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Appendix B.8

LTE Band 13



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Effective (Isotropic) Radiated Power Output Data

Test Result

ANT41

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	ERP(dBm)	Limit(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	23.19	15.48	34.77	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.39	15.68	34.77	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.37	15.66	34.77	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.42	14.71	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#0	23.43	15.72	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#12	23.46	15.75	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#24	23.31	15.60	34.77	PASS
Band13	5MHz	QPSK	23230	25RB#0	22.40	14.69	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#0	23.37	15.66	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#12	23.38	15.67	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#24	23.43	15.72	34.77	PASS
Band13	5MHz	QPSK	23255	25RB#0	22.45	14.74	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#0	22.71	15.00	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#12	22.38	14.67	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#24	22.48	14.77	34.77	PASS
Band13	5MHz	16QAM	23205	25RB#0	21.46	13.75	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.59	14.88	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#12	23.10	15.39	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#24	22.70	14.99	34.77	PASS
Band13	5MHz	16QAM	23230	25RB#0	21.42	13.71	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#0	22.79	15.08	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#12	22.41	14.70	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#24	22.62	14.91	34.77	PASS
Band13	5MHz	16QAM	23255	25RB#0	21.38	13.67	34.77	PASS
Band13	5MHz	64QAM	23205	1RB#0	21.62	13.91	34.77	PASS
Band13	5MHz	64QAM	23205	1RB#12	21.54	13.83	34.77	PASS
Band13	5MHz	64QAM	23205	1RB#24	21.43	13.72	34.77	PASS



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Band13	5MHz	64QAM	23205	25RB#0	20.47	12.76	34.77	PASS
Band13	5MHz	64QAM	23230	1RB#0	21.61	13.90	34.77	PASS
Band13	5MHz	64QAM	23230	1RB#12	21.56	13.85	34.77	PASS
Band13	5MHz	64QAM	23230	1RB#24	21.51	13.80	34.77	PASS
Band13	5MHz	64QAM	23230	25RB#0	20.42	12.71	34.77	PASS
Band13	5MHz	64QAM	23255	1RB#0	21.58	13.87	34.77	PASS
Band13	5MHz	64QAM	23255	1RB#12	21.57	13.86	34.77	PASS
Band13	5MHz	64QAM	23255	1RB#24	21.47	13.76	34.77	PASS
Band13	5MHz	64QAM	23255	25RB#0	20.47	12.76	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#0	23.37	15.66	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#24	23.39	15.68	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#49	23.19	15.48	34.77	PASS
Band13	10MHz	QPSK	23230	50RB#0	22.44	14.73	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.79	15.08	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#24	22.83	15.12	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#49	22.89	15.18	34.77	PASS
Band13	10MHz	16QAM	23230	50RB#0	21.42	13.71	34.77	PASS
Band13	10MHz	64QAM	23230	1RB#0	21.71	14.00	34.77	PASS
Band13	10MHz	64QAM	23230	1RB#24	21.62	13.91	34.77	PASS
Band13	10MHz	64QAM	23230	1RB#49	21.48	13.77	34.77	PASS
Band13	10MHz	64QAM	23230	50RB#0	20.46	12.75	34.77	PASS



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Peak-to-Average Ratio(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	4.60	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.38	13	PASS
Band13	10MHz	64QAM	23230	50RB#0	6.16	13	PASS



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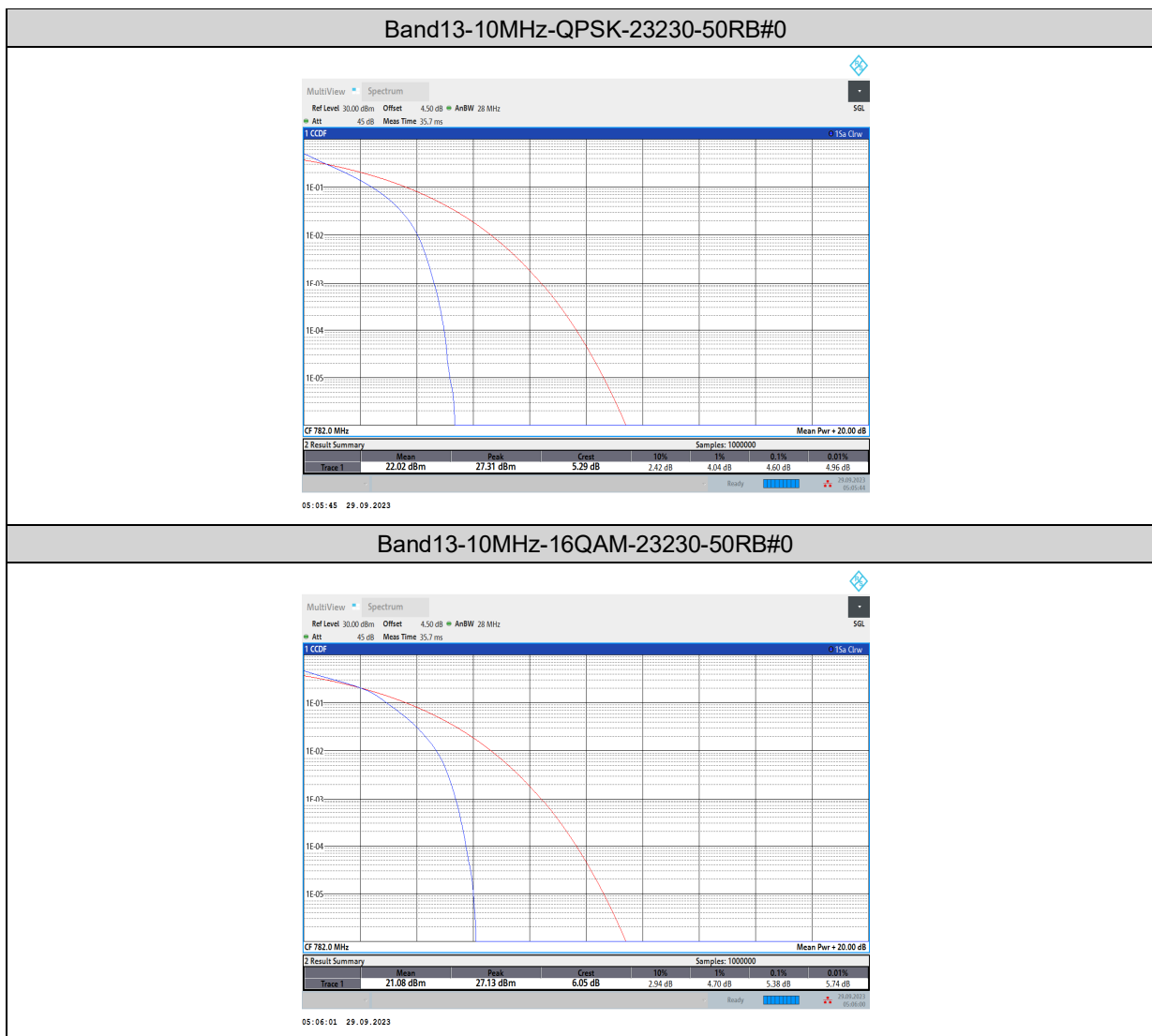
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Test Graphs



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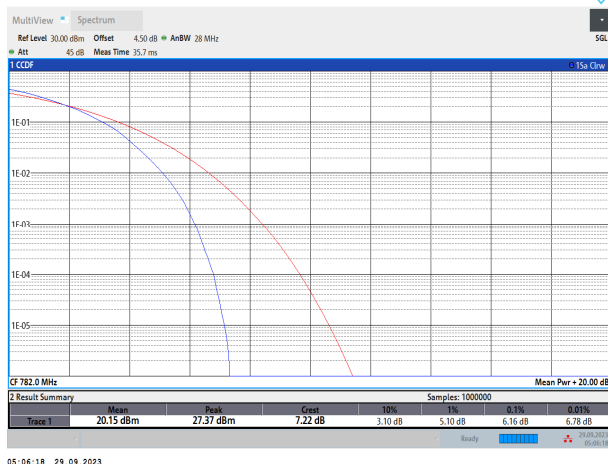
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Band13-10MHz-64QAM-23230-50RB#0



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26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23230	25RB#0	4.472	4.90	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.47	4.92	PASS
Band13	5MHz	64QAM	23230	25RB#0	4.483	4.90	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.94	9.68	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.921	9.68	PASS
Band13	10MHz	64QAM	23230	50RB#0	8.929	9.64	PASS



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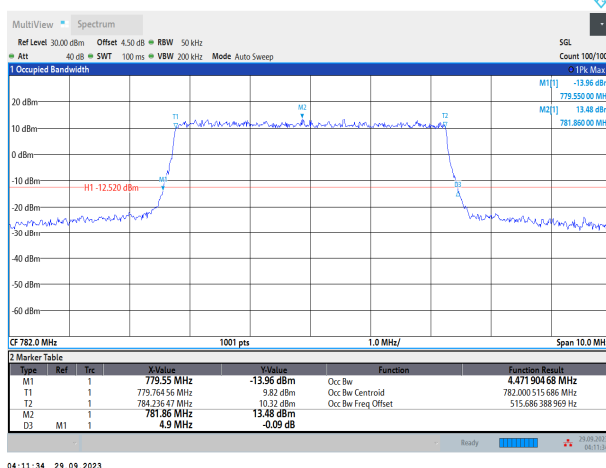
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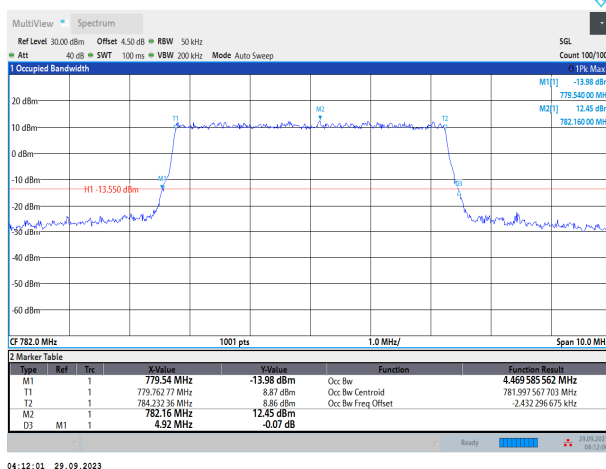
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Test Graphs

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



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

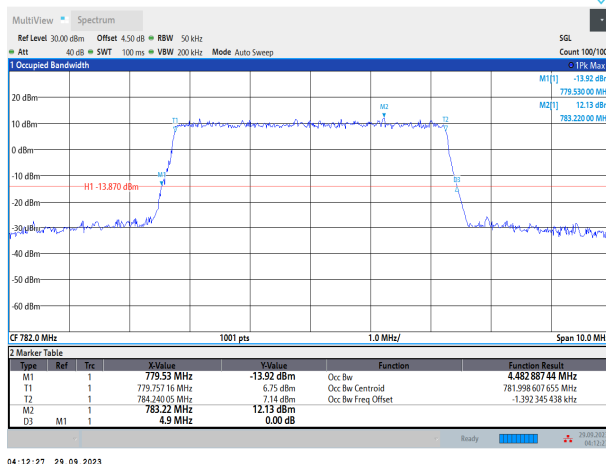


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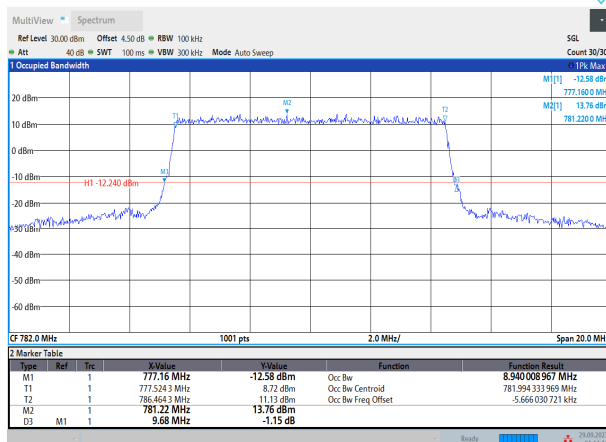
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Band13-10MHz-QPSK-23230-50RB#0



04:14:15 29.09.2023



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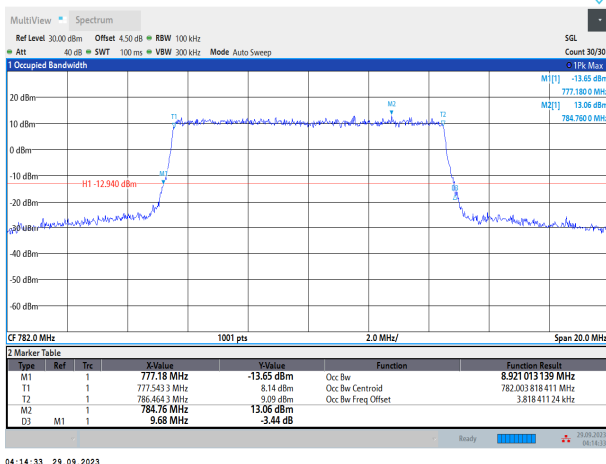
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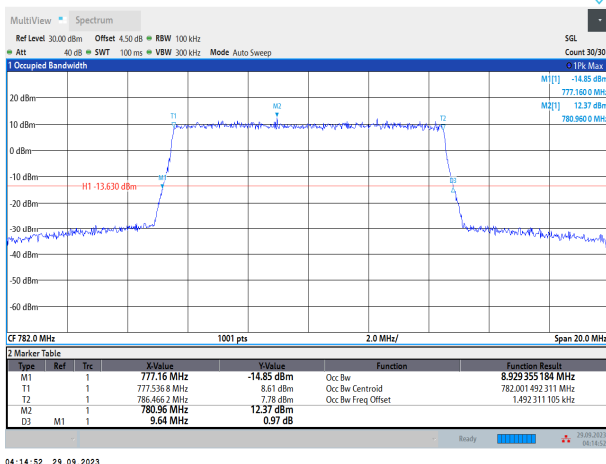
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Band13-10MHz-16QAM-23230-50RB#0



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



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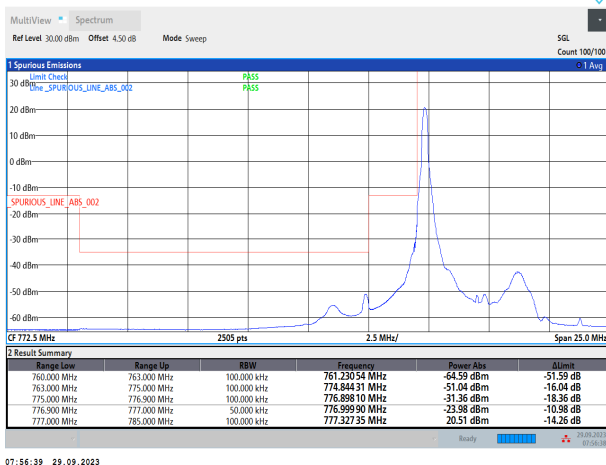
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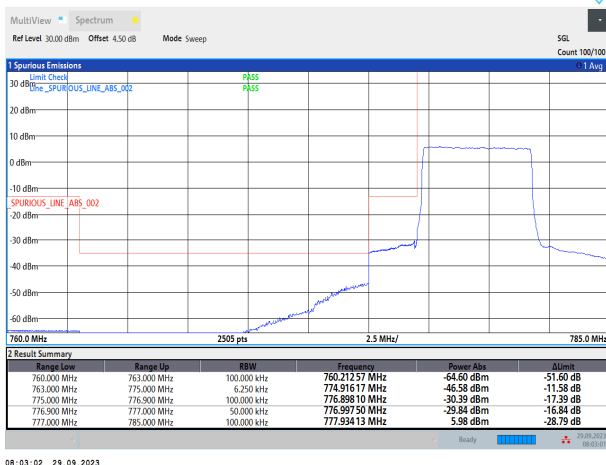
Band Edge

Test Graphs

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



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



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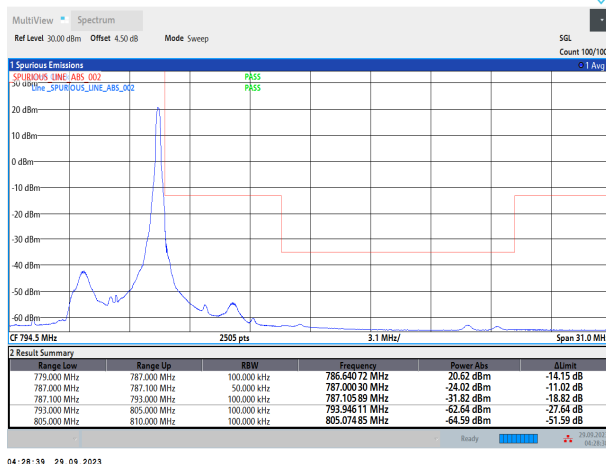
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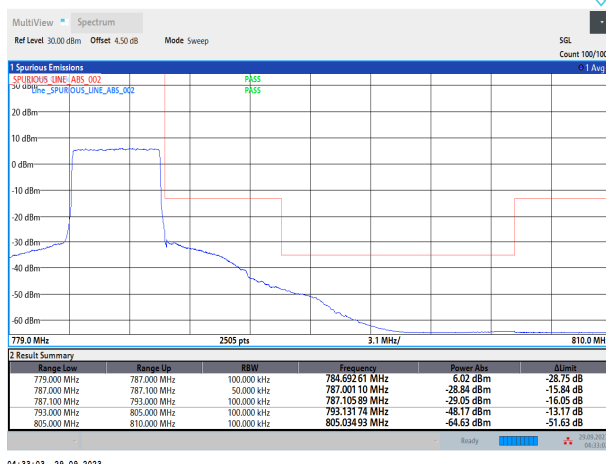
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Band13-5MHz-QPSK-23255-1RB#24



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



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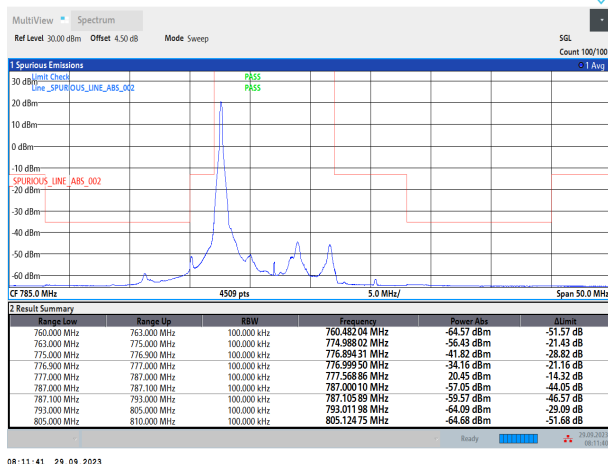
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Report No.: SEWM2309000347RG01

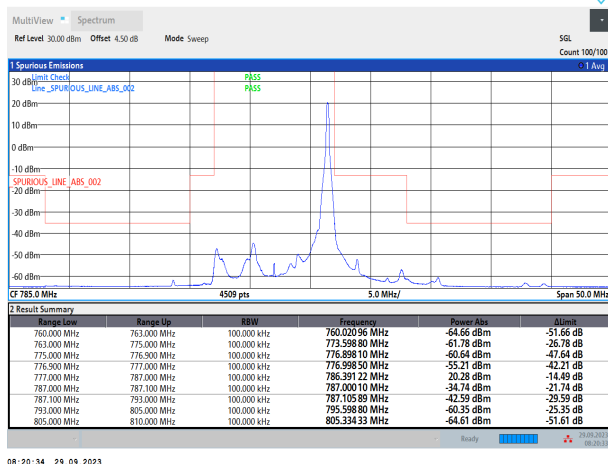
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Band13-10MHz-QPSK-23230-1RB#0



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



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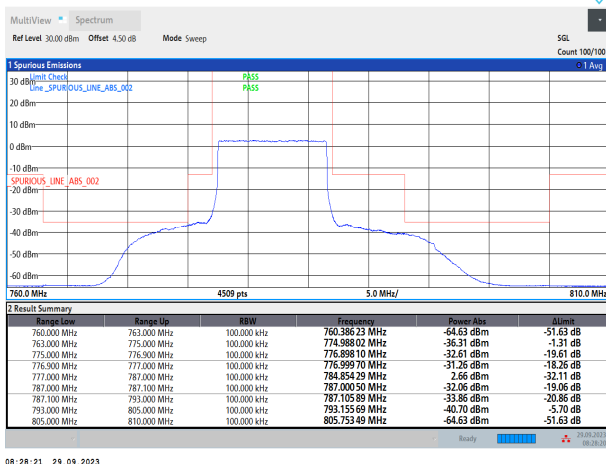
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Band13-10MHz-QPSK-23230-50RB#0



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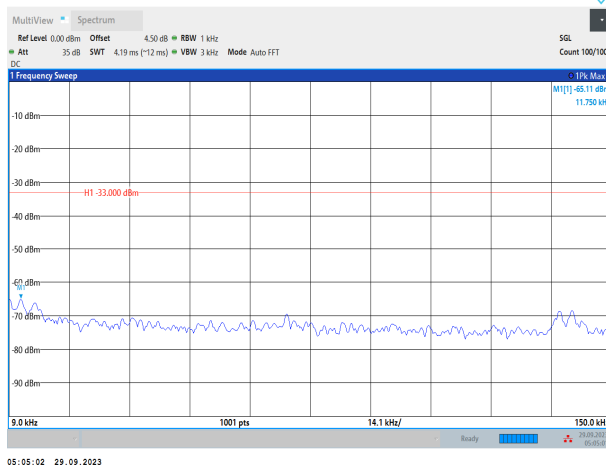
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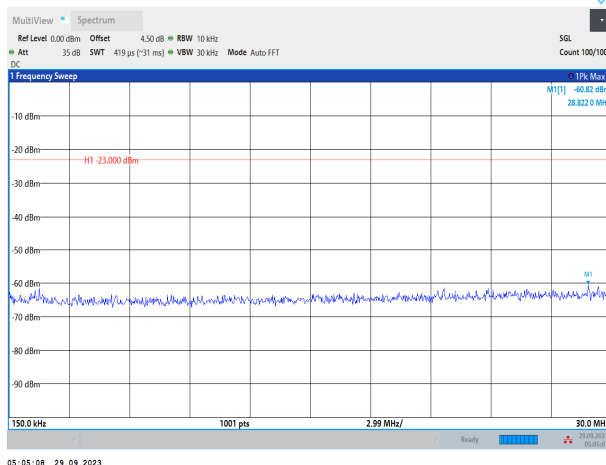
Conducted Spurious Emission

Test Graphs

Band13-10MHz-QPSK-23230-1RB#0-Range1:0.009~0.15MHz



Band13-10MHz-QPSK-23230-1RB#0-Range2:0.15~30MHz



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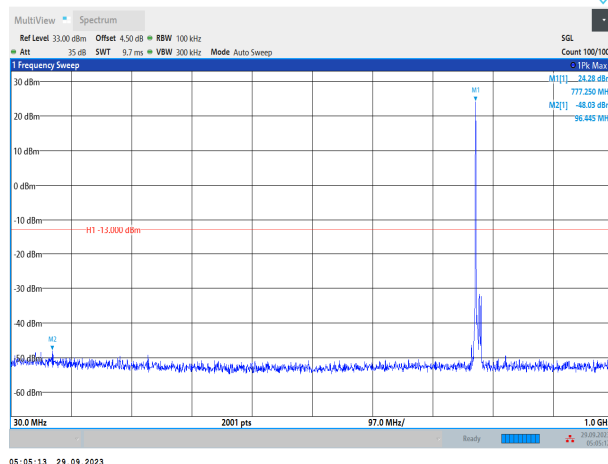
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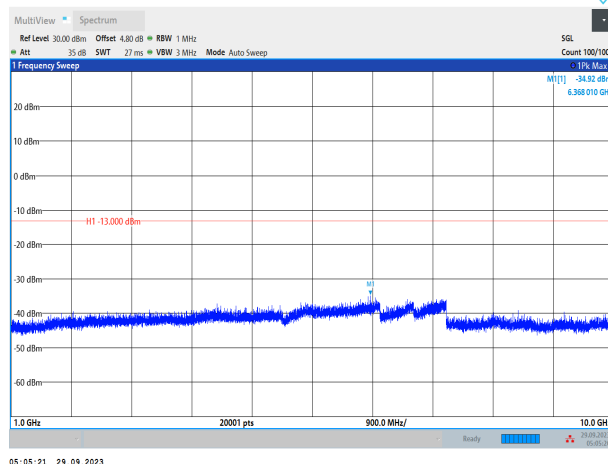
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Band13-10MHz-QPSK-23230-1RB#0-Range3:30~1000MHz



Band13-10MHz-QPSK-23230-1RB#0-Range4:1000~10000MHz



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Field Strength of Spurious Radiation

Test Band = LTE Band13_10M_ TM1

Test Channel = Mid

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1555.1800	42.17	-48.30	25.18	-76.21	-13.00	63.21	Horizontal
2	2332.7700	41.46	-47.48	26.83	-74.45	-13.00	61.45	Horizontal
3	3110.3600	41.10	-46.70	28.37	-72.49	-13.00	59.49	Horizontal
4	3887.9500	40.25	-46.22	28.99	-72.24	-13.00	59.24	Horizontal
5	4665.5400	39.88	-45.80	30.66	-70.51	-13.00	57.51	Horizontal
6	5443.1300	39.49	-45.04	32.46	-68.35	-13.00	55.35	Horizontal

Final Data List								
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1555.1800	43.17	-48.30	25.18	-75.21	-13.00	62.21	Vertical
2	2332.7700	42.95	-47.48	26.83	-72.96	-13.00	59.96	Vertical
3	3110.3600	42.32	-46.70	28.37	-71.27	-13.00	58.27	Vertical
4	3887.9500	40.68	-46.22	28.99	-71.81	-13.00	58.81	Vertical
5	4665.5400	40.66	-45.80	30.66	-69.73	-13.00	56.73	Vertical
6	5443.1300	40.13	-45.04	32.46	-67.71	-13.00	54.71	Vertical



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Test Band = LTE Band13_5M_TM1
Test Channel = Low
Final Data List

NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1554.6800	43.20	-48.30	25.18	-75.18	-13.00	62.18	Horizontal
2	2332.0200	42.61	-47.48	26.83	-73.30	-13.00	60.30	Horizontal
3	3109.3600	41.44	-46.71	28.37	-72.16	-13.00	59.16	Horizontal
4	3886.7000	40.55	-46.22	28.99	-71.94	-13.00	58.94	Horizontal
5	4664.0400	39.62	-45.80	30.66	-70.77	-13.00	57.77	Horizontal
6	5441.3800	40.42	-45.04	32.46	-67.42	-13.00	54.42	Horizontal

Final Data List

NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1554.6800	43.38	-48.30	25.18	-75.00	-13.00	62.00	Vertical
2	2332.0200	42.69	-47.48	26.83	-73.22	-13.00	60.22	Vertical
3	3109.3600	42.04	-46.71	28.37	-71.56	-13.00	58.56	Vertical
4	3886.7000	40.50	-46.22	28.99	-71.99	-13.00	58.99	Vertical
5	4664.0400	39.85	-45.80	30.66	-70.54	-13.00	57.54	Vertical
6	5441.3800	39.81	-45.04	32.46	-68.03	-13.00	55.03	Vertical



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Test Band = LTE Band13_5M_ TM1
Test Channel = Mid
Final Data List

NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1559.6800	42.97	-48.30	25.18	-75.41	-40.00	35.41	Horizontal
2	2339.5200	42.68	-47.48	26.85	-73.21	-13.00	60.21	Horizontal
3	3119.3600	41.80	-46.66	28.37	-71.75	-13.00	58.75	Horizontal
4	3899.2000	40.34	-46.23	29.00	-72.15	-13.00	59.15	Horizontal
5	4679.0400	40.30	-45.80	30.69	-70.06	-13.00	57.06	Horizontal
6	5458.8800	39.33	-45.07	32.50	-68.50	-13.00	55.50	Horizontal

Final Data List

NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1559.6800	44.04	-48.30	25.18	-74.34	-40.00	34.34	Vertical
2	2339.5200	43.04	-47.48	26.85	-72.85	-13.00	59.85	Vertical
3	3119.3600	41.80	-46.66	28.37	-71.75	-13.00	58.75	Vertical
4	3899.2000	41.15	-46.23	29.00	-71.34	-13.00	58.34	Vertical
5	4679.0400	39.35	-45.80	30.69	-71.01	-13.00	58.01	Vertical
6	5458.8800	40.02	-45.07	32.50	-67.81	-13.00	54.81	Vertical



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Test Band = LTE Band13_5M_ TM1
Test Channel = High
Final Data List

NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1564.6800	42.99	-48.29	25.18	-75.38	-40.00	35.38	Horizontal
2	2347.0200	42.32	-47.48	26.87	-73.54	-13.00	60.54	Horizontal
3	3129.3600	42.11	-46.61	28.38	-71.39	-13.00	58.39	Horizontal
4	3911.7000	40.75	-46.23	29.01	-71.72	-13.00	58.72	Horizontal
5	4694.0400	40.36	-45.80	30.73	-69.97	-13.00	56.97	Horizontal
6	5476.3800	39.04	-45.10	32.54	-68.78	-13.00	55.78	Horizontal

Final Data List

NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity
1	1564.6800	42.70	-48.29	25.18	-75.67	-40.00	35.67	Vertical
2	2347.0200	42.64	-47.48	26.87	-73.22	-13.00	60.22	Vertical
3	3129.3600	42.08	-46.61	28.38	-71.42	-13.00	58.42	Vertical
4	3911.7000	41.25	-46.23	29.01	-71.22	-13.00	58.22	Vertical
5	4694.0400	40.03	-45.80	30.73	-70.30	-13.00	57.30	Vertical
6	5476.3800	39.60	-45.10	32.54	-68.22	-13.00	55.22	Vertical

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & AMP. The basic equation with a sample calculation is as follows:

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Preamp (dB)

Level = Reading Level + AF + Factor -95.26

Margin = Limit – Level



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Frequency Stability

Test Result

Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	VL	NT	-0.80	-0.001023	PASS
Band13	10MHz	QPSK	23230	50RB#0	VN	NT	0.20	0.000256	PASS
Band13	10MHz	QPSK	23230	50RB#0	VH	NT	2.40	0.003069	PASS

Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	NV	-30	1.70	0.002174	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-20	0.50	0.000639	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-10	2.00	0.002558	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	0	2.00	0.002558	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	10	1.60	0.002046	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	20	1.50	0.001918	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	30	0.90	0.001151	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	40	2.20	0.002813	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	50	1.50	0.001918	PASS

---End of Attachment---



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