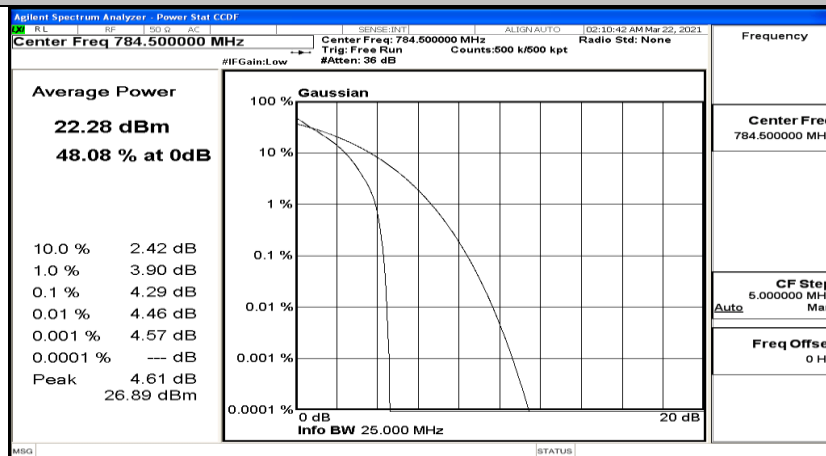
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



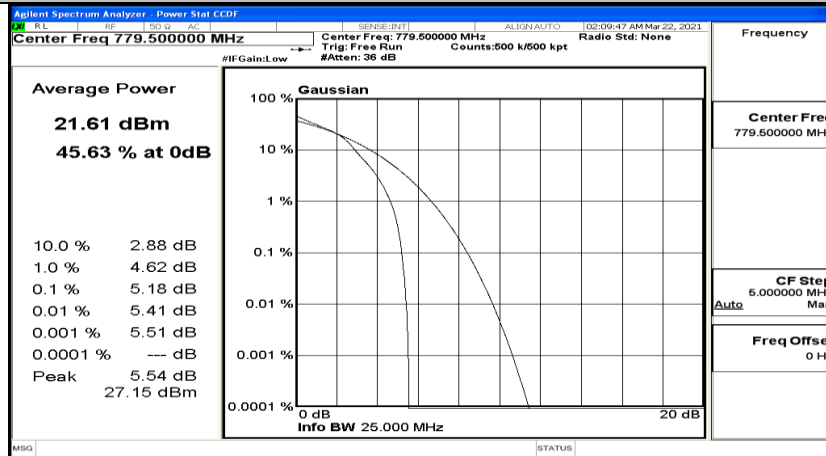
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



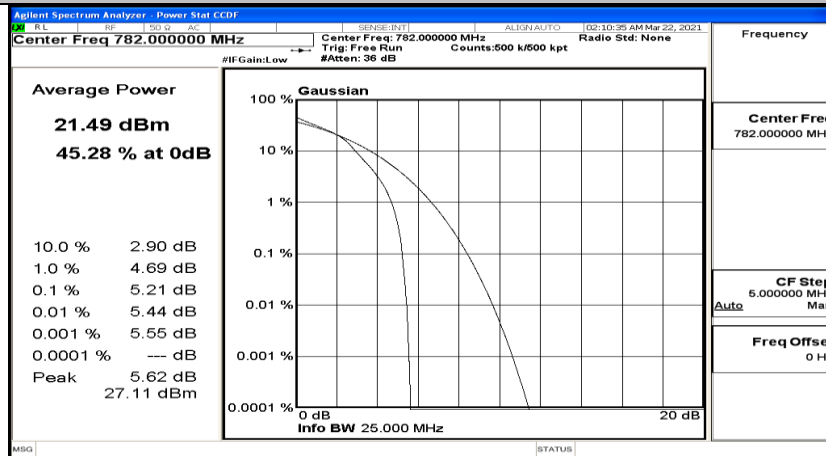
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



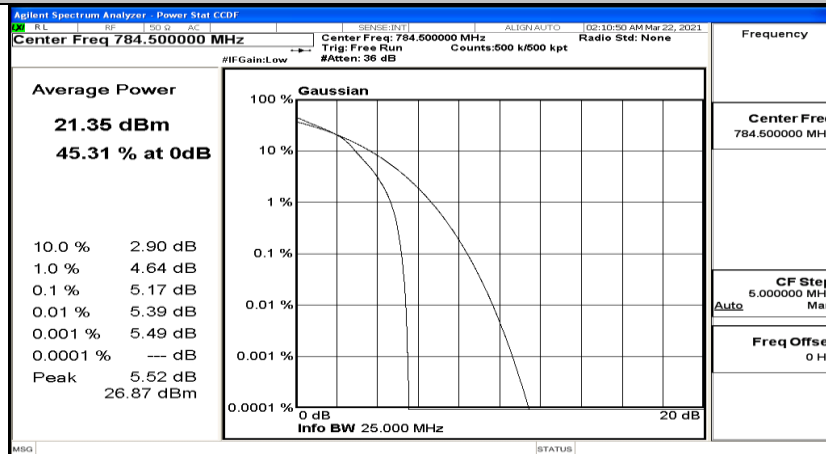
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



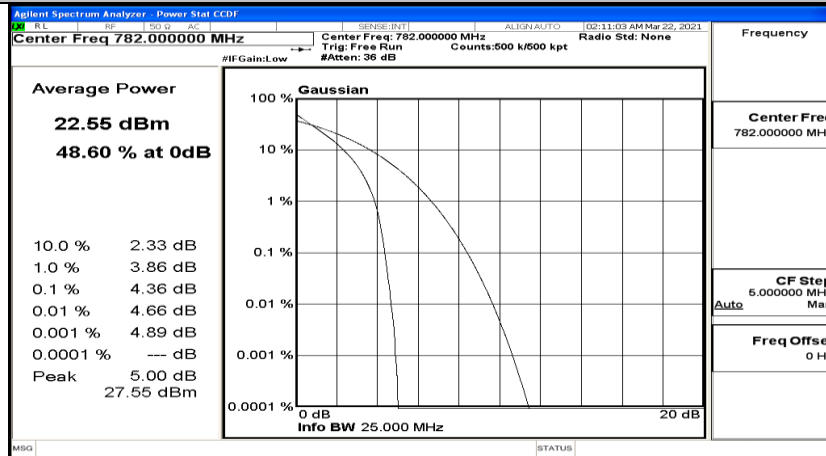
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



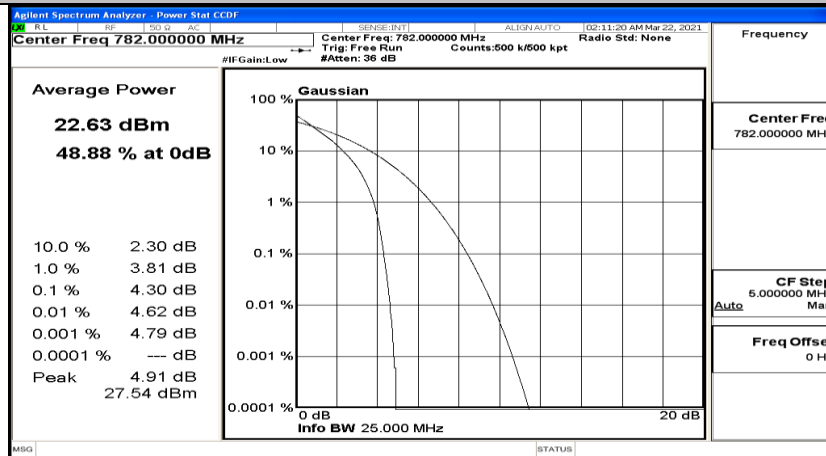
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



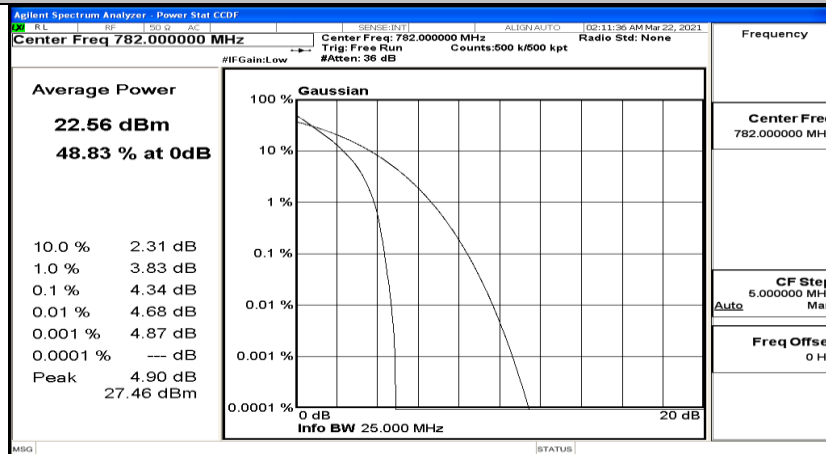
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



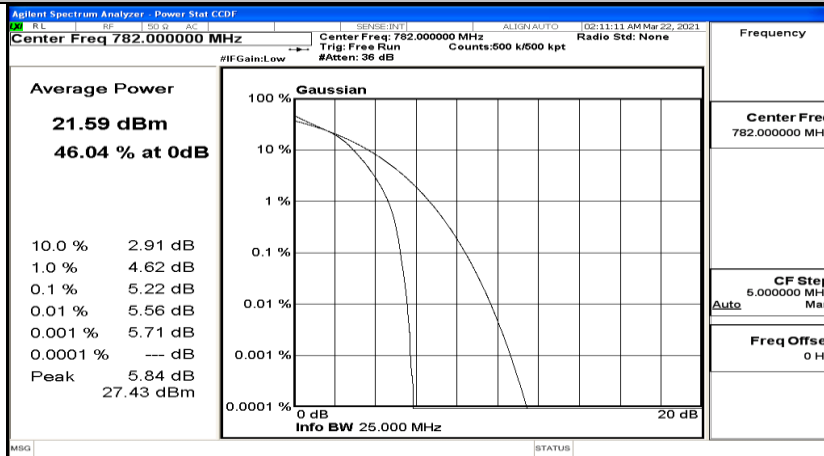
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



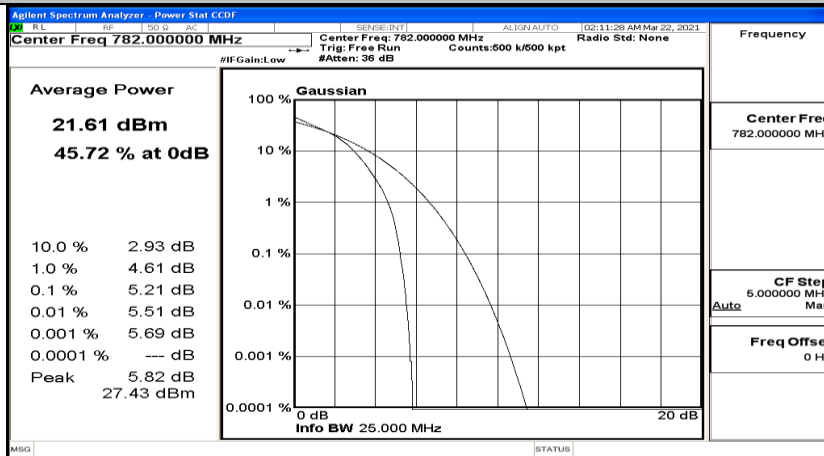
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



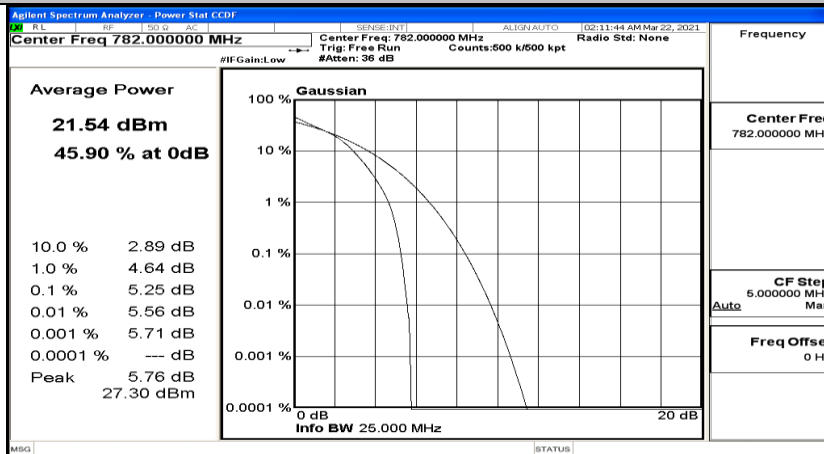
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



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



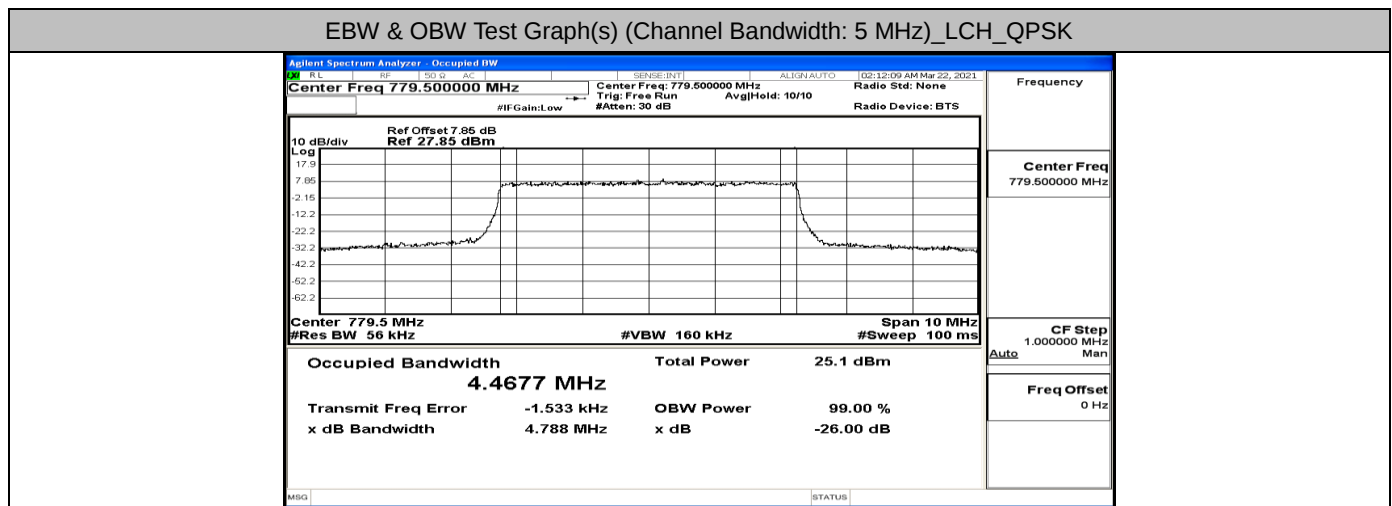
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM



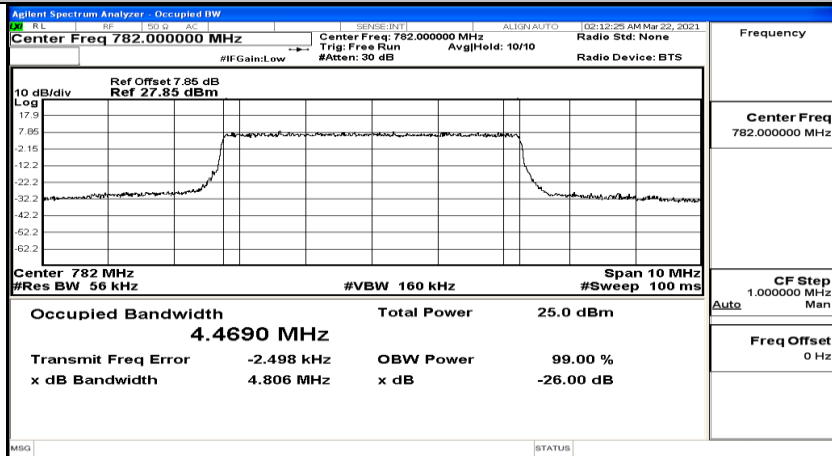
I.3 26dB Bandwidth and Occupied Bandwidth

EBW & OBW Test Result (Channel Bandwidth: 5 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	4.4677	4.788	PASS
	MCH	4.4690	4.806	PASS
	HCH	4.4662	4.747	PASS
16QAM	LCH	4.4670	4.829	PASS
	MCH	9.9128	10.00	PASS
	HCH	4.4637	4.849	PASS

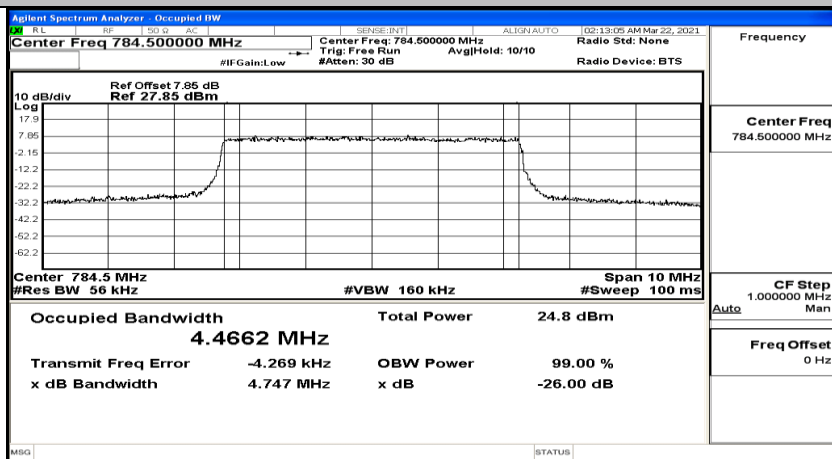
EBW & OBW Test Result (Channel Bandwidth: 10 MHz)				
Modulation	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
QPSK	LCH	8.9774	19.87	PASS
	MCH	8.9095	9.440	PASS
	HCH	8.9231	9.452	PASS
16QAM	LCH	8.9012	9.395	PASS
	MCH	8.9062	9.456	PASS
	HCH	8.9096	9.425	PASS



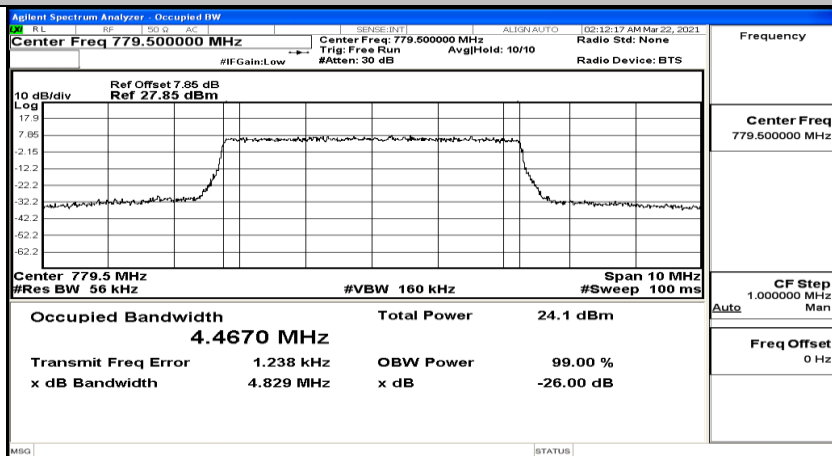
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



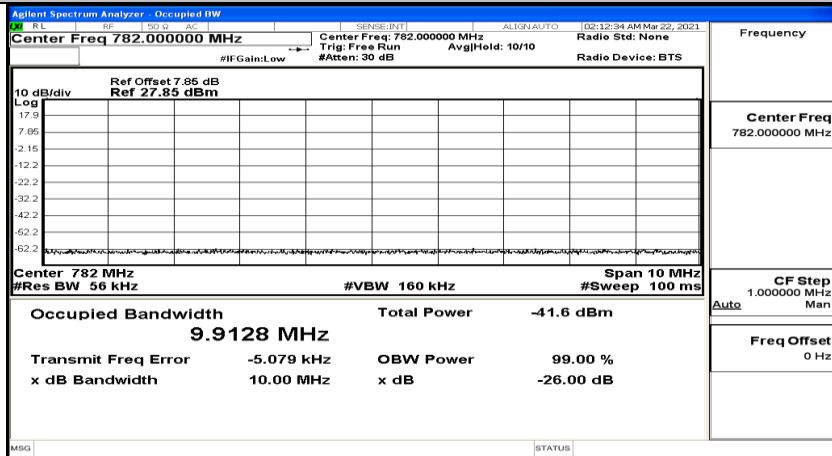
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



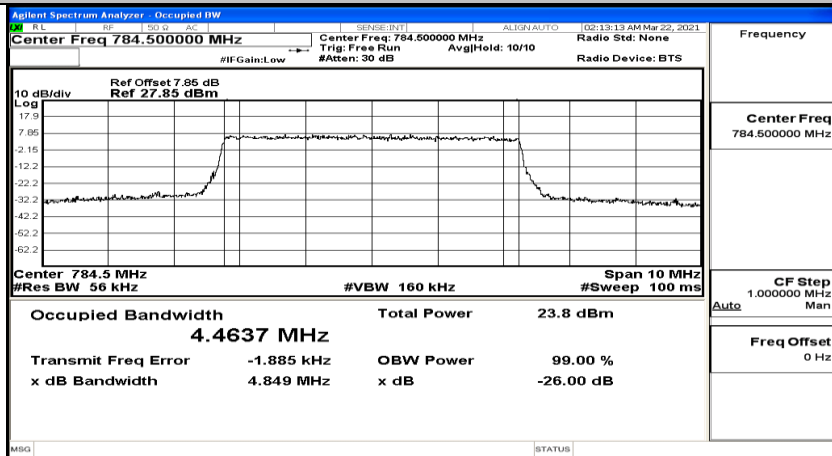
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



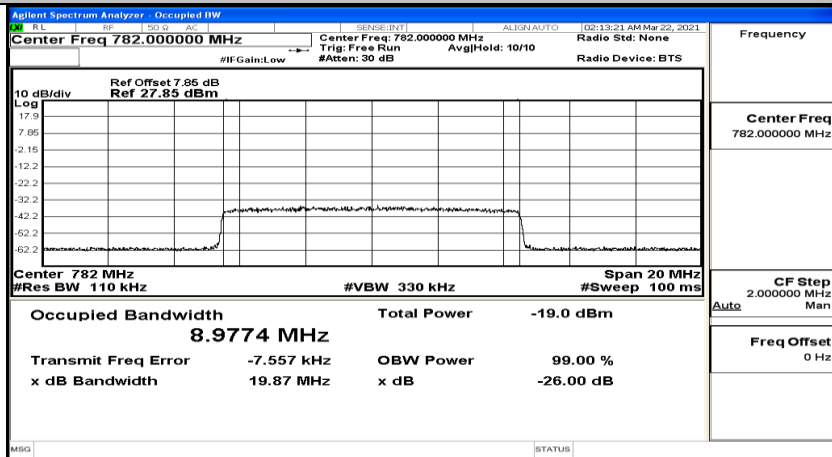
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



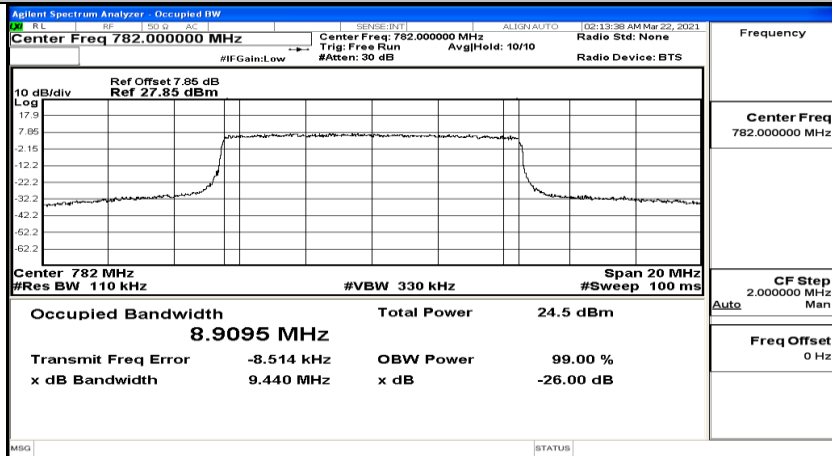
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



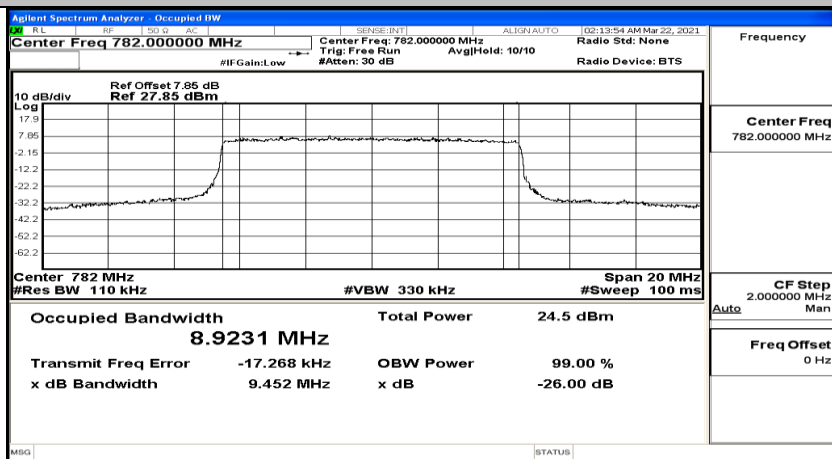
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



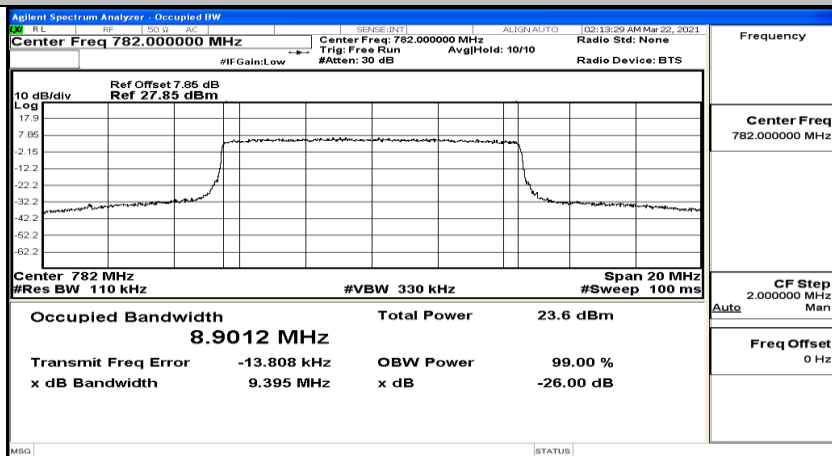
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK



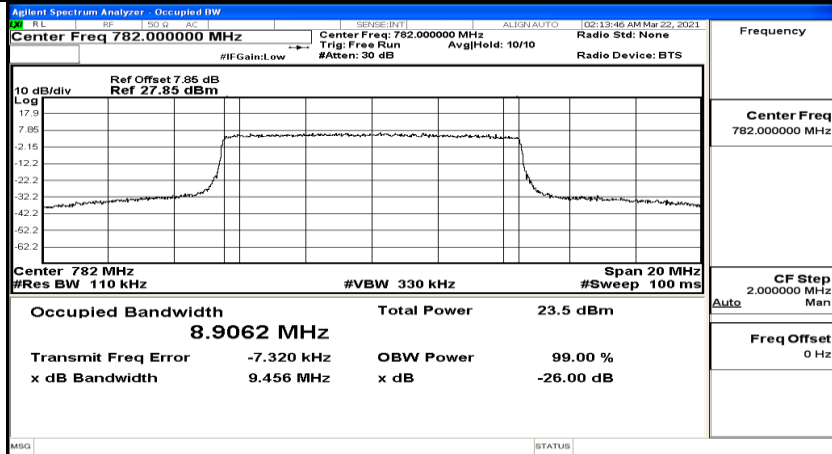
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



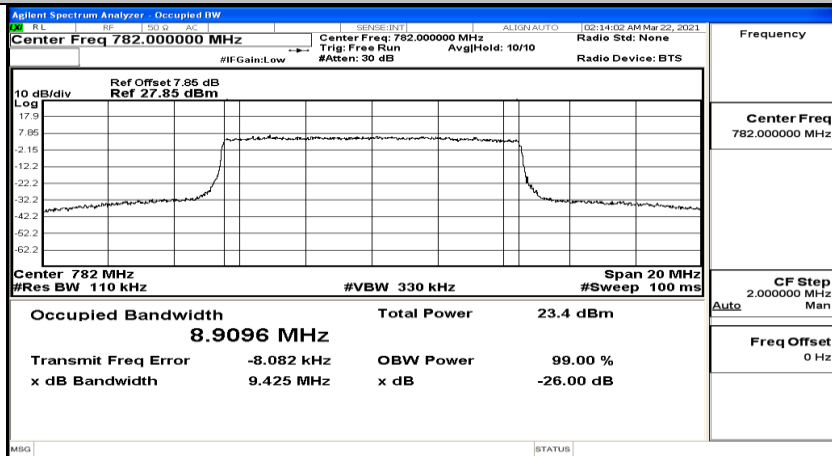
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM



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

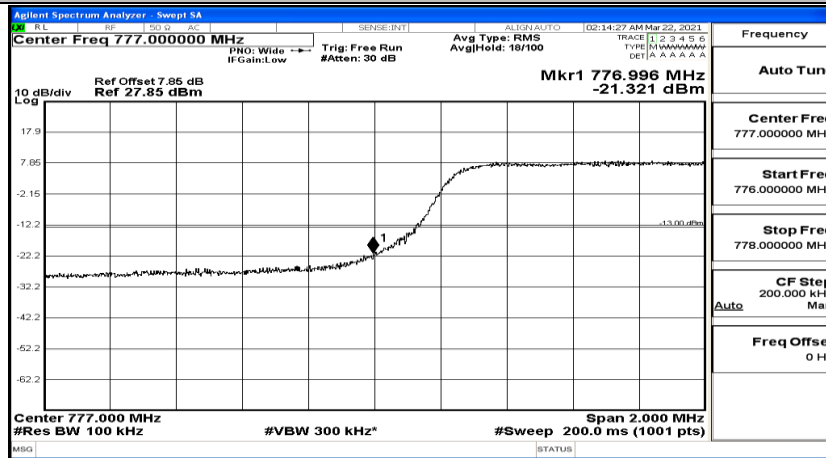


EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM

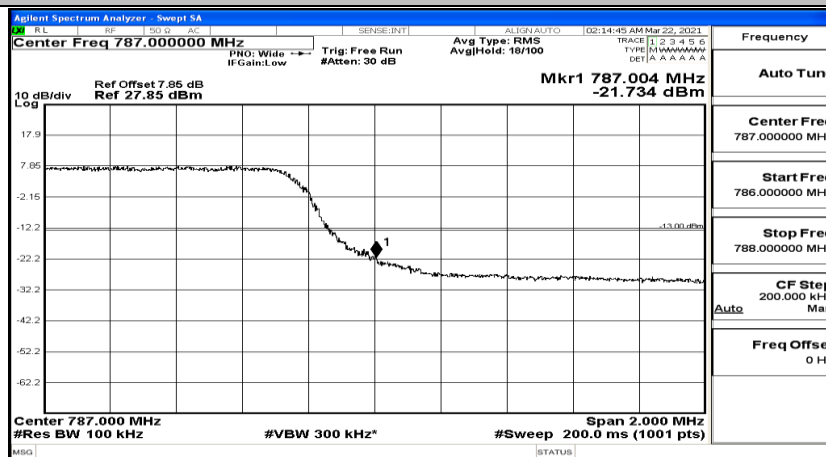


I.4 Band Edge

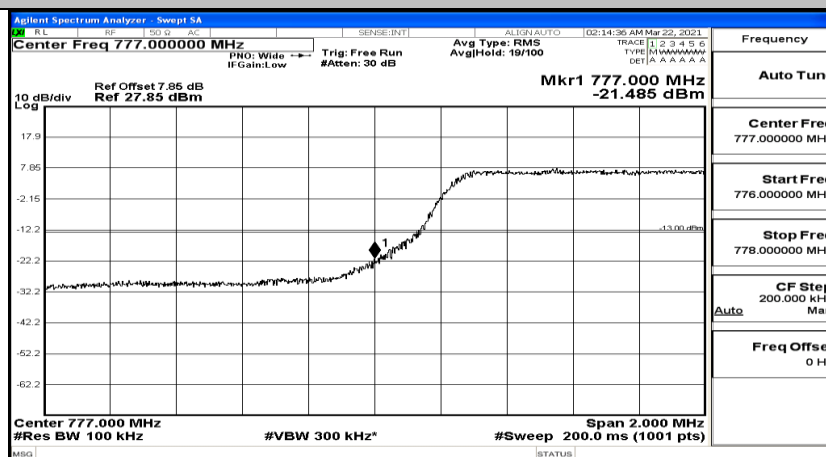
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



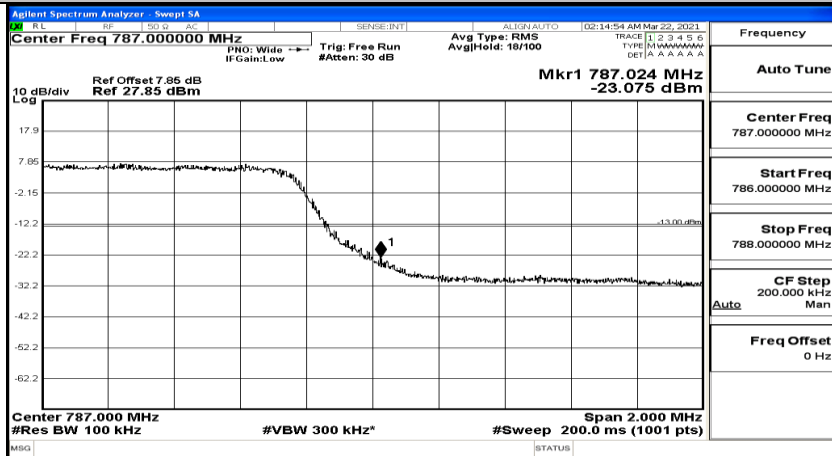
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



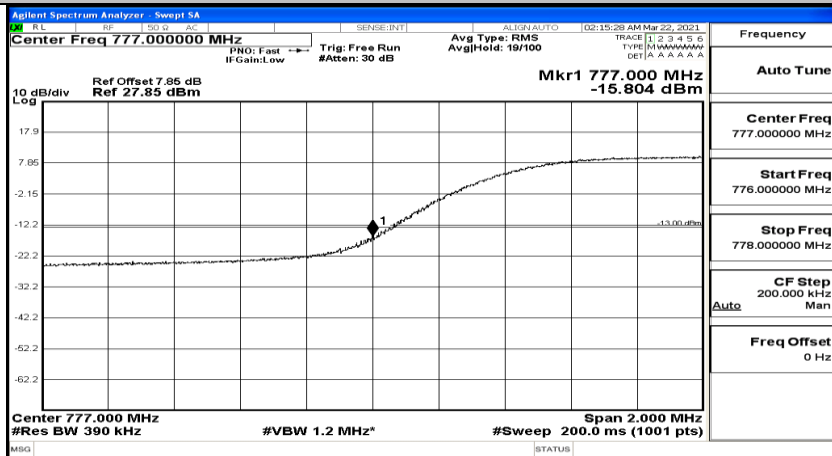
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



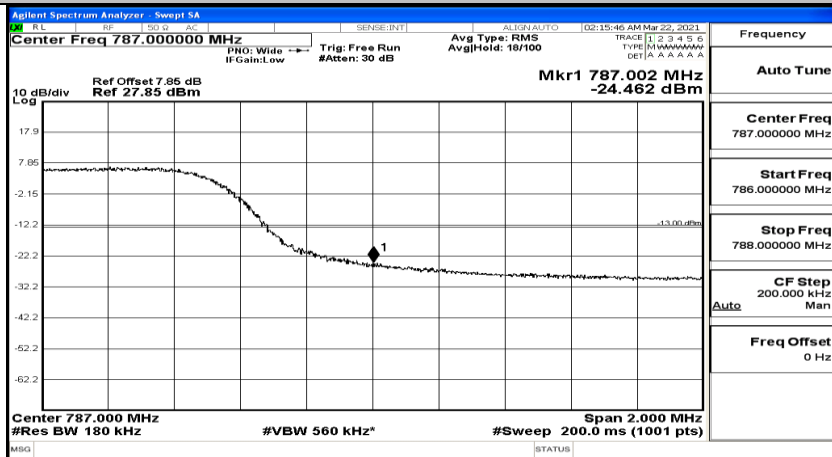
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



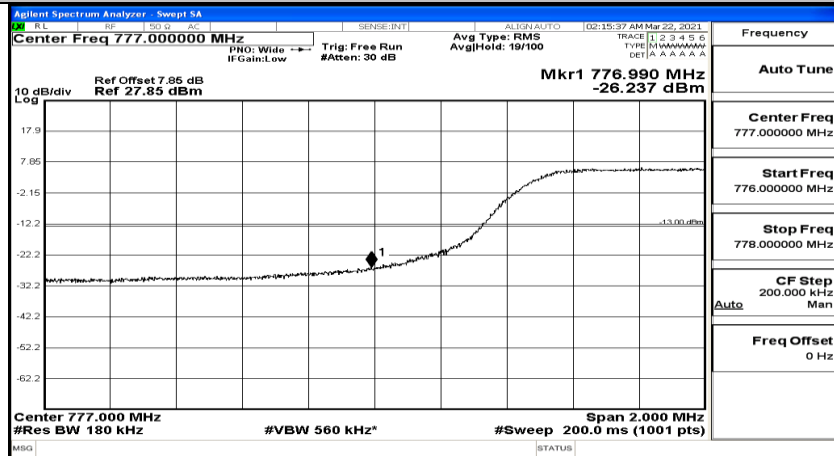
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK



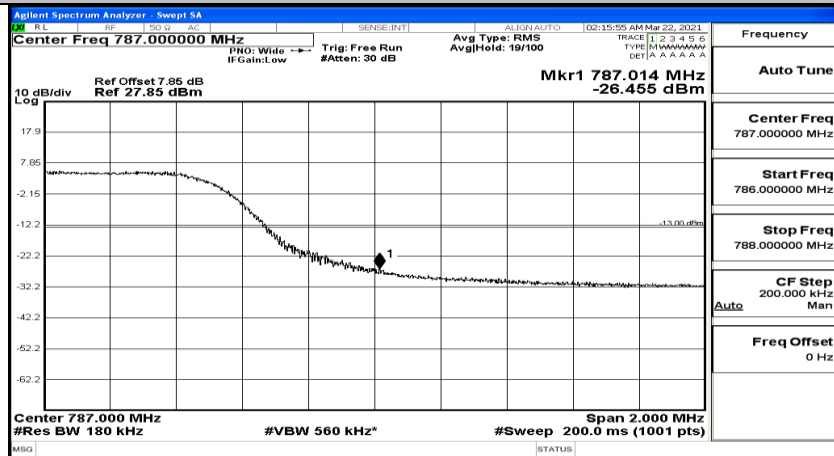
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK



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



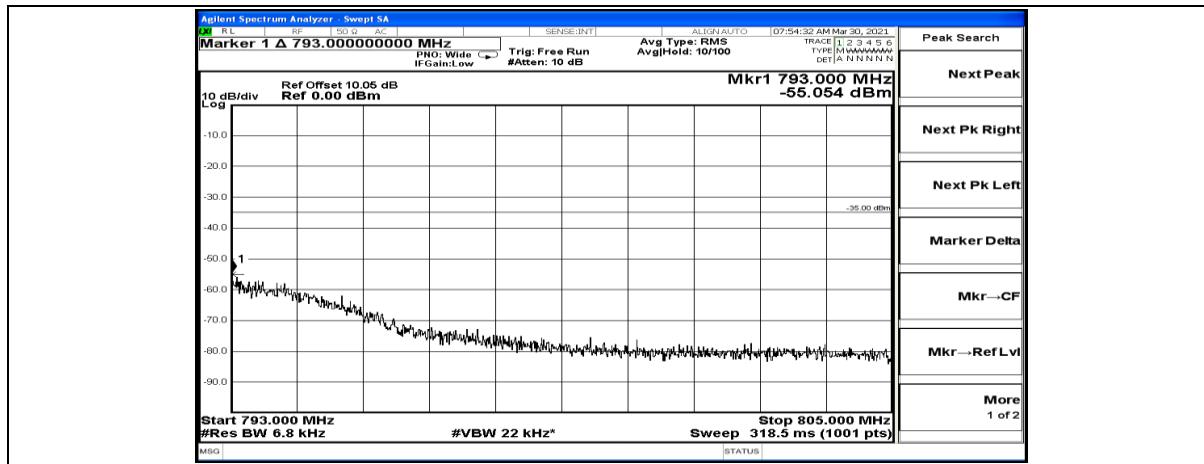
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM



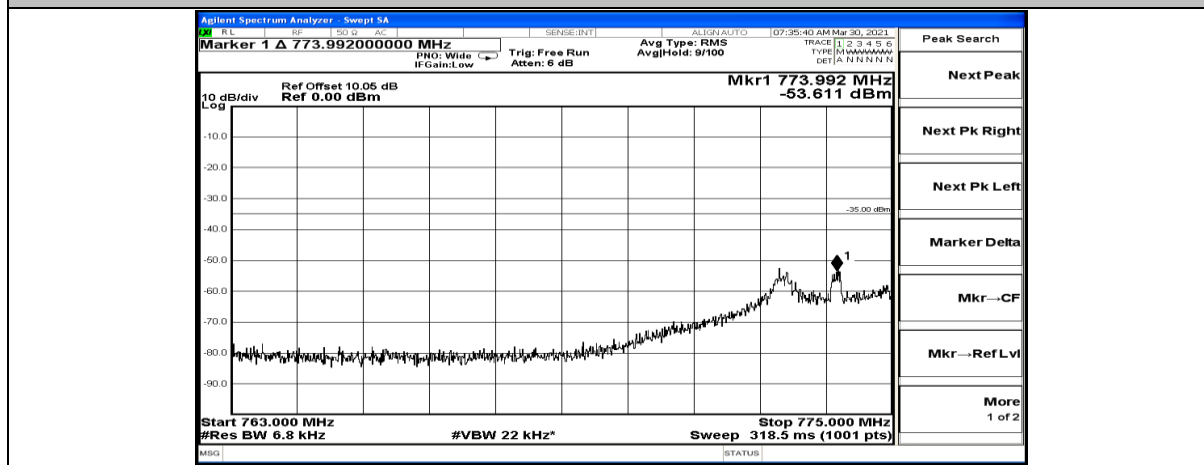
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



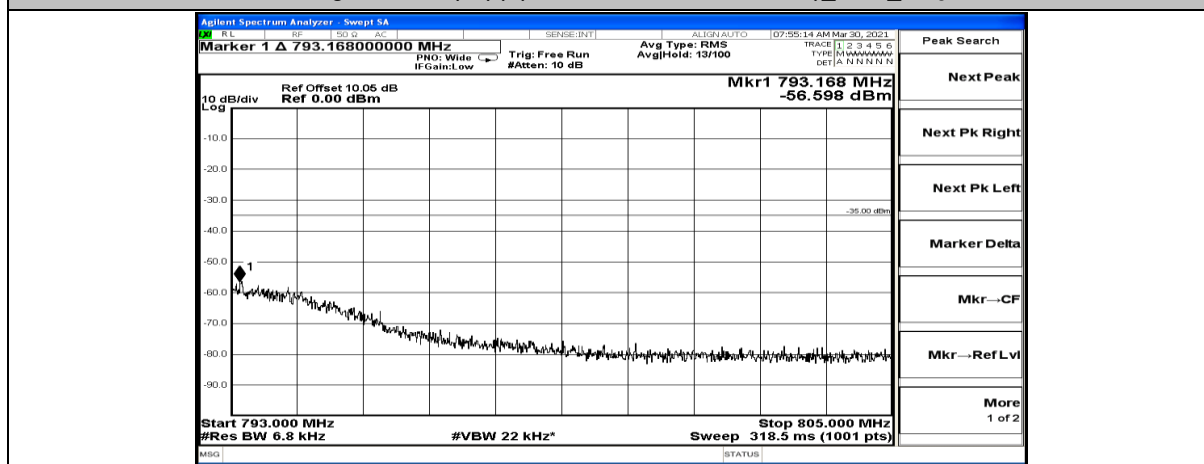
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



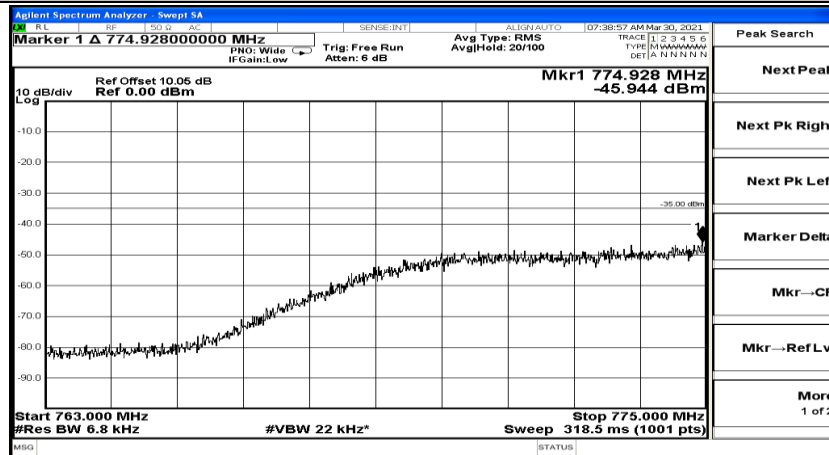
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



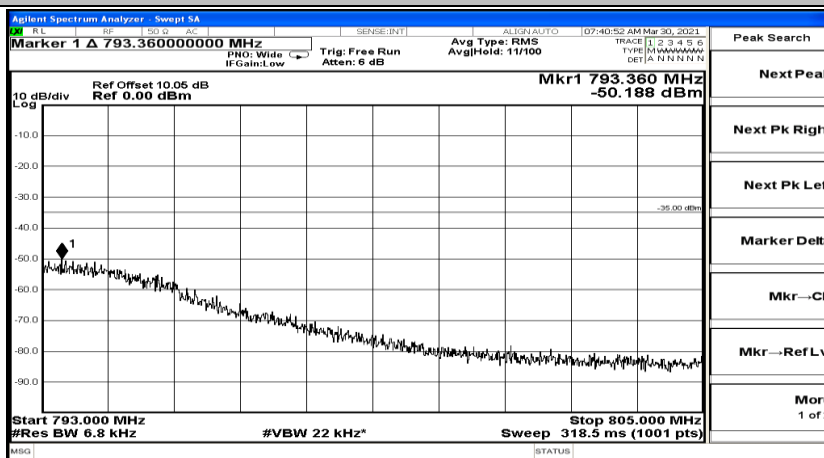
Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



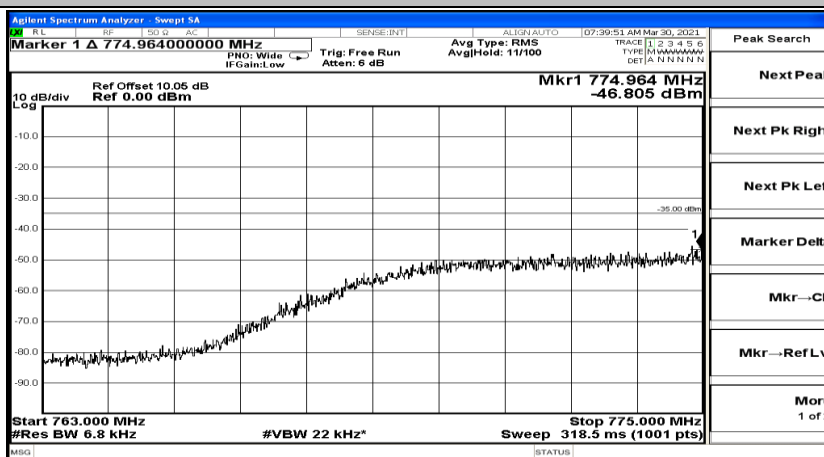
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_L_QPSK



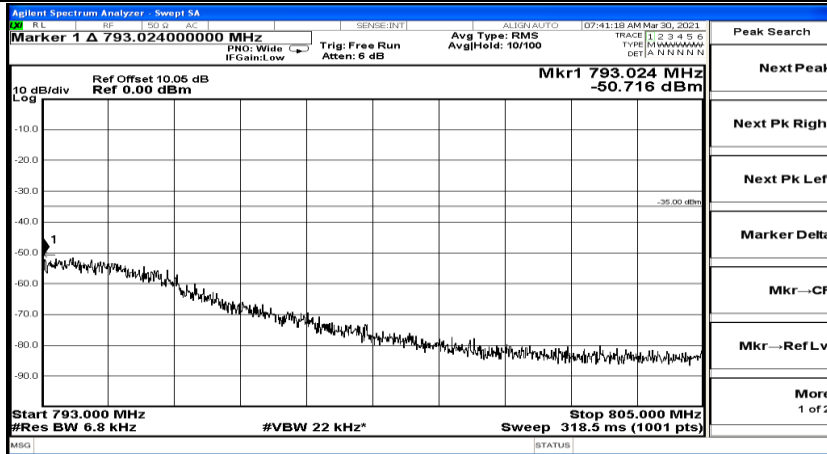
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_H_QPSK



Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_L_16QAM



Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_H_16QAM

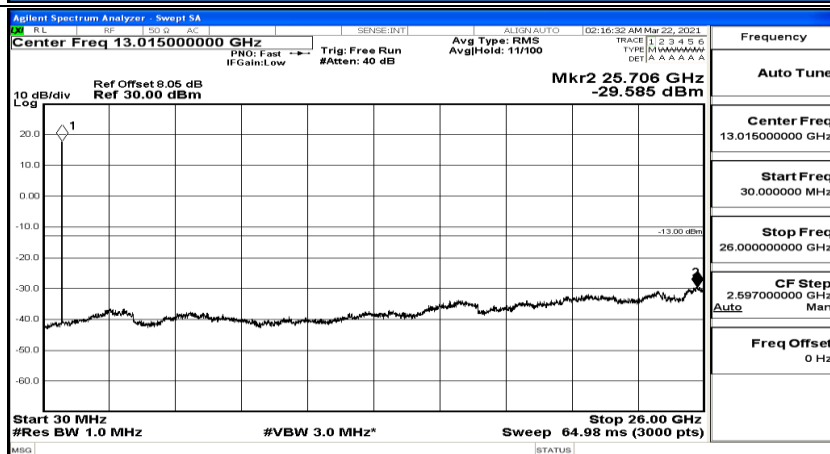
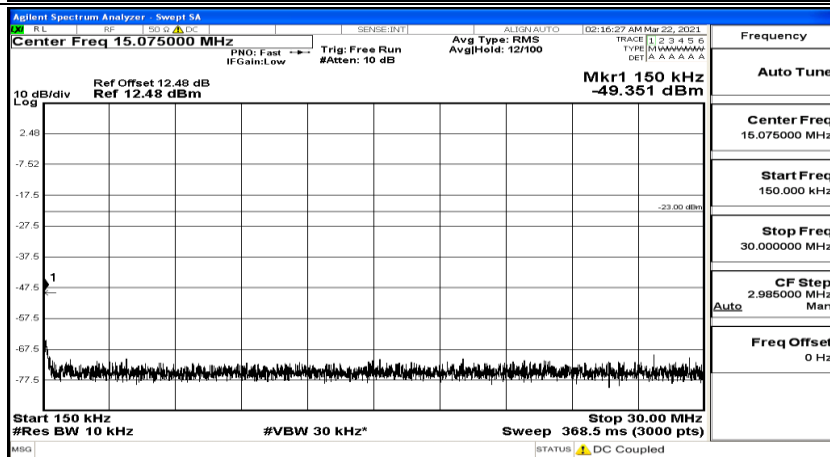
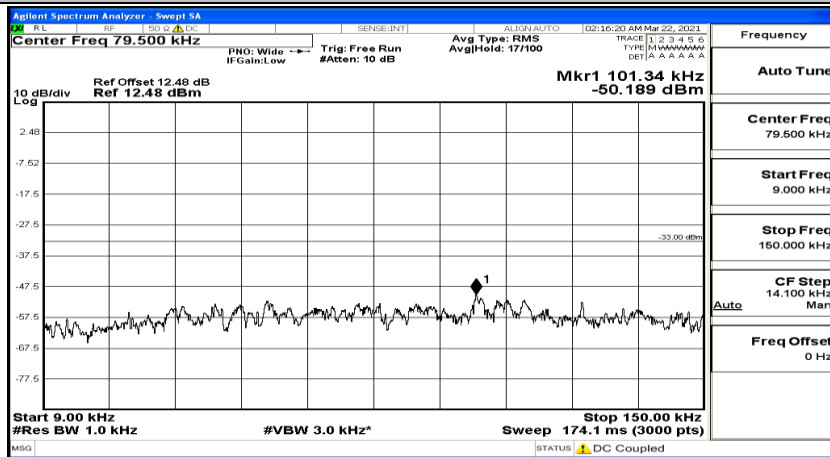


I.5 Conducted Spurious Emission

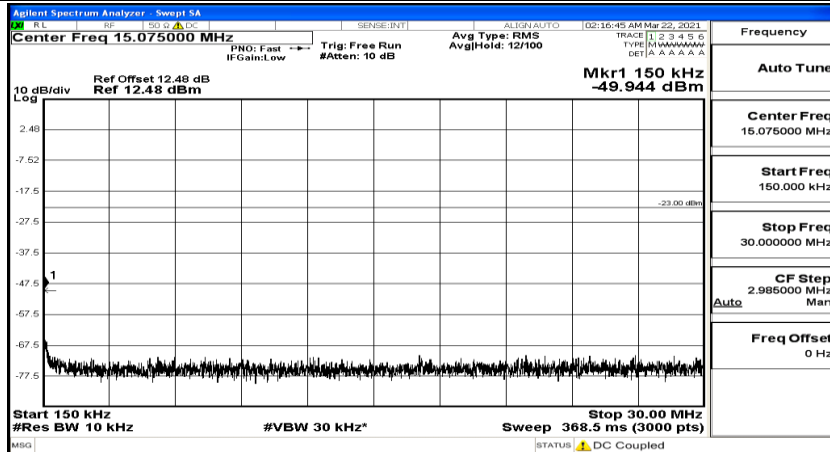
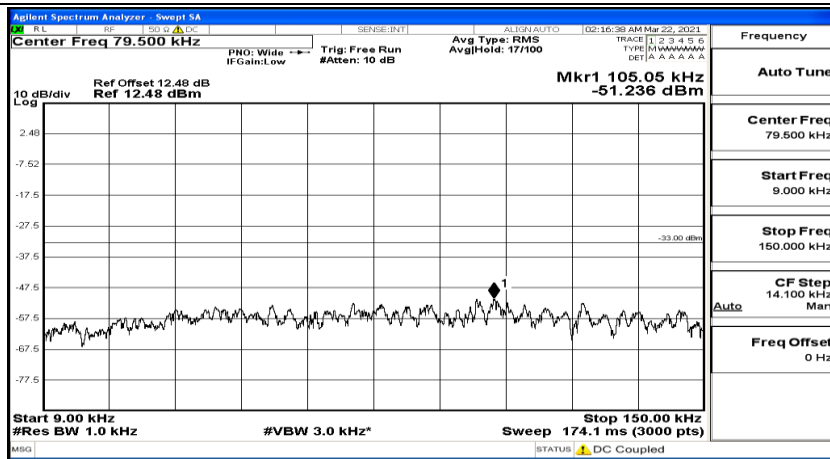
Test Graphs

Channel Bandwidth: 5 MHz

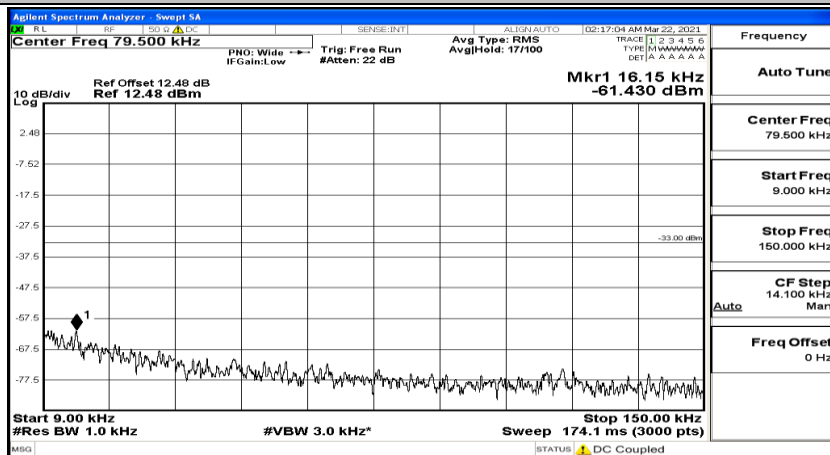
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0

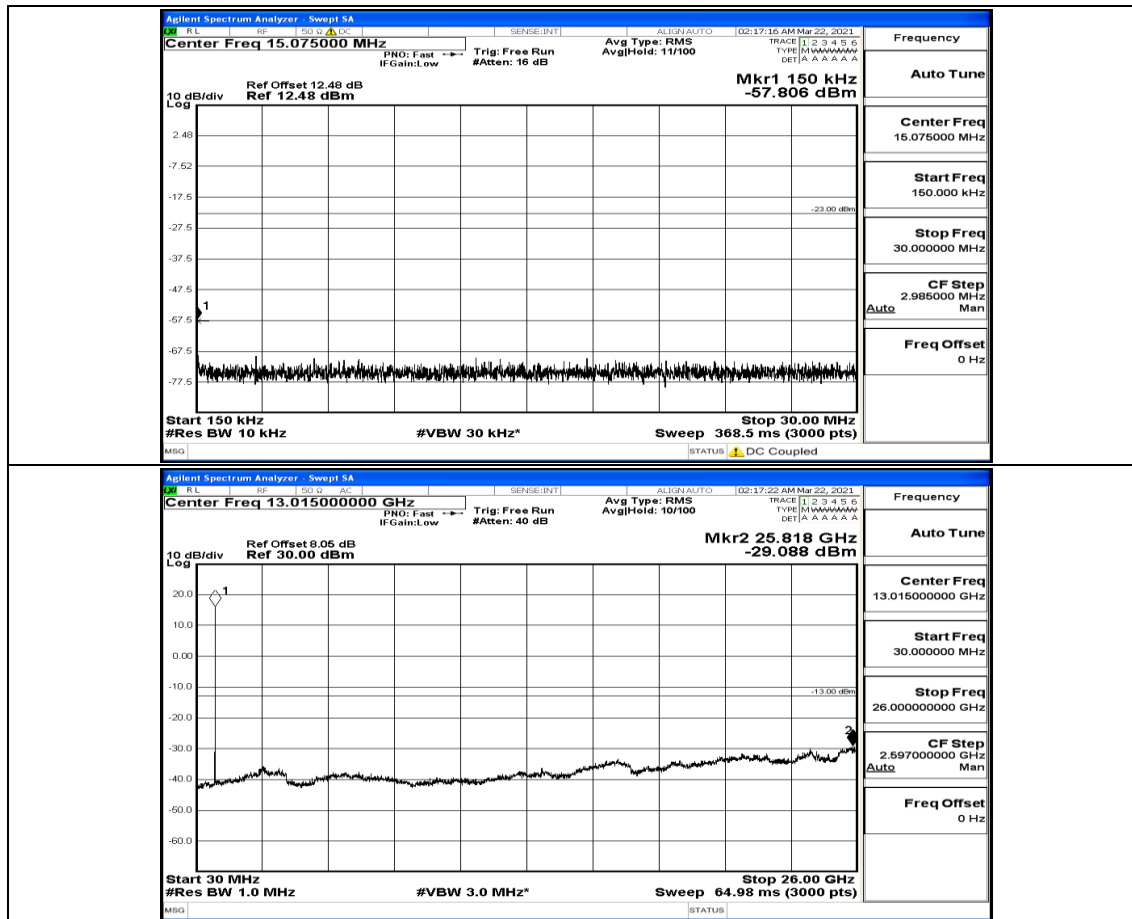


(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12

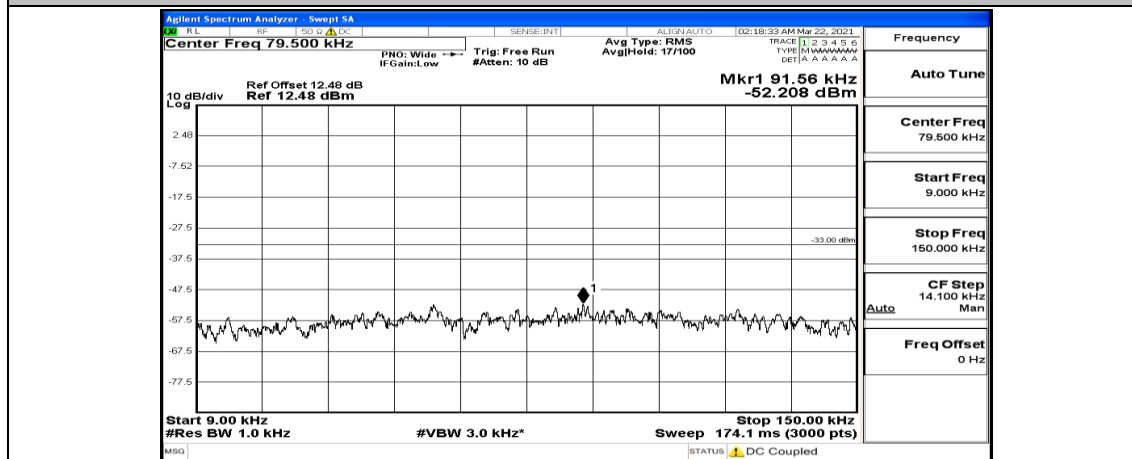


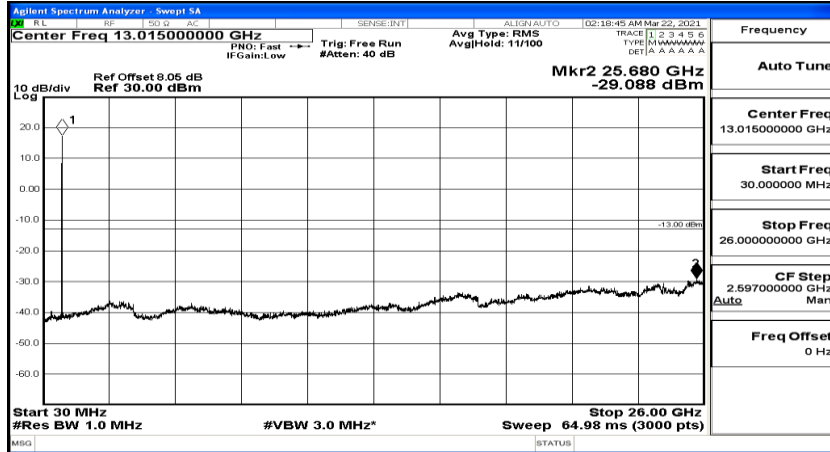
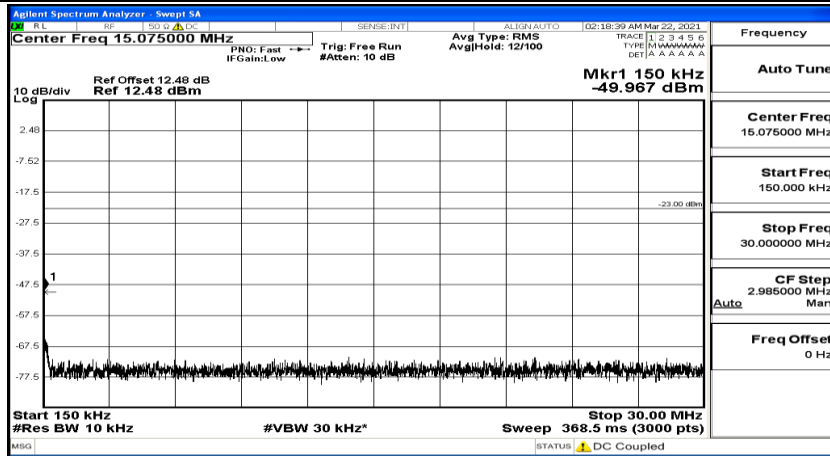
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



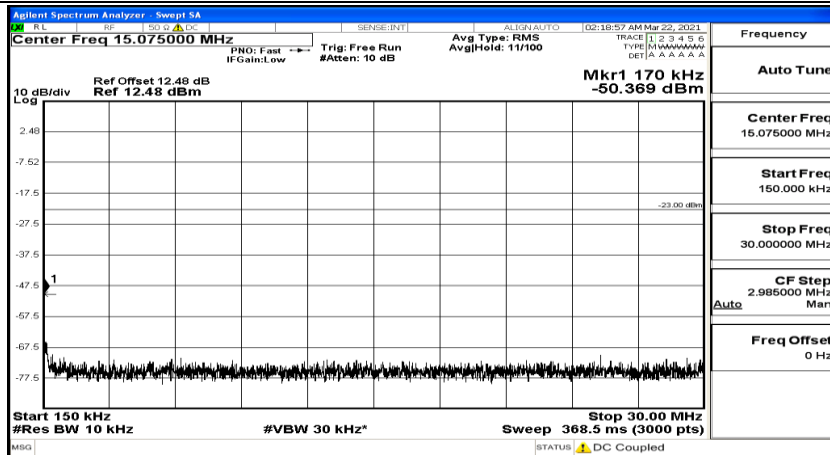
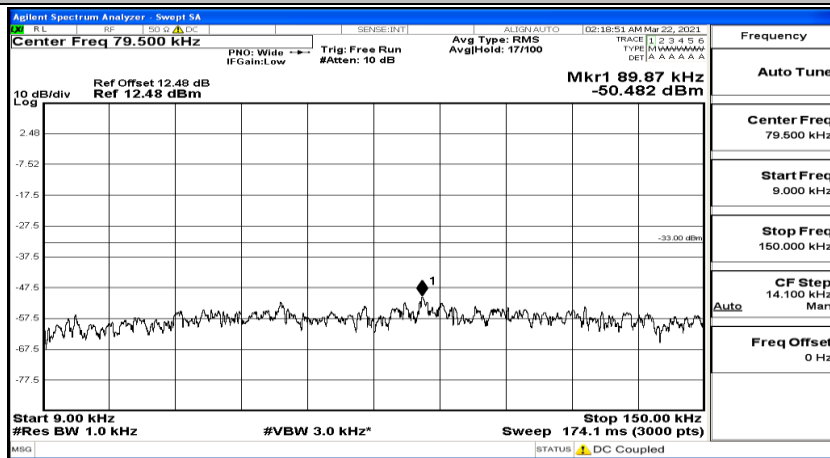


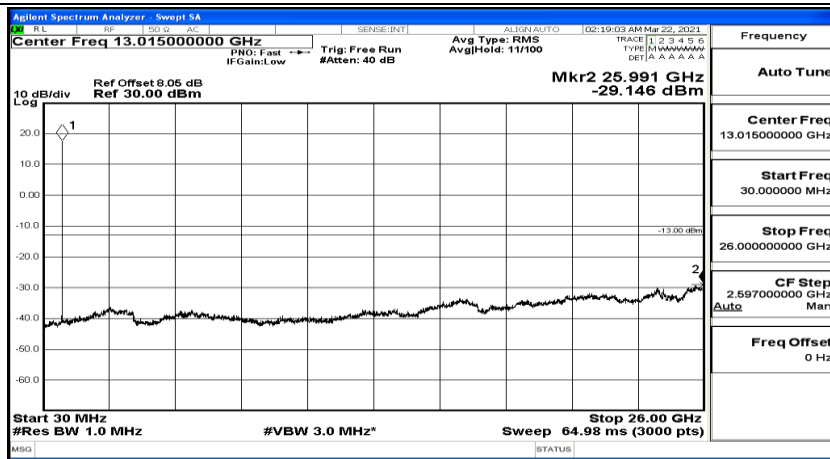
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0



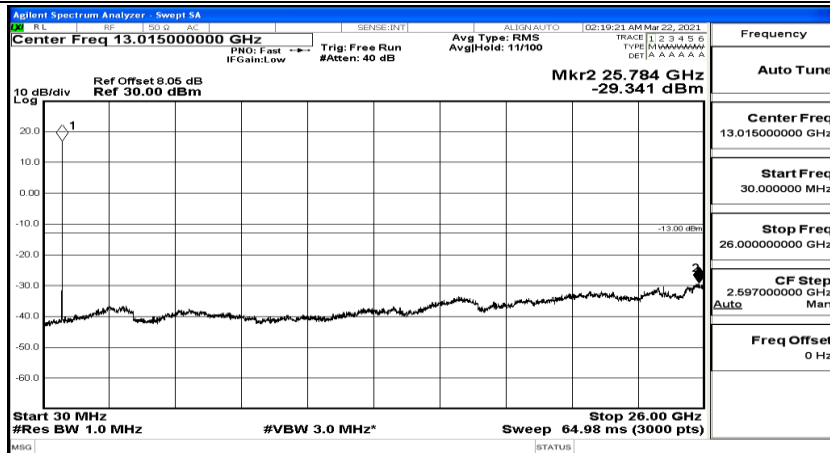
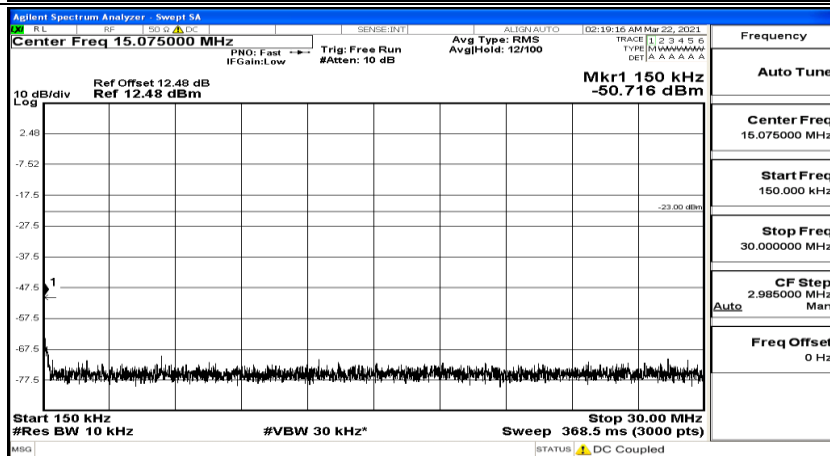
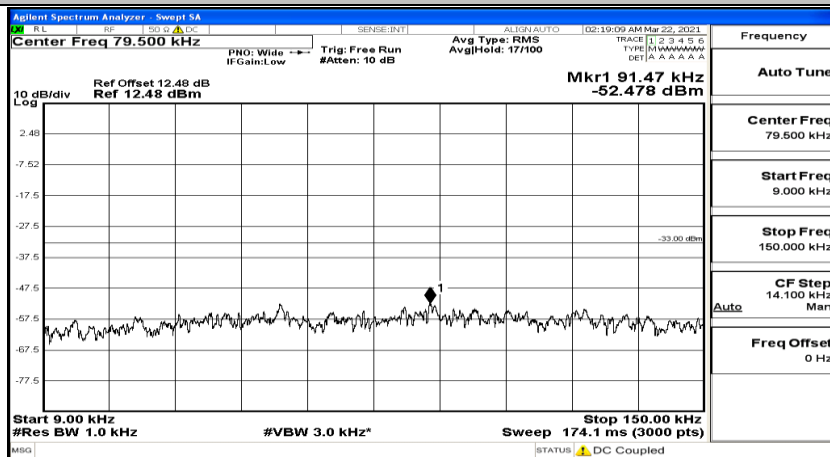


(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12





(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24



Agilent Spectrum Analyzer - Swept SA

Center Freq 79.500 kHz

Ref Offset 12.48 dB
Ref 12.48 dBm

10 dB/div
Log

Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 3.0 kHz*

Stop 150.00 kHz
Sweep 174.1 ms (3000 pts)

Frequency

Auto Tune

Center Freq 79.500 kHz

Start Freq 9.000 kHz

Stop Freq 150.000 kHz

CF Step 14.100 kHz

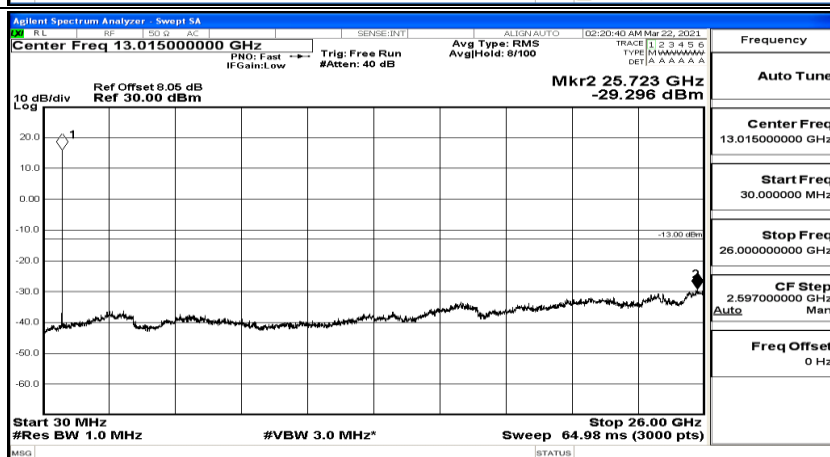
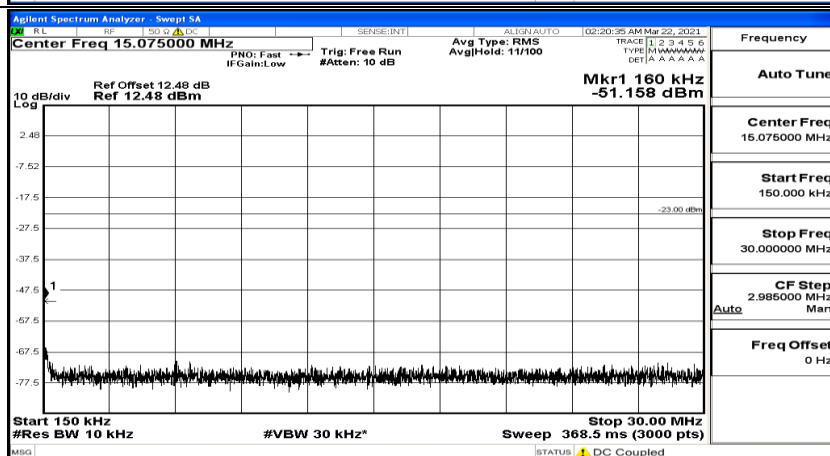
Auto

Freq Offset 0 Hz

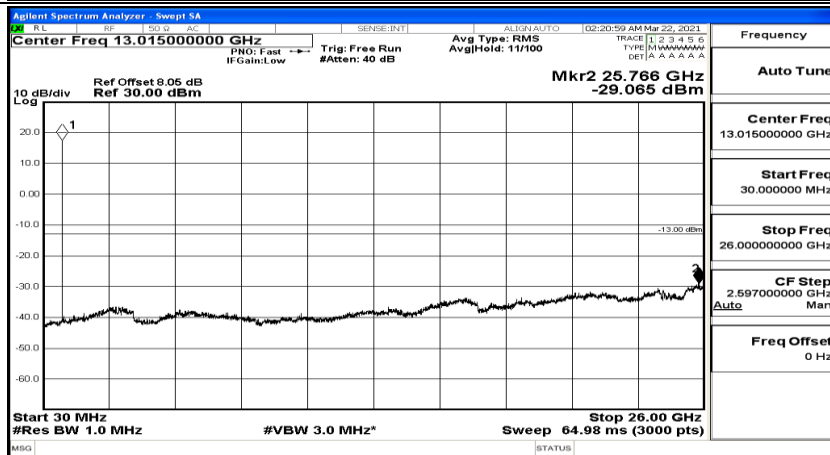
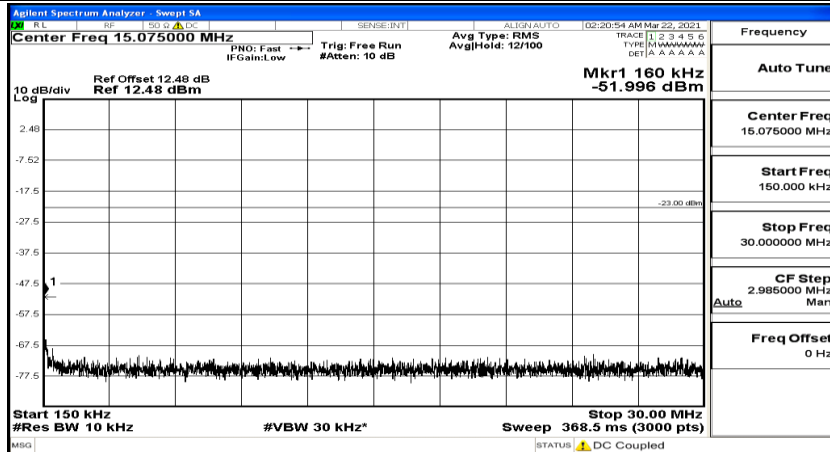
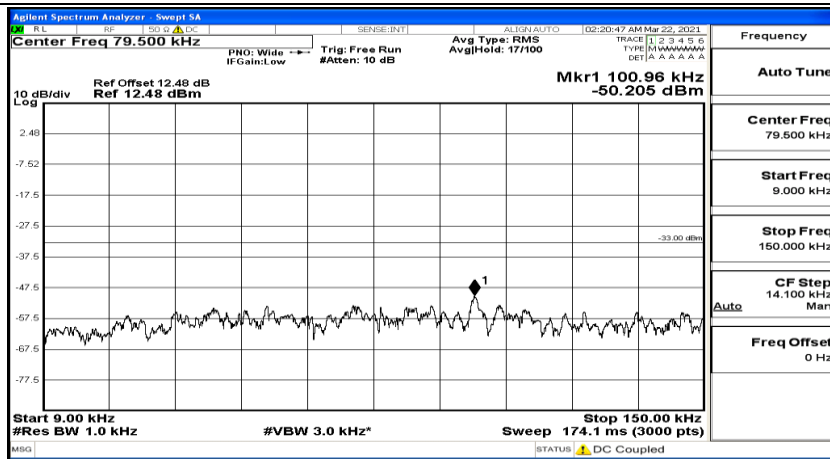
Traces: 1 2 3 4 5 6
Type: NORM NORM NORM
Det: A A A A A A

Marker 1: 105.10 kHz, -51.728 dBm

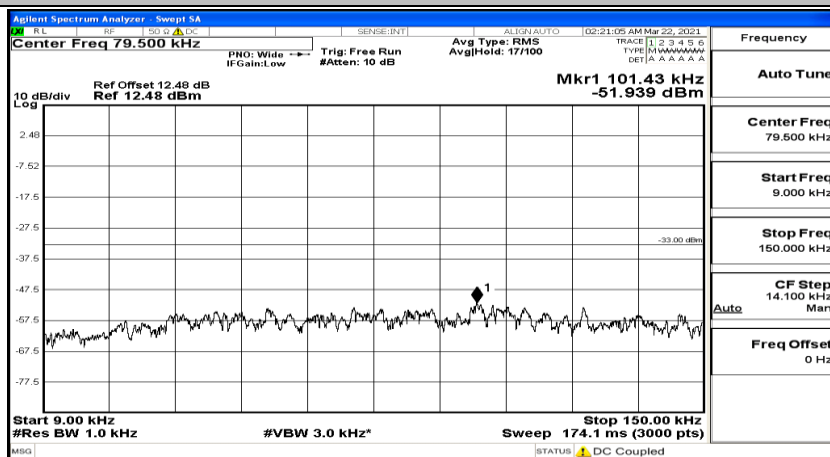
Other labels: PRO: Wide IF Gain: Low, Trig: Free Run #Atten: 10 dB, Avg Type: RMS AvgHld: 17/100, SENSE: RATT, ALI: ANALYZE, 02:20:28 AM Mar 23, 2021, -33.00 dBm

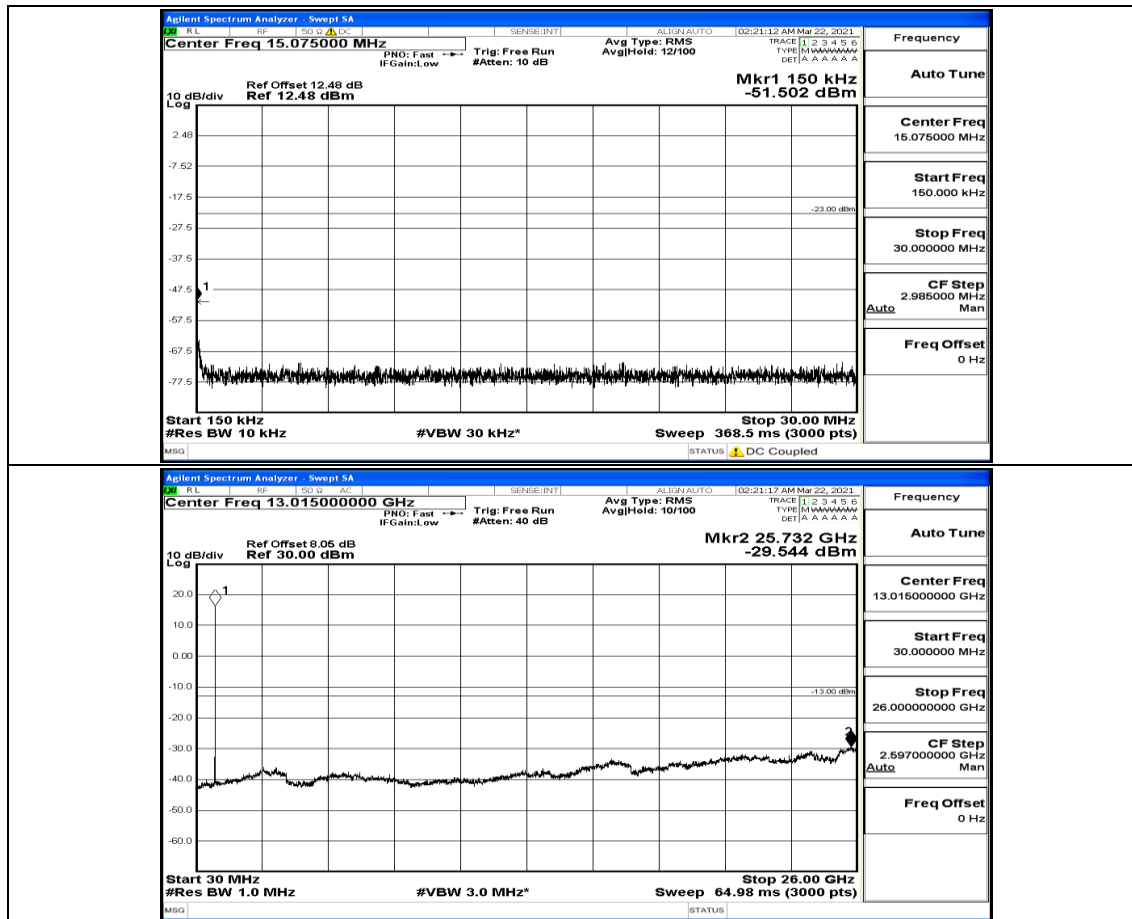


(Channel Bandwidth: 5 MHz) HCH QPSK 1RB#12

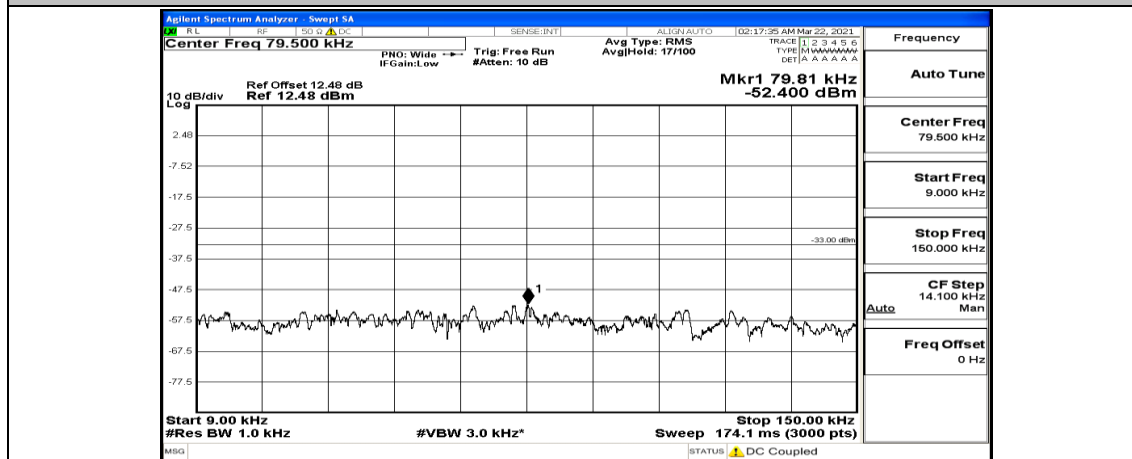


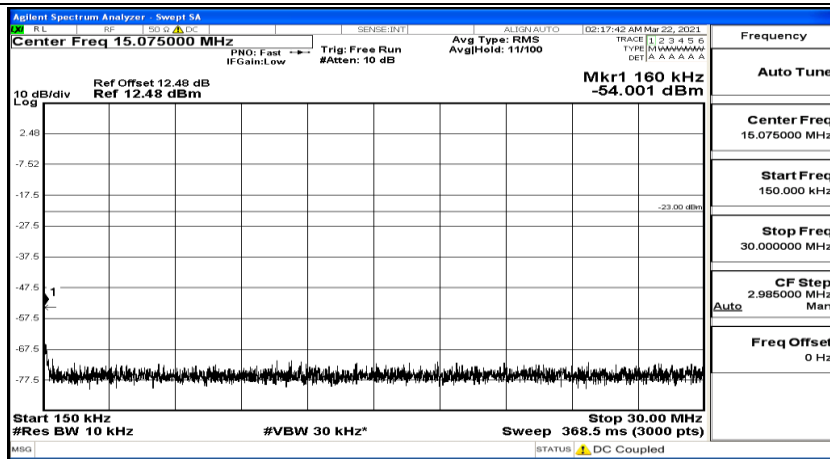
(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24



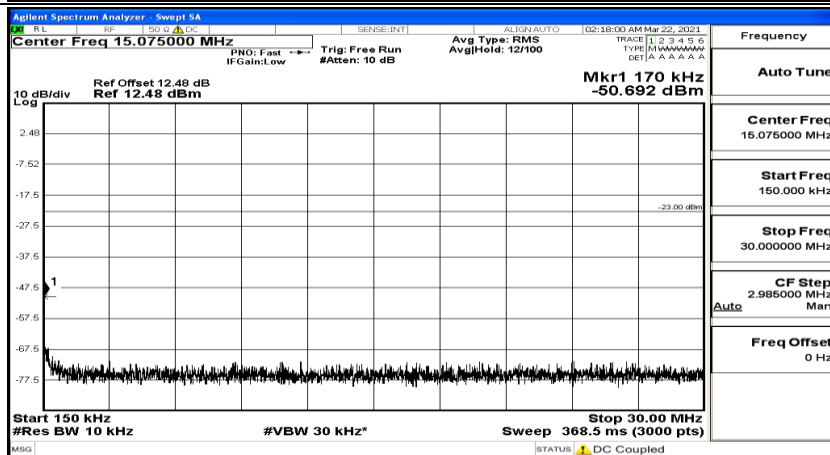
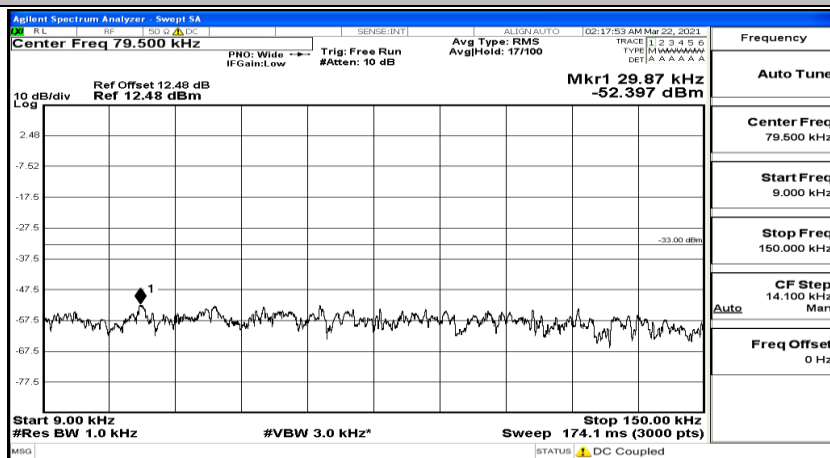


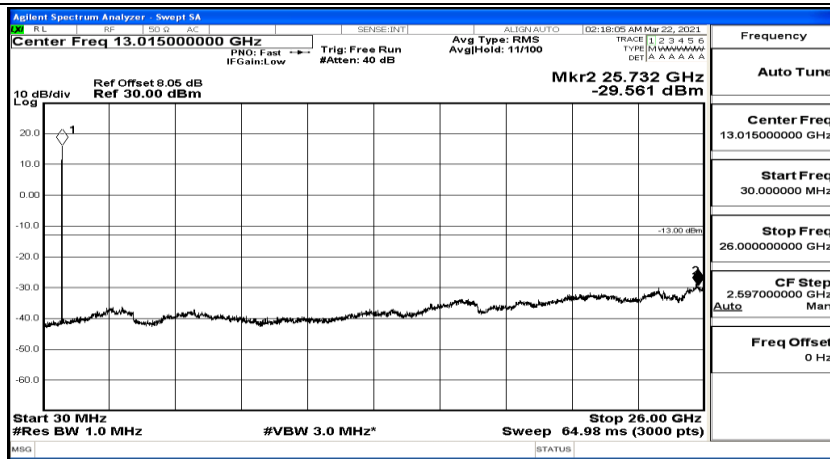
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0



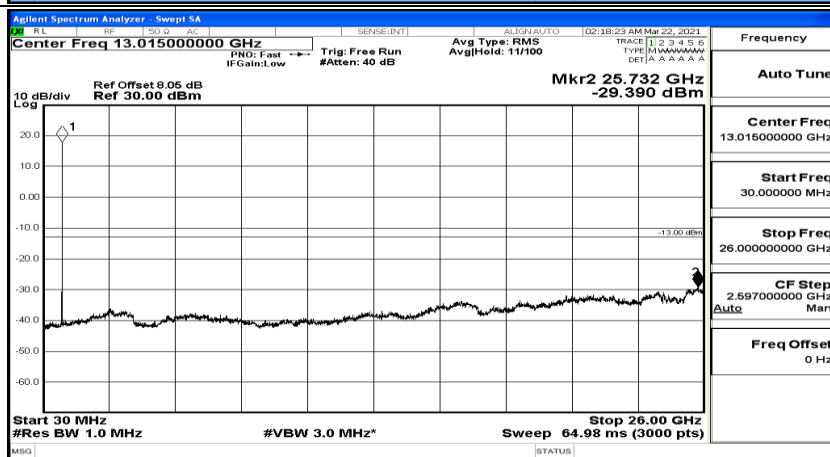
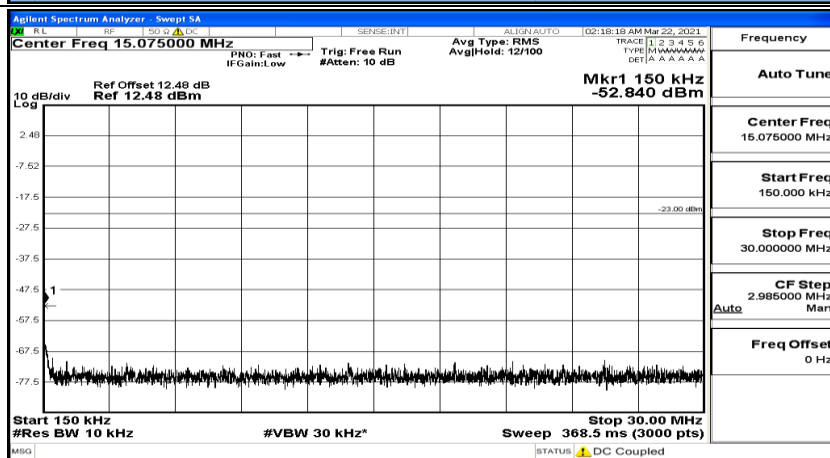
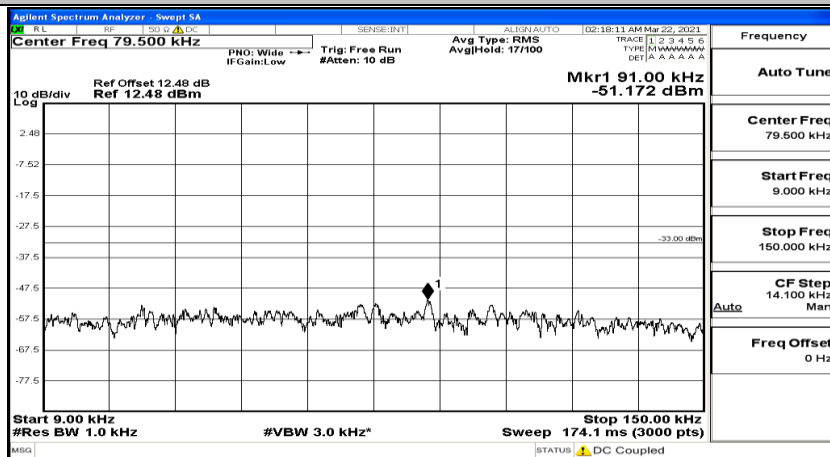


(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12

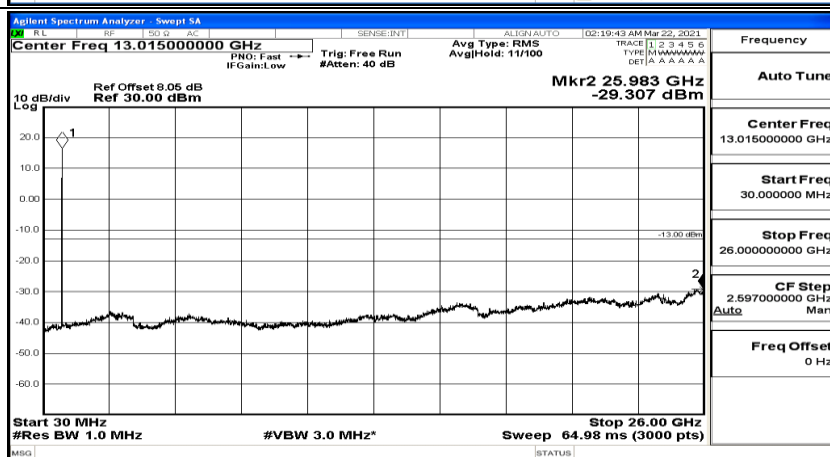
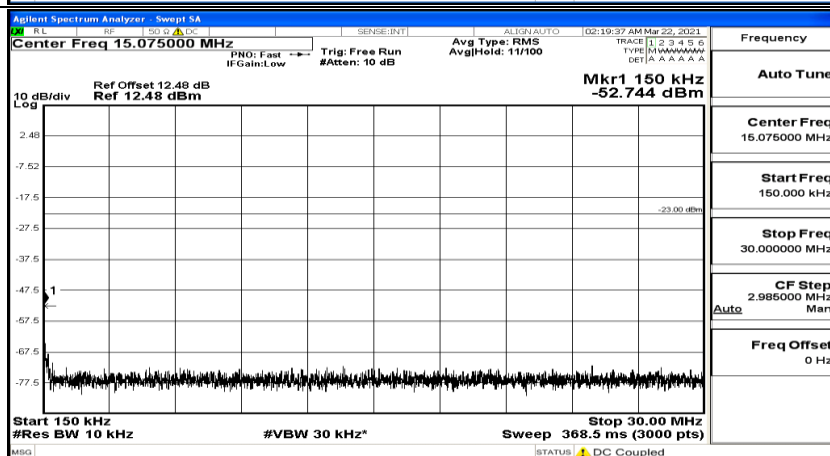
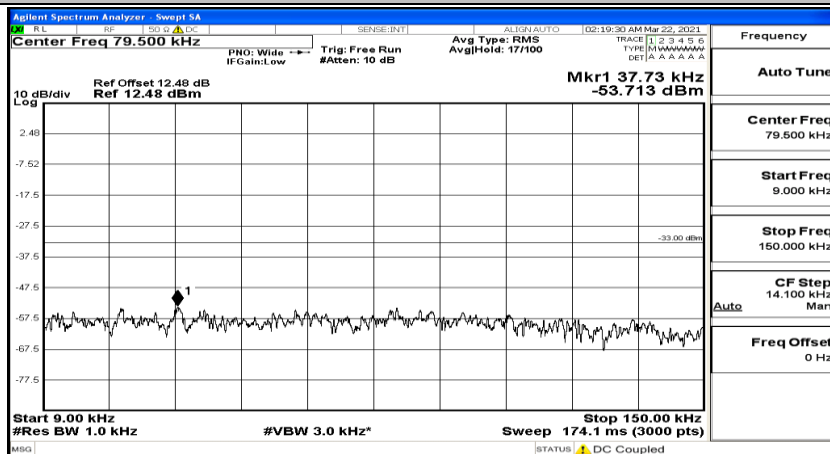




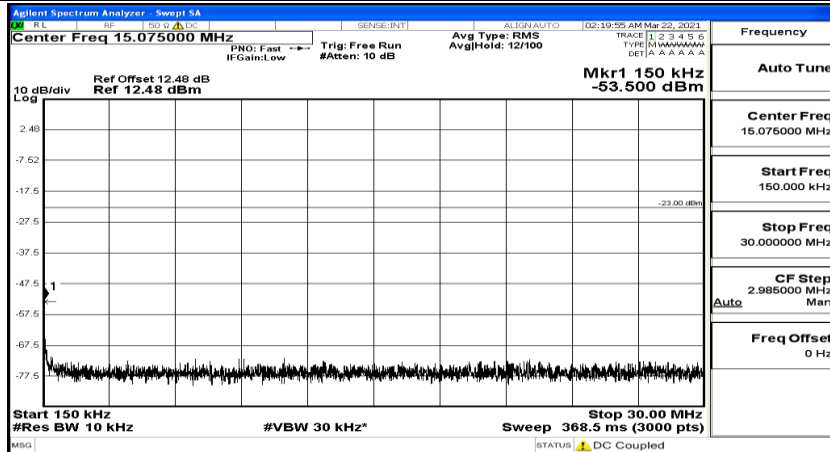
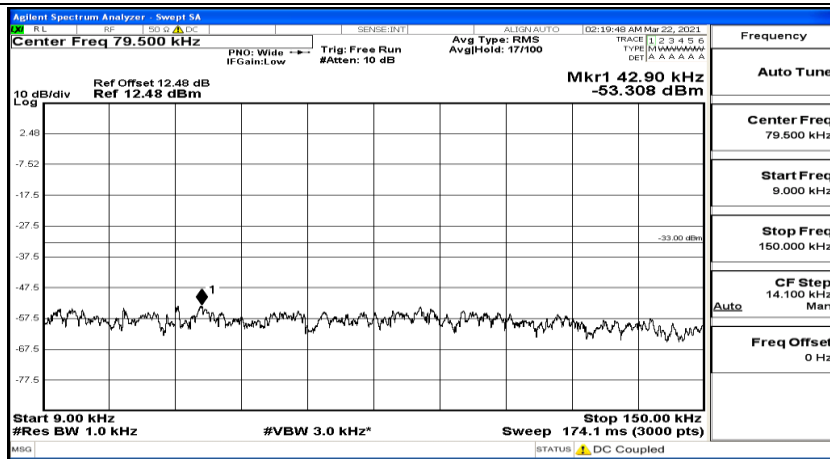
(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24



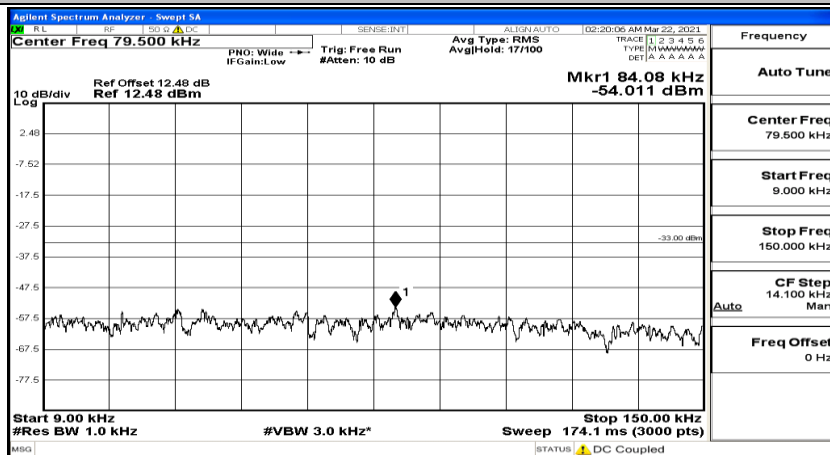
(Channel Bandwidth: 5 MHz) MCH 16QAM 1RB#0

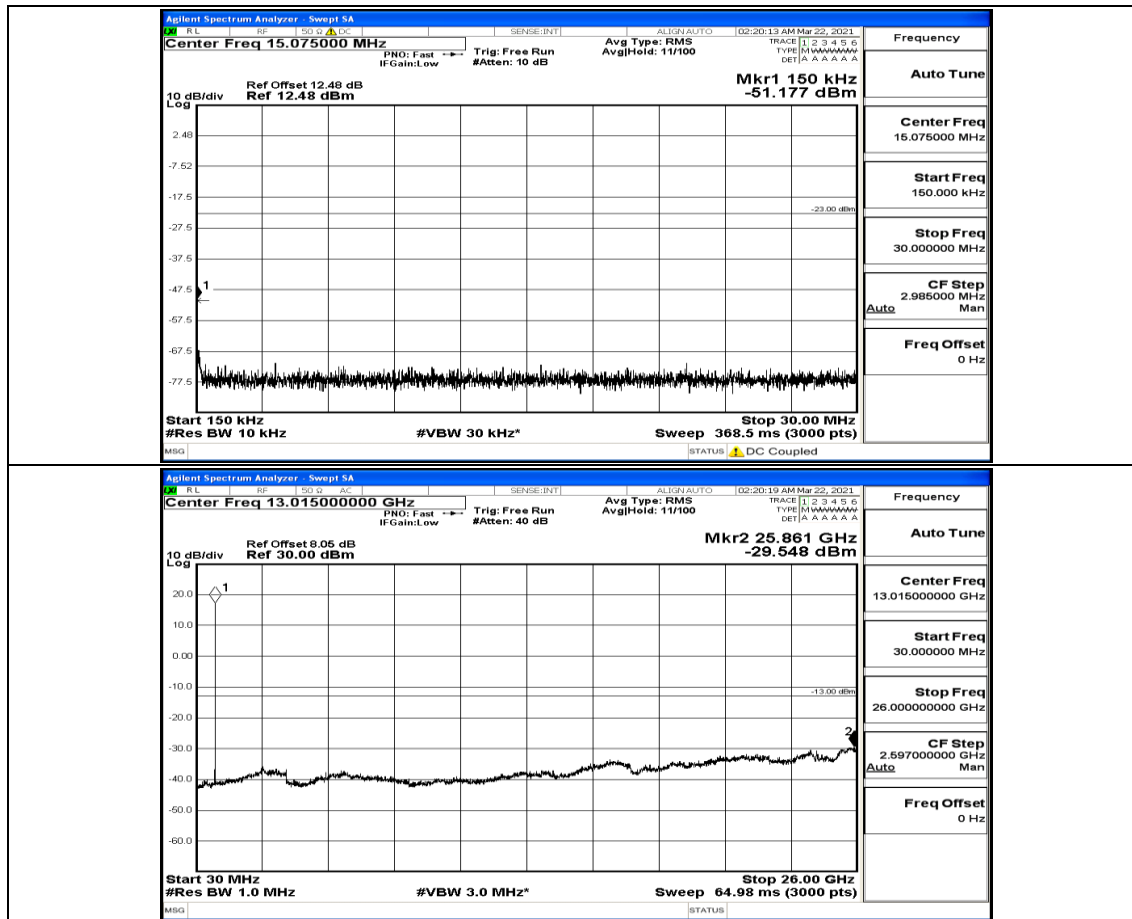


(Channel Bandwidth: 5 MHz) MCH 16QAM 1RB#12



(Channel Bandwidth: 5 MHz)_MCH_16QAM_1RB#24





(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#0

