FCC LTE Band Test Data

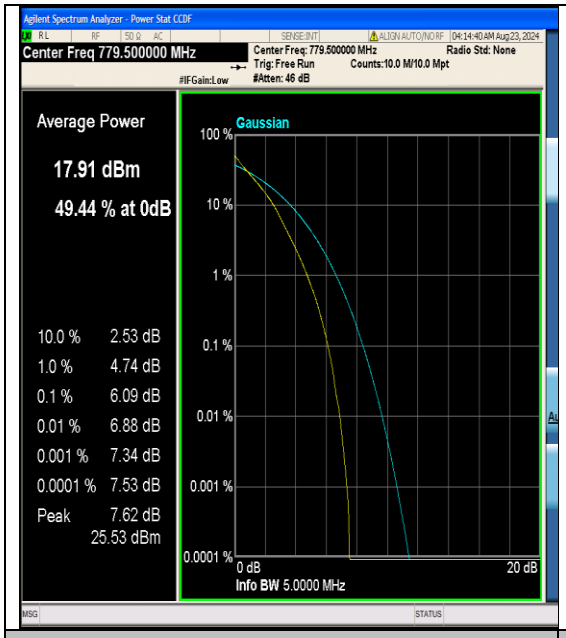
FCC ID	**:**	**2BKLE-ARIES**
Company:	**:**	**Versa World Inc.**
EUT	**:**	**POC/IP Two Way Radio**
Model Number	**:**	**G232**
Reviewed By	**:**	**Eric Wang**

Appendix B: Peak-to-Average Ratio(CCDF)

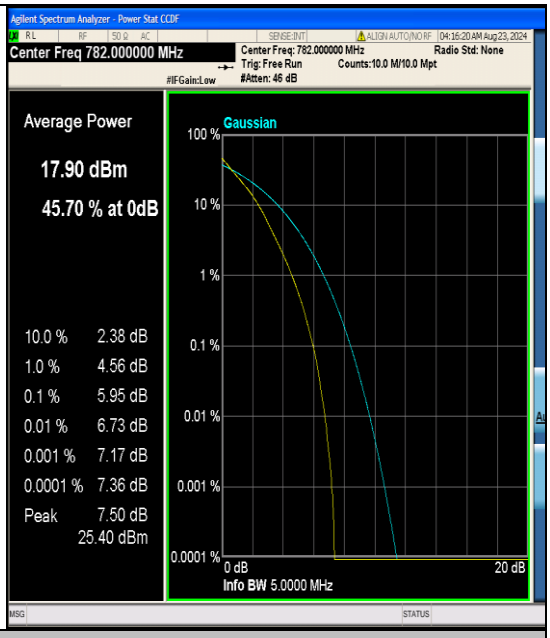
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	6.09	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	5.95	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	5.74	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	9.80	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	6.56	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	6.39	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	5.80	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	6.51	13	PASS

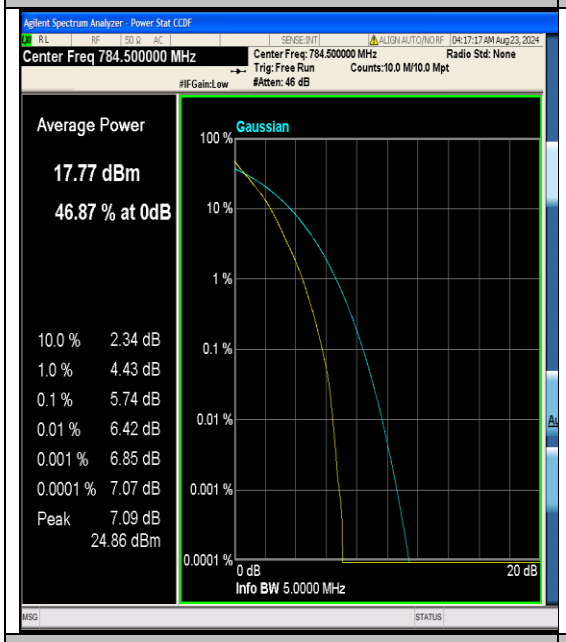
Test Graphs



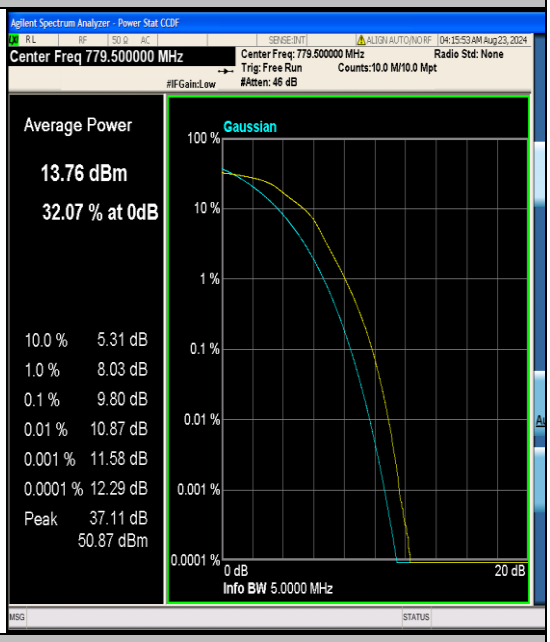
Band13-5MHz-QPSK-23205-25RB#0-PASS



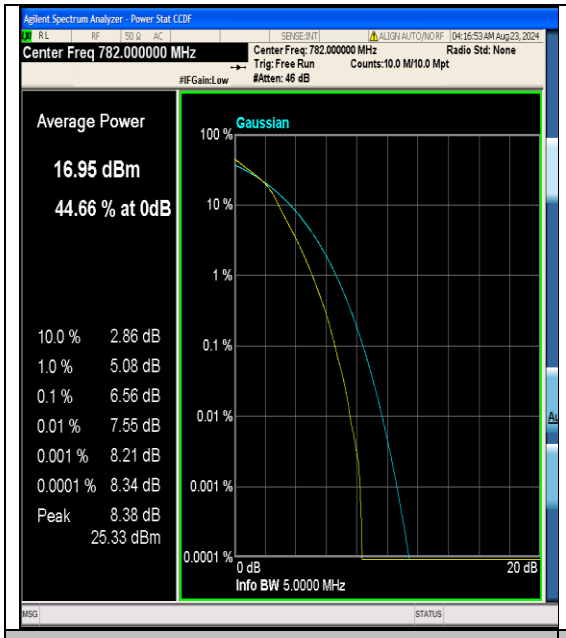
Band13-5MHz-QPSK-23230-25RB#0-PASS



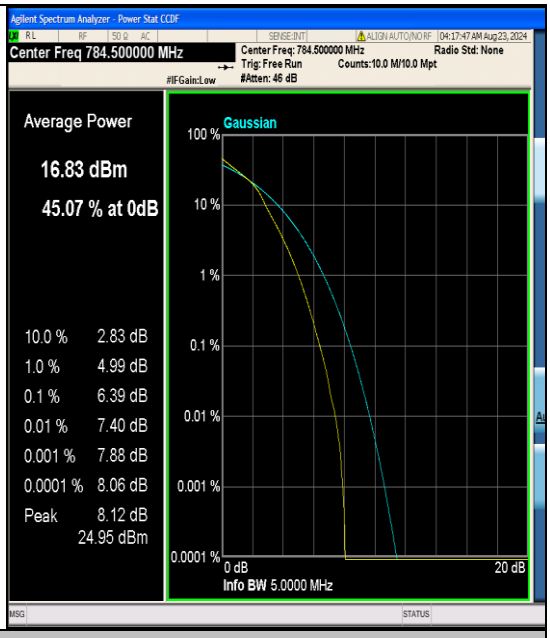
Band13-5MHz-QPSK-23255-25RB#0-PASS



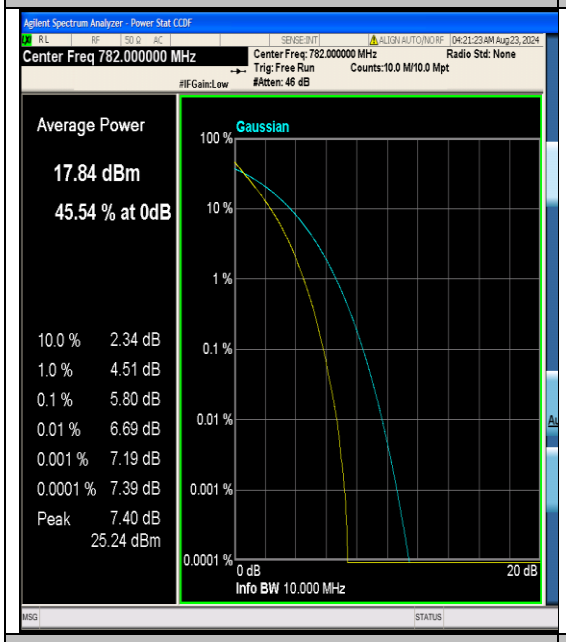
Band13-5MHz-16QAM-23205-25RB#0-PASS



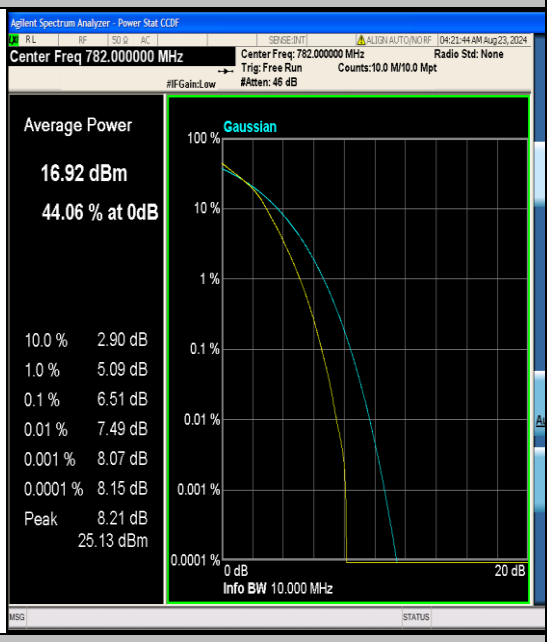
Band13-5MHz-16QAM-23230-25RB#0-PASS



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



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



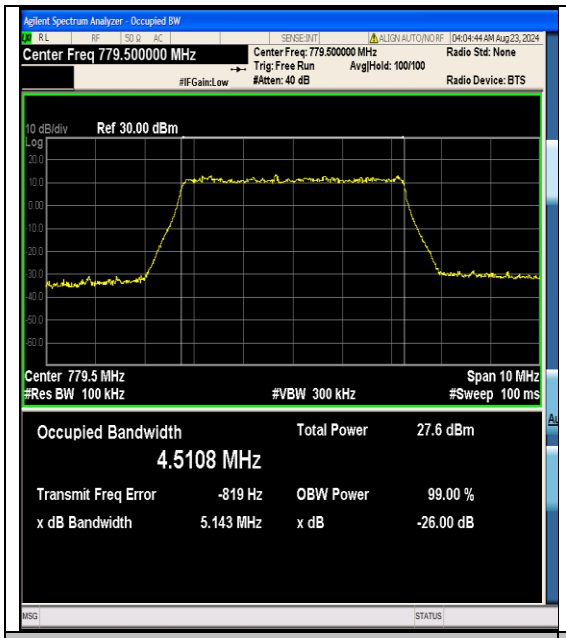
Band13-10MHz-16QAM-23230-50RB#0-PASS

Appendix C: 26dB Bandwidth and Occupied Bandwidth

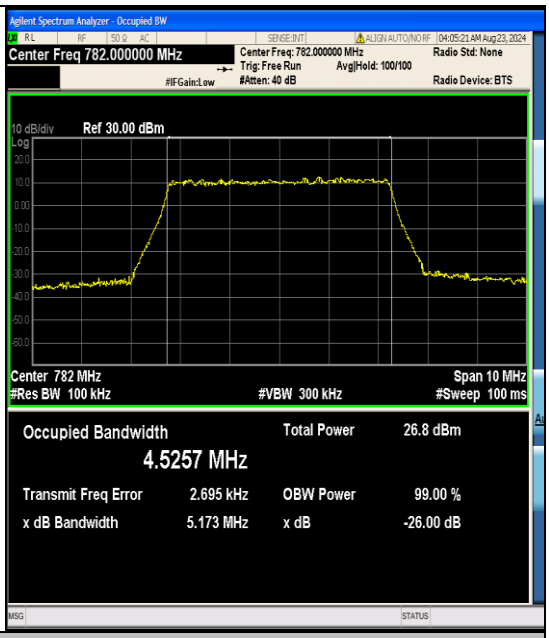
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.5108	5.143	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.5257	5.173	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.4995	5.120	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.5276	5.209	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.5222	5.132	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.5128	5.164	PASS
Band13	10MHz	QPSK	23230	50RB#0	9.0087	10.05	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.9892	10.06	PASS

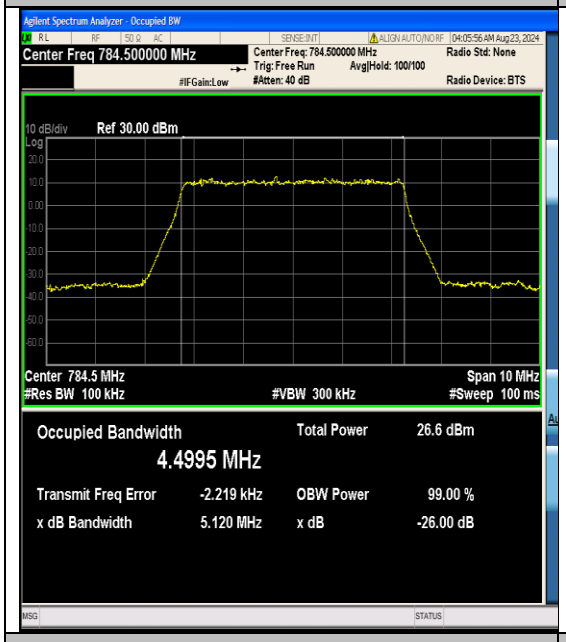
Test Graphs



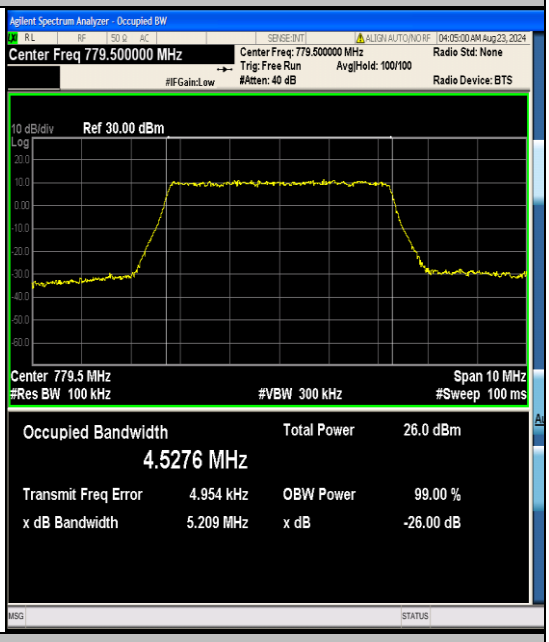
Band13-5MHz-QPSK-23205-25RB#0-PASS



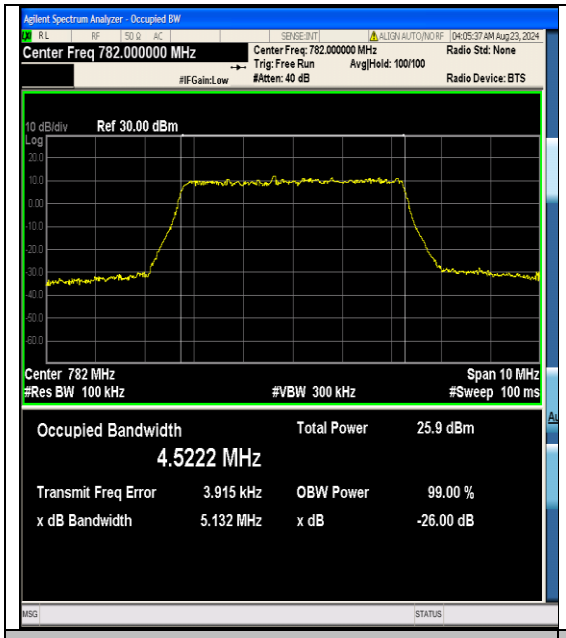
Band13-5MHz-QPSK-23230-25RB#0-PASS



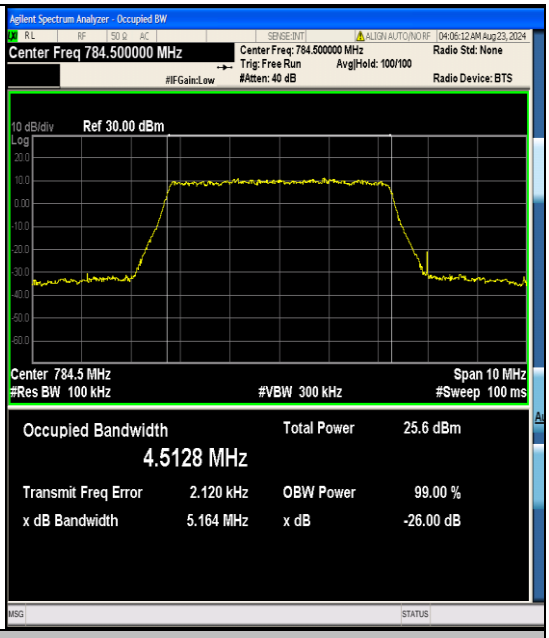
Band13-5MHz-QPSK-23255-25RB#0-PASS



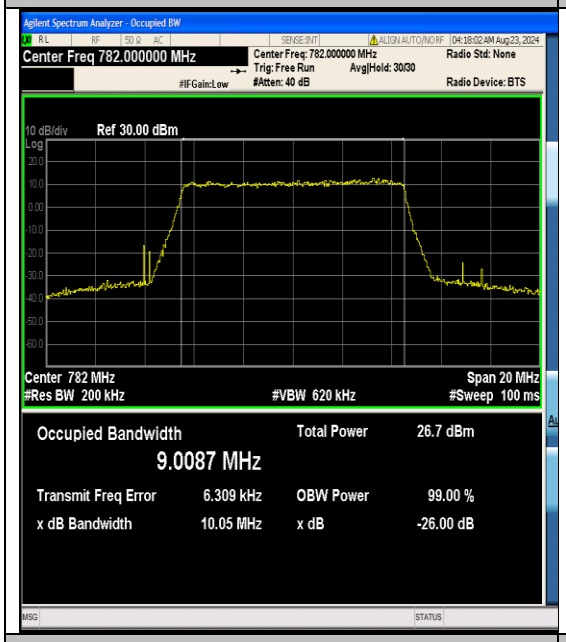
Band13-5MHz-16QAM-23205-25RB#0-PASS



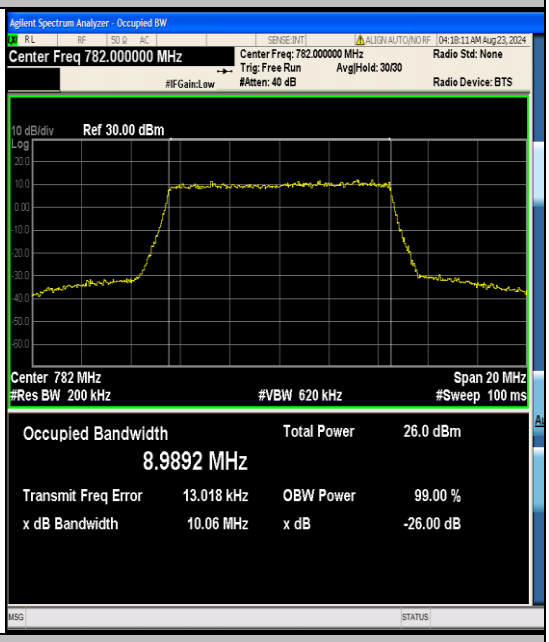
Band13-5MHz-16QAM-23230-25RB#0-PASS



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



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



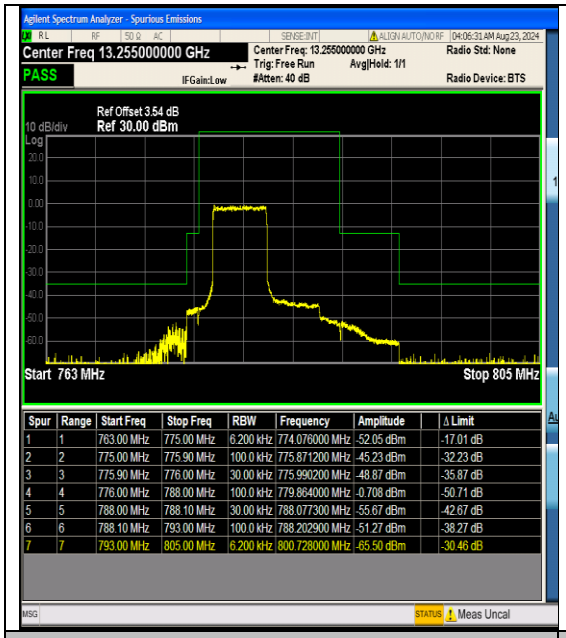
Band13-10MHz-16QAM-23230-50RB#0-PASS

Appendix D: Band Edge

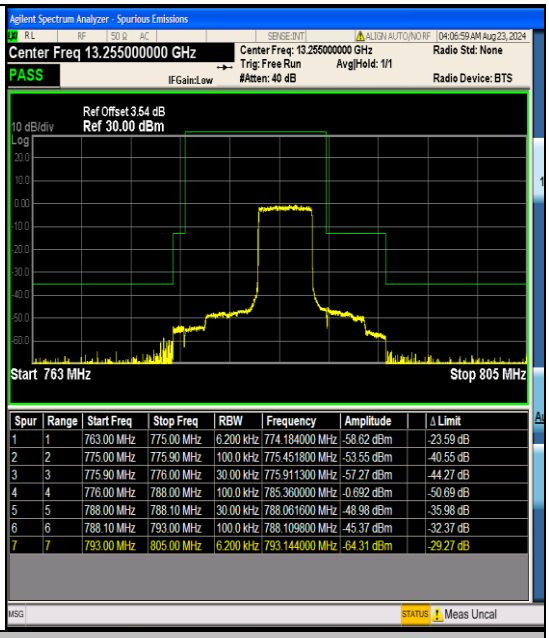
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	-52.05	PASS
Band13	5MHz	QPSK	23255	25RB#0	-58.62	PASS
Band13	5MHz	16QAM	23205	25RB#0	-52.23	PASS
Band13	5MHz	16QAM	23255	25RB#0	-60.24	PASS
Band13	10MHz	QPSK	23230	50RB#0	-54.82	PASS
Band13	10MHz	16QAM	23230	50RB#0	-52.45	PASS

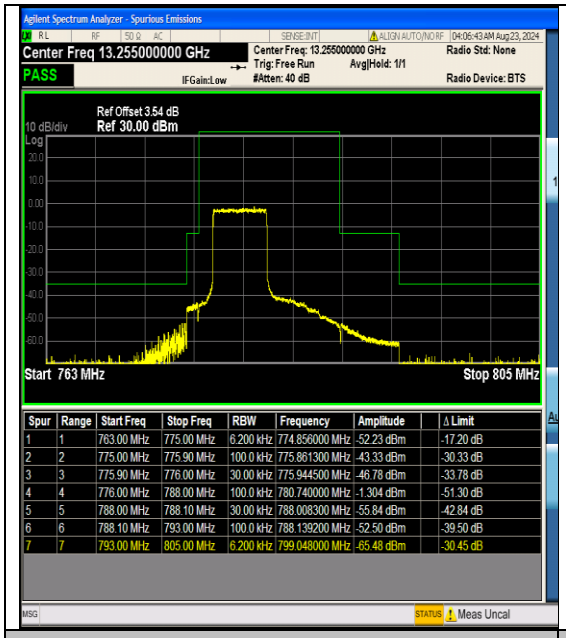
Test Graphs



Band13_5MHz_QPSK_23205_25RB#0

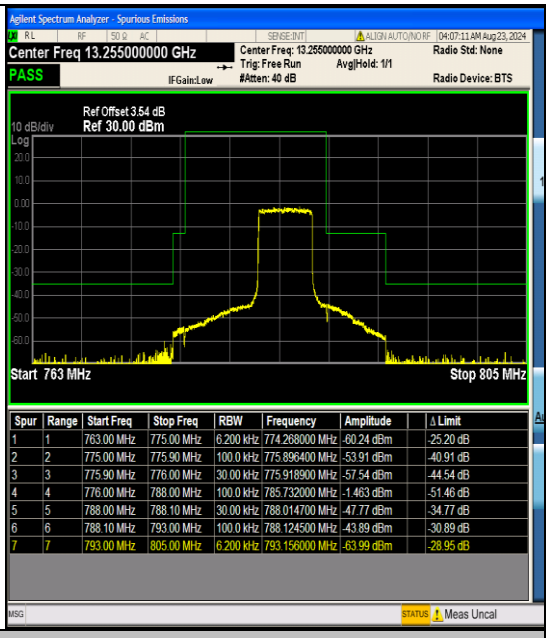


Band13_5MHz_QPSK_23255_25RB#0



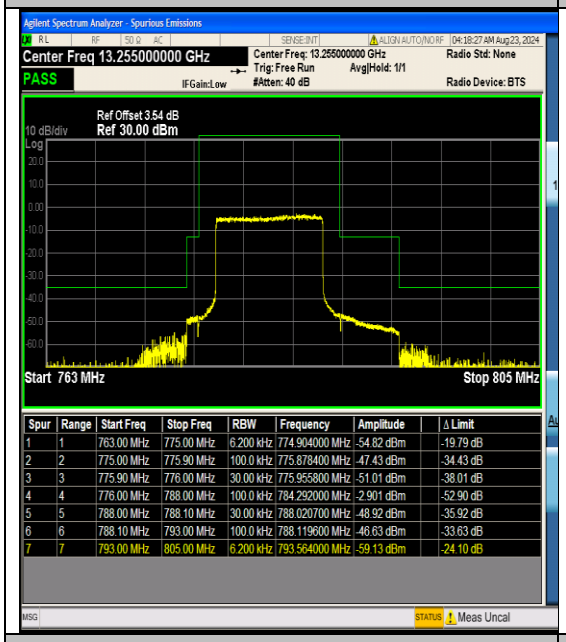
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	774.856000 MHz	-52.23 dBm	-17.20 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.861300 MHz	-43.33 dBm	-30.33 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.944500 MHz	-46.78 dBm	-33.78 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	780.740000 MHz	-1.304 dBm	-51.30 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.008300 MHz	-55.84 dBm	-42.84 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.139200 MHz	-52.50 dBm	-39.50 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	799.048000 MHz	-65.48 dBm	-30.45 dB

Band13_5MHz_16QAM_23205_25RB#0



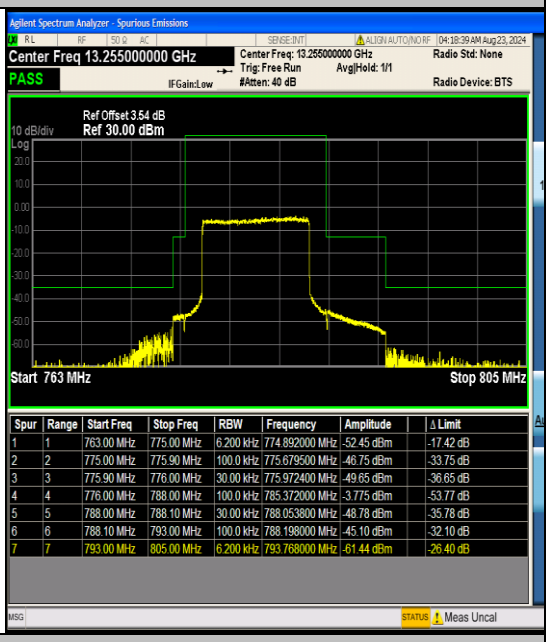
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	774.268000 MHz	-60.24 dBm	-25.20 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.896400 MHz	-53.91 dBm	-40.91 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.918900 MHz	-57.54 dBm	-44.54 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	785.732000 MHz	-1.463 dBm	-51.46 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.014700 MHz	-47.77 dBm	-34.77 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.124500 MHz	-43.89 dBm	-30.89 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.156000 MHz	-63.99 dBm	-28.95 dB

Band13_5MHz_16QAM_23255_25RB#0



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	774.904000 MHz	-54.82 dBm	-19.79 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.878400 MHz	-47.43 dBm	-34.43 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.955800 MHz	-51.01 dBm	-38.01 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	784.292000 MHz	-2.901 dBm	-52.90 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.020700 MHz	-48.92 dBm	-35.92 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.119600 MHz	-46.63 dBm	-33.63 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.564000 MHz	-59.13 dBm	-24.10 dB

Band13_10MHz_QPSK_23230_50RB#0



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	763.00 MHz	775.00 MHz	6.200 kHz	774.892000 MHz	-52.45 dBm	-17.42 dB
2	2	775.00 MHz	775.90 MHz	100.0 kHz	775.679500 MHz	-46.75 dBm	-33.75 dB
3	3	775.90 MHz	776.00 MHz	30.00 kHz	775.972400 MHz	-49.65 dBm	-36.65 dB
4	4	776.00 MHz	788.00 MHz	100.0 kHz	785.372000 MHz	-3.775 dBm	-53.77 dB
5	5	788.00 MHz	788.10 MHz	30.00 kHz	788.053800 MHz	-48.78 dBm	-35.78 dB
6	6	788.10 MHz	793.00 MHz	100.0 kHz	788.198000 MHz	-45.10 dBm	-32.10 dB
7	7	793.00 MHz	805.00 MHz	6.200 kHz	793.768000 MHz	-61.44 dBm	-26.40 dB

Band13_10MHz_16QAM_23230_50RB#0

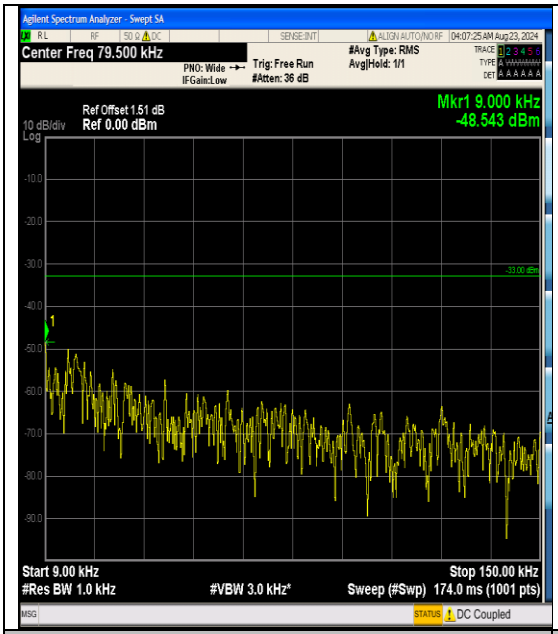
Appendix E: Conducted Spurious Emission

Test Result

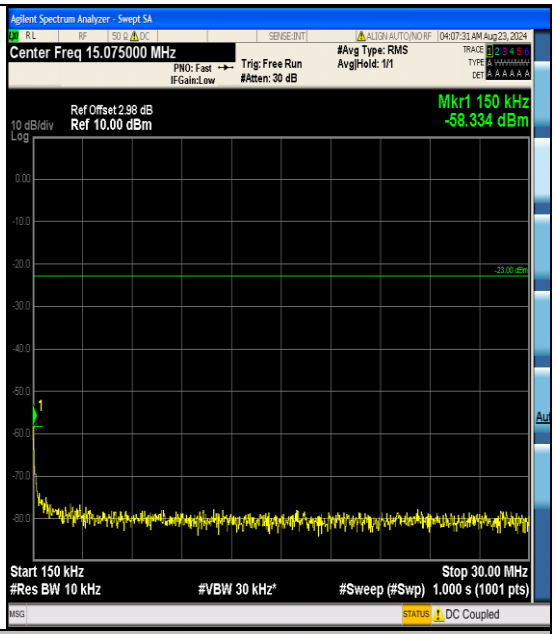
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	0.009~0.15	-48.54	PASS
Band13	5MHz	QPSK	23205	25RB#0	0.15~30	-58.33	PASS
Band13	5MHz	QPSK	23205	25RB#0	30~1000	-62.03	PASS
Band13	5MHz	QPSK	23205	25RB#0	1000~3000	-52.55	PASS
Band13	5MHz	QPSK	23205	25RB#0	3000~10000	-49.14	PASS
Band13	5MHz	QPSK	23230	25RB#0	0.009~0.15	-49.61	PASS
Band13	5MHz	QPSK	23230	25RB#0	0.15~30	-57.86	PASS
Band13	5MHz	QPSK	23230	25RB#0	30~1000	-64.18	PASS
Band13	5MHz	QPSK	23230	25RB#0	1000~3000	-52.53	PASS
Band13	5MHz	QPSK	23230	25RB#0	3000~10000	-49.98	PASS
Band13	5MHz	QPSK	23255	25RB#0	0.009~0.15	-47.38	PASS
Band13	5MHz	QPSK	23255	25RB#0	0.15~30	-59.08	PASS
Band13	5MHz	QPSK	23255	25RB#0	30~1000	-62.98	PASS
Band13	5MHz	QPSK	23255	25RB#0	1000~3000	-52.05	PASS
Band13	5MHz	QPSK	23255	25RB#0	3000~10000	-49.82	PASS
Band13	5MHz	16QAM	23205	25RB#0	0.009~0.15	-48.33	PASS
Band13	5MHz	16QAM	23205	25RB#0	0.15~30	-58.52	PASS
Band13	5MHz	16QAM	23205	25RB#0	30~1000	-64.15	PASS
Band13	5MHz	16QAM	23205	25RB#0	1000~3000	-52.11	PASS
Band13	5MHz	16QAM	23205	25RB#0	3000~10000	-49.84	PASS
Band13	5MHz	16QAM	23230	25RB#0	0.009~0.15	-48.76	PASS
Band13	5MHz	16QAM	23230	25RB#0	0.15~30	-58.57	PASS
Band13	5MHz	16QAM	23230	25RB#0	30~1000	-64.78	PASS
Band13	5MHz	16QAM	23230	25RB#0	1000~3000	-52.51	PASS
Band13	5MHz	16QAM	23230	25RB#0	3000~10000	-49.80	PASS
Band13	5MHz	16QAM	23255	25RB#0	0.009~0.15	-48.09	PASS
Band13	5MHz	16QAM	23255	25RB#0	0.15~30	-60.01	PASS
Band13	5MHz	16QAM	23255	25RB#0	30~1000	-64.04	PASS
Band13	5MHz	16QAM	23255	25RB#0	1000~3000	-52.41	PASS
Band13	5MHz	16QAM	23255	25RB#0	3000~10000	-49.99	PASS
Band13	10MHz	QPSK	23230	50RB#0	0.009~0.15	-45.72	PASS
Band13	10MHz	QPSK	23230	50RB#0	0.15~30	-58.17	PASS
Band13	10MHz	QPSK	23230	50RB#0	30~1000	-66.62	PASS
Band13	10MHz	QPSK	23230	50RB#0	1000~3000	-52.27	PASS
Band13	10MHz	QPSK	23230	50RB#0	3000~10000	-49.49	PASS
Band13	10MHz	16QAM	23230	50RB#0	0.009~0.15	-47.36	PASS

Band13	10MHz	16QAM	23230	50RB#0	0.15~30	-58.23	PASS
Band13	10MHz	16QAM	23230	50RB#0	30~1000	-66.46	PASS
Band13	10MHz	16QAM	23230	50RB#0	1000~3000	-52.29	PASS
Band13	10MHz	16QAM	23230	50RB#0	3000~10000	-50.00	PASS

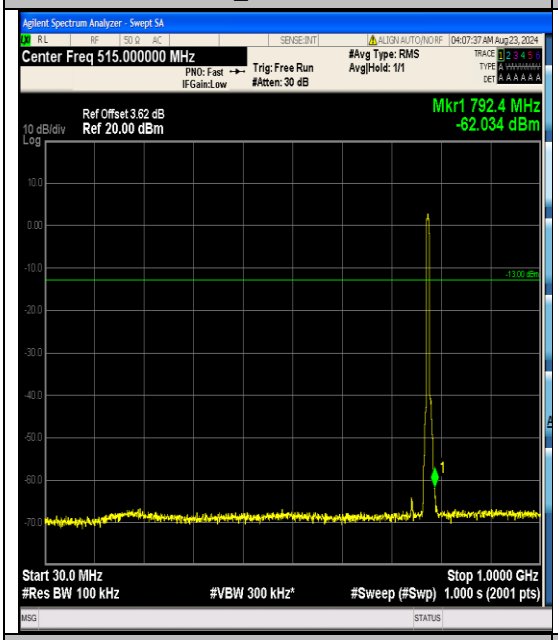
Test Graphs



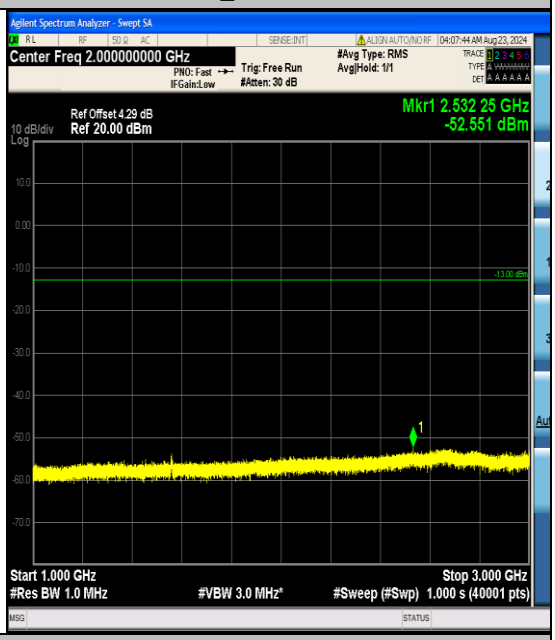
Band13_5MHz_QPSK_23205_25RB#0_0.009~0.15_0.009~0.15



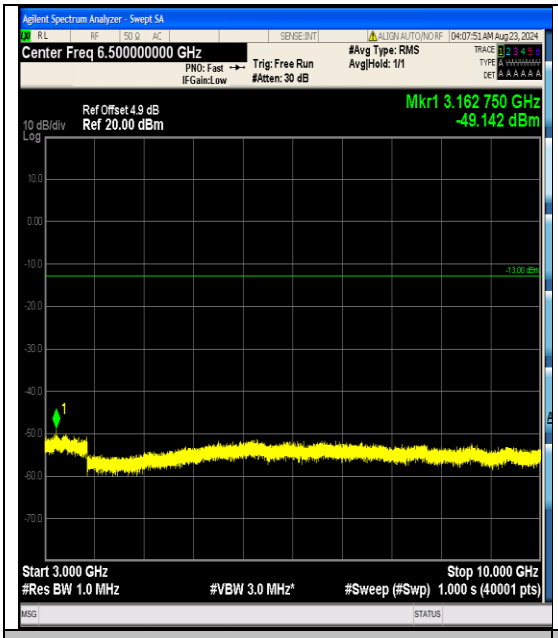
Band13_5MHz_QPSK_23205_25RB#0_0.15~30_0.15~30



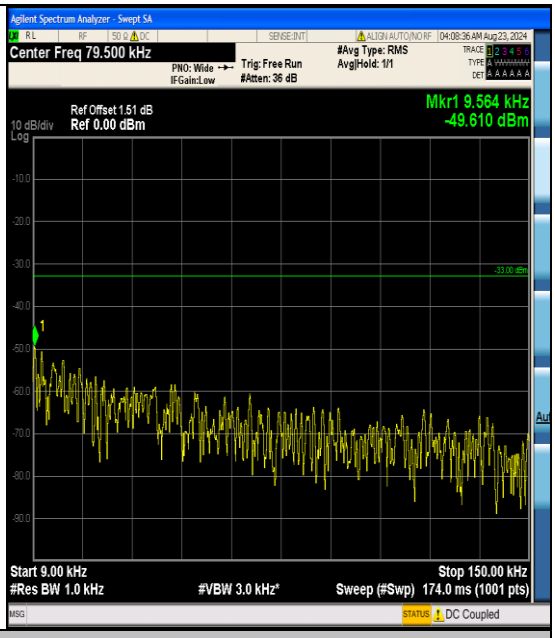
Band13_5MHz_QPSK_23205_25RB#0_30~1000_30~1000



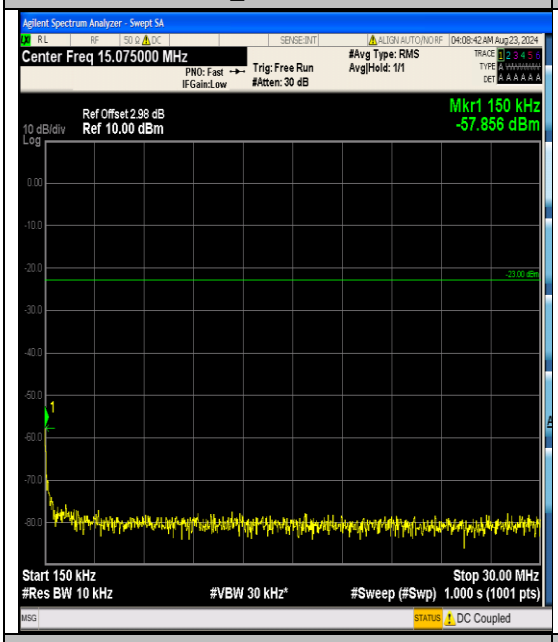
Band13_5MHz_QPSK_23205_25RB#0_1000~3000_1000~3000



Band13_5MHz_QPSK_23205_25RB#0_3000~10000_3000~10000

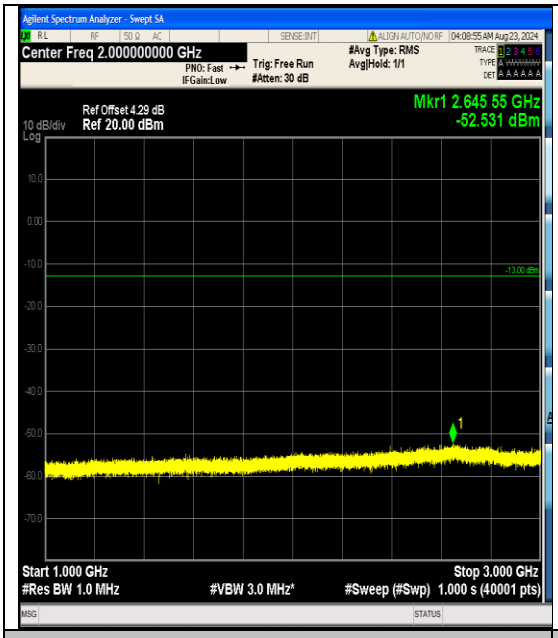


Band13_5MHz_QPSK_23230_25RB#0_0.009~0.15_0.009~0.15

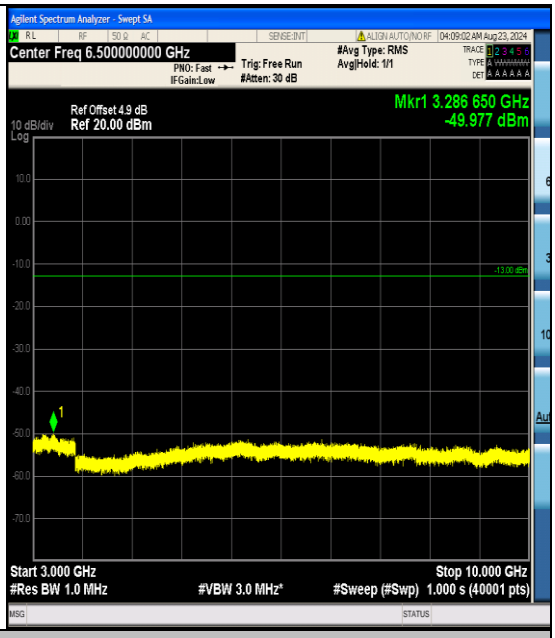


Band13_5MHz_QPSK_23230_25RB#0_0.15~30_0.15~30

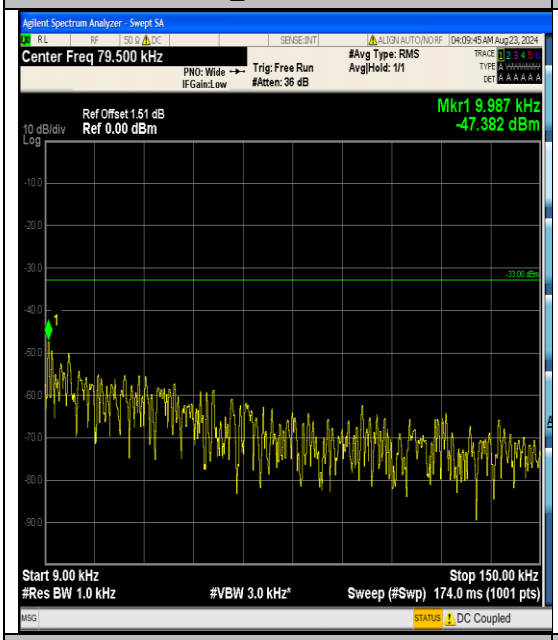
Band13_5MHz_QPSK_23230_25RB#0_30~1000_30~1000



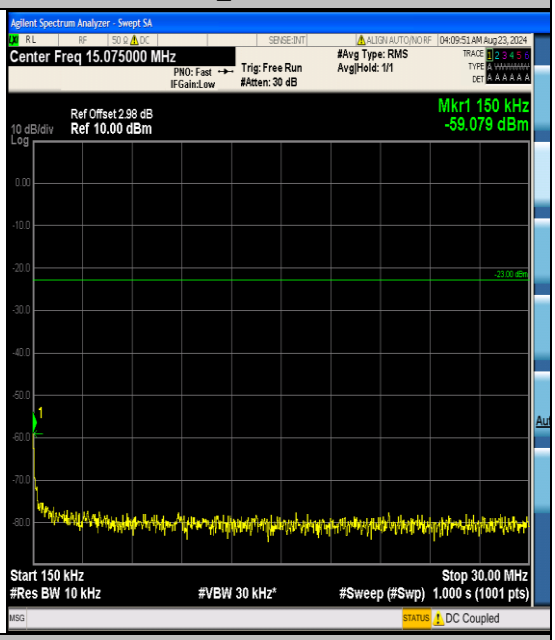
Band13_5MHz_QPSK_23230_25RB#0_1000~3000_1000~3000



Band13_5MHz_QPSK_23230_25RB#0_3000~10000_3000~10000

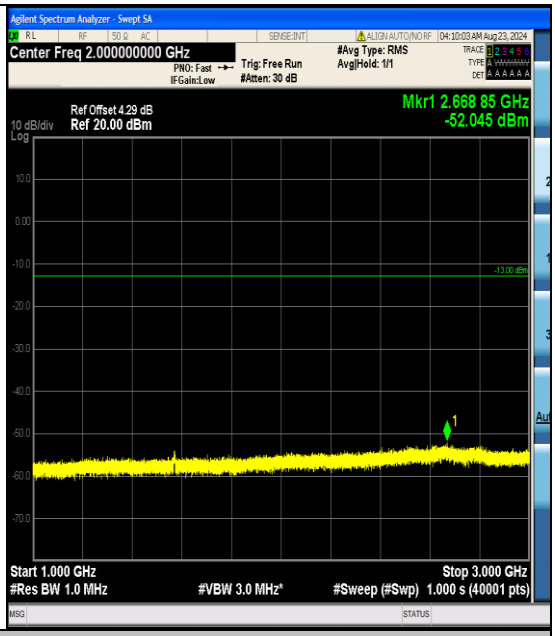


Band13_5MHz_QPSK_23255_25RB#0_0.009~0.15_0.009~0.15

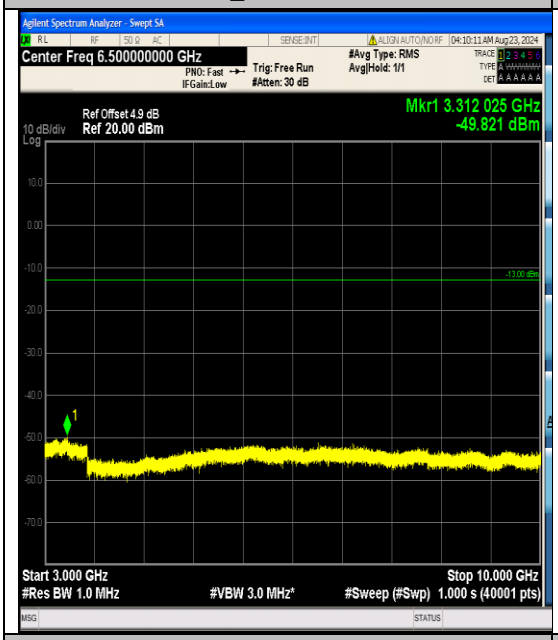


Band13_5MHz_QPSK_23255_25RB#0_0.15~30_0.15~30

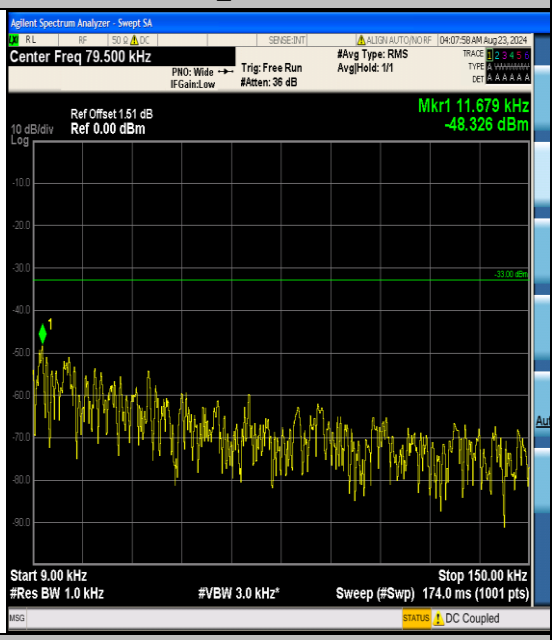
Band13_5MHz_QPSK_23255_25RB#0_30~1000_30~1000



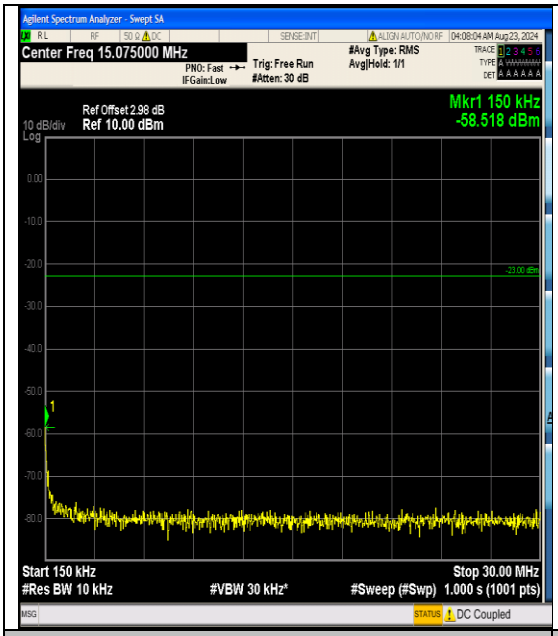
Band13_5MHz_QPSK_23255_25RB#0_1000~3000_1000~3000



Band13_5MHz_QPSK_23255_25RB#0_3000~10000_3000~10000

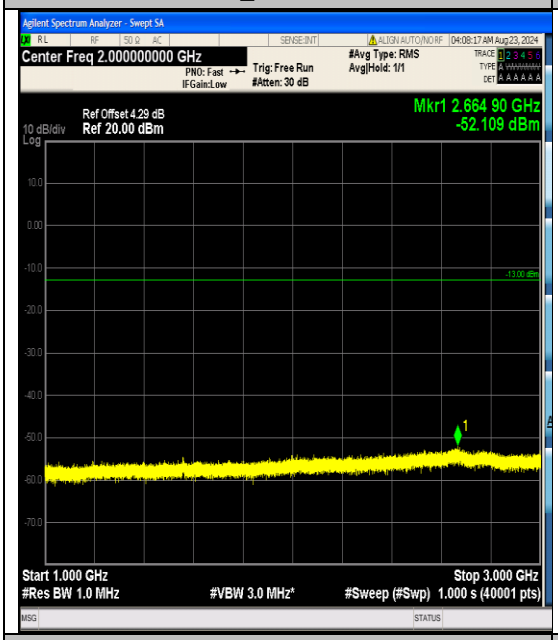


Band13_5MHz_16QAM_23205_25RB#0_0.009~0.15_0.009~0.15

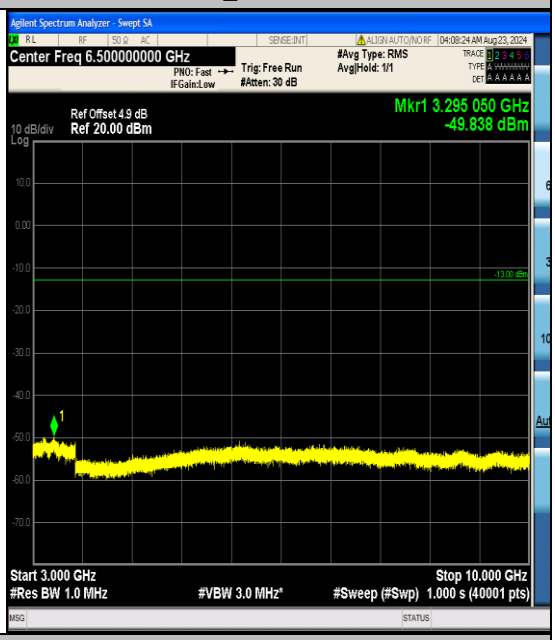


Band13_5MHz_16QAM_23205_25RB#0_0.15~30_0.15~30

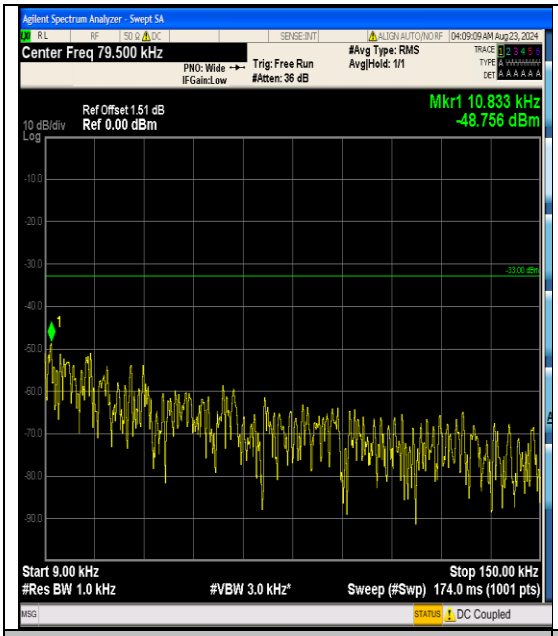
Band13_5MHz_16QAM_23205_25RB#0_30~1000_30~1000



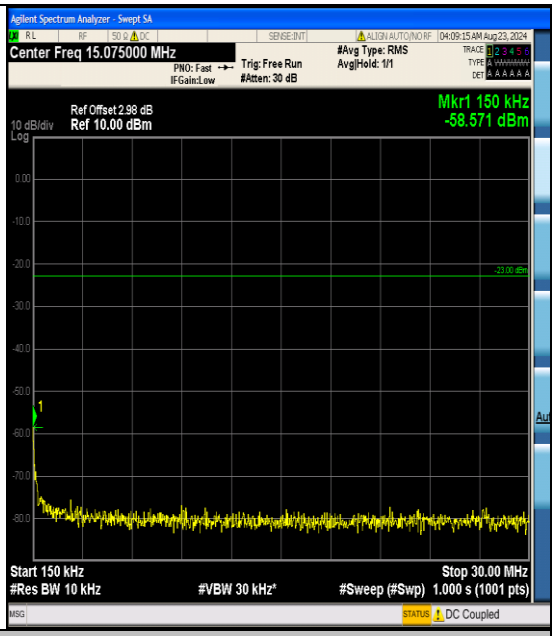
Band13_5MHz_16QAM_23205_25RB#0_1000~3000_1000~3000



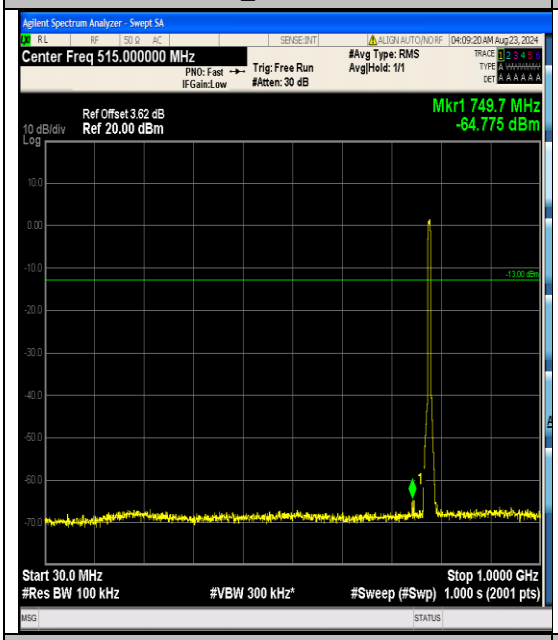
Band13_5MHz_16QAM_23205_25RB#0_3000~10000_3000~10000



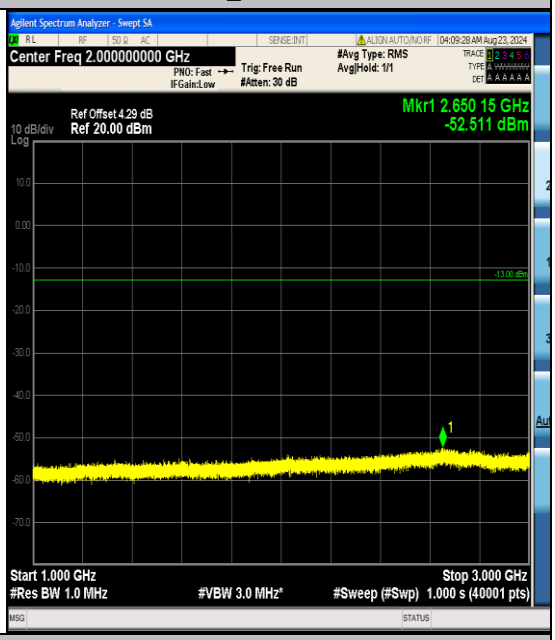
Band13_5MHz_16QAM_23230_25RB#0_0.009~0.15_0.009~0.15



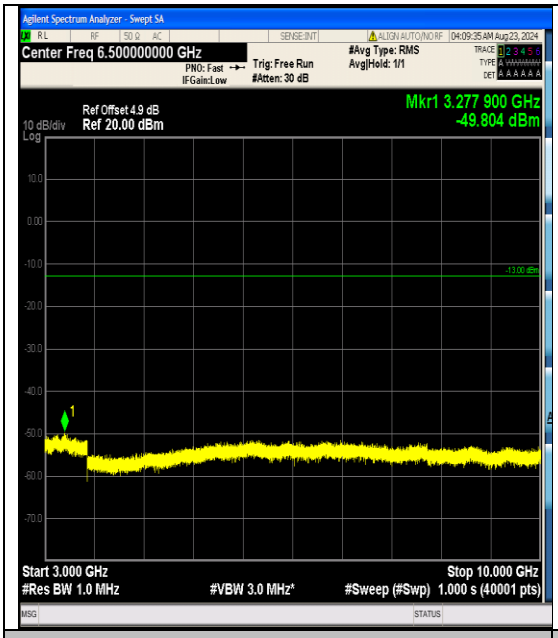
Band13_5MHz_16QAM_23230_25RB#0_0.15~30_0.15~30



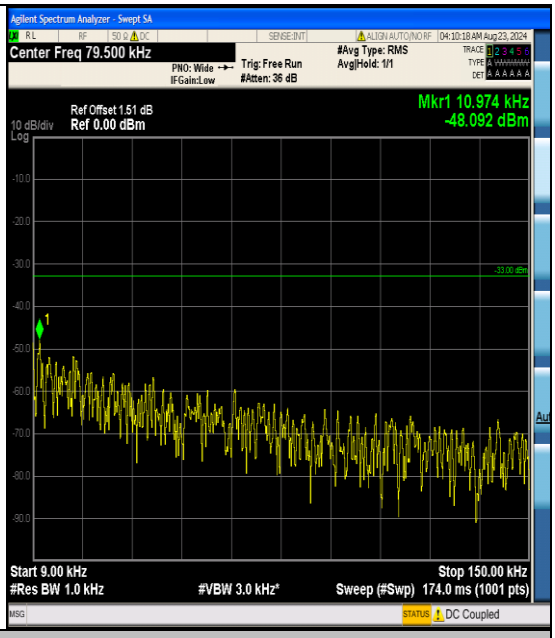
Band13_5MHz_16QAM_23230_25RB#0_30~1000_30~1000



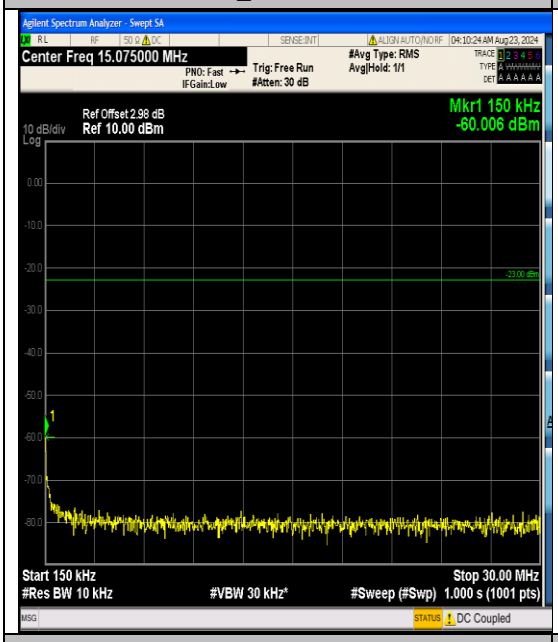
Band13_5MHz_16QAM_23230_25RB#0_1000~3000_1000~3000



Band13_5MHz_16QAM_23230_25RB#0_3000~10000_3000~10000

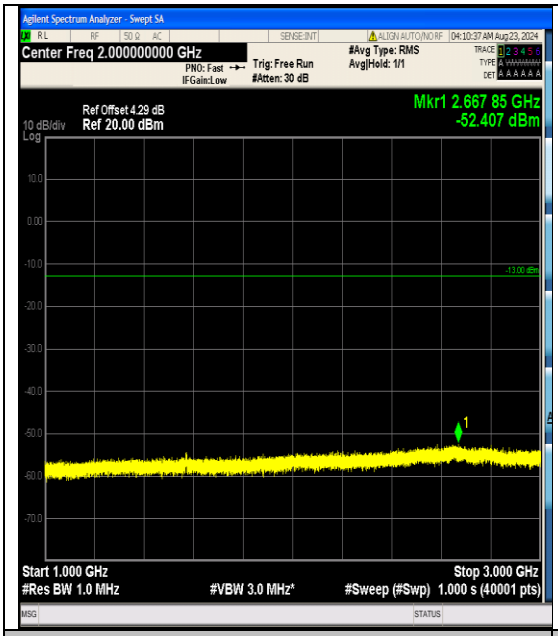


Band13_5MHz_16QAM_23255_25RB#0_0.009~0.15_0.009~0.15

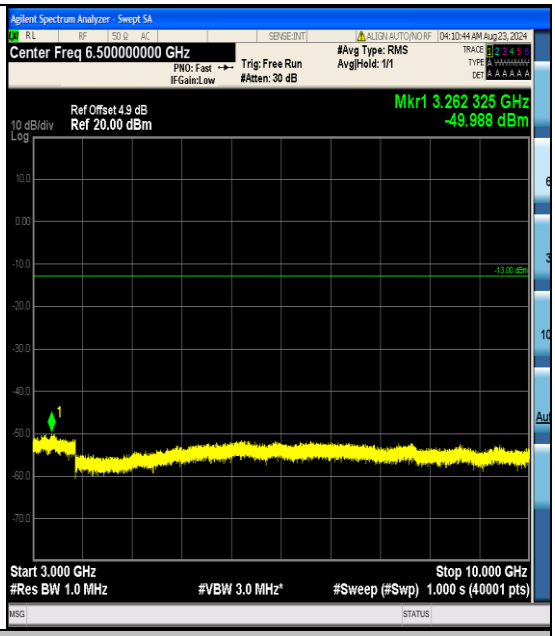


Band13_5MHz_16QAM_23255_25RB#0_0.15~30_0.15~30

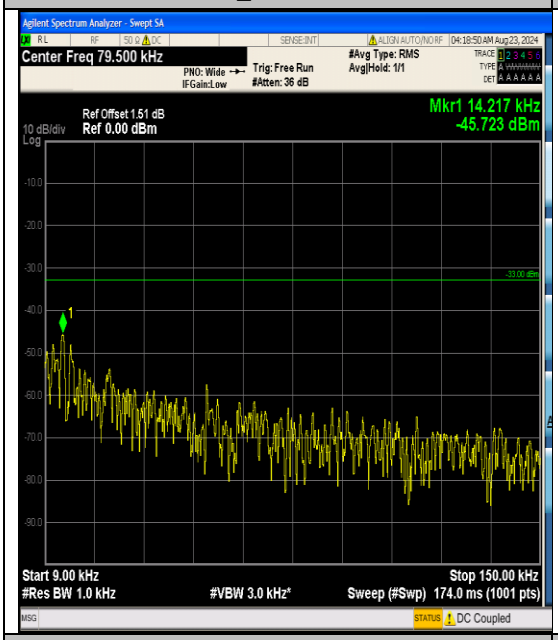
Band13_5MHz_16QAM_23255_25RB#0_30~1000_30~1000



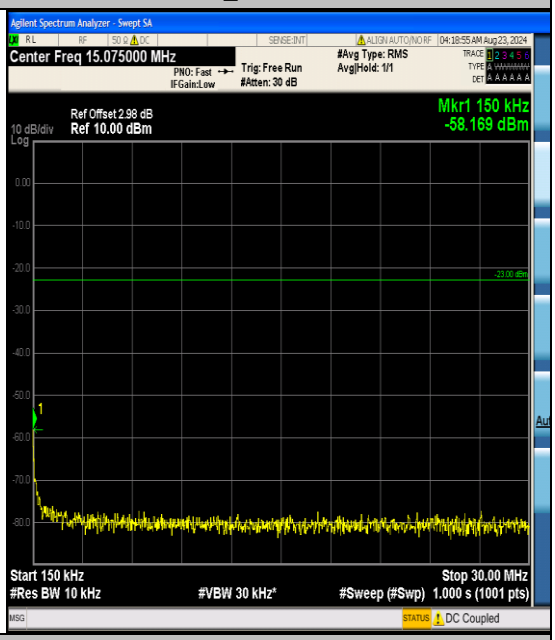
Band13_5MHz_16QAM_23255_25RB#0_1000~3000_1000~3000



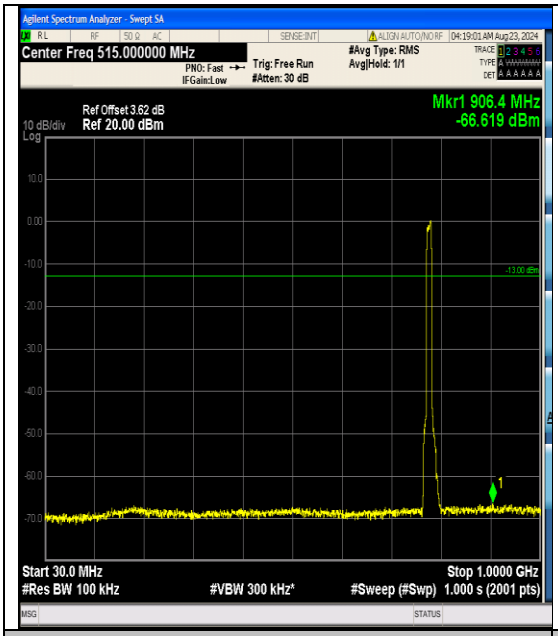
Band13_5MHz_16QAM_23255_25RB#0_3000~10000_3000~10000



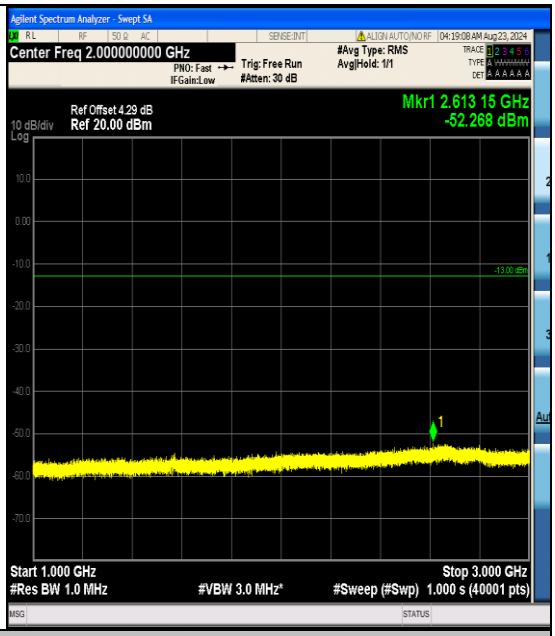
Band13_10MHz_QPSK_23230_50RB#0_0.009~0.15_0.009~0.15



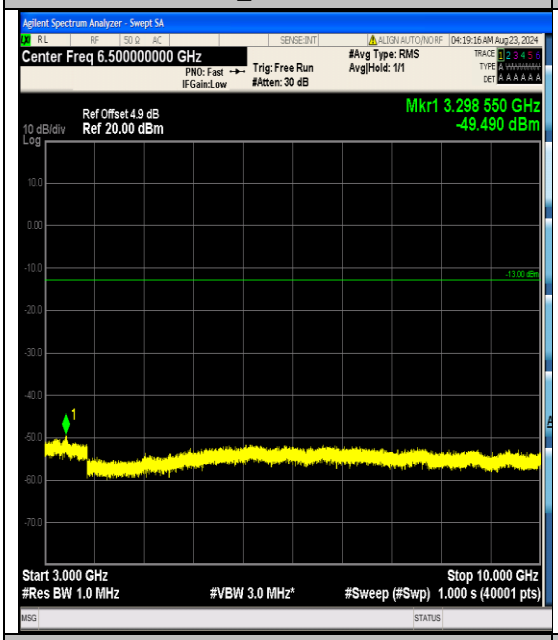
Band13_10MHz_QPSK_23230_50RB#0_0.15~30_0.15~30



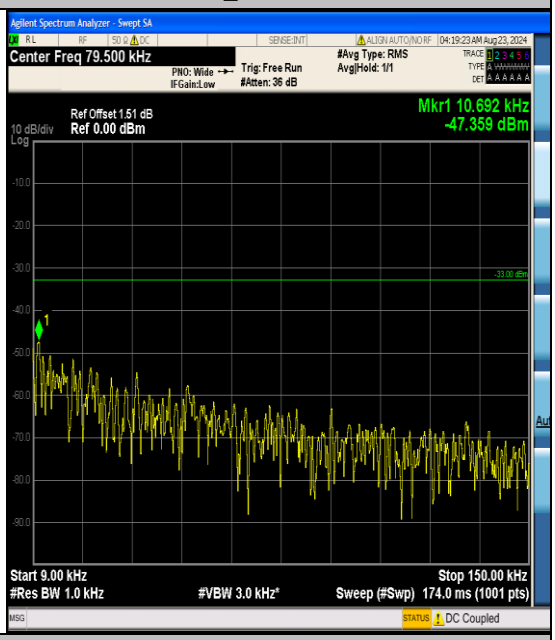
Band13_10MHz_QPSK_23230_50RB#0_30~1000_30~1000



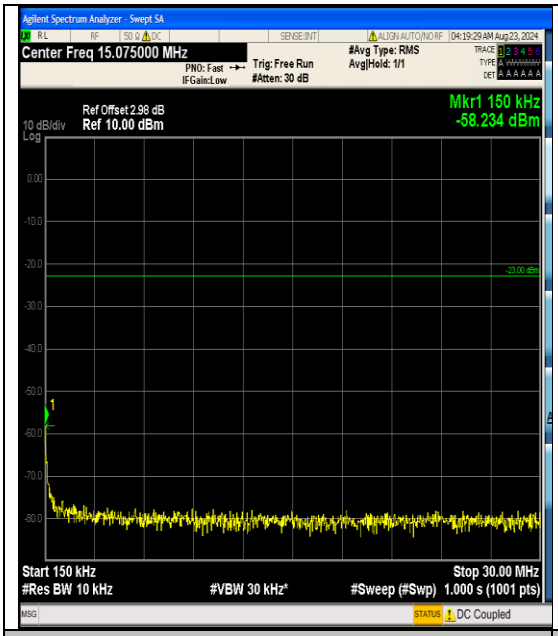
Band13_10MHz_QPSK_23230_50RB#0_1000~3000_1000~3000



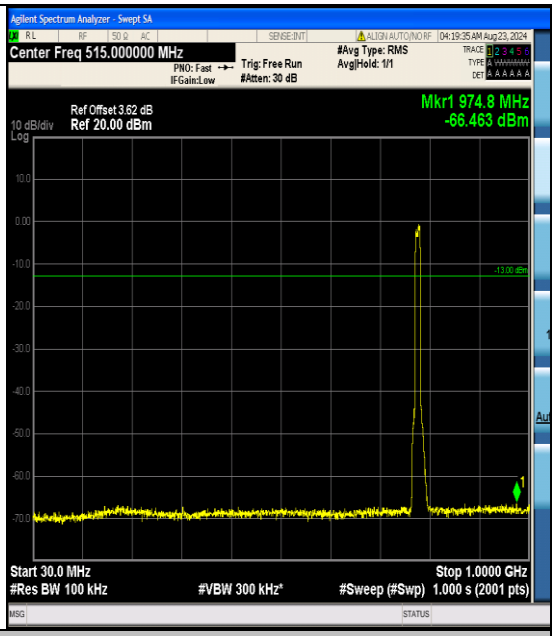
Band13_10MHz_QPSK_23230_50RB#0_3000~10000_3000~10000



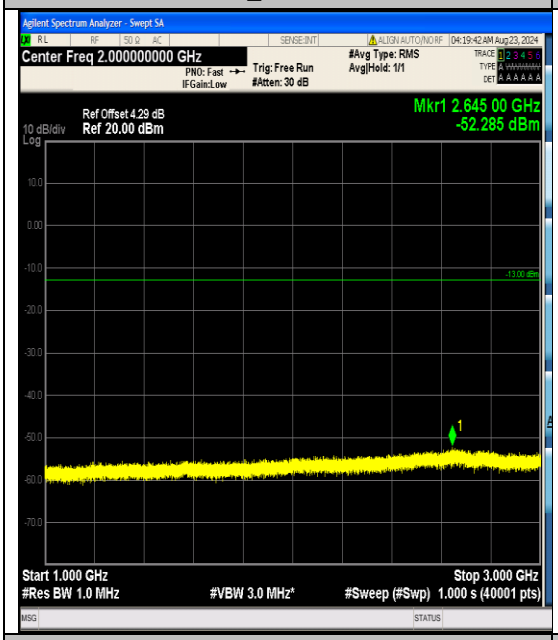
Band13_10MHz_16QAM_23230_50RB#0_0.009~0.15_0.009~0.15



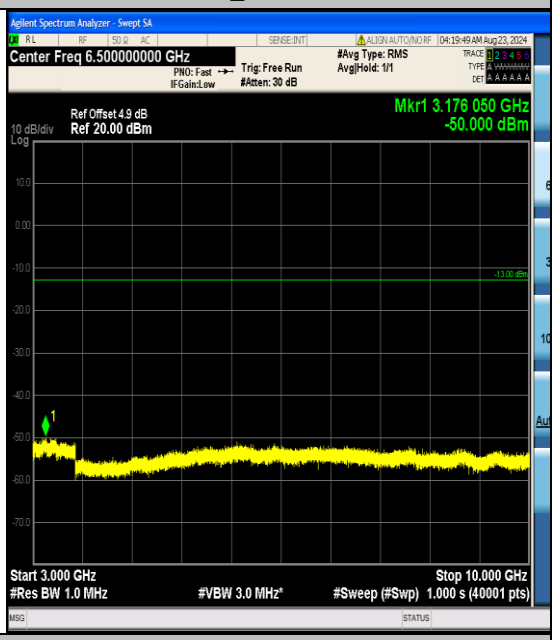
Band13_10MHz_16QAM_23230_50RB#0_0.15~30_0.15~30



Band13_10MHz_16QAM_23230_50RB#0_30~1000_30~1000



Band13_10MHz_16QAM_23230_50RB#0_1000~3000_1000~3000



Band13_10MHz_16QAM_23230_50RB#0_3000~10000_3000~10000

Appendix F: Frequency Stability

Test Result

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
BandName	Bandwidth	Modulation	Channel	RBcfg	VolValue	TempValue	ValueHz	ValuePpm	Limit	Verdict

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	NV	-30	-11.59	-0.014869	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	-20	-10.69	-0.013714	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	-10	-14.29	-0.018332	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	0	-8.81	-0.011302	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	10	-10.44	-0.013393	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	20	-13.59	-0.017434	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	30	5.12	0.006568	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	40	-13.46	-0.017267	±2.5	PASS
Band13	5MHz	QPSK	23205	25RB#0	NV	50	-11.39	-0.014612	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-30	-4.28	-0.005473	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-20	-7.50	-0.009591	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	-10	-11.27	-0.014412	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	0	-14.61	-0.018683	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	10	-13.18	-0.016854	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	20	-2.86	-0.003657	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	30	-10.16	-0.012992	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	40	-13.33	-0.017046	±2.5	PASS
Band13	5MHz	QPSK	23230	25RB#0	NV	50	-14.00	-0.017903	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-30	-16.82	-0.021440	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-20	-5.98	-0.007623	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	-10	-9.26	-0.011804	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	0	-8.18	-0.010427	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	10	-3.73	-0.004755	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	20	-9.04	-0.011523	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	30	-6.90	-0.008795	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	40	-9.24	-0.011778	±2.5	PASS
Band13	5MHz	QPSK	23255	25RB#0	NV	50	-12.22	-0.015577	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-30	-7.27	-0.009326	±2.5	PASS

Band13	5MHz	16QAM	23205	25RB#0	NV	-20	-11.17	-0.014330	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	-10	-12.90	-0.016549	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	0	1.69	0.002168	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	10	-9.20	-0.011802	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	20	-11.07	-0.014201	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	30	-6.44	-0.008262	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	40	8.14	0.010443	±2.5	PASS
Band13	5MHz	16QAM	23205	25RB#0	NV	50	-14.56	-0.018679	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-30	-2.62	-0.003350	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-20	-12.36	-0.015806	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	-10	-2.43	-0.003107	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	0	-8.30	-0.010614	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	10	-5.04	-0.006445	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	20	-9.61	-0.012289	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	30	-3.89	-0.004974	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	40	-4.71	-0.006023	±2.5	PASS
Band13	5MHz	16QAM	23230	25RB#0	NV	50	-3.86	-0.004936	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-30	-9.78	-0.012467	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-20	-7.14	-0.009101	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	-10	-8.87	-0.011307	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	0	-6.17	-0.007865	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	10	-13.53	-0.017247	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	20	3.99	0.005086	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	30	-10.39	-0.013244	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	40	-5.74	-0.007317	±2.5	PASS
Band13	5MHz	16QAM	23255	25RB#0	NV	50	-13.15	-0.016762	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-30	-10.30	-0.013171	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-20	-12.35	-0.015793	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-10	-10.69	-0.013670	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	0	-10.87	-0.013900	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	10	-11.40	-0.014578	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	20	-15.29	-0.019552	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	30	-5.68	-0.007263	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	40	-18.93	-0.024207	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	50	-10.00	-0.012788	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-30	-14.92	-0.019079	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-20	-10.99	-0.014054	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-10	-13.55	-0.017327	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	0	-9.98	-0.012762	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	10	-10.76	-0.013760	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	20	-17.51	-0.022391	±2.5	PASS

Band13	10MHz	16QAM	23230	50RB#0	NV	30	-18.05	-0.023082	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	40	-15.88	-0.020307	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	50	-13.63	-0.017430	±2.5	PASS