

Appendix J: Test Data for E-UTRA Band 13

Product Name: mobile phone

Trade Mark: Purism

Test Model: Librem 5

Environmental Conditions

Temperature:	24.6° C
Relative Humidity:	53.7%
ATM Pressure:	100.0 kPa
Test Engineer:	Ken He
Supervised by:	LI HUAN

J.1 Conducted Output Power

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#12	25.18	PASS
Band13	5MHz	QPSK	23205	1RB#24	25.62	PASS
Band13	5MHz	QPSK	23205	1RB#0	25.41	PASS
Band13	5MHz	QPSK	23205	12RB#0	24.44	PASS
Band13	5MHz	QPSK	23205	12RB#6	24.36	PASS
Band13	5MHz	QPSK	23205	12RB#13	24.30	PASS
Band13	5MHz	QPSK	23205	25RB#0	24.29	PASS
Band13	5MHz	QPSK	23230	1RB#0	25.42	PASS
Band13	5MHz	QPSK	23230	1RB#12	25.61	PASS
Band13	5MHz	QPSK	23230	1RB#24	25.48	PASS
Band13	5MHz	QPSK	23230	12RB#0	24.31	PASS
Band13	5MHz	QPSK	23230	12RB#6	24.33	PASS
Band13	5MHz	QPSK	23230	12RB#13	24.53	PASS
Band13	5MHz	QPSK	23230	25RB#0	24.37	PASS
Band13	5MHz	QPSK	23255	1RB#24	25.55	PASS
Band13	5MHz	QPSK	23255	1RB#0	25.34	PASS
Band13	5MHz	QPSK	23255	1RB#12	25.48	PASS
Band13	5MHz	QPSK	23255	12RB#6	24.47	PASS
Band13	5MHz	QPSK	23255	12RB#0	24.47	PASS
Band13	5MHz	QPSK	23255	12RB#13	24.51	PASS
Band13	5MHz	QPSK	23255	25RB#0	24.40	PASS
Band13	5MHz	16QAM	23205	1RB#24	24.67	PASS
Band13	5MHz	16QAM	23205	1RB#12	24.13	PASS
Band13	5MHz	16QAM	23205	1RB#0	24.02	PASS
Band13	5MHz	16QAM	23205	12RB#6	23.53	PASS
Band13	5MHz	16QAM	23205	12RB#13	23.30	PASS
Band13	5MHz	16QAM	23205	12RB#0	23.54	PASS
Band13	5MHz	16QAM	23205	25RB#0	23.11	PASS
Band13	5MHz	16QAM	23230	1RB#24	24.64	PASS
Band13	5MHz	16QAM	23230	1RB#0	24.68	PASS
Band13	5MHz	16QAM	23230	1RB#12	24.87	PASS
Band13	5MHz	16QAM	23230	12RB#6	23.20	PASS
Band13	5MHz	16QAM	23230	12RB#0	23.19	PASS

Band13	5MHz	16QAM	23230	12RB#13	23.30	PASS
Band13	5MHz	16QAM	23230	25RB#0	23.26	PASS
Band13	5MHz	16QAM	23255	1RB#12	24.24	PASS
Band13	5MHz	16QAM	23255	1RB#0	24.03	PASS
Band13	5MHz	16QAM	23255	1RB#24	24.37	PASS
Band13	5MHz	16QAM	23255	12RB#6	23.38	PASS
Band13	5MHz	16QAM	23255	12RB#0	23.39	PASS
Band13	5MHz	16QAM	23255	12RB#13	23.26	PASS
Band13	5MHz	16QAM	23255	25RB#0	23.44	PASS
Band13	10MHz	QPSK	23230	1RB#24	25.32	PASS
Band13	10MHz	QPSK	23230	1RB#0	25.08	PASS
Band13	10MHz	QPSK	23230	1RB#49	25.41	PASS
Band13	10MHz	QPSK	23230	25RB#12	24.41	PASS
Band13	10MHz	QPSK	23230	25RB#0	24.39	PASS
Band13	10MHz	QPSK	23230	25RB#25	24.58	PASS
Band13	10MHz	QPSK	23230	50RB#0	24.51	PASS
Band13	10MHz	16QAM	23230	1RB#24	24.73	PASS
Band13	10MHz	16QAM	23230	1RB#0	24.33	PASS
Band13	10MHz	16QAM	23230	1RB#49	24.37	PASS
Band13	10MHz	16QAM	23230	25RB#25	23.75	PASS
Band13	10MHz	16QAM	23230	25RB#12	23.36	PASS
Band13	10MHz	16QAM	23230	25RB#0	23.36	PASS
Band13	10MHz	16QAM	23230	50RB#0	23.56	PASS

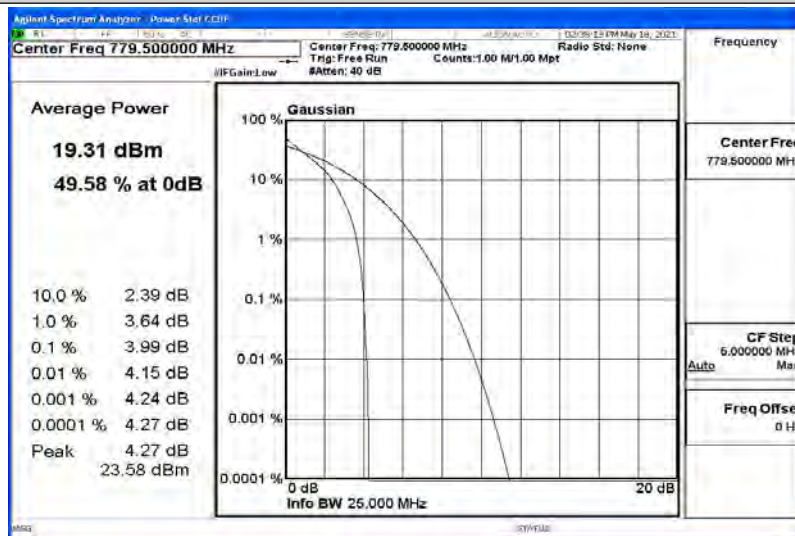
J.2 Peak-to-Average Ratio(CCDF)

Test Result

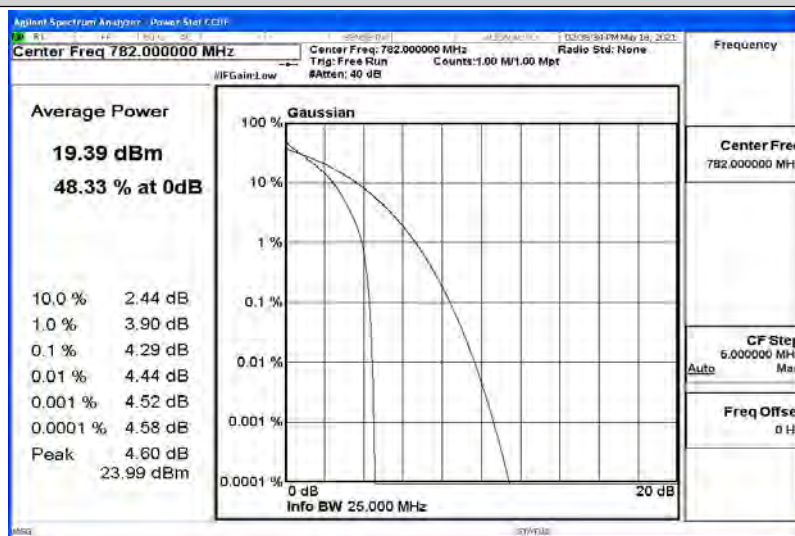
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	3.99	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.29	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.33	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.82	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.20	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	5.26	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	4.16	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.09	13	PASS

Test Graphs

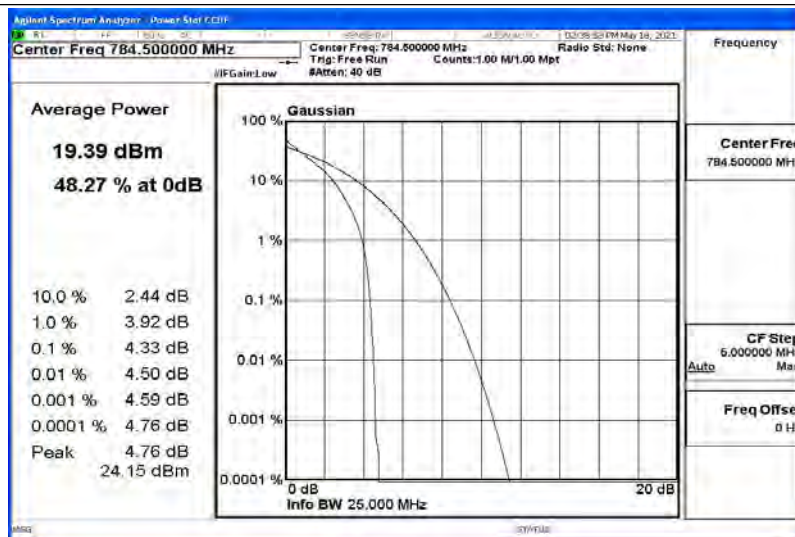
Band13-5MHz-QPSK-23205-25RB#0



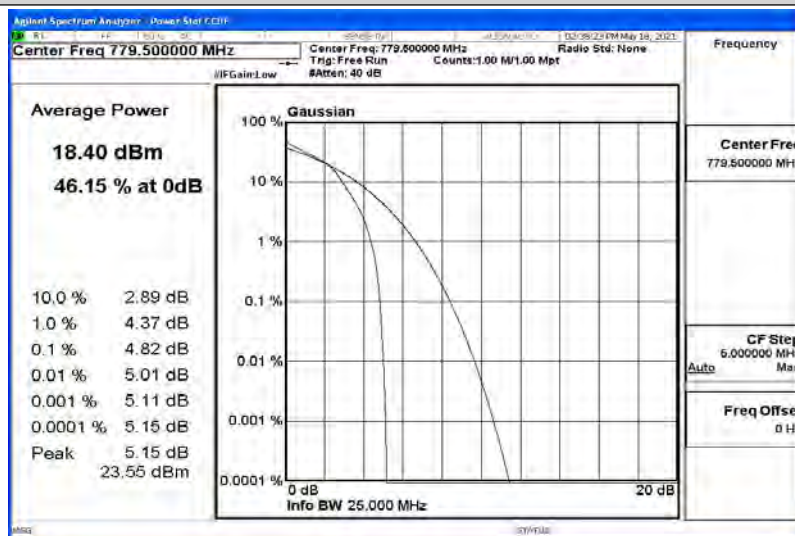
Band13-5MHz-QPSK-23230-25RB#0



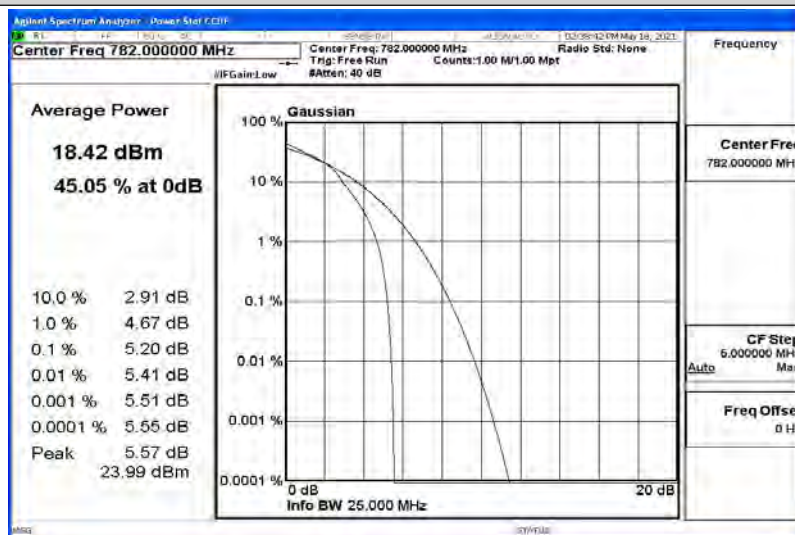
Band13-5MHz-QPSK-23255-25RB#0



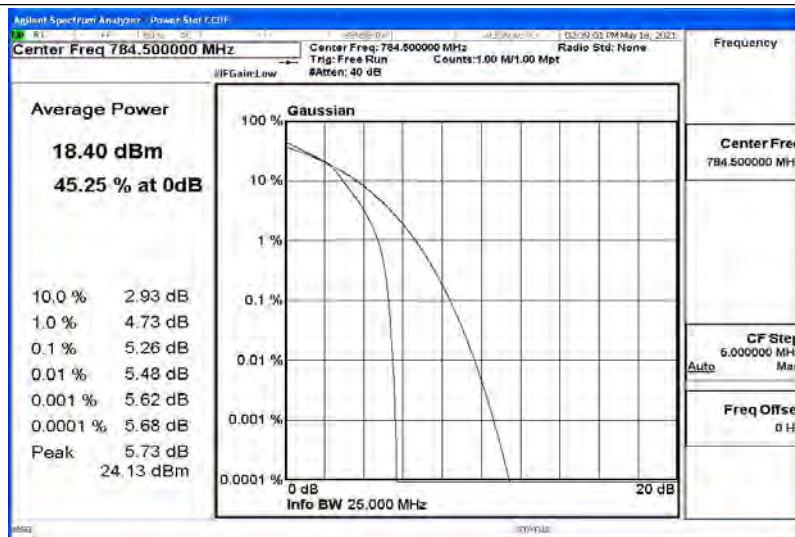
Band13-5MHz-16QAM-23205-25RB#0



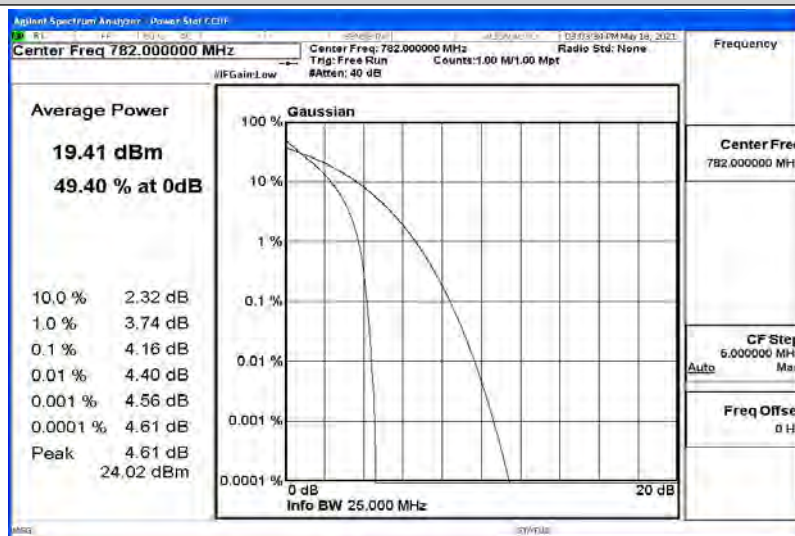
Band13-5MHz-16QAM-23230-25RB#0



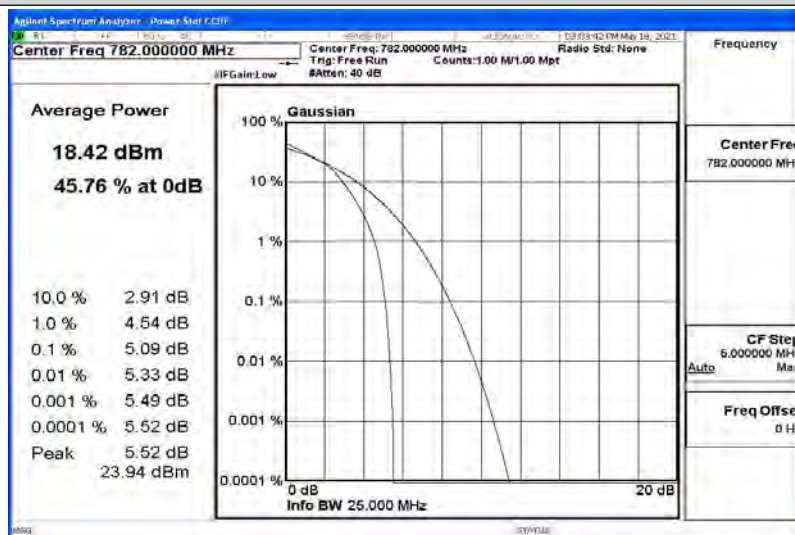
Band13-5MHz-16QAM-23255-25RB#0



Band13-10MHz-QPSK-23230-50RB#0



Band13-10MHz-16QAM-23230-50RB#0



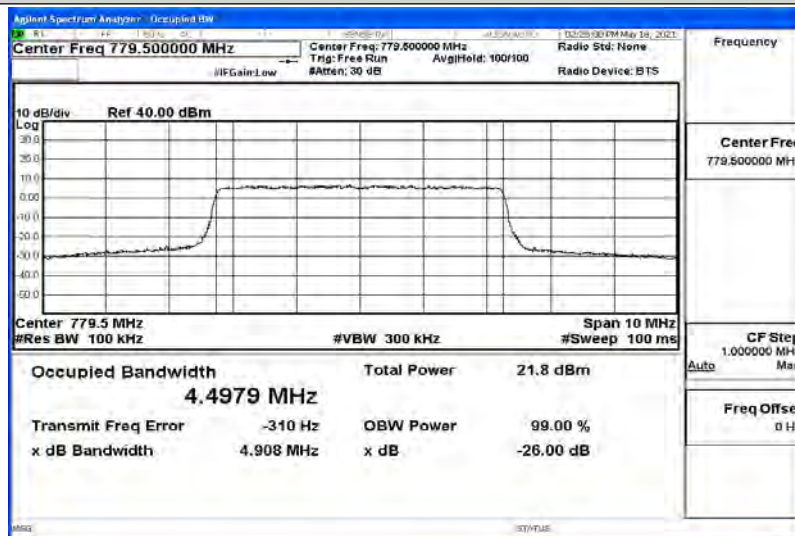
J.3 26dB Bandwidth and Occupied Bandwidth

Test Result

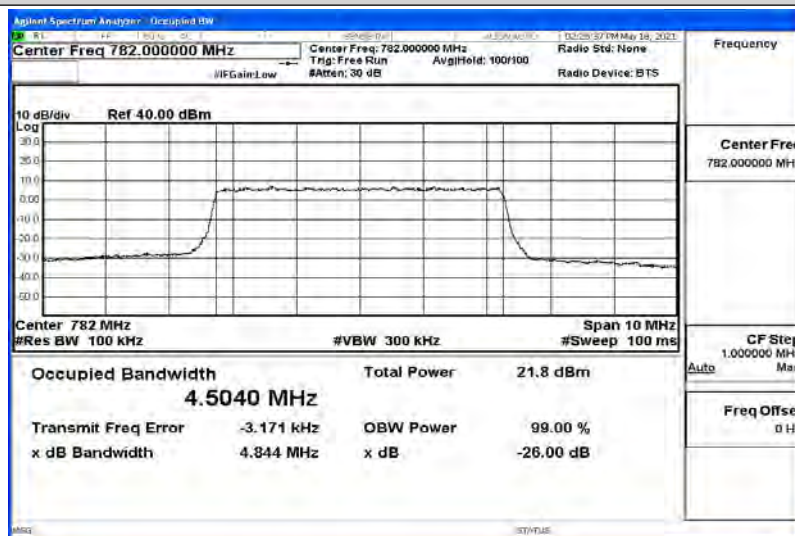
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.4979	4.908	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.5040	4.844	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.4987	4.909	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.5049	4.896	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.5053	4.862	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.5025	4.883	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.9728	9.557	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.9622	9.537	PASS

Test Graphs

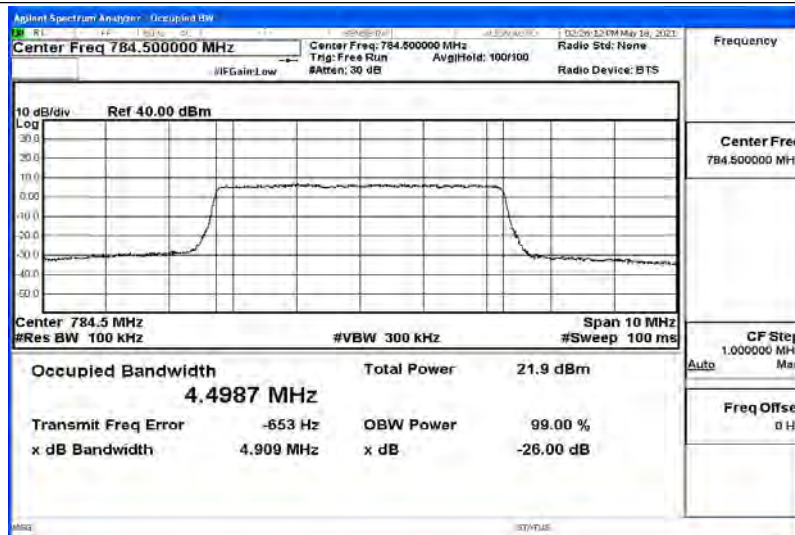
Band13-5MHz-QPSK-23205-25RB#0-4.4979



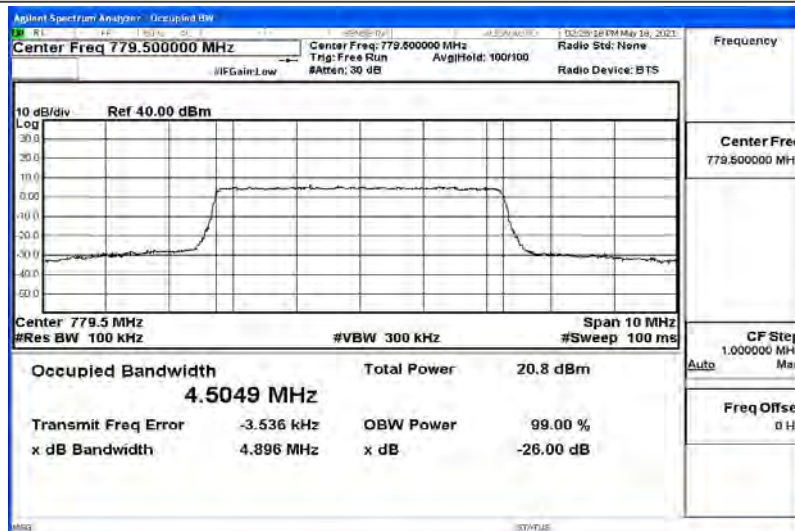
Band13-5MHz-QPSK-23230-25RB#0-4.5040



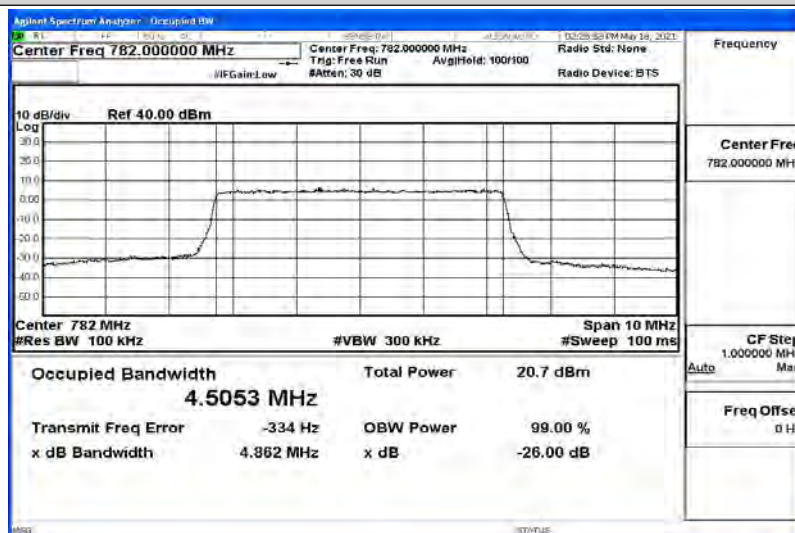
Band13-5MHz-QPSK-23255-25RB#0-4.4987



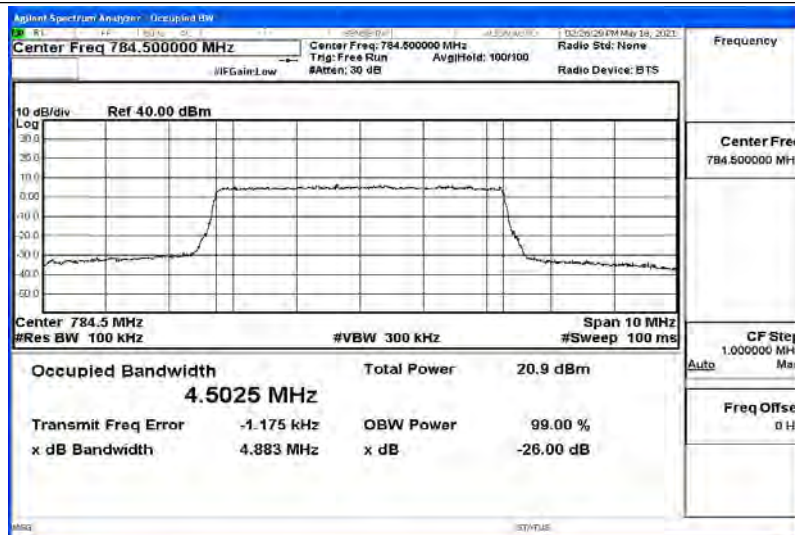
Band13-5MHz-16QAM-23205-25RB#0-4.5049



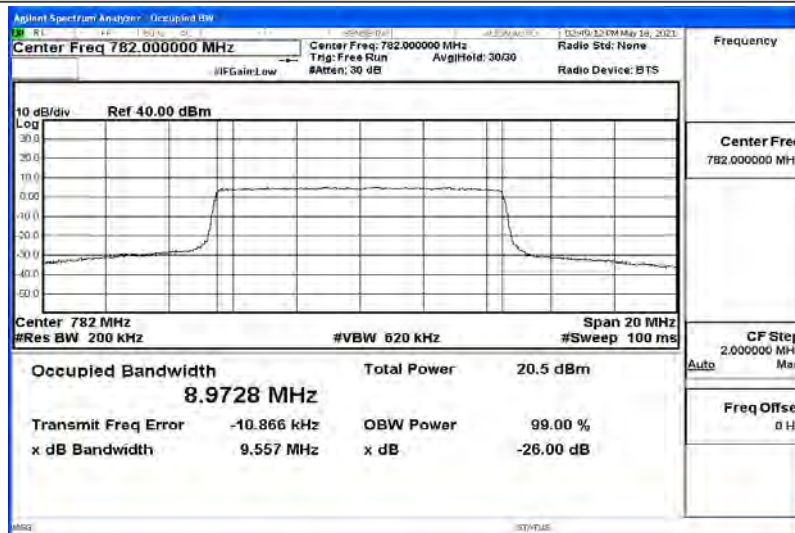
Band13-5MHz-16QAM-23230-25RB#0-4.5053



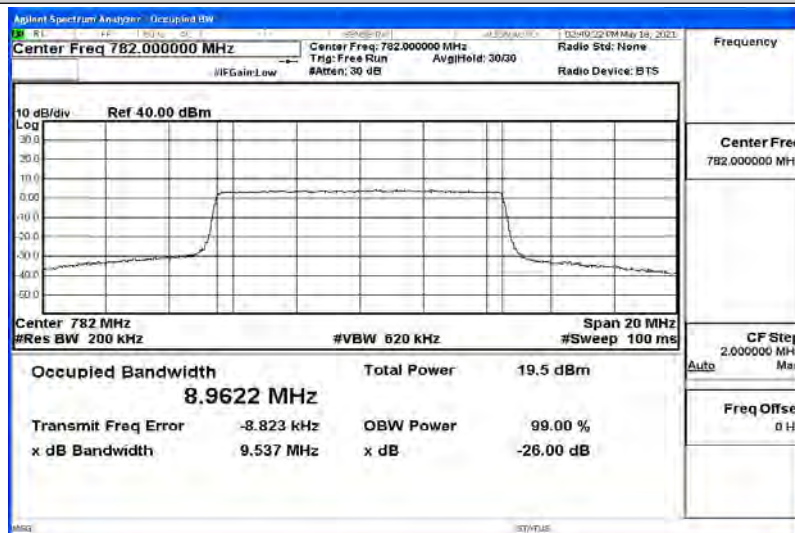
Band13-5MHz-16QAM-23255-25RB#0-4.5025



Band13-10MHz-QPSK-23230-50RB#0-8.9728



Band13-10MHz-16QAM-23230-50RB#0-8.9622



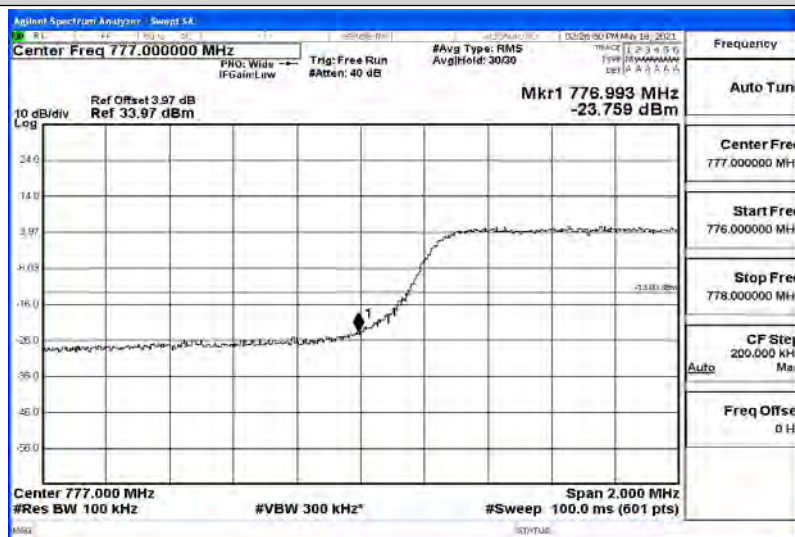
J.4 Band Edge

Test Result

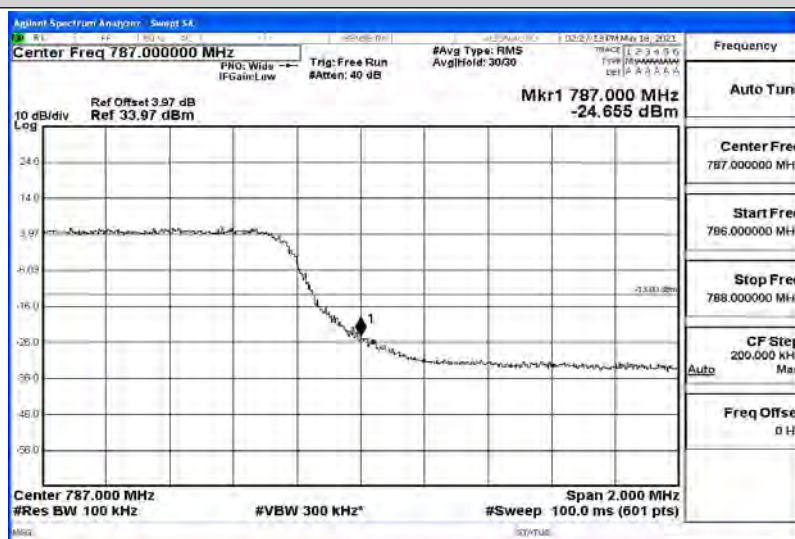
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	-23.76	PASS
Band13	5MHz	QPSK	23255	25RB#0	-24.66	PASS
Band13	5MHz	16QAM	23205	25RB#0	-23.98	PASS
Band13	5MHz	16QAM	23255	25RB#0	-24.59	PASS

Test Graphs

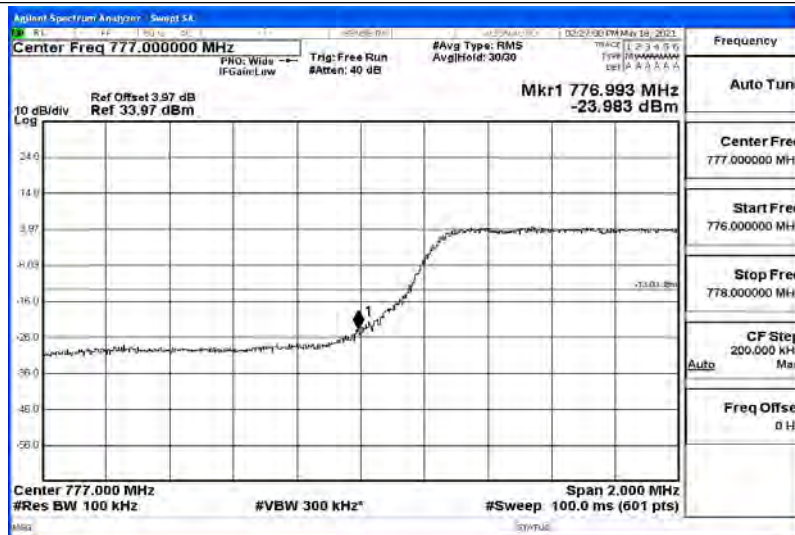
Band13-5MHz-QPSK-23205-25RB#0



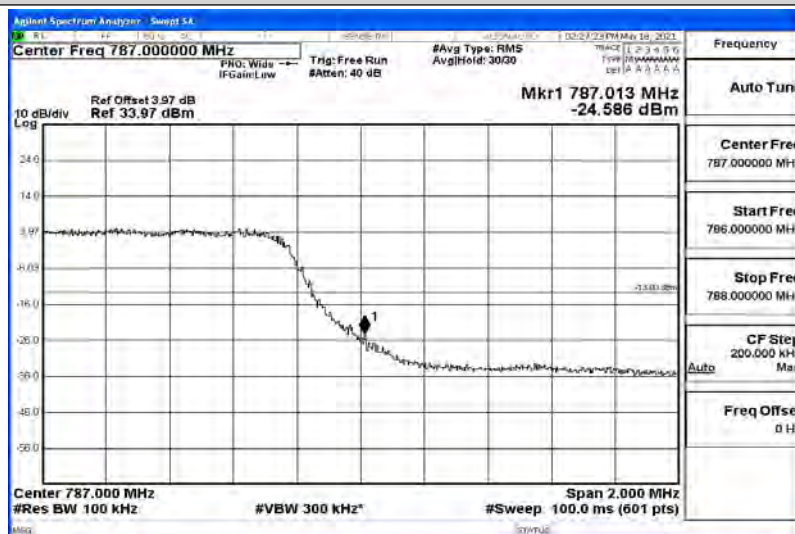
Band13-5MHz-QPSK-23255-25RB#0



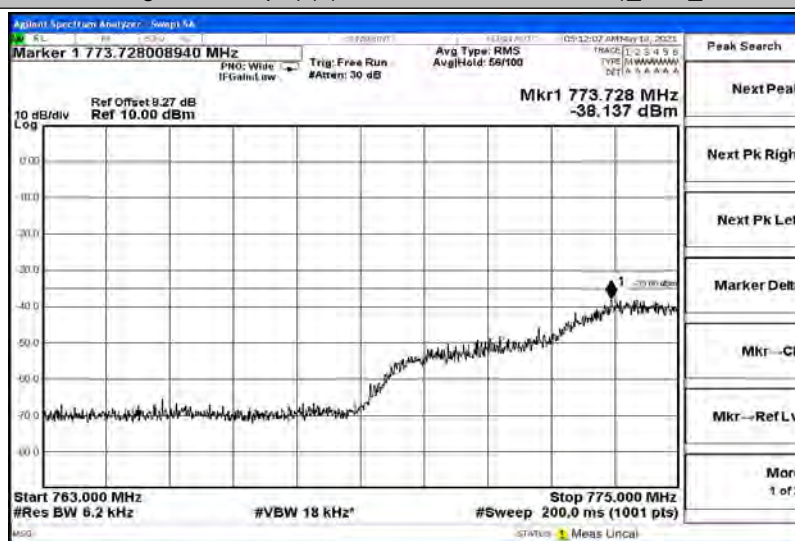
Band13-5MHz-16QAM-23205-25RB#0



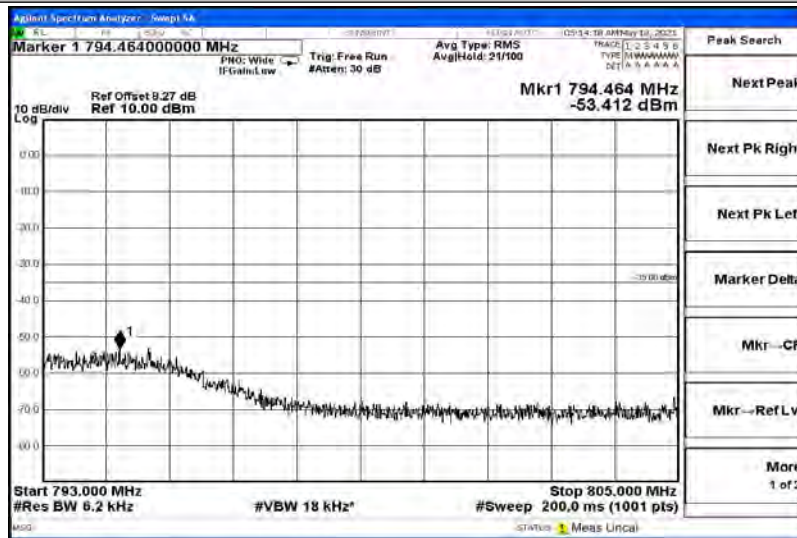
Band13-5MHz-16QAM-23255-25RB#0



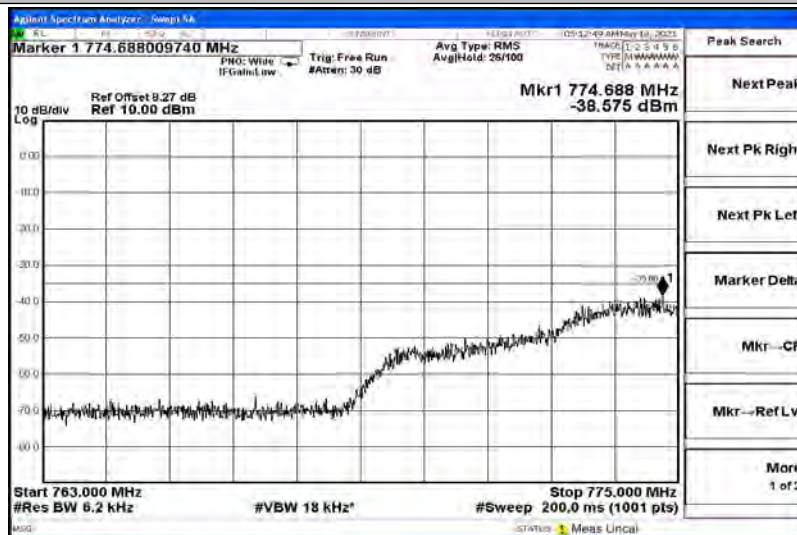
Band Edge Test Graph(s) (Channel Bandwidth:5 MHz)_LCH_QPSK



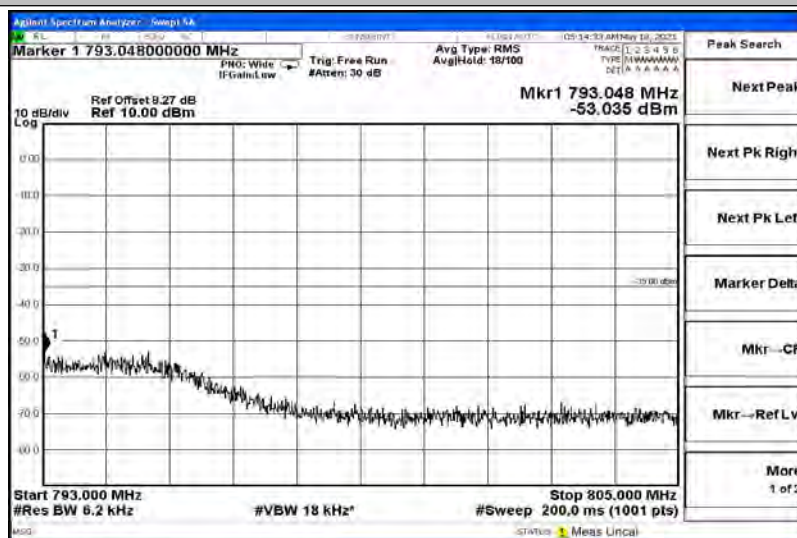
Band Edge Test Graph(s) (Channel Bandwidth:5 MHz)_HCH_QPSK



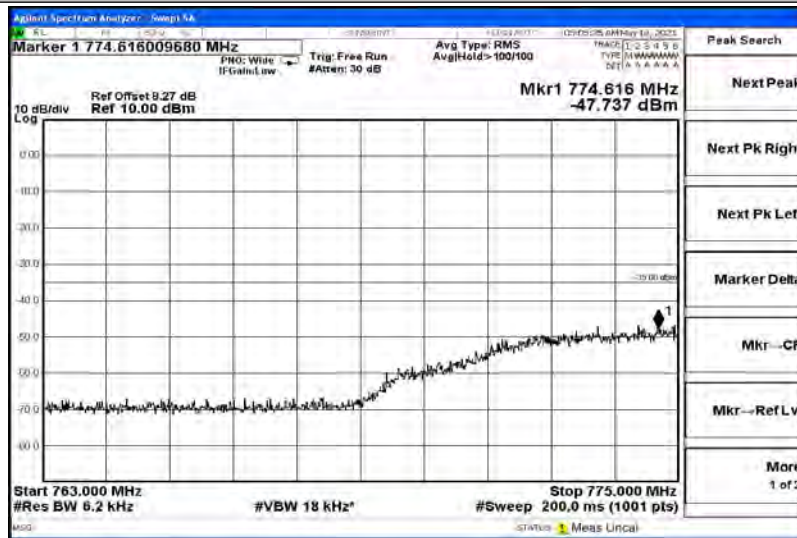
Band Edge Test Graph(s) (Channel Bandwidth:5 MHz)_LCH_16QAM



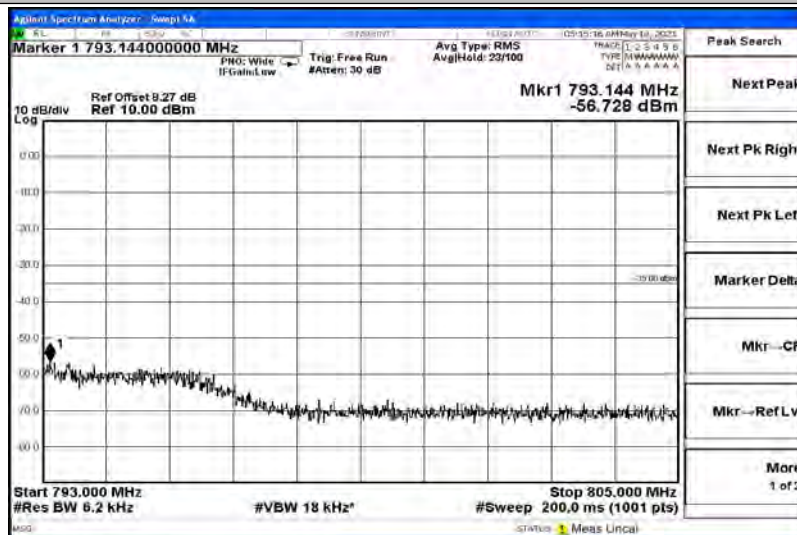
Band Edge Test Graph(s) (Channel Bandwidth:5 MHz)_HCH_16QAM



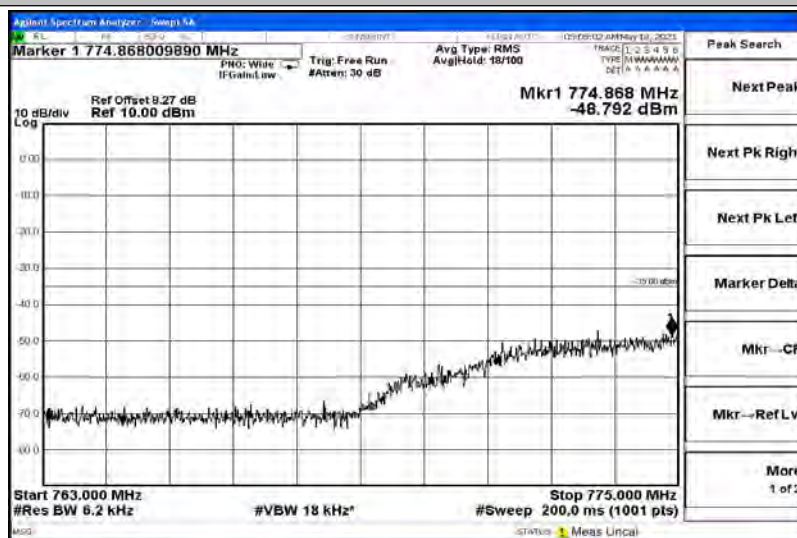
Band Edge Test Graph(s) (Channel Bandwidth:10 MHz)_QPSK



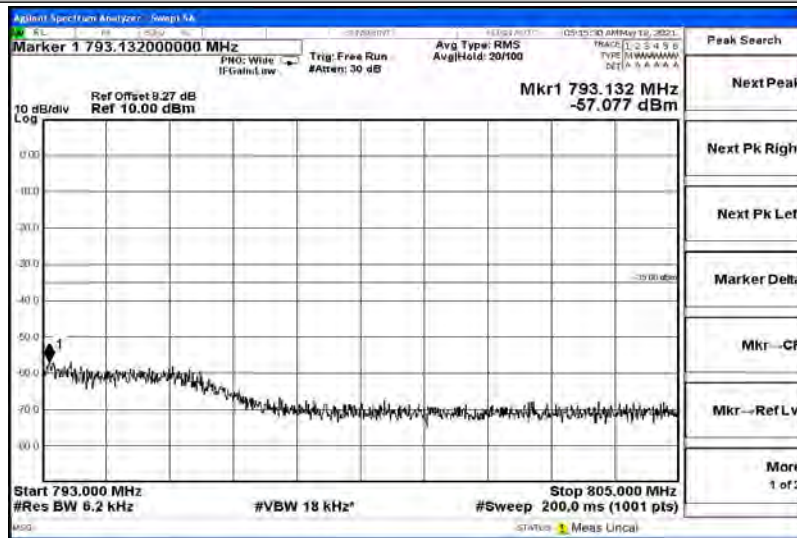
Band Edge Test Graph(s) (Channel Bandwidth:10 MHz)_QPSK



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



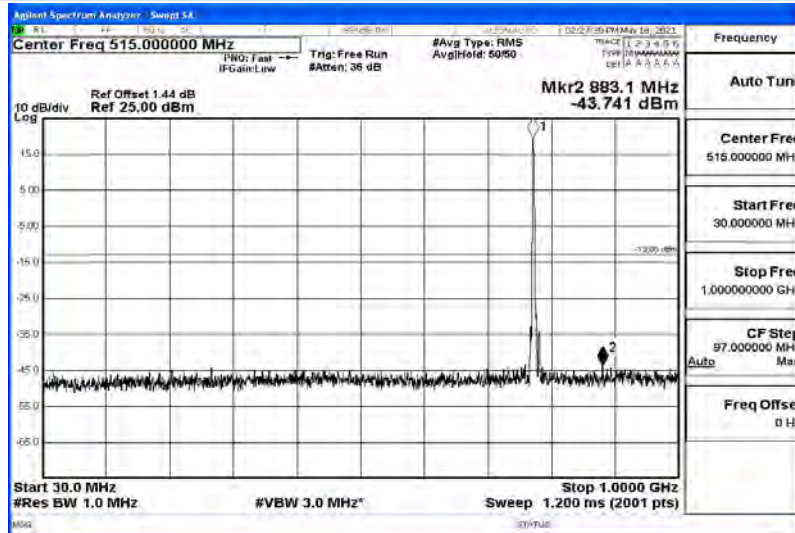
Band Edge Test Graph(s) (Channel Bandwidth: 10 MHz)_16QAM



J.5 Conducted Spurious Emission

Test Graphs

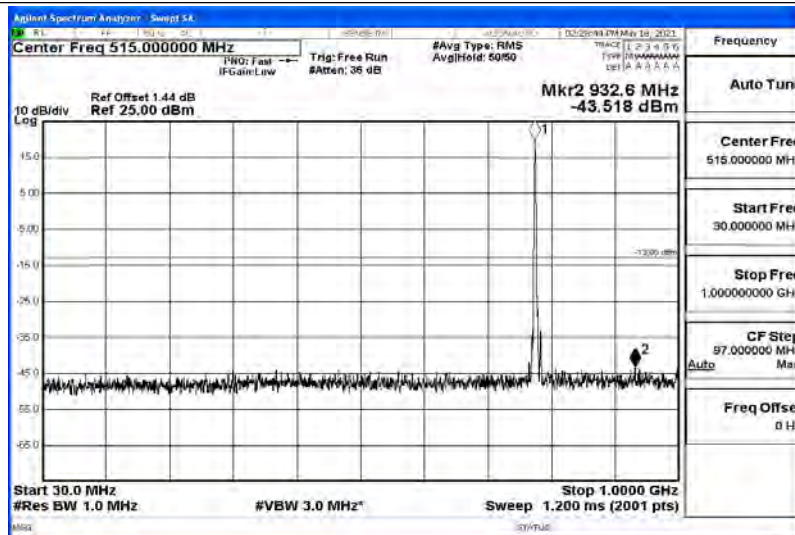
Band13-5MHz-QPSK-23205-1RB#0-Range1:30~1000MHz



Band13-5MHz-QPSK-23205-1RB#0-Range2:1000~10000MHz



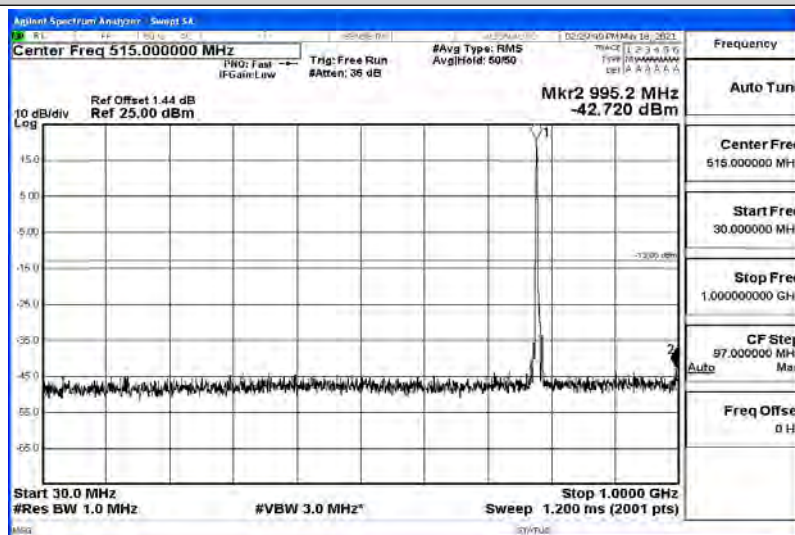
Band13-5MHz-QPSK-23230-1RB#0-Range1:30~1000MHz



Band13-5MHz-QPSK-23230-1RB#0-Range2:1000~10000MHz



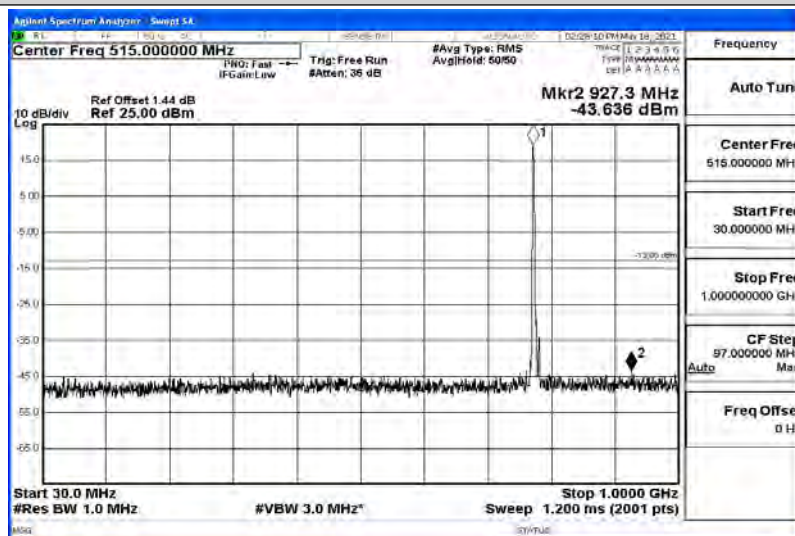
Band13-5MHz-QPSK-23255-1RB#0-Range1:30~1000MHz



Band13-5MHz-QPSK-23255-1RB#0-Range2:1000~10000MHz



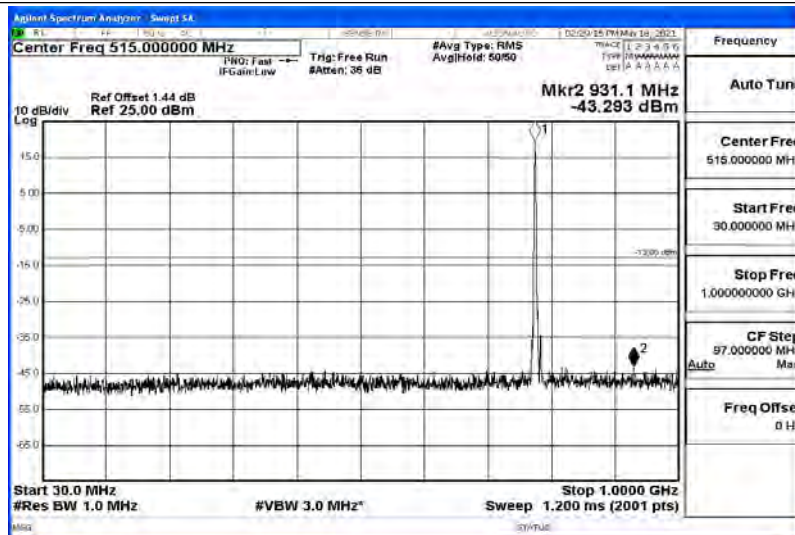
Band13-5MHz-16QAM-23205-1RB#0-Range1:30~1000MHz



Band13-5MHz-16QAM-23205-1RB#0-Range2:1000~10000MHz



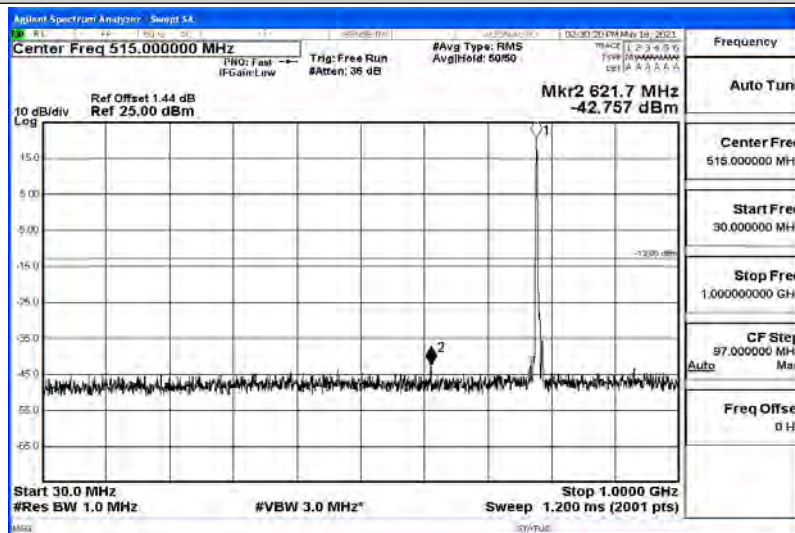
Band13-5MHz-16QAM-23230-1RB#0-Range1:30~1000MHz



Band13-5MHz-16QAM-23230-1RB#0-Range2:1000~10000MHz



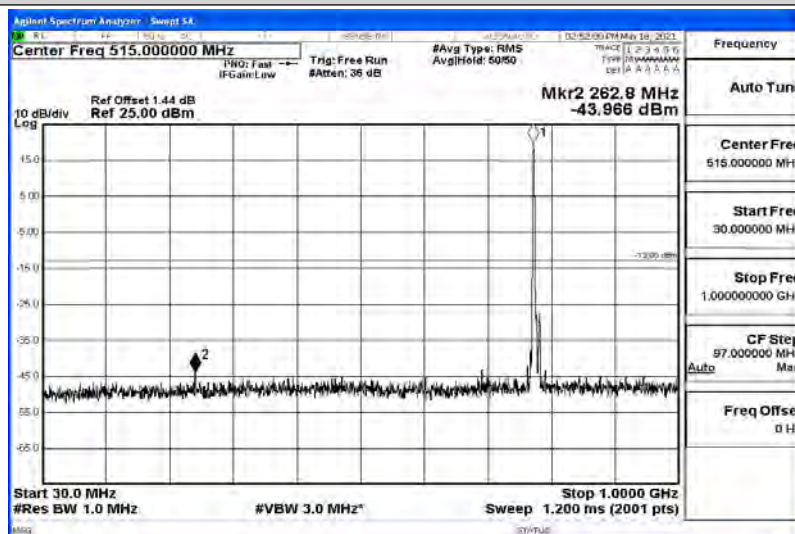
Band13-5MHz-16QAM-23255-1RB#0-Range1:30~1000MHz



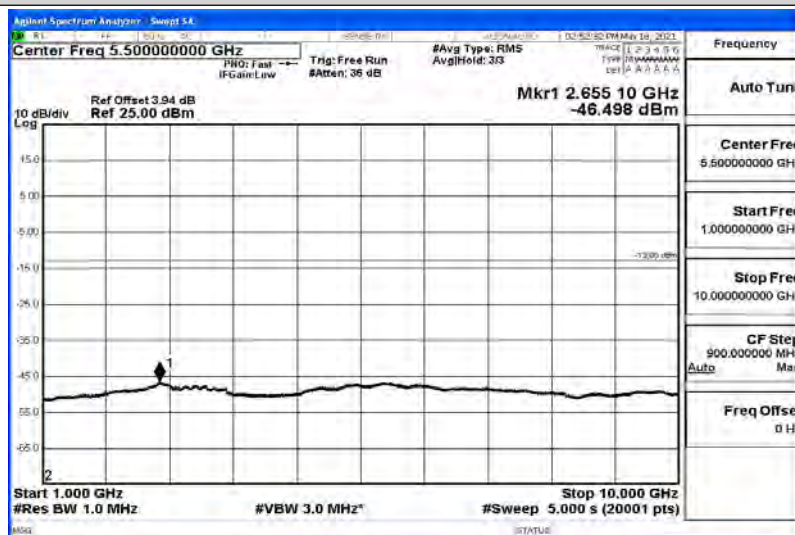
Band13-5MHz-16QAM-23255-1RB#0-Range2:1000~10000MHz



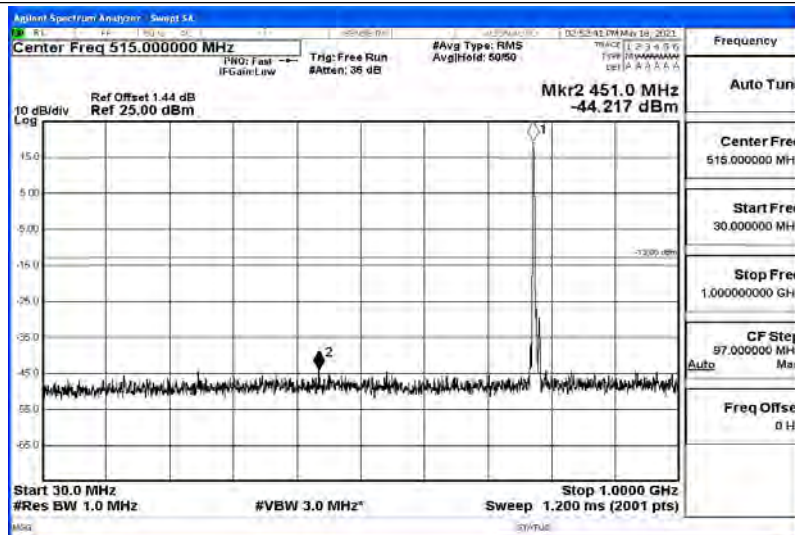
Band13-10MHz-QPSK-23230-1RB#0-Range1:30~1000MHz



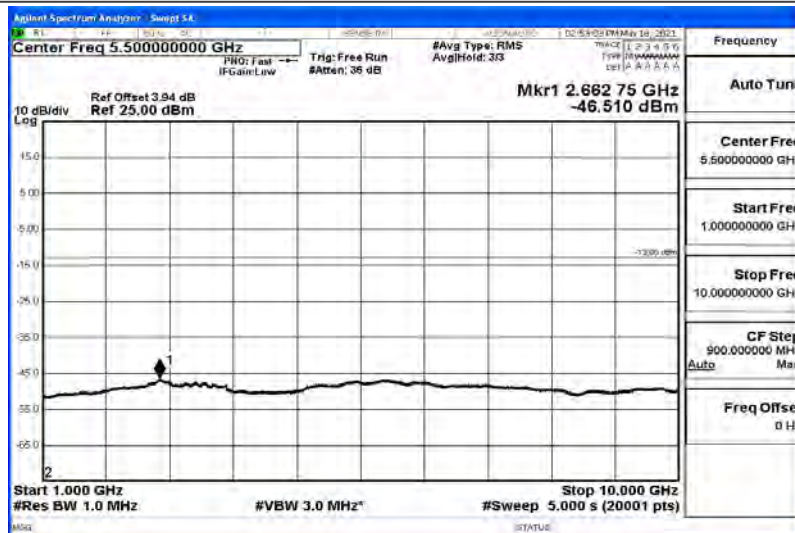
Band13-10MHz-QPSK-23230-1RB#0-Range2:1000~10000MHz



Band13-10MHz-16QAM-23230-1RB#0-Range1:30~1000MHz

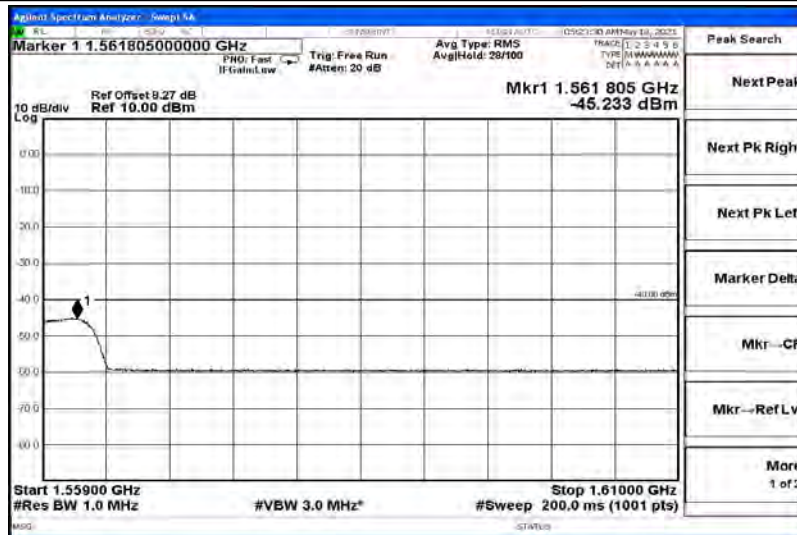


Band13-10MHz-16QAM-23230-1RB#0-Range2:1000~10000MHz

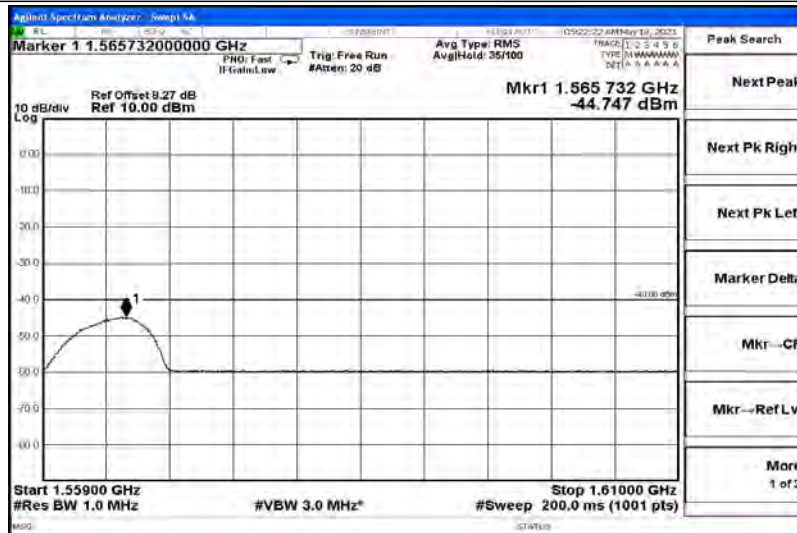


Note: Not recorded test plots from 9 KHz to 30 MHz as emission levels 20dB lower than emission limit.

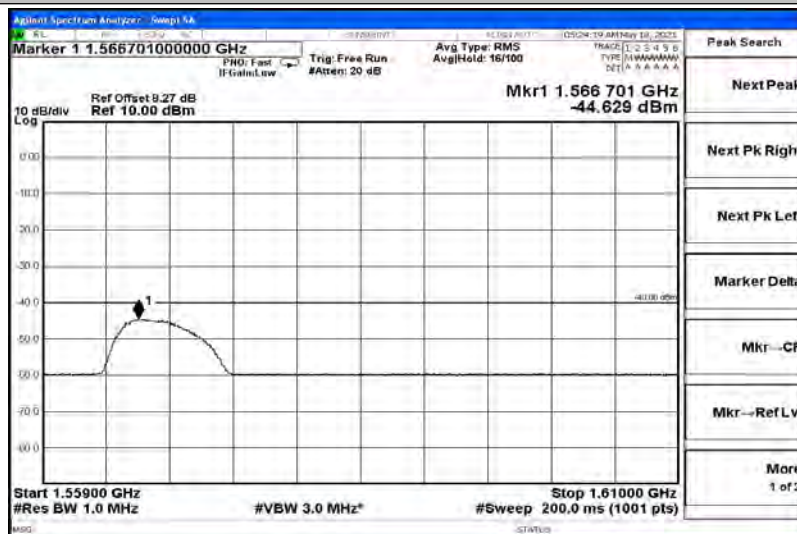
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



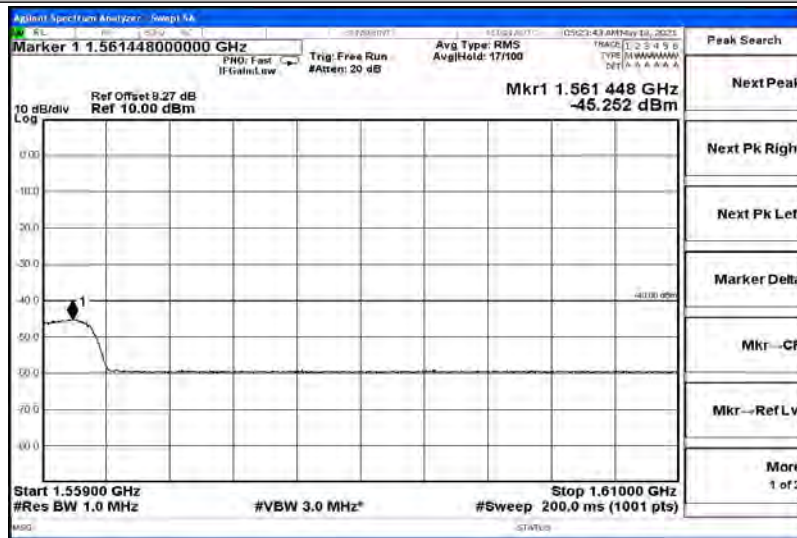
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



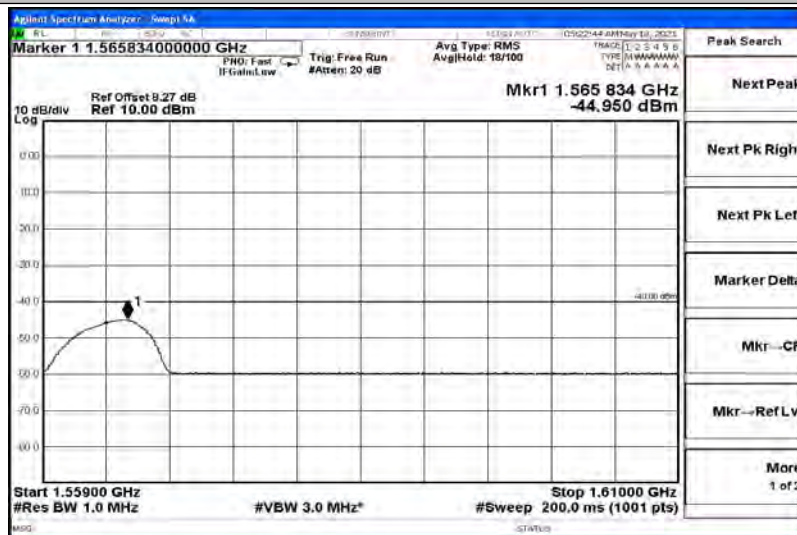
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



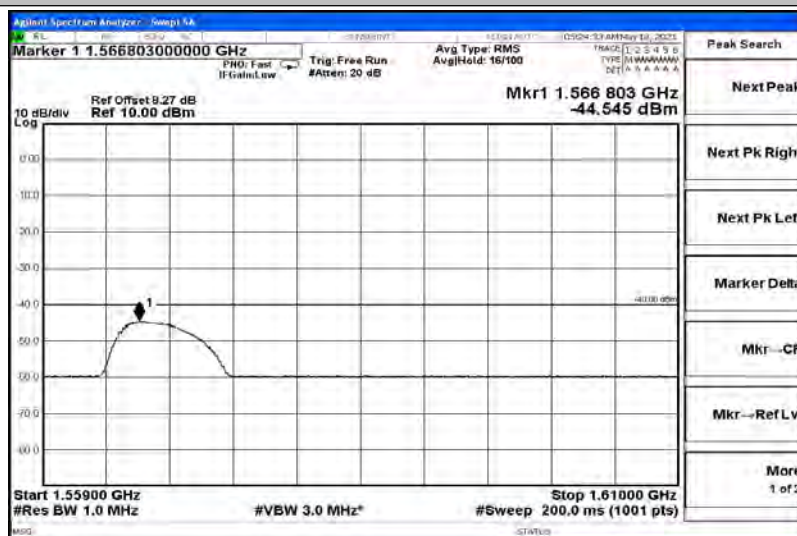
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM



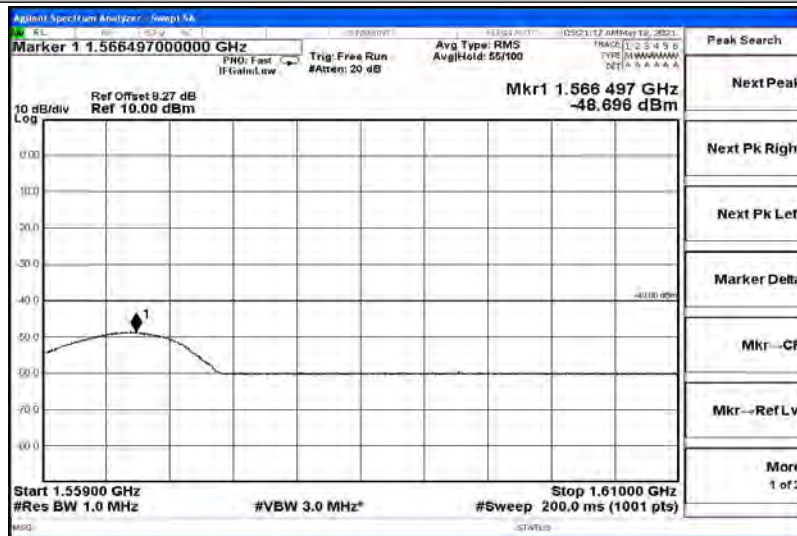
CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM



CSE Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM



CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_QPSK



CSE Test Graph(s) (Channel Bandwidth: 10 MHz)_16QAM

