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Appendix B.8

LTE Band 13

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
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Effective (Isotropic) Radiated Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	ERP(dBm)	Limit(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	22.78	22.11	34.77	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.06	22.39	34.77	PASS
Band13	5MHz	QPSK	23205	1RB#24	22.78	22.11	34.77	PASS
Band13	5MHz	QPSK	23205	25RB#0	21.94	21.27	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#0	22.8	22.13	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#12	23.01	22.34	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#24	22.82	22.15	34.77	PASS
Band13	5MHz	QPSK	23230	25RB#0	21.83	21.16	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#0	22.83	22.16	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#12	23.15	22.48	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#24	22.88	22.21	34.77	PASS
Band13	5MHz	QPSK	23255	25RB#0	21.96	21.29	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#0	22.09	21.42	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#12	22.24	21.57	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#24	21.95	21.28	34.77	PASS
Band13	5MHz	16QAM	23205	25RB#0	20.97	20.3	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#0	21.99	21.32	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#12	22.27	21.6	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#24	22.09	21.42	34.77	PASS
Band13	5MHz	16QAM	23230	25RB#0	20.86	20.19	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#0	22.04	21.37	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#12	22.38	21.71	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#24	22.16	21.49	34.77	PASS
Band13	5MHz	16QAM	23255	25RB#0	20.98	20.31	34.77	PASS
Band13	5MHz	64QAM	23205	1RB#0	20.99	20.32	34.77	PASS
Band13	5MHz	64QAM	23205	1RB#12	21.21	20.54	34.77	PASS



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Band13	5MHz	64QAM	23205	1RB#24	20.85	20.18	34.77	PASS
Band13	5MHz	64QAM	23205	25RB#0	19.97	19.3	34.77	PASS
Band13	5MHz	64QAM	23230	1RB#0	20.95	20.28	34.77	PASS
Band13	5MHz	64QAM	23230	1RB#12	21.21	20.54	34.77	PASS
Band13	5MHz	64QAM	23230	1RB#24	21	20.33	34.77	PASS
Band13	5MHz	64QAM	23230	25RB#0	19.89	19.22	34.77	PASS
Band13	5MHz	64QAM	23255	1RB#0	21.01	20.34	34.77	PASS
Band13	5MHz	64QAM	23255	1RB#12	21.39	20.72	34.77	PASS
Band13	5MHz	64QAM	23255	1RB#24	21.04	20.37	34.77	PASS
Band13	5MHz	64QAM	23255	25RB#0	20.01	19.34	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#0	22.88	22.21	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#24	23.03	22.36	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#49	22.91	22.24	34.77	PASS
Band13	10MHz	QPSK	23230	50RB#0	21.81	21.14	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.12	21.45	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#24	22.21	21.54	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#49	22.18	21.51	34.77	PASS
Band13	10MHz	16QAM	23230	50RB#0	20.82	20.15	34.77	PASS
Band13	10MHz	64QAM	23230	1RB#0	21.12	20.45	34.77	PASS
Band13	10MHz	64QAM	23230	1RB#24	21.17	20.5	34.77	PASS
Band13	10MHz	64QAM	23230	1RB#49	21.08	20.41	34.77	PASS
Band13	10MHz	64QAM	23230	50RB#0	19.84	19.17	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	5.06	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.74	13	PASS
Band13	10MHz	64QAM	23230	50RB#0	6.06	13	PASS



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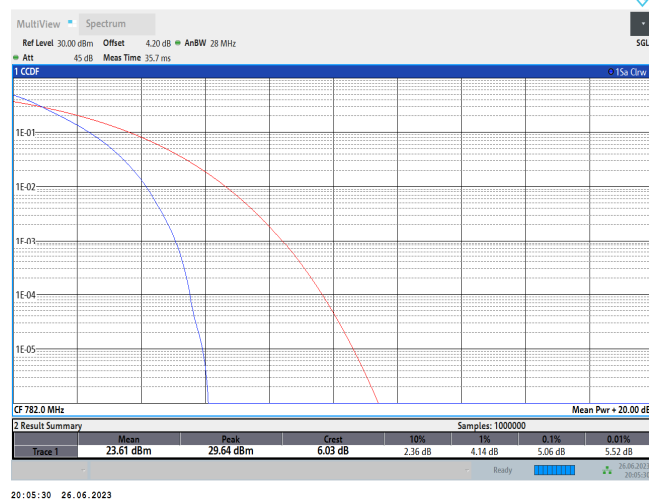
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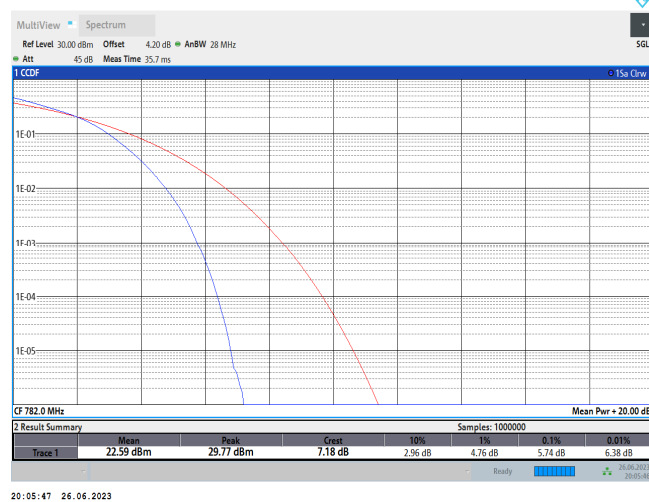
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Test Graphs

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



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



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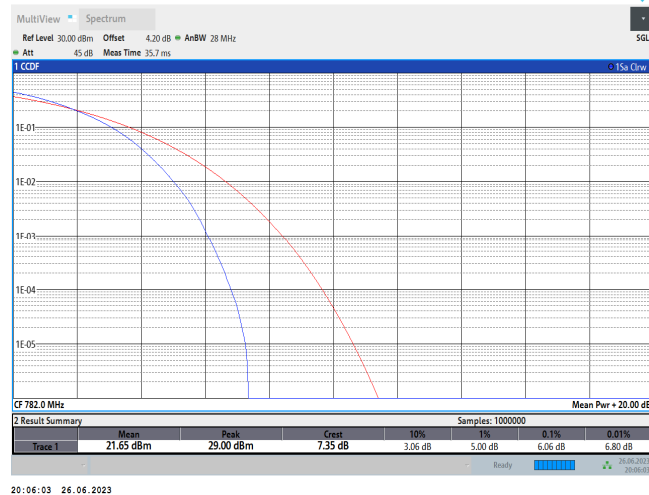
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Modulation Characteristics

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result	Verdict
Band13	10MHz	QPSK	23230	50RB#0	PASS	PASS
Band13	10MHz	16QAM	23230	50RB#0	PASS	PASS
Band13	10MHz	64QAM	23230	50RB#0	PASS	PASS

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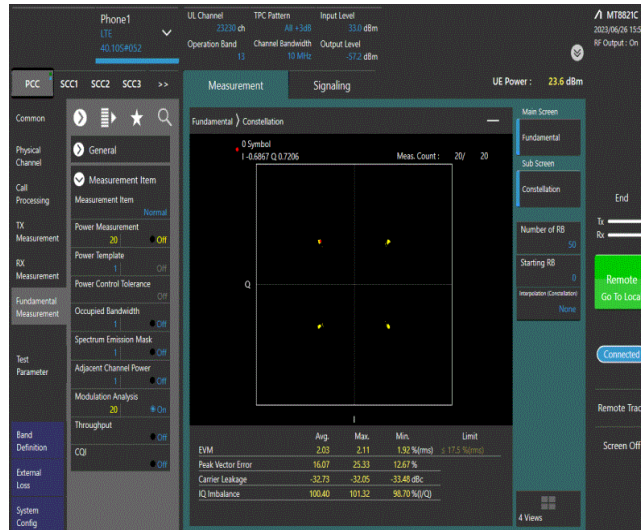
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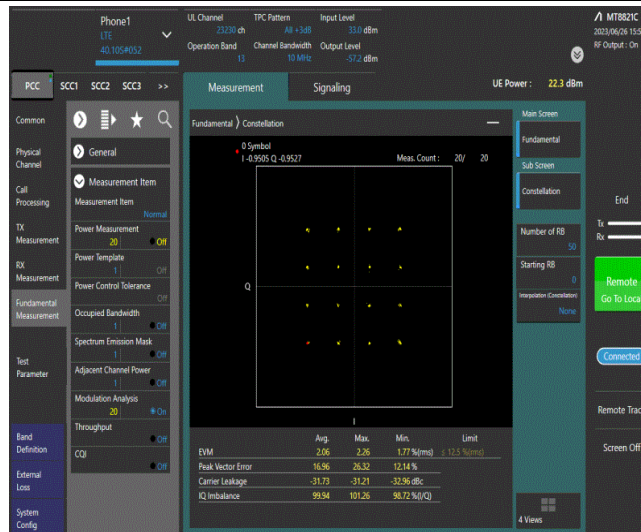
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Test Graphs

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



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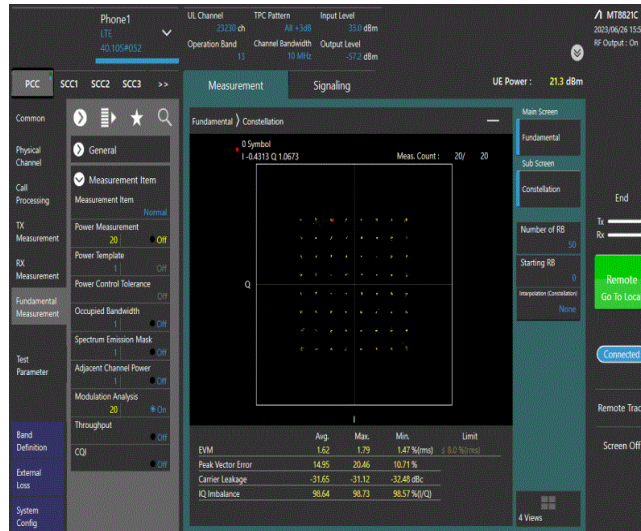
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26dB Bandwidth and Occupied Bandwidth

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.489	5.27	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.481	4.95	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.462	4.96	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.474	4.88	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.484	4.95	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.459	4.93	PASS
Band13	5MHz	64QAM	23205	25RB#0	4.487	4.96	PASS
Band13	5MHz	64QAM	23230	25RB#0	4.468	4.87	PASS
Band13	5MHz	64QAM	23255	25RB#0	4.509	4.92	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.948	9.60	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.914	9.70	PASS
Band13	10MHz	64QAM	23230	50RB#0	8.879	9.44	PASS



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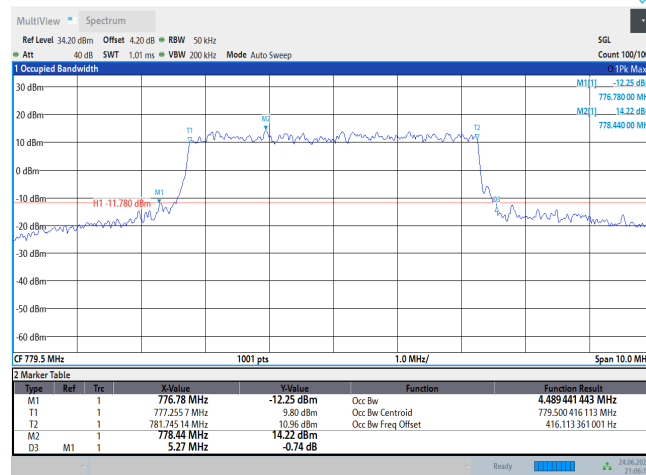
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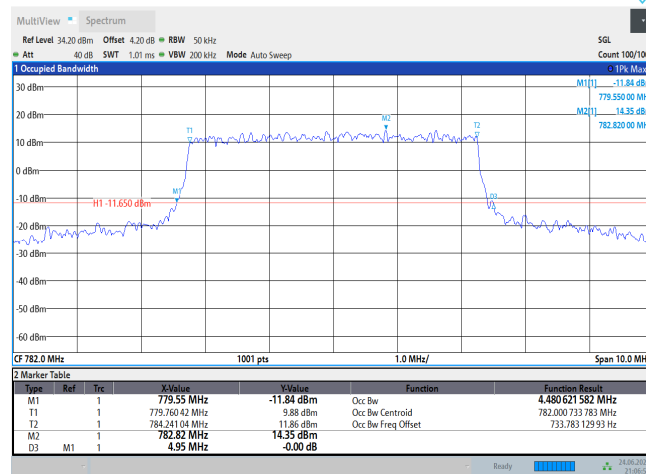
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Test Graphs

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



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



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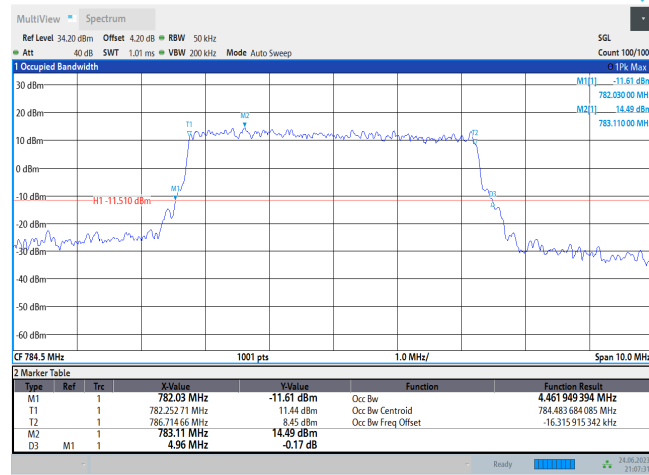
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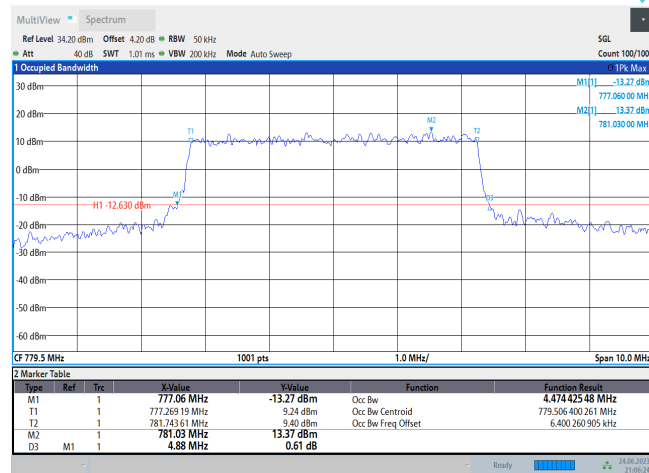
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Band13-5MHz-QPSK-23255-25RB#0



21:07:31 24.06.2023

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



21:06:25 24.06.2023



SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Wireless Laboratory

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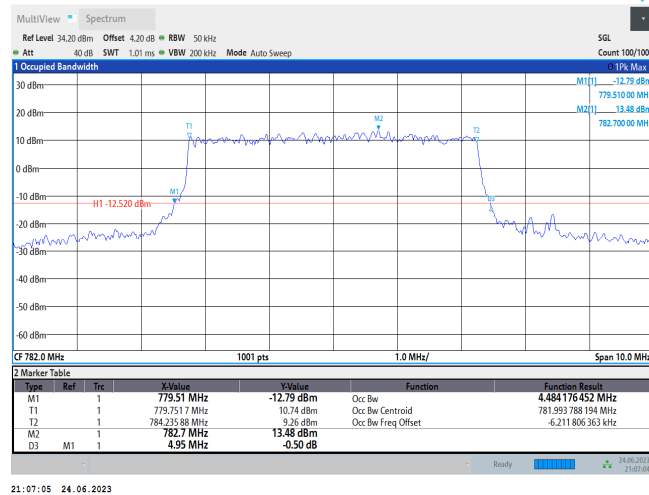
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Report No.: SEWM2305000178RG01

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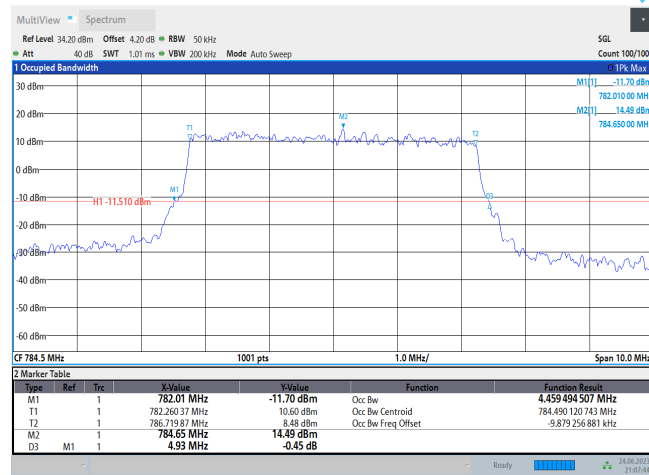
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Band13-5MHz-16QAM-23230-25RB#0



21:07:05 24.06.2023

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



21:07:45 24.06.2023



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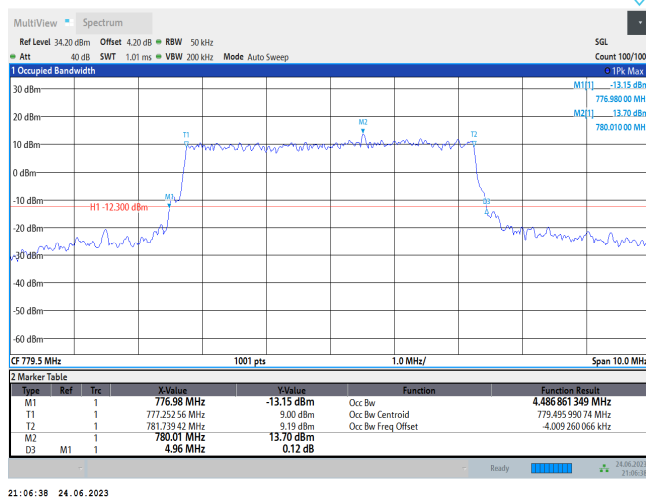
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Band13-5MHz-64QAM-23205-25RB#0



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



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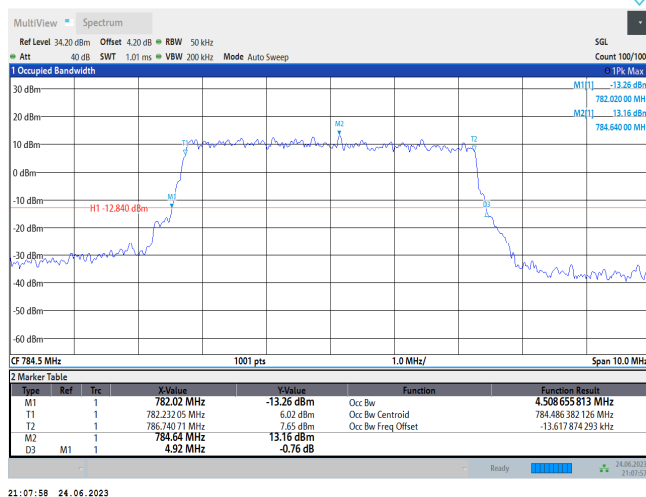
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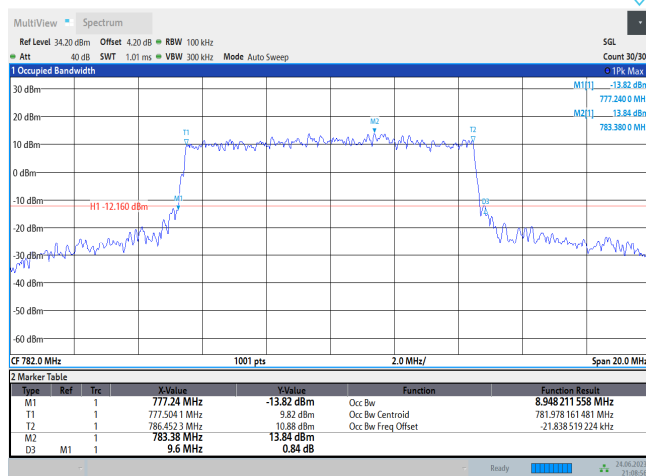
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Band13-5MHz-64QAM-23255-25RB#0



21:07:58 24.06.2023

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



21:08:57 24.06.2023



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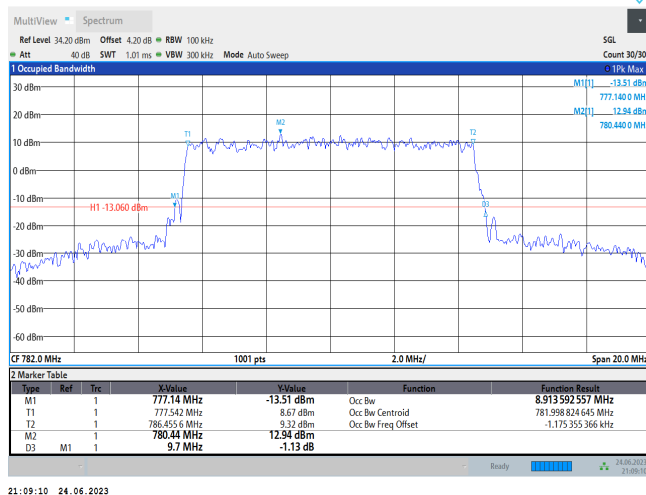
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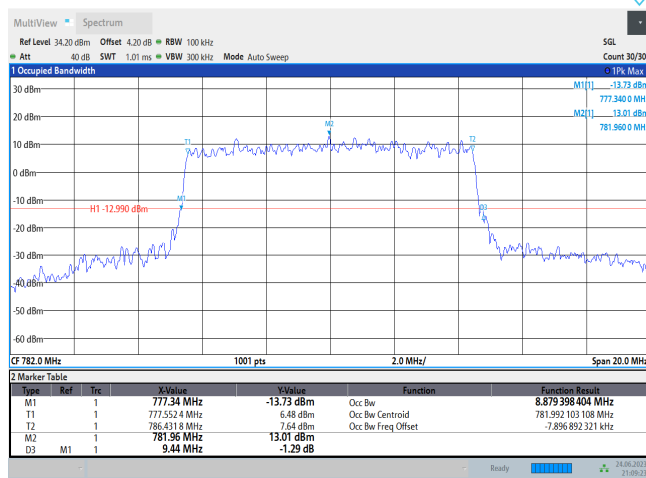
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Band13-10MHz-16QAM-23230-50RB#0



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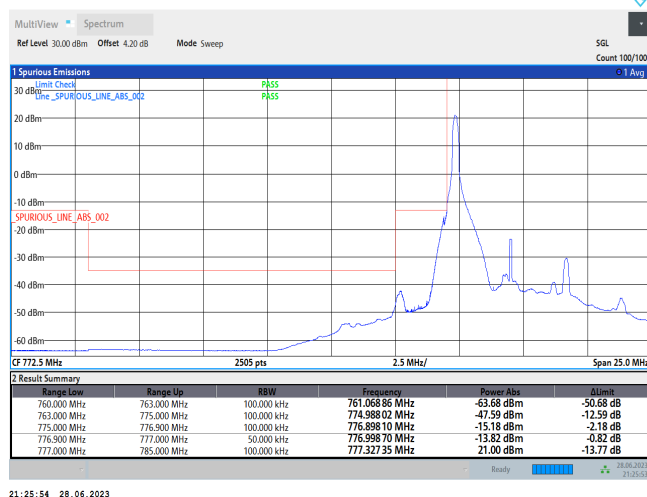


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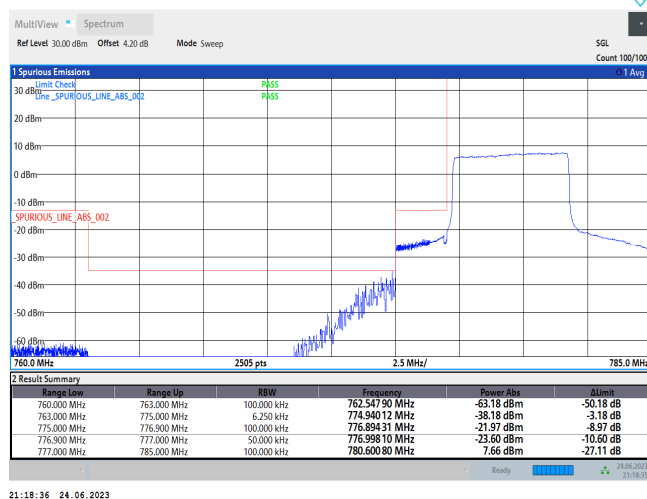
Band Edge

Test Graphs

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



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

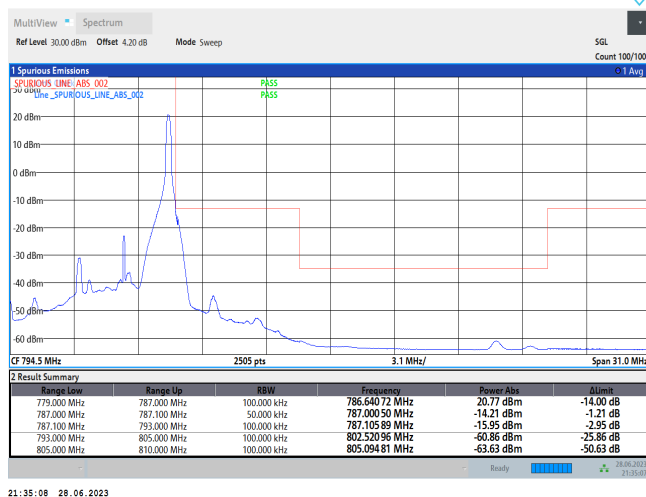


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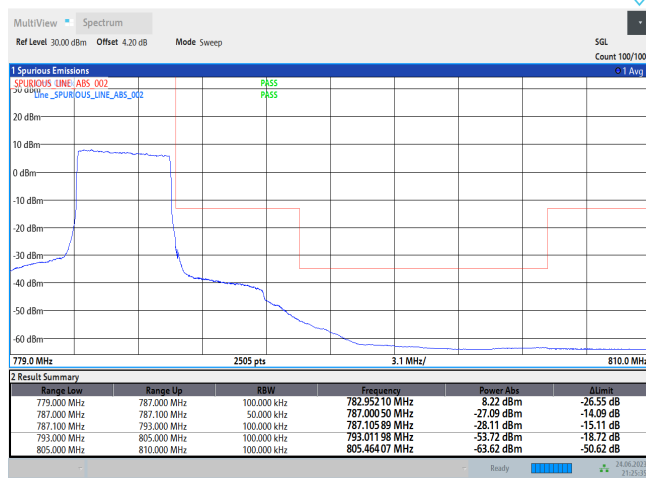
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Band13-5MHz-QPSK-23255-1RB#24



21:35:08 28.06.2023

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



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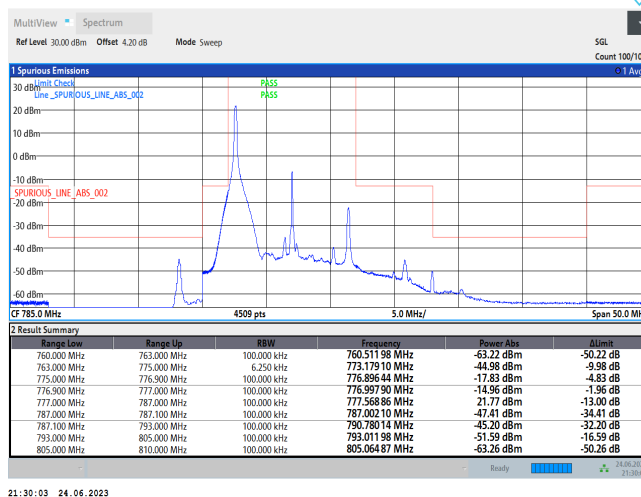
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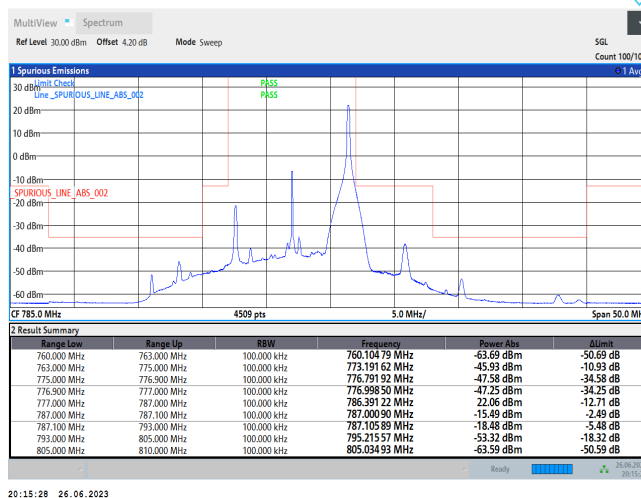
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Band13-10MHz-QPSK-23230-1RB#0



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



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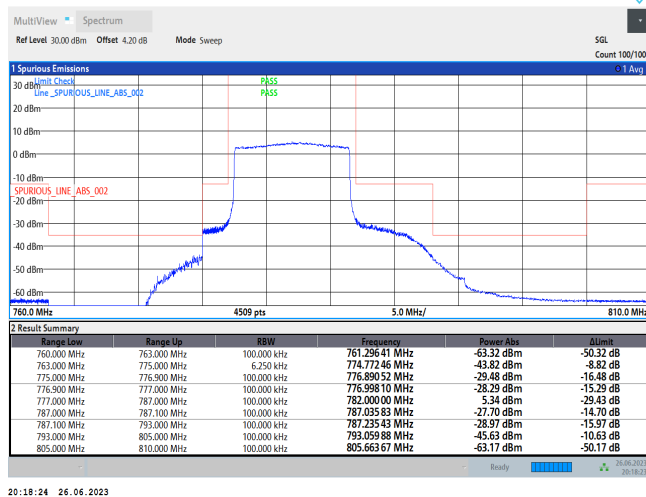
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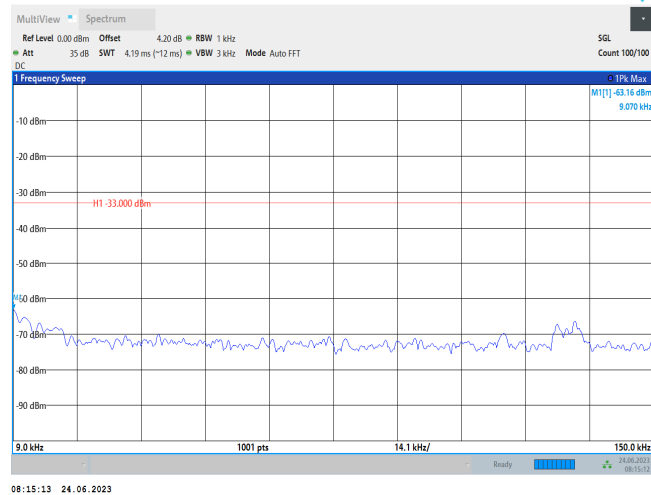
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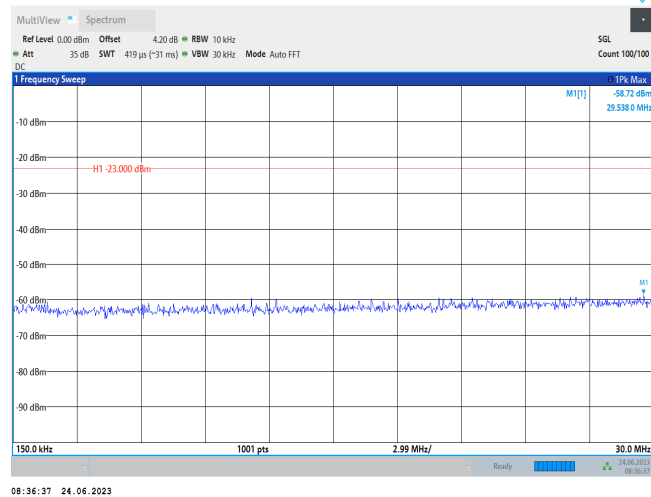
Conducted Spurious Emission

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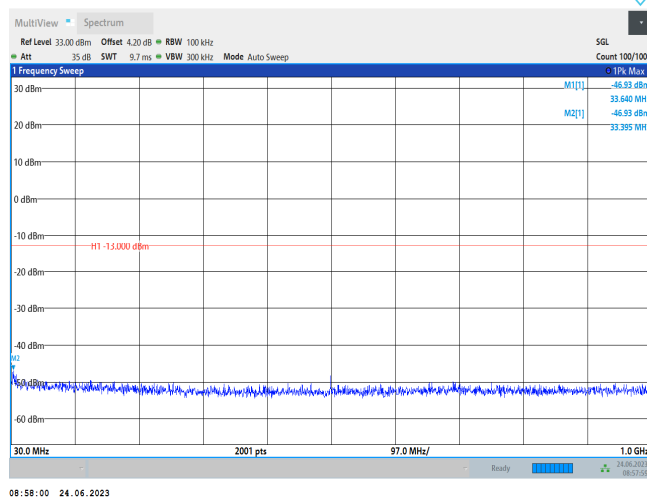
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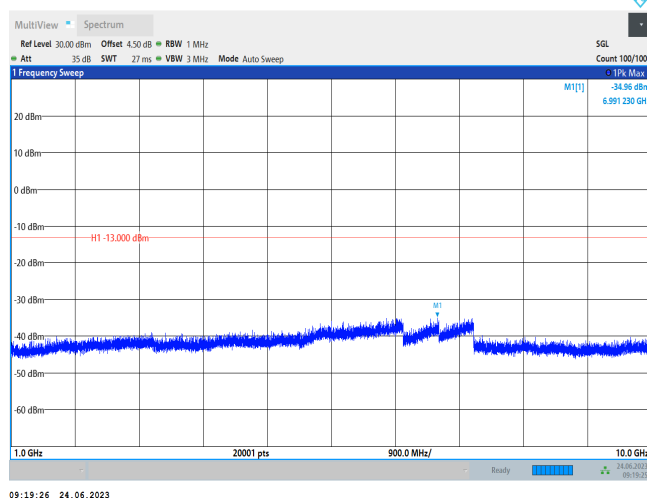
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Band13-10MHz-QPSK-23230-1RB#0-Range3:30~1000MHz



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



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Field Strength of Spurious Radiation

Test Band = LTE band 13_ TM1_10MHz

Test Channel = Mid

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1554.8571	72.24	-48.30	25.18	-46.14	-13.00	33.14	145	118	Horizontal
2	2332.5714	59.64	-47.48	26.83	-56.27	-13.00	43.27	155	90	Horizontal
3	3110.2857	50.61	-46.70	28.37	-62.99	-13.00	49.99	255	118	Horizontal
4	3888	48.03	-46.22	28.99	-64.46	-13.00	51.46	148	202	Horizontal
5	4887.4286	42.59	-45.59	31.15	-67.11	-13.00	54.11	172	228	Horizontal
6	6065.7143	41.16	-44.60	32.91	-65.79	-13.00	52.79	136	56	Horizontal

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1555.4286	58.90	-48.30	25.18	-59.48	-13.00	46.48	244	175	Vertical
2	2332.5714	55.95	-47.48	26.83	-59.96	-13.00	46.96	156	19	Vertical
3	3110.2857	53.37	-46.70	28.37	-60.23	-13.00	47.23	136	80	Vertical
4	3888	45.06	-46.22	28.99	-67.43	-13.00	54.43	259	84	Vertical
5	4915.4286	42.59	-45.62	31.21	-67.07	-13.00	54.07	188	254	Vertical
6	6020.5714	41.26	-44.48	32.77	-65.72	-13.00	52.72	172	347	Vertical



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中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南面 邮编: 215000

t (86-512) 62992980 www.sgs.com.cn
t (86-512) 62992980 sgs.china@sgs.com

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Test Band = LTE band 13_ TM1_10MHz
Test Channel = Mid

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1344	52.75	-48.07	25.13	-65.45	-13.00	52.45	248	210	Horizontal
2	1560	71.36	-48.30	25.18	-47.02	-40.00	7.02	178	100	Horizontal
3	2339.4286	62.28	-47.48	26.85	-53.61	-13.00	40.61	189	269	Horizontal
4	3119.4286	52.78	-46.66	28.37	-60.77	-13.00	47.77	156	360	Horizontal
5	3899.4286	48.38	-46.23	29.00	-64.11	-13.00	51.11	133	210	Horizontal
6	4910.2857	42.67	-45.60	31.20	-66.99	-13.00	53.99	256	250	Horizontal

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1344	49.10	-48.07	25.13	-69.10	-13.00	56.10	278	130	Vertical
2	1560	62.58	-48.30	25.18	-55.80	-40.00	15.80	186	52	Vertical
3	2339.4286	61.80	-47.48	26.85	-54.09	-13.00	41.09	156	151	Vertical
4	3119.4286	51.76	-46.66	28.37	-61.79	-13.00	48.79	266	119	Vertical
5	3899.4286	45.37	-46.23	29.00	-67.12	-13.00	54.12	239	160	Vertical
6	5446.8571	41.70	-45.05	32.47	-66.14	-13.00	53.14	175	131	Vertical



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中国·苏州·中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

t (86-512) 62992980 www.sgs.com
t (86-512) 62992980 sgs.china@sgs.com

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Test Band = LTE band 13_ TM1_10MHz
Test Channel = Low

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1554.8571	67.60	-48.30	25.18	-50.78	-13.00	37.78	241	153	Horizontal
2	2332	60.11	-47.48	26.83	-55.80	-13.00	42.80	265	190	Horizontal
3	3109.1429	53.34	-46.71	28.37	-60.26	-13.00	47.26	196	132	Horizontal
4	3886.8571	47.99	-46.22	28.99	-64.50	-13.00	51.50	158	212	Horizontal
5	4880.5714	42.64	-45.59	31.14	-67.07	-13.00	54.07	172	80	Horizontal
6	6681.1429	40.60	-44.14	34.63	-64.18	-13.00	51.18	133	212	Horizontal

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1554.8571	61.03	-48.30	25.18	-57.35	-13.00	44.35	175	181	Vertical
2	2332	56.97	-47.48	26.83	-58.94	-13.00	45.94	146	14	Vertical
3	3109.1429	48.81	-46.71	28.37	-64.79	-13.00	51.79	196	83	Vertical
4	3886.8571	45.34	-46.22	28.99	-67.15	-13.00	54.15	258	140	Vertical
5	4664	42.89	-45.80	30.66	-67.51	-13.00	54.51	183	181	Vertical
6	5441.7143	41.67	-45.04	32.46	-66.17	-13.00	53.17	261	70	Vertical



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t (86-512) 62992980 www.sgs.com
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Test Band = LTE band 13_ TM1_10MHz
Test Channel = High

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1564.5714	71.51	-48.29	25.18	-46.86	-40.00	6.86	245	102	Horizontal
2	2346.8571	63.06	-47.48	26.87	-52.81	-13.00	39.81	188	263	Horizontal
3	3129.7143	56.80	-46.61	28.38	-56.70	-13.00	43.70	186	72	Horizontal
4	3911.4286	48.45	-46.23	29.01	-64.03	-13.00	51.03	236	204	Horizontal
5	4962.2857	42.62	-45.72	31.32	-67.05	-13.00	54.05	256	4	Horizontal
6	5853.1429	41.58	-44.82	32.67	-65.83	-13.00	52.83	192	244	Horizontal

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1564.5714	65.11	-48.29	25.18	-53.26	-40.00	13.26	254	130	Vertical
2	2346.8571	56.40	-47.48	26.87	-59.47	-13.00	46.47	199	318	Vertical
3	3129.1429	54.91	-46.62	28.38	-58.59	-13.00	45.59	186	110	Vertical
4	3911.4286	45.79	-46.23	29.01	-66.69	-13.00	53.69	254	90	Vertical
5	4894.2857	42.91	-45.58	31.17	-66.77	-13.00	53.77	147	7	Vertical
6	6465.1429	40.87	-44.68	34.19	-64.88	-13.00	51.88	172	12	Vertical



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t (86-512) 62992980 sgs.china@sgs.com

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Test Band = LTE band 13_ TM1_10MHz
Test Channel = Low

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1409.1429	63.13	-48.03	25.10	-55.05	-13.00	42.05	152	360	Horizontal
2	2113.7143	49.42	-47.71	26.22	-67.33	-13.00	54.33	169	100	Horizontal
3	2818.3600	43.23	-46.85	27.94	-70.95	-13.00	57.95	258	250	Horizontal
4	3522.9500	42.52	-46.49	28.62	-70.61	-13.00	57.61	154	354	Horizontal
5	4227.5400	40.80	-45.91	29.65	-70.72	-13.00	57.72	236	52	Horizontal
6	4932.1300	41.89	-45.65	31.25	-67.77	-13.00	54.77	111	360	Horizontal

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1409.1429	57.05	-48.03	25.10	-61.13	-13.00	48.13	127	217	Vertical
2	2113.7700	43.17	-47.71	26.22	-73.58	-13.00	60.58	169	287	Vertical
3	2818.3600	42.97	-46.85	27.94	-71.21	-13.00	58.21	258	159	Vertical
4	3522.9500	42.28	-46.49	28.62	-70.85	-13.00	57.85	147	228	Vertical
5	4227.5400	41.03	-45.91	29.65	-70.49	-13.00	57.49	232	109	Vertical
6	4932.1300	42.53	-45.65	31.25	-67.13	-13.00	54.13	154	50	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) - Preamplifier (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	-5.30	-0.006777	PASS
Band13	10MHz	QPSK	23230	50RB#0	VN	NT	-9.50	-0.012148	PASS
Band13	10MHz	QPSK	23230	50RB#0	VH	NT	-10.40	-0.013299	PASS

Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	NV	-30	-7.60	-0.009719	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-20	-4.20	-0.005371	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-10	-11.50	-0.014706	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	0	-2.60	-0.003325	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	10	-3.40	-0.004348	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	20	-10.30	-0.013171	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	30	-11.60	-0.014834	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	40	-5.90	-0.007545	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	50	-13.90	-0.017775	PASS

---End of Attachment---



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