

Appendix for LTE B13

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1 Appendix A: Effective Radiated Result Output Data**1.1 Test Result**

Ant13

Band	Channel bandwidth	Modulation	Channel	RB Configure	Result(dBm)	ERP(dBm)	Limit(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	23.15	15.70	50	PASS
Band13	5MHz	QPSK	23205	1RB#13	23.2	15.75	50	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.04	15.59	50	PASS
Band13	5MHz	QPSK	23205	12RB#0	22.03	14.58	50	PASS
Band13	5MHz	QPSK	23205	12RB#6	22.18	14.73	50	PASS
Band13	5MHz	QPSK	23205	12RB#13	22.12	14.67	50	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.17	14.72	50	PASS
Band13	5MHz	QPSK	23230	1RB#0	23.29	15.84	50	PASS
Band13	5MHz	QPSK	23230	1RB#13	23.17	15.72	50	PASS
Band13	5MHz	QPSK	23230	1RB#24	23.11	15.66	50	PASS
Band13	5MHz	QPSK	23230	12RB#0	22.11	14.66	50	PASS
Band13	5MHz	QPSK	23230	12RB#6	22.15	14.70	50	PASS
Band13	5MHz	QPSK	23230	12RB#13	22.21	14.76	50	PASS
Band13	5MHz	QPSK	23230	25RB#0	22.18	14.73	50	PASS
Band13	5MHz	QPSK	23255	1RB#0	23.11	15.66	50	PASS
Band13	5MHz	QPSK	23255	1RB#13	23.19	15.74	50	PASS
Band13	5MHz	QPSK	23255	1RB#24	23.15	15.70	50	PASS
Band13	5MHz	QPSK	23255	12RB#0	22.15	14.70	50	PASS
Band13	5MHz	QPSK	23255	12RB#6	22.29	14.84	50	PASS
Band13	5MHz	QPSK	23255	12RB#13	22.15	14.70	50	PASS
Band13	5MHz	QPSK	23255	25RB#0	22.25	14.80	50	PASS
Band13	5MHz	16QAM	23205	1RB#0	22.41	14.96	50	PASS
Band13	5MHz	16QAM	23205	1RB#13	22.09	14.64	50	PASS
Band13	5MHz	16QAM	23205	1RB#24	22.3	14.85	50	PASS
Band13	5MHz	16QAM	23205	12RB#0	21.1	13.65	50	PASS
Band13	5MHz	16QAM	23205	12RB#6	21.17	13.72	50	PASS
Band13	5MHz	16QAM	23205	12RB#13	21.04	13.59	50	PASS
Band13	5MHz	16QAM	23205	25RB#0	21.08	13.63	50	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.49	15.04	50	PASS
Band13	5MHz	16QAM	23230	1RB#13	22.43	14.98	50	PASS
Band13	5MHz	16QAM	23230	1RB#24	22.19	14.74	50	PASS
Band13	5MHz	16QAM	23230	12RB#0	21.26	13.81	50	PASS
Band13	5MHz	16QAM	23230	12RB#6	21.2	13.75	50	PASS
Band13	5MHz	16QAM	23230	12RB#13	21.22	13.77	50	PASS
Band13	5MHz	16QAM	23230	25RB#0	21.25	13.80	50	PASS
Band13	5MHz	16QAM	23255	1RB#0	22.16	14.71	50	PASS
Band13	5MHz	16QAM	23255	1RB#13	22.45	15.00	50	PASS
Band13	5MHz	16QAM	23255	1RB#24	22.5	15.05	50	PASS
Band13	5MHz	16QAM	23255	12RB#0	21.16	13.71	50	PASS
Band13	5MHz	16QAM	23255	12RB#6	21.19	13.74	50	PASS
Band13	5MHz	16QAM	23255	12RB#13	21.14	13.69	50	PASS
Band13	5MHz	16QAM	23255	25RB#0	21.16	13.71	50	PASS
Band13	5MHz	64QAM	23205	1RB#0	21.33	13.88	50	PASS
Band13	5MHz	64QAM	23205	1RB#13	20.81	13.36	50	PASS
Band13	5MHz	64QAM	23205	1RB#24	21.11	13.66	50	PASS
Band13	5MHz	64QAM	23205	12RB#0	20.16	12.71	50	PASS
Band13	5MHz	64QAM	23205	12RB#6	20.17	12.72	50	PASS
Band13	5MHz	64QAM	23205	12RB#13	20.11	12.66	50	PASS
Band13	5MHz	64QAM	23205	25RB#0	20.2	12.75	50	PASS
Band13	5MHz	64QAM	23230	1RB#0	21.6	14.15	50	PASS
Band13	5MHz	64QAM	23230	1RB#13	21.5	14.05	50	PASS
Band13	5MHz	64QAM	23230	1RB#24	21.28	13.83	50	PASS
Band13	5MHz	64QAM	23230	12RB#0	20.2	12.75	50	PASS
Band13	5MHz	64QAM	23230	12RB#6	20.02	12.57	50	PASS
Band13	5MHz	64QAM	23230	12RB#13	20.16	12.71	50	PASS
Band13	5MHz	64QAM	23230	25RB#0	20.16	12.71	50	PASS
Band13	5MHz	64QAM	23255	1RB#0	21.33	13.88	50	PASS
Band13	5MHz	64QAM	23255	1RB#13	21.06	13.61	50	PASS
Band13	5MHz	64QAM	23255	1RB#24	21.37	13.92	50	PASS
Band13	5MHz	64QAM	23255	12RB#0	20.15	12.70	50	PASS
Band13	5MHz	64QAM	23255	12RB#6	20.23	12.78	50	PASS
Band13	5MHz	64QAM	23255	12RB#13	20.22	12.77	50	PASS
Band13	5MHz	64QAM	23255	25RB#0	20.15	12.70	50	PASS

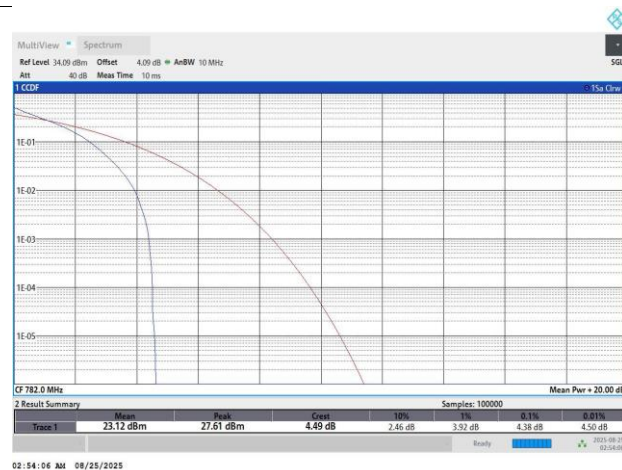
Band13	10MHz	QPSK	23230	1RB#0	23.09	15.64	50	PASS
Band13	10MHz	QPSK	23230	1RB#25	23.2	15.75	50	PASS
Band13	10MHz	QPSK	23230	1RB#49	23.13	15.68	50	PASS
Band13	10MHz	QPSK	23230	25RB#0	22.15	14.70	50	PASS
Band13	10MHz	QPSK	23230	25RB#13	22.27	14.82	50	PASS
Band13	10MHz	QPSK	23230	25RB#25	22.16	14.71	50	PASS
Band13	10MHz	QPSK	23230	50RB#0	22.22	14.77	50	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.54	15.09	50	PASS
Band13	10MHz	16QAM	23230	1RB#25	22.17	14.72	50	PASS
Band13	10MHz	16QAM	23230	1RB#49	21.99	14.54	50	PASS
Band13	10MHz	16QAM	23230	25RB#0	21.14	13.69	50	PASS
Band13	10MHz	16QAM	23230	25RB#13	21.28	13.83	50	PASS
Band13	10MHz	16QAM	23230	25RB#25	21.23	13.78	50	PASS
Band13	10MHz	16QAM	23230	50RB#0	21.29	13.84	50	PASS
Band13	10MHz	64QAM	23230	1RB#0	21.24	13.79	50	PASS
Band13	10MHz	64QAM	23230	1RB#25	21.73	14.28	50	PASS
Band13	10MHz	64QAM	23230	1RB#49	21.24	13.79	50	PASS
Band13	10MHz	64QAM	23230	25RB#0	20.16	12.71	50	PASS
Band13	10MHz	64QAM	23230	25RB#13	20.2	12.75	50	PASS
Band13	10MHz	64QAM	23230	25RB#25	20.19	12.74	50	PASS
Band13	10MHz	64QAM	23230	50RB#0	20.16	12.71	50	PASS

2 Appendix B: Peak-to-Average Ratio

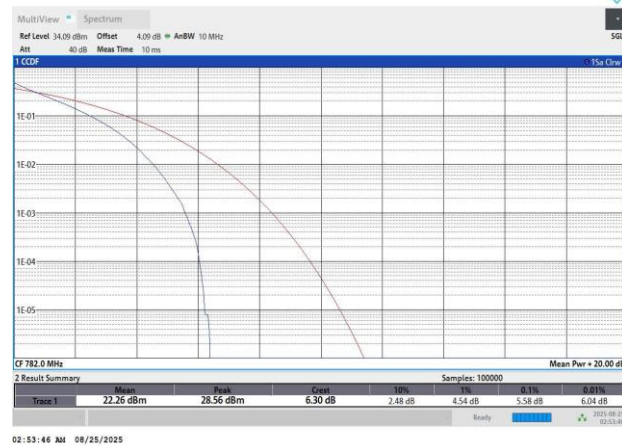
2.1 Test Result

Band	Channel bandwidth	Modulation	Channel	RB Configure	Result(dBm)	Limit(dB)	Verdict
Band13	10MHz	QPSK	23230	1RB#0	4.38	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	5.58	13	PASS
Band13	10MHz	16QAM	23230	1RB#0	4.94	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	6.28	13	PASS
Band13	10MHz	64QAM	23230	1RB#0	5.9	13	PASS
Band13	10MHz	64QAM	23230	50RB#0	6.46	13	PASS

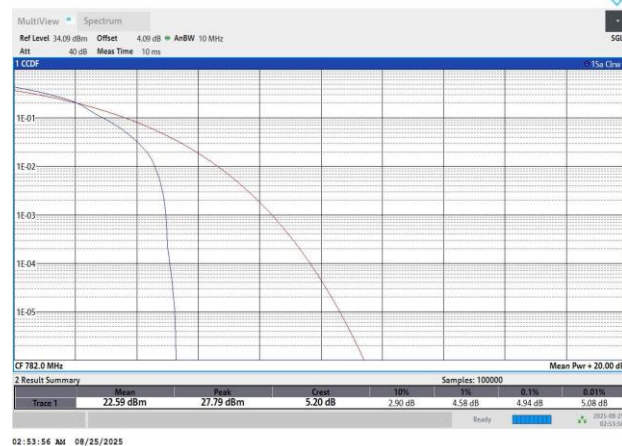
2.2 Test Plots



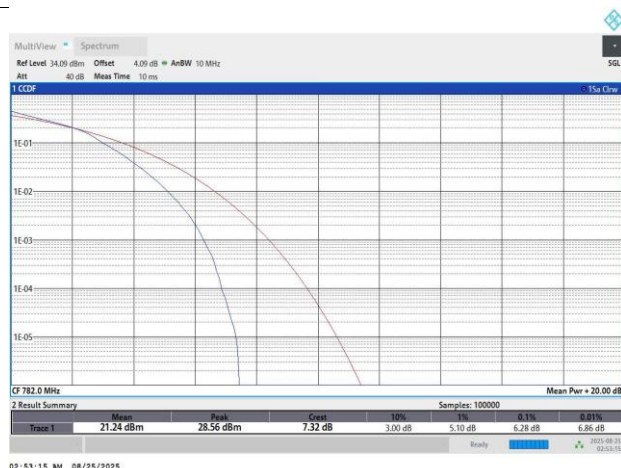
Band13-10MHz-QPSK-23230-1RB#0-4.38-13-PASS



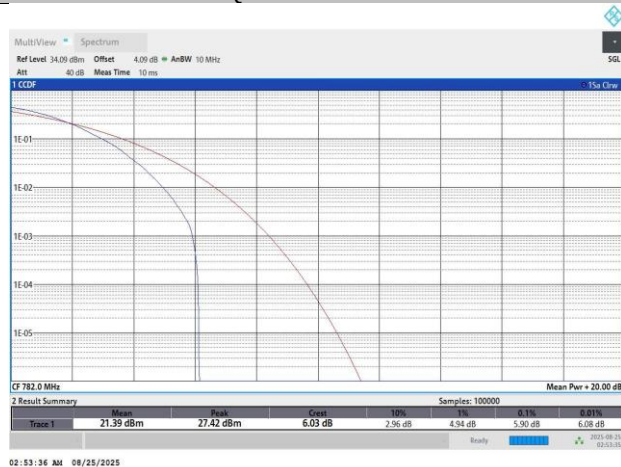
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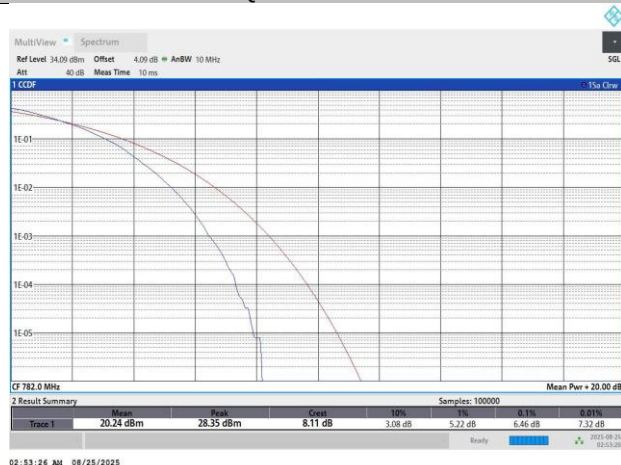
Band13-10MHz-16QAM-23230-1RB#0-4.94-13-PASS



Band13-10MHz-16QAM-23230-50RB#0-6.28-13-PASS



Band13-10MHz-64QAM-23230-1RB#0-5.9-13-PASS



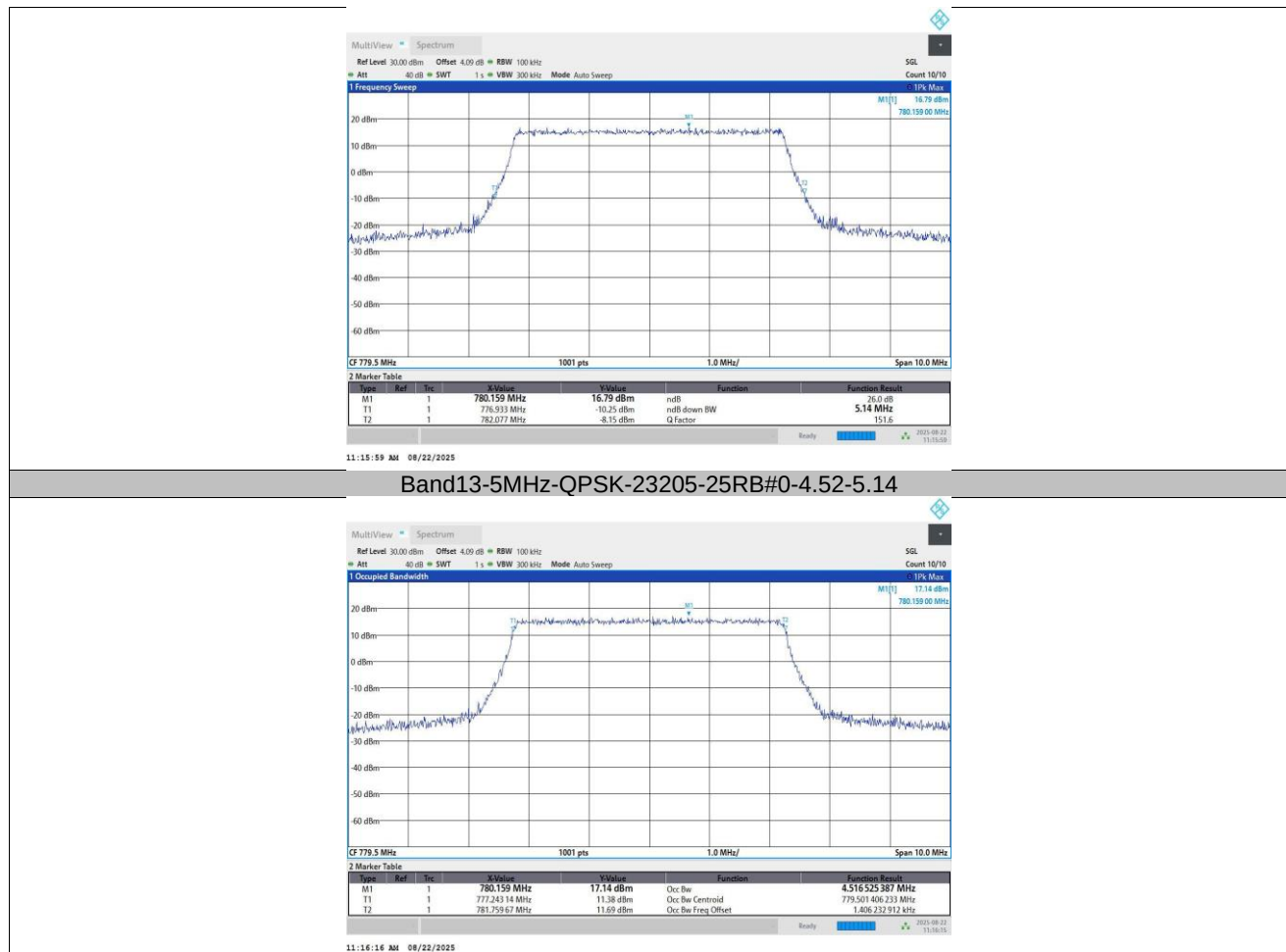
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3 Appendix C: 26dB Bandwidth and Occupied Bandwidth

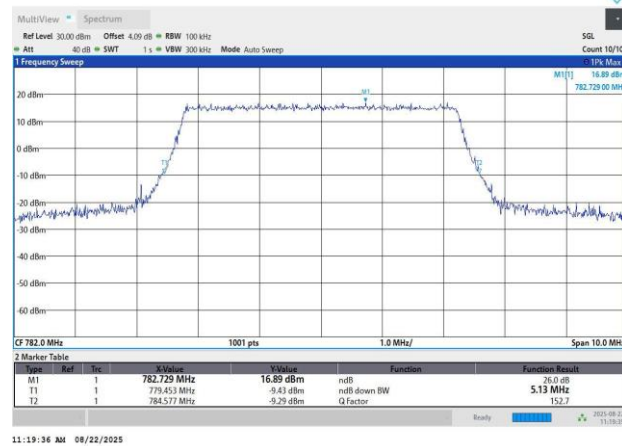
3.1 Test Result

Band	Channel bandwidth	Modulation	Channel	RB Configure	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.52	5.14	See graph
Band13	5MHz	QPSK	23230	25RB#0	4.51	5.13	See graph
Band13	5MHz	QPSK	23255	25RB#0	4.51	5.14	See graph
Band13	5MHz	16QAM	23205	25RB#0	4.51	5.07	See graph
Band13	5MHz	16QAM	23230	25RB#0	4.52	5.09	See graph
Band13	5MHz	16QAM	23255	25RB#0	4.51	5.16	See graph
Band13	5MHz	64QAM	23205	25RB#0	4.51	5.16	See graph
Band13	5MHz	64QAM	23230	25RB#0	4.51	5.14	See graph
Band13	5MHz	64QAM	23255	25RB#0	4.51	5.16	See graph
Band13	10MHz	QPSK	23230	50RB#0	8.99	10.09	See graph
Band13	10MHz	16QAM	23230	50RB#0	9.0	10.03	See graph
Band13	10MHz	64QAM	23230	50RB#0	8.99	9.97	See graph

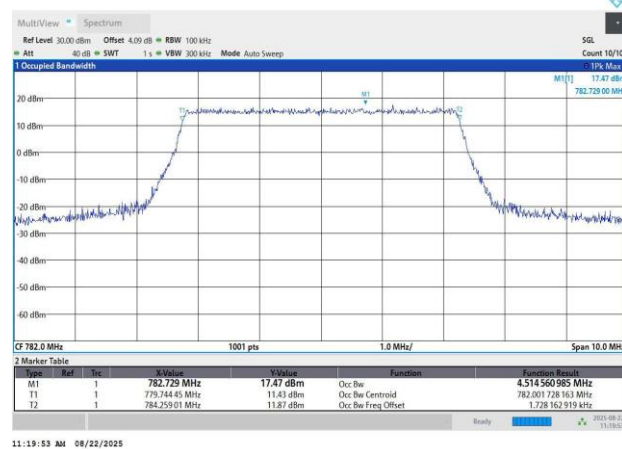
3.2 Test Plots



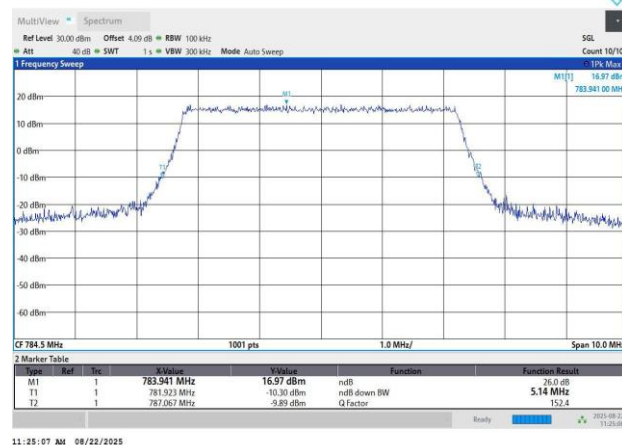
Band13-5MHz-QPSK-23205-25RB#0-4.52-5.14



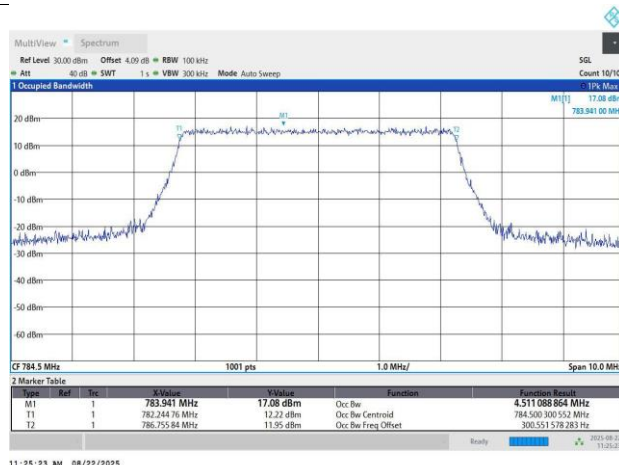
Band13-5MHz-QPSK-23230-25RB#0-4.51-5.13



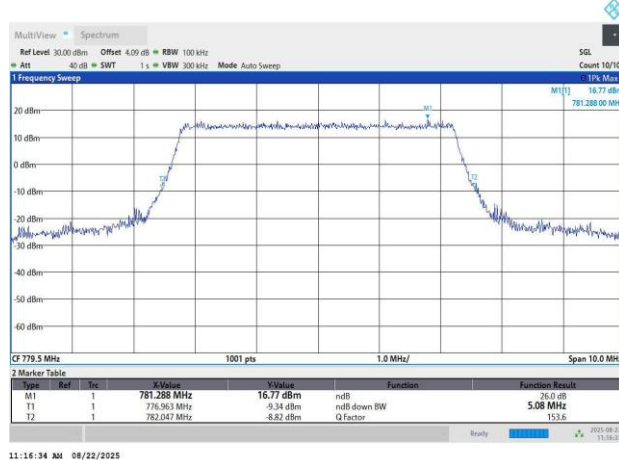
Band13-5MHz-QPSK-23230-25RB#0-4.51-5.13



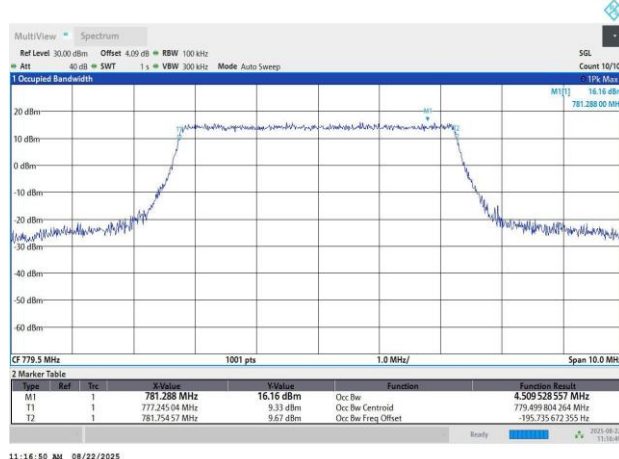
Band13-5MHz-QPSK-23255-25RB#0-4.51-5.14



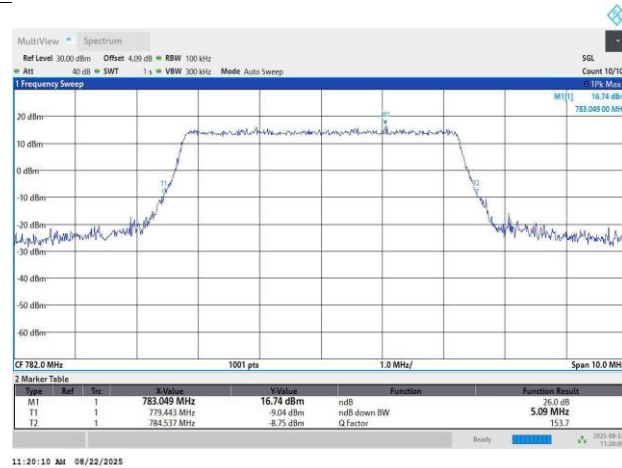
Band13-5MHz-QPSK-23255-25RB#0-4.51-5.14



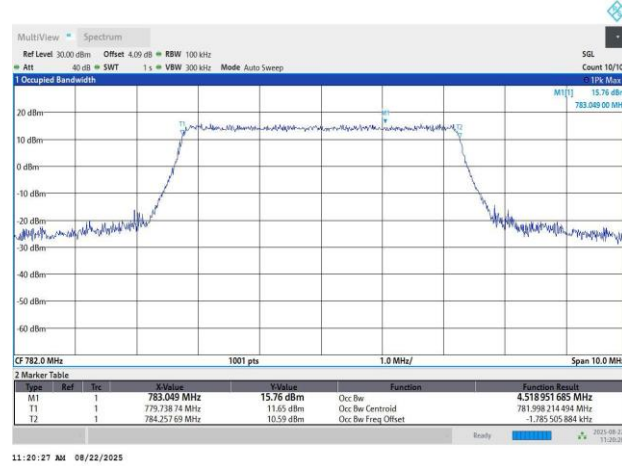
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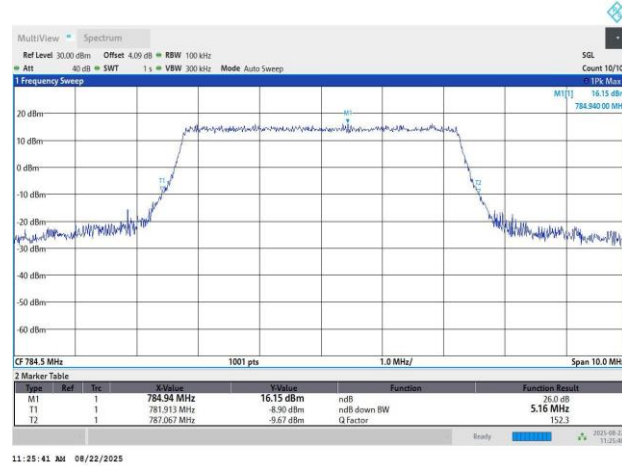
Band13-5MHz-16QAM-23205-25RB#0-4.51-5.08



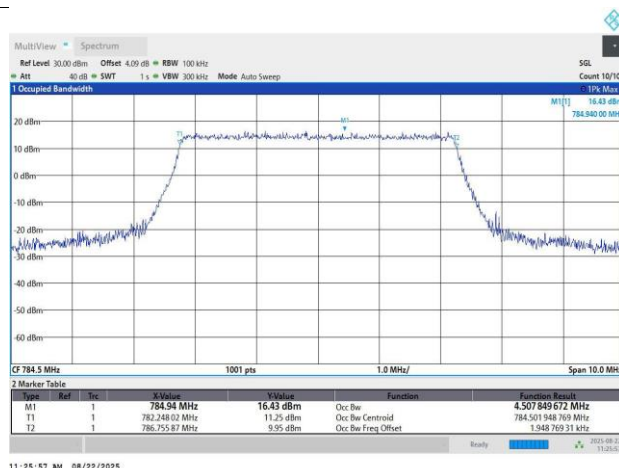
Band13-5MHz-16QAM-23230-25RB#0-4.52-5.09



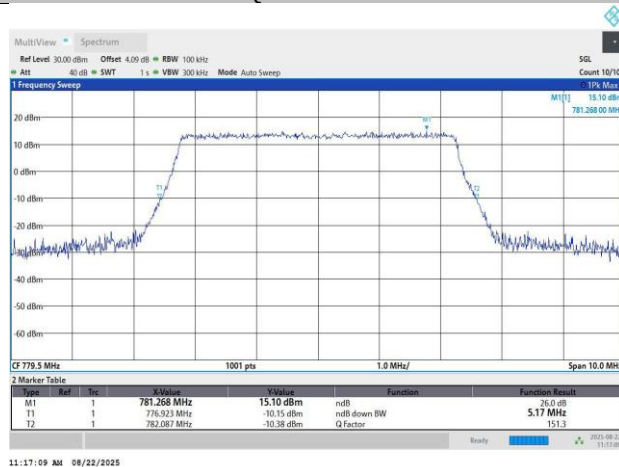
Band13-5MHz-16QAM-23230-25RB#0-4.52-5.09



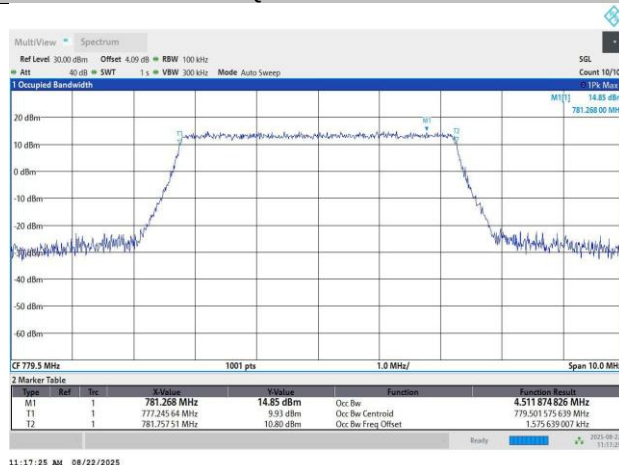
Band13-5MHz-16QAM-23255-25RB#0-4.51-5.16



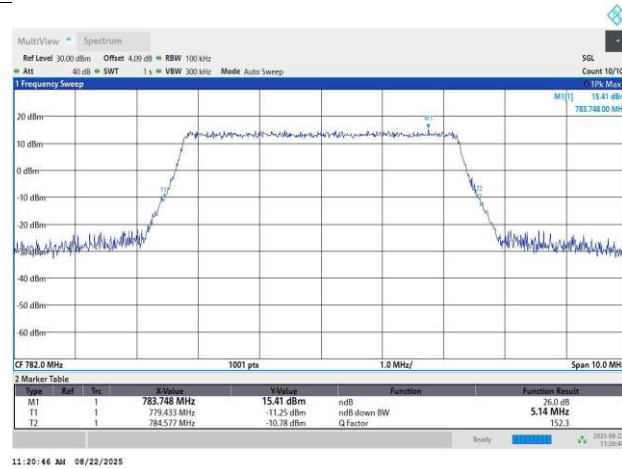
Band13-5MHz-16QAM-23255-25RB#0-4.51-5.16



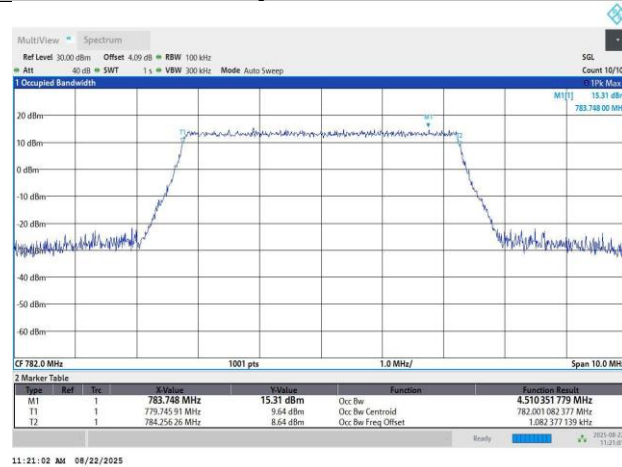
Band13-5MHz-64QAM-23205-25RB#0-4.51-5.17



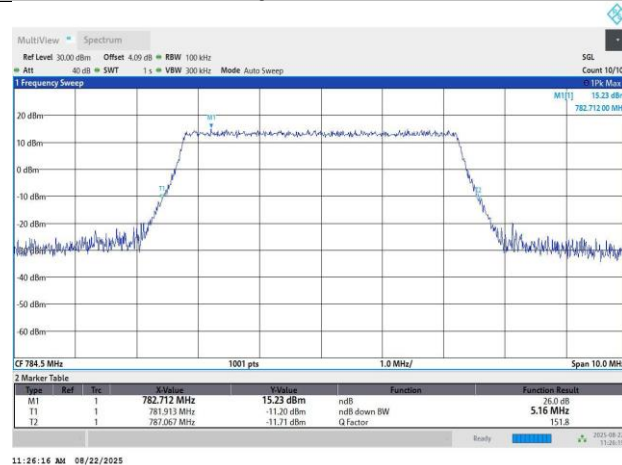
Band13-5MHz-64QAM-23205-25RB#0-4.51-5.17



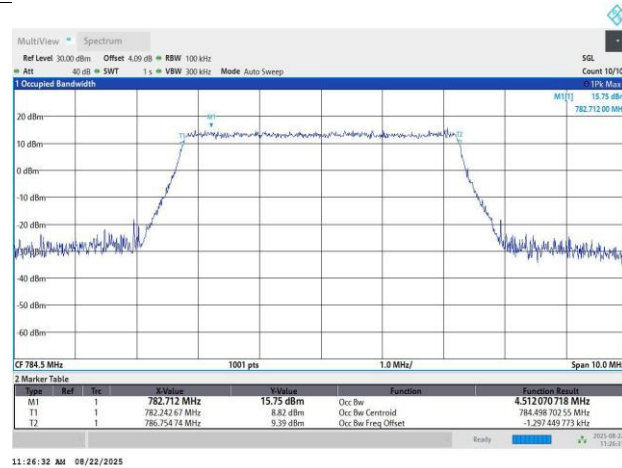
Band13-5MHz-64QAM-23230-25RB#0-4.51-5.14



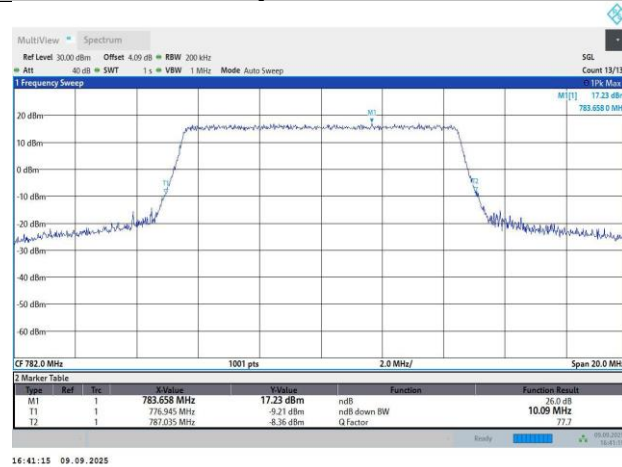
Band13-5MHz-64QAM-23230-25RB#0-4.51-5.14



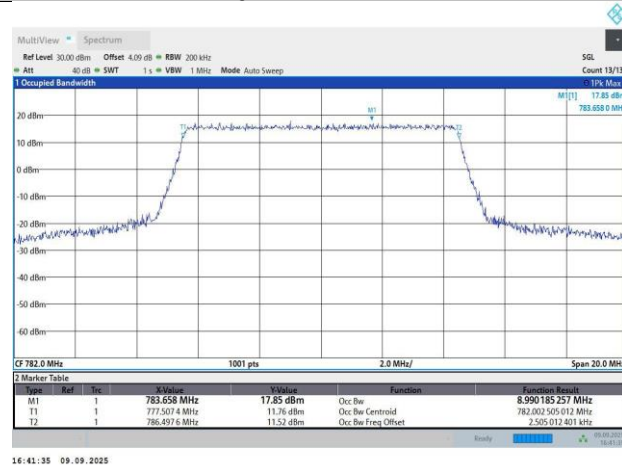
Band13-5MHz-64QAM-23255-25RB#0-4.51-5.16



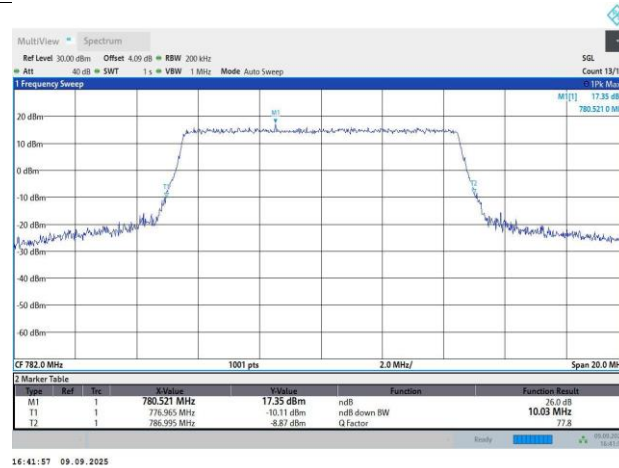
Band13-5MHz-64QAM-23255-25RB#0-4.51-5.16



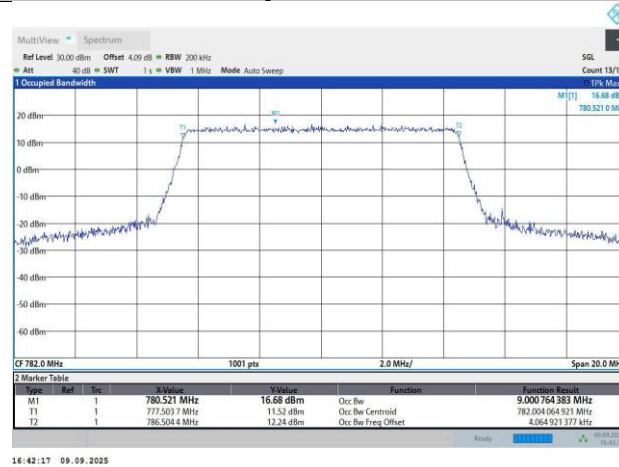
Band13-10MHz-QPSK-23230-50RB#0-8.99-10.09



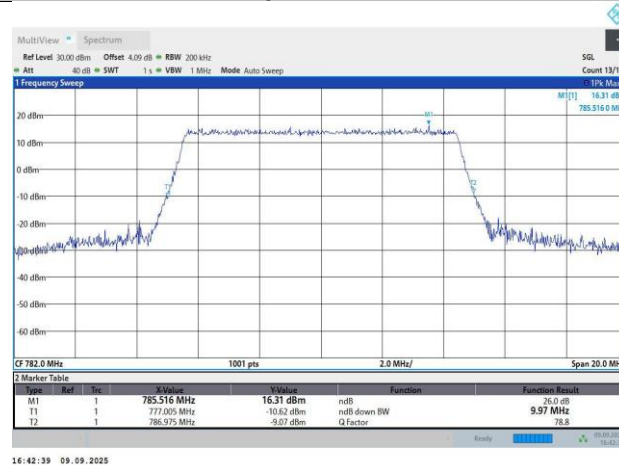
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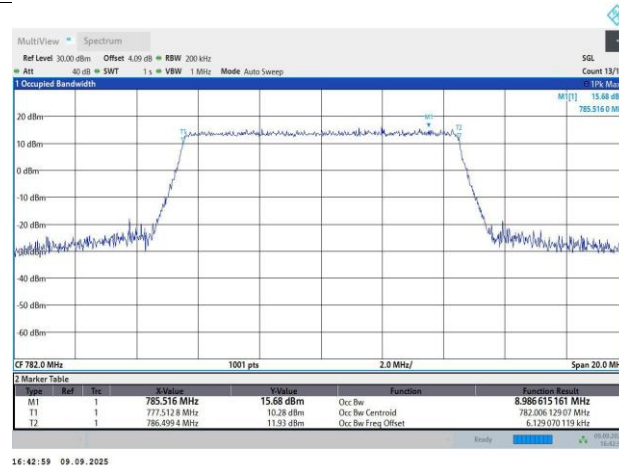
Band13-10MHz-16QAM-23230-50RB#0-9.0-10.03



Band13-10MHz-16QAM-23230-50RB#0-9.0-10.03



Band13-10MHz-64QAM-23230-50RB#0-8.99-9.97



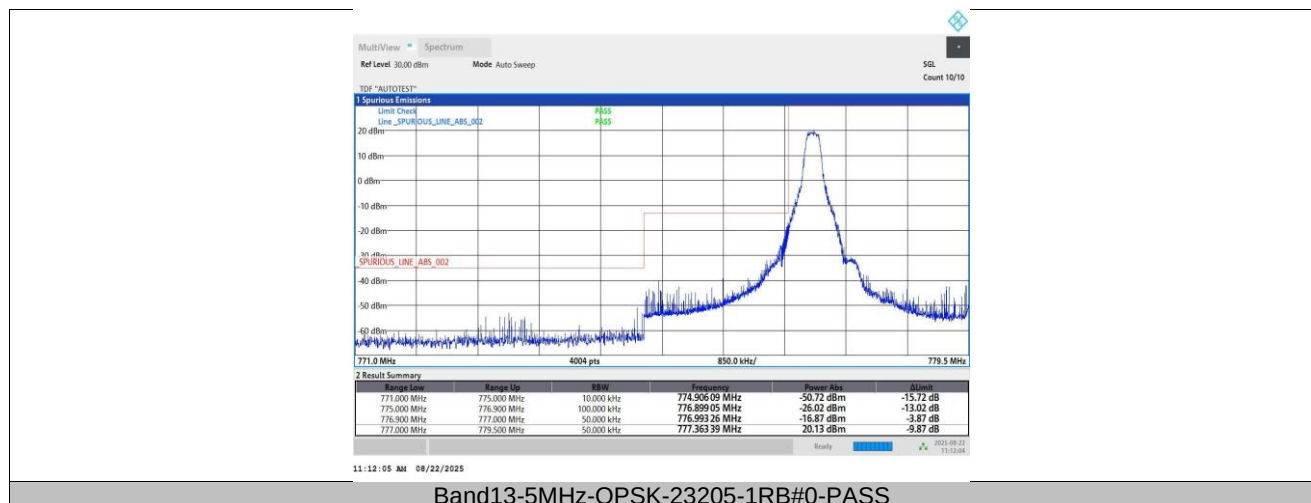
Band13-10MHz-64QAM-23230-50RB#0-8.99-9.97

4 Appendix D: Band Edge

4.1 Test Result

Band	Channel bandwidth	Modulation	Channel	RB Configure	Result	Verdict
Band13	5MHz	QPSK	23205	1RB#0	See graph	PASS
Band13	5MHz	QPSK	23205	12RB#0	See graph	PASS
Band13	5MHz	QPSK	23205	25RB#0	See graph	PASS
Band13	5MHz	QPSK	23255	1RB#24	See graph	PASS
Band13	5MHz	QPSK	23255	12RB#13	See graph	PASS
Band13	5MHz	QPSK	23255	25RB#0	See graph	PASS
Band13	5MHz	16QAM	23205	1RB#0	See graph	PASS
Band13	5MHz	16QAM	23205	12RB#0	See graph	PASS
Band13	5MHz	16QAM	23205	25RB#0	See graph	PASS
Band13	5MHz	16QAM	23255	1RB#24	See graph	PASS
Band13	5MHz	16QAM	23255	12RB#13	See graph	PASS
Band13	5MHz	16QAM	23255	25RB#0	See graph	PASS
Band13	5MHz	64QAM	23205	1RB#0	See graph	PASS
Band13	5MHz	64QAM	23205	12RB#0	See graph	PASS
Band13	5MHz	64QAM	23205	25RB#0	See graph	PASS
Band13	5MHz	64QAM	23255	1RB#24	See graph	PASS
Band13	5MHz	64QAM	23255	12RB#13	See graph	PASS
Band13	5MHz	64QAM	23255	25RB#0	See graph	PASS
Band13	10MHz	QPSK	23230	1RB#0	See graph	PASS
Band13	10MHz	QPSK	23230	1RB#49	See graph	PASS
Band13	10MHz	QPSK	23230	25RB#0	See graph	PASS
Band13	10MHz	QPSK	23230	25RB#25	See graph	PASS
Band13	10MHz	QPSK	23230	50RB#0	See graph	PASS
Band13	10MHz	QPSK	23230	50RB#0	See graph	PASS
Band13	10MHz	16QAM	23230	1RB#0	See graph	PASS
Band13	10MHz	16QAM	23230	1RB#49	See graph	PASS
Band13	10MHz	16QAM	23230	25RB#0	See graph	PASS
Band13	10MHz	16QAM	23230	25RB#25	See graph	PASS
Band13	10MHz	16QAM	23230	50RB#0	See graph	PASS
Band13	10MHz	16QAM	23230	50RB#0	See graph	PASS
Band13	10MHz	64QAM	23230	1RB#0	See graph	PASS
Band13	10MHz	64QAM	23230	1RB#49	See graph	PASS
Band13	10MHz	64QAM	23230	25RB#0	See graph	PASS
Band13	10MHz	64QAM	23230	25RB#25	See graph	PASS
Band13	10MHz	64QAM	23230	50RB#0	See graph	PASS
Band13	10MHz	64QAM	23230	50RB#0	See graph	PASS

4.2 Test Plots

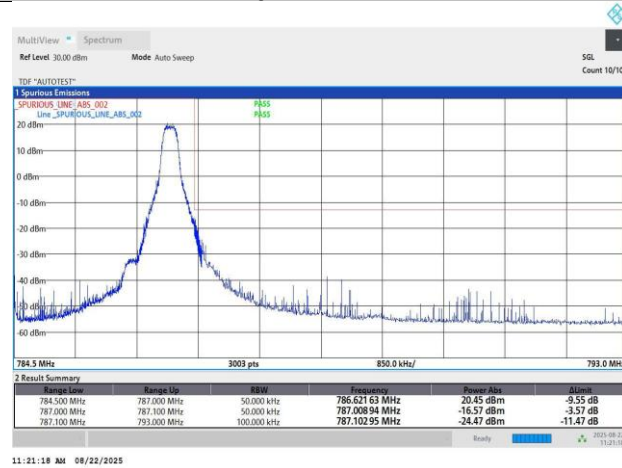




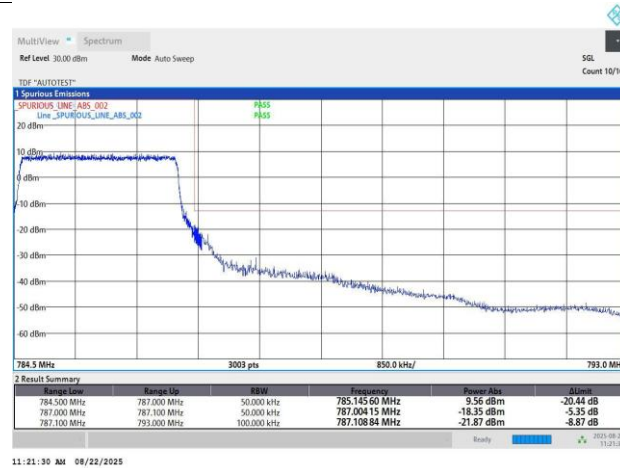
Band13-5MHz-QPSK-23205-12RB#0-PASS



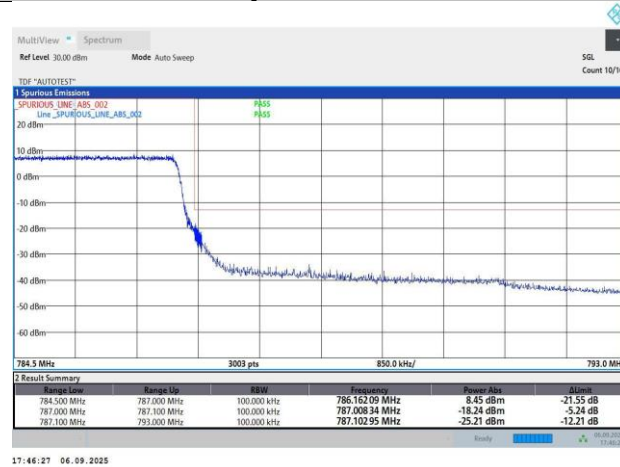
Band13-5MHz-QPSK-23205-25RB#0-PASS



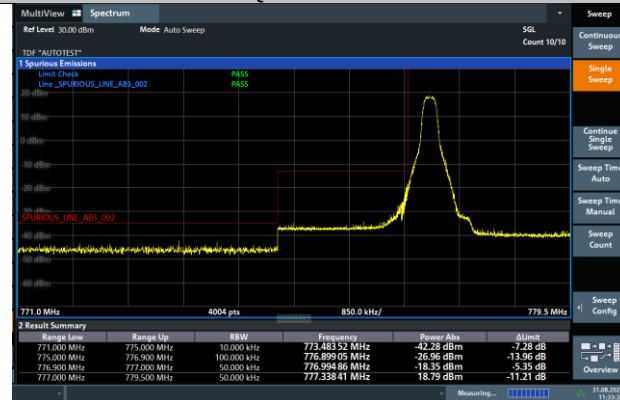
Band13-5MHz-QPSK-23255-1RB#24-PASS



Band13-5MHz-QPSK-23255-12RB#13-PASS



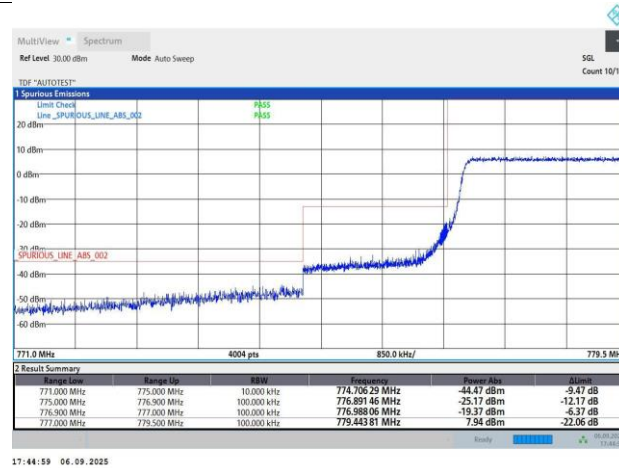
Band13-5MHz-QPSK-23255-25RB#0-PASS



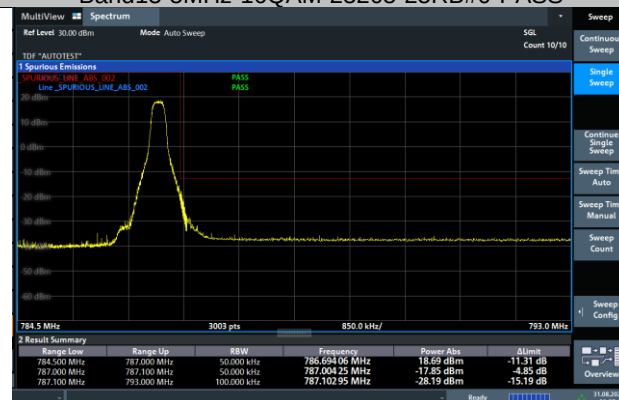
Band13-5MHz-16QAM-23205-1RB#0-PASS



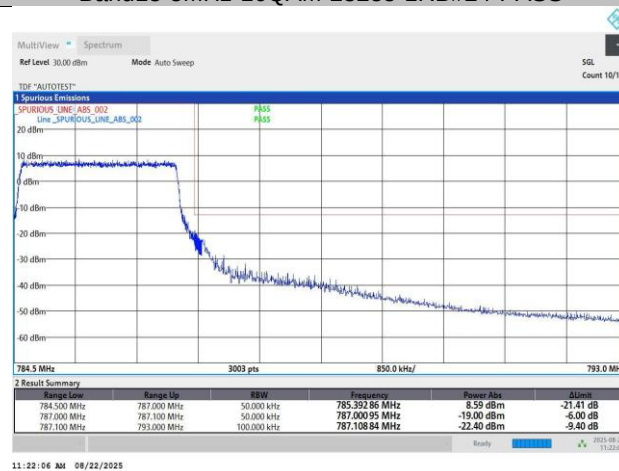
Band13-5MHz-16QAM-23205-12RB#0-PASS



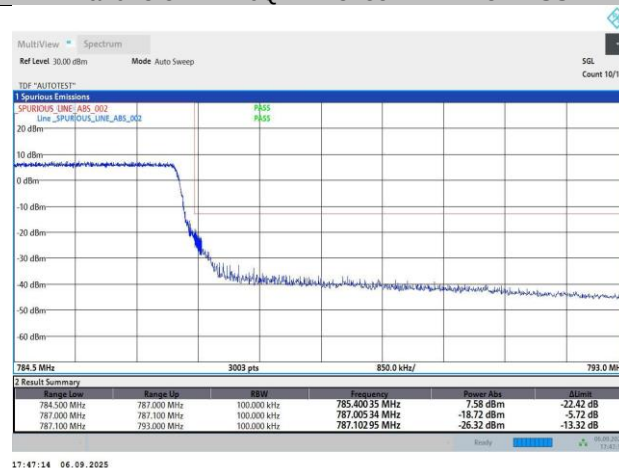
Band13-5MHz-16QAM-23205-25RB#0-PASS



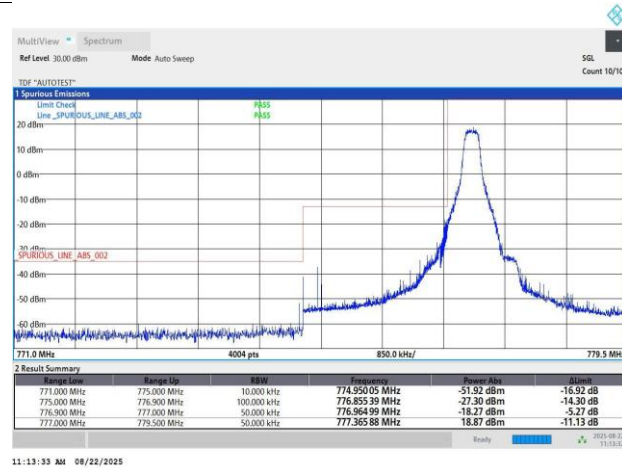
Band13-5MHz-16QAM-23255-1RB#24-PASS



Band13-5MHz-16QAM-23255-12RB#13-PASS



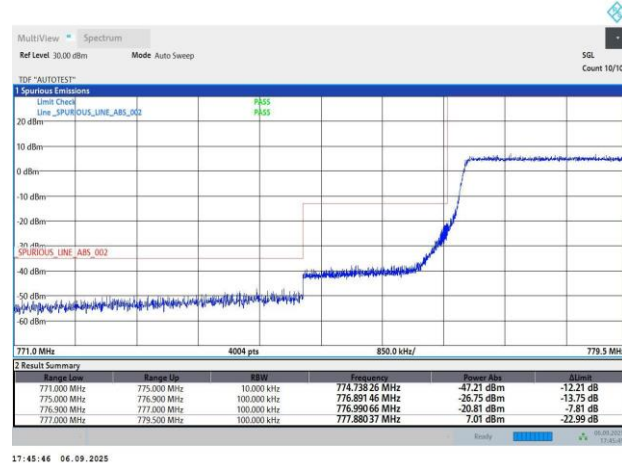
Band13-5MHz-16QAM-23255-25RB#0-PASS



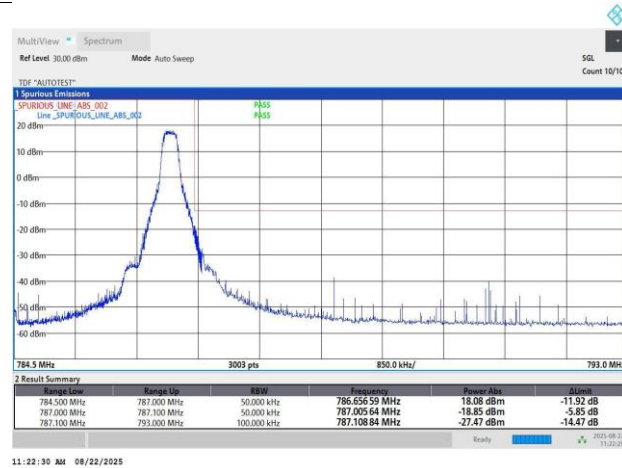
Band13-5MHz-64QAM-23205-1RB#0-PASS



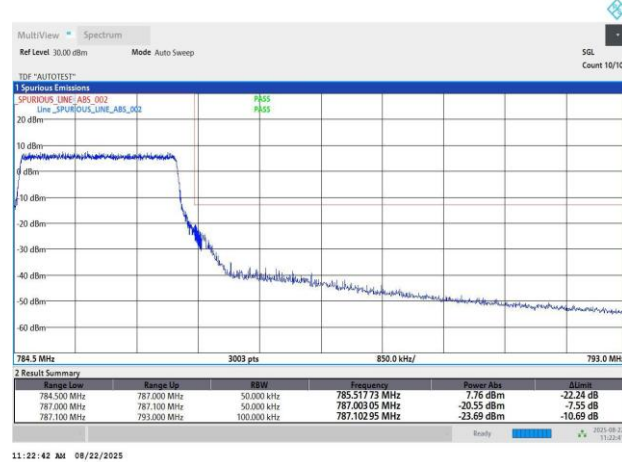
Band13-5MHz-64QAM-23205-12RB#0-PASS



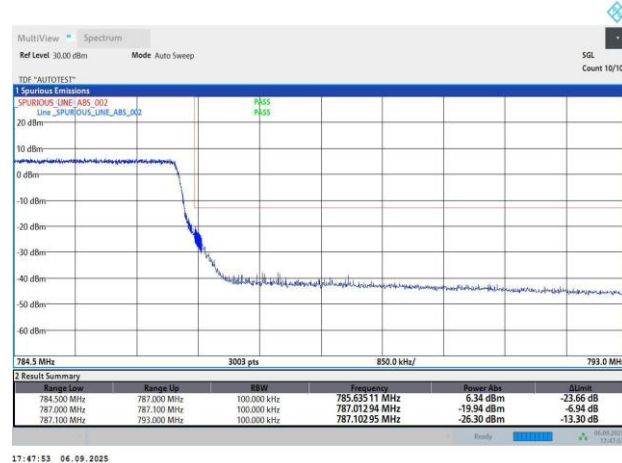
Band13-5MHz-64QAM-23205-25RB#0-PASS



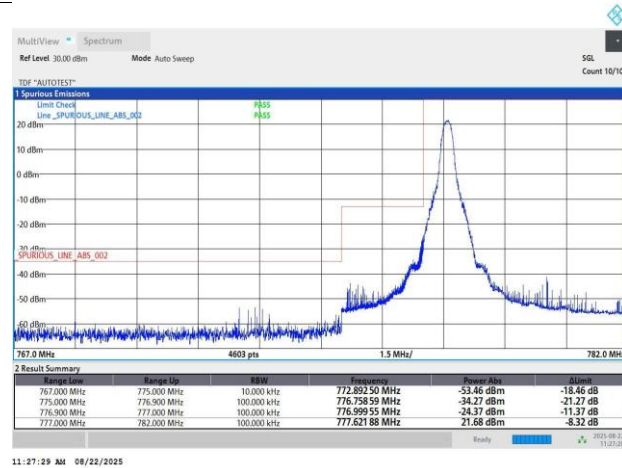
Band13-5MHz-64QAM-23255-1RB#24-PASS



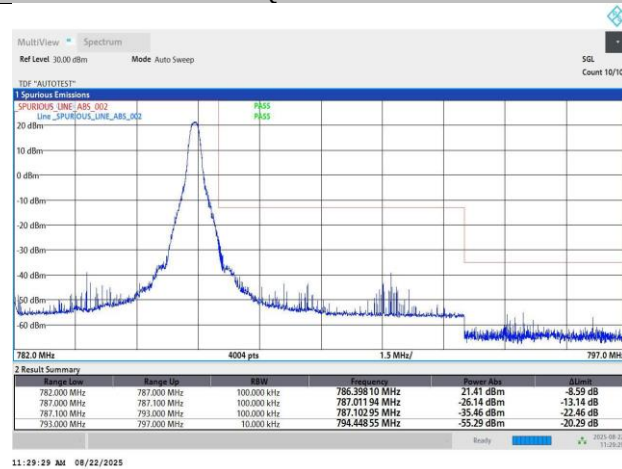
Band13-5MHz-64QAM-23255-12RB#13-PASS



Band13-5MHz-64QAM-23255-25RB#0-PASS



Band13-10MHz-QPSK-23230-1RB#0-PASS



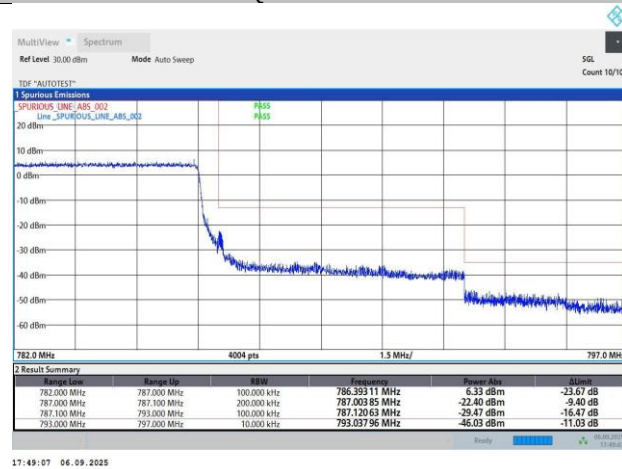
Band13-10MHz-QPSK-23230-1RB#49-PASS



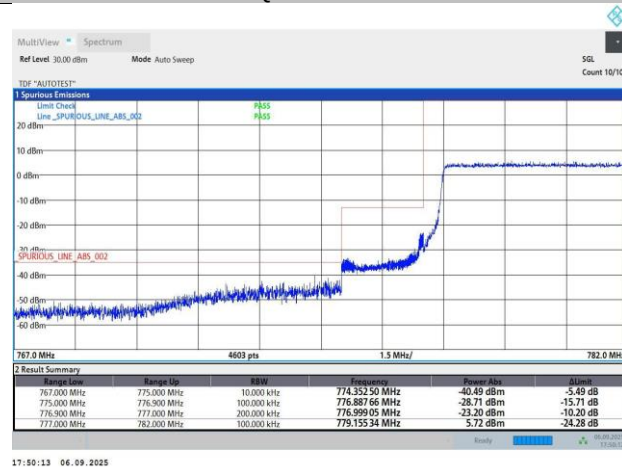
Band13-10MHz-QPSK-23230-25RB#0-PASS



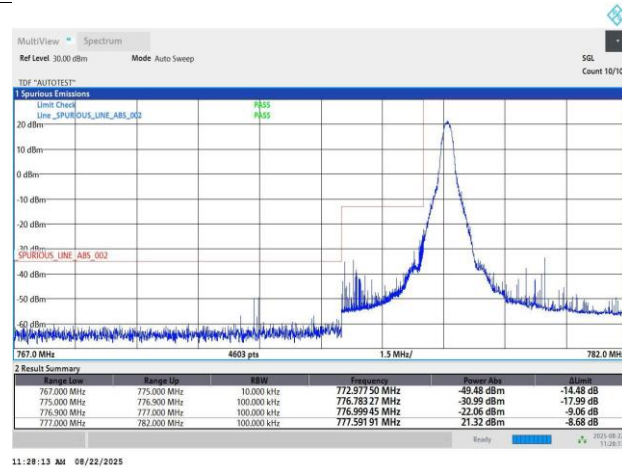
Band13-10MHz-QPSK-23230-25RB#25-PASS



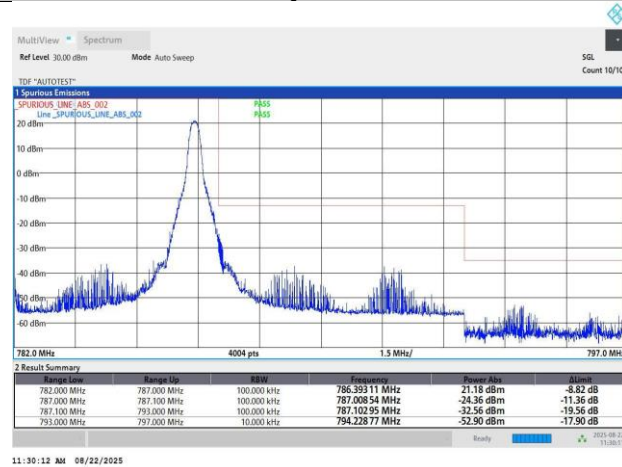
Band13-10MHz-QPSK-23230-50RB#0-PASS



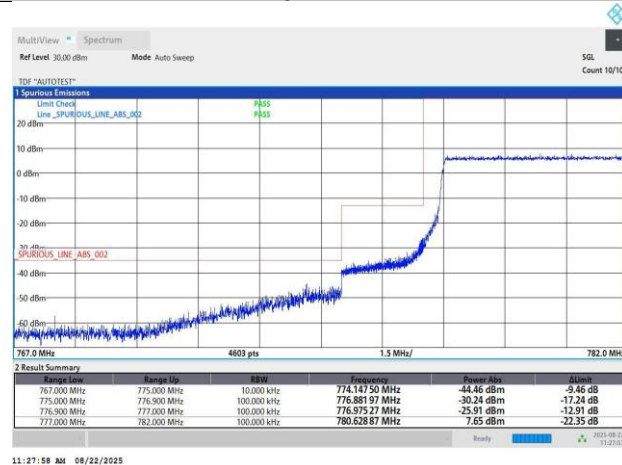
Band13-10MHz-QPSK-23230-50RB#0-PASS



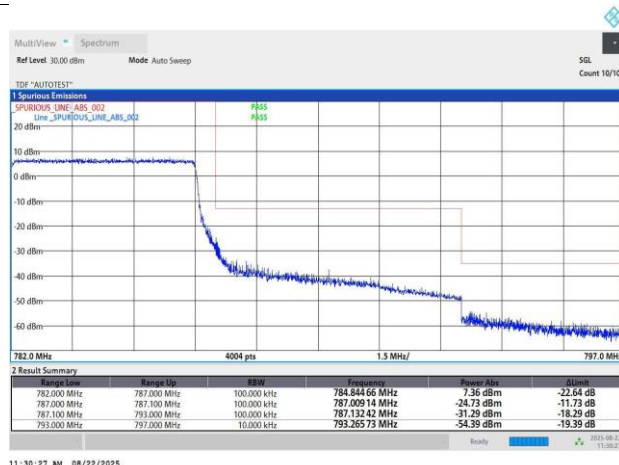
Band13-10MHz-16QAM-23230-1RB#0-PASS



Band13-10MHz-16QAM-23230-1RB#49-PASS



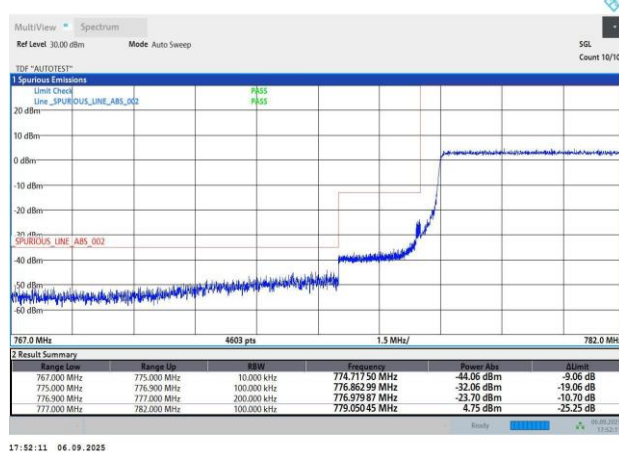
Band13-10MHz-16QAM-23230-25RB#0-PASS



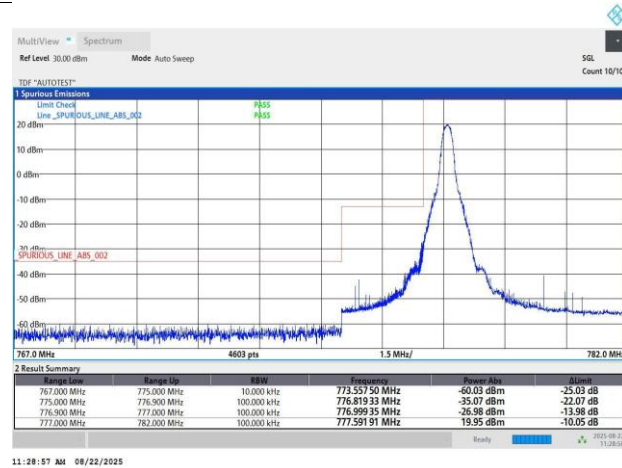
Band13-10MHz-16QAM-23230-25RB#25-PASS



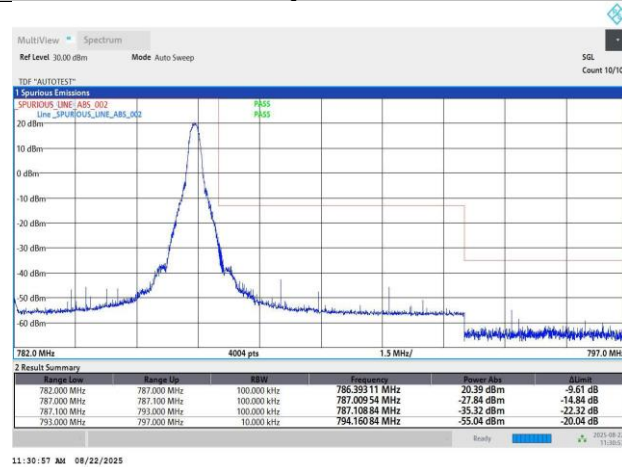
Band13-10MHz-16QAM-23230-50RB#0-PASS



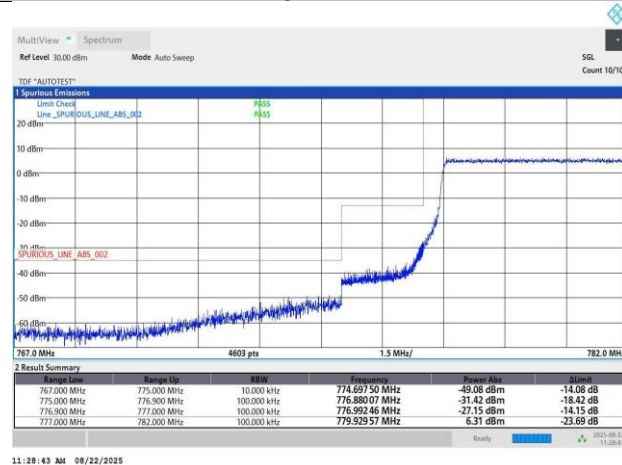
Band13-10MHz-16QAM-23230-50RB#0-PASS



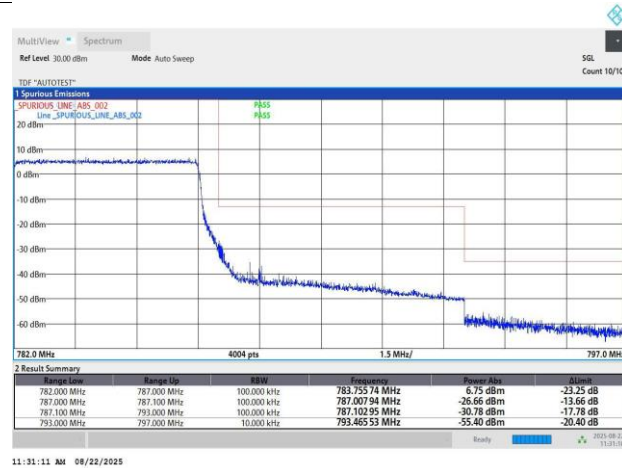
Band13-10MHz-64QAM-23230-1RB#0-PASS



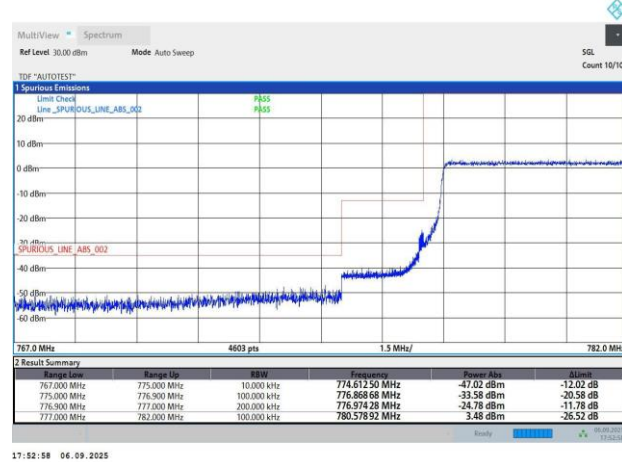
Band13-10MHz-64QAM-23230-1RB#49-PASS



Band13-10MHz-64QAM-23230-25RB#0-PASS



Band13-10MHz-64QAM-23230-25RB#25-PASS



Band13-10MHz-64QAM-23230-50RB#0-PASS



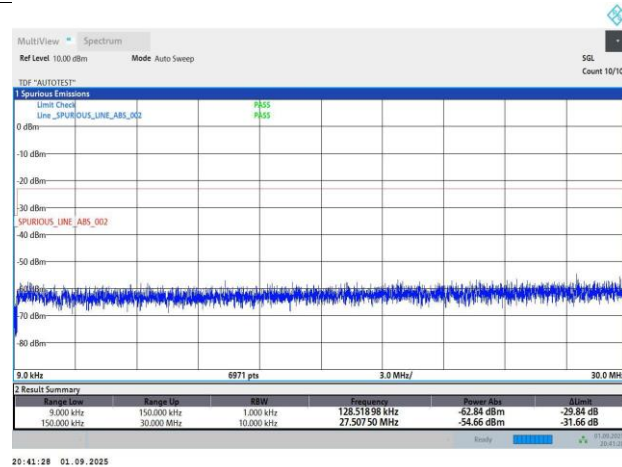
Band13-10MHz-64QAM-23230-50RB#0-PASS

5 Appendix E: Conducted Spurious Emission

5.1 Test Result

Band	Channel bandwidth	Modulation	Channel	RB Configure	Result	Verdict
Band13	5MHz	QPSK	23205	1RB#0	See graph	PASS
Band13	5MHz	QPSK	23230	1RB#0	See graph	PASS
Band13	5MHz	QPSK	23255	1RB#0	See graph	PASS
Band13	10MHz	QPSK	23230	1RB#0	See graph	PASS

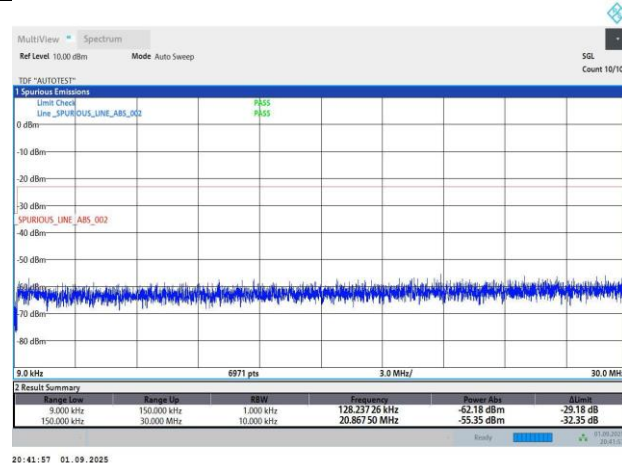
5.2 Test Plots



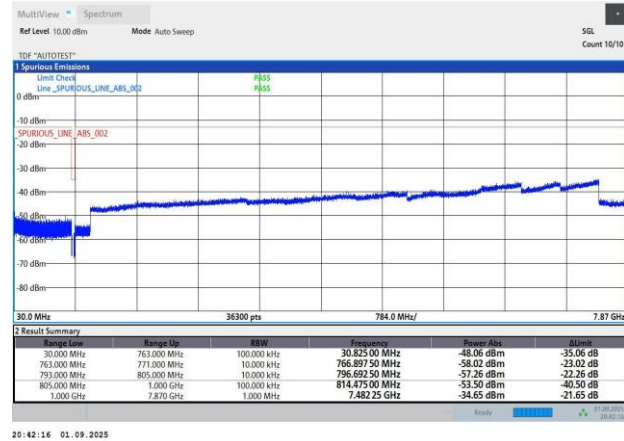
Band13-5MHz-QPSK-23205-1RB#0-PASS



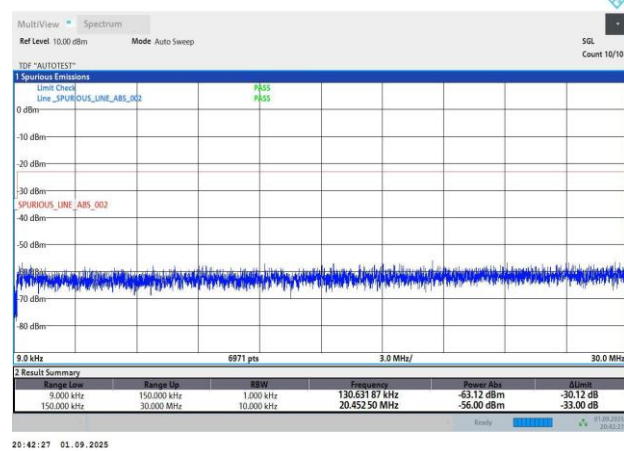
Band13-5MHz-QPSK-23205-1RB#0-PASS



Band13-5MHz-QPSK-23230-1RB#0-PASS



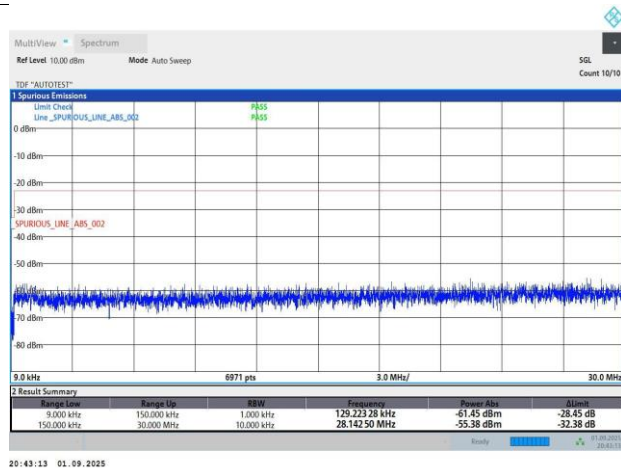
Band13-5MHz-QPSK-23230-1RB#0-PASS



Band13-5MHz-QPSK-23255-1RB#0-PASS



Band13-5MHz-QPSK-23255-1RB#0-PASS



Band13-10MHz-QPSK-23230-1RB#0-PASS



Band13-10MHz-QPSK-23230-1RB#0-PASS

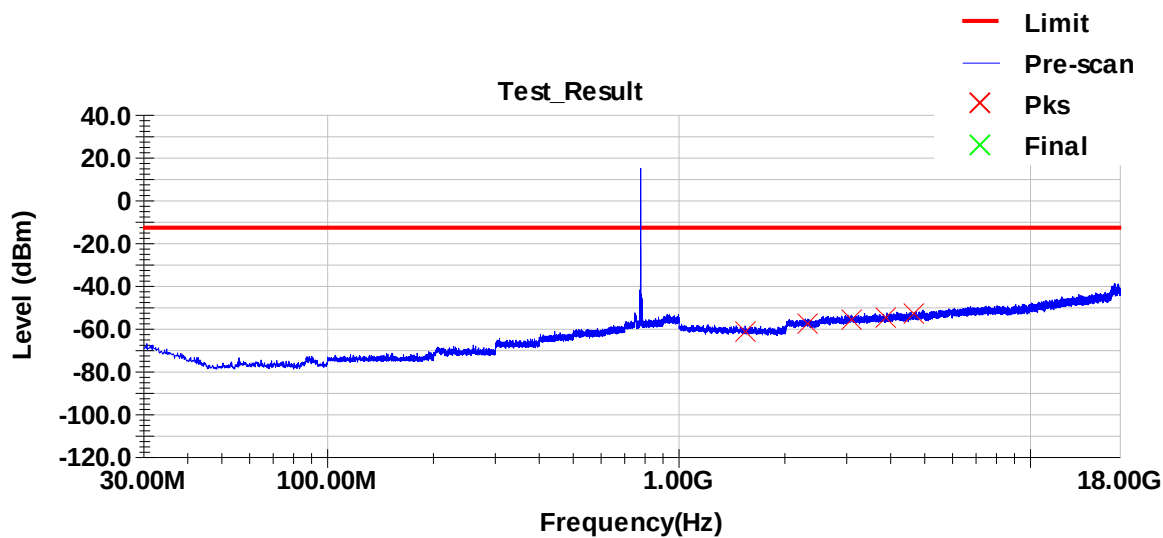
6 Appendix F: Radiated spurious emissions

Remark:

- The pre-tests cover all operation mode of EUT and the test reports show only the worst.
- If the margin is greater than 10dB, it is considered to meet the standard and no further test is conducted.
- The part of the graph that exceeds the limit is RF fundamental frequency and it should be excluded against the limits.

6.1 Test Result

The worst mode: LTE B13_LINK/ANT 13-BW10M-Mid-QPSK



Frequency(MHz)	Measure Level(dBuV)	Factor	EIRP_CF	EIRP Result(dBm)	Limit(dBm)	Margin(dB)	Pol
1564.000	48.95	31.93	-95.200	-61.78	-13.00	48.78	V
2346.000	48.67	33.02	-95.200	-57.55	-13.00	44.55	V
3128.000	47.98	-8.73	-95.200	-55.95	-13.00	42.95	V
3910.000	48.26	-7.67	-95.200	-54.62	-13.00	41.62	V
4692.000	48.42	-6.30	-95.200	-53.07	-13.00	40.07	V

7 Appendix G: Frequency Stability**7.1 Test Result**

Band	Channel bandwidth	Modulation	Channel	RB Configure	Voltage (Vdc)	Temperature (°C)	deviation (Hz)	deviation (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	NV	NT	-1.6	-0.002046	PASS
Band13	10MHz	QPSK	23230	50RB#0	LV	NT	-1.4	-0.001790	PASS
Band13	10MHz	QPSK	23230	50RB#0	HV	NT	2.3	0.002941	PASS

Band	Channel bandwidth	Modulation	Channel	RB Configure	Voltage (Vdc)	Temperature (°C)	deviation (Hz)	deviation (ppm)	Verdict
Band 13	10MHz	QPSK	23230	50RB#0	NV	-30	1.5	0.001918	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	-20	1.0	0.001279	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	-10	-0.3	-0.000384	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	0	0.6	0.000767	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	10	1.7	0.002174	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	20	0.1	0.000128	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	30	0.3	0.000384	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	40	0.3	0.000384	PASS
Band 13	10MHz	QPSK	23230	50RB#0	NV	50	-0.5	-0.000598	PASS

END