

Report No.: SEWM2307000288RG01

Rev.: 01

Page: 1 of 6

Appendix B.3

LTE-NB1 Band 5



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Effective (Isotropic) Radiated Power Output Data

Test Result

Test Band	Test Mode	Sub-carrier Spacing (kHz)	Test channel	Number of T	Conducted Power (dBm)	ERP (dBm)	limit (dBm)	Verdict
NB1 Band 5	BPSK	3.75	20401	1T0	23.41	23.76	38.45	PASS
NB1 Band 5	BPSK	3.75	20401	1T47	23.53	23.88	38.45	PASS
NB1 Band 5	BPSK	3.75	20525	1T0	23.43	23.78	38.45	PASS
NB1 Band 5	BPSK	3.75	20525	1T47	23.33	23.68	38.45	PASS
NB1 Band 5	BPSK	3.75	20649	1T0	23.46	23.81	38.45	PASS
NB1 Band 5	BPSK	3.75	20649	1T47	23.51	23.86	38.45	PASS
NB1 Band 5	QPSK	3.75	20401	1T0	23.35	23.7	38.45	PASS
NB1 Band 5	QPSK	3.75	20401	1T47	23.37	23.72	38.45	PASS
NB1 Band 5	QPSK	3.75	20525	1T0	23.27	23.62	38.45	PASS
NB1 Band 5	QPSK	3.75	20525	1T47	23.59	23.94	38.45	PASS
NB1 Band 5	QPSK	3.75	20649	1T0	23.42	23.77	38.45	PASS
NB1 Band 5	QPSK	3.75	20649	1T47	23.41	23.76	38.45	PASS



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Test Band	Test Mode	Sub-carrier Spacing (kHz)	Test channel	Number of T	Conducted Power (dBm)	ERP (dBm)	limit (dBm)	Verdict
NB1 Band 5	BPSK	15	20401	1T0	23.45	23.8	38.45	PASS
NB1 Band 5	BPSK	15	20401	1T11	23.34	23.69	38.45	PASS
NB1 Band 5	BPSK	15	20525	1T0	23.51	23.86	38.45	PASS
NB1 Band 5	BPSK	15	20525	1T11	23.38	23.73	38.45	PASS
NB1 Band 5	BPSK	15	20649	1T0	23.47	23.82	38.45	PASS
NB1 Band 5	BPSK	15	20649	1T11	23.42	23.77	38.45	PASS
NB1 Band 5	QPSK	15	20401	1T0	23.33	23.68	38.45	PASS
NB1 Band 5	QPSK	15	20401	1T11	23.38	23.73	38.45	PASS
NB1 Band 5	QPSK	15	20401	12T0	21.68	22.03	38.45	PASS
NB1 Band 5	QPSK	15	20525	1T0	23.42	23.77	38.45	PASS
NB1 Band 5	QPSK	15	20525	1T11	23.39	23.74	38.45	PASS
NB1 Band 5	QPSK	15	20525	12T0	21.77	22.12	38.45	PASS
NB1 Band 5	QPSK	15	20649	1T0	23.33	23.68	38.45	PASS
NB1 Band 5	QPSK	15	20649	1T11	23.38	23.73	38.45	PASS
NB1 Band 5	QPSK	15	20649	12T0	21.69	22.04	38.45	PASS



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Field Strength of Spurious Radiation

Test Band = NB-IOT Band 5_ TM1

Test Channel = Low Channel

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1653	72.29	-48.37	24.60	-46.74	-13.00	33.74	265	186	Horizontal
2	2479	56.87	-46.92	27.35	-57.95	-13.00	44.95	284	243	Horizontal
3	3298.36	43.01	-46.11	29.56	-68.80	-13.00	55.80	142	301	Horizontal
4	4122.95	41.73	-45.34	31.50	-67.37	-13.00	54.37	263	215	Horizontal
5	4947.54	42.28	-45.08	33.09	-64.98	-13.00	51.98	228	14	Horizontal
6	5772.13	40.19	-43.52	34.03	-64.57	-13.00	51.57	225	301	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	1653	62.59	-48.37	24.60	-56.44	-13.00	43.44	142	75	Vertical
2	2479	54.55	-46.92	27.35	-60.27	-13.00	47.27	265	175	Vertical
3	3298.36	42.57	-46.11	29.56	-69.24	-13.00	56.24	221	0	Vertical
4	4122.95	42.19	-45.34	31.50	-66.91	-13.00	53.91	222	357	Vertical
5	4947.54	41.68	-45.08	33.09	-65.58	-13.00	52.58	263	0	Vertical
6	5772.13	40.66	-43.52	34.03	-64.10	-13.00	51.10	228	190	Vertical



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000
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号厂房南面 邮编: 215000

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

Test Band = NB-IOT Band 5_ TM1

Test Channel = Mid Channel

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1673	73.35	-48.32	24.60	-45.63	-13.00	32.63	263	186	Horizontal
2	2509.5	58.95	-46.79	27.44	-55.66	-13.00	42.66	254	213	Horizontal
3	3328.36	42.55	-46.16	29.57	-69.30	-13.00	56.30	185	213	Horizontal
4	4160.45	41.24	-45.23	31.56	-67.69	-13.00	54.69	263	28	Horizontal
5	4992.54	41.47	-45.02	33.18	-65.63	-13.00	52.63	224	100	Horizontal
6	5824.63	40.25	-43.43	34.21	-64.24	-13.00	51.24	118	359	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	1673	65.89	-48.32	24.60	-53.09	-13.00	40.09	241	261	Vertical
2	2509.5	54.55	-46.79	27.44	-60.06	-13.00	47.06	142	191	Vertical
3	3328.36	42.46	-46.16	29.57	-69.39	-13.00	56.39	263	1	Vertical
4	4160.45	42.52	-45.23	31.56	-66.41	-13.00	53.41	228	290	Vertical
5	4992.54	41.29	-45.02	33.18	-65.81	-13.00	52.81	226	234	Vertical
6	5824.63	41.05	-43.43	34.21	-63.44	-13.00	50.44	229	347	Vertical



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000
 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号厂房南楼 邮编: 215000

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

Test Band = NB-IOT Band 5_ TM1

Test Channel = High Channel

Final Data List										
NO.	Frequency [MHz]	Reading [dBμV]	Factor [dB]	AF[dB/m]	Level [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1693	74.26	-48.26	24.60	-44.66	-13.00	31.66	265	187	Horizontal
2	2539.5	58.05	-46.94	27.57	-56.58	-13.00	43.58	284	230	Horizontal
3	3358.36	43.27	-46.21	29.57	-68.63	-13.00	55.63	142	302	Horizontal
4	4197.95	41.50	-45.12	31.62	-67.26	-13.00	54.26	263	157	Horizontal
5	5037.54	41.21	-44.85	33.19	-65.71	-13.00	52.71	225	14	Horizontal
6	5887.13	40.02	-43.24	34.42	-64.06	-13.00	51.06	118	216	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	1693	64.15	-48.26	24.60	-54.77	-13.00	41.77	102	263	Vertical
2	2539.5	55.21	-46.94	27.57	-59.42	-13.00	46.42	265	164	Vertical
3	3358.36	42.49	-46.21	29.57	-69.41	-13.00	56.41	284	277	Vertical
4	4197.95	41.60	-45.12	31.62	-67.16	-13.00	54.16	142	5	Vertical
5	5037.54	41.68	-44.85	33.19	-65.24	-13.00	52.24	263	20	Vertical
6	5887.13	39.70	-43.24	34.42	-64.38	-13.00	51.38	228	0	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

---End of Attachment---



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

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

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000
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号厂房南楼 邮编: 215000

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