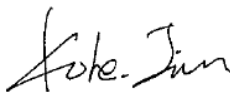


## TEST REPORT

**Application No.:** GZEM2009015097CR  
**Applicant:** Chamberlain Group Inc, The  
**Address of Applicant:** 300 Windsor Dr Oak Brook, 60523, Illinois, United States  
**Manufacturer:** Grupo Chamberlain S de RL de CV  
**Address of Manufacturer:** Boulevard Luis Donaldo Colosio Murrieta 1891 Colonia Obrera Codigo Postal 84048 Nogales, Sonora, Mexico  
**Factory:** Foshan Foresee Intelligent Control Technology Co., Ltd  
**Address of Factory:** 33 Changbao West Road, Rongli, Ronggui, Shunde, Foshan, 528305 Guangdong, China  
**Equipment Under Test (EUT):**  
**EUT Name:** Sliding Gate Operator  
**Model No.:** SL600  
**Standard(s):** 47 CFR Part 15, Subpart C 15.247  
**Date of Receipt:** 2020-09-15  
**Date of Test:** 2020-09-23 to 2020-11-24  
**Date of Issue:** 2021-02-07

|                     |              |
|---------------------|--------------|
| <b>Test Result:</b> | <b>Pass*</b> |
|---------------------|--------------|

\* In the configuration tested, the EUT complied with the standards specified above.



Kobe Jian  
EMC Laboratory Manager



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](mailto:CN.Doccheck@sgs.com)

| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 01              |         | 2021-02-07 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                                 |                                                                                                                     |                          |             |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------|-------------|
| <b>Authorized for issue by:</b> |                                                                                                                     |                          |             |
| <b>Tested By</b>                | <br>Lily_Kuang /Project Engineer | 2020-09-23 to 2020-11-24 | <b>Date</b> |
| <b>Checked By</b>               | <br>Ricky_Liu /Reviewer          | 2021-02-07               | <b>Date</b> |



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](mailto:CN.Doccheck@sgs.com)

## 2 Test Summary

| Radio Spectrum Technical Requirement                                                     |                                  |        |                                                |        |
|------------------------------------------------------------------------------------------|----------------------------------|--------|------------------------------------------------|--------|
| Item                                                                                     | Standard                         | Method | Requirement                                    | Result |
| Antenna Requirement                                                                      | 47 CFR Part 15, Subpart C 15.247 | N/A    | 47 CFR Part 15, Subpart C 15.203 & 15.247(c)   | Pass   |
| Other requirements<br>Frequency Hopping<br>Spread Spectrum<br>System Hopping<br>Sequence | 47 CFR Part 15, Subpart C 15.247 | N/A    | 47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h) | Pass   |

| Radio Spectrum Matter Part                          |                                  |                                        |                                           |        |
|-----------------------------------------------------|----------------------------------|----------------------------------------|-------------------------------------------|--------|
| Item                                                | Standard                         | Method                                 | Requirement                               | Result |
| Conducted Emissions at AC Power Line (150kHz-30MHz) | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 6.2         | 47 CFR Part 15, Subpart C 15.207          | Pass   |
| Conducted Peak Output Power                         | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 7.8.5       | 47 CFR Part 15, Subpart C 15.247(b)(1)    | Pass   |
| 20dB Bandwidth                                      | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 7.8.7       | 47 CFR Part 15, Subpart C 15.247(a)(1)    | Pass   |
| Carrier Frequencies Separation                      | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 7.8.2       | 47 CFR Part 15, Subpart C 15.247a(1)      | Pass   |
| Hopping Channel Number                              | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 7.8.3       | 47 CFR Part 15, Subpart C 15.247a(1)(iii) | Pass   |
| Dwell Time                                          | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 7.8.4       | 47 CFR Part 15, Subpart C 15.247a(1)(iii) | Pass   |
| Conducted Band Edges Measurement                    | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 7.8.6       | 47 CFR Part 15, Subpart C 15.247(d)       | Pass   |
| Conducted Spurious Emissions                        | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 7.8.8       | 47 CFR Part 15, Subpart C 15.247(d)       | Pass   |
| Radiated Emissions & Restricted bands               | 47 CFR Part 15, Subpart C 15.247 | ANSI C63.10 (2013) Section 6.4,6.5,6.6 | 47 CFR Part 15, Subpart C 15.205 & 15.209 | Pass   |

**Note:**

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

According to the declaration from the applicant, the motor is changed for the product, so all the tests were done for the EUT.



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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd. No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
Guangzhou Branch Inspection & Testing Laboratory 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

### 3 Contents

|                                                                                       | Page |
|---------------------------------------------------------------------------------------|------|
| 1 Cover Page.....                                                                     | 1    |
| 2 Test Summary .....                                                                  | 3    |
| 3 Contents .....                                                                      | 4    |
| 4 General Information .....                                                           | 6    |
| 4.1 Details of E.U.T.....                                                             | 6    |
| 4.2 Description of Support Units.....                                                 | 6    |
| 4.3 Measurement Uncertainty .....                                                     | 6    |
| 4.4 Test Location .....                                                               | 7    |
| 4.5 Test Facility .....                                                               | 8    |
| 4.6 Deviation from Standards.....                                                     | 9    |
| 4.7 Abnormalities from Standard Conditions .....                                      | 9    |
| 5 Equipment List.....                                                                 | 10   |
| 6 Radio Spectrum Technical Requirement .....                                          | 12   |
| 6.1 Antenna Requirement .....                                                         | 12   |
| 6.1.1 Test Requirement:.....                                                          | 12   |
| 6.1.2 Conclusion .....                                                                | 12   |
| 6.2 Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence..... | 13   |
| 6.2.1 Test Requirement:.....                                                          | 13   |
| 6.2.2 Conclusion .....                                                                | 13   |
| 7 Radio Spectrum Matter Test Results.....                                             | 14   |
| 7.1 Conducted Emissions at AC Power Line (150kHz-30MHz) .....                         | 14   |
| 7.1.1 E.U.T. Operation.....                                                           | 14   |
| 7.1.2 Test Setup Diagram.....                                                         | 14   |
| 7.1.3 Measurement Procedure and Data .....                                            | 15   |
| 7.2 Conducted Peak Output Power.....                                                  | 18   |
| 7.2.1 E.U.T. Operation.....                                                           | 18   |
| 7.2.2 Test Setup Diagram.....                                                         | 18   |
| 7.2.3 Measurement Procedure and Data .....                                            | 18   |
| 7.3 20dB Bandwidth.....                                                               | 19   |
| 7.3.1 E.U.T. Operation.....                                                           | 19   |
| 7.3.2 Test Setup Diagram.....                                                         | 19   |
| 7.3.3 Measurement Procedure and Data .....                                            | 19   |
| 7.4 Carrier Frequencies Separation .....                                              | 20   |
| 7.4.1 E.U.T. Operation.....                                                           | 20   |
| 7.4.2 Test Setup Diagram.....                                                         | 20   |
| 7.4.3 Measurement Procedure and Data .....                                            | 20   |
| 7.5 Hopping Channel Number.....                                                       | 21   |
| 7.5.1 E.U.T. Operation.....                                                           | 21   |
| 7.5.2 Test Setup Diagram.....                                                         | 21   |
| 7.5.3 Measurement Procedure and Data .....                                            | 21   |
| 7.6 Dwell Time.....                                                                   | 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](mailto:CN.Doccheck@sgs.com)

|          |                                            |           |
|----------|--------------------------------------------|-----------|
| 7.6.1    | E.U.T. Operation.....                      | 22        |
| 7.6.2    | Test Setup Diagram.....                    | 22        |
| 7.6.3    | Measurement Procedure and Data .....       | 22        |
| 7.7      | Conducted Band Edges Measurement.....      | 23        |
| 7.7.1    | E.U.T. Operation.....                      | 23        |
| 7.7.2    | Test Setup Diagram.....                    | 24        |
| 7.7.3    | Measurement Procedure and Data .....       | 24        |
| 7.8      | Conducted Spurious Emissions.....          | 25        |
| 7.8.1    | E.U.T. Operation.....                      | 25        |
| 7.8.2    | Test Setup Diagram.....                    | 25        |
| 7.8.3    | Measurement Procedure and Data .....       | 25        |
| 7.9      | Radiated Emissions & Restricted bands..... | 26        |
| 7.9.1    | E.U.T. Operation.....                      | 26        |
| 7.9.2    | Test Setup Diagram.....                    | 27        |
| 7.9.3    | Measurement Procedure and Data .....       | 28        |
| <b>8</b> | <b>Appendix .....</b>                      | <b>44</b> |
| 8.1      | Appendix 15.247.....                       | 44        |



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](mailto:CN.Doccheck@sgs.com)

## 4 General Information

### 4.1 Details of E.U.T.

|                             |                                         |
|-----------------------------|-----------------------------------------|
| Power Supply:               | AC 120 V, 60Hz                          |
| Cable:                      | AC mains                                |
| Test Voltage:               | AC 120 V, 60Hz                          |
| Antenna Gain:               | -5 dBi declared by applicant            |
| Antenna Type:               | Integrated antenna                      |
| Channel Spacing:            | 500 kHz                                 |
| Modulation Type:            | GFSK                                    |
| Number of Channels:         | 50                                      |
| Operation Frequency:        | 902.25MHz to 926.75MHz                  |
| Spectrum Spread Technology: | Frequency Hopping Spread Spectrum(FHSS) |
| Hardware Version:           | SL600-R                                 |
| Firmware Version:           | V1.1                                    |
| S/N:                        | SN00654                                 |
| Test Software Version:      | N/A                                     |
| RF Power setting level      | Default and can not be changed by user  |

### 4.2 Description of Support Units

The EUT has been tested as an independent unit.

### 4.3 Measurement Uncertainty

| No. | Item                            | Measurement Uncertainty   |
|-----|---------------------------------|---------------------------|
| 1   | Radio Frequency                 | $\pm 5.5 \times 10^{-8}$  |
| 2   | Duty cycle                      | $\pm 0.57\%$              |
| 3   | Occupied Bandwidth              | $\pm 3\%$                 |
| 4   | RF Conducted power              | 0.68dB                    |
| 5   | RF Power Density                | 1.50dB                    |
| 6   | Conducted Spurious Emissions    | 1.04dB                    |
| 7   | RF Radiated Power               | 4.5dB (below 1GHz)        |
|     |                                 | 4.8dB (above 1GHz)        |
| 8   | Radiated Spurious Emission Test | 4.5dB (30MHz-1GHz)        |
|     |                                 | 4.8dB (1GHz-18GHz)        |
| 9   | Temperature                     | $\pm 0.4^{\circ}\text{C}$ |
| 10  | Humidity                        | $\pm 1.3\%$               |
| 11  | Supply Voltages                 | $\pm 1.5\%$               |
| 12  | Time                            | $\pm 3\%$                 |



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](mailto:CN.Doccheck@sgs.com)

#### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,  
 Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
 Guangzhou Branch EMC Laboratory

No. 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

#### 4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to

ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized 2.948 Listed Test Firm(Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818, Jul 13, 2017.

● **Industry Canada (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● **VCCI (Registration No.: R-12460, C-12584, G-10449 and T-11179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-10449 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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](mailto:CN.Doccheck@sgs.com)  
 No.198 Kazhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

#### 4.6 Deviation from Standards

None

#### 4.7 Abnormalities from Standard Conditions

None



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](mailto:CN.Doccheck@sgs.com)

## 5 Equipment List

| Conducted Emissions at AC Power Line (150kHz-30MHz) |                   |                |              |            |              |
|-----------------------------------------------------|-------------------|----------------|--------------|------------|--------------|
| Equipment                                           | Manufacturer      | Model No       | Inventory No | Cal Date   | Cal Due Date |
| Shielding Room                                      | ChangZhou ZhongYu | 8m x 3m x 3.8m | EMC0306      | N/A        | N/A          |
| Two-Line V-Network                                  | Rohde & Schwarz   | ENV216         | EMC0118      | 2020-01-10 | 2021-01-09   |
| LISN                                                | Rohde & Schwarz   | ENV216         | EMC2135      | 2020-09-25 | 2021-09-24   |
| EMI Test Receiver                                   | Rohde & Schwarz   | ESCS30         | EMC0506      | 2020-11-13 | 2021-11-12   |
| Coaxial Cable                                       | HangTianXing      | 2m             | EMC0107      | 2020-09-09 | 2022-09-08   |
| Voltage Probe                                       | SGS-EMC           | N/A            | EMC0106      | 2019-05-10 | 2021-05-09   |
| Conical Metal Housing                               | SGS-EMC           | N/A            | EMC0167      | 2020-04-19 | 2022-04-18   |
| Test Software E3c                                   | Audix             | Ver. 5.4.1221b | GZE100-62    | N/A        | N/A          |

| RF Conducted Test      |                     |          |              |            |              |
|------------------------|---------------------|----------|--------------|------------|--------------|
| Equipment              | Manufacturer        | Model No | Inventory No | Cal Date   | Cal Due Date |
| EXA Signal Analyzer    | AgilentTechnologies | N9010A   | EMC2138      | 2020-09-17 | 2021-09-16   |
| 6dB Attenuator         | HP                  | 8491A    | EMC2062      | 2020-04-15 | 2022-04-14   |
| Test Software JS1120-3 | HangTianXing        | V2.6     | GZE100-69    | N/A        | N/A          |
| MI CABLE               | SGS-EMC             | 0.8M     | EMC2136      | 2019-11-02 | 2021-11-01   |
| MI CABLE               | SGS-EMC             | 0.8M     | EMC2137      | 2019-11-02 | 2021-11-01   |

| Radiated Emissions                  |                             |            |              |            |              |
|-------------------------------------|-----------------------------|------------|--------------|------------|--------------|
| Equipment                           | Manufacturer                | Model No   | Inventory No | Cal Date   | Cal Due Date |
| EMI Test Receiver                   | Rohde & Schwarz             | ESIB26     | EMC0522      | 2020-01-10 | 2021-01-09   |
| EMI Test Receiver                   | Rohde & Schwarz             | ESCI       | EMC0056      | 2020-01-10 | 2021-01-09   |
| Chamber cable                       | HangTianXing                | N/A        | EMC0542      | 2019-06-28 | 2021-06-27   |
| Trilog Broadband Antenna 25MHz-1GHz | SCHWARZBECKME SS-ELEKTRONIK | VULB 9168  | EMC2174      | 2018-09-06 | 2021-09-05   |
| Trilog Broadband Antenna 30MHz-1GHz | SCHWARZBECKME SS-ELEKTRONIK | VULB 9168  | SEM003-18    | 2019-02-22 | 2022-02-22   |
| Bi-log Type Antenna                 | Schaffner Chase             | CBL6143    | EMC0519      | 2020-06-08 | 2023-06-07   |
| Horn Antenna 1GHz-18GHz             | Rohde & Schwarz             | HF906      | EMC0518      | 2018-09-02 | 2021-09-01   |
| 1GHz-26.5 GHz Pre-Amplifier         | Agilent                     | 8449B      | EMC0521      | 2020-01-10 | 2021-01-09   |
| Amplifier                           | HP                          | 8447F      | EMC2065      | 2020-05-26 | 2021-05-25   |
| Pre-Amplifier MH648A                | ANRITSU CORP                | MH648A     | EMC2086      | 2020-11-13 | 2021-11-12   |
| Active Loop Antenna                 | ETS-Lindgren                | 6502       | EMC2190      | 2019-12-27 | 2021-12-26   |
| High Pass Filter(915MHz)            | FSY MICROWAVE               | HM1465-9SS | EMC2079      | 2020-01-10 | 2021-01-09   |
| 2.4GHz Filter                       | Micro-Tronics               | BRM 50702  | EMC2069      | 2020-01-10 | 2021-01-09   |



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](mailto:CN.Doccheck@sgs.com)**

SGS-CSTC Standards Technical Services Co., Ltd. No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
Guangzhou Branch Testing Center EEC Laboratory. 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

|                           |          |               |           |            |            |
|---------------------------|----------|---------------|-----------|------------|------------|
| 10m Semi-Anechoic Chamber | ETS      | N/A           | EMC0530   | 2019-10-20 | 2022-10-19 |
| 966 Anechoic Chamber      | C.R.T    | 9m x 6m x 6m  | EMC2142   | 2020-12-19 | 2023-12-18 |
| MXE EMI Receiver          | Keysight | N9038A        | EMC2139   | 2020-11-13 | 2021-11-12 |
| EXA Signal Analyzer       | Keysight | N9010A        | EMC2138   | 2020-09-17 | 2021-09-16 |
| Test Software E3          | Audix    | Ver.6.120110a | GZE100-61 | N/A        | N/A        |

| General used equipment |              |          |              |            |              |
|------------------------|--------------|----------|--------------|------------|--------------|
| Equipment              | Manufacturer | Model No | Inventory No | Cal Date   | Cal Due Date |
| DMM                    | Fluke        | 73       | EMC0006      | 2020-07-09 | 2021-07-08   |
| DMM                    | Fluke        | 73       | EMC0007      | 2020-07-09 | 2021-07-08   |



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](mailto:CN.Doccheck@sgs.com)

## 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(c)

#### 6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -5 dBi. Please refer to the internal photos for details.



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](mailto:CN.Doccheck@sgs.com)

## 6.2 Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence

### 6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)

### 6.2.2 Conclusion

Standard Requirement:

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Compliance for section 15.247(a)(1):

According to Technical Specification, the pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONES; i.e. the shift register is initialized with nine ones.

> Number of shift register stages: 9

> Length of pseudo-random sequence:  $2^9 - 1 = 511$  bits

> Longest sequence of zeros: 8 (non-inverted signal)

Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

Each frequency used equally on the average by each transmitter.

According to Technical Specification, the receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any transmitters and shift frequencies in synchronization with the transmitted signals.

Compliance for section 15.247(h):

According to Technical specification, the system incorporates with an adaptive system to detect other user within the spectrum bands



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](mailto:CN.Doccheck@sgs.com)  
 No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 7 Radio Spectrum Matter Test Results

### 7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

| Frequency of emission(MHz) | Conducted limit(dBμV) |           |
|----------------------------|-----------------------|-----------|
|                            | Quasi-peak            | Average   |
| 0.15-0.5                   | 66 to 56*             | 56 to 46* |
| 0.5-5                      | 56                    | 46        |
| 5-30                       | 60                    | 50        |

\*Decreases with the logarithm of the frequency.

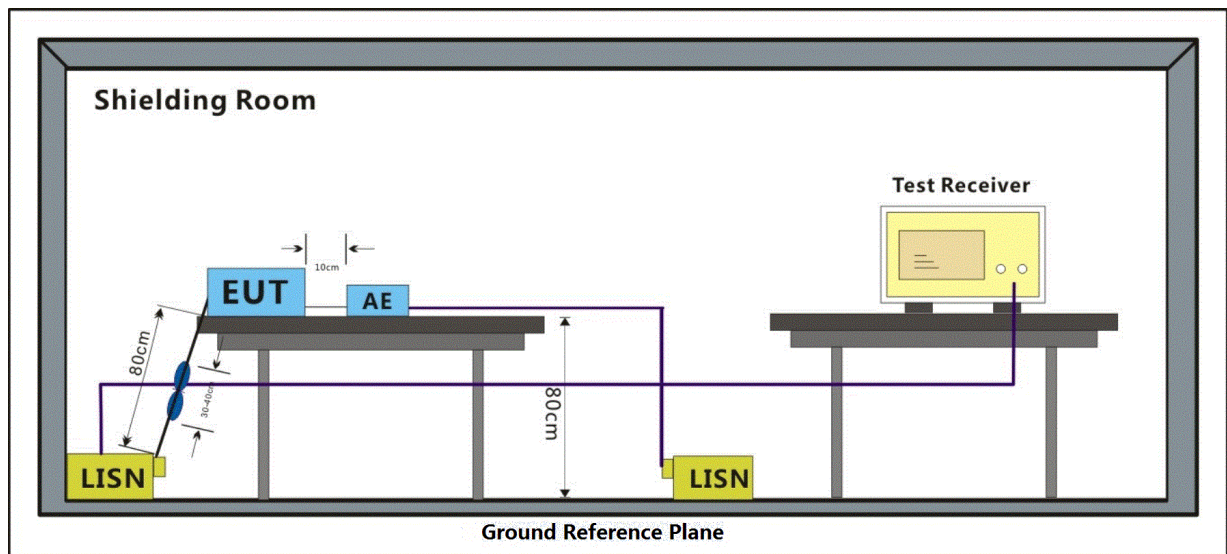
#### 7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.

#### 7.1.2 Test Setup Diagram



### 7.1.3 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

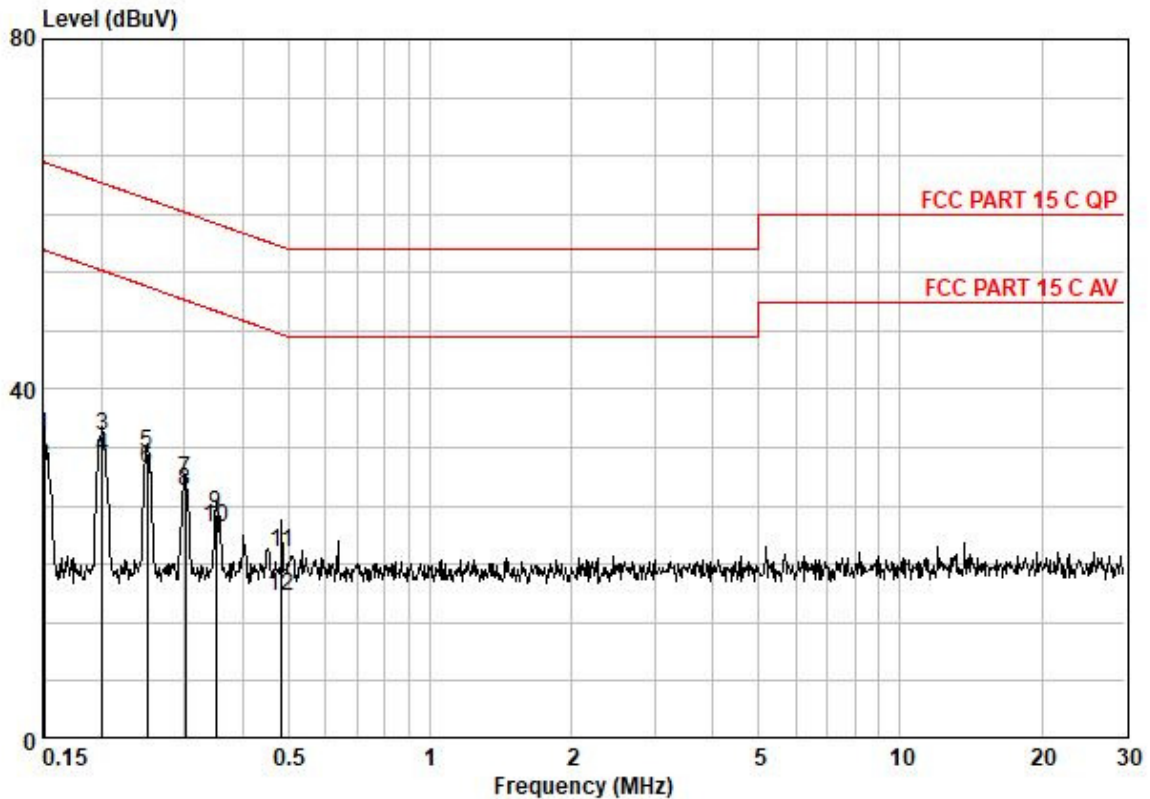
Remark: LISN=Read Level+ Cable Loss+ LISN Factor



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](mailto:CN.Doccheck@sgs.com)

Mode:b; Line:Live Line



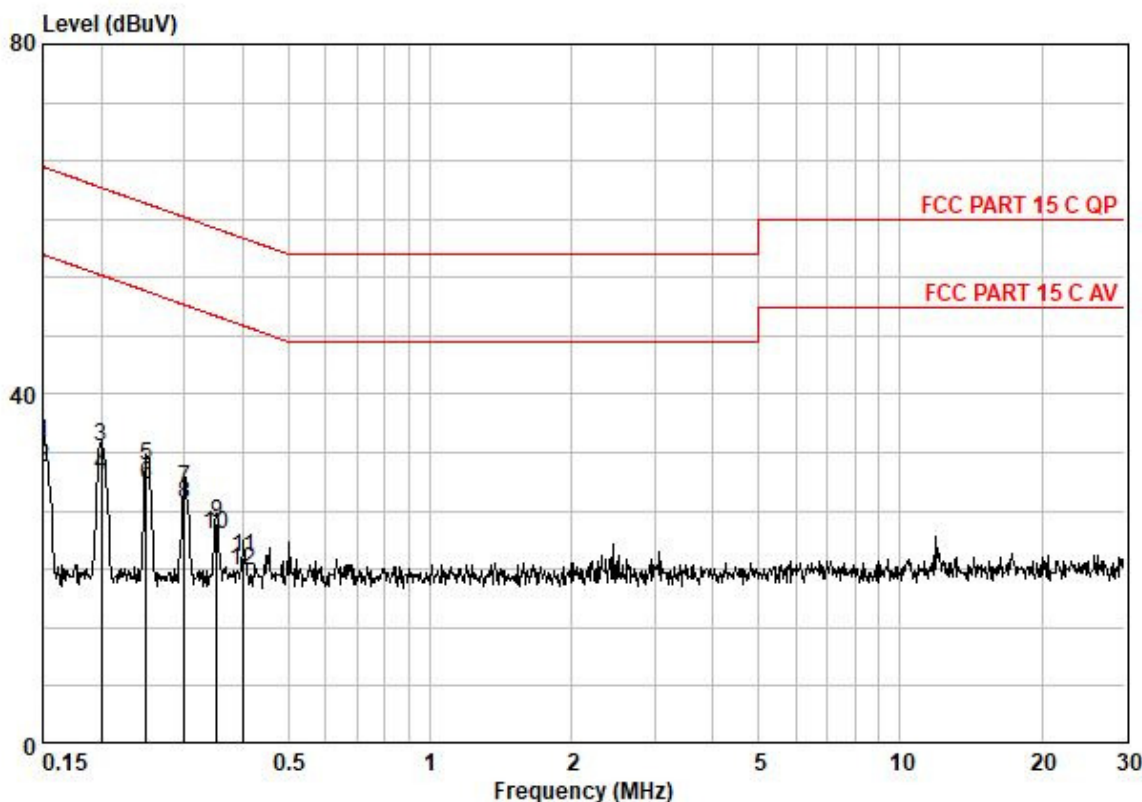
|                  |                       |                     |                      |                           |                       |                     |         |  |
|------------------|-----------------------|---------------------|----------------------|---------------------------|-----------------------|---------------------|---------|--|
| Pol              | :LIVE                 |                     |                      |                           |                       |                     |         |  |
| Mode             | :                     |                     |                      |                           |                       |                     |         |  |
| Model            | :                     |                     |                      |                           |                       |                     |         |  |
| Frequency<br>MHz | read<br>level<br>dBuV | Cable<br>Loss<br>dB | LISN<br>Factor<br>dB | Measured<br>level<br>dBuV | Limit<br>Line<br>dBuV | Over<br>limit<br>dB | Remark  |  |
| 0.15             | 25.04                 | 0.10                | 9.61                 | 34.75                     | 65.96                 | -31.21              | QP      |  |
| 0.15             | 21.56                 | 0.10                | 9.61                 | 31.27                     | 55.96                 | -24.69              | AVERAGE |  |
| 0.20             | 24.92                 | 0.10                | 9.60                 | 34.62                     | 63.58                 | -28.96              | QP      |  |
| 0.20             | 22.58                 | 0.10                | 9.60                 | 32.28                     | 53.58                 | -21.30              | AVERAGE |  |
| 0.25             | 22.98                 | 0.10                | 9.61                 | 32.69                     | 61.73                 | -29.04              | QP      |  |
| 0.25             | 21.18                 | 0.10                | 9.61                 | 30.89                     | 51.73                 | -20.84              | AVERAGE |  |
| 0.30             | 19.84                 | 0.10                | 9.60                 | 29.54                     | 60.19                 | -30.65              | QP      |  |
| 0.30             | 18.63                 | 0.10                | 9.60                 | 28.33                     | 50.19                 | -21.86              | AVERAGE |  |
| 0.35             | 16.12                 | 0.10                | 9.60                 | 25.82                     | 58.96                 | -33.14              | QP      |  |
| 0.35             | 14.55                 | 0.10                | 9.60                 | 24.25                     | 48.96                 | -24.71              | AVERAGE |  |
| 0.48             | 11.62                 | 0.10                | 9.61                 | 21.33                     | 56.27                 | -34.94              | QP      |  |
| 0.48             | 6.57                  | 0.10                | 9.61                 | 16.28                     | 46.27                 | -29.99              | AVERAGE |  |



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](mailto:CN.Doccheck@sgs.com)

Mode:b; Line:Neutral Line

Pol : NEUTRAL  
Mode :  
Model :

| Frequency<br>MHz | read<br>level<br>dBuV | Cable<br>Loss<br>dB | LISN<br>Factor<br>dB | Measured<br>level<br>dBuV | Limit<br>Line<br>dBuV | Over<br>limit<br>dB | Remark  |
|------------------|-----------------------|---------------------|----------------------|---------------------------|-----------------------|---------------------|---------|
| 0.15             | 24.80                 | 0.10                | 9.61                 | 34.51                     | 66.00                 | -31.49              | QP      |
| 0.15             | 21.93                 | 0.10                | 9.61                 | 31.64                     | 56.00                 | -24.36              | AVERAGE |
| 0.20             | 24.36                 | 0.10                | 9.62                 | 34.08                     | 63.62                 | -29.54              | QP      |
| 0.20             | 20.98                 | 0.10                | 9.62                 | 30.70                     | 53.62                 | -22.92              | AVERAGE |
| 0.25             | 22.04                 | 0.10                | 9.62                 | 31.76                     | 61.78                 | -30.02              | QP      |
| 0.25             | 19.91                 | 0.10                | 9.62                 | 29.63                     | 51.78                 | -22.15              | AVERAGE |
| 0.30             | 19.46                 | 0.10                | 9.63                 | 29.19                     | 60.24                 | -31.05              | QP      |
| 0.30             | 17.73                 | 0.10                | 9.63                 | 27.46                     | 50.24                 | -22.78              | AVERAGE |
| 0.35             | 15.54                 | 0.10                | 9.63                 | 25.27                     | 58.91                 | -33.64              | QP      |
| 0.35             | 14.34                 | 0.10                | 9.63                 | 24.07                     | 48.91                 | -24.84              | AVERAGE |
| 0.40             | 11.60                 | 0.10                | 9.64                 | 21.34                     | 57.81                 | -36.47              | QP      |
| 0.40             | 10.20                 | 0.10                | 9.64                 | 19.94                     | 47.81                 | -27.87              | AVERAGE |



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](mailto:CN.Doccheck@sgs.com)

## 7.2 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(1)

Test Method: ANSI C63.10 (2013) Section 7.8.5

Limit:

| Frequency range(MHz) | Output power of the intentional radiator(watt)         |
|----------------------|--------------------------------------------------------|
| 902-928              | 1 for $\geq 50$ hopping channels                       |
|                      | 0.25 for $25 \leq$ hopping channels $< 50$             |
|                      | 1 for digital modulation                               |
| 2400-2483.5          | 1 for $\geq 75$ non-overlapping hopping channels       |
|                      | 0.125 for all other frequency hopping systems          |
|                      | 1 for digital modulation                               |
| 5725-5850            | 1 for frequency hopping systems and digital modulation |

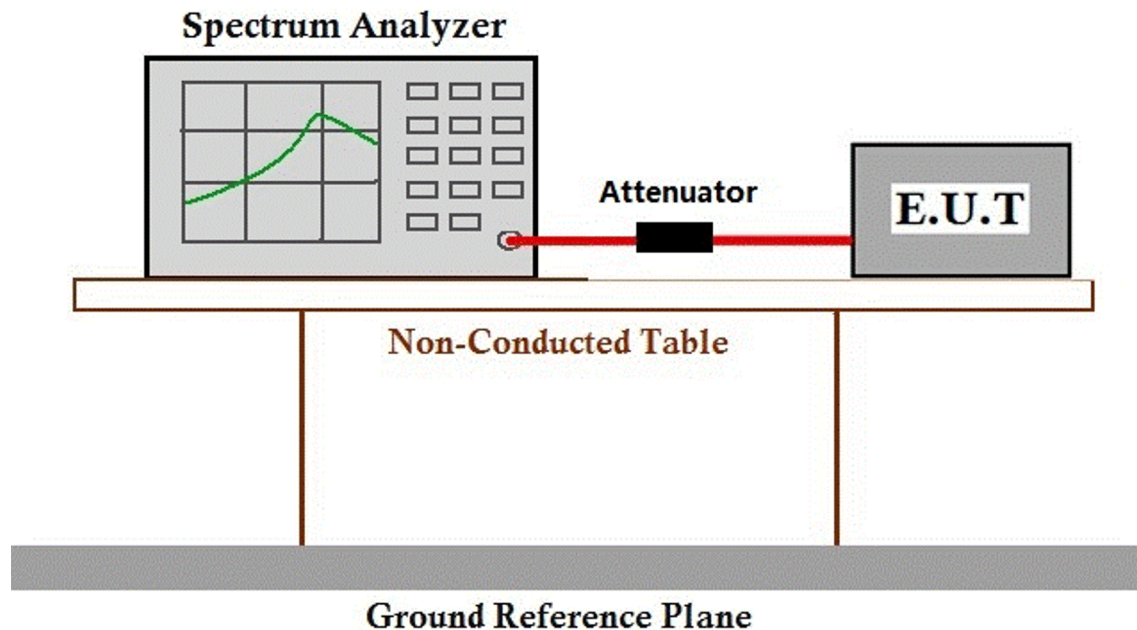
### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 64.4 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.

### 7.2.2 Test Setup Diagram



### 7.2.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center EEC Laboratory

No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

### 7.3 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.247(a)(1)

Test Method: ANSI C63.10 (2013) Section 7.8.7

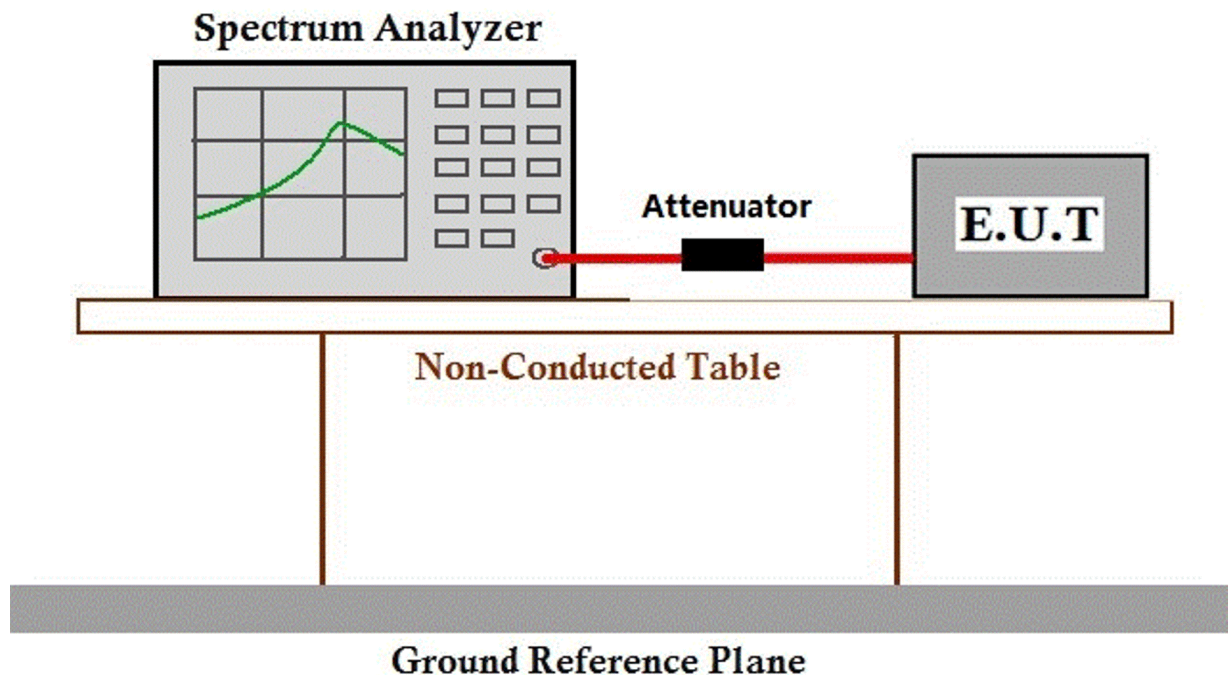
#### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 64.4 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.

#### 7.3.2 Test Setup Diagram



#### 7.3.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
 Guangzhou Branch Testing Center EEC Laboratory

No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

## 7.4 Carrier Frequencies Separation

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)  
 Test Method: ANSI C63.10 (2013) Section 7.8.2  
 Limit: 2/3 of the 20dB bandwidth base on the transmission power is less than 0.125W

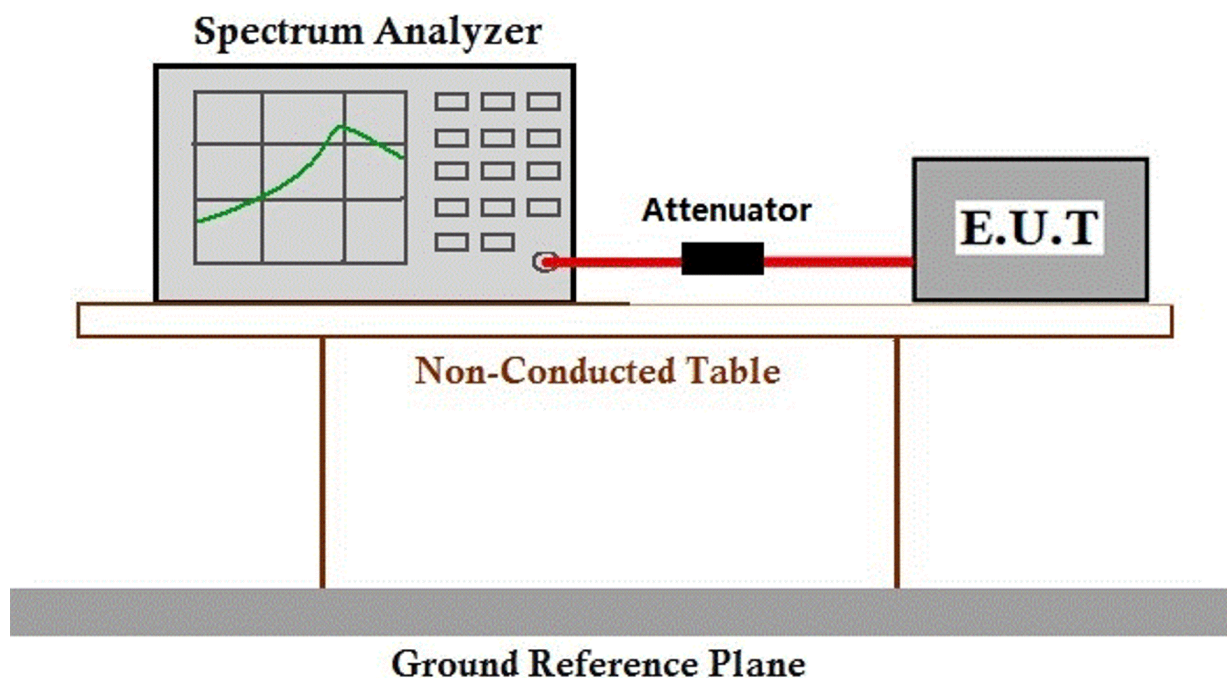
### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 64.4 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.

### 7.4.2 Test Setup Diagram



### 7.4.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247

## 7.5 Hopping Channel Number

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)(iii)

Test Method: ANSI C63.10 (2013) Section 7.8.3

Limit:

| Frequency range(MHz) | Number of hopping channels (minimum) |
|----------------------|--------------------------------------|
| 902-928              | 50 for 20dB bandwidth <250kHz        |
|                      | 25 for 20dB bandwidth ≥250kHz        |
| 2400-2483.5          | 15                                   |
| 5725-5850            | 75                                   |

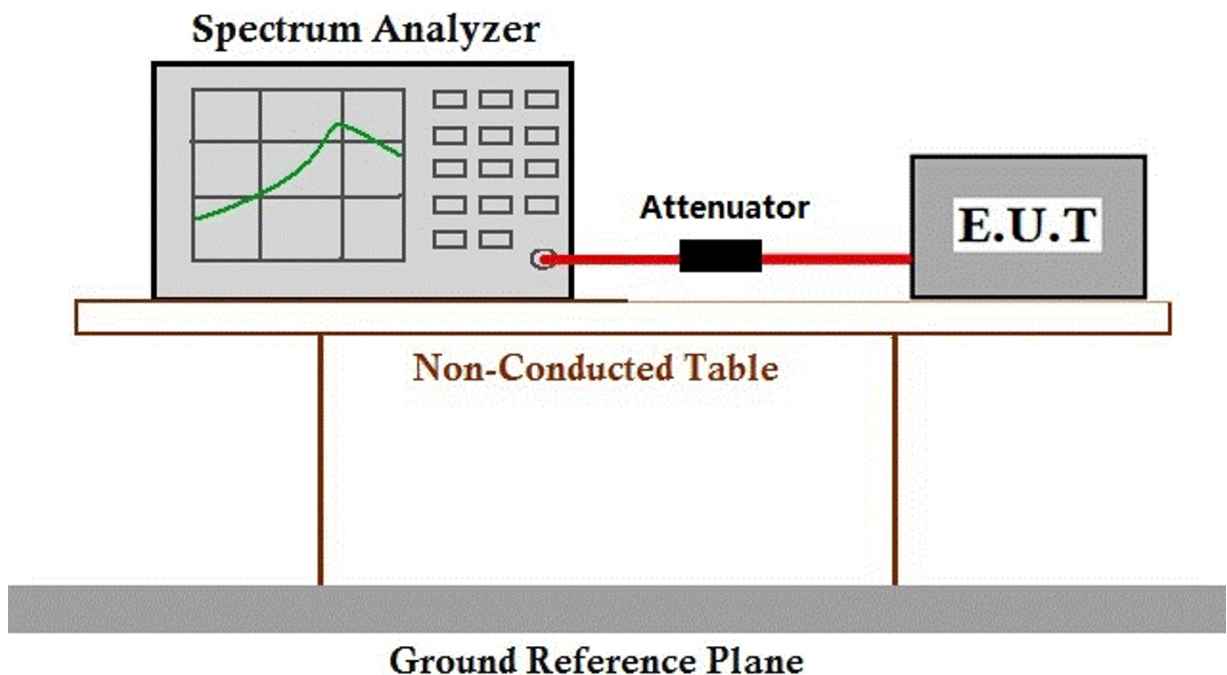
### 7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 64.4 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.

### 7.5.2 Test Setup Diagram



### 7.5.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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](mailto:CN.Doccheck@sgs.com)  
 No.198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 7.6 Dwell Time

Test Requirement 47 CFR Part 15, Subpart C 15.247a(1)(iii)

Test Method: ANSI C63.10 (2013) Section 7.8.4

Limit:

| Frequency(MHz) | Limit                                                                     |
|----------------|---------------------------------------------------------------------------|
| 902-928        | 0.4S within a 20S period(20dB bandwidth<250kHz)                           |
|                | 0.4S within a 10S period(20dB bandwidth≥250kHz)                           |
| 2400-2483.5    | 0.4S within a period of 0.4S multiplied by the number of hopping channels |
| 5725-5850      | 0.4S within a 30S period                                                  |

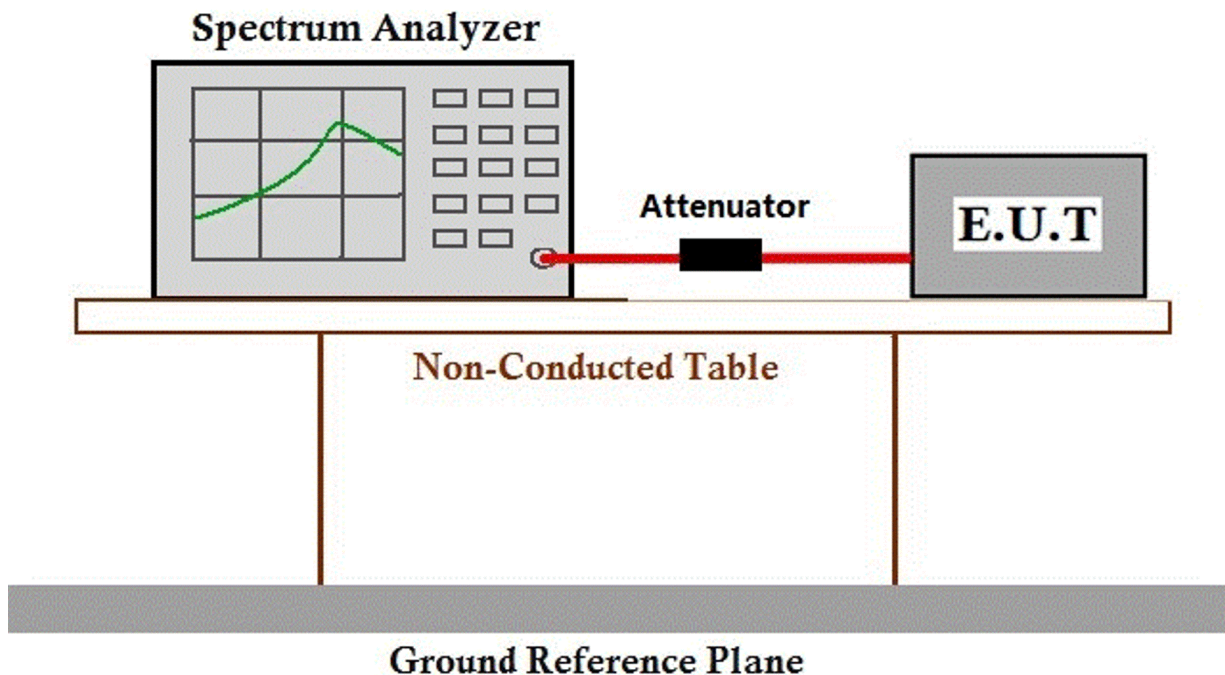
### 7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 64.3 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.

### 7.6.2 Test Setup Diagram



### 7.6.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
 Guangzhou Branch, Testing Center EEC Laboratory

No.198 Kazhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 7.7 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 7.8.6

Limit: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))

### 7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 63.7 % RH Atmospheric Pressure: 1020 mbar

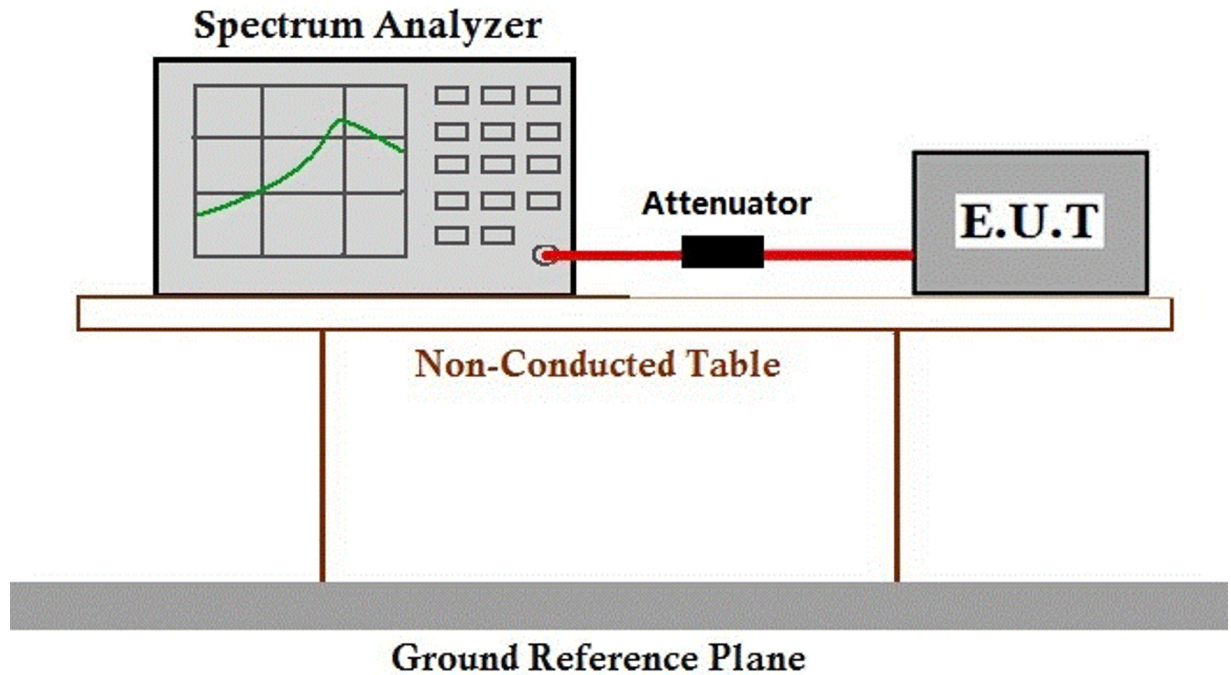
Test mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.



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](mailto:CN.Doccheck@sgs.com)

### 7.7.2 Test Setup Diagram



### 7.7.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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](mailto:CN.Doccheck@sgs.com)

## 7.8 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 7.8.8

Limit: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))

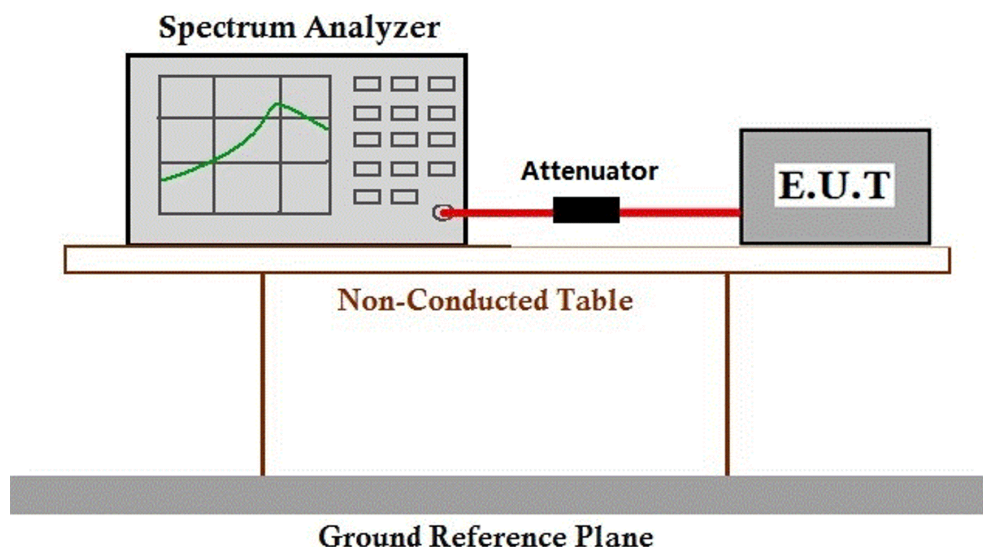
### 7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 24.9 °C Humidity: 63.3 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.

### 7.8.2 Test Setup Diagram



### 7.8.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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](mailto:CN.Doccheck@sgs.com)  
 No.198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
 Guangzhou Branch Testing Center EEC Laboratory. 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 7.9 Radiated Emissions & Restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6

Measurement Distance: 3m

Limit:

| Frequency(MHz) | Field strength<br>(microvolts/meter) | Measurement distance<br>(meters) |
|----------------|--------------------------------------|----------------------------------|
| 0.009-0.490    | 2400/F(kHz)                          | 300                              |
| 0.490-1.705    | 24000/F(kHz)                         | 30                               |
| 1.705-30.0     | 30                                   | 30                               |
| 30-88          | 100                                  | 3                                |
| 88-216         | 150                                  | 3                                |
| 216-960        | 200                                  | 3                                |
| Above 960      | 500                                  | 3                                |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

### 7.9.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 52 % RH Atmospheric Pressure: 1020 mbar

Test Mode: b:TX mode\_Keep the EUT in transmitting with modulation mode.



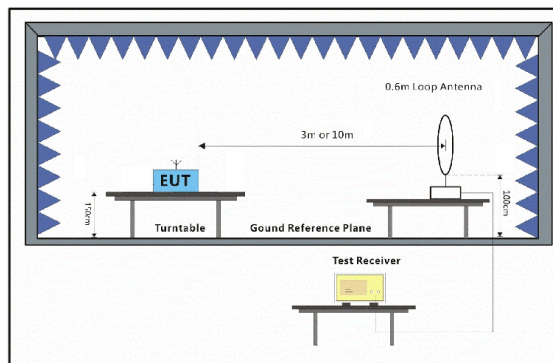
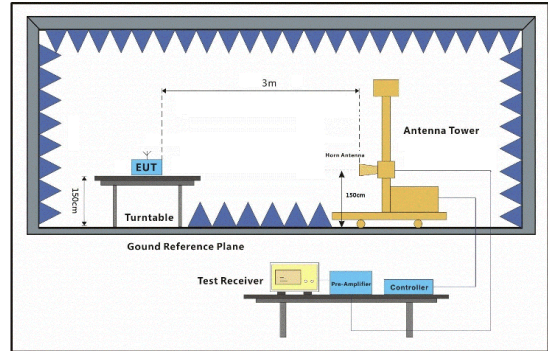
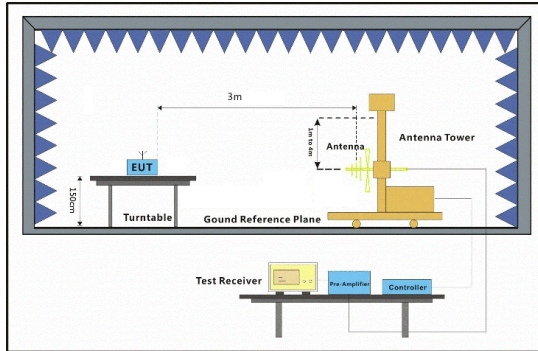
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center EEC Laboratory

No. 198 Kazhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 7.9.2 Test Setup Diagram



### 7.9.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

#### Remark:

- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:  
 Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown



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](mailto:CN.Doccheck@sgs.com)  
 No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

According to the clause 7.5 of ANSI C63.10-2013:

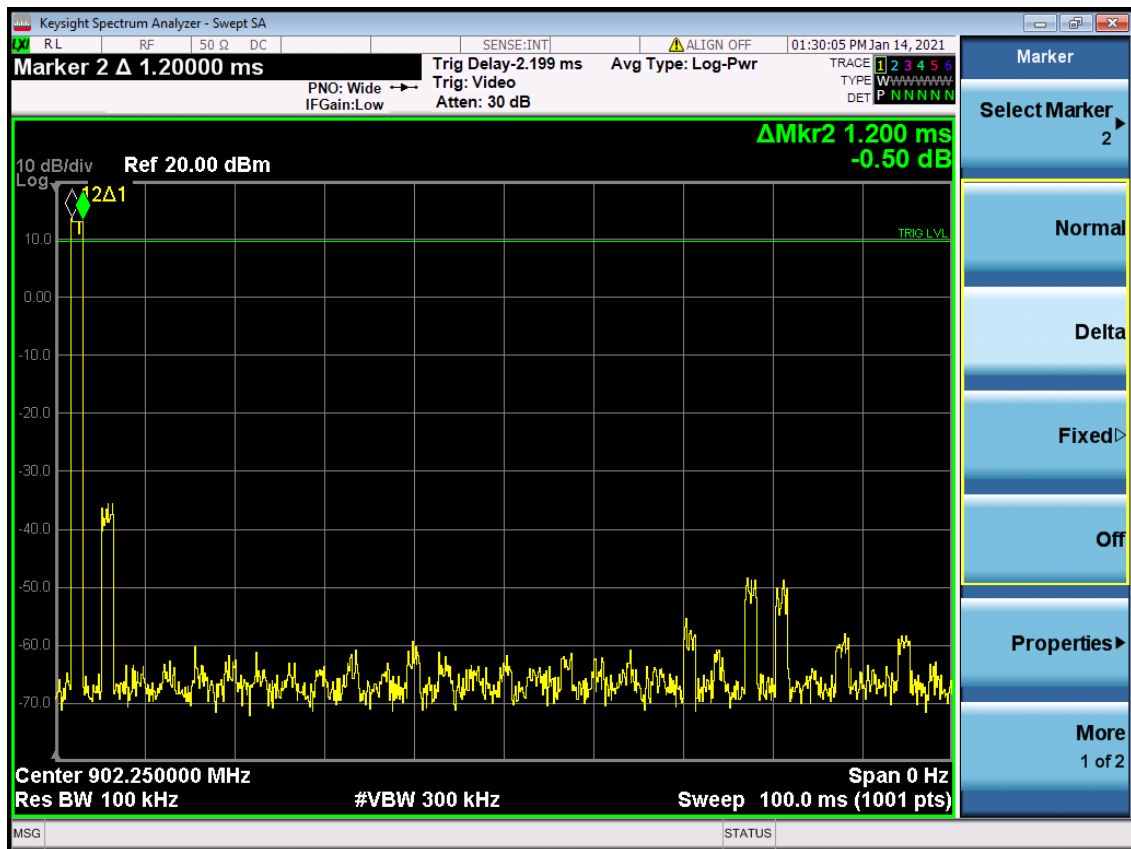
The average correction factor is computed by analyzing the on time in 100ms over one complete pulse train. Analysis of the remote transmitter on time in one complete pulse train, therefore the average value of fundamental frequency is: Average = Peak value + 20log (Duty cycle), where the duty factor is calculated from following formula:

$$20\log(\text{Duty cycle}) = 20\log\left(\frac{T_{\text{pulse}}}{100}\right) = 20\log(1.2/100) = -38.4\text{dB}$$

Here  $T_{\text{pulse}} = 1.2$  (ms)

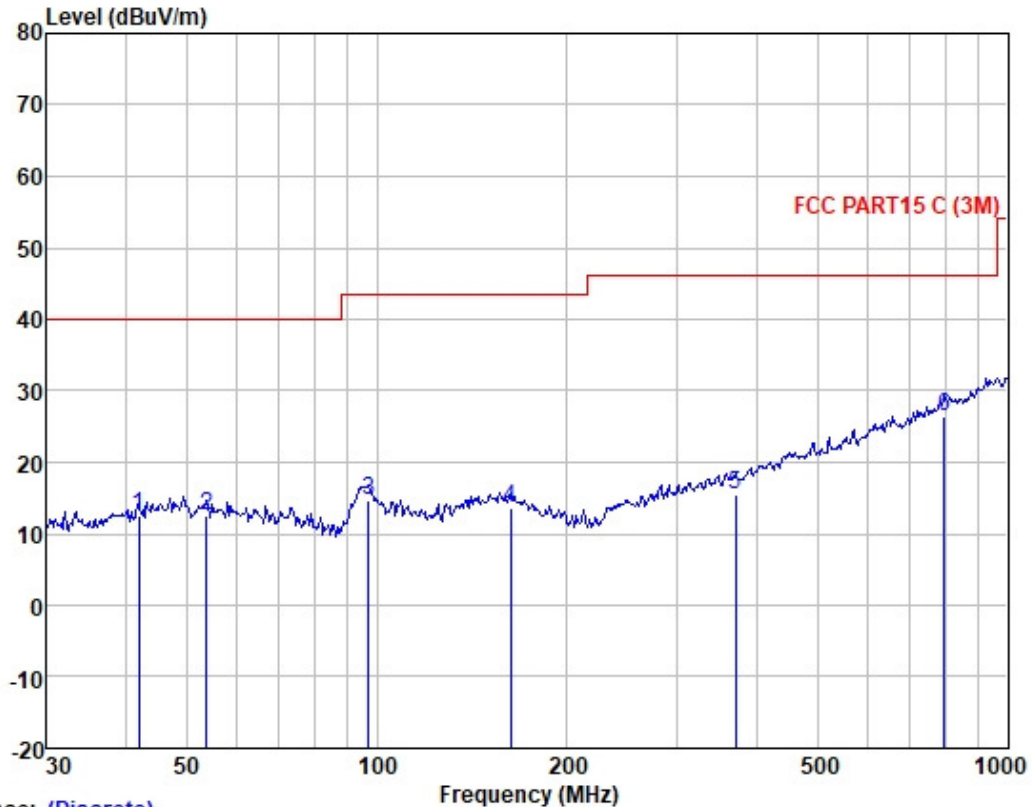
Please refer to below plots for more details.

**Duty cycle:**



**30MHz- 1G:** Field Strength of Unwanted Emissions. Quasi-Peak Measurement:

Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low



Trace: (Discrete)

Site : SGS

Condition: FCC PART15 C (3M) 3m HORIZONTAL

Job :

Model :

Power :

Test Mode:

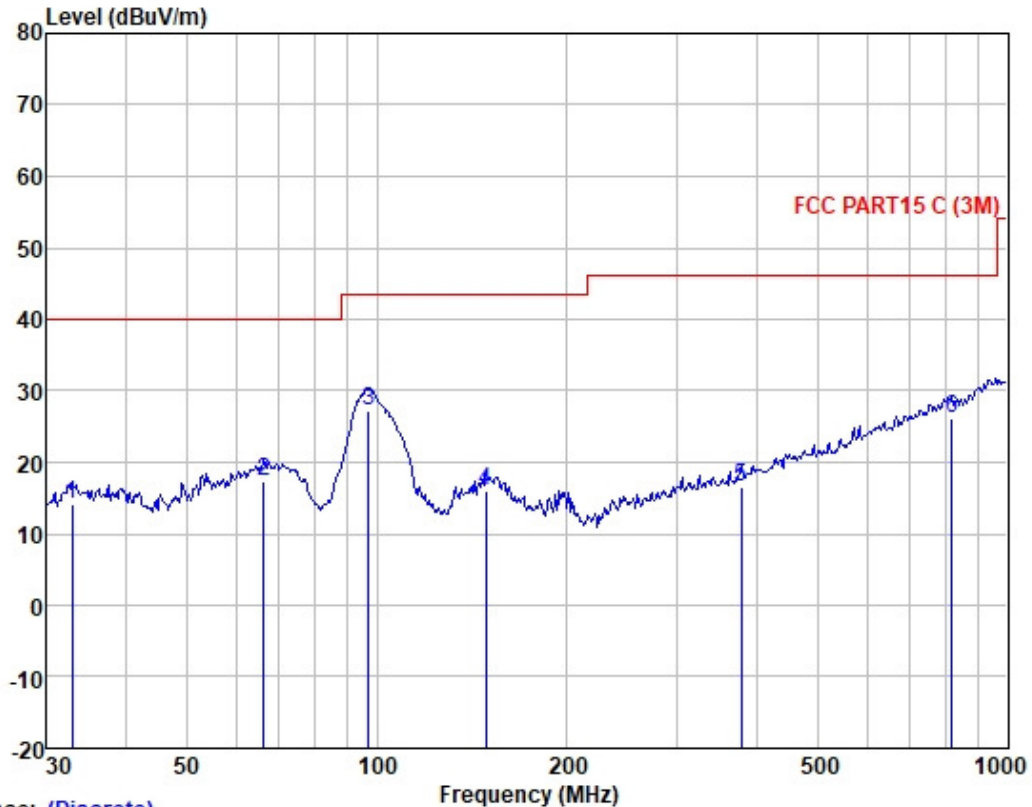
|   | Freq    | Read  | Antenna | Cable | Preamp | Limit  | Over   |           |               |
|---|---------|-------|---------|-------|--------|--------|--------|-----------|---------------|
|   | MHz     | Level | Factor  | Loss  | Factor | Line   | Limit  | Pol/Phase | Remark        |
|   | MHz     | dBuV  | dB/m    | dB    | dB     | dBuV/m | dBuV/m | dB        |               |
| 1 | 42.007  | 24.82 | 13.70   | 1.11  | 27.17  | 12.46  | 40.00  | -27.54    | HORIZONTAL QP |
| 2 | 53.693  | 24.63 | 13.83   | 1.25  | 27.17  | 12.54  | 40.00  | -27.46    | HORIZONTAL QP |
| 3 | 97.115  | 31.45 | 8.70    | 1.61  | 27.08  | 14.68  | 43.50  | -28.82    | HORIZONTAL QP |
| 4 | 163.182 | 24.76 | 13.53   | 2.17  | 26.79  | 13.67  | 43.50  | -29.83    | HORIZONTAL QP |
| 5 | 370.702 | 24.04 | 15.25   | 3.40  | 27.19  | 15.50  | 46.00  | -30.50    | HORIZONTAL QP |
| 6 | 793.396 | 26.05 | 22.53   | 5.78  | 28.04  | 26.32  | 46.00  | -19.68    | HORIZONTAL QP |



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](mailto:CN.Doccheck@sgs.com)

Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:Low



Trace: (Discrete)

Site : SGS

Condition: FCC PART15 C (3M) 3m VERTICAL

Job :

Model :

Power :

Test Mode:

|   | Freq    | Read  | Antenna | Cable | Preamp | Limit  | Over   |                 |        |
|---|---------|-------|---------|-------|--------|--------|--------|-----------------|--------|
|   | MHz     | Level | Factor  | Loss  | Factor | Line   | Limit  | Pol/Phase       | Remark |
|   | MHz     | dBuV  | dB/m    | dB    | dB     | dBuV/m | dBuV/m | dB              |        |
| 1 | 32.864  | 27.51 | 12.74   | 1.03  | 27.19  | 14.09  | 40.00  | -25.91 VERTICAL | QP     |
| 2 | 66.266  | 30.71 | 12.56   | 1.30  | 27.14  | 17.43  | 40.00  | -22.57 VERTICAL | QP     |
| 3 | 97.115  | 44.10 | 8.70    | 1.61  | 27.08  | 27.33  | 43.50  | -16.17 VERTICAL | QP     |
| 4 | 148.963 | 27.09 | 13.75   | 2.05  | 26.84  | 16.05  | 43.50  | -27.45 VERTICAL | QP     |
| 5 | 378.584 | 24.88 | 15.48   | 3.43  | 27.24  | 16.55  | 46.00  | -29.45 VERTICAL | QP     |
| 6 | 815.968 | 25.52 | 22.77   | 5.90  | 28.01  | 26.18  | 46.00  | -19.82 VERTICAL | QP     |



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.

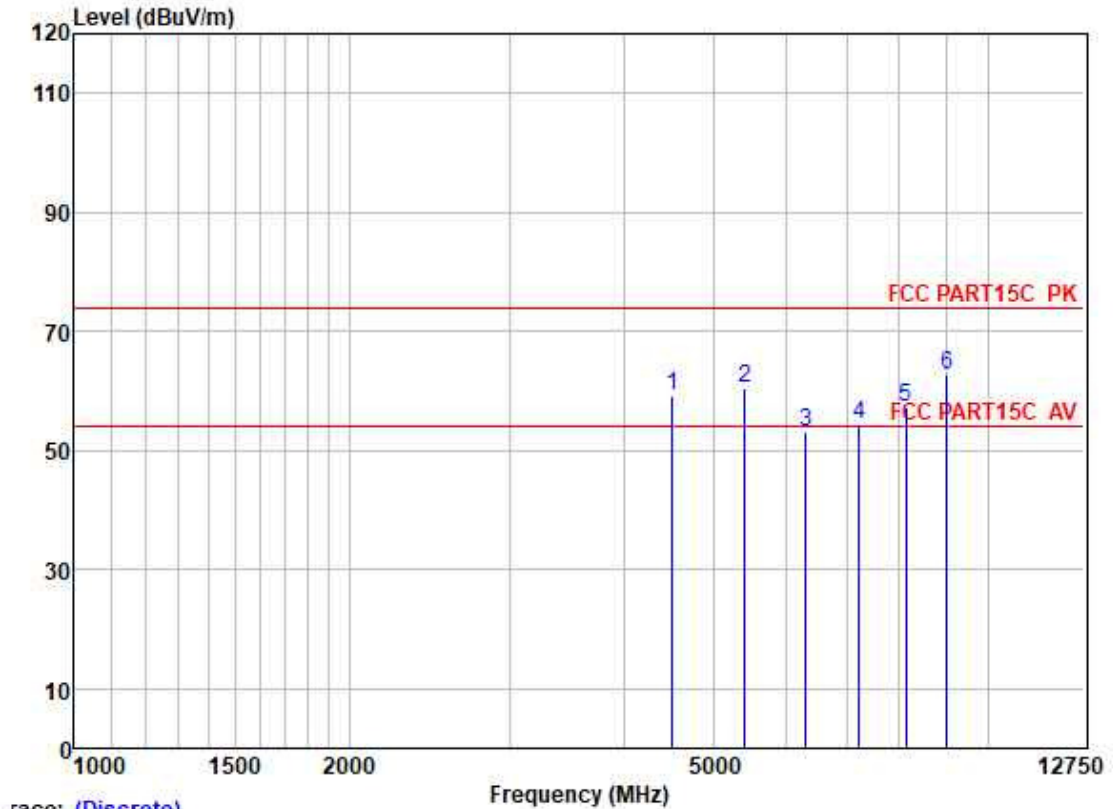
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center EEC Laboratory

No.198 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

1GHz~10GHz Field Strength of Unwanted Emissions Measurement:

Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low



Trace: (Discrete)

|   | Freq     | ReadAntenna | Cable  | Preamp | Limit  | Over   |        |        |                 |
|---|----------|-------------|--------|--------|--------|--------|--------|--------|-----------------|
|   |          | Level       | Factor | Loss   | Factor | Level  | Line   | Limit  | Pol/Phase       |
|   | MHz      | dBuV        | dB/m   | dB     | dB     | dBuV/m | dBuV/m | dB     | Remark          |
| 1 | 4511.966 | 60.08       | 30.82  | 5.11   | 36.92  | 59.09  | 74.00  | -14.91 | HORIZONTAL Peak |
| 2 | 5413.961 | 59.47       | 31.79  | 6.06   | 36.99  | 60.33  | 74.00  | -13.67 | HORIZONTAL Peak |
| 3 | 6315.233 | 50.55       | 33.51  | 5.95   | 36.99  | 53.02  | 74.00  | -20.98 | HORIZONTAL Peak |
| 4 | 7218.015 | 49.84       | 35.62  | 6.01   | 36.93  | 54.54  | 74.00  | -19.46 | HORIZONTAL Peak |
| 5 | 8120.215 | 50.88       | 36.95  | 6.27   | 36.91  | 57.19  | 74.00  | -16.81 | HORIZONTAL Peak |
| 6 | 9022.050 | 54.66       | 37.43  | 7.54   | 37.02  | 62.61  | 74.00  | -11.39 | HORIZONTAL Peak |



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](mailto:CN.Doccheck@sgs.com)

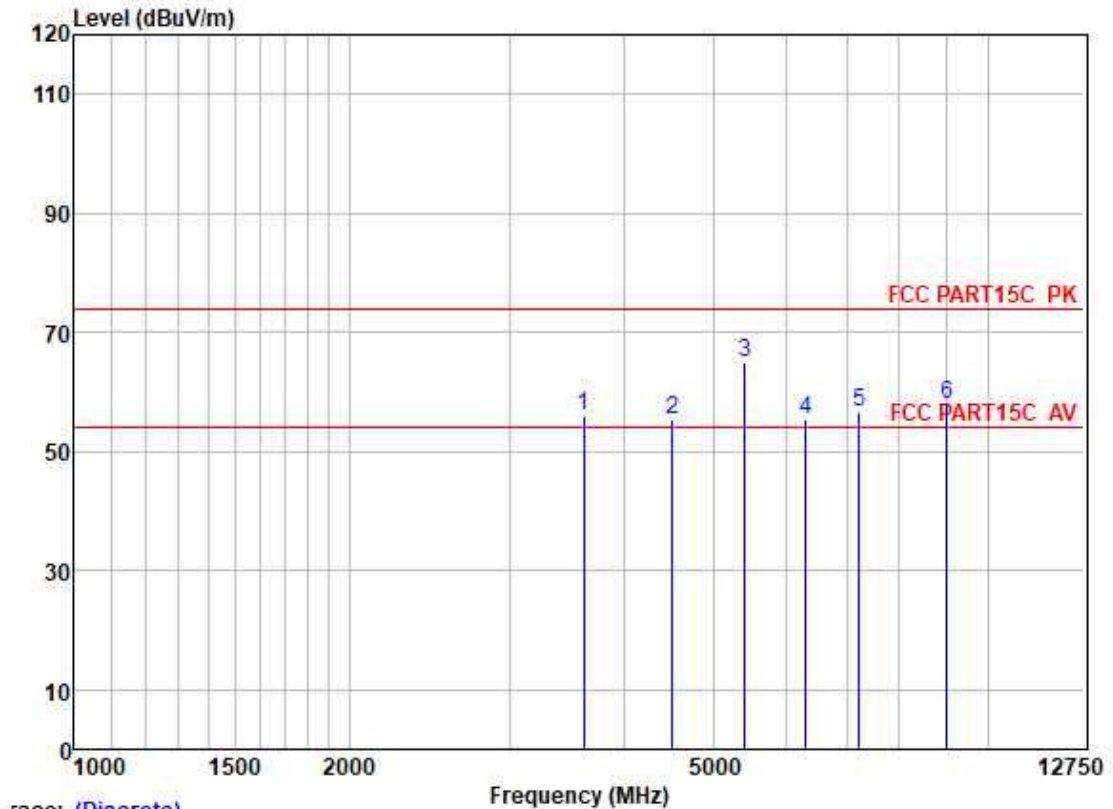
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Remark  |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|---------|
| 4511.966        | 60.08             | 30.82                 | 5.11            | 36.92                    | 59.09          | 74.00               | -14.91          | Peak    |
| 4511.966        | N/A               | N/A                   | N/A             | N/A                      | 20.69          | 54.00               | -33.31          | Average |
| 5413.961        | 59.47             | 31.79                 | 6.06            | 36.99                    | 60.33          | 74.00               | -13.67          | Peak    |
| 5413.961        | N/A               | N/A                   | N/A             | N/A                      | 21.93          | 54.00               | -32.07          | Average |
| 6315.233        | 50.55             | 33.51                 | 5.95            | 36.99                    | 53.02          | 74.00               | -25.24          | Peak    |
| 6315.233        | N/A               | N/A                   | N/A             | N/A                      | 14.62          | 54.00               | -39.38          | Average |
| 7218.015        | 49.84             | 35.62                 | 6.01            | 36.93                    | 54.54          | 74.00               | -27.83          | Peak    |
| 7218.015        | N/A               | N/A                   | N/A             | N/A                      | 16.14          | 54.00               | -37.86          | Average |
| 8120.215        | 50.88             | 36.95                 | 6.27            | 36.91                    | 57.19          | 74.00               | -18.83          | Peak    |
| 8120.215        | N/A               | N/A                   | N/A             | N/A                      | 18.79          | 54.00               | -35.21          | Average |
| 9022.05         | 54.66             | 37.43                 | 7.54            | 37.02                    | 62.61          | 74.00               | -20.01          | Peak    |
| 9022.05         | N/A               | N/A                   | N/A             | N/A                      | 24.21          | 54.00               | -29.79          | Average |



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](mailto:CN.Doccheck@sgs.com)

Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:Low



|   | Freq     | ReadAntenna | Cable | Preamp |       | Limit  | Over   |           |          |      |
|---|----------|-------------|-------|--------|-------|--------|--------|-----------|----------|------|
|   | Level    | Factor      | Loss  | Factor | Level | Line   | Limit  | Pol/Phase | Remark   |      |
|   | MHz      | dBuV        | dB/m  | dB     | dB    | dBuV/m | dBuV/m | dB        |          |      |
| 1 | 3609.451 | 59.32       | 29.05 | 4.50   | 36.94 | 55.93  | 74.00  | -18.07    | VERTICAL | Peak |
| 2 | 4511.966 | 56.48       | 30.82 | 5.11   | 36.92 | 55.49  | 74.00  | -18.51    | VERTICAL | Peak |
| 3 | 5413.961 | 64.20       | 31.79 | 6.06   | 36.99 | 65.06  | 74.00  | -8.94     | VERTICAL | Peak |
| 4 | 6315.233 | 52.74       | 33.51 | 5.95   | 36.99 | 55.21  | 74.00  | -18.79    | VERTICAL | Peak |
| 5 | 7218.015 | 52.06       | 35.62 | 6.01   | 36.93 | 56.76  | 74.00  | -17.24    | VERTICAL | Peak |
| 6 | 9022.050 | 50.10       | 37.43 | 7.54   | 37.02 | 58.05  | 74.00  | -15.95    | VERTICAL | Peak |



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](mailto:CN.Doccheck@sgs.com)

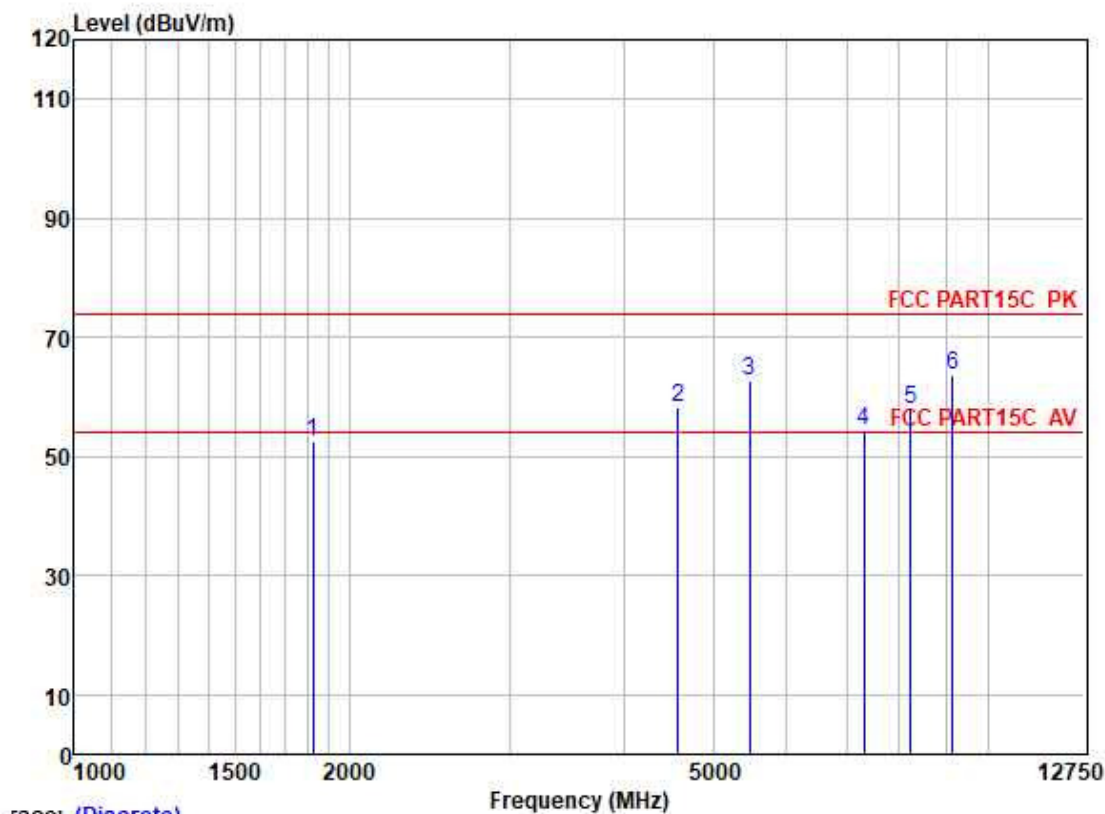
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Remark  |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|---------|
| 3609.451        | 59.32             | 29.05                 | 4.5             | 36.94                    | 55.93          | 74.00               | -18.07          | Peak    |
| 3609.451        | N/A               | N/A                   | N/A             | N/A                      | 17.53          | 54.00               | -36.47          | Average |
| 4511.966        | 56.48             | 30.82                 | 5.11            | 36.92                    | 55.49          | 74.00               | -18.51          | Peak    |
| 4511.966        | N/A               | N/A                   | N/A             | N/A                      | 17.09          | 54.00               | -36.91          | Average |
| 5413.961        | 64.2              | 31.79                 | 6.06            | 36.99                    | 65.06          | 74.00               | -8.94           | Peak    |
| 5413.961        | N/A               | N/A                   | N/A             | N/A                      | 26.66          | 54.00               | -27.34          | Average |
| 6315.233        | 52.74             | 33.51                 | 5.95            | 36.99                    | 55.21          | 74.00               | -18.79          | Peak    |
| 6315.233        | N/A               | N/A                   | N/A             | N/A                      | 16.81          | 54.00               | -37.19          | Average |
| 7218.015        | 52.06             | 35.62                 | 6.01            | 36.93                    | 56.76          | 74.00               | -17.24          | Peak    |
| 7218.015        | N/A               | N/A                   | N/A             | N/A                      | 18.36          | 54.00               | -35.64          | Average |
| 9022.05         | 50.1              | 37.43                 | 7.54            | 37.02                    | 58.05          | 74.00               | -15.95          | Peak    |
| 9022.05         | N/A               | N/A                   | N/A             | N/A                      | 19.65          | 54.00               | -34.35          | Average |



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](mailto:CN.Doccheck@sgs.com)

Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:middle



race: (Discrete)

|   | Freq     | Read Level | Antenna Factor | Cable Loss | Preamplifier Factor | Level  | Limit Line | Over Limit | Pol/Phase  | Remark |
|---|----------|------------|----------------|------------|---------------------|--------|------------|------------|------------|--------|
|   | MHz      | dBuV       | dB/m           | dB         | dB                  | dBuV/m | dBuV/m     | dB         |            |        |
| 1 | 1823.477 | 61.03      | 25.97          | 2.98       | 37.55               | 52.43  | 74.00      | -21.57     | HORIZONTAL | Peak   |
| 2 | 4573.422 | 58.84      | 30.91          | 5.33       | 36.92               | 58.16  | 74.00      | -15.84     | HORIZONTAL | Peak   |
| 3 | 5488.170 | 61.50      | 31.80          | 6.36       | 36.99               | 62.67  | 74.00      | -11.33     | HORIZONTAL | Peak   |
| 4 | 7318.355 | 49.08      | 36.00          | 6.13       | 36.92               | 54.29  | 74.00      | -19.71     | HORIZONTAL | Peak   |
| 5 | 8232.291 | 51.34      | 36.99          | 6.39       | 36.92               | 57.80  | 74.00      | -16.20     | HORIZONTAL | Peak   |
| 6 | 9147.857 | 55.62      | 37.63          | 7.44       | 37.04               | 63.65  | 74.00      | -10.35     | HORIZONTAL | Peak   |



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 herein 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  
Guangzhou Branch Testing Center EEC Laboratory.

中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgsc.china@sgs.com

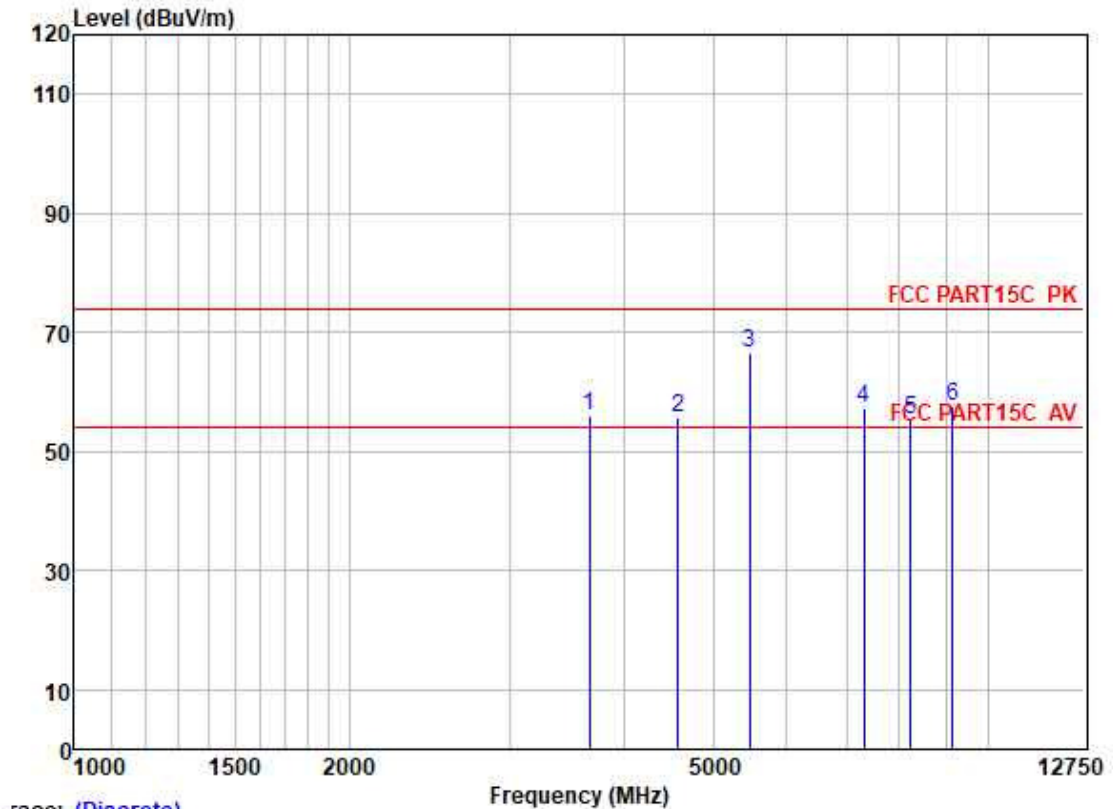
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Remark  |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|---------|
| 1823.477        | 61.03             | 25.97                 | 2.98            | 37.55                    | 52.43          | 74.00               | -21.57          | Peak    |
| 1823.477        | N/A               | N/A                   | N/A             | N/A                      | 14.03          | 54.00               | -39.97          | Average |
| 4573.422        | 58.84             | 30.91                 | 5.33            | 36.92                    | 58.16          | 74.00               | -15.84          | Peak    |
| 4573.422        | N/A               | N/A                   | N/A             | N/A                      | 19.76          | 54.00               | -34.24          | Average |
| 5488.17         | 61.5              | 31.8                  | 6.36            | 36.99                    | 62.67          | 74.00               | -11.33          | Peak    |
| 5488.17         | N/A               | N/A                   | N/A             | N/A                      | 24.27          | 54.00               | -29.73          | Average |
| 7318.355        | 49.08             | 36                    | 6.13            | 36.92                    | 54.29          | 74.00               | -19.71          | Peak    |
| 7318.355        | N/A               | N/A                   | N/A             | N/A                      | 15.89          | 54.00               | -38.11          | Average |
| 8232.291        | 51.34             | 36.99                 | 6.39            | 36.92                    | 57.8           | 74.00               | -16.2           | Peak    |
| 8232.291        | N/A               | N/A                   | N/A             | N/A                      | 19.4           | 54.00               | -34.6           | Average |
| 9147.857        | 55.62             | 37.63                 | 7.44            | 37.04                    | 63.65          | 74.00               | -10.35          | Peak    |
| 9147.857        | N/A               | N/A                   | N/A             | N/A                      | 25.25          | 54.00               | -28.75          | Average |



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](mailto:CN.Doccheck@sgs.com)

Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:middle



|   | Freq     | ReadAntenna | Cable | Preamp |       | Limit  | Over   |           |          |      |
|---|----------|-------------|-------|--------|-------|--------|--------|-----------|----------|------|
|   | Level    | Factor      | Loss  | Factor | Level | Line   | Limit  | Pol/Phase | Remark   |      |
|   | MHz      | dBuV        | dB/m  | dB     | dB    | dBuV/m | dBuV/m | dB        |          |      |
| 1 | 3659.775 | 59.27       | 29.15 | 4.53   | 36.93 | 56.02  | 74.00  | -17.98    | VERTICAL | Peak |
| 2 | 4573.422 | 56.21       | 30.91 | 5.33   | 36.92 | 55.53  | 74.00  | -18.47    | VERTICAL | Peak |
| 3 | 5488.170 | 65.40       | 31.80 | 6.36   | 36.99 | 66.57  | 74.00  | -7.43     | VERTICAL | Peak |
| 4 | 7318.355 | 52.10       | 36.00 | 6.13   | 36.92 | 57.31  | 74.00  | -16.69    | VERTICAL | Peak |
| 5 | 8232.291 | 48.93       | 36.99 | 6.39   | 36.92 | 55.39  | 74.00  | -18.61    | VERTICAL | Peak |
| 6 | 9147.857 | 49.64       | 37.63 | 7.44   | 37.04 | 57.67  | 74.00  | -16.33    | VERTICAL | Peak |



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](mailto:CN.Doccheck@sgs.com)

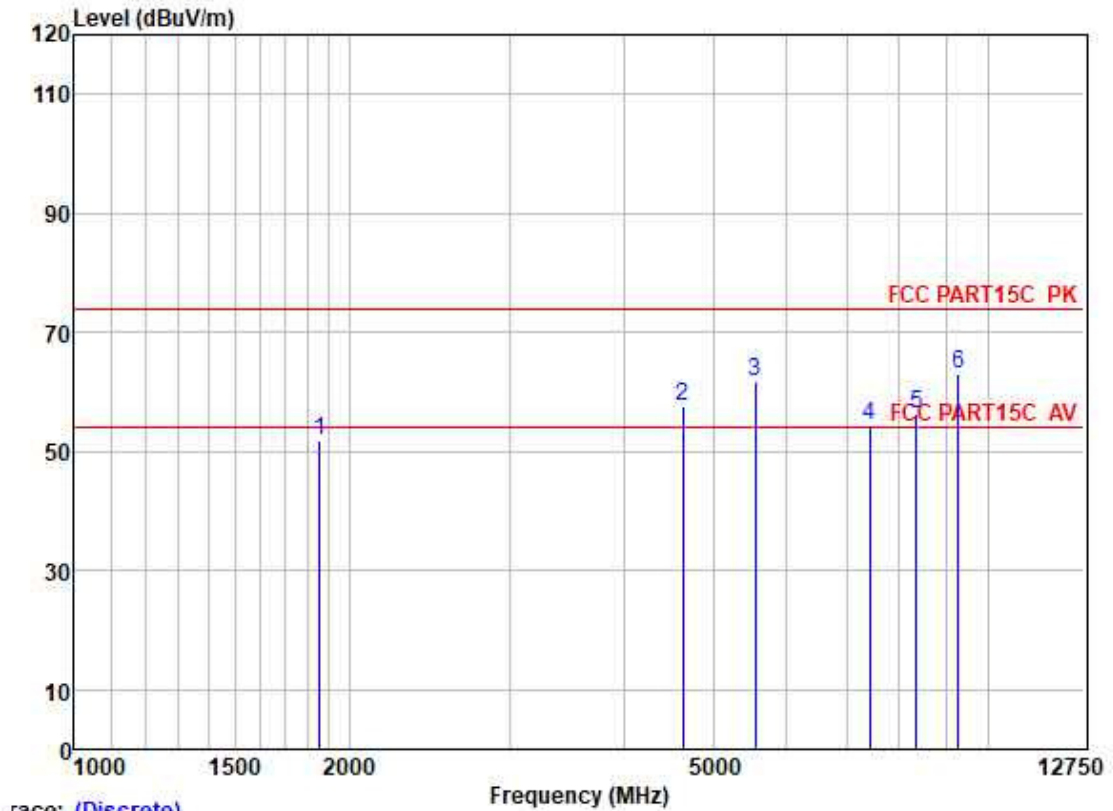
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Remark  |
|-----------------|-------------------|-----------------------|-----------------|--------------------|----------------|---------------------|-----------------|---------|
| 3659.775        | 59.27             | 29.15                 | 4.53            | 36.93              | 56.02          | 74.00               | -17.98          | Peak    |
| 3659.775        | N/A               | N/A                   | N/A             | N/A                | 17.62          | 54.00               | -36.38          | Average |
| 4573.422        | 56.21             | 30.91                 | 5.33            | 36.92              | 55.53          | 74.00               | -18.47          | Peak    |
| 4573.422        | N/A               | N/A                   | N/A             | N/A                | 17.13          | 54.00               | -36.87          | Average |
| 5488.17         | 65.4              | 31.8                  | 6.36            | 36.99              | 66.57          | 74.00               | -7.43           | Peak    |
| 5488.17         | N/A               | N/A                   | N/A             | N/A                | 28.17          | 54.00               | -25.83          | Average |
| 7318.355        | 52.1              | 36                    | 6.13            | 36.92              | 57.31          | 74.00               | -16.69          | Peak    |
| 7318.355        | N/A               | N/A                   | N/A             | N/A                | 18.91          | 54.00               | -35.09          | Average |
| 8232.291        | 48.93             | 36.99                 | 6.39            | 36.92              | 55.39          | 74.00               | -18.61          | Peak    |
| 8232.291        | N/A               | N/A                   | N/A             | N/A                | 16.99          | 54.00               | -37.01          | Average |
| 9147.857        | 49.64             | 37.63                 | 7.44            | 37.04              | 57.67          | 74.00               | -16.33          | Peak    |
| 9147.857        | N/A               | N/A                   | N/A             | N/A                | 19.27          | 54.00               | -34.73          | Average |



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](mailto:CN.Doccheck@sgs.com)

Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:High



Trace: (Discrete)

|   |          | ReadAntenna |        | Cable | Preamp |        | Limit  | Over   |            |        |
|---|----------|-------------|--------|-------|--------|--------|--------|--------|------------|--------|
|   | Freq     | Level       | Factor | Loss  | Factor | Level  | Line   | Limit  | Pol/Phase  | Remark |
|   | MHz      | dBuV        | dB/m   | dB    | dB     | dBuV/m | dBuV/m | dB     |            |        |
| 1 | 1853.834 | 60.29       | 26.00  | 2.94  | 37.54  | 51.69  | 74.00  | -22.31 | HORIZONTAL | Peak   |
| 2 | 4633.319 | 58.13       | 30.99  | 5.40  | 36.93  | 57.59  | 74.00  | -16.41 | HORIZONTAL | Peak   |
| 3 | 5560.673 | 60.64       | 31.86  | 6.33  | 36.99  | 61.84  | 74.00  | -12.16 | HORIZONTAL | Peak   |
| 4 | 7414.726 | 48.87       | 36.22  | 6.20  | 36.92  | 54.37  | 74.00  | -19.63 | HORIZONTAL | Peak   |
| 5 | 8340.943 | 49.70       | 37.05  | 6.56  | 36.92  | 56.39  | 74.00  | -17.61 | HORIZONTAL | Peak   |
| 6 | 9267.160 | 54.82       | 37.85  | 7.33  | 37.05  | 62.95  | 74.00  | -11.05 | HORIZONTAL | Peak   |



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](mailto:CN.Doccheck@sgs.com)

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Remark  |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|---------|
| 1853.834        | 60.29             | 26                    | 2.94            | 37.54                    | 51.69          | 74.00               | -22.31          | Peak    |
| 1853.834        | N/A               | N/A                   | N/A             | N/A                      | 13.29          | 54.00               | -40.71          | Average |
| 4633.319        | 58.13             | 30.99                 | 5.4             | 36.93                    | 57.59          | 74.00               | -16.41          | Peak    |
| 4633.319        | N/A               | N/A                   | N/A             | N/A                      | 19.19          | 54.00               | -34.81          | Average |
| 5560.673        | 60.64             | 31.86                 | 6.33            | 36.99                    | 61.84          | 74.00               | -12.16          | Peak    |
| 5560.673        | N/A               | N/A                   | N/A             | N/A                      | 23.44          | 54.00               | -30.56          | Average |
| 7414.726        | 48.87             | 36.22                 | 6.2             | 36.92                    | 54.37          | 74.00               | -19.63          | Peak    |
| 7414.726        | N/A               | N/A                   | N/A             | N/A                      | 15.97          | 54.00               | -38.03          | Average |
| 8340.943        | 49.7              | 37.05                 | 6.56            | 36.92                    | 56.39          | 74.00               | -17.61          | Peak    |
| 8340.943        | N/A               | N/A                   | N/A             | N/A                      | 17.99          | 54.00               | -36.01          | Average |
| 9267.16         | 54.82             | 37.85                 | 7.33            | 37.05                    | 62.95          | 74.00               | -11.05          | Peak    |
| 9267.16         | N/A               | N/A                   | N/A             | N/A                      | 24.55          | 54.00               | -29.45          | Average |



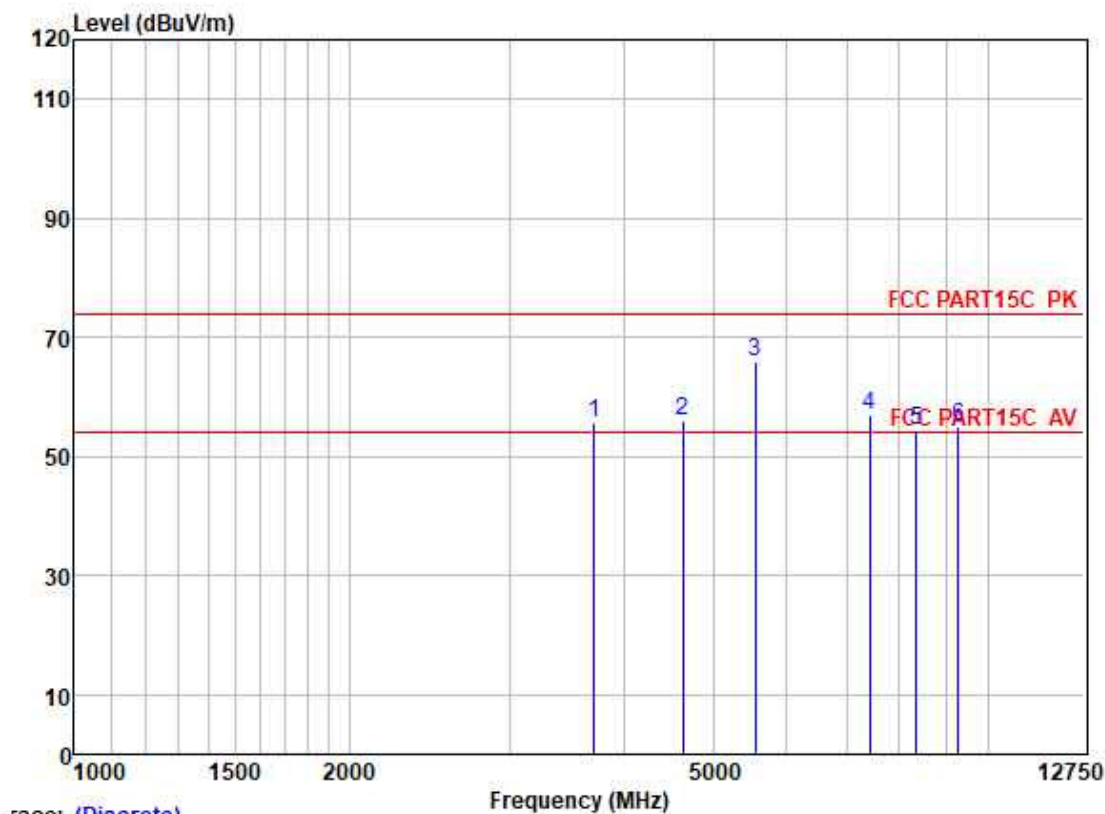
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center EEC Laboratory

No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:High



|   | Freq     | ReadAntenna | Cable | Preamp | Limit | Over   |           |        |               |
|---|----------|-------------|-------|--------|-------|--------|-----------|--------|---------------|
|   | Level    | Factor      | Loss  | Factor | Line  | Limit  | Pol/Phase | Remark |               |
|   | MHz      | dBuV        | dB/m  | dB     | dB    | dBuV/m | dBuV/m    | dB     |               |
| 1 | 3707.691 | 58.71       | 29.25 | 4.56   | 36.93 | 55.59  | 74.00     | -18.41 | VERTICAL Peak |
| 2 | 4633.319 | 56.49       | 30.99 | 5.40   | 36.93 | 55.95  | 74.00     | -18.05 | VERTICAL Peak |
| 3 | 5560.673 | 64.68       | 31.86 | 6.33   | 36.99 | 65.88  | 74.00     | -8.12  | VERTICAL Peak |
| 4 | 7414.726 | 51.37       | 36.22 | 6.20   | 36.92 | 56.87  | 74.00     | -17.13 | VERTICAL Peak |
| 5 | 8340.000 | 47.60       | 37.05 | 6.56   | 36.92 | 54.29  | 74.00     | -19.71 | VERTICAL Peak |
| 6 | 9267.160 | 46.85       | 37.85 | 7.33   | 37.05 | 54.98  | 74.00     | -19.02 | VERTICAL Peak |



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](mailto:CN.Doccheck@sgs.com)

| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Remark  |
|-----------------|-------------------|-----------------------|-----------------|--------------------------|----------------|---------------------|-----------------|---------|
| 3707.691        | 58.71             | 29.25                 | 4.56            | 36.93                    | 55.59          | 74.00               | -18.41          | Peak    |
| 3707.691        | N/A               | N/A                   | N/A             | N/A                      | 17.19          | 54.00               | -36.81          | Average |
| 4633.319        | 56.49             | 30.99                 | 5.4             | 36.93                    | 55.95          | 74.00               | -18.05          | Peak    |
| 4633.319        | N/A               | N/A                   | N/A             | N/A                      | 17.55          | 54.00               | -36.45          | Average |
| 5560.673        | 64.68             | 31.86                 | 6.33            | 36.99                    | 65.88          | 74.00               | -8.12           | Peak    |
| 5560.673        | N/A               | N/A                   | N/A             | N/A                      | 27.48          | 54.00               | -26.52          | Average |
| 7414.726        | 51.37             | 36.22                 | 6.2             | 36.92                    | 56.87          | 74.00               | -17.13          | Peak    |
| 7414.726        | N/A               | N/A                   | N/A             | N/A                      | 18.47          | 54.00               | -35.53          | Average |
| 8340.000        | 47.6              | 37.05                 | 6.56            | 36.92                    | 54.29          | 74.00               | -19.71          | Peak    |
| 8340.000        | N/A               | N/A                   | N/A             | N/A                      | 15.89          | 54.00               | -38.11          | Average |
| 9267.16         | 46.85             | 37.85                 | 7.33            | 37.05                    | 54.98          | 74.00               | -19.02          | Peak    |
| 9267.16         | N/A               | N/A                   | N/A             | N/A                      | 16.58          | 54.00               | -37.42          | Average |



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](mailto:CN.Doccheck@sgs.com)

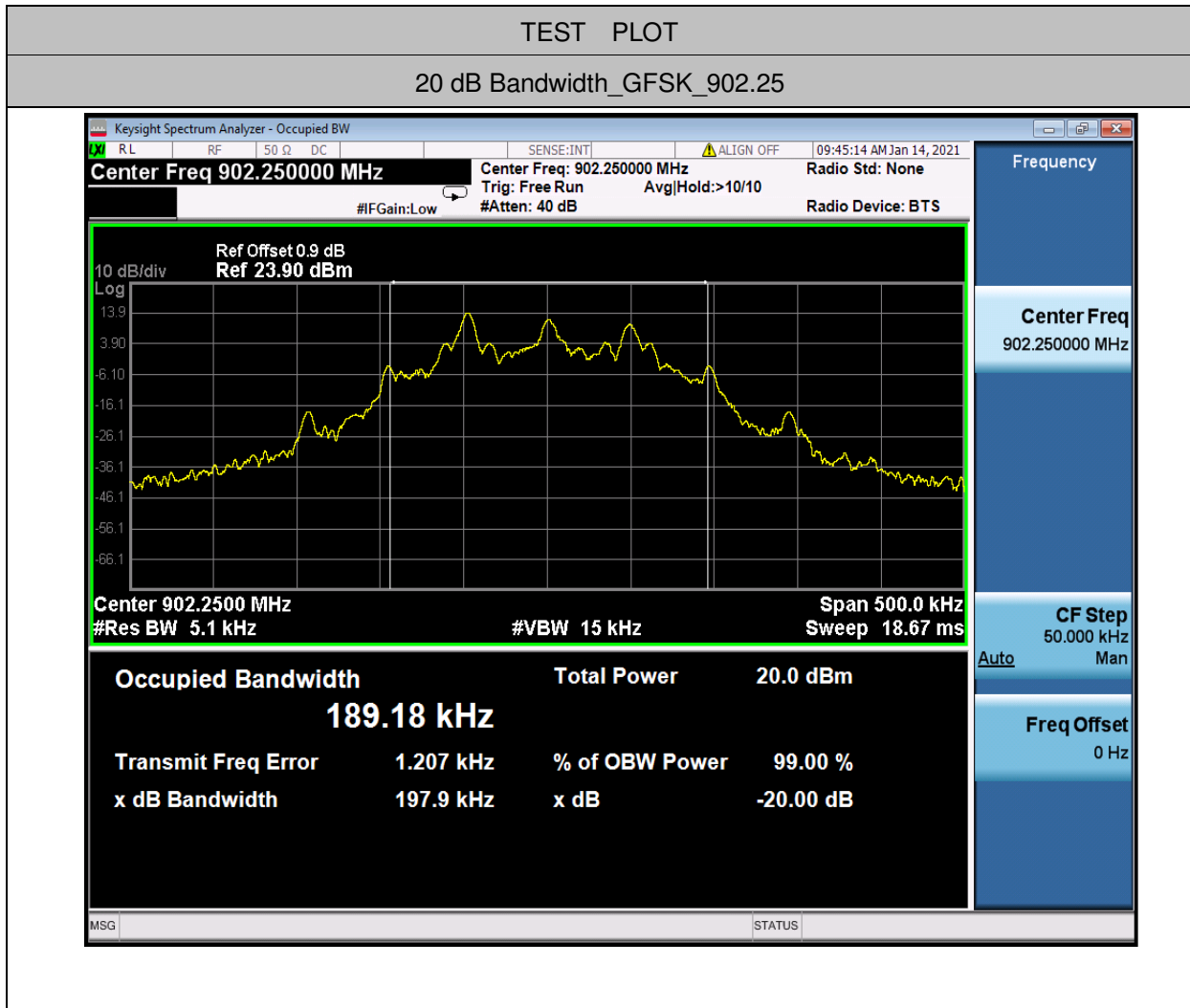
## 8 Appendix

### 8.1 Appendix 15.247

Cable Loss = 0.9 dB

#### 1.20 dB Bandwidth

| Test Mode | Test Channel | OBW[MHz] | EBW[MHz] | Limit[MHz] | Verdict |
|-----------|--------------|----------|----------|------------|---------|
| GFSK      | 902.25       | 0.18913  | 0.1979   | <=0.5      | PASS    |
| GFSK      | 914.75       | 0.18965  | 0.1981   | <=0.5      | PASS    |
| GFSK      | 926.75       | 0.17922  | 0.1957   | <=0.5      | PASS    |



### 20 dB Bandwidth\_GFSK\_914.75



### 20 dB Bandwidth\_GFSK\_926.75



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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Inspection & Testing Services

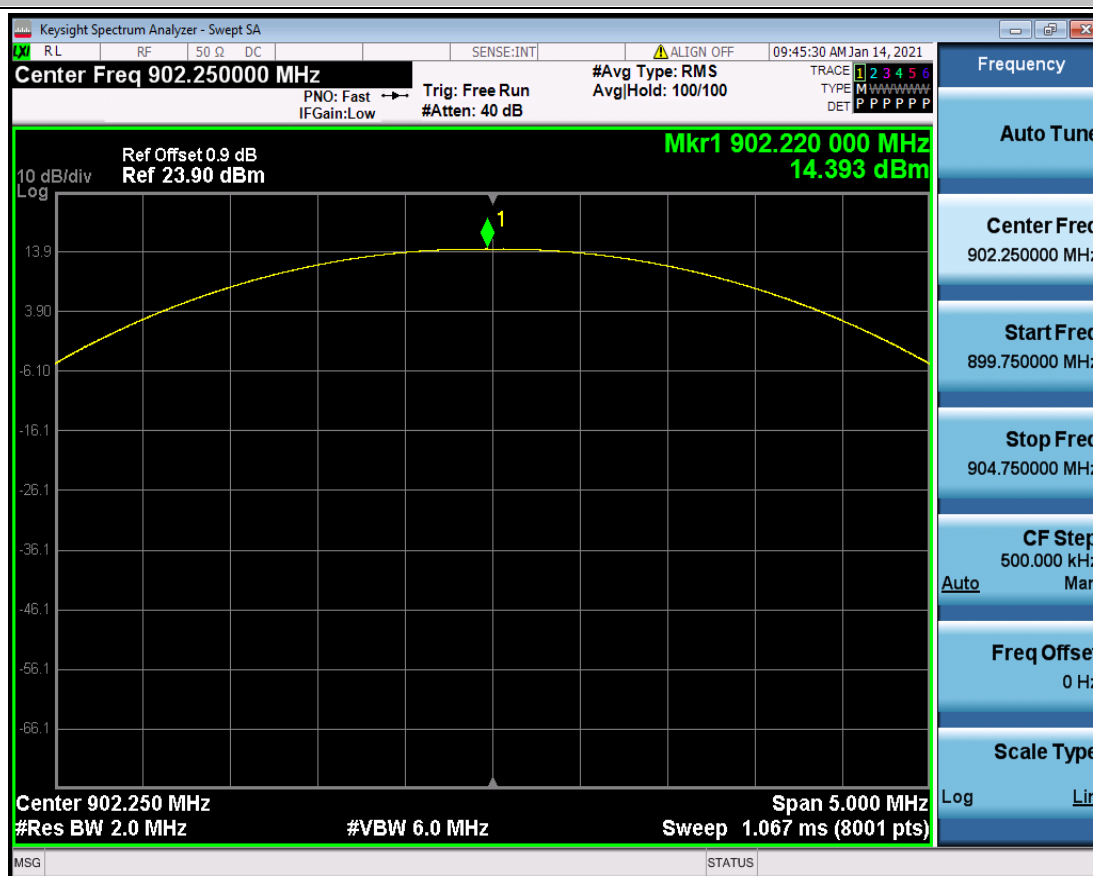
No. 198 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## 2. Conducted Peak Output Power

| Test Mode | Test Channel | Power[dBm] | Limit[dBm] | Verdict |
|-----------|--------------|------------|------------|---------|
| GFSK      | 902.25       | 14.393     | <=30       | PASS    |
| GFSK      | 914.75       | 14.138     | <=30       | PASS    |
| GFSK      | 926.75       | 14.001     | <=30       | PASS    |

TEST PLOT

|                             |      |        |
|-----------------------------|------|--------|
| Conducted Peak Output Power | GFSK | 902.25 |
|-----------------------------|------|--------|



Conducted Peak Output Power GFSK 914.75

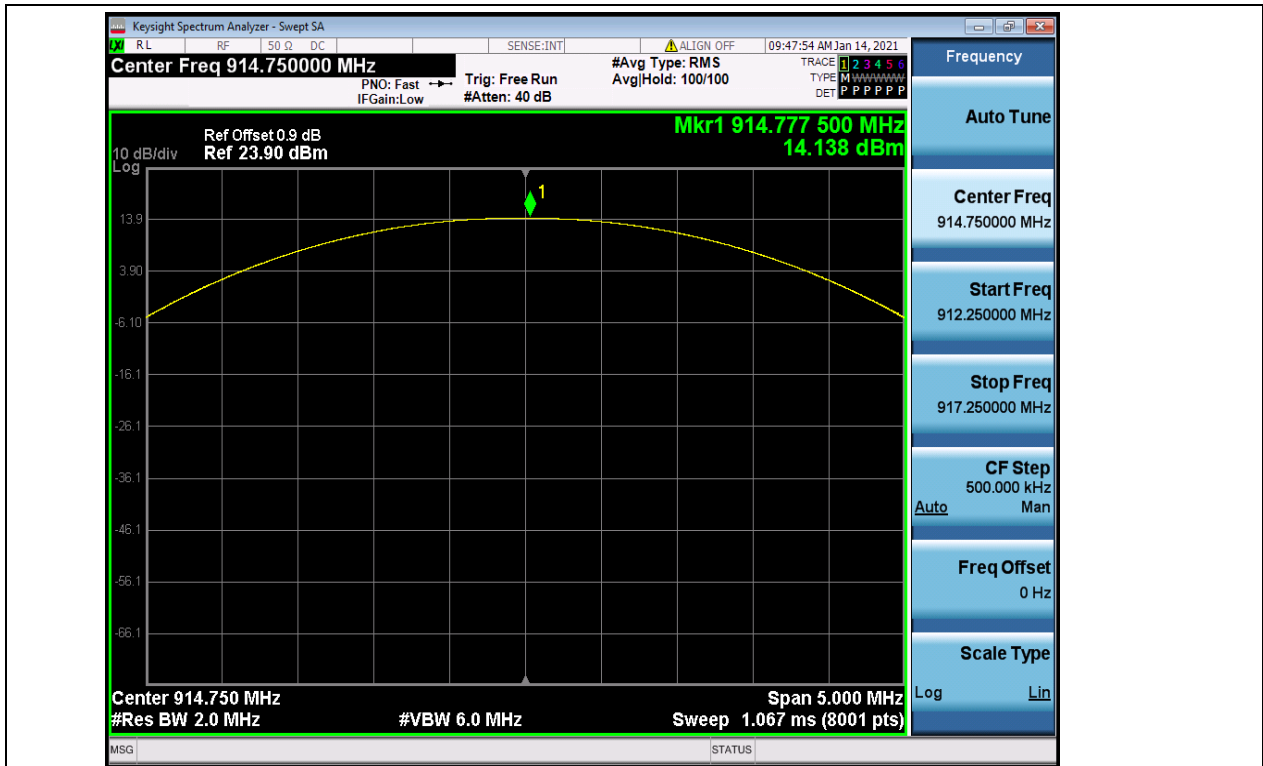


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic 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 notified that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of its technical competence. 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.

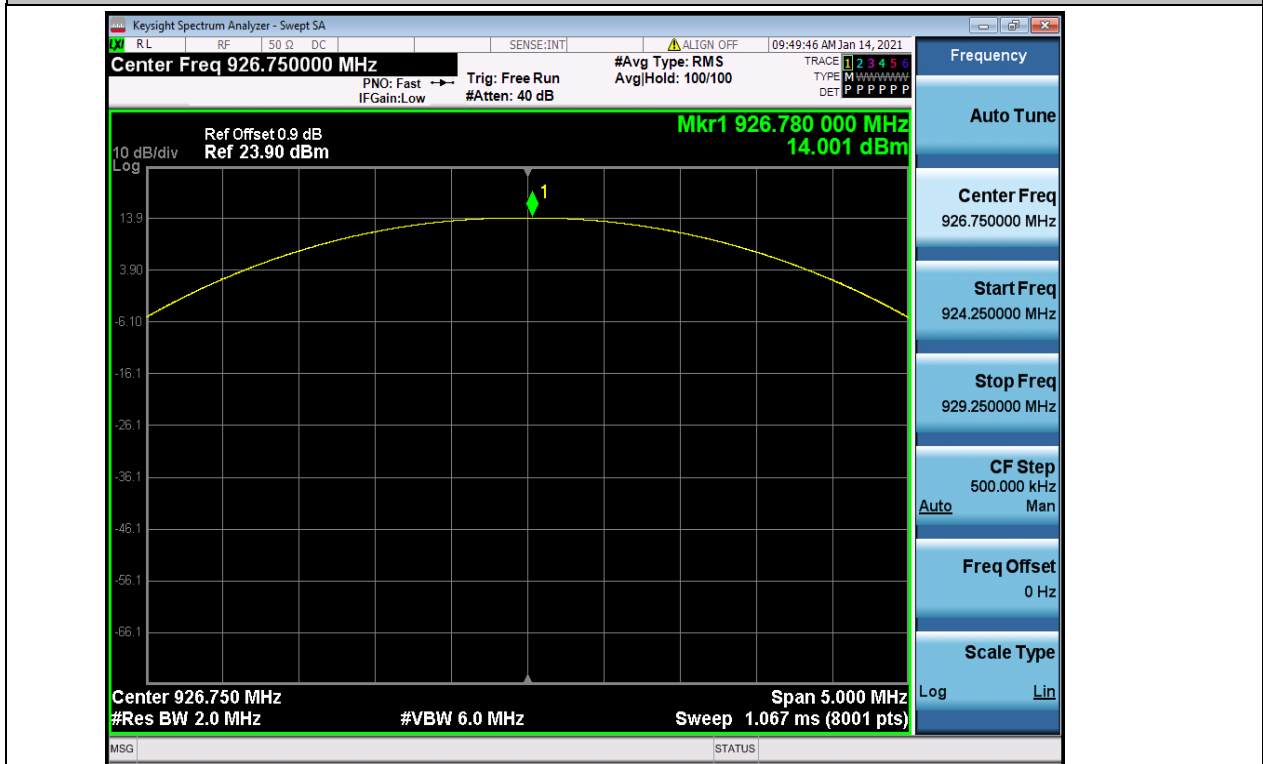
**Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

SGS-CSTC Standards Technical Services Co., Ltd  
Guangzhou Branch Testing Center EEC Laboratory.

中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com



Conducted Peak Output Power\_GFSK\_926.75



## 3.Carrier Frequency Separation

| Test Mode | Test Channel | Result[MHz] | Limit[MHz]    | Verdict |
|-----------|--------------|-------------|---------------|---------|
| GFSK      | 902.25       | 0.500       | $\geq 0.1979$ | PASS    |
| GFSK      | 914.75       | 0.500       | $\geq 0.1981$ | PASS    |
| GFSK      | 926.75       | 0.499       | $\geq 0.1957$ | PASS    |

### TEST PLOT

#### Carrier Frequency Separation\_GFSK\_902.25



#### Carrier Frequency Separation\_GFSK\_914.75



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](mailto:CN.Doccheck@sgs.com)

No.198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgs.com](http://www.sgs.com)  
Guangzhou Branch Testing Center EEC Laboratory. 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



Carrier Frequency Separation\_GFSK\_926.75



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](mailto:CN.Doccheck@sgs.com)

No.198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgs.com](http://www.sgs.com)  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



#### 4.Dwell Time

| Test Mode | Test Channel | Burst Width[ms/hop/ch] | Total Hops[hop*ch] | Dwell Time[s] | Limit[s] | Verdict |
|-----------|--------------|------------------------|--------------------|---------------|----------|---------|
| GFSK      | 902.25       | 1.31                   | 90                 | 0.12          | 0.4      | PASS    |
| GFSK      | 914.75       | 1.31                   | 80                 | 0.11          | 0.4      | PASS    |
| GFSK      | 926.75       | 1.31                   | 90                 | 0.12          | 0.4      | PASS    |

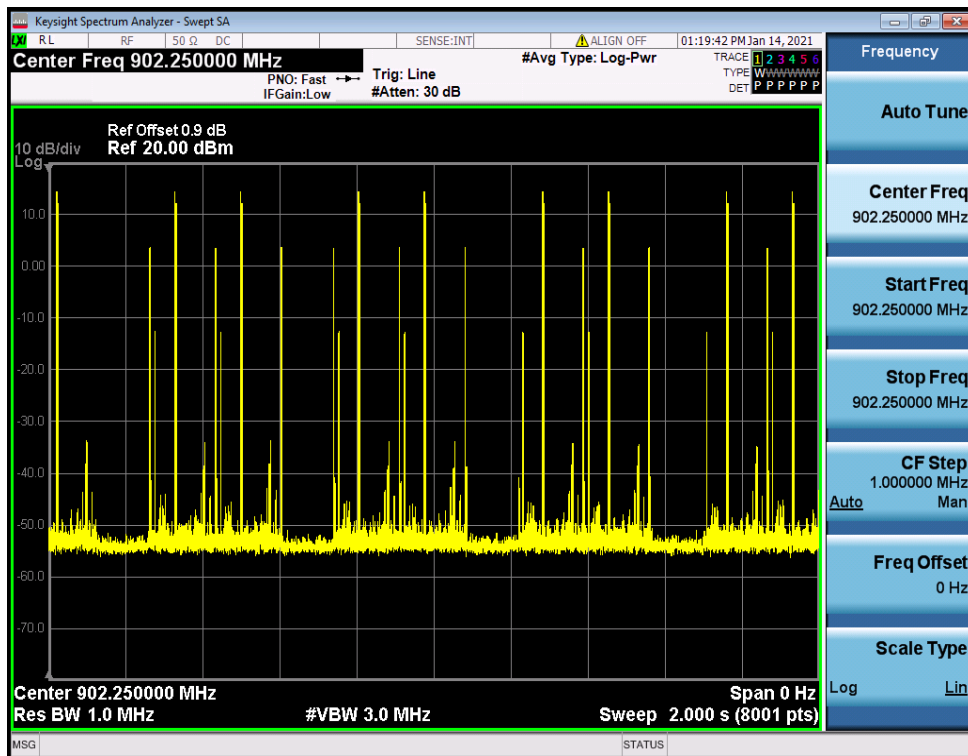
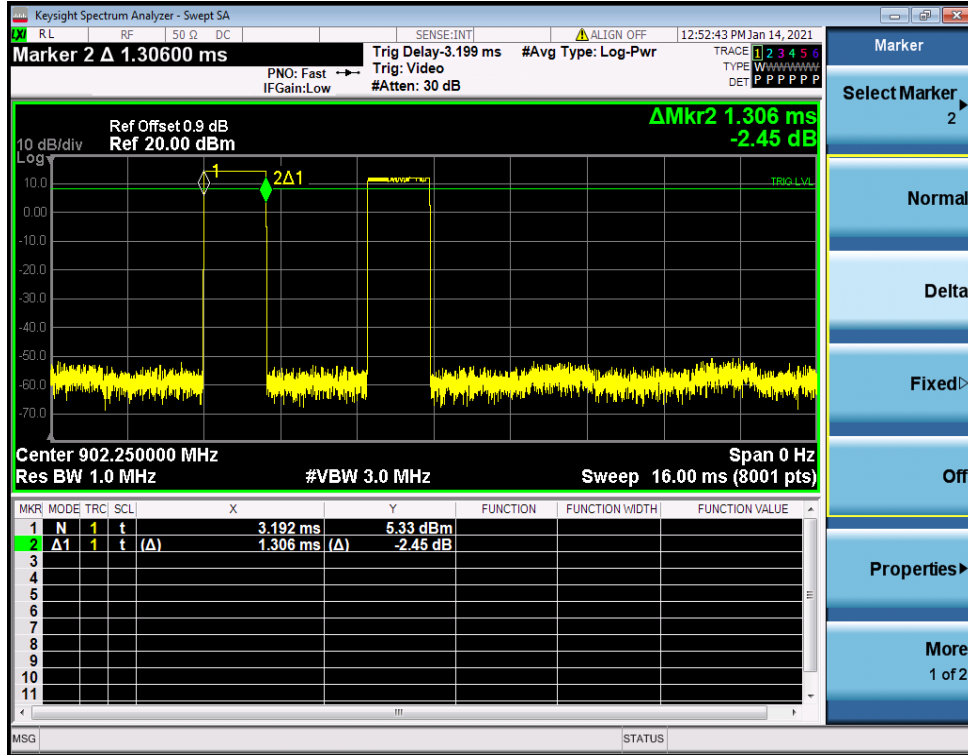


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

## TEST PLOT

### Dwell Time\_GFSK\_902.25



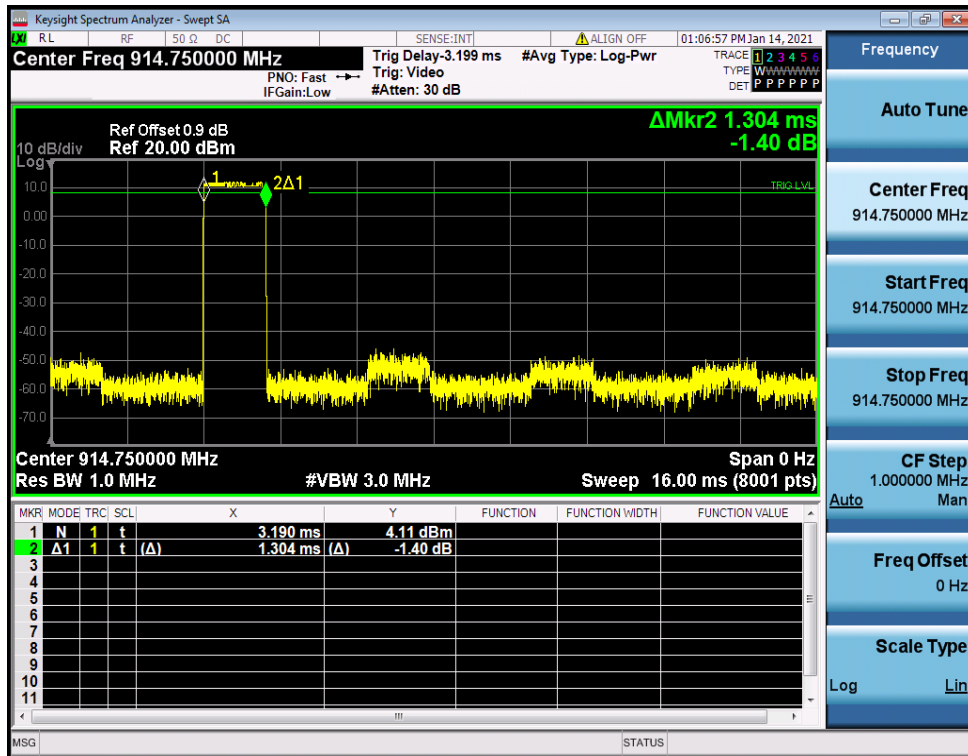
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch, Testing Center, EEC Laboratory.

No. 198 Kazhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 [www.sgs.com.cn](http://www.sgs.com.cn)  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

### Dwell Time\_GFSK\_914.75

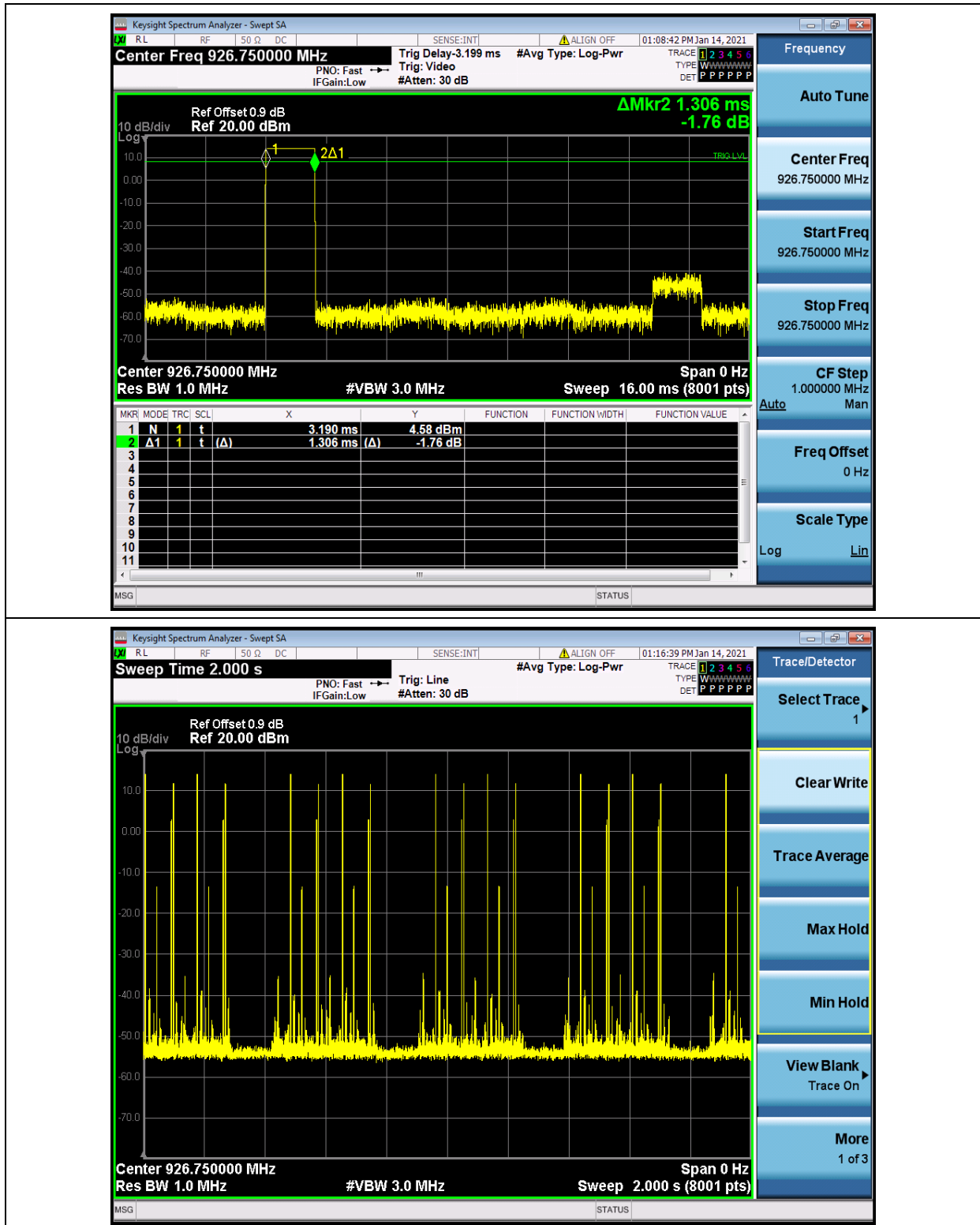


### Dwell Time\_GFSK\_926.75



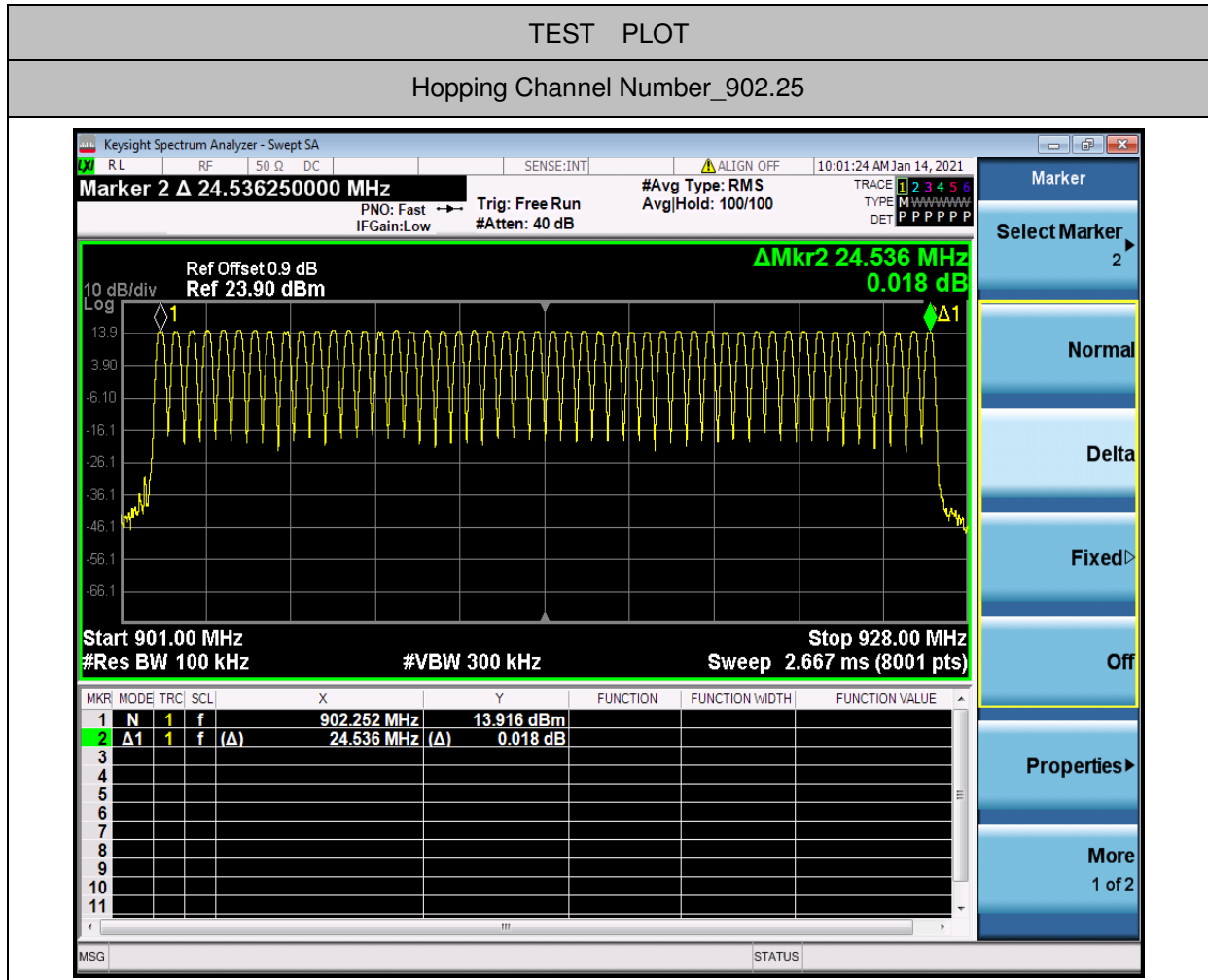
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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



## 5.Hopping Channel Number

| Test Mode | Test Channel         | Number of Hopping Channel[N] | Limit[N] | Verdict |
|-----------|----------------------|------------------------------|----------|---------|
| GFSK      | All hopping channels | 50                           | >=50     | PASS    |



## 6.Band-edge for RF Conducted Emissions

| Test Channel | Hopping | Carrier Power[dBm] | Max. Spurious Level [dBm] | Limit[dBm] | Verdict |
|--------------|---------|--------------------|---------------------------|------------|---------|
| 902.25       | On      | 14.778             | -46.836                   | <=-5.23    | PASS    |
| 902.25       | Off     | 14.819             | -42.002                   | <=-5.19    | PASS    |
| 926.75       | On      | 14.576             | -40.089                   | <=-5.42    | PASS    |
| 926.75       | Off     | 14.473             | -43.163                   | <=-5.53    | PASS    |

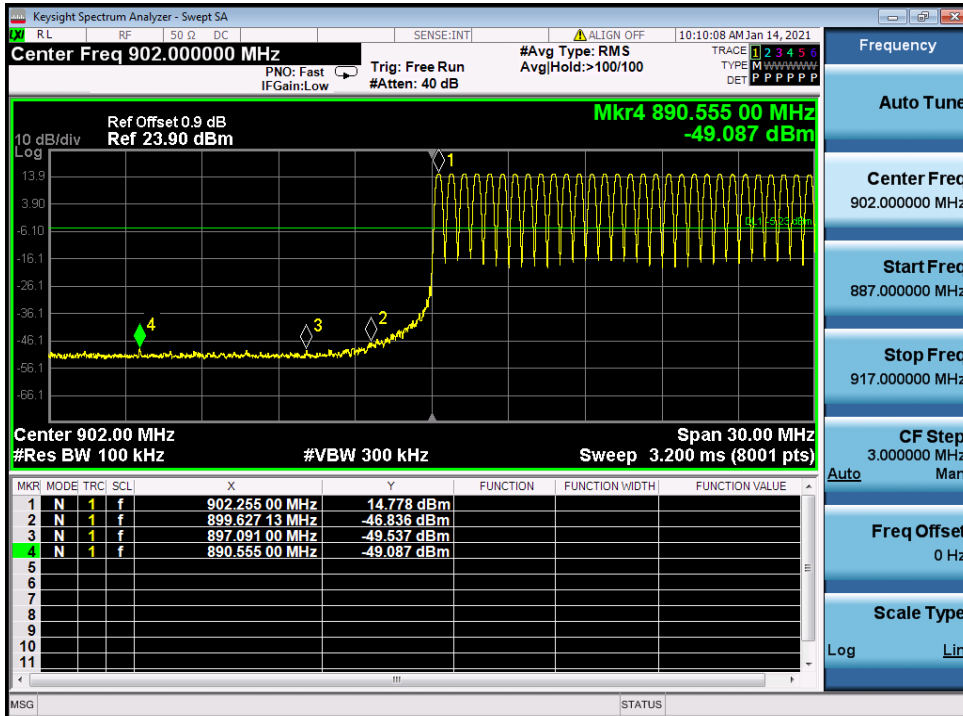


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

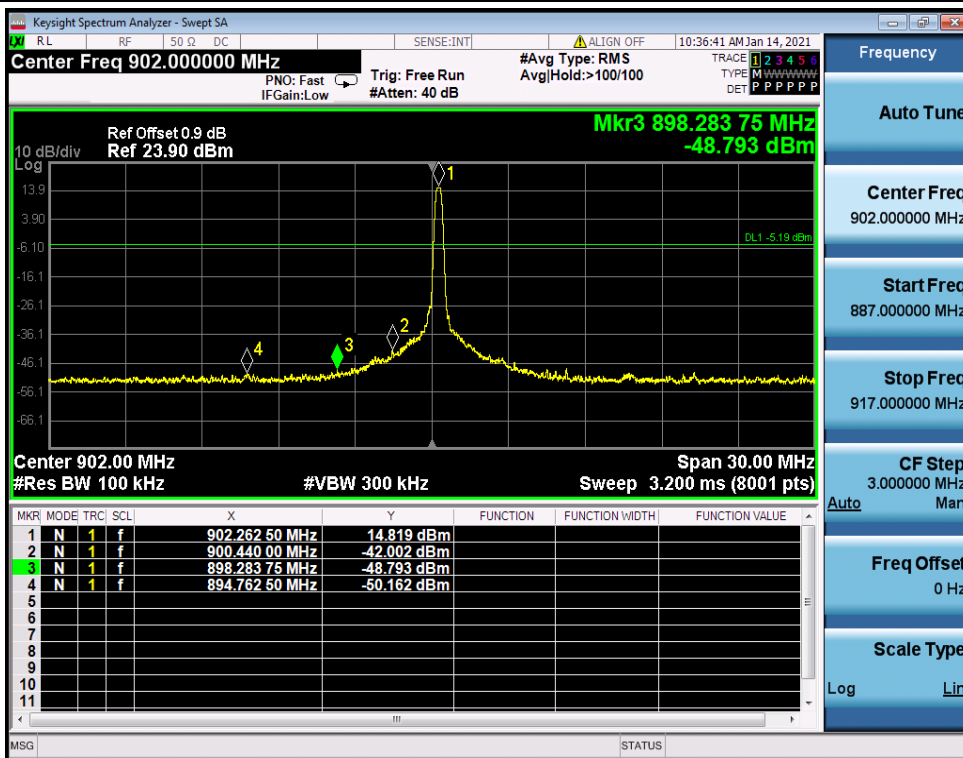
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

## TEST PLOT

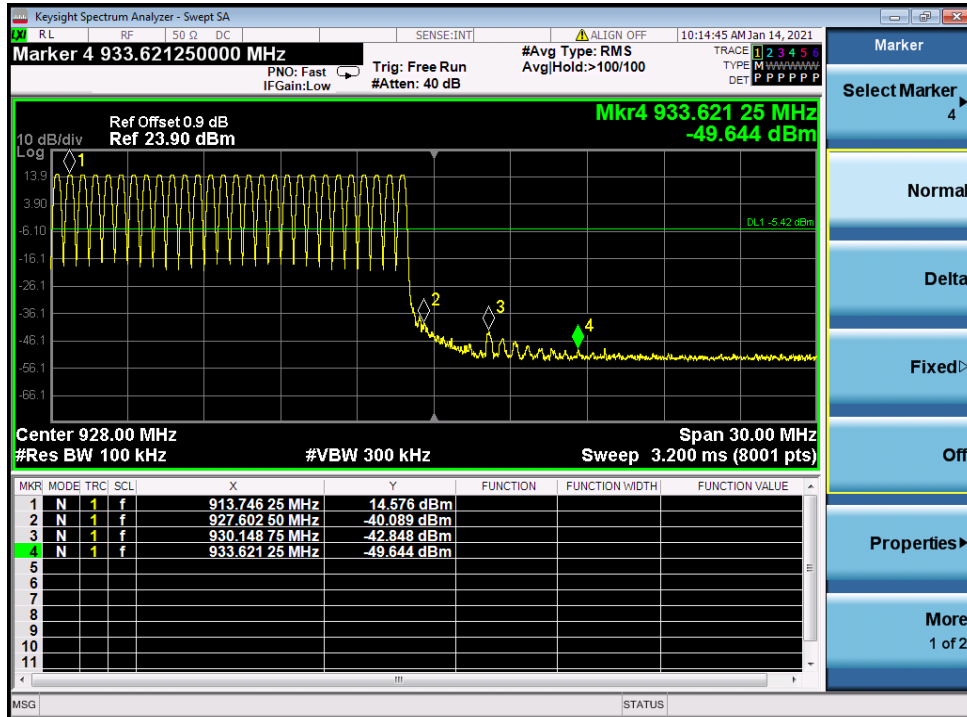
## Band-edge for RF Conducted Emissions\_GFSK\_902.25\_Hopping On



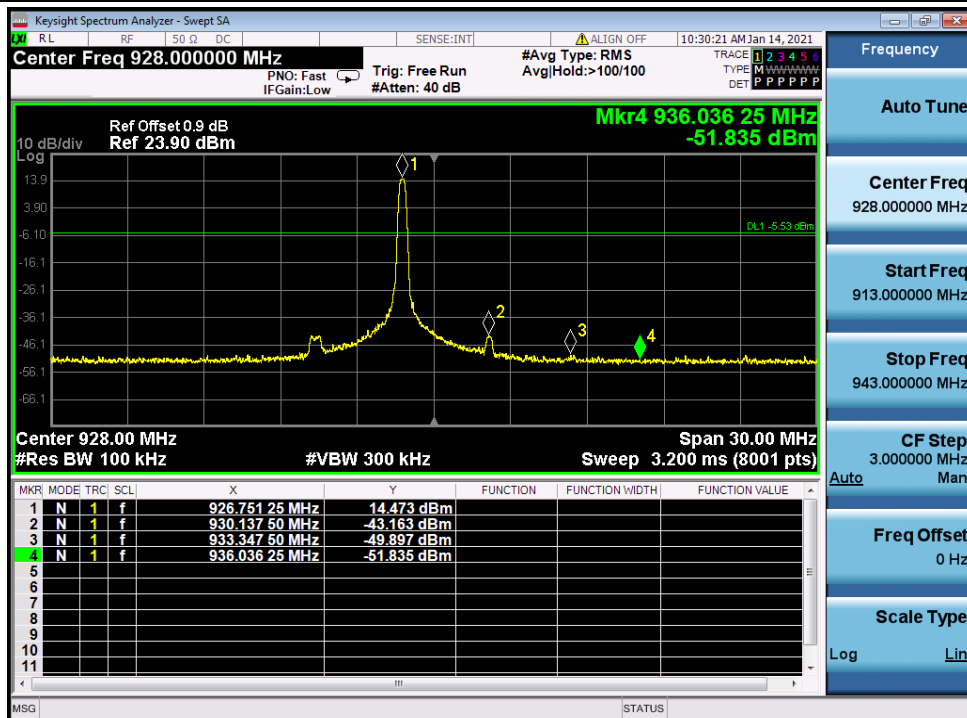
## Band-edge for RF Conducted Emissions\_GFSK\_902.25\_Hopping Off



### Band-edge for RF Conducted Emissions\_GFSK\_926.75\_Hopping On



### Band-edge for RF Conducted Emissions\_GFSK\_926.75\_Hopping Off



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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center EEC Laboratory

No.198 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

**7.RF Conducted Spurious Emissions**

| Test Channel | StartFre [MHz] | StopFre [MHz] | RBW [kHz] | VBW [kHz] | Pref[dBm] | Max. Level [dBm] | Limit [dBm] | Verdict |
|--------------|----------------|---------------|-----------|-----------|-----------|------------------|-------------|---------|
| 902.25       | 30             | 10000         | 100       | 300       | 14.471    | -46.924          | <-5.529     | PASS    |
| 902.25       | 10000          | 26000         | 100       | 300       | 14.471    | -51.408          | <-5.529     | PASS    |
| 914.75       | 30             | 10000         | 100       | 300       | 14.207    | -39.474          | <-5.793     | PASS    |
| 914.75       | 10000          | 26000         | 100       | 300       | 14.207    | -51.903          | <-5.793     | PASS    |
| 926.75       | 30             | 10000         | 100       | 300       | 14.088    | -41.237          | <-5.912     | PASS    |
| 926.75       | 10000          | 26000         | 100       | 300       | 14.088    | -51.795          | <-5.912     | PASS    |



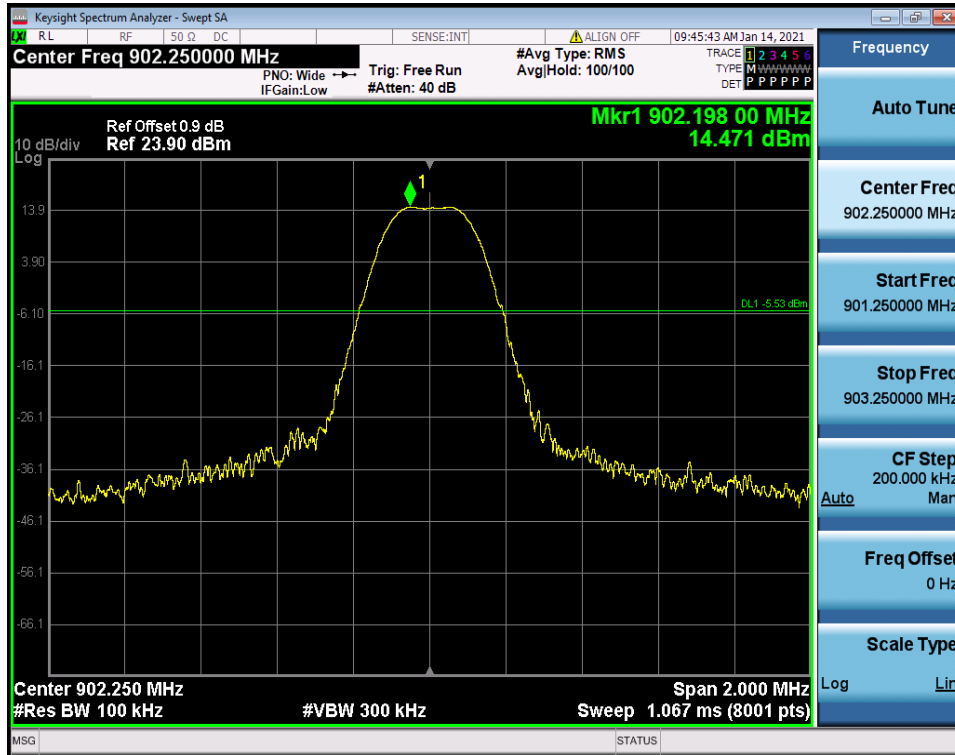
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

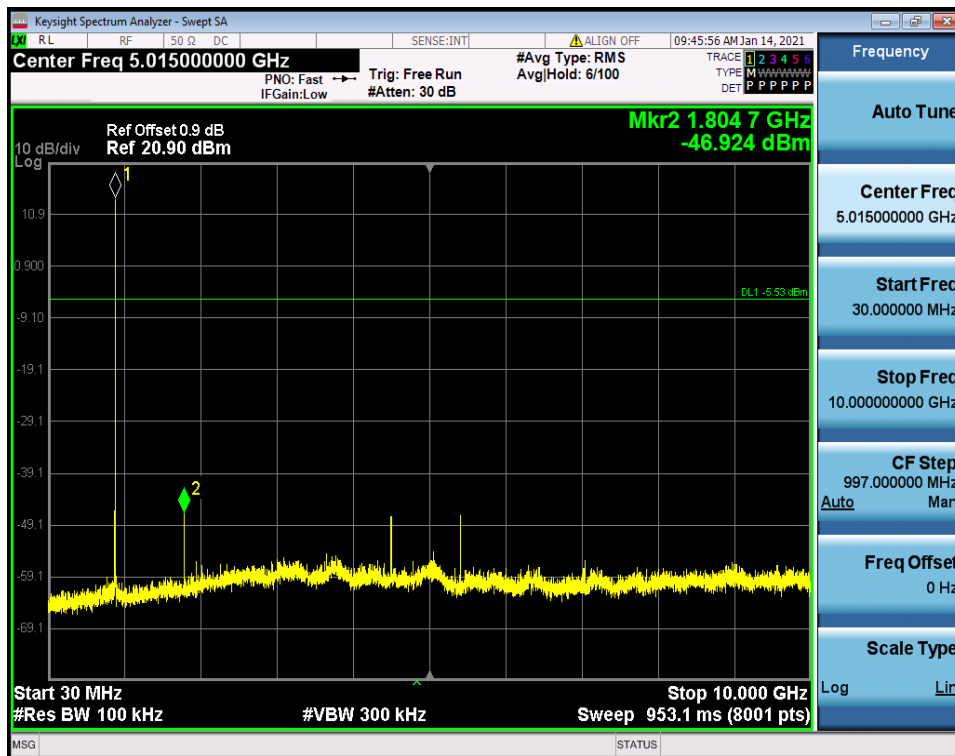
## TEST PLOT

## RF Conducted Spurious Emissions\_GFSK\_902.25

Pref



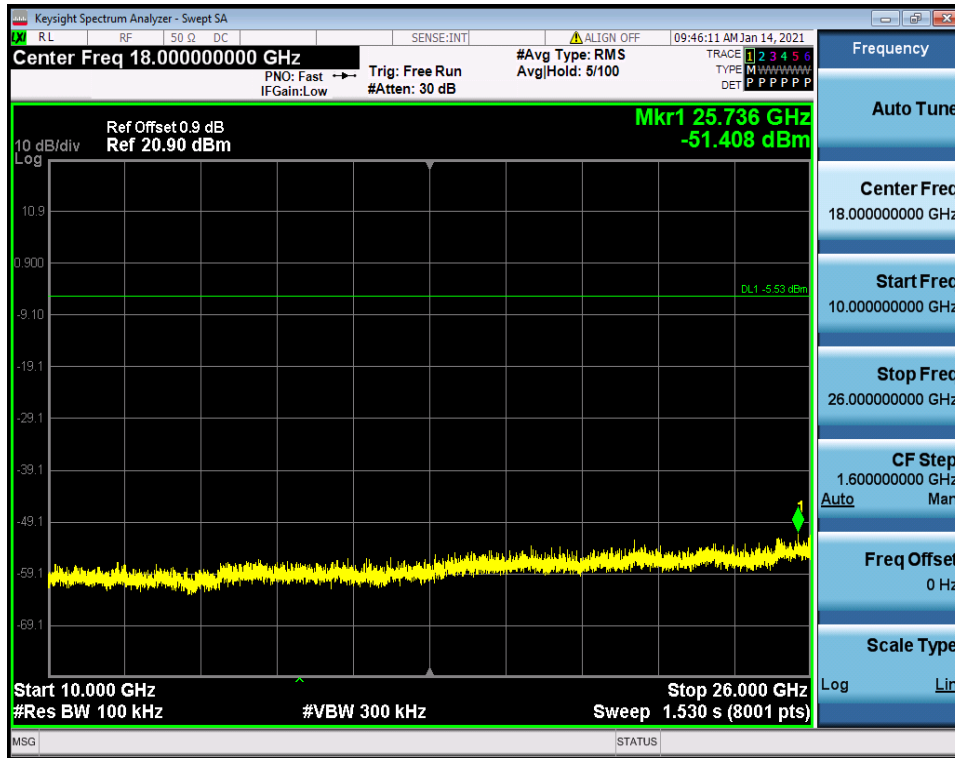
CSE\_1



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.

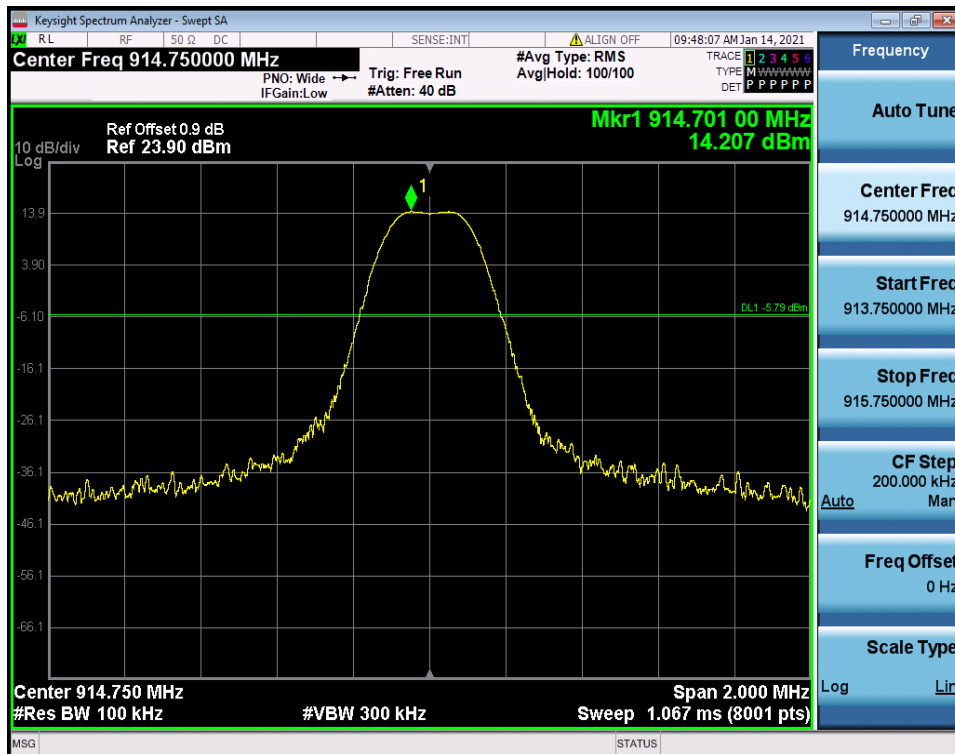
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

CSE\_2



## RF Conducted Spurious Emissions\_GFSK\_914.75

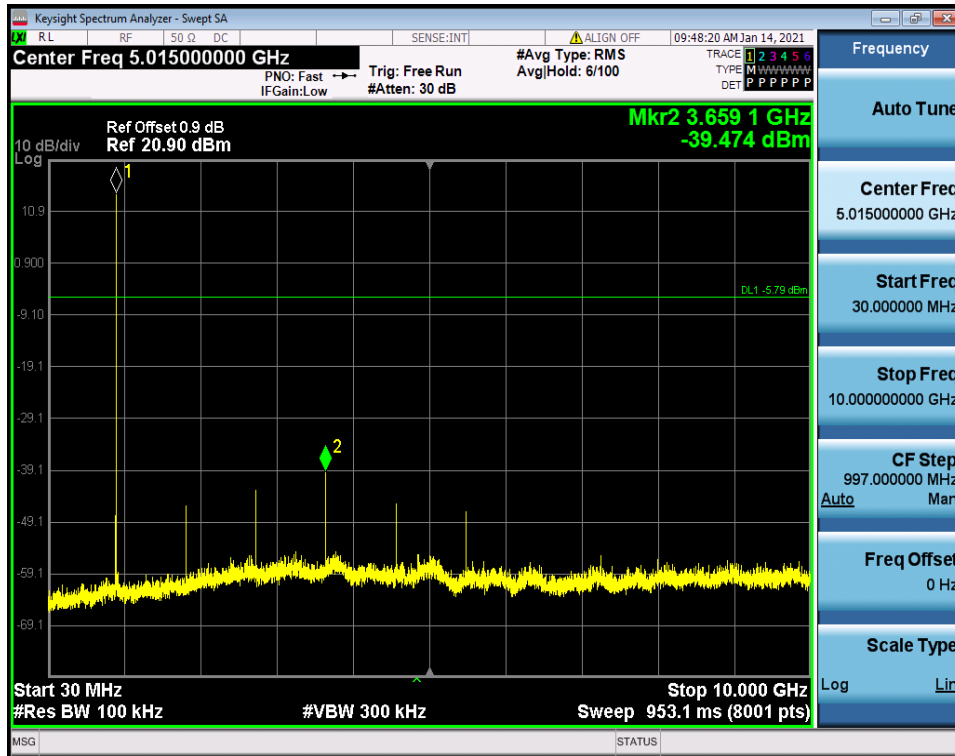
Pref



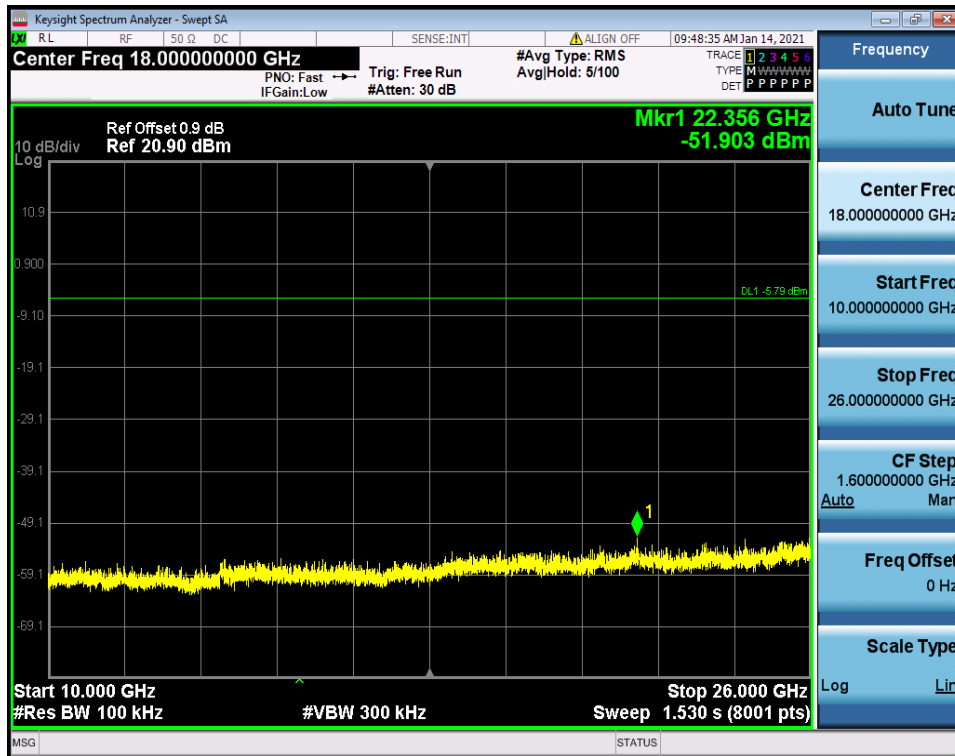
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic 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](mailto:CN.Doccheck@sgs.com)  
No. 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

CSE\_1



CSE\_2



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.

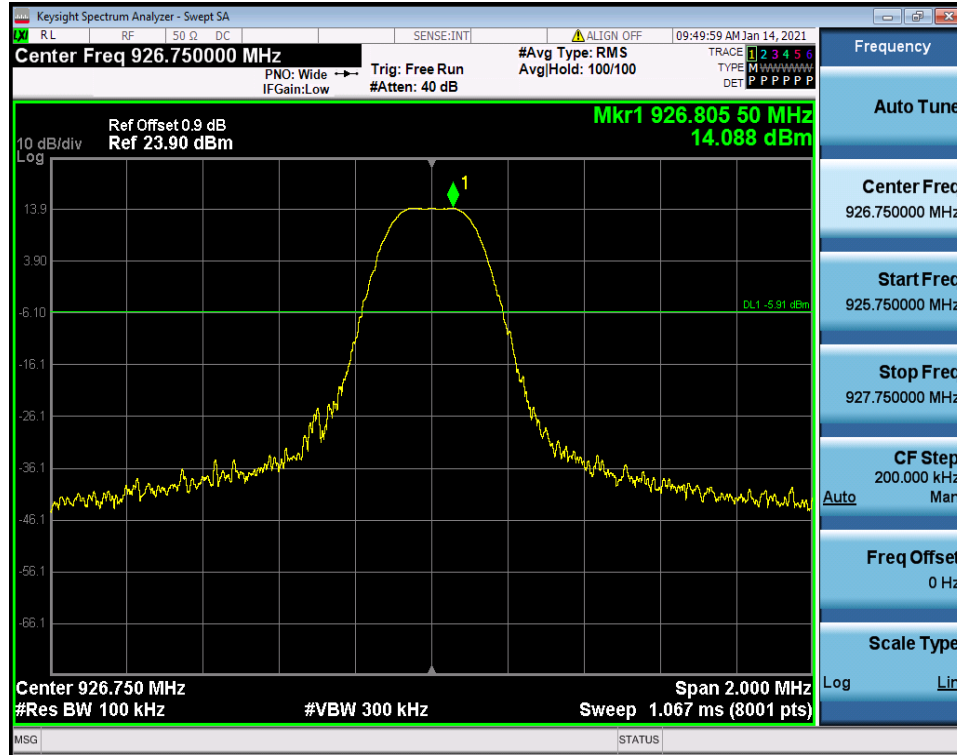
Attention: To check the authenticity of testing/inspection report and certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center EEC Laboratory

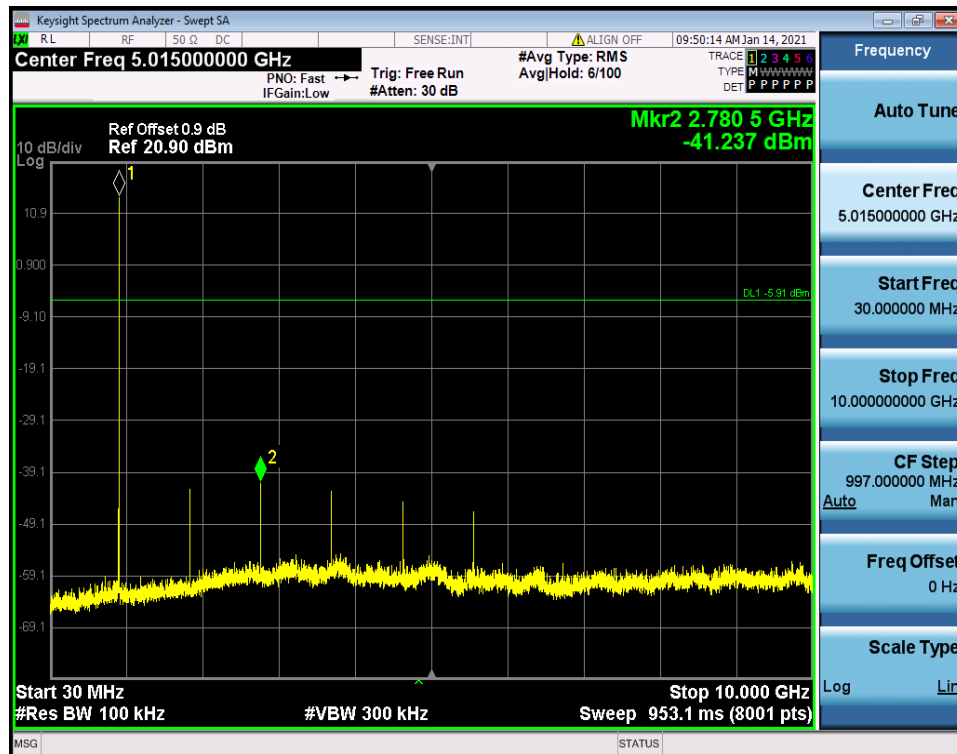
No. 198 Kezhu Road, Science Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

## RF Conducted Spurious Emissions\_GFSK\_926.75

Pref



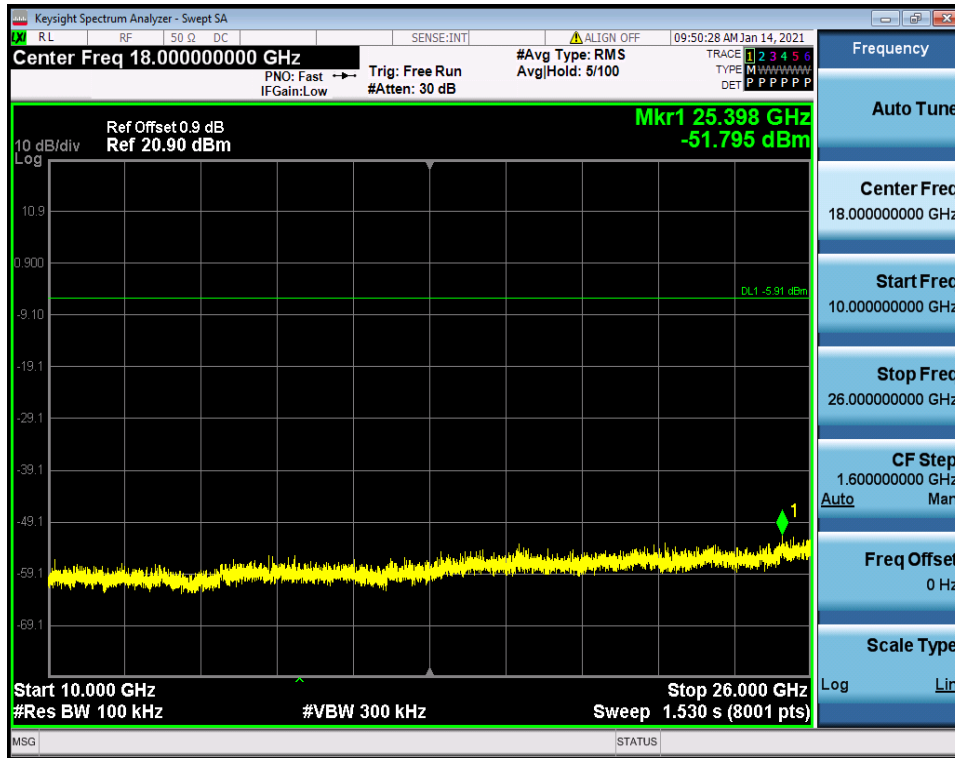
CSE\_1



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](mailto:CN.Doccheck@sgs.com)  
No.198 Kazhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgsgroup.com.cn  
Guangzhou Branch Testing Center EEC Laboratory. 中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com

CSE\_2



--End of 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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Guangzhou Branch Testing Center EEC Laboratory

No. 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86-20) 82155555 f (86-20) 82075058 www.sgs.com  
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86-20) 82155555 f (86-20) 82075058 sgs.china@sgs.com