



Appendix B

E-UTRA Band 14



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (CMA) Calibration Laboratory

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



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 BAND = LTE BAND 14	6
3.2. TEST MODE = LTE /TM1 10MHZ.....	6
3.2.1. TEST CHANNEL = MCH.....	6
3.3. TEST MODE = LTE /TM2 10MHZ.....	7
3.3.1. TEST CHANNEL = MCH.....	7
4. 26DB BANDWIDTH AND OCCUPIED BANDWIDTH	8
4.1. TEST RESULT	8
4.2. TEST PLOTS.....	8
5. EMISSION MASK.....	13
5.1. TEST PLOTS.....	13
6. BAND EDGE COMPLIANCE	20
6.1. TEST PLOTS.....	20
7. SPURIOUS EMISSION AT ANTENNA TERMINAL	27
7.1. TEST PLOTS.....	27
8. FIELD STRENGTH OF SPURIOUS RADIATION.....	28
8.1. TEST BAND = LTE BAND 14	28
8.1.1. TEST MODE =LTE/TM1 10MHZ.....	28
8.1.1.1. TEST CHANNEL = MCH.....	28
9. FREQUENCY STABILITY	29
9.1. FREQUENCY VS VOLTAGE	29
9.2. FREQUENCY VS TEMPERATURE	29



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
Band14	5MHz	QPSK	23305	1RB#0	22.93	24.78	34.77	PASS
Band14	5MHz	QPSK	23305	1RB#12	23.47	25.32	34.77	PASS
Band14	5MHz	QPSK	23305	1RB#24	22.17	24.02	34.77	PASS
Band14	5MHz	QPSK	23305	12RB#0	22.01	23.86	34.77	PASS
Band14	5MHz	QPSK	23305	12RB#6	22.06	23.91	34.77	PASS
Band14	5MHz	QPSK	23305	12RB#13	21.88	23.73	34.77	PASS
Band14	5MHz	QPSK	23305	25RB#0	22.09	23.94	34.77	PASS
Band14	5MHz	QPSK	23330	1RB#0	22.95	24.80	34.77	PASS
Band14	5MHz	QPSK	23330	1RB#12	23.29	25.14	34.77	PASS
Band14	5MHz	QPSK	23330	1RB#24	22.43	24.28	34.77	PASS
Band14	5MHz	QPSK	23330	12RB#0	21.97	23.82	34.77	PASS
Band14	5MHz	QPSK	23330	12RB#6	21.95	23.80	34.77	PASS
Band14	5MHz	QPSK	23330	12RB#13	21.99	23.84	34.77	PASS
Band14	5MHz	QPSK	23330	25RB#0	22.05	23.90	34.77	PASS
Band14	5MHz	QPSK	23355	1RB#0	23.19	25.04	34.77	PASS
Band14	5MHz	QPSK	23355	1RB#12	23.42	25.27	34.77	PASS
Band14	5MHz	QPSK	23355	1RB#24	22.6	24.45	34.77	PASS
Band14	5MHz	QPSK	23355	12RB#0	22.18	24.03	34.77	PASS
Band14	5MHz	QPSK	23355	12RB#6	22.24	24.09	34.77	PASS
Band14	5MHz	QPSK	23355	12RB#13	22.19	24.04	34.77	PASS
Band14	5MHz	QPSK	23355	25RB#0	22.18	24.03	34.77	PASS
Band14	5MHz	16QAM	23305	1RB#0	22.24	24.09	34.77	PASS
Band14	5MHz	16QAM	23305	1RB#12	22.12	23.97	34.77	PASS
Band14	5MHz	16QAM	23305	1RB#24	22.15	24.00	34.77	PASS
Band14	5MHz	16QAM	23305	12RB#0	21.08	22.93	34.77	PASS
Band14	5MHz	16QAM	23305	12RB#6	21.07	22.92	34.77	PASS
Band14	5MHz	16QAM	23305	12RB#13	20.97	22.82	34.77	PASS
Band14	5MHz	16QAM	23305	25RB#0	20.92	22.77	34.77	PASS
Band14	5MHz	16QAM	23330	1RB#0	22.34	24.19	34.77	PASS
Band14	5MHz	16QAM	23330	1RB#12	22.15	24.00	34.77	PASS
Band14	5MHz	16QAM	23330	1RB#24	22.17	24.02	34.77	PASS
Band14	5MHz	16QAM	23330	12RB#0	21.03	22.88	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-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 Laboratory
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



Band14	5MHz	16QAM	23330	12RB#6	21.05	22.90	34.77	PASS
Band14	5MHz	16QAM	23330	12RB#13	21.08	22.93	34.77	PASS
Band14	5MHz	16QAM	23330	25RB#0	21.01	22.86	34.77	PASS
Band14	5MHz	16QAM	23355	1RB#0	22.47	24.32	34.77	PASS
Band14	5MHz	16QAM	23355	1RB#12	22.62	24.47	34.77	PASS
Band14	5MHz	16QAM	23355	1RB#24	22.56	24.41	34.77	PASS
Band14	5MHz	16QAM	23355	12RB#0	21.29	23.14	34.77	PASS
Band14	5MHz	16QAM	23355	12RB#6	21.32	23.17	34.77	PASS
Band14	5MHz	16QAM	23355	12RB#13	21.18	23.03	34.77	PASS
Band14	5MHz	16QAM	23355	25RB#0	21.19	23.04	34.77	PASS
Band14	10MHz	QPSK	23330	1RB#0	23.07	24.92	34.77	PASS
Band14	10MHz	QPSK	23330	1RB#24	23.77	25.62	34.77	PASS
Band14	10MHz	QPSK	23330	1RB#49	22.06	23.91	34.77	PASS
Band14	10MHz	QPSK	23330	25RB#0	22.25	24.10	34.77	PASS
Band14	10MHz	QPSK	23330	25RB#12	22.08	23.93	34.77	PASS
Band14	10MHz	QPSK	23330	25RB#25	21.92	23.77	34.77	PASS
Band14	10MHz	QPSK	23330	50RB#0	21.99	23.84	34.77	PASS
Band14	10MHz	16QAM	23330	1RB#0	22.27	24.12	34.77	PASS
Band14	10MHz	16QAM	23330	1RB#24	22.33	24.18	34.77	PASS
Band14	10MHz	16QAM	23330	1RB#49	22.51	24.36	34.77	PASS
Band14	10MHz	16QAM	23330	25RB#0	20.98	22.83	34.77	PASS
Band14	10MHz	16QAM	23330	25RB#12	21.01	22.86	34.77	PASS
Band14	10MHz	16QAM	23330	25RB#25	20.97	22.82	34.77	PASS
Band14	10MHz	16QAM	23330	50RB#0	20.94	22.79	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-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

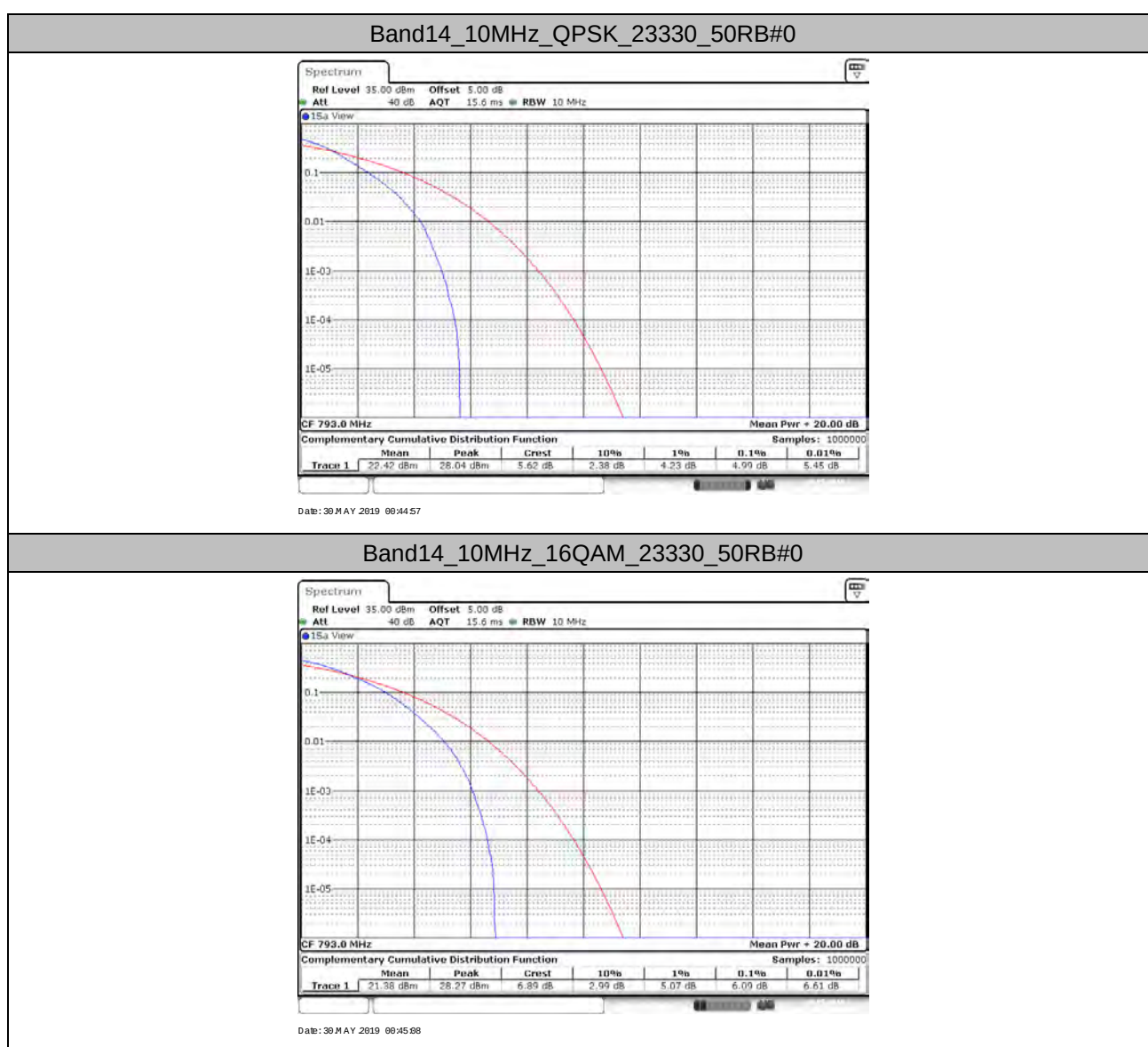


2. Peak-to-Average Ratio(CCDF)

2.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band14	10MHz	QPSK	23330	50RB#0	4.99	13	PASS
Band14	10MHz	16QAM	23330	50RB#0	6.09	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.

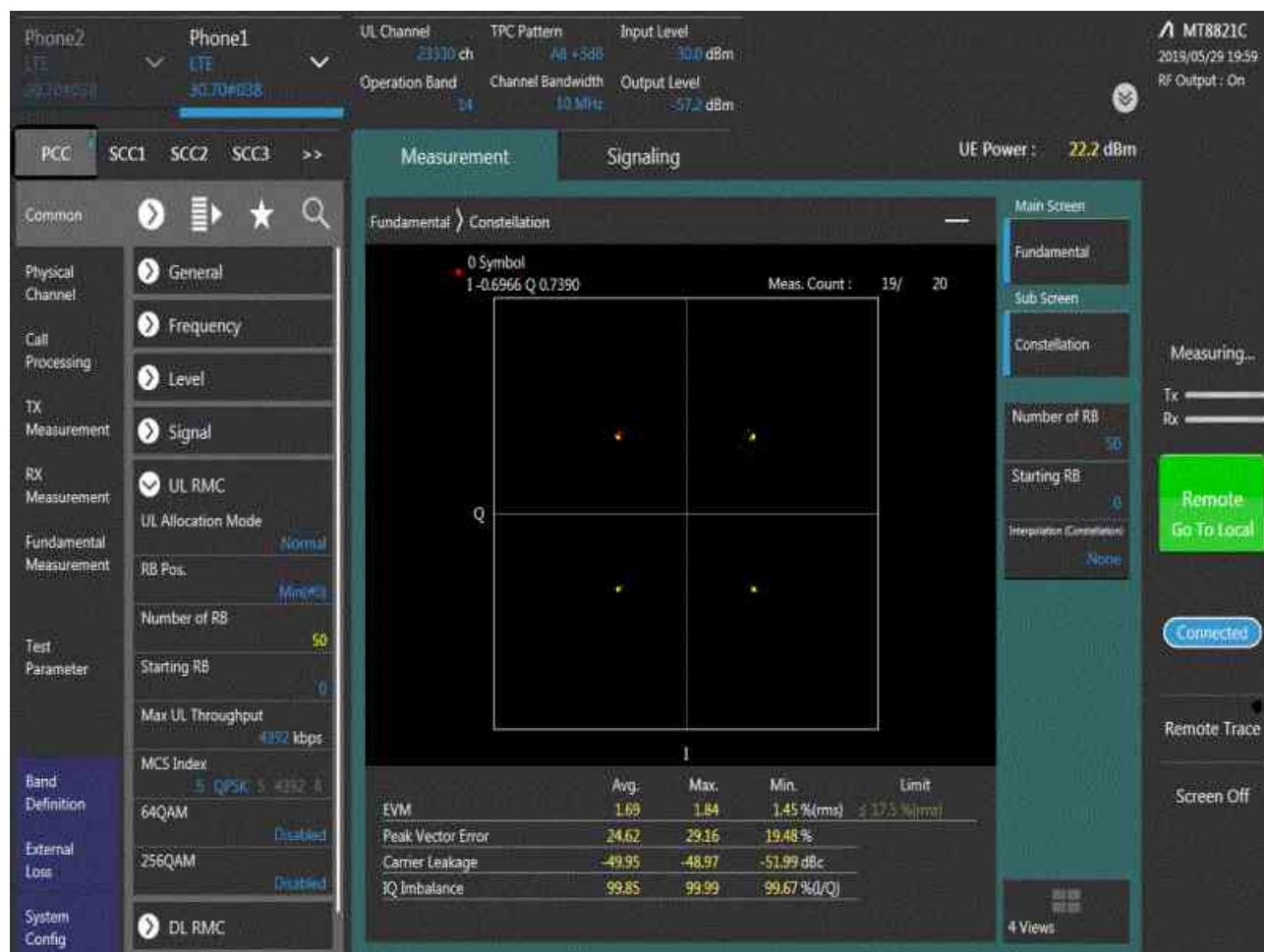
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
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 BAND = LTE Band 14

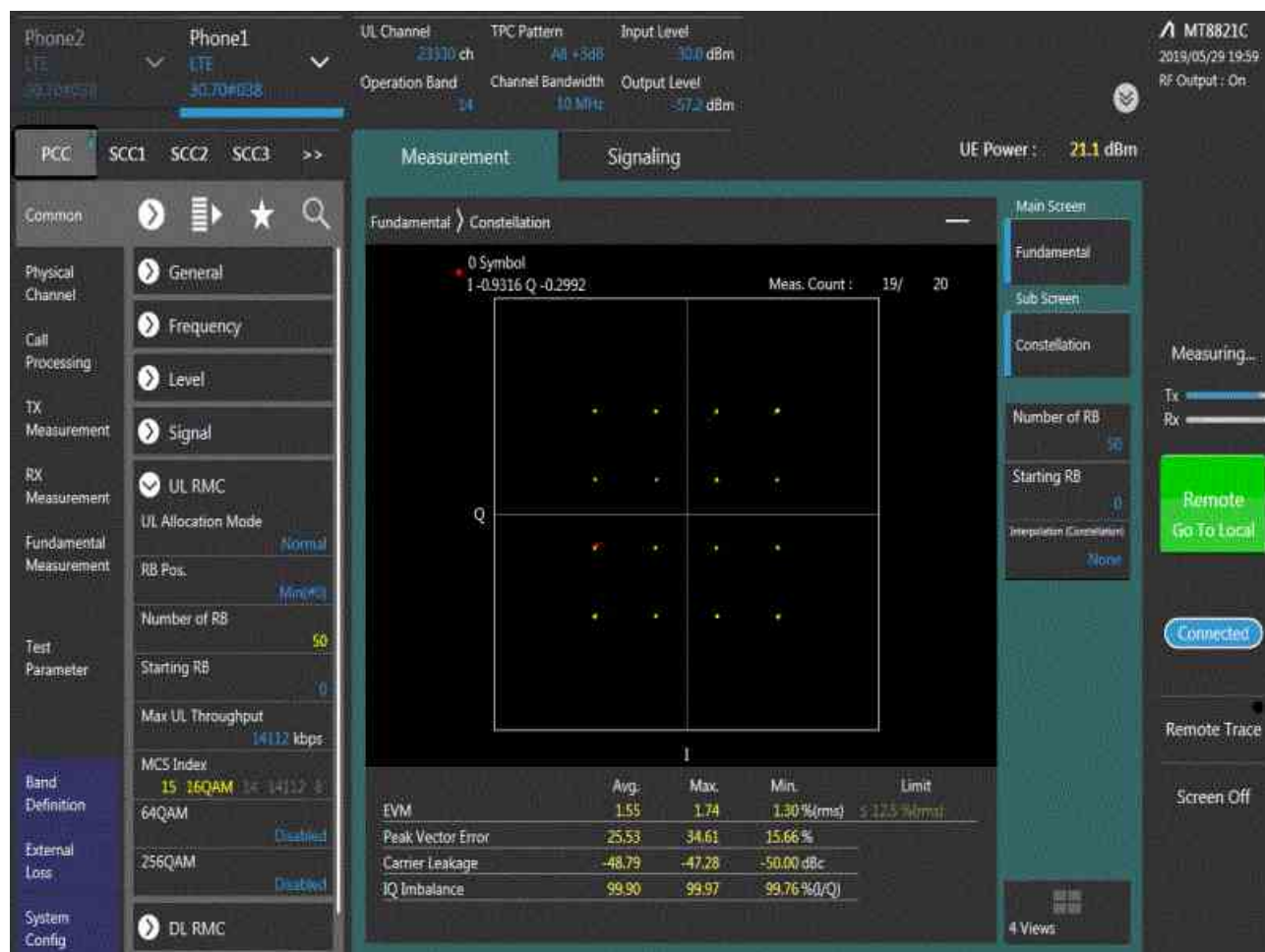
3.2. Test Mode = LTE /TM1 10MHz

3.2.1. Test Channel = MCH



3.3. Test Mode = LTE /TM2 10MHz

3.3.1. Test Channel = MCH



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (Shenzhen) CMAA Laboratory

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 deemed to have accepted the terms and conditions of the document and to have agreed to be bound by the terms and conditions of the 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 strictly prohibited and may result in severe civil or criminal penalties. If the holder has not 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.

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

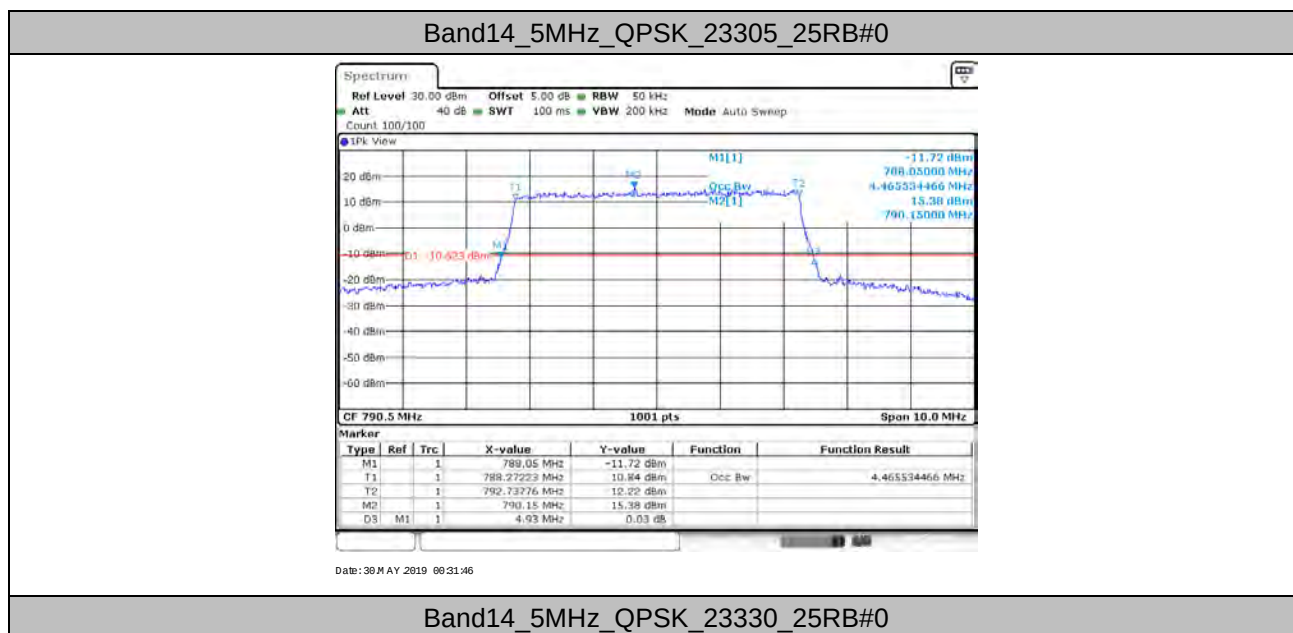


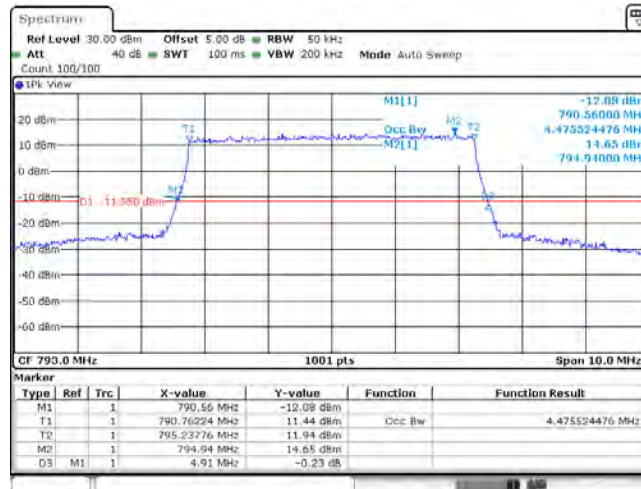
4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band14	5MHz	QPSK	23305	25RB#0	4.466	4.930	PASS
Band14	5MHz	QPSK	23330	25RB#0	4.476	4.910	PASS
Band14	5MHz	QPSK	23355	25RB#0	4.476	4.930	PASS
Band14	5MHz	16QAM	23305	25RB#0	4.476	4.950	PASS
Band14	5MHz	16QAM	23330	25RB#0	4.466	4.930	PASS
Band14	5MHz	16QAM	23355	25RB#0	4.456	4.850	PASS
Band14	10MHz	QPSK	23330	50RB#0	8.911	9.700	PASS
Band14	10MHz	16QAM	23330	50RB#0	8.891	9.700	PASS

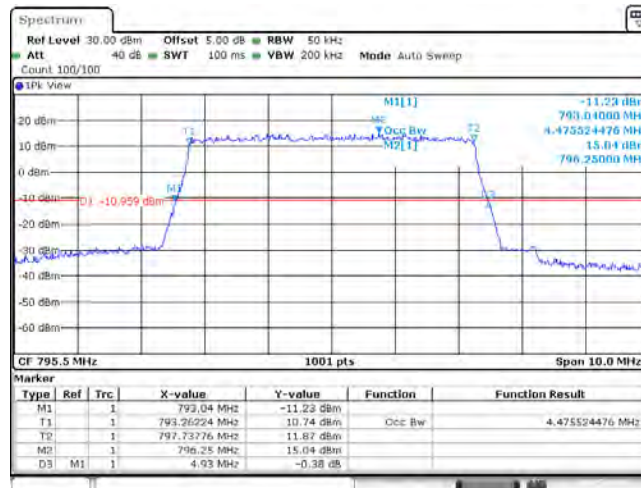
4.2. Test Plots





Date: 30 MAY 2019 06:32:29

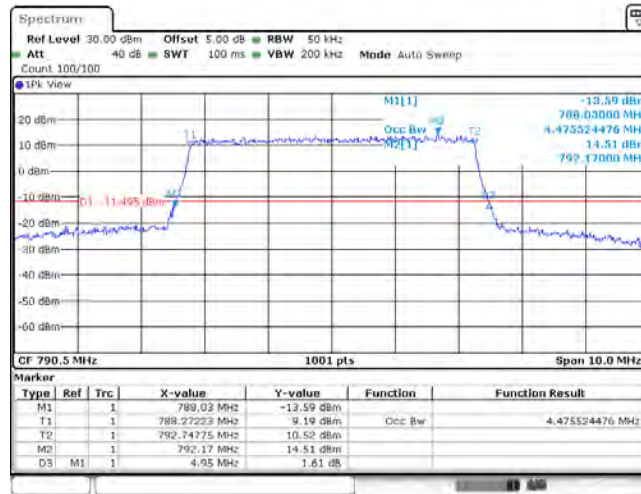
Band14_5MHz_QPSK_23355_25RB#0



Date: 30 MAY 2019 06:33:11

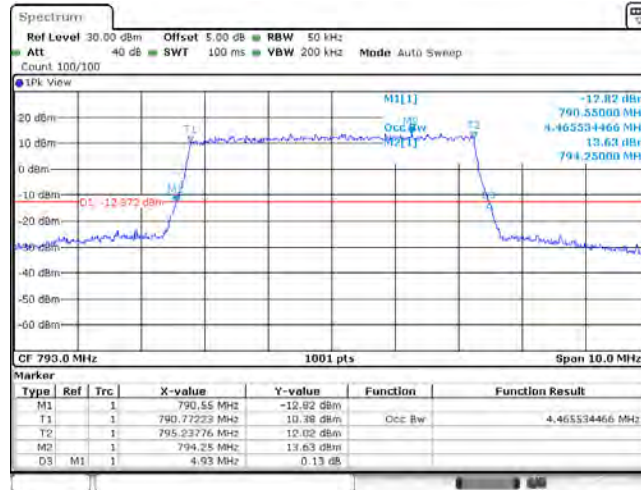
Band14_5MHz_16QAM_23305_25RB#0





Date: 30 MAY 2019 06:32:06

Band14_5MHz_16QAM_23330_25RB#0



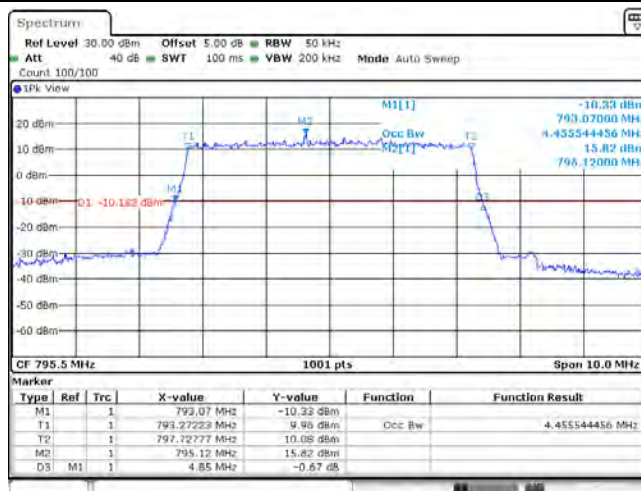
Date: 30 MAY 2019 06:32:49

Band14_5MHz_16QAM_23355_25RB#0



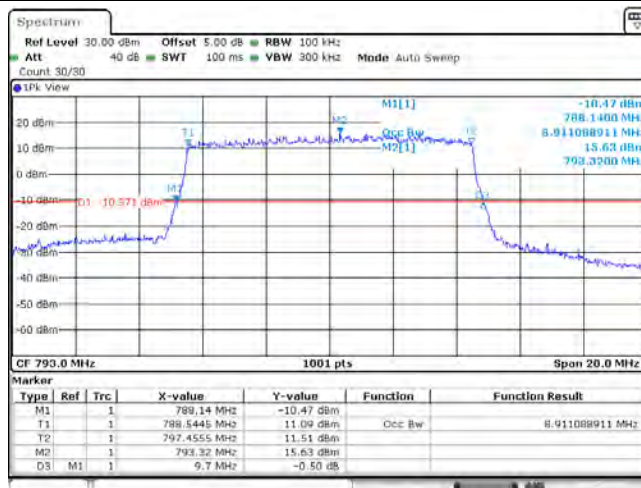
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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



Date: 30 MAY 2019 08:33:32

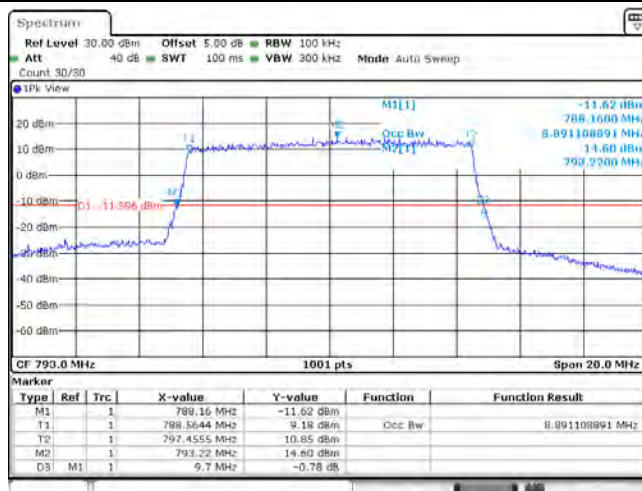
Band14_10MHz_QPSK_23330_50RB#0



Date: 30 MAY 2019 08:35:57

Band14_10MHz_16QAM_23330_50RB#0





Date: 30 MAY 2019 08:35:28



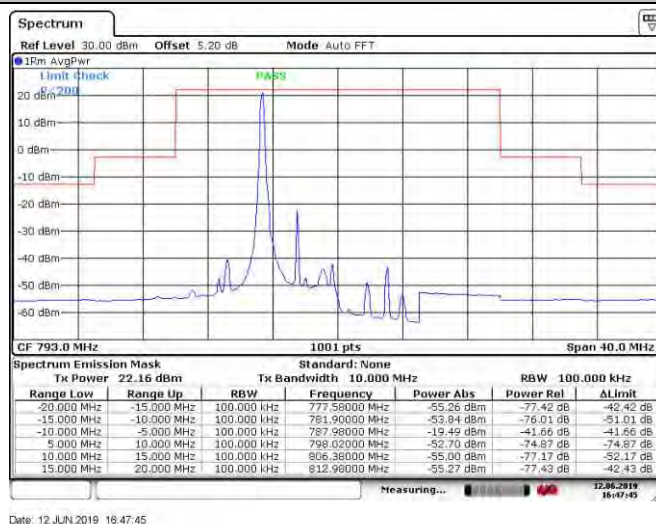
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

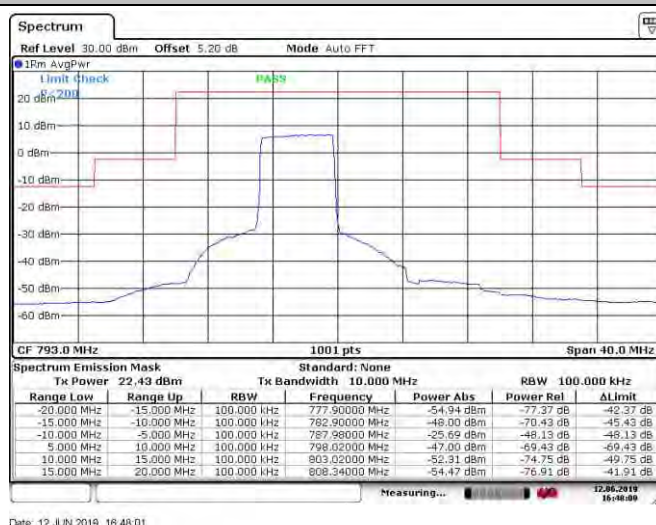
5. Emission Mask

5.1. Test Plots

BAND 14_5MHz_QPSK_23305_1RB#0



BAND 14_5MHz_QPSK_23305_25RB#0

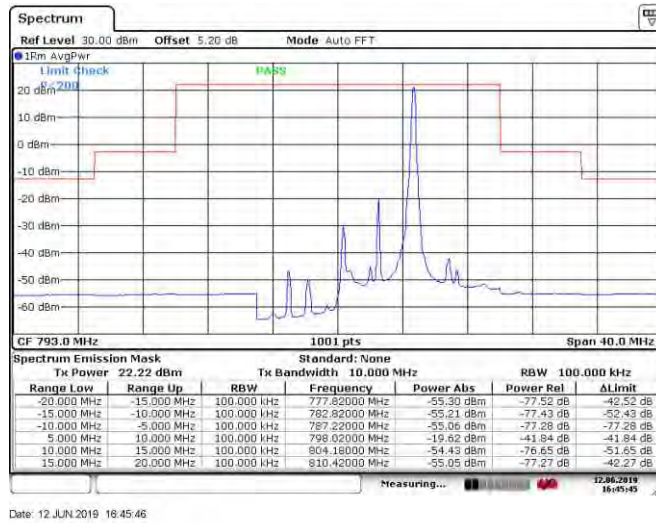


BAND 14_5MHz_QPSK_23355_1RB#24

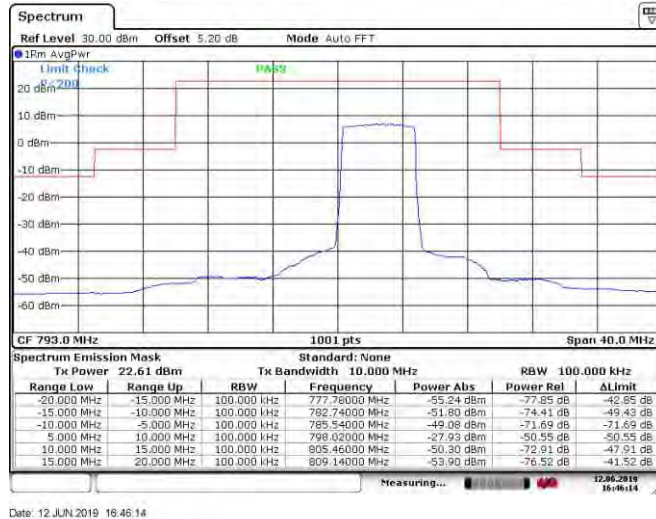


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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



BAND 14_5MHz_QPSK_23355_25RB#0

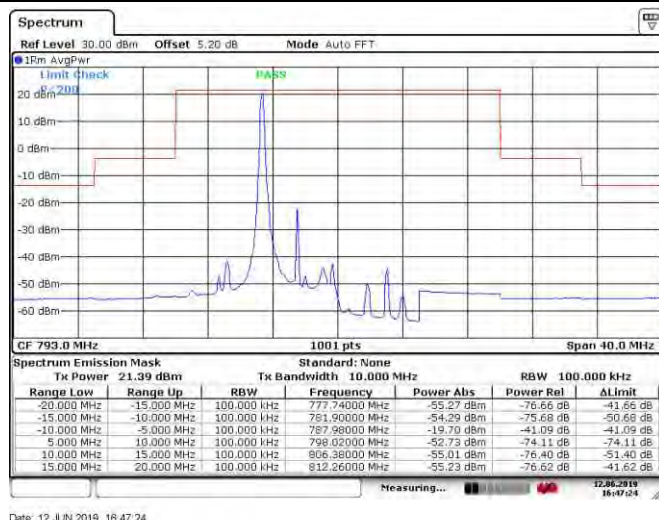


BAND 14_5MHz_16QAM_23305_1RB#0

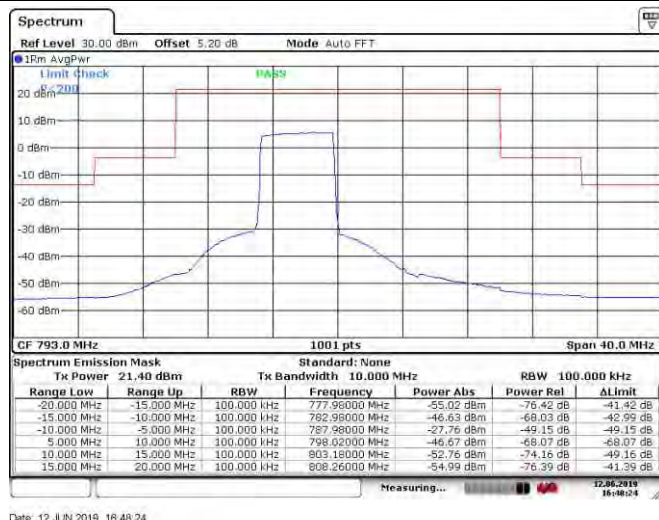


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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



BAND 14_5MHz_16QAM_23305_25RB#0

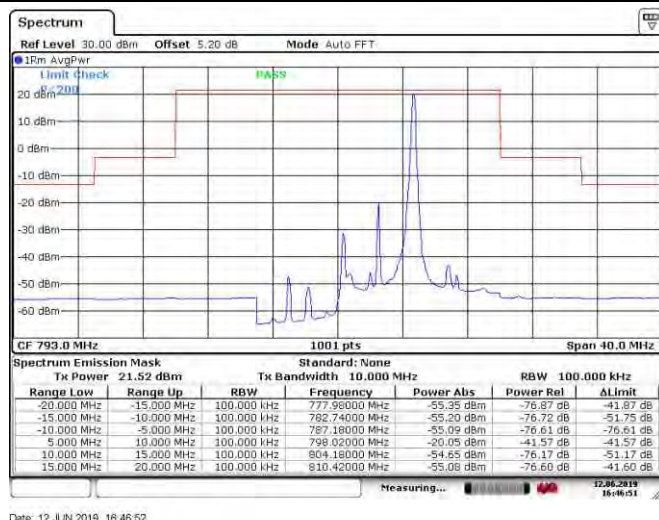


BAND 14_5MHz_16QAM_23355_1RB#24

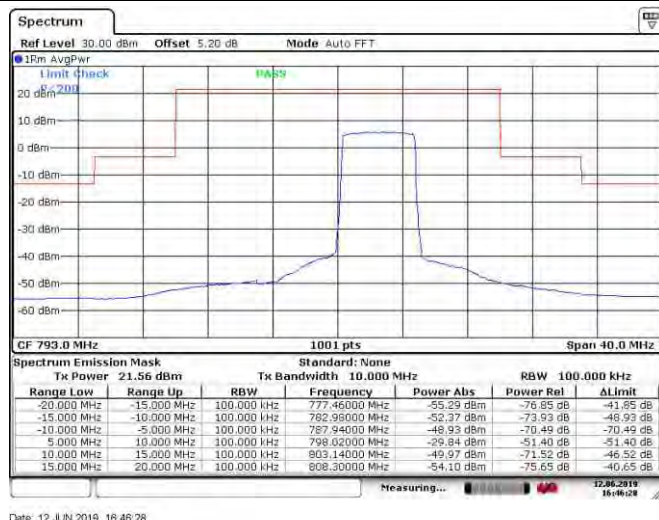


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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



BAND 14_5MHz_16QAM_23355_25RB#0

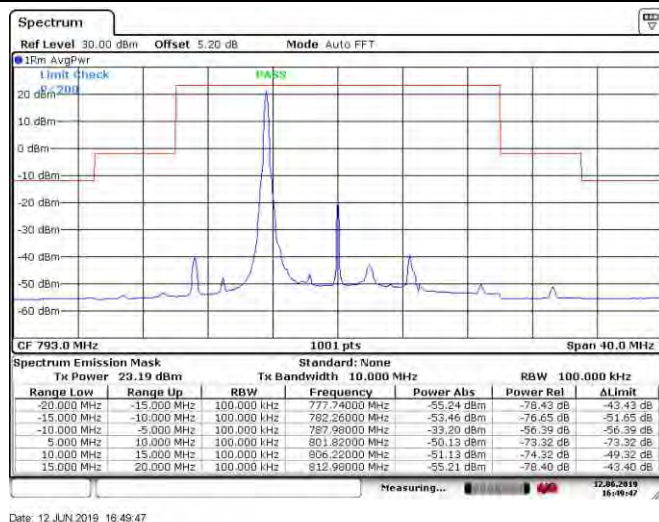


BAND 14_10MHz_QPSK_23330_1RB#0

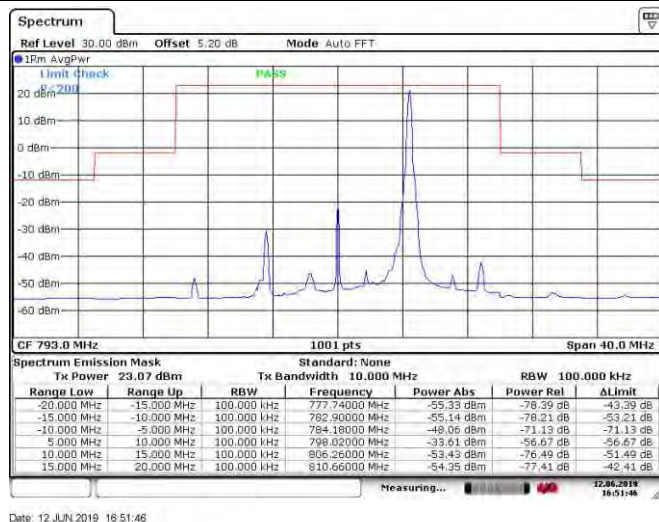


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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



BAND 14_10MHz_QPSK_23330_1RB#49

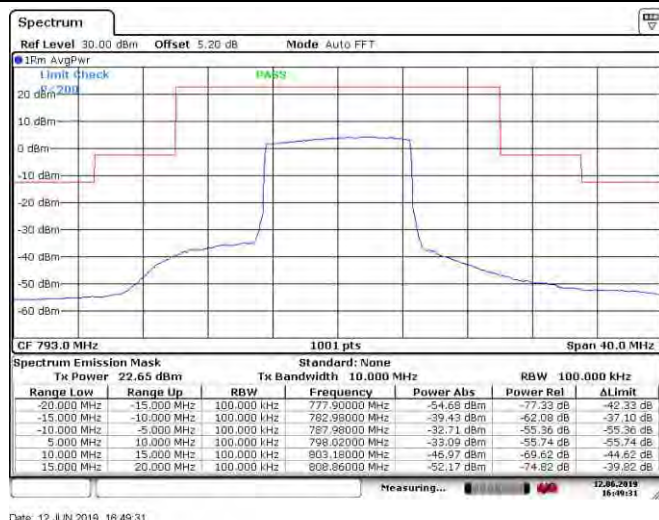


BAND 14_10MHz_QPSK_23330_50RB#0

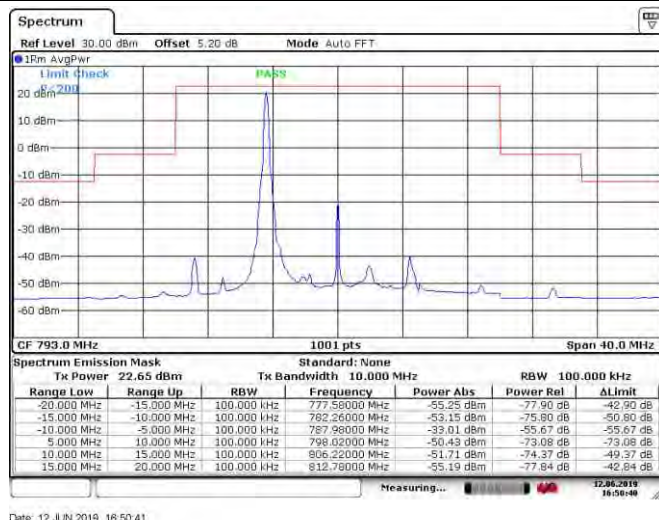


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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



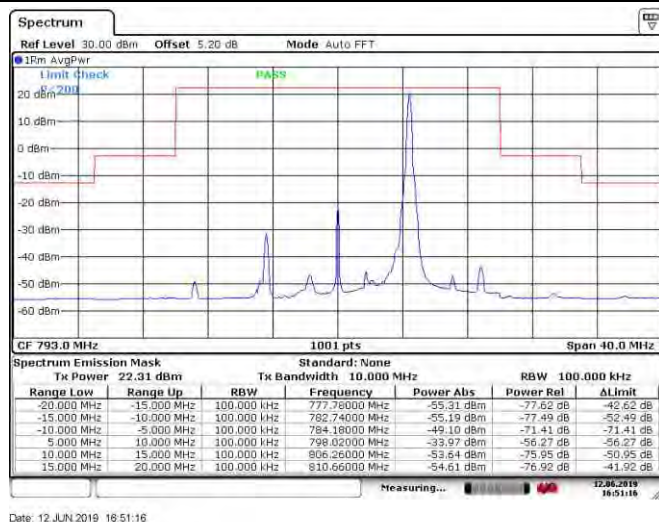
BAND 14_10MHz_16QAM_23330_1RB#0



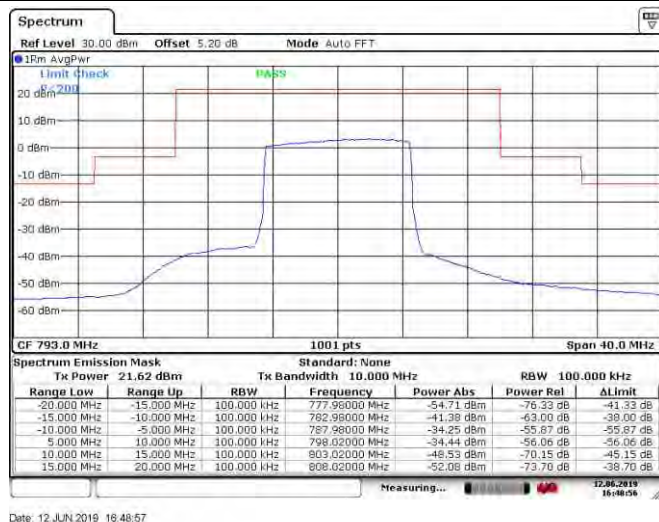
BAND 14_10MHz_16QAM_23330_1RB#49



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.



BAND 14_10MHz_16QAM_23330_50RB#0



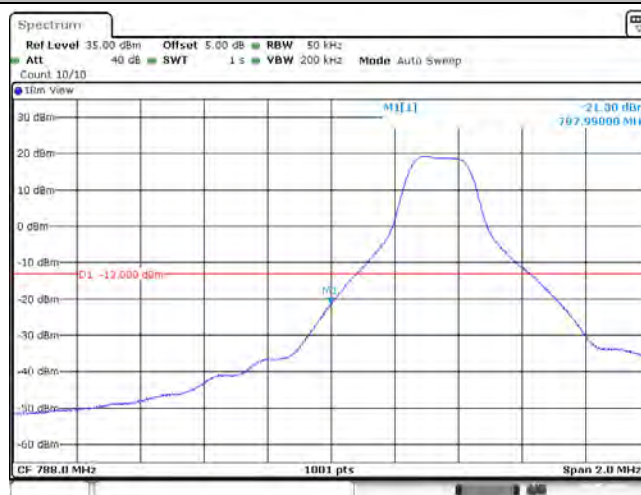
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

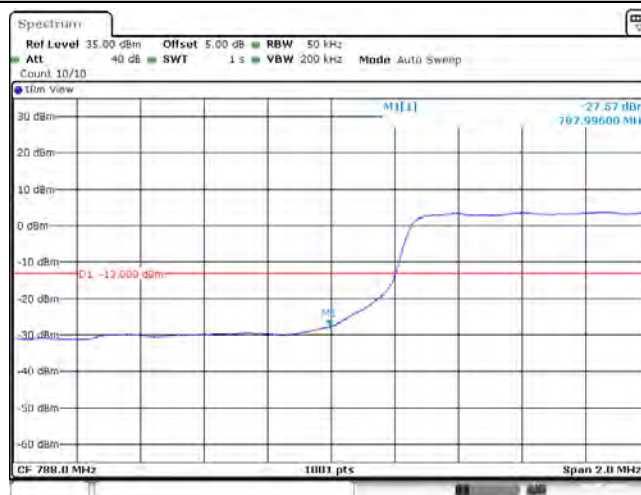
6. Band Edge Compliance

6.1. Test Plots

Band14_5MHz_QPSK_23305_1RB#0



Band14_5MHz_QPSK_23305_25RB#0

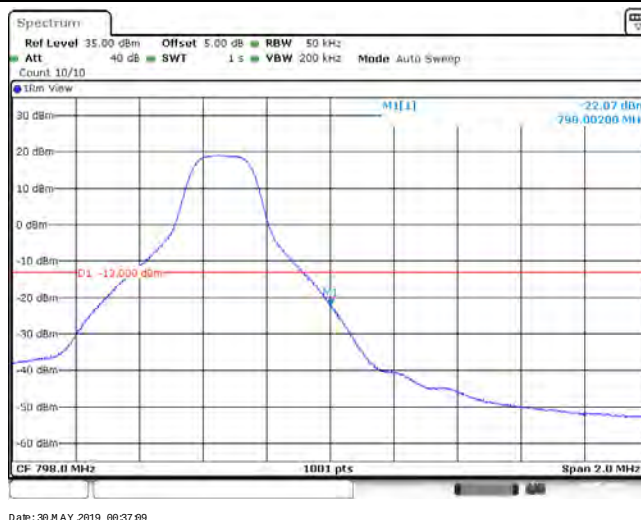


Band14_5MHz_QPSK_23355_1RB#24



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



Band14_5MHz_QPSK_23355_25RB#0



Band14_5MHz_16QAM_23305_1RB#0





Band14_5MHz_16QAM_23305_25RB#0

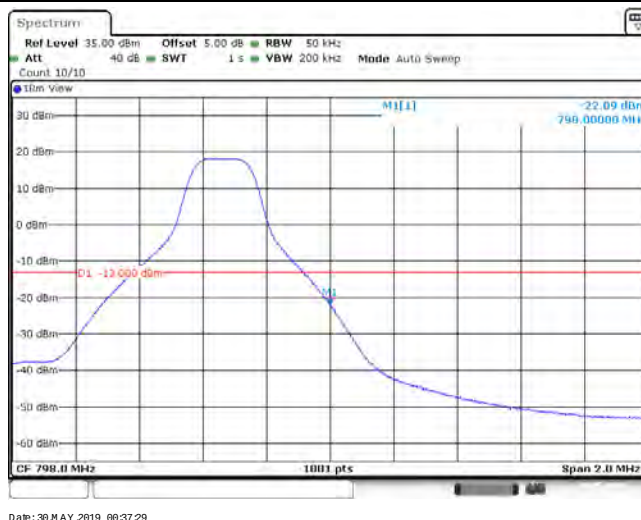


Band14_5MHz_16QAM_23355_1RB#24



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



Band14_5MHz_16QAM_23355_25RB#0

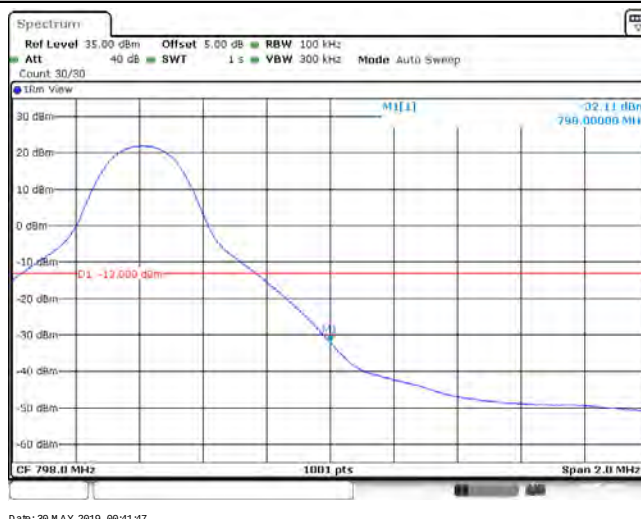


Band14_10MHz_QPSK_23330_Left_1RB#0



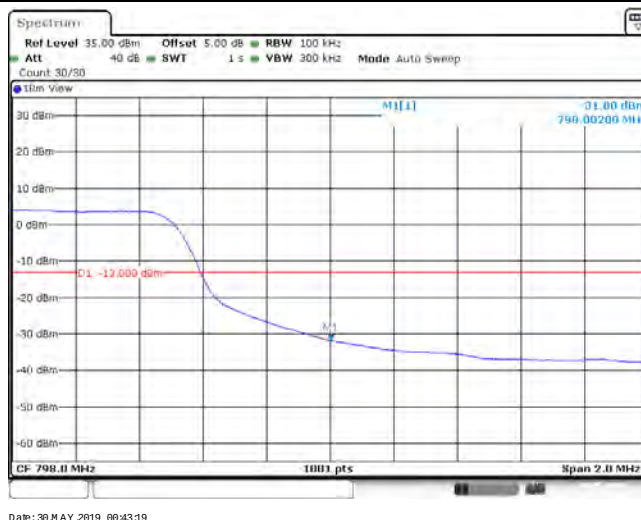


Band14_10MHz_QPSK_23330_Right_1RB#49



Band14_10MHz_QPSK_23330_Right_50RB#0





Band14_10MHz_16QAM_23330_Left_1RB#0



Band14_10MHz_16QAM_23330_Right_1RB#49





Date: 30 MAY 2019 06:42:33

Band14_10MHz_16QAM_23330_Right_50RB#0



Date: 30 MAY 2019 06:44:05



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. 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.

7.1. 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



8. Field Strength of Spurious Radiation

8.1. Test BAND = LTE Band 14

8.1.1. Test Mode = LTE/TM1 10MHz

8.1.1.1. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
63.926667	-80.12	-13.00	67.12	Vertical
104.293333	-78.12	-13.00	65.12	Vertical
1577.000000	-60.15	-40.00	20.15	Vertical
2365.500000	-57.20	-13.00	44.20	Vertical
3154.050000	-66.29	-13.00	53.29	Vertical
4852.012500	-65.00	-13.00	52.00	Vertical
61.966667	-76.72	-13.00	63.72	Horizontal
104.293333	-79.25	-13.00	66.25	Horizontal
1577.000000	-61.82	-40.00	21.82	Horizontal
2365.500000	-51.71	-13.00	38.71	Horizontal
4142.700000	-66.49	-13.00	53.49	Horizontal
6056.137500	-63.89	-13.00	50.89	Horizontal

Remark:

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 had been displayed.

We have tested all modulation and all Bandwidth , but only the worst case data presented in this report.



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.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



9. Frequency Stability

9.1. Frequency Vs Voltage

Voltage										
BAND	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band14	10MHz	QPSK	23330	50RB#0	VL	NT	-0.40	-0.000504	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	VN	NT	0.10	0.000126	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	VH	NT	-0.70	-0.000883	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	VL	NT	1.20	0.001513	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	VN	NT	-1.10	-0.001387	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	VH	NT	0.20	0.000252	±2.5	PASS

9.2. Frequency Vs Temperature

Temperature										
BAND	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band14	10MHz	QPSK	23330	50RB#0	NV	-30	-2.10	-0.002648	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	-20	-1.50	-0.001892	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	0	-0.40	-0.000504	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	10	1.40	0.001765	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	20	-1.90	-0.002396	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	30	-0.20	-0.000252	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	40	0.10	0.000126	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	50	-2.10	-0.002648	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	-30	-1.30	-0.001639	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	-20	1.30	0.001639	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	0	-1.60	-0.002018	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	10	0.50	0.000631	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	20	-1.00	-0.001261	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	30	-1.50	-0.001892	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	40	-1.40	-0.001765	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	50	-2.10	-0.002648	±2.5	PASS

The End

