



Appendix B

E-UTRA Band 13



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



CONTENT

1	EFFECTIVE (ISOTROPIC) RADIATED POWER	3
1.1.	TEST RESULT	3
2.	PEAK-TO-AVERAGE RATIO (CCDF)	5
2.1.	TEST RESULT	5
2.2.	TEST PLOTS	5
3.	MODULATION CHARACTERISTICS	6
3.1.	TEST MODE = LTE /TM1 10MHZ	6
3.1.1.	TEST CHANNEL = MCH	6
3.2.	TEST MODE = LTE /TM2 10MHZ	7
3.2.1.	TEST CHANNEL = MCH	7
4.	26DB BANDWIDTH AND OCCUPIED BANDWIDTH	8
4.1.	TEST RESULT	8
4.2.	TEST PLOTS	8
5.	BAND EDGE COMPLIANCE	13
5.1.	TEST PLOTS	13
6.	SPURIOUS EMISSION AT ANTENNA TERMINAL	20
6.1.	TEST PLOTS	20
7.	FIELD STRENGTH OF SPURIOUS RADIATION	21
7.1.	TEST MODE =LTE/TM1	21
7.1.1.	TEST CHANNEL = MCH	21
8.	FREQUENCY STABILITY	22
8.1.	FREQUENCY VS VOLTAGE	22
8.2.	FREQUENCY VS TEMPERATURE	22



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
 No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
 中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



1 Effective (Isotropic) Radiated Power

1.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power(dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#12	21.94	18.29	34.77	PASS
Band13	5MHz	QPSK	23205	1RB#24	22.15	18.50	34.77	PASS
Band13	5MHz	QPSK	23205	1RB#0	21.97	18.32	34.77	PASS
Band13	5MHz	QPSK	23205	12RB#0	21.19	17.54	34.77	PASS
Band13	5MHz	QPSK	23205	12RB#6	21.31	17.66	34.77	PASS
Band13	5MHz	QPSK	23205	12RB#13	21.19	17.54	34.77	PASS
Band13	5MHz	QPSK	23205	25RB#0	21.16	17.51	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#0	22.01	18.36	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#12	22.17	18.52	34.77	PASS
Band13	5MHz	QPSK	23230	1RB#24	22.00	18.35	34.77	PASS
Band13	5MHz	QPSK	23230	12RB#0	21.22	17.57	34.77	PASS
Band13	5MHz	QPSK	23230	12RB#6	21.12	17.47	34.77	PASS
Band13	5MHz	QPSK	23230	12RB#13	21.10	17.45	34.77	PASS
Band13	5MHz	QPSK	23230	25RB#0	21.05	17.40	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#24	22.04	18.39	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#0	22.16	18.51	34.77	PASS
Band13	5MHz	QPSK	23255	1RB#12	21.99	18.34	34.77	PASS
Band13	5MHz	QPSK	23255	12RB#6	21.19	17.54	34.77	PASS
Band13	5MHz	QPSK	23255	12RB#0	21.23	17.58	34.77	PASS
Band13	5MHz	QPSK	23255	12RB#13	21.10	17.45	34.77	PASS
Band13	5MHz	QPSK	23255	25RB#0	21.18	17.53	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#12	21.46	17.81	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#0	21.28	17.63	34.77	PASS
Band13	5MHz	16QAM	23205	1RB#24	21.43	17.78	34.77	PASS
Band13	5MHz	16QAM	23205	12RB#13	20.26	16.61	34.77	PASS
Band13	5MHz	16QAM	23205	12RB#6	20.16	16.51	34.77	PASS
Band13	5MHz	16QAM	23205	12RB#0	20.23	16.58	34.77	PASS
Band13	5MHz	16QAM	23205	25RB#0	20.15	16.50	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#0	21.30	17.65	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#12	21.33	17.68	34.77	PASS
Band13	5MHz	16QAM	23230	1RB#24	21.25	17.60	34.77	PASS
Band13	5MHz	16QAM	23230	12RB#0	20.12	16.47	34.77	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-Document.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
 No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
 中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



Band13	5MHz	16QAM	23230	12RB#6	20.23	16.58	34.77	PASS
Band13	5MHz	16QAM	23230	12RB#13	20.11	16.46	34.77	PASS
Band13	5MHz	16QAM	23230	25RB#0	20.09	16.44	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#0	21.43	17.78	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#12	21.46	17.81	34.77	PASS
Band13	5MHz	16QAM	23255	1RB#24	21.46	17.81	34.77	PASS
Band13	5MHz	16QAM	23255	12RB#13	20.29	16.64	34.77	PASS
Band13	5MHz	16QAM	23255	12RB#0	20.17	16.52	34.77	PASS
Band13	5MHz	16QAM	23255	12RB#6	20.17	16.52	34.77	PASS
Band13	5MHz	16QAM	23255	25RB#0	20.05	16.40	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#49	22.16	18.51	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#24	22.17	18.52	34.77	PASS
Band13	10MHz	QPSK	23230	1RB#0	22.16	18.51	34.77	PASS
Band13	10MHz	QPSK	23230	25RB#0	21.25	17.60	34.77	PASS
Band13	10MHz	QPSK	23230	25RB#12	21.26	17.61	34.77	PASS
Band13	10MHz	QPSK	23230	25RB#25	21.18	17.53	34.77	PASS
Band13	10MHz	QPSK	23230	50RB#0	21.30	17.65	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#49	21.45	17.80	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#0	21.36	17.71	34.77	PASS
Band13	10MHz	16QAM	23230	1RB#24	21.25	17.60	34.77	PASS
Band13	10MHz	16QAM	23230	25RB#0	20.32	16.67	34.77	PASS
Band13	10MHz	16QAM	23230	25RB#12	20.20	16.55	34.77	PASS
Band13	10MHz	16QAM	23230	25RB#25	20.13	16.48	34.77	PASS
Band13	10MHz	16QAM	23230	50RB#0	20.20	16.55	34.77	PASS

Remark:

a: For getting the EIRP (Efficient Isotropic Radiated Power), the following formula should be taken to calculate it,

ERP [dBm] = Conducted Power [dBm] + Gain [dBd]

EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]



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.

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

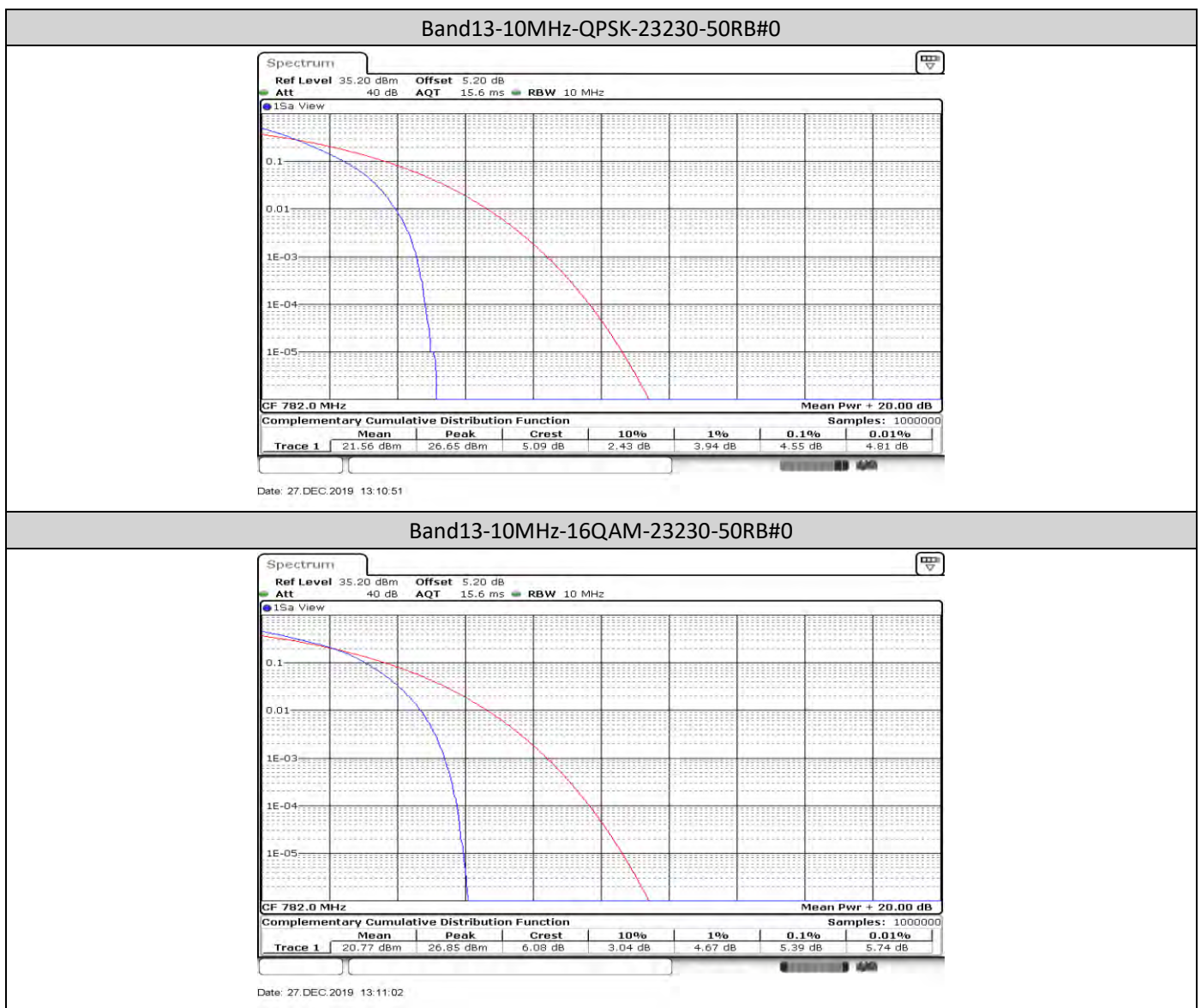


2. Peak-to-Average Ratio (CCDF)

2.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	4.55	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.39	13	PASS

2.2. Test Plots



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.

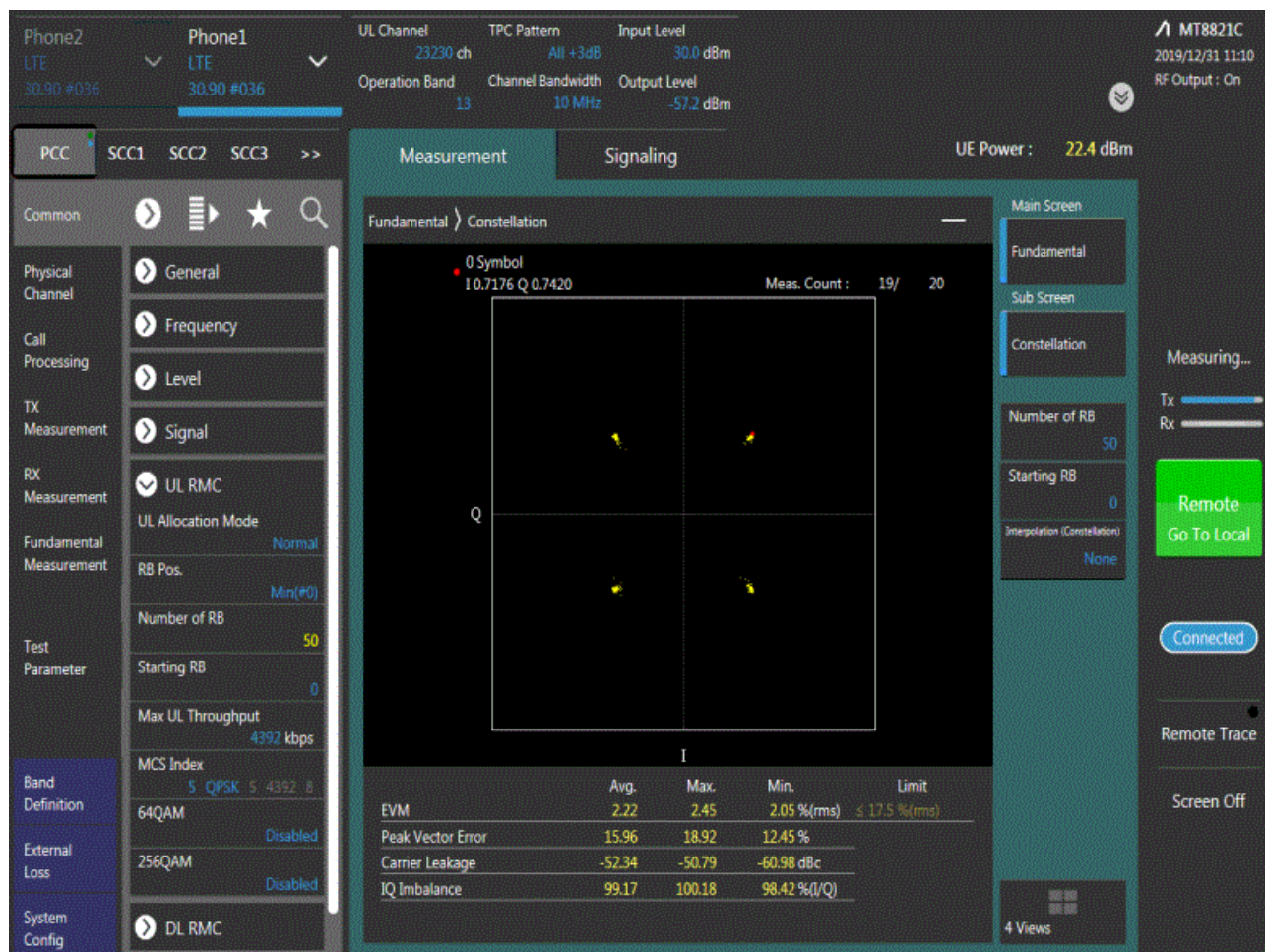
Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



3. Modulation Characteristics

3.1. Test Mode = LTE /TM1 10MHz

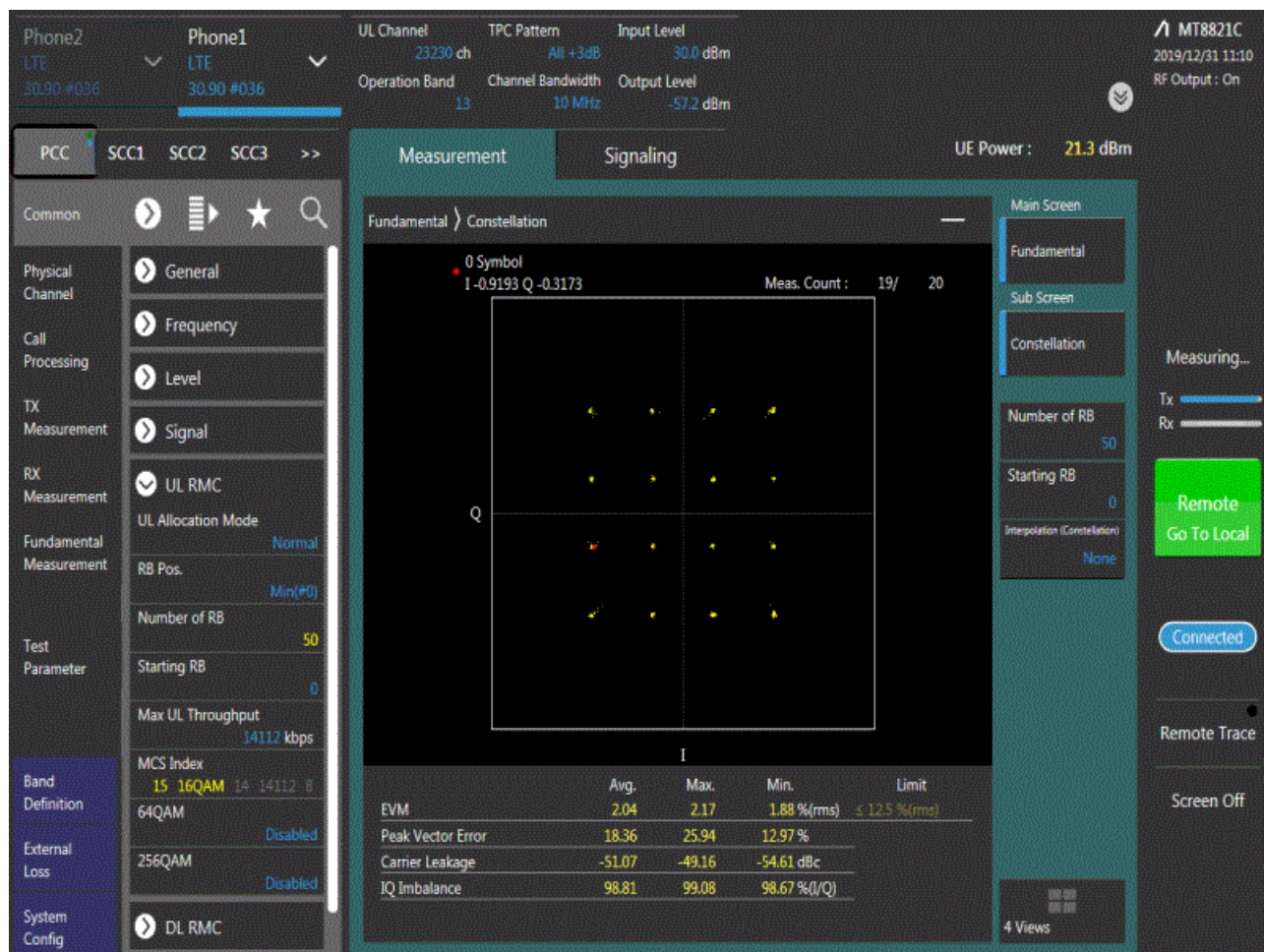
3.1.1. Test Channel = MCH





3.2. Test Mode = LTE /TM2 10MHz

3.2.1. Test Channel = MCH





4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.486	5.050	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.486	4.940	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.496	4.950	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.486	4.920	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.505	4.930	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.486	4.910	PASS
Band13	10MHz	QPSK	23230	50RB#0	9.011	9.740	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.971	9.640	PASS

4.2. Test Plots

Band13-5MHz-QPSK-23205-25RB#0-4.486

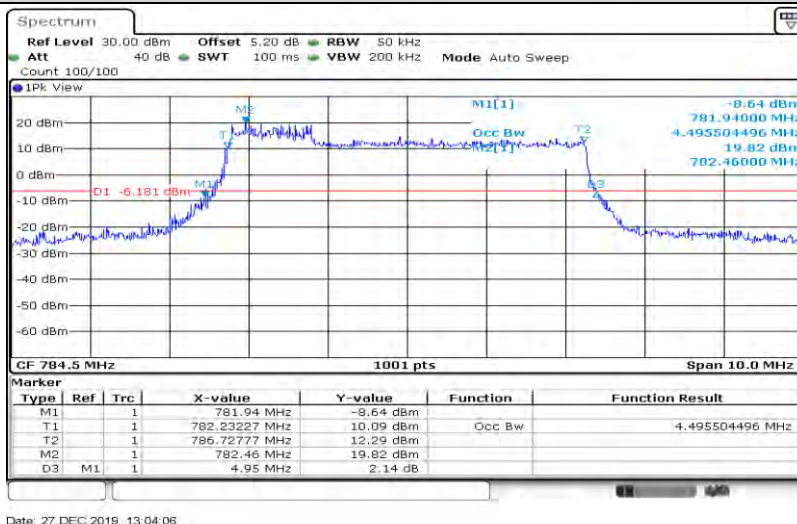


Band13-5MHz-QPSK-23230-25RB#0-4.486





Band13-5MHz-QPSK-23255-25RB#0-4.496



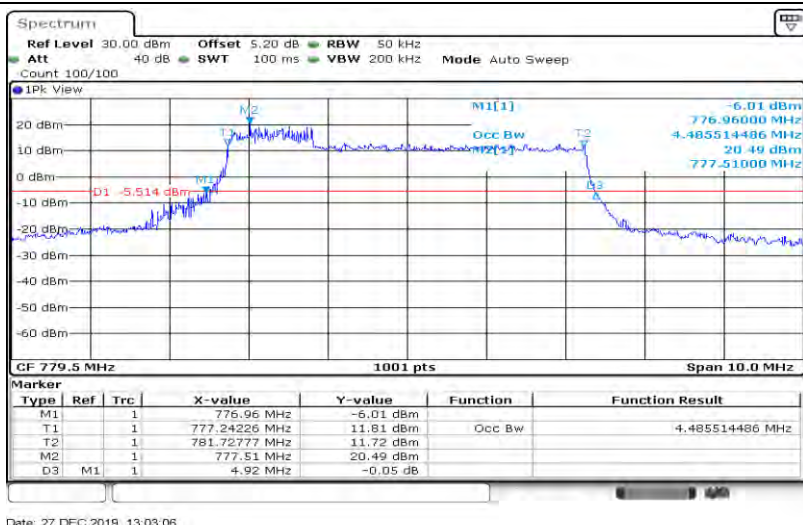
Band13-5MHz-16QAM-23205-25RB#0-4.486



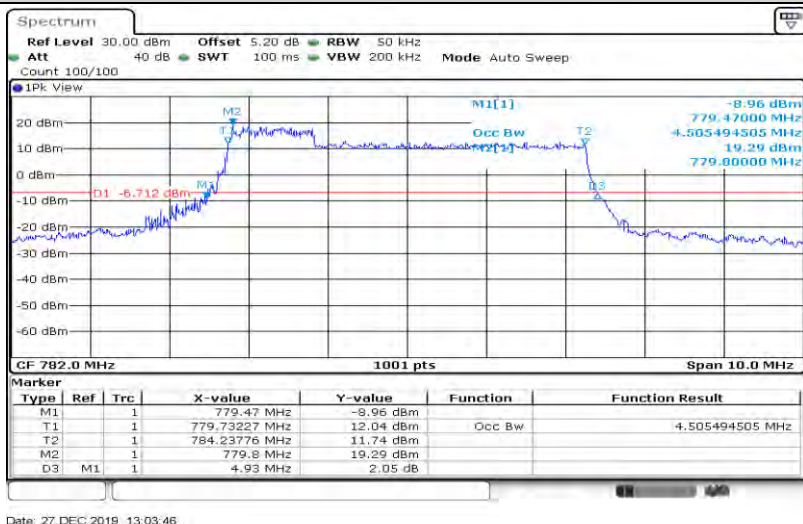
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic 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

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



Band13-5MHz-16QAM-23230-25RB#0-4.505

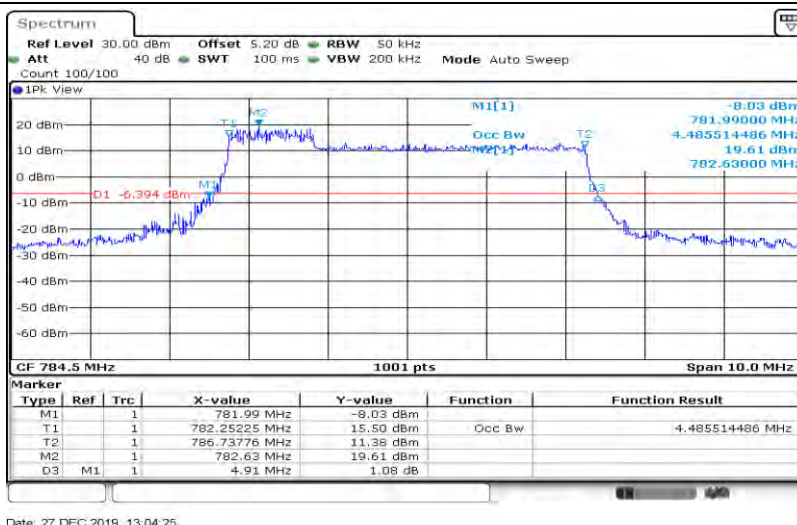


Band13-5MHz-16QAM-23255-25RB#0-4.486



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
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



Band13-10MHz-QPSK-23230-50RB#0-9.011

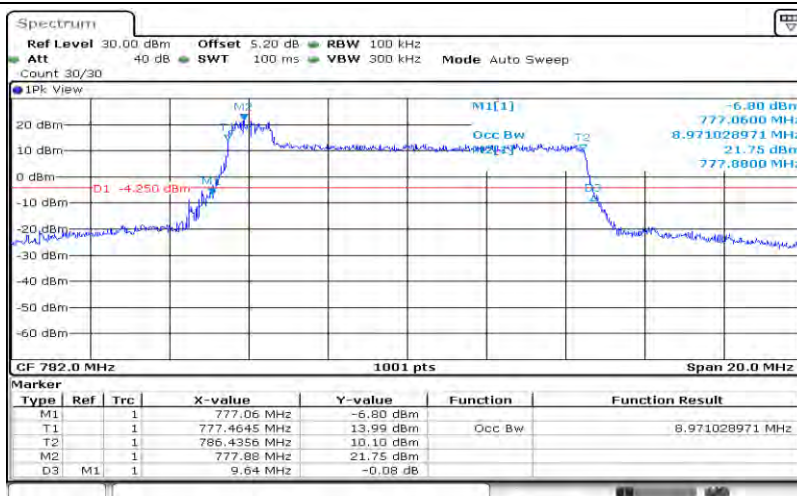


Band13-10MHz-16QAM-23230-50RB#0-8.971



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
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



Date: 27.DEC.2019 13:04:55





5. Band Edge Compliance

5.1. Test Plots

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



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



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



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 Co., Ltd.
Shenzhen Branch

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



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



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





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



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



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
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



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



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



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-Document.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) 83071443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



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



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



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
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



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



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





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



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) 83071443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



6. Spurious Emission at Antenna Terminal

Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (\text{Span} / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Remark2: only the worst case data displayed in this report.

6.1. Test Plots



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
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



7. Field Strength of Spurious Radiation

7.1. Test Mode =LTE/TM1

7.1.1. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
109.1560	-64.98	-13.00	51.98	Vertical
1559.3111	-63.64	-40.00	23.64	Vertical
3110.4044	-60.80	-13.00	47.80	Vertical
3888.0355	-61.81	-13.00	48.81	Vertical
4665.6666	-54.13	-13.00	41.13	Vertical
17996.3999	-42.82	-13.00	29.82	Vertical
42.0286	-64.37	-13.00	51.37	Horizontal
1559.9110	-64.43	-40.00	24.43	Horizontal
3110.4044	-58.98	-13.00	45.98	Horizontal
3888.0355	-58.52	-13.00	45.52	Horizontal
4665.6666	-57.90	-13.00	44.90	Horizontal
16382.9353	-46.58	-13.00	33.58	Horizontal

Remark:

- 1 According to 971168 D01 Power Meas License Digital Systems, The amplitudes of unwanted emissions that are attenuated more than 20 dB below the applicable limit are not required to be reported.
- 2 The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data displayed in this report.
- 3 all modulation and all Bandwidth had been tested, but only the worst case data displayed in this report.





8. Frequency Stability

8.1. Frequency Vs Voltage

Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	VL	NT	-2.40	-0.003069	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	VN	NT	-8.20	-0.010486	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	VH	NT	-4.20	-0.005371	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	VL	NT	-5.80	-0.007417	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	VN	NT	-5.50	-0.007033	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	VH	NT	-8.40	-0.010742	±2.5	PASS

8.2. Frequency Vs Temperature

Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band13	10MHz	QPSK	23230	50RB#0	NV	-30	-8.90	-0.011381	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	-20	-8.40	-0.010742	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	0	-1.90	-0.002430	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	10	-8.90	-0.011381	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	20	-13.70	-0.017519	±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	40	-2.90	-0.003708	±2.5	PASS
Band13	10MHz	QPSK	23230	50RB#0	NV	50	-8.60	-0.010997	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-30	-1.90	-0.002430	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	-20	-2.00	-0.002558	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	0	-0.60	-0.000767	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	10	-13.00	-0.016624	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	20	-5.20	-0.006650	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	30	-8.00	-0.010230	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	40	-10.00	-0.012788	±2.5	PASS
Band13	10MHz	16QAM	23230	50RB#0	NV	50	-4.90	-0.006266	±2.5	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) 83071443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com