# FCC TEST REPORT

| | |
|---|---|
| **Application No:** | ZR/2020/50009 |
| **Applicant:** | Motorola Mobility LLC |
| **Address of Applicant:** | 222 W Merchandise Mart Plaza, Suite 1800, Chicago IL 60654, USA |
| **Manufacturer:** | Company Name: Motorola Mobility LLC |
| **Address of Manufacturer** | 222 W Merchandise Mart Plaza, Suite 1800, Chicago IL 60654, USA |
| **EUT Description:** | Mobile Cellular Phone |
| **Model No.:** | XT2081-1 |
| **Type Name:** | MC369 |
| **Trade Mark:** | Motorola |
| **FCC ID:** | IHDT56ZD1 |
| **Standards:** | 47 CFR FCC Part 2, Subpart J<br>47 CFR Part 15, Subpart C |
| **Test Method:** | KDB558074 D01 15.247 Meas Guidance v05r02<br>ANSI C63.10 (2013) |
| **Date of Receipt:** | 2020/05/09 |
| **Date of Test:** | 2020/05/10 to 2020/06/21 |
| **Date of Issue:** | 2020/08/10 |
| **Test Result:** | **PASS *** |

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

Authorized Signature:

Derek Yang
Wireless 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

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

# 1 Version

| Revision Record | | | | |
|---|---|---|---|---|
| **Version** | **Chapter** | **Date** | **Modifier** | **Remark** |
| 01 | | 2020/08/10 | | Original |
| | | | | |
| | | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| **Tested By** | | Mike Hu<br>**(Mike Hu) /Project Engineer** | | |
| **Checked By** | | David Chen<br>**(David Chen) /Reviewer** | | |

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

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

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

Member of the SGS Group (SGS SA)

We, Motorola Mobility LLC. declare on our sole responsibility for the product of XT2081-1 Latam SS/DS(SKU1), XT2081-2 WE&APEM SS/DS(SKU2) , the detail differences as below:

| RF Functionally Matrix-Same ROW indicates Signal Path is shared among SKUs | | |
|---|---|---|
| Bands/Modes | SKU1 | SKU2 |
| Model | XT2081-1 | XT2081-2 |
| PCB | The same | The same |
| GSM | The same | The same |
| WCDMA | Band I/II/IV/V/VI/VIII | Band I/II /V/VIII |
| LTE | Band1/2/3/4/5/7/8/19/28/66 | Band1/3/5/7/8/20/38/40/41 |
| WLAN 2.4GHz | The same | The same |
| Bluetooth | The same | The same |
| Antenna | The same | The same |
| Hardware Version: | The same | The same |
| Software Version: | The same | The same |

According to the difference description above: WIFi of XT2081-1 is same with XT2081-2, so radiated spurious emissions is spot check and others remain data are copied from XT2081-2 original report (Report No.: ZR/2020/5000702).

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

SGS-CSTC Standards Technical Services Co.,Ltd. Shenzhen Branch Testing Center LLC Laboratory.
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

# 2 Test Summary

| Test Item | Test Requirement | Test method | Test Result | Result |
|---|---|---|---|---|
| **AC Power Line Conducted Emission** | 15.207 | ANSI C63.10 2013 | Clause 4.2 | PASS |
| **Duty Cycle** | -- | -- | Clause 4.3 | PASS |
| **Conducted Output Power** | 15.247 (b)(3) | ANSI C63.10 2013 | Clause 4.4 | PASS |
| **DTS (6 dB) Bandwidth & 99% Occupied Bandwidth** | 15.247 (a)(2) | ANSI C63.10 2013 | Clause 4.5 | PASS |
| **Power Spectral Density** | 15.247 (e) | ANSI C63.10 2013 | Clause 4.6 | PASS |
| **Band-edge for RF Conducted Emissions** | 15.247(d) | ANSI C63.10 2013 | Clause 4.7 | PASS |
| **RF Conducted Spurious Emissions** | 15.247(d) | ANSI C63.10 2013 | Clause 4.8 | PASS |
| **Radiated Spurious Emissions** | 15.247(d);15.205/15.209 | ANSI C63.10 2013 | Clause 4.9 | PASS |
| **Restricted bands around fundamental frequency (Radiated Emission)** | 15.247(d);15.205/15.209 | ANSI C63.10 2013 | Clause 4.10 | 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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

# Contents

**1 VERSION** ..... **2**

**2 TEST SUMMARY** ..... **4**

**3 GENERAL INFORMATION** ..... **6**

3.1 CLIENT INFORMATION ..... 6
3.2 TEST LOCATION ..... 6
3.3 TEST FACILITY ..... 6
3.4 GENERAL DESCRIPTION OF EUT ..... 7
3.5 TEST ENVIRONMENT AND MODE ..... 8
3.6 DESCRIPTION OF SUPPORT UNITS ..... 8

**4 TEST RESULTS AND MEASUREMENT DATA** ..... **9**

4.1 ANTENNA REQUIREMENT ..... 9
4.2 AC POWER LINE CONDUCTED EMISSIONS ..... 10
4.3 DUTY CYCLE ..... 14
*4.3.1 Test Results* ..... *14*
*4.3.1 Test Plots* ..... *14*
4.4 CONDUCTED OUTPUT POWER ..... 17
*4.4.1 Test Results* ..... *18*
4.5 DTS (6 DB) BANDWIDTH & 99% OCCUPIED BANDWIDTH ..... 19
*4.5.1 Test Results* ..... *19*
*4.5.2 Test plots* ..... *20*
4.6 POWER SPECTRAL DENSITY ..... 30
*4.6.1 Test Results* ..... *30*
*4.6.2 Test plots* ..... *31*
4.7 BAND-EDGE FOR RF CONDUCTED EMISSIONS ..... 36
*4.7.1 Test plots* ..... *37*
4.8 RF CONDUCTED SPURIOUS EMISSIONS ..... 42
*4.8.1 Test plots* ..... *43*
4.9 RADIATED SPURIOUS EMISSIONS ..... 49
*4.9.1 Radiated emission below 1GHz* ..... *52*
*4.9.2 Transmitter emission above 1GHz* ..... *54*
4.10 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY ..... 72
*4.10.1 ANT1* ..... *74*

**5 MEASUREMENT UNCERTAINTY (95% CONFIDENCE LEVELS, K=2)** ..... **86**

**6 EQUIPMENT LIST** ..... **87**

**7 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS** ..... **89**

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

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

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

Member of the SGS Group (SGS SA)

# 3 General Information

## 3.1 Client Information

| | |
|---|---|
| Applicant: | Motorola Mobility LLC |
| Address of Applicant: | 222 W Merchandise Mart Plaza, Suite 1800, Chicago IL 60654, USA |
| Manufacturer: | Company Name: Motorola Mobility LLC |
| Address of Manufacturer: | 222 W Merchandise Mart Plaza, Suite 1800, Chicago IL 60654, USA |

## 3.2 Test Location

| | |
|---|---|
| Company: | SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch |
| Address: | No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China |
| Post code: | 518057 |
| Telephone: | +86 (0) 755 2601 2053 |
| Fax: | +86 (0) 755 2671 0594 |
| E-mail: | ee.shenzhen@sgs.com |

## 3.3 Test Facility

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

**• CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

**• A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

**• VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

**• FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

**• Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-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-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

## 3.4 General Description of EUT

| | |
|---|---|
| EUT Description: | Mobile Cellular Phone |
| Model No.: | XT2081-1 |
| Type Name: | MC369 |
| Trade Mark: | Motorola |
| Hardware Version: | DVT2-2 |
| Software Version: | QPZ30.30-Q3 |
| IEEE 802.11 WLAN Mode Supported | ☒ 802.11B (20 MHz channel bandwidth),<br>☒ 802.11G (20 MHz channel bandwidth)<br>☒ 802.11N (20 MHz channel bandwidth),<br>☐ 802.11N (40 MHz channel bandwidth) |
| Operation Frequency: | 2400 MHz -2483.5MHz<br>fc = 2407 MHz + N * 5 MHz, where:<br>-fc = "Operating Frequency" in MHz,<br>-N = "Channel Number" with the range from 1 to 11 for the 20 MHz channel bandwidth, or 3 to 9 for the 40 MHz channel bandwidth. |
| Type of Modulation: | IEEE for 802.11B: DSSS<br>IEEE for 802.11G : OFDM<br>IEEE for 802.11N(HT20) : OFDM |
| Sample Type: | ☒ Portable Device, ☐ Module |
| Antenna Type: | ☐ External, ☒ Integrated |
| Antenna Ports | ☒ Ant 1, ☐ Ant 2, ☐ Ant 3 |
| Smart System | ☒ SISO (for 802.11B/G/N),<br>☐ MIMO (for 802.11N): 2 Tx & 2 Rx,<br>☐ Diversity (for 802.11B/G) : Tx & Rx |
| Antenna Gain: | -0.5dBi |
| Power Supply | ☒ AC/DC Adapter; ☐ Battery ☐ PoE:; ☐ Other: |
| Accsessories | AC Aadpte:Model No.:SC-41;SC-42;SC-43;SC-46;SC-47;MC-101;MC-102;MC-103;MC-106;MC-107<br>I/P:100-240 300mA<br>O/P:5V,2000mA;<br>Battery: Model No.:JK50,3.8V |

| Operation Frequency of each channel (802.11B/G/N HT20) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Channel** | **Frequency** | **Channel** | **Frequency** | **Channel** | **Frequency** | **Channel** | **Frequency** |
| 1 | 2412MHz | 4 | 2427MHz | 7 | 2442MHz | 10 | 2457MHz |
| 2 | 2417MHz | 5 | 2432MHz | 8 | 2447MHz | 11 | 2462MHz |
| 3 | 2422MHz | 6 | 2437MHz | 9 | 2452MHz | | |

Remark:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

| Channel | Frequency for 802.11B/G/N (HT20) |
|---|---|
| The Lowest channel | 2412MHz |
| The Middle channel | 2437MHz |
| The Highest channel | 2462MHz |

## 3.5 Test Environment and Mode

| **Operating Environment:** | |
|---|---|
| Temperature: | 25.0 °C |
| Humidity: | 50 % RH |
| Atmospheric Pressure: | 101.30 KPa |
| **Test mode:** | |
| Transmitting mode: | Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate. |

## 3.6 Description of Support Units

The EUT has been tested independent unit.

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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

# 4 Test results and Measurement Data

## 4.1 Antenna Requirement

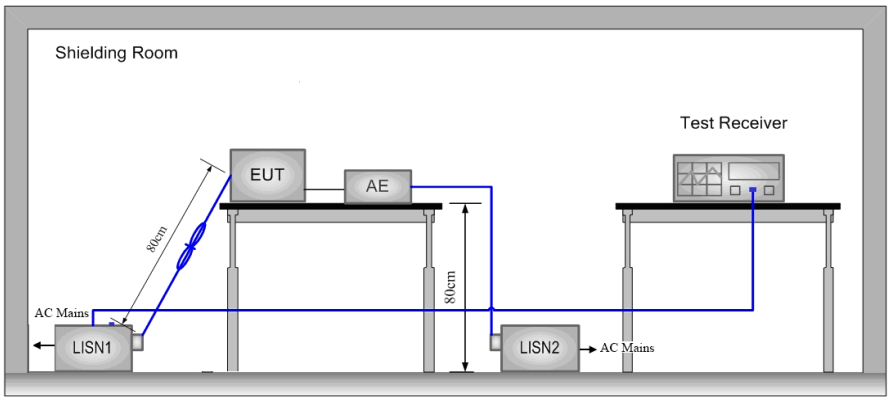
| **Standard requirement:** | 47 CFR Part 15C Section 15.203 /247(c) |
|---|---|
| 15.203 requirement:<br>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or 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.<br>15.247(b) (4) requirement:<br>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. | |
| The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -0.5dBi. | |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

## 4.2 AC Power Line Conducted Emissions

| | | | |
|---|---|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.207 | | |
| Test Method: | ANSI C63.10: 2013 | | |
| Test Frequency Range: | 150kHz to 30MHz | | |
| Limit: | Frequency range (MHz) | Limit (dBuV) | |
| | | 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. | | |
| Test Procedure: | 1) The mains terminal disturbance voltage test was conducted in a shielded room.<br>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω 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.<br>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,<br>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.<br>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: 2013 on conducted measurement. | | |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

| | |
|---|---|
| Test Setup: |  |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates at lowest, middle and highest channel.<br>Charge + Transmitting mode. |
| Final Test Mode: | Through Pre-scan, find the 1Mbps of rate of 802.11B at lowest channel is the worst case.<br>Charge + Transmitting mode.<br>Only the worst case is recorded in the report. |
| Instruments Used: | Refer to section 5.10 for details |
| Test Results: | Pass |

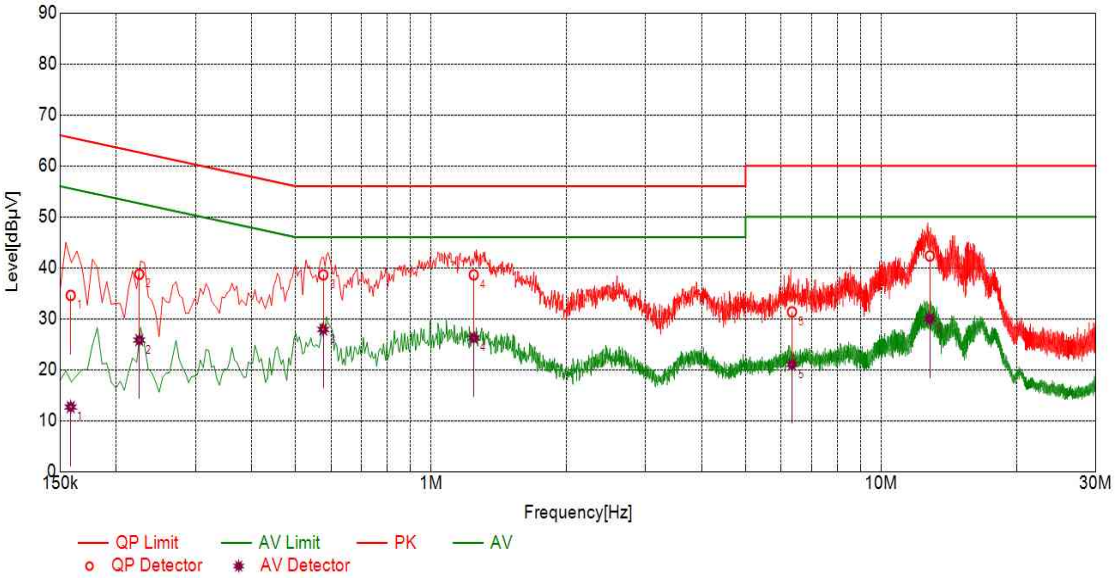
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:

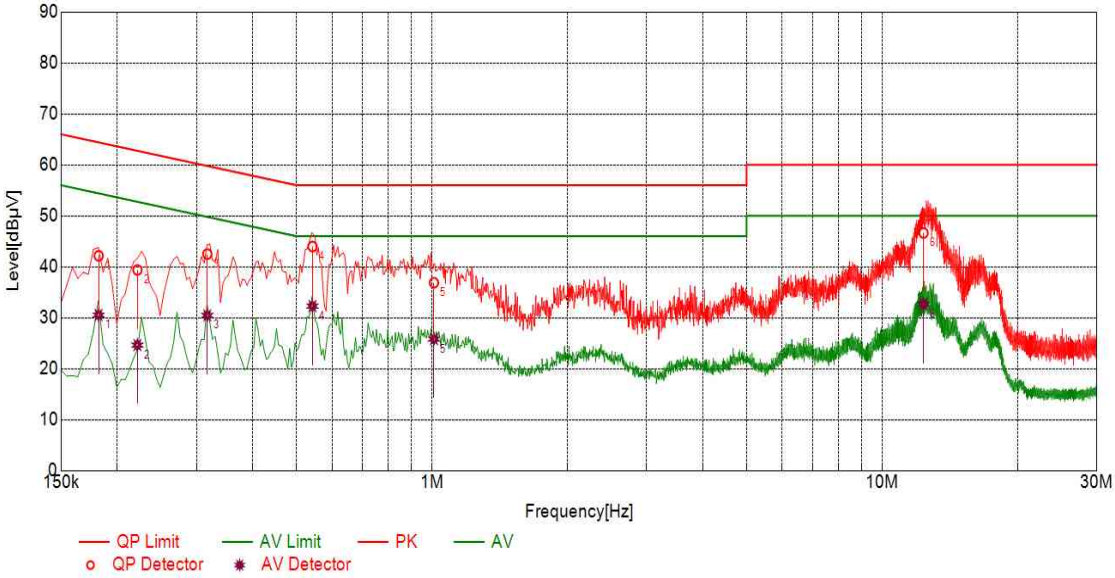



**Test Graph**

| Final Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Factor [dB] | QP Value | QP Limit | QP Margin | AV Value | AV Limit | AV Margin | Type |
| 1 | 0.1584 | 10.10 | 34.58 | 65.55 | 30.97 | 12.68 | 55.55 | 42.87 | L |
| 2 | 0.2250 | 10.10 | 38.74 | 62.63 | 23.89 | 25.81 | 52.63 | 26.82 | L |
| 3 | 0.5765 | 10.10 | 38.61 | 56.00 | 17.39 | 27.90 | 46.00 | 18.10 | L |
| 4 | 1.2446 | 10.10 | 38.60 | 56.00 | 17.40 | 26.24 | 46.00 | 19.76 | L |
| 5 | 6.3386 | 10.10 | 31.33 | 60.00 | 28.67 | 21.01 | 50.00 | 28.99 | L |
| 6 | 12.8275 | 10.11 | 42.32 | 60.00 | 17.68 | 29.99 | 50.00 | 20.01 | L |

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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

Neutral Line:




**Test Graph**

| Final Data List | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Factor [dB] | QP Value | QP Limit | QP Margin | AV Value | AV Limit | AV Margin | Type |
| 1 | 0.1818 | 10.10 | 42.16 | 64.40 | 22.24 | 30.53 | 54.40 | 23.87 | N |
| 2 | 0.2217 | 10.10 | 39.37 | 62.75 | 23.38 | 24.63 | 52.75 | 28.12 | N |
| 3 | 0.3169 | 10.10 | 42.50 | 59.79 | 17.29 | 30.46 | 49.79 | 19.33 | N |
| 4 | 0.5428 | 10.10 | 43.98 | 56.00 | 12.02 | 32.29 | 46.00 | 13.71 | N |
| 5 | 1.0105 | 10.10 | 36.87 | 56.00 | 19.13 | 25.81 | 46.00 | 20.19 | N |
| 6 | 12.3596 | 10.10 | 46.63 | 60.00 | 13.37 | 32.69 | 50.00 | 17.31 | N |

*Remarks:*

*1. The following Quasi-Peak and Average measurements were performed on the EUT:*

*2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.*

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

## 4.3 Duty Cycle

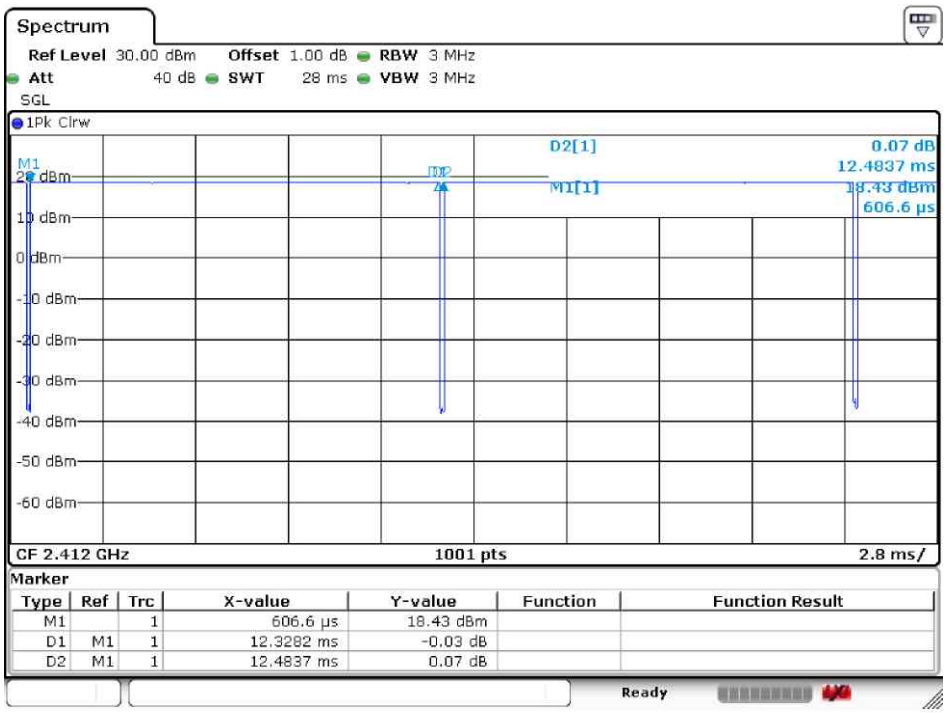
### 4.3.1 Test Results

| Test Mode | TX Freq. [MHz] | Duty cycle [%] |
|---|---|---|
| 11B | Ant 1: CH1,CH6,CH11 | 98.75 |
| 11G | Ant 1: CH1,CH6,CH11 | 97.93 |
| 11N20 | Ant 1: CH1,CH6,CH11 | 97.78 |

### 4.3.1 Test Plots

#### 4.3.1.1 ANT1

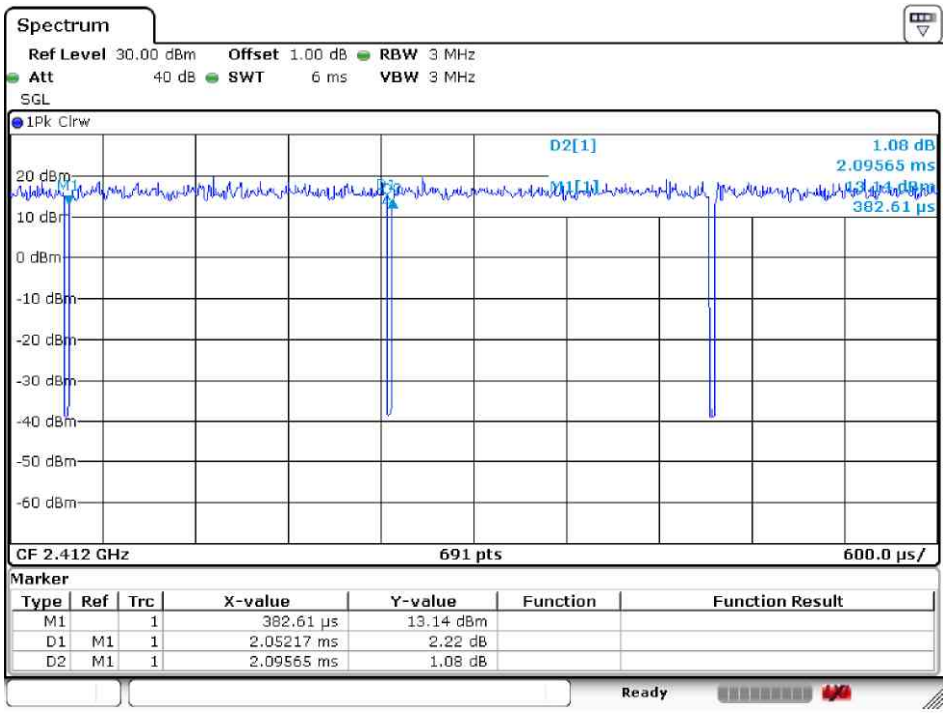
#### 4.3.1.1.1 11B




Date: 22.MAY.2020 03:46:47

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

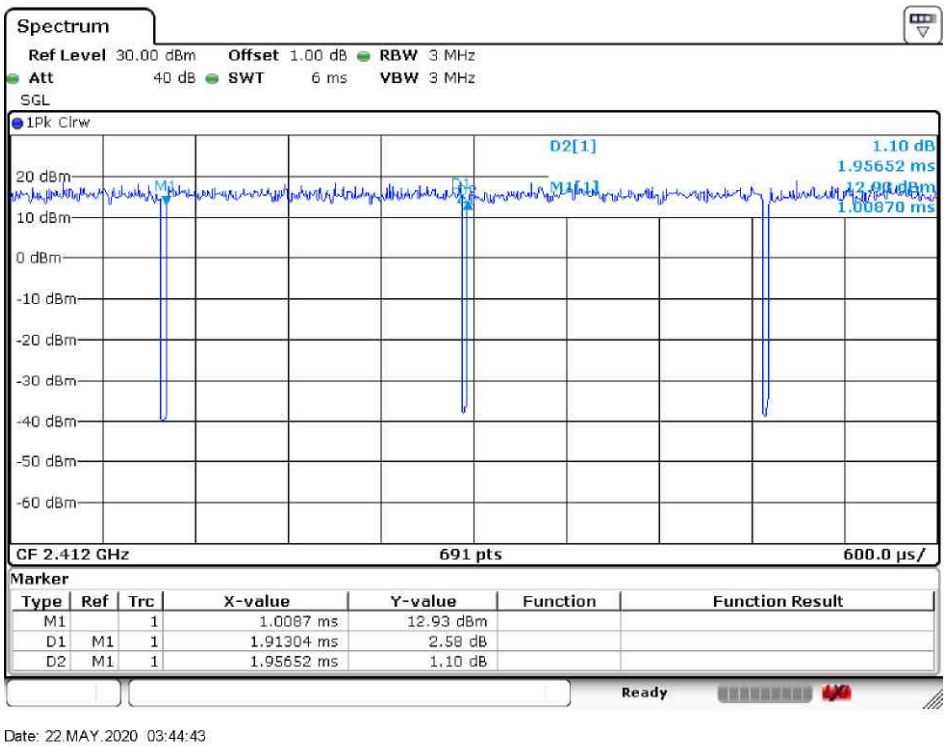
### 4.3.1.1.2 11G




Date: 22.MAY.2020 03:45:31

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.3.1.1.3 11N20




Date: 22.MAY.2020 03:44:43

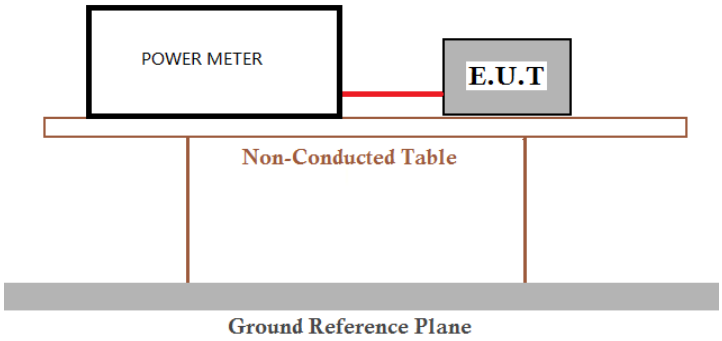
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic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

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

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

Member of the SGS Group (SGS SA)

## 4.4 Conducted Output Power

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (b)(3) |
| Test Method: | ANSI C63.10 :2013 Section 11.9.1.3 |
| Test Setup: |  |
| Test Instruments: | Refer to section 5.10 for details |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates |
| Final Test Mode: | Through Pre-scan, find the<br>1Mbps of rate is the worst case of 802.11B;<br>6Mbps of rate is the worst case of 802.11G ;<br>6.5Mbps of rate is the worst case of 802.11N(HT20); |
| Limit: | 30dBm |
| Test Results: | Pass |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.4.1 Test Results

**Measurement Data of Average Power:**

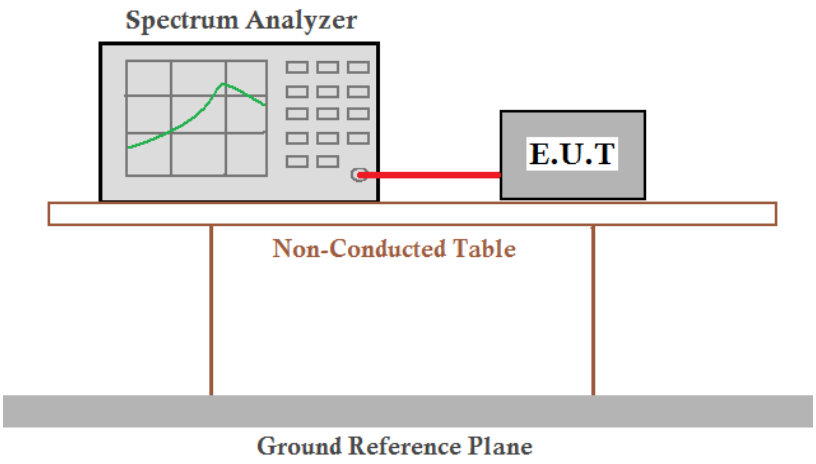
| Mode | Test Channel | Average Output Power (dBm) [Duty Cycle Considered] | Result |
|---|---|---|---|
| 802.11B | Lowest | 17.74 | Report purpose only |
| | Middle | 17.78 | Report purpose only |
| | Highest | 18.05 | Report purpose only |
| 802.11G | Lowest | 15.92 | Report purpose only |
| | Middle | 15.94 | Report purpose only |
| | Highest | 16.29 | Report purpose only |
| 802.11N20 | Lowest | 14.83 | Report purpose only |
| | Middle | 14.78 | Report purpose only |
| | Highest | 15.11 | Report purpose only |

**Measurement Data of Peak Power:**

| Mode | Test Channel | Peak Output Power (dBm) | Limit (dBm) | Result |
|---|---|---|---|---|
| 802.11B | Lowest | 18.06 | 30.00 | Pass |
| | Middle | 18.22 | 30.00 | Pass |
| | Highest | 18.22 | 30.00 | Pass |
| 802.11G | Lowest | 17.35 | 30.00 | Pass |
| | Middle | 17.24 | 30.00 | Pass |
| | Highest | 17.44 | 30.00 | Pass |
| 802.11N20 | Lowest | 17.03 | 30.00 | Pass |
| | Middle | 17.07 | 30.00 | Pass |
| | Highest | 17.18 | 30.00 | Pass |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

## 4.5 DTS (6 dB) Bandwidth & 99% Occupied Bandwidth

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (a)(2) |
| Test Method: | ANSI C63.10: 2013 Section 11.8.1 Option 1 |
| Test Setup: |  |
| Instruments Used: | Refer to section 5.10 for details |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates |
| Final Test Mode: | Through Pre-scan, find the<br>1Mbps of rate is the worst case of 802.11B;<br>6Mbps of rate is the worst case of 802.11G;<br>6.5Mbps of rate is the worst case of 802.11N(HT20); |
| Limit: | ≥ 500 kHz |
| Test Results: | Pass |

### 4.5.1 Test Results

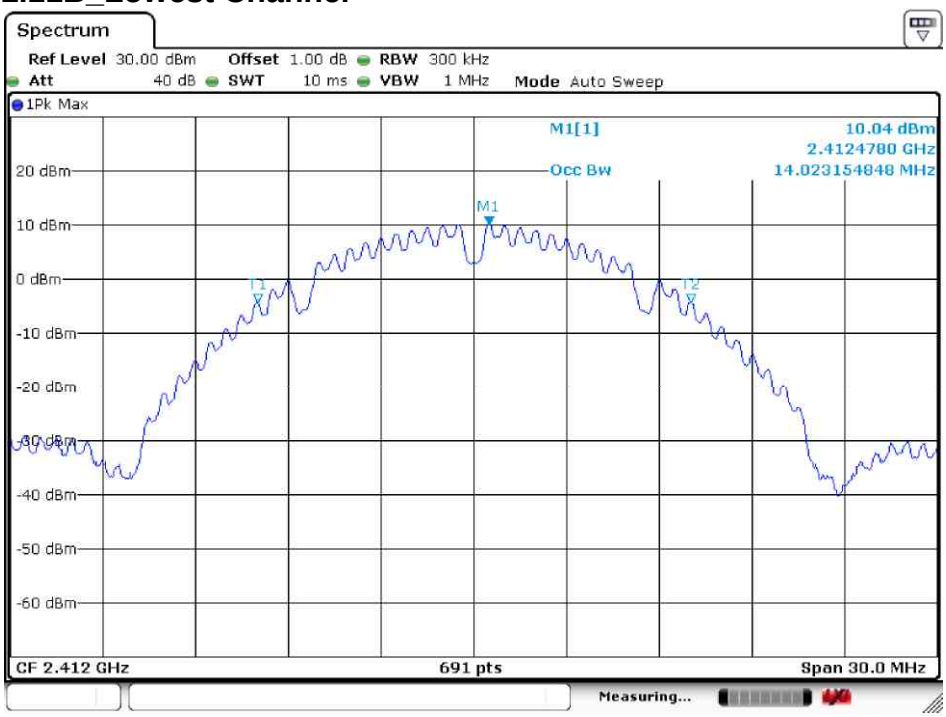
| Mode | Test Channel | Occupied Bandwidth (MHz) | 6dB Emission Bandwidth (MHz) | Limit (kHz) | Result |
|---|---|---|---|---|---|
| 802.11B | Lowest | 14.02 | 9.07 | ≥500 | Pass |
| | Middle | 13.89 | 9.03 | ≥500 | Pass |
| | Highest | 13.85 | 9.07 | ≥500 | Pass |
| 802.11G | Lowest | 17.06 | 16.32 | ≥500 | Pass |
| | Middle | 16.93 | 15.98 | ≥500 | Pass |
| | Highest | 16.85 | 15.72 | ≥500 | Pass |
| 802.11N20 | Lowest | 18.10 | 17.33 | ≥500 | Pass |
| | Middle | 18.10 | 17.11 | ≥500 | Pass |
| | Highest | 17.97 | 16.59 | ≥500 | Pass |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.5.2 Test plots

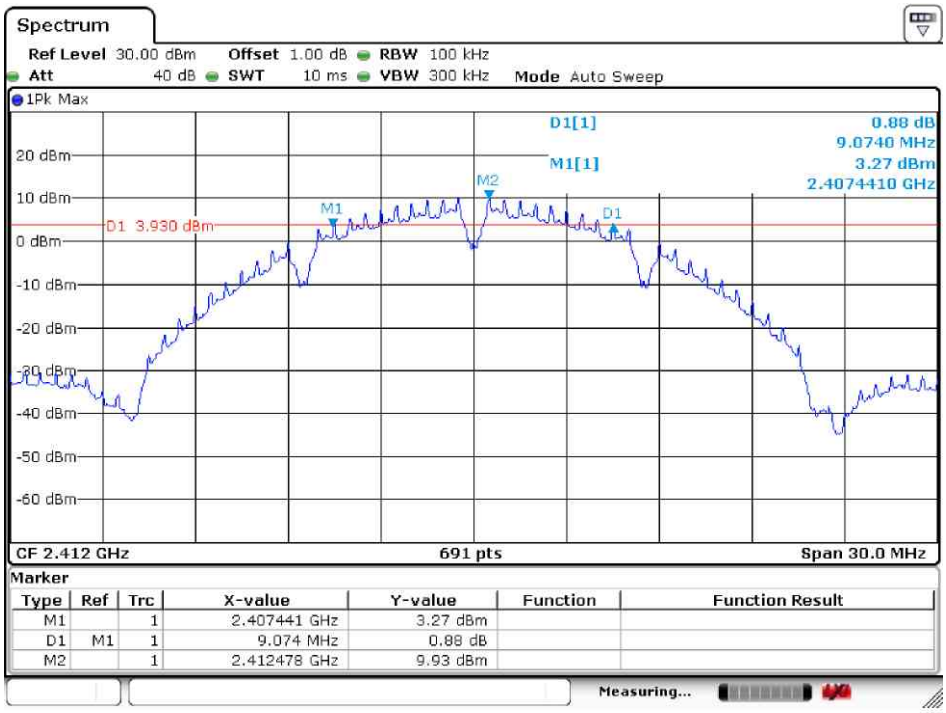
#### 4.5.2.1 ANT1

#### 4.5.2.1.1 802.11B_Lowest Channel



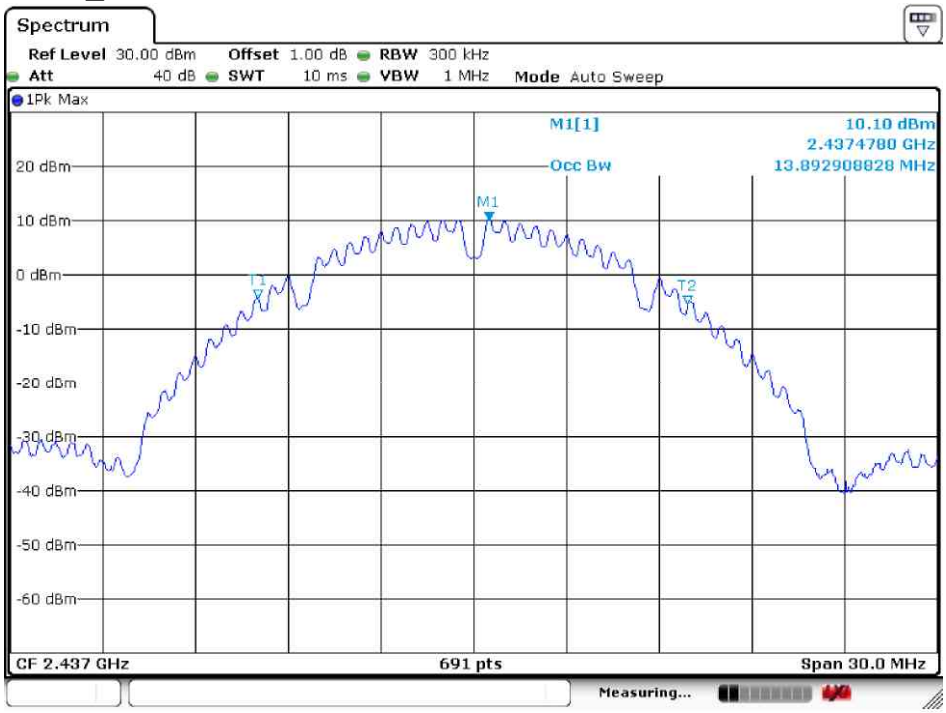

Date: 22.MAY.2020 03:03:14

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)



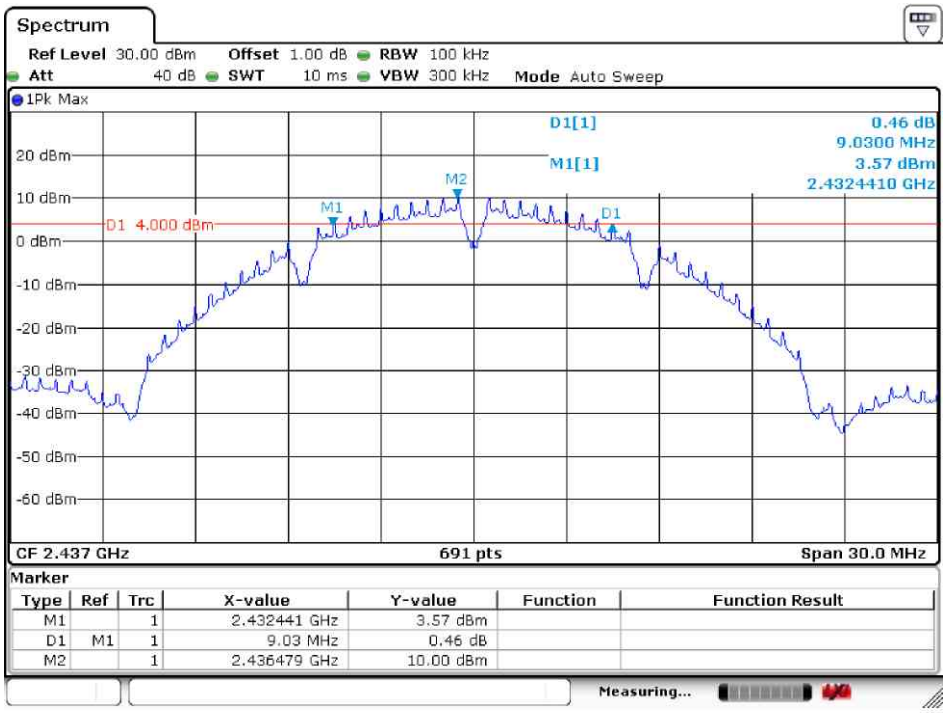

Date: 22.MAY.2020 02:55:02

### 4.5.2.1.2 802.11B_ Middle Channel



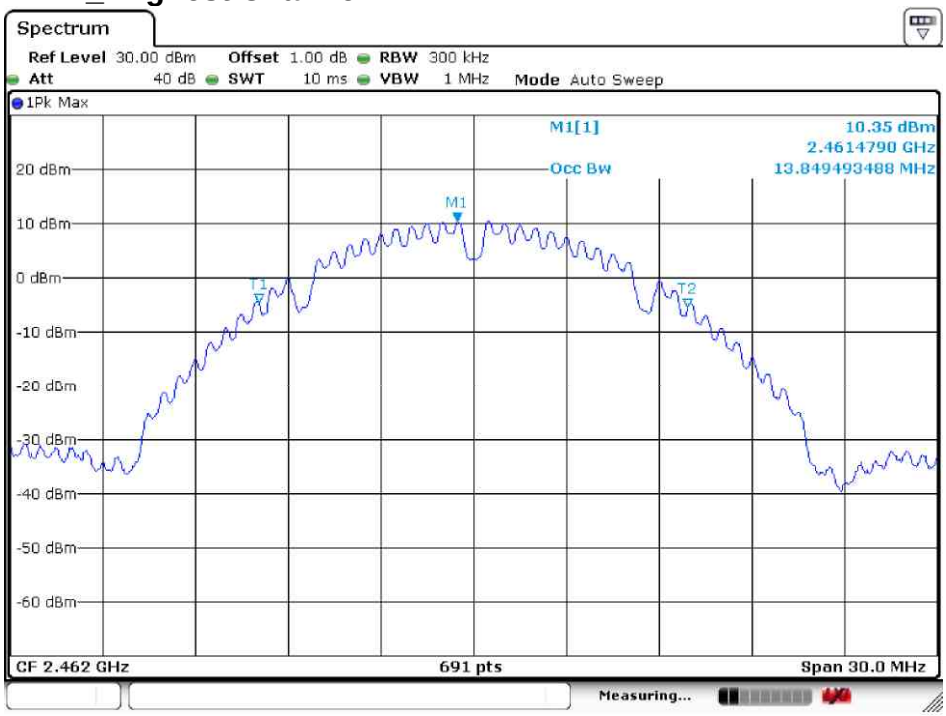

Date: 22.MAY.2020 03:02:55

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)




Date: 22.MAY.2020 02:59:16

### 4.5.2.1.3 802.11B_ Highest Channel



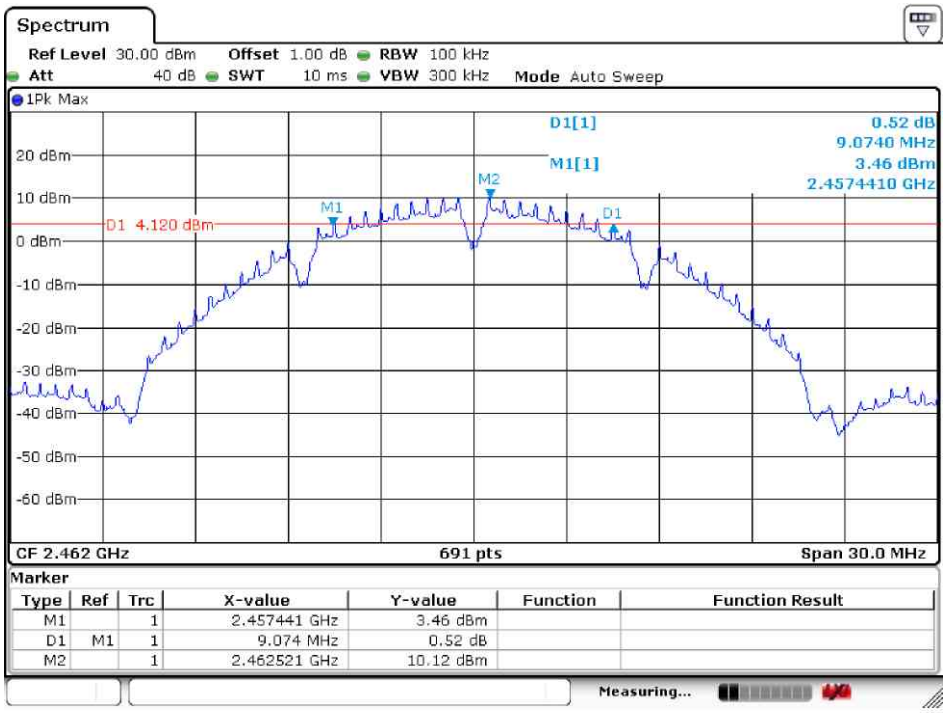

Date: 22.MAY.2020 03:02:34

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

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

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

Member of the SGS Group (SGS SA)




Date: 22.MAY.2020 03:00:33

### 4.5.2.1.4 802.11G_Lowest Channel

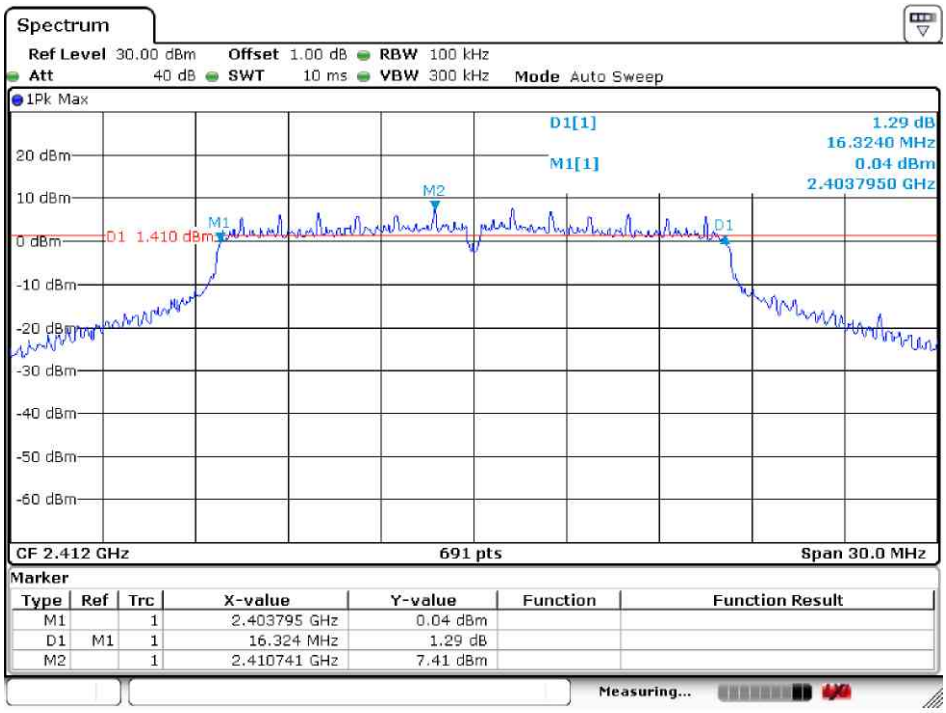
Date: 22.MAY.2020 03:03:38

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

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

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

Member of the SGS Group (SGS SA)

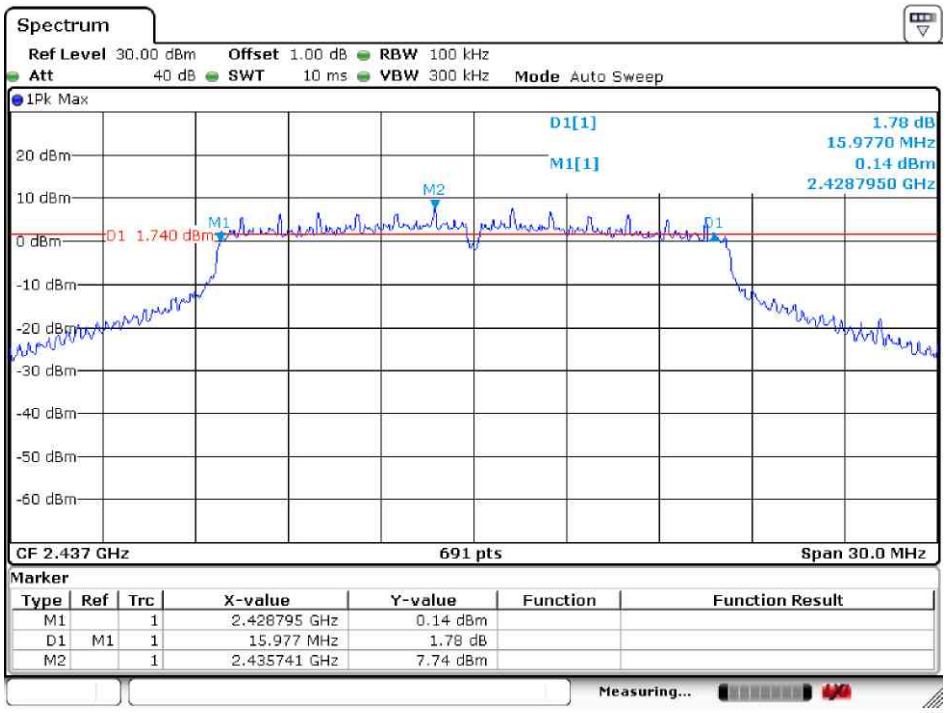



Date: 22.MAY.2020 02:50:18

## 4.5.2.1.5 802.11G_ Middle Channel

Date: 22.MAY.2020 03:03:56

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

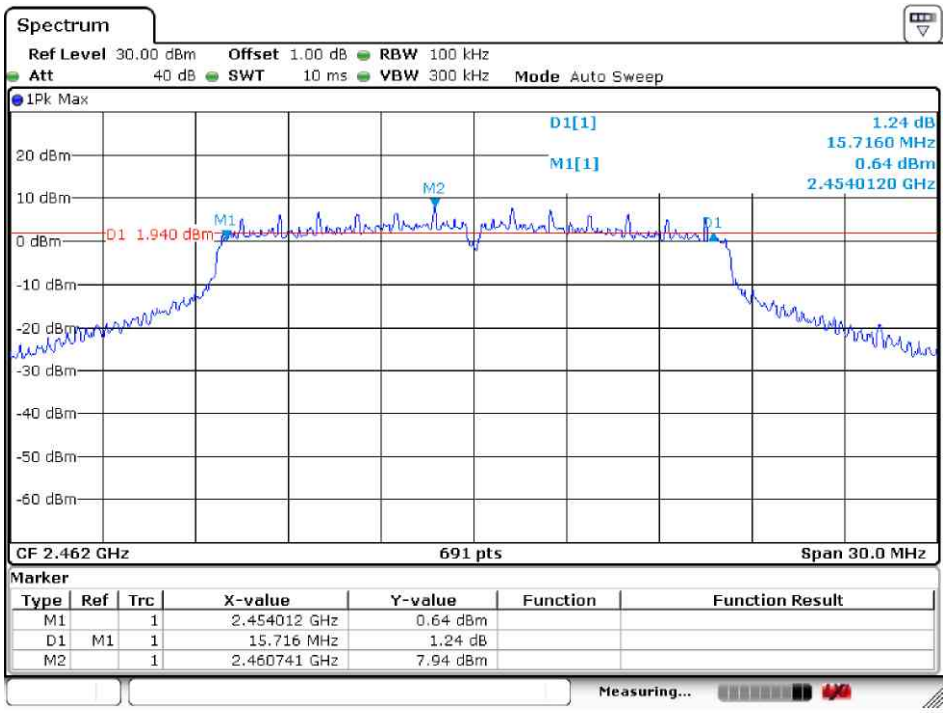



Date: 22.MAY.2020 02:49:28

### 4.5.2.1.6 802.11G_ Highest Channel

Date: 22.MAY.2020 03:04:11

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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)




Date: 22.MAY.2020 02:47:27

## 4.5.2.1.7 802.11N20_Lowest Channel

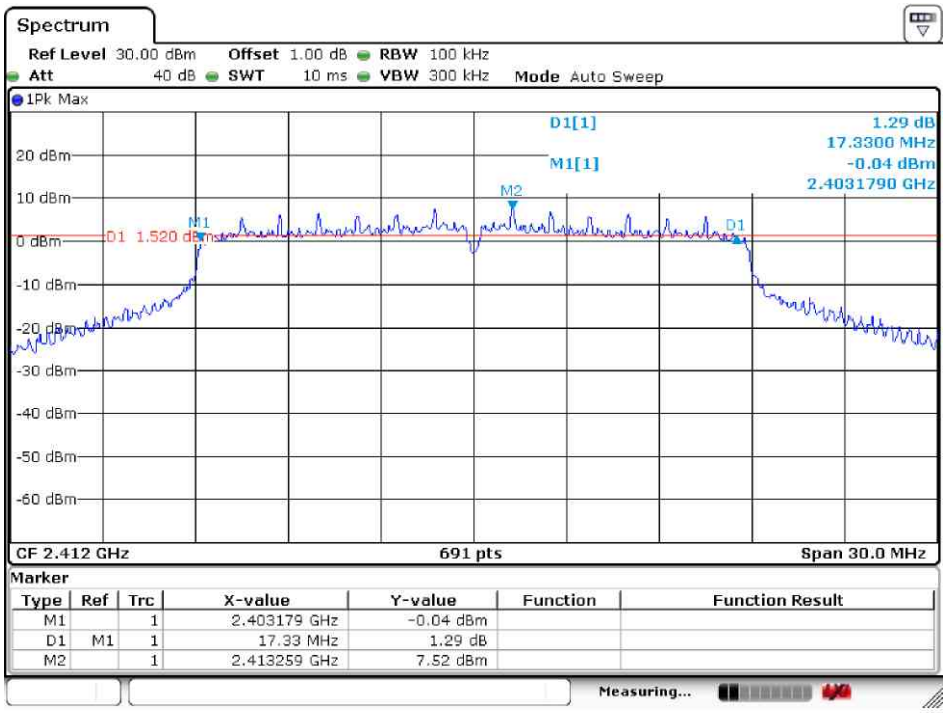
Date: 22.MAY.2020 03:05:51

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

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

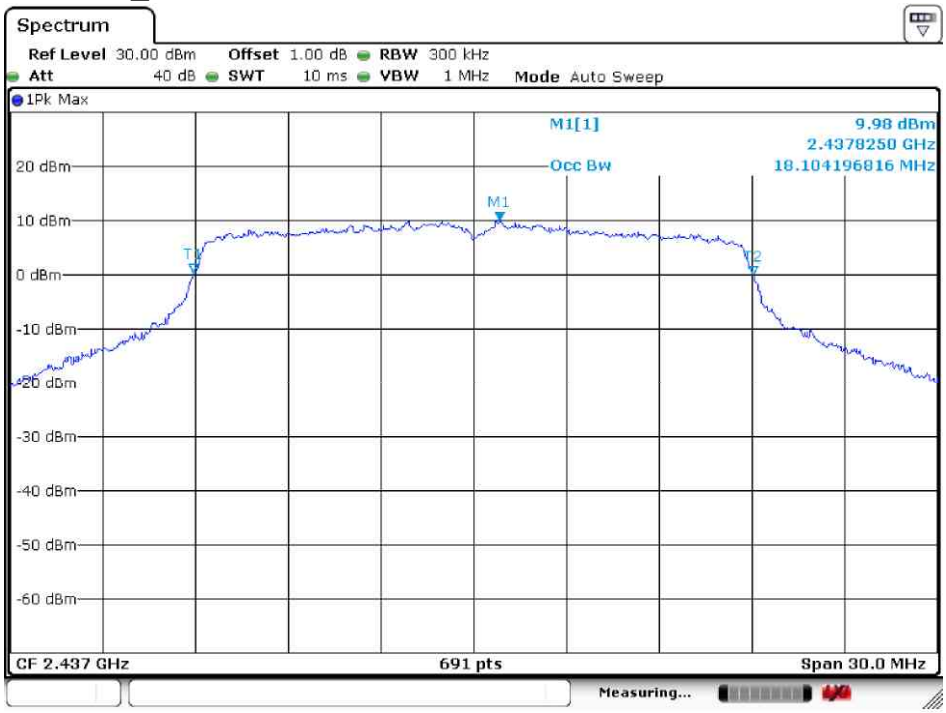
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com

Member of the SGS Group (SGS SA)




Date: 22.MAY.2020 02:41:49

### 4.5.2.1.8 802.11 N20_ Middle Channel



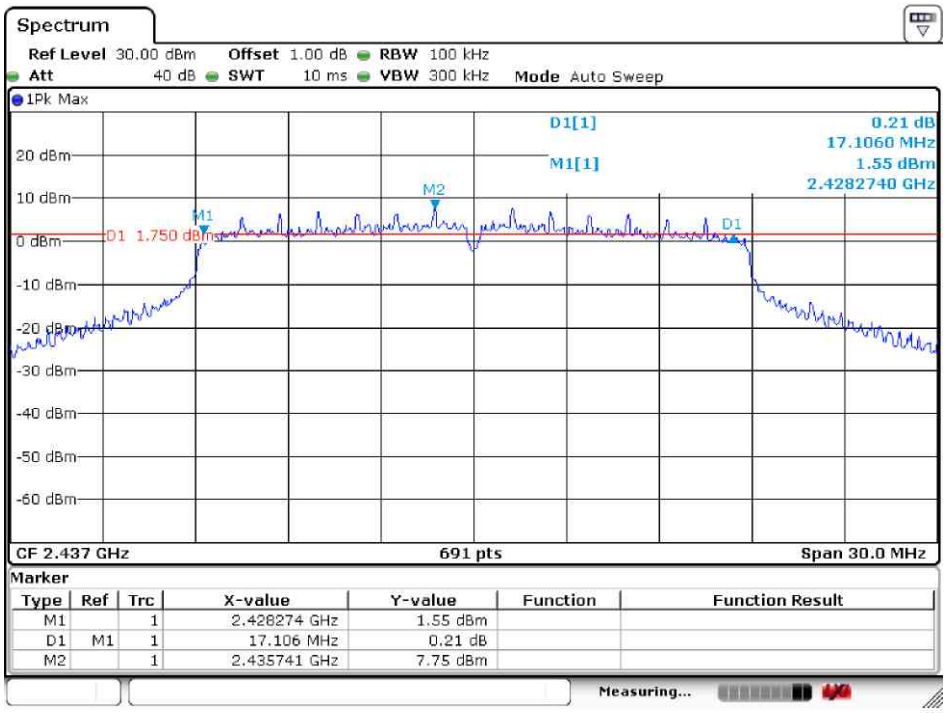

Date: 22.MAY.2020 03:05:31

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

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

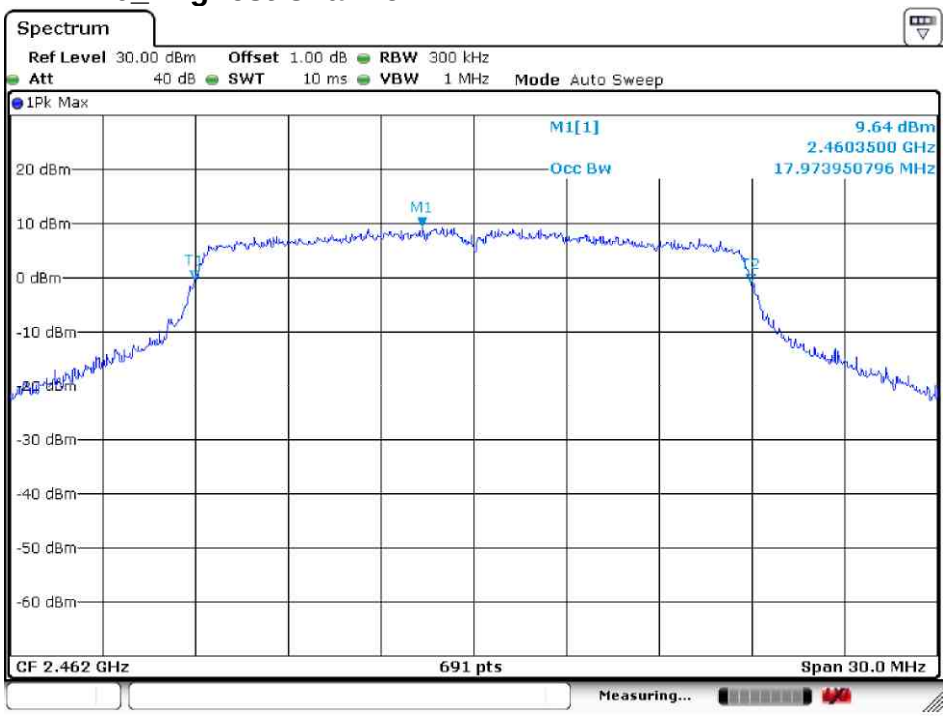
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com

Member of the SGS Group (SGS SA)



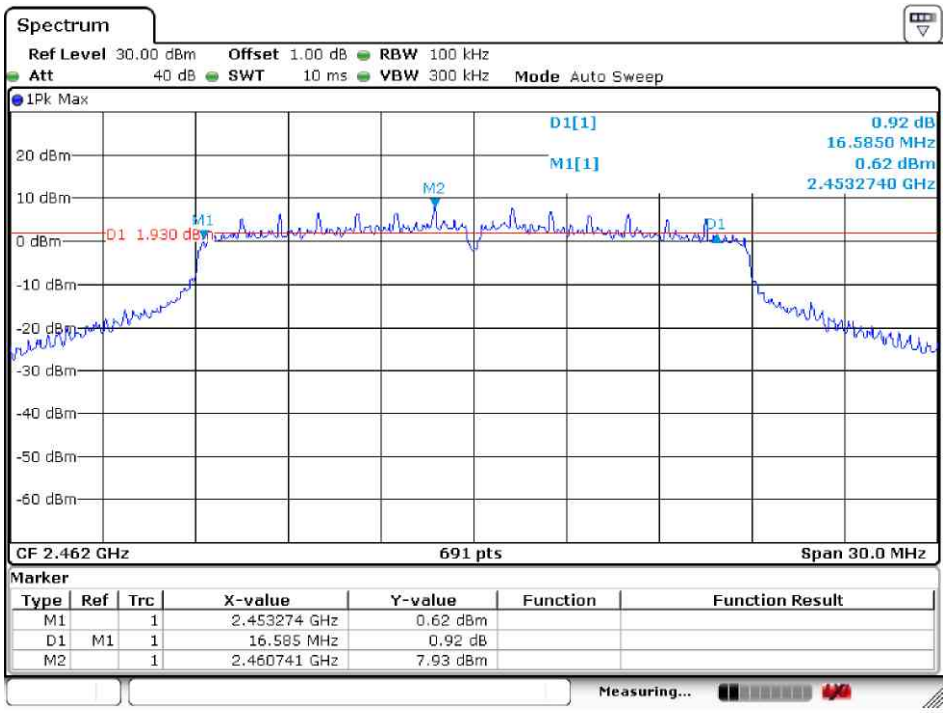

Date: 22.MAY.2020 02:44:44

## 4.5.2.1.9 802.11 N20_ Highest Channel




Date: 22.MAY.2020 03:04:29

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)




Date: 22.MAY.2020 02:46:15

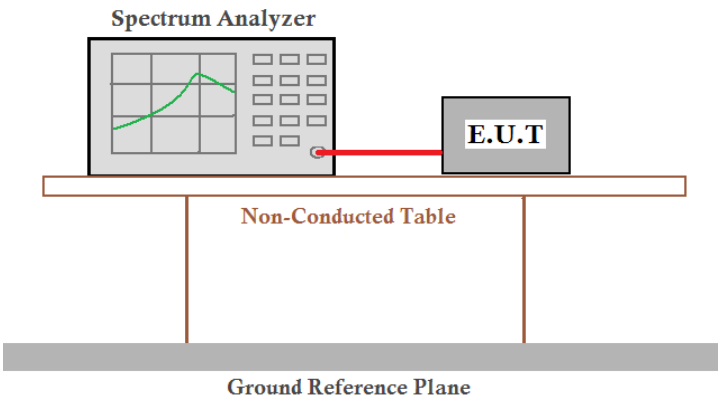
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic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

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

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

Member of the SGS Group (SGS SA)

## 4.6 Power Spectral Density

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (e) |
| Test Method: | ANSI C63.10 :2013 Section 11.10.2 |
| Test Setup: |  |
| Test Instruments: | Refer to section 5.10 for details |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates |
| Final Test Mode: | Through Pre-scan, find the<br>1Mbps of rate is the worst case of 802.11B;<br>6Mbps of rate is the worst case of 802.11G ;<br>6.5Mbps of rate is the worst case of 802.11N(HT20); |
| Limit: | ≤8.00dBm/3kHz |
| Test Results: | Pass |

### 4.6.1 Test Results

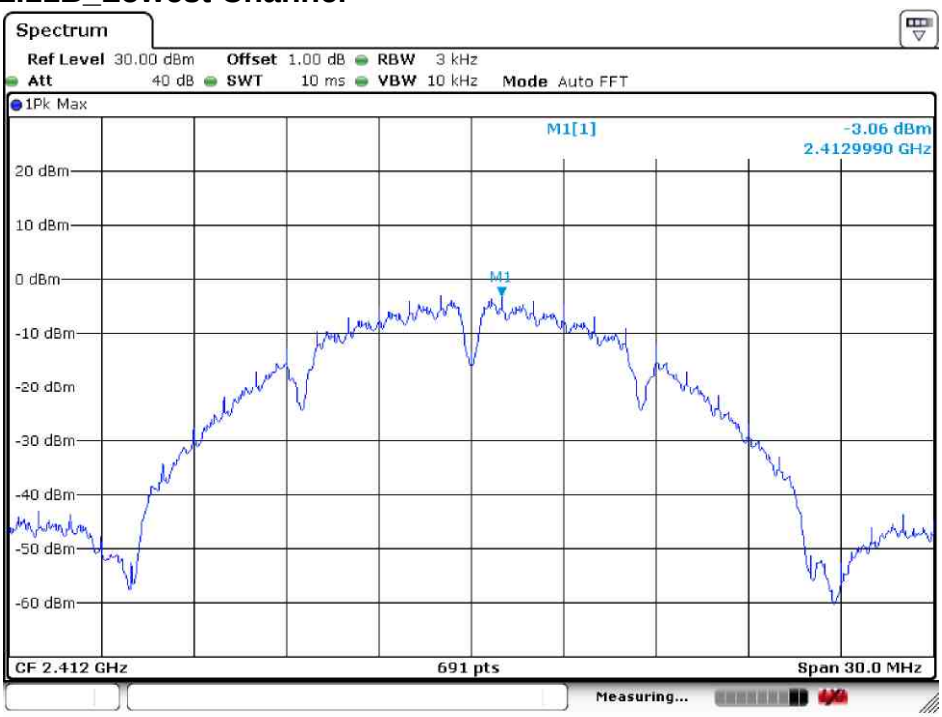
| Mode | Test Channel | Power Spectral Density (dBm/3kHz) | Limit (dBm/3kHz) | Result |
|---|---|---|---|---|
| 802.11B | Lowest | -3.06 | ≤8.00 | Pass |
| | Middle | -3.72 | ≤8.00 | Pass |
| | Highest | -2.83 | ≤8.00 | Pass |
| 802.11G | Lowest | -7.78 | ≤8.00 | Pass |
| | Middle | -7.74 | ≤8.00 | Pass |
| | Highest | -7.37 | ≤8.00 | Pass |
| 802.11N20 | Lowest | -7.53 | ≤8.00 | Pass |
| | Middle | -7.70 | ≤8.00 | Pass |
| | Highest | -8.01 | ≤8.00 | Pass |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.6.2 Test plots

#### 4.6.2.1 ANT1

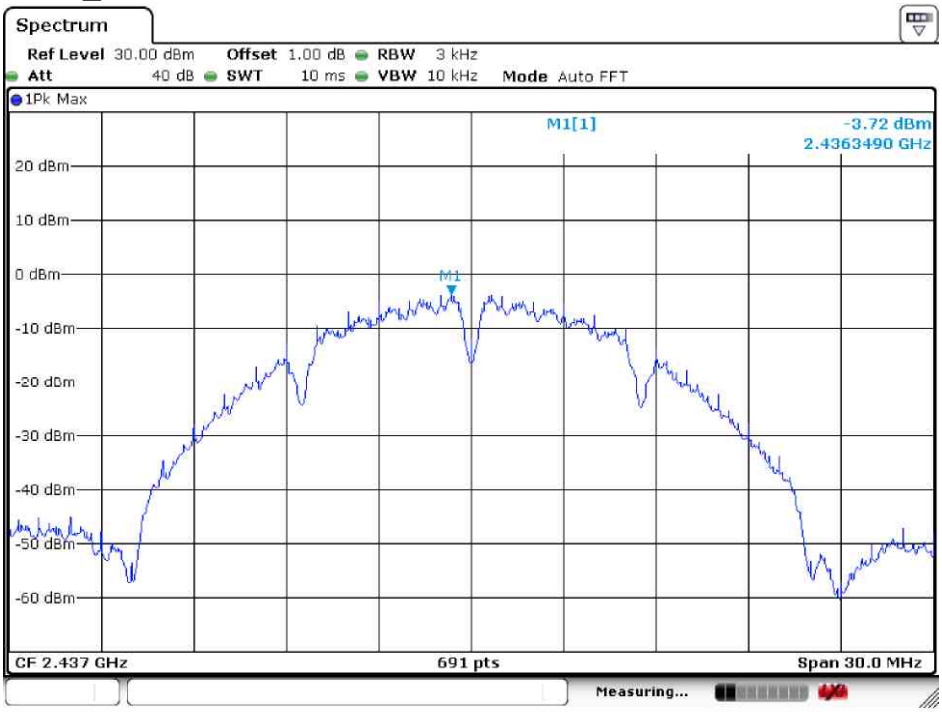
#### 4.6.2.1.1 802.11B_Lowest Channel




Date: 22.MAY.2020 03:11:59

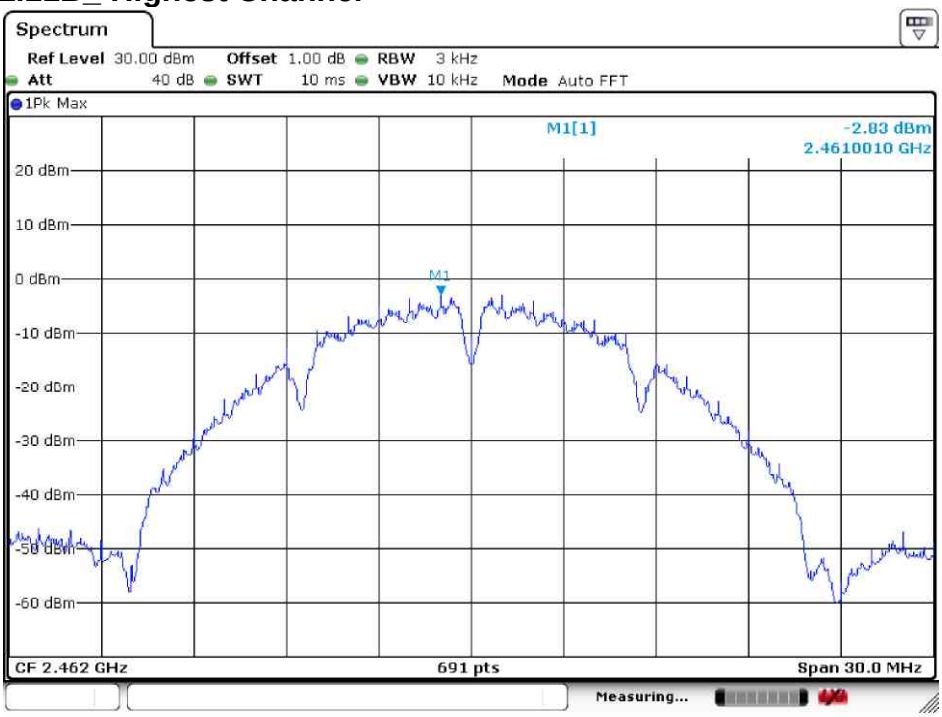
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.6.2.1.2 802.11B_ Middle Channel




Date: 22.MAY.2020 03:12:17

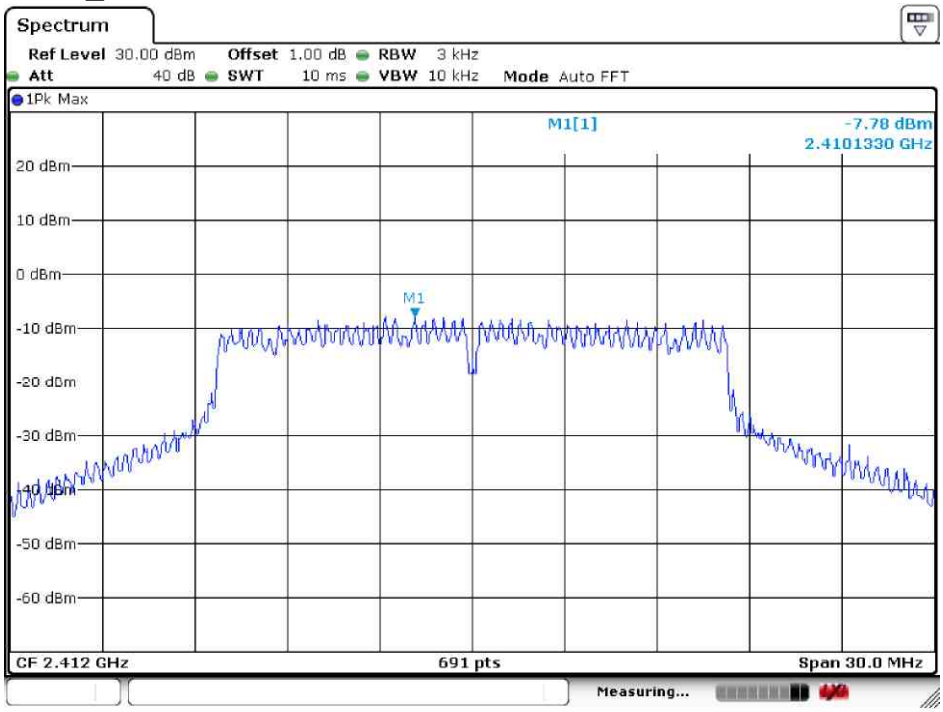
### 4.6.2.1.3 802.11B_ Highest Channel




Date: 22.MAY.2020 03:12:40

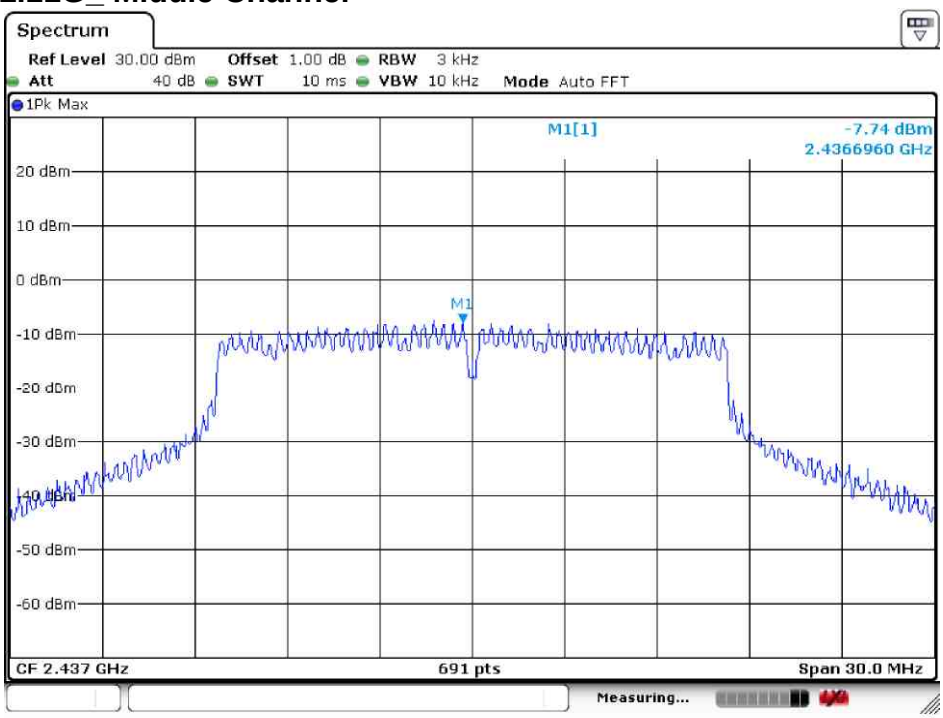
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.6.2.1.4 802.11G_Lowest Channel




Date: 22.MAY.2020 03:11:32

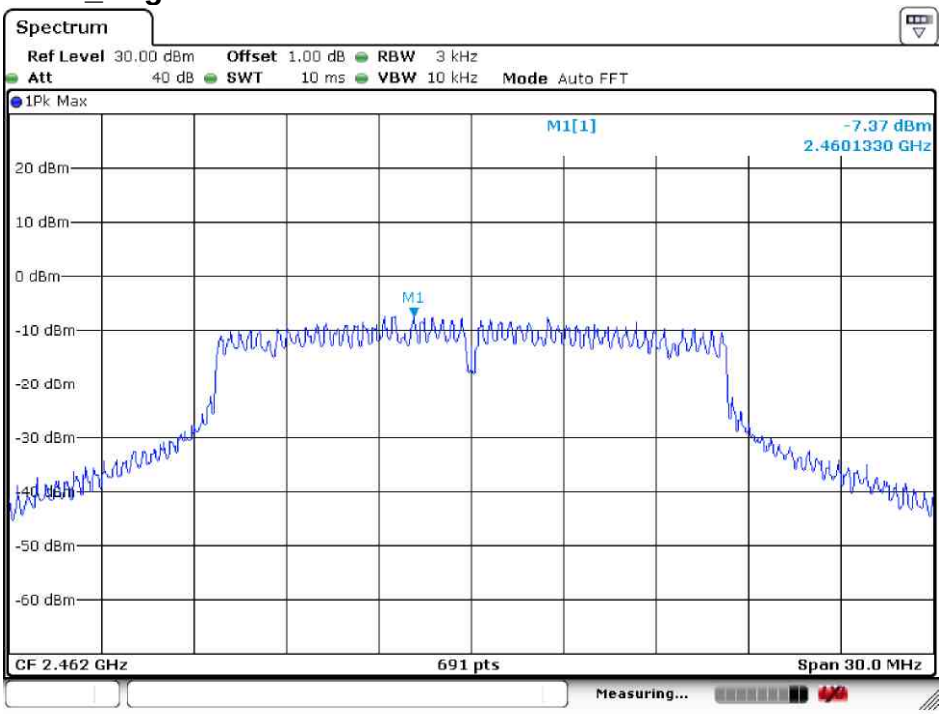
### 4.6.2.1.5 802.11G_ Middle Channel




Date: 22.MAY.2020 03:11:15

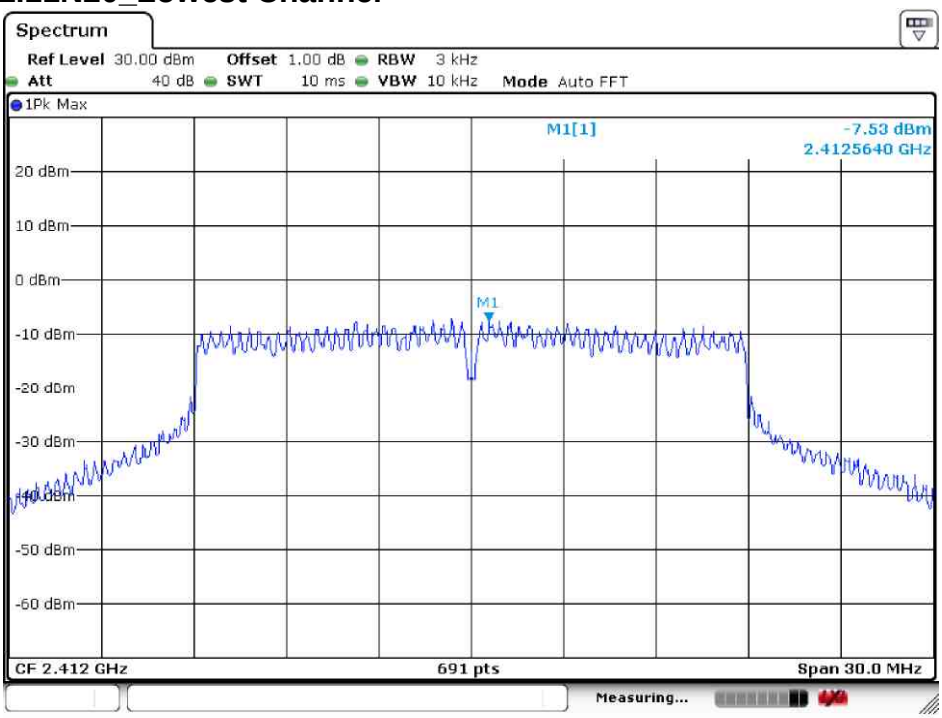
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.6.2.1.6 802.11G_ Highest Channel




Date: 22.MAY.2020 03:10:54

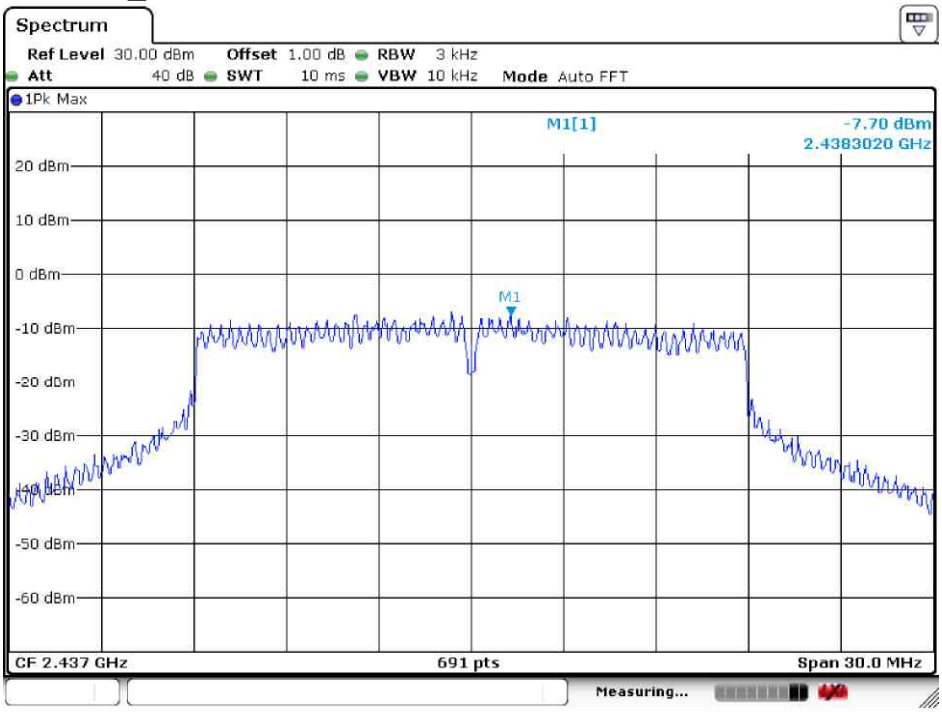
### 4.6.2.1.7 802.11N20_Lowest Channel




Date: 22.MAY.2020 03:09:20

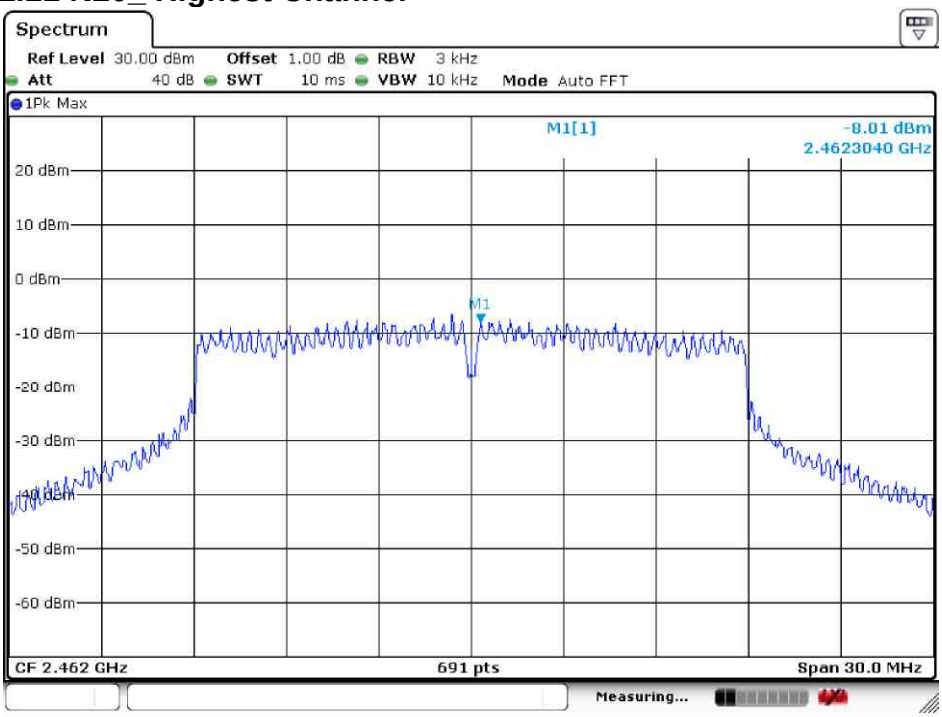
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.6.2.1.8 802.11 N20_ Middle Channel




Date: 22.MAY.2020 03:09:44

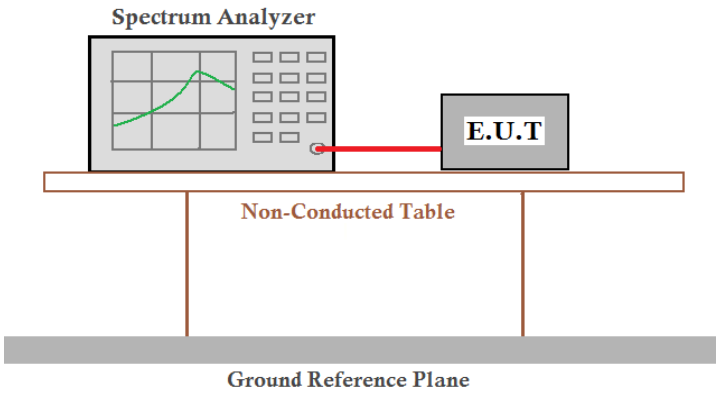
### 4.6.2.1.9 802.11 N20_ Highest Channel




Date: 22.MAY.2020 03:10:26

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

## 4.7 Band-edge for RF Conducted Emissions

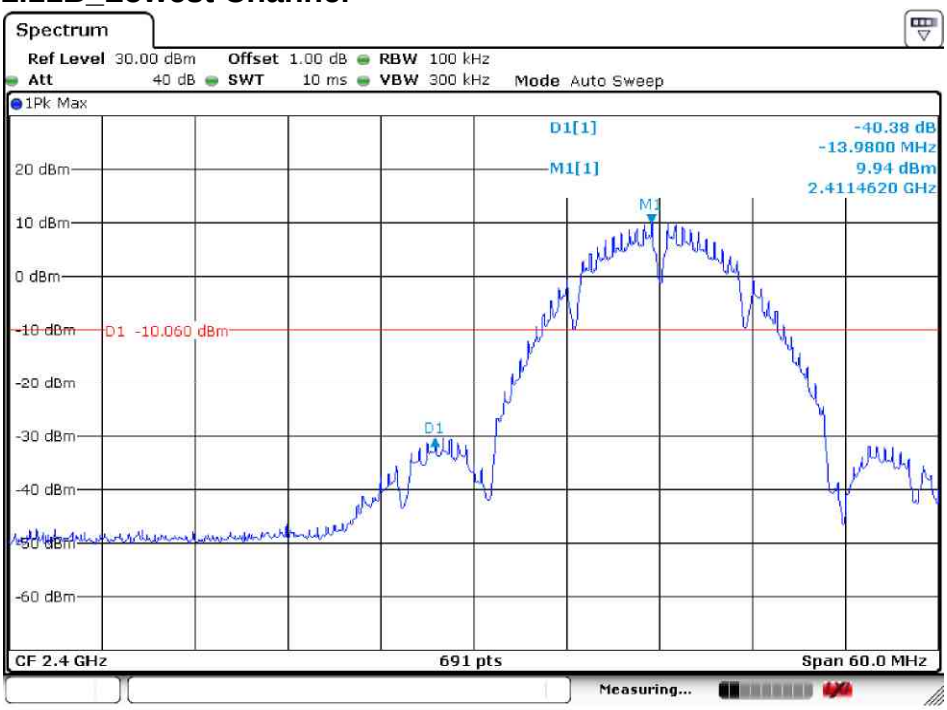
| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (d) |
| Test Method: | ANSI C63.10: 2013 Section 11.13 |
| Test Setup: |  |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates |
| Final Test Mode: | Through Pre-scan, find the<br>1Mbps of rate is the worst case of 802.11B;<br>6Mbps of rate is the worst case of 802.11G ;<br>6.5Mbps of rate is the worst case of 802.11N(HT20) ; |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. |
| Instruments Used: | Refer to section 5.10 for details |
| Test Results: | Pass |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.7.1 Test plots

#### 4.7.1.1 ANT1

#### 4.7.1.1.1 802.11B_Lowest Channel



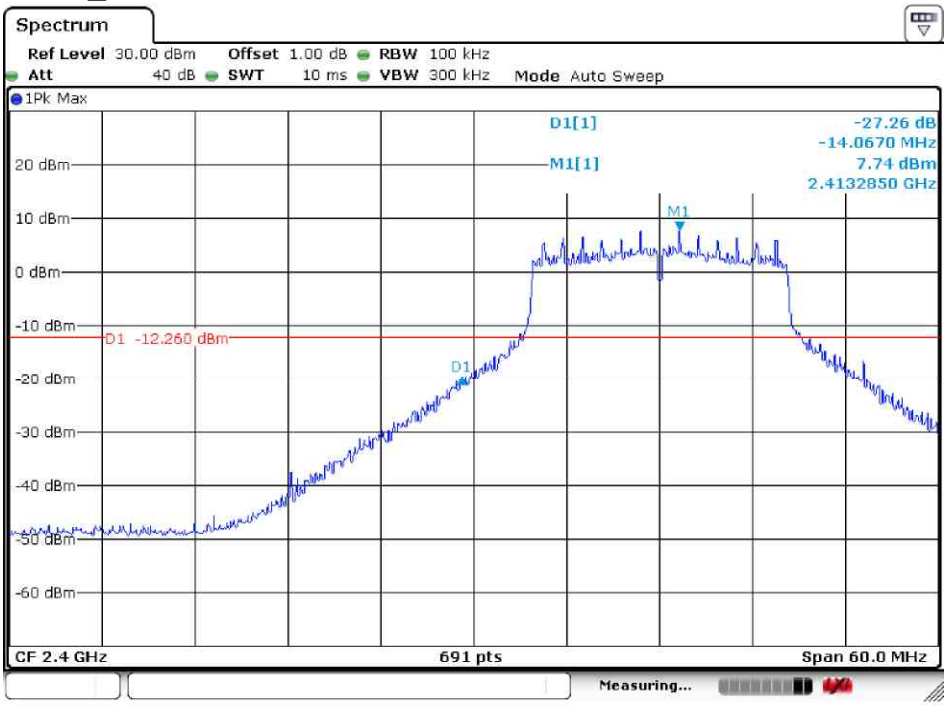

Date: 22.MAY.2020 03:13:57

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.7.1.1.2 802.11B_ Highest Channel

Date: 22.MAY.2020 03:13:10

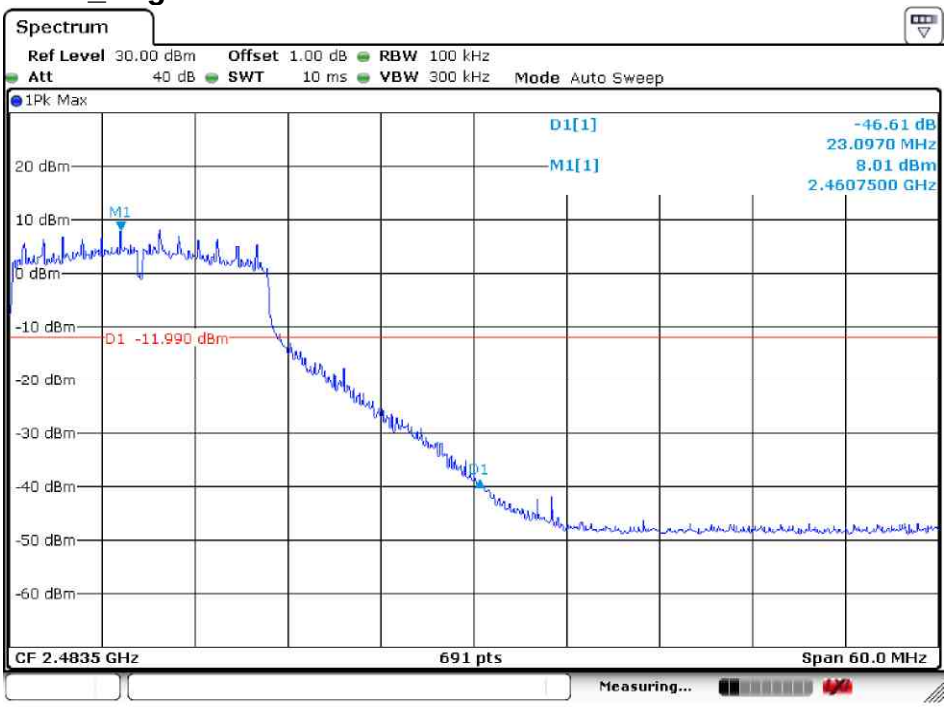
### 4.7.1.1.3 802.11G_Lowest Channel




Date: 22.MAY.2020 03:15:21

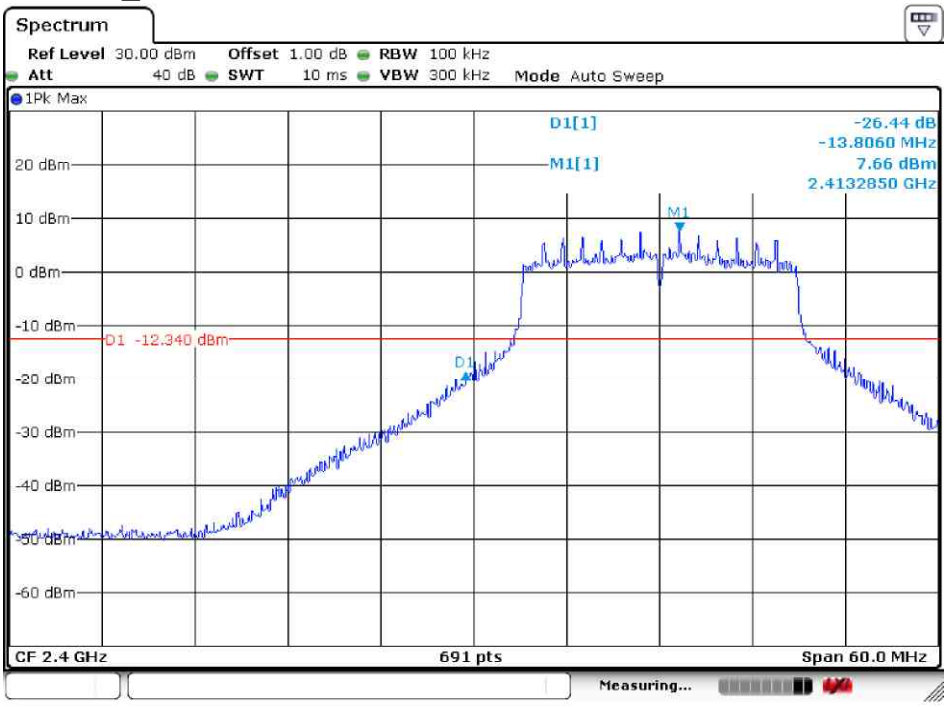
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.7.1.1.4 802.11G_ Highest Channel




Date: 22.MAY.2020 03:19:54

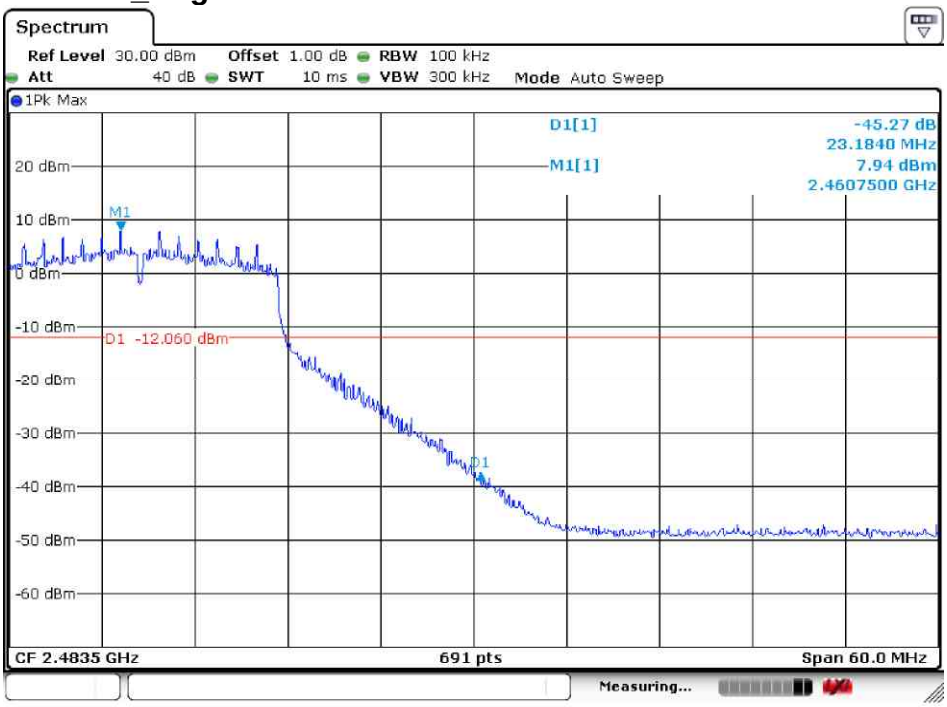
### 4.7.1.1.5 802.11N20_Lowest Channel




Date: 22.MAY.2020 03:21:45

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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.7.1.1.6 802.11 N20_ Highest Channel



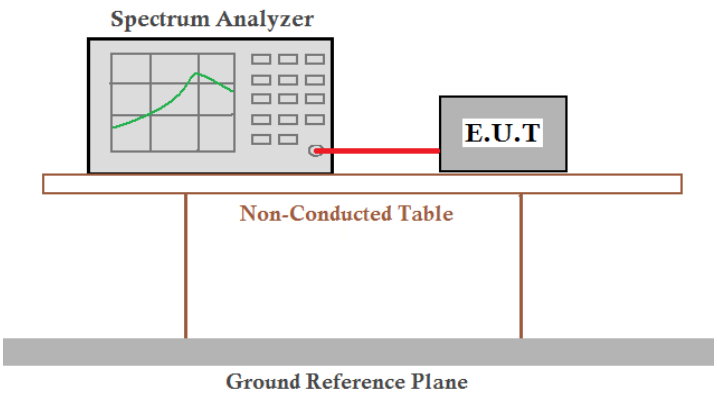

Date: 22.MAY.2020 03:21:11

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

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

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

## 4.8 RF Conducted Spurious Emissions

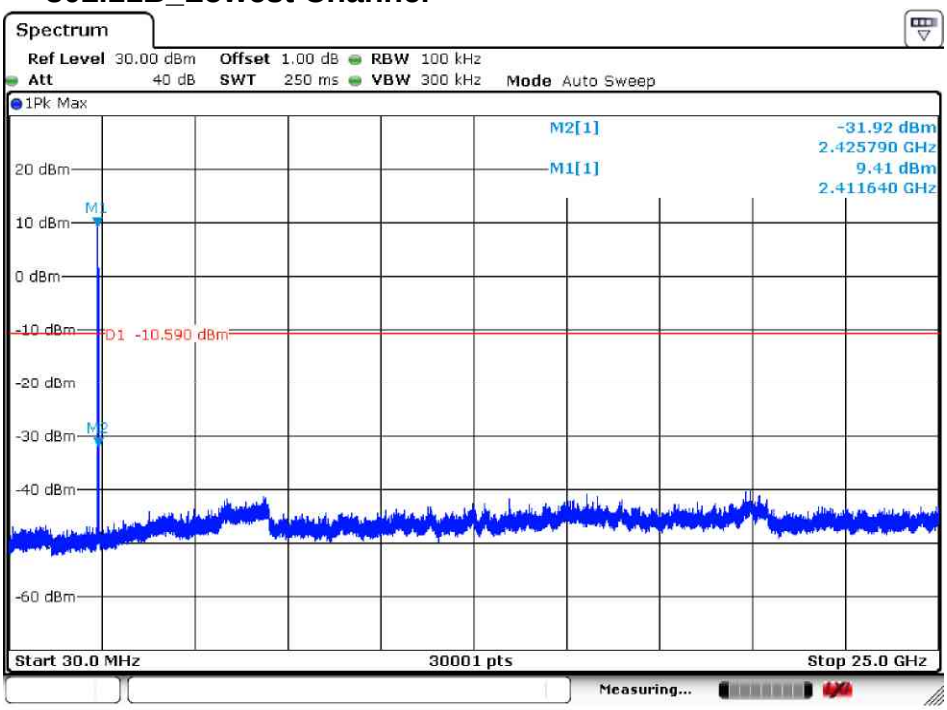
| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.247 (d) |
| Test Method: | ANSI C63.10: 2013 Section 11.11 |
| Test Setup: |  |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates |
| Final Test Mode: | Through Pre-scan, find the<br>1Mbps of rate is the worst case of 802.11B;<br>6Mbps of rate is the worst case of 802.11G;<br>6.5Mbps of rate is the worst case of 802.11N(HT20); |
| Limit: | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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. |
| Instruments Used: | Refer to section 5.10 for details |
| Test Results: | Pass |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.8.1 Test plots

#### 4.8.1.1 ANT1

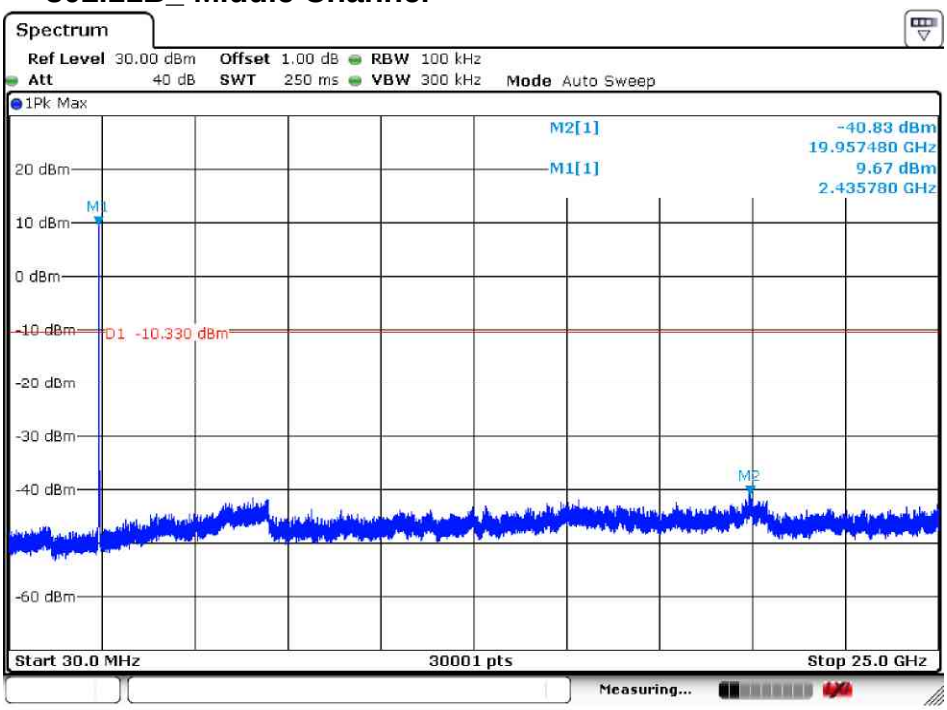
##### 4.8.1.1.1 802.11B_Lowest Channel




Date: 22.MAY.2020 03:39:59

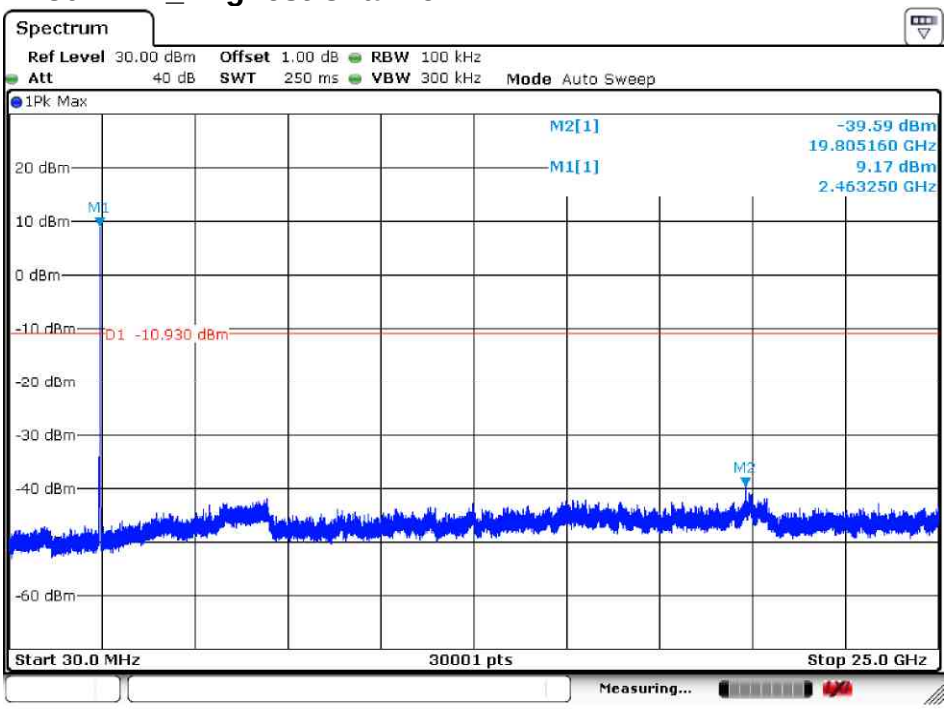
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.8.1.1.2 802.11B_ Middle Channel




Date: 22.MAY.2020 03:40:53

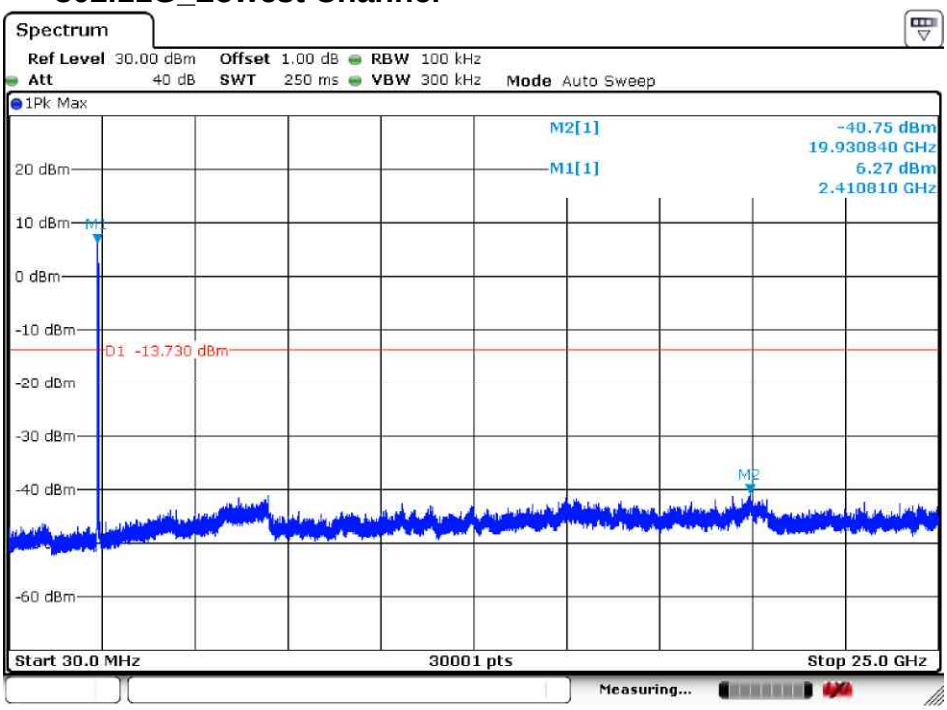
### 4.8.1.1.3 802.11B_ Highest Channel




Date: 22.MAY.2020 03:41:47

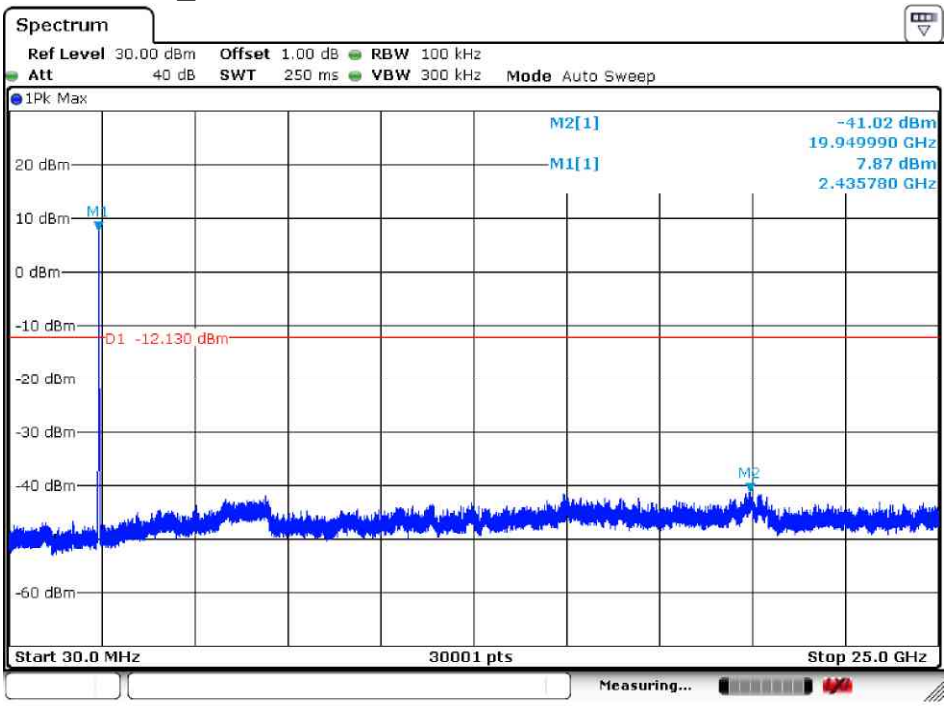
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic 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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.8.1.1.4 802.11G_Lowest Channel




Date: 22.MAY.2020 03:38:16

### 4.8.1.1.5 802.11G_ Middle Channel

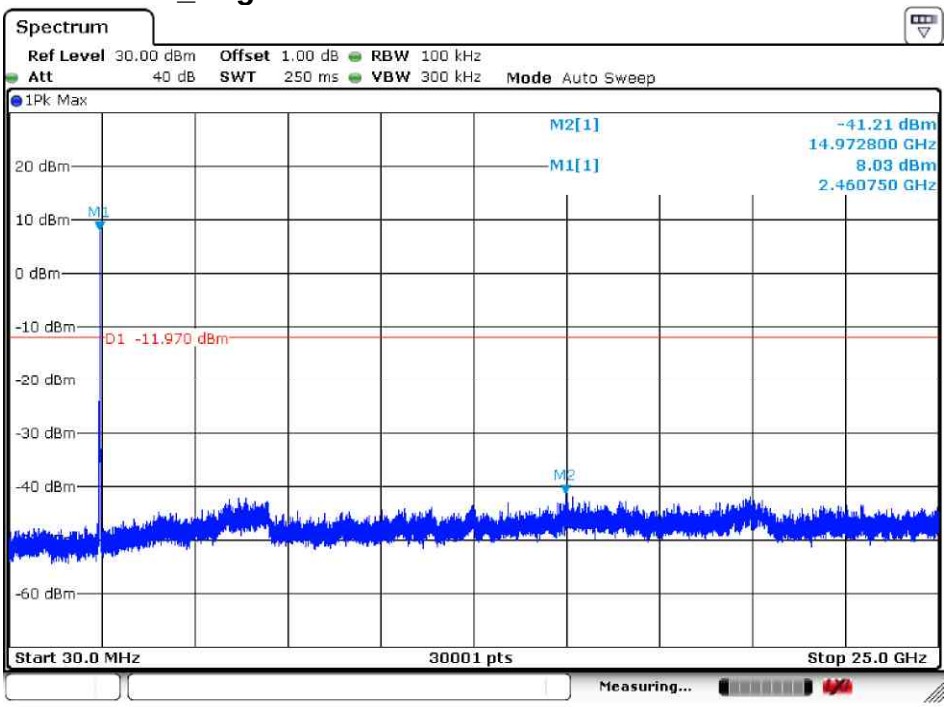



Date: 22.MAY.2020 03:34:14

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

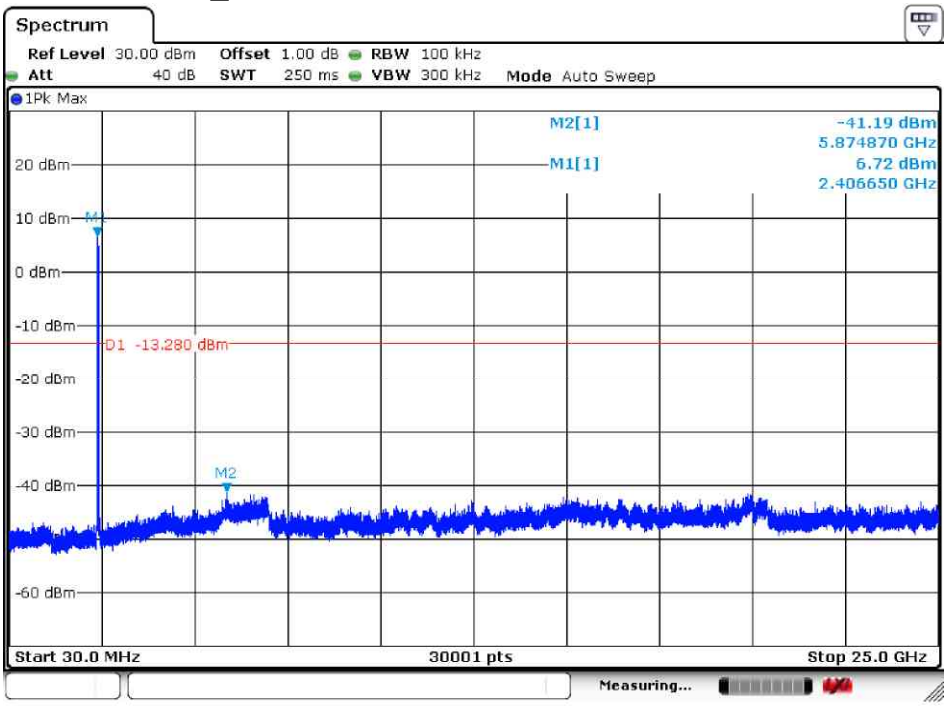
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

### 4.8.1.1.6 802.11G_ Highest Channel




Date: 22.MAY.2020 03:35:02

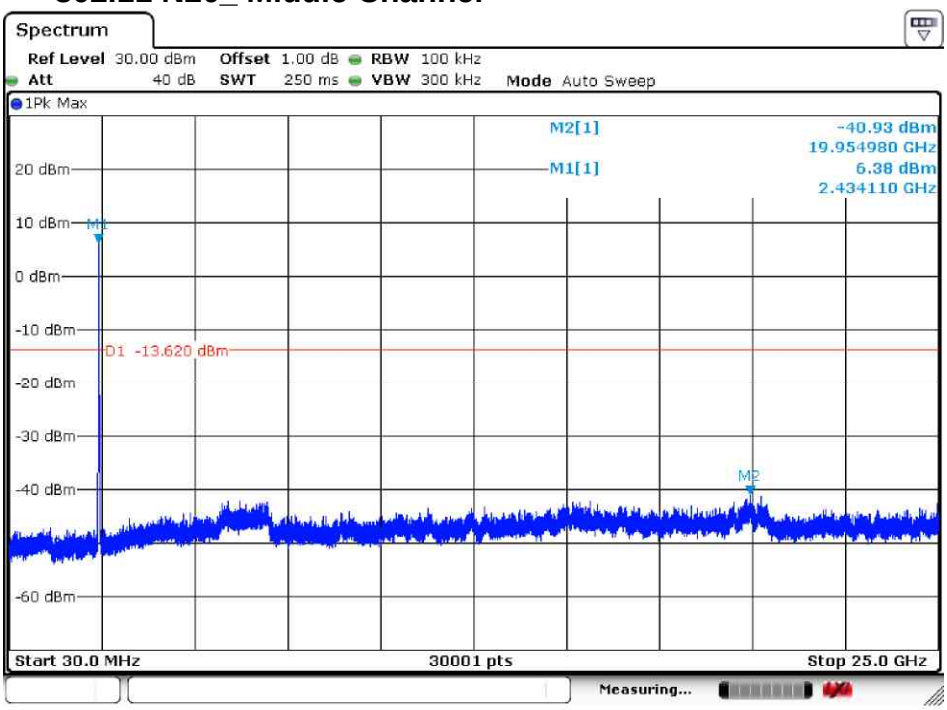
### 4.8.1.1.7 802.11N20_Lowest Channel




Date: 22.MAY.2020 03:30:36

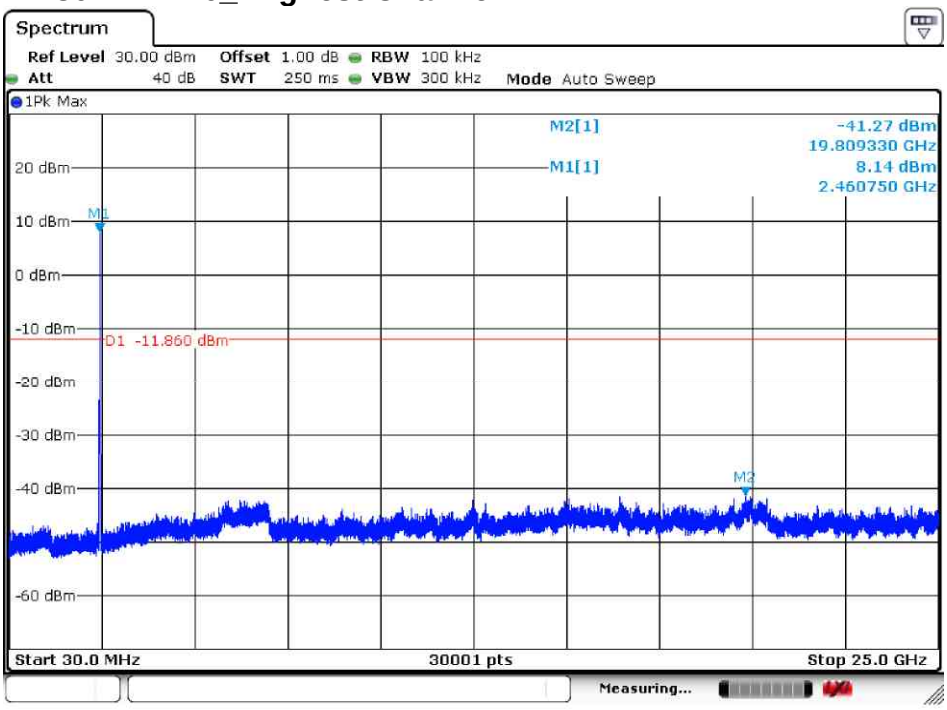
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.8.1.1.8 802.11 N20_ Middle Channel




Date: 22.MAY.2020 03:32:40

### 4.8.1.1.9 802.11 N20_ Highest Channel




Date: 22.MAY.2020 03:32:03

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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

Remark:

Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

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

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

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

Member of the SGS Group (SGS SA)

## 4.9 Radiated Spurious Emissions

| | | | | | |
|---|---|---|---|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.209 and 15.205 | | | | |
| Test Method: | ANSI C63.10 :2013 Section 11.12 | | | | |
| Test Site: | Measurement Distance: 3m (Semi-Anechoic Chamber) | | | | |
| Receiver Setup: | Frequency | Detector | RBW | VBW | Remark |
| | 0.009MHz-0.090MHz | Peak | 10kHz | 30kHz | Peak |
| | 0.009MHz-0.090MHz | Average | 10kHz | 30kHz | Average |
| | 0.090MHz-0.110MHz | Quasi-peak | 10kHz | 30kHz | Quasi-peak |
| | 0.110MHz-0.490MHz | Peak | 10kHz | 30kHz | Peak |
| | 0.110MHz-0.490MHz | Average | 10kHz | 30kHz | Average |
| | 0.490MHz -30MHz | Quasi-peak | 10kHz | 30kHz | Quasi-peak |
| | 30MHz-1GHz | Quasi-peak | 100 kHz | 300kHz | Quasi-peak |
| | Above 1GHz | Peak | 1MHz | 3MHz | Peak |
| | | Peak | 1MHz | 10Hz | Average |
| Limit: | Frequency | Field strength (microvolt/meter) | Limit (dBuV/m) | Remark | Measurement distance (m) |
| | 0.009MHz-0.490MHz | 2400/F(kHz) | - | - | 300 |
| | 0.490MHz-1.705MHz | 24000/F(kHz) | - | - | 30 |
| | 1.705MHz-30MHz | 30 | - | - | 30 |
| | 30MHz-88MHz | 100 | 40.0 | Quasi-peak | 3 |
| | 88MHz-216MHz | 150 | 43.5 | Quasi-peak | 3 |
| | 216MHz-960MHz | 200 | 46.0 | Quasi-peak | 3 |
| | 960MHz-1GHz | 500 | 54.0 | Quasi-peak | 3 |
| | Above 1GHz | 500 | 54.0 | Average | 3 |
| | Remark: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device. | | | | |

| | |
|---|---|
| Test Setup: | |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

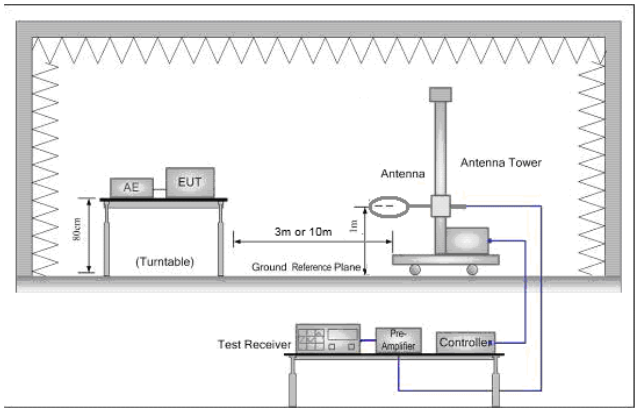



Figure 1. Below 30MHz

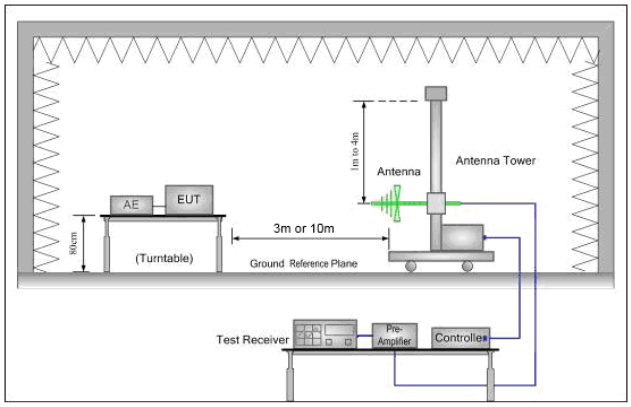



Figure 2. 30MHz to 1GHz

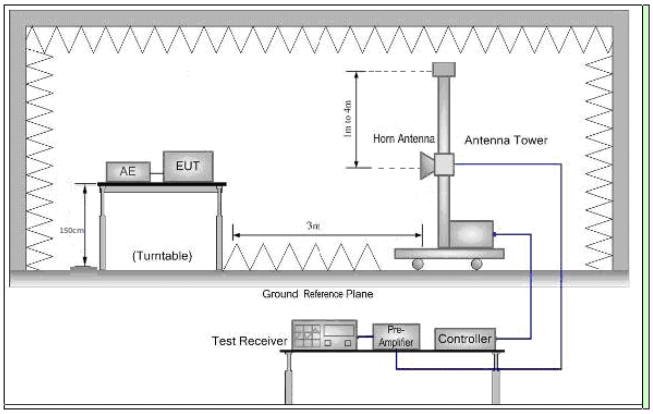



Figure 3. Above 1 GHz

| | |
|---|---|
| Test Procedure: | 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 camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>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 semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation<br>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.<br>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.<br>e. Use the following spectrum analyzer settings:<br>(1) Span shall wide enough to fully capture the emission being measured;<br>(2) Set RBW=100 kHz for f < 1 GHz, RBW=1MHz for f>1GHz ; VBW ⩾ RBW; Sweep = auto;<br>Detector function = peak; Trace = max hold for peak<br>(3) For average measurement: use duty cycle correction factor method per 15.35(c).<br>Duty cycle = On time/100 milliseconds |

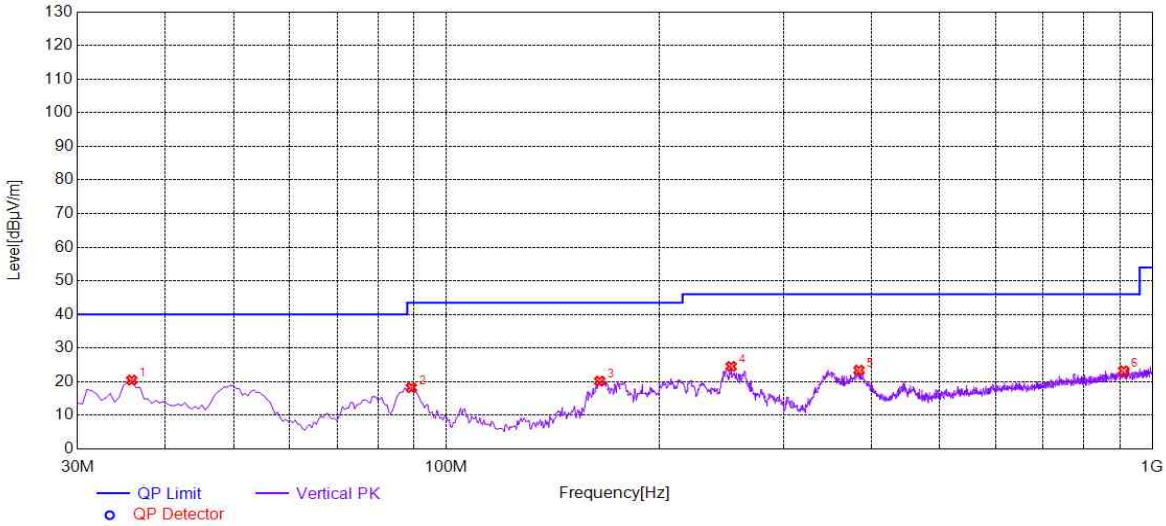
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

| | |
|---|---|
| | On time = N 1 *L 1 +N 2 *L 2 +...+N n-1 *LN n-1 +N n *L n<br>Where N 1 is number of type 1 pulses, L 1 is length of type 1 pulses, etc.<br>Average Emission Level = Peak Emission Level + 20*log(Duty cycl<br>f. 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.<br>g. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>h. 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.<br>i. Test the EUT in the lowest channel, the middle channel ,the Highest channel<br>j. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.<br>k. Repeat above procedures until all frequencies measured was complete. |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates.<br>Charge + Transmitting mode. |
| Final Test Mode: | Pretest the EUT at Charge + Transmitting mode.<br>Through Pre-scan, find the<br>1Mbps of rate is the worst case of 802.11B;<br>6Mbps of rate is the worst case of 802.11G;<br>6.5Mbps of rate is the worst case of 802.11N(HT20);<br>For below 1GHz, through Pre-scan, find the 1Mbps of rate of 802.11B at lowest channel is the worst case. Only the worst case is recorded in the report. |
| Instruments Used: | Refer to section 5.10 for details |
| Test Results: | Pass |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M–10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.1 Radiated emission below 1GHz

#### 4.9.1.1 Charge + Transmitting, Vertical

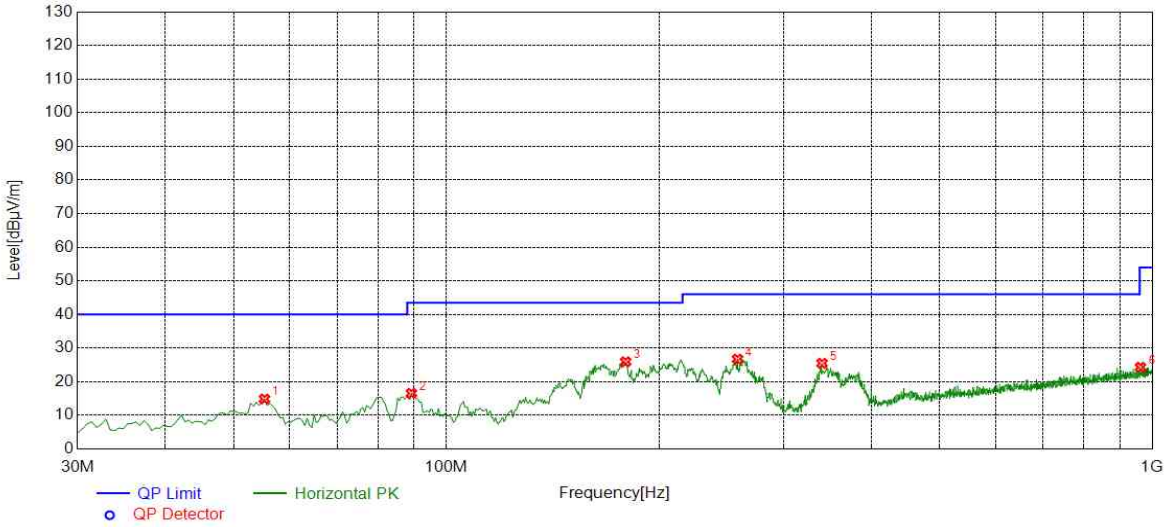



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 35.8229 | 20.47 | -32.50 | 40.00 | 19.53 | 150 | 290 | Vertical |
| 2 | 89.1996 | 18.24 | -33.62 | 43.50 | 25.26 | 150 | 56 | Vertical |
| 3 | 164.897 | 20.20 | -33.96 | 43.50 | 23.30 | 150 | 360 | Vertical |
| 4 | 253.211 | 24.56 | -29.16 | 46.00 | 21.44 | 150 | 360 | Vertical |
| 5 | 384.227 | 23.45 | -25.39 | 46.00 | 22.55 | 150 | 314 | Vertical |
| 6 | 911.200 | 23.28 | -15.06 | 46.00 | 22.72 | 150 | 224 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.1.2 Charge + Transmitting, Horizontal




**Suspected List**

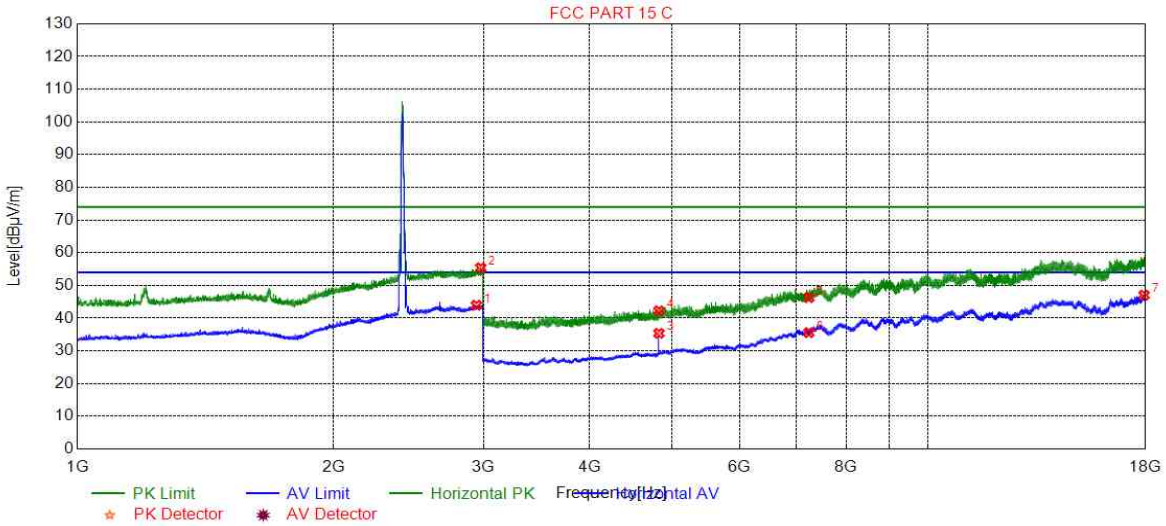
| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 55.2326 | 14.88 | -30.96 | 40.00 | 25.12 | 150 | 192 | Horizontal |
| 2 | 89.1996 | 16.58 | -33.62 | 43.50 | 26.92 | 150 | 246 | Horizontal |
| 3 | 179.454 | 25.95 | -32.95 | 43.50 | 17.55 | 150 | 270 | Horizontal |
| 4 | 258.549 | 26.73 | -28.99 | 46.00 | 19.27 | 150 | 110 | Horizontal |
| 5 | 340.555 | 25.50 | -26.70 | 46.00 | 20.50 | 150 | 131 | Horizontal |
| 6 | 962.636 | 24.34 | -14.32 | 54.00 | 29.66 | 150 | 64 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2 Transmitter emission above 1GHz

#### 4.9.2.1 ANT1

#### 4.9.2.1.1 802.11B_Lowest Channel_ Horizontal

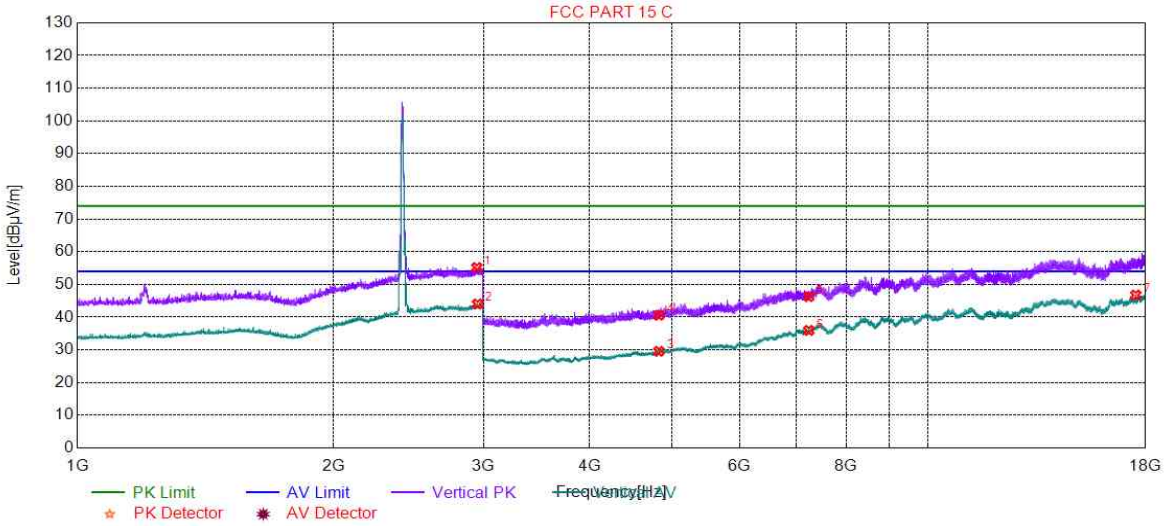



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2943.98 | 43.97 | 9.62 | 54.00 | 10.03 | 150 | 182 | Horizontal |
| 2 | 2978.49 | 55.41 | 9.55 | 74.00 | 18.59 | 150 | 121 | Horizontal |
| 3 | 4824.00 | 35.37 | -18.21 | 54.00 | 18.63 | 150 | 313 | Horizontal |
| 4 | 4824.00 | 42.27 | -18.21 | 74.00 | 31.73 | 150 | 313 | Horizontal |
| 5 | 7236.00 | 46.29 | -9.99 | 74.00 | 27.71 | 150 | 296 | Horizontal |
| 6 | 7236.00 | 35.59 | -9.99 | 54.00 | 18.41 | 150 | 31 | Horizontal |
| 7 | 17922.4 | 47.06 | 0.70 | 54.00 | 6.94 | 150 | 347 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.2 802.11B_Lowest Channel_ Vertical

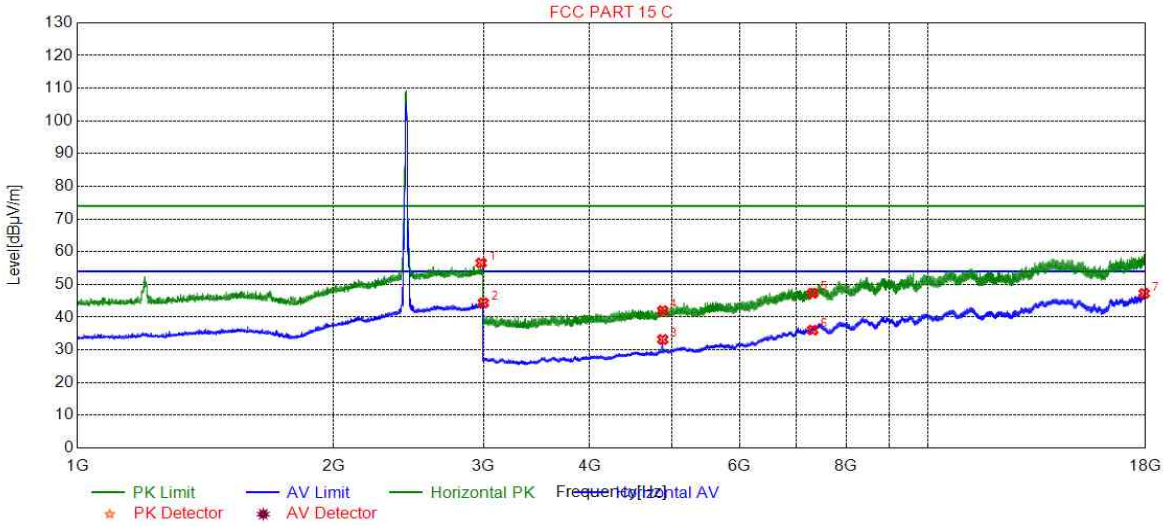



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2947.48 | 55.21 | 9.65 | 74.00 | 18.79 | 150 | 36 | Vertical |
| 2 | 2952.98 | 44.05 | 9.67 | 54.00 | 9.95 | 150 | 359 | Vertical |
| 3 | 4824.00 | 29.58 | -18.21 | 54.00 | 24.42 | 150 | 91 | Vertical |
| 4 | 4824.00 | 40.60 | -18.21 | 74.00 | 33.40 | 150 | 222 | Vertical |
| 5 | 7236.00 | 46.28 | -9.99 | 74.00 | 27.72 | 150 | 139 | Vertical |
| 6 | 7236.00 | 35.96 | -9.99 | 54.00 | 18.04 | 150 | 360 | Vertical |
| 7 | 17525.3 | 46.78 | 1.02 | 54.00 | 7.22 | 150 | 213 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.3 802.11B_ Middle Channel_ Horizontal

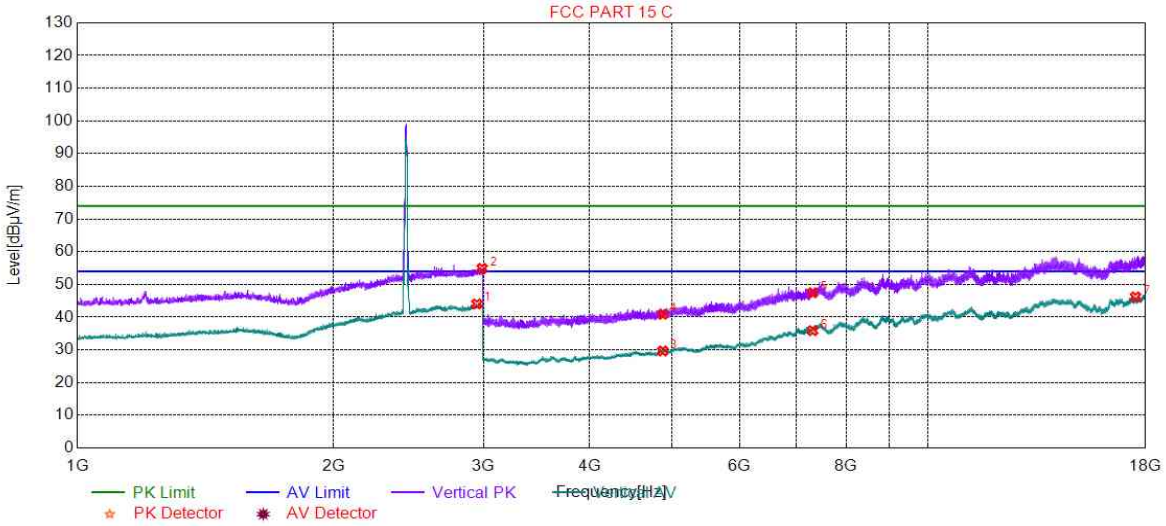



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2981.99 | 56.58 | 9.53 | 74.00 | 17.42 | 150 | 0 | Horizontal |
| 2 | 2999.49 | 44.35 | 9.45 | 54.00 | 9.65 | 150 | 195 | Horizontal |
| 3 | 4874.00 | 33.19 | -17.99 | 54.00 | 20.81 | 150 | 325 | Horizontal |
| 4 | 4874.00 | 42.00 | -17.99 | 74.00 | 32.00 | 150 | 294 | Horizontal |
| 5 | 7311.00 | 47.30 | -9.74 | 74.00 | 26.70 | 150 | 88 | Horizontal |
| 6 | 7311.00 | 36.04 | -9.74 | 54.00 | 17.96 | 150 | 40 | Horizontal |
| 7 | 17930.6 | 47.25 | 0.70 | 54.00 | 6.75 | 150 | 196 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.4 802.11B_ Middle Channel_ Vertical

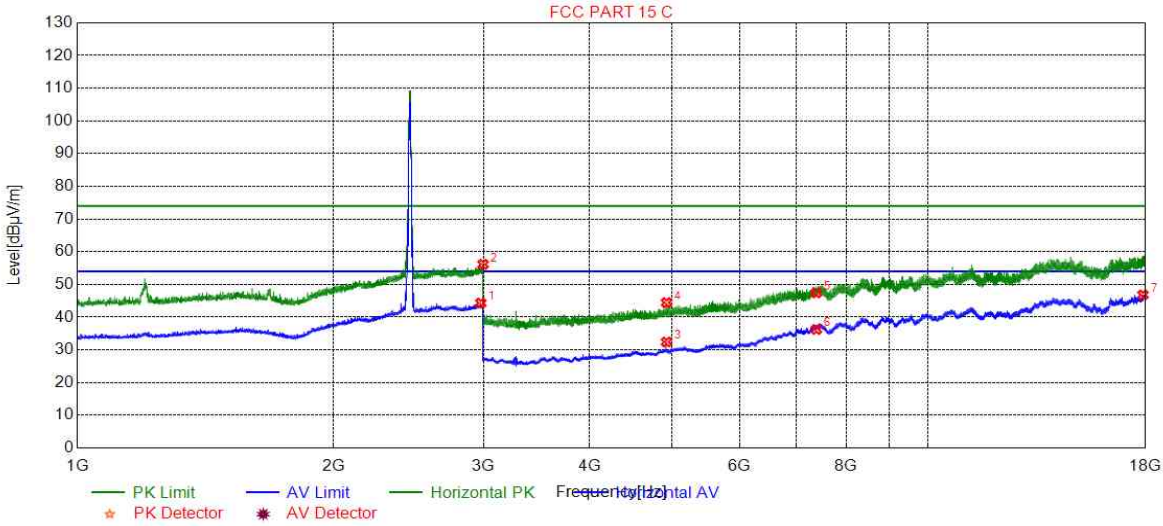



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2946.98 | 44.08 | 9.65 | 54.00 | 9.92 | 150 | 120 | Vertical |
| 2 | 2989.99 | 54.94 | 9.50 | 74.00 | 19.06 | 150 | 360 | Vertical |
| 3 | 4874.00 | 29.68 | -17.99 | 54.00 | 24.32 | 150 | 16 | Vertical |
| 4 | 4874.00 | 40.88 | -17.99 | 74.00 | 33.12 | 150 | 104 | Vertical |
| 5 | 7311.00 | 47.48 | -9.74 | 74.00 | 26.52 | 150 | 231 | Vertical |
| 6 | 7311.00 | 35.88 | -9.74 | 54.00 | 18.12 | 150 | 27 | Vertical |
| 7 | 17519.2 | 46.22 | 1.00 | 54.00 | 7.78 | 150 | 231 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.5 802.11B_ Highest Channel_ Horizontal

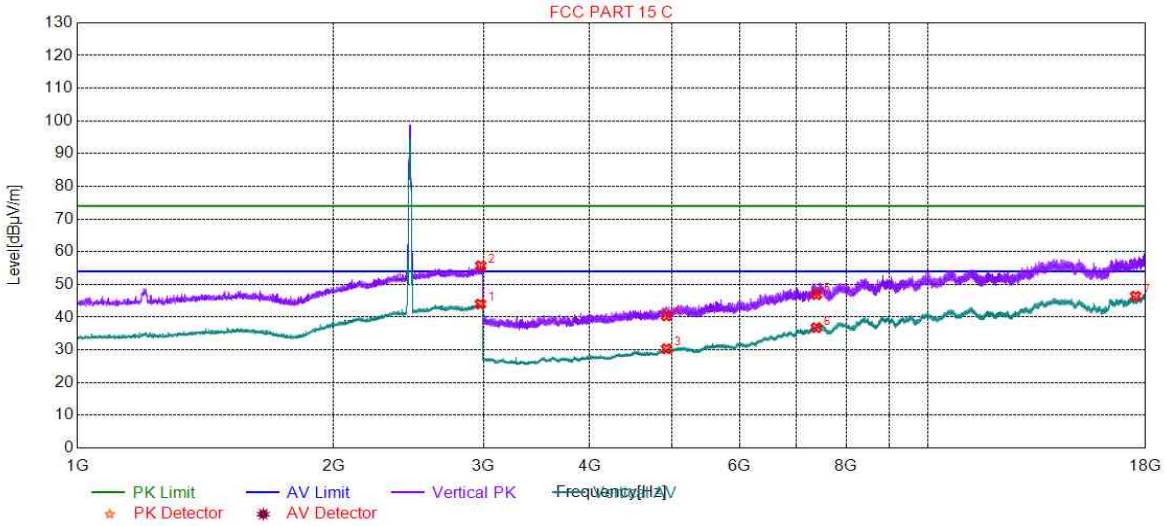



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2978.99 | 44.32 | 9.55 | 54.00 | 9.68 | 150 | 117 | Horizontal |
| 2 | 2997.49 | 56.16 | 9.46 | 74.00 | 17.84 | 150 | 262 | Horizontal |
| 3 | 4924.00 | 32.42 | -17.72 | 54.00 | 21.58 | 150 | 334 | Horizontal |
| 4 | 4924.00 | 44.46 | -17.72 | 74.00 | 29.54 | 150 | 302 | Horizontal |
| 5 | 7386.00 | 47.43 | -9.55 | 74.00 | 26.57 | 150 | 119 | Horizontal |
| 6 | 7386.00 | 36.26 | -9.55 | 54.00 | 17.74 | 150 | 70 | Horizontal |
| 7 | 17872.9 | 46.82 | 0.33 | 54.00 | 7.18 | 150 | 70 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.6 802.11B_ Highest Channel_ Vertical

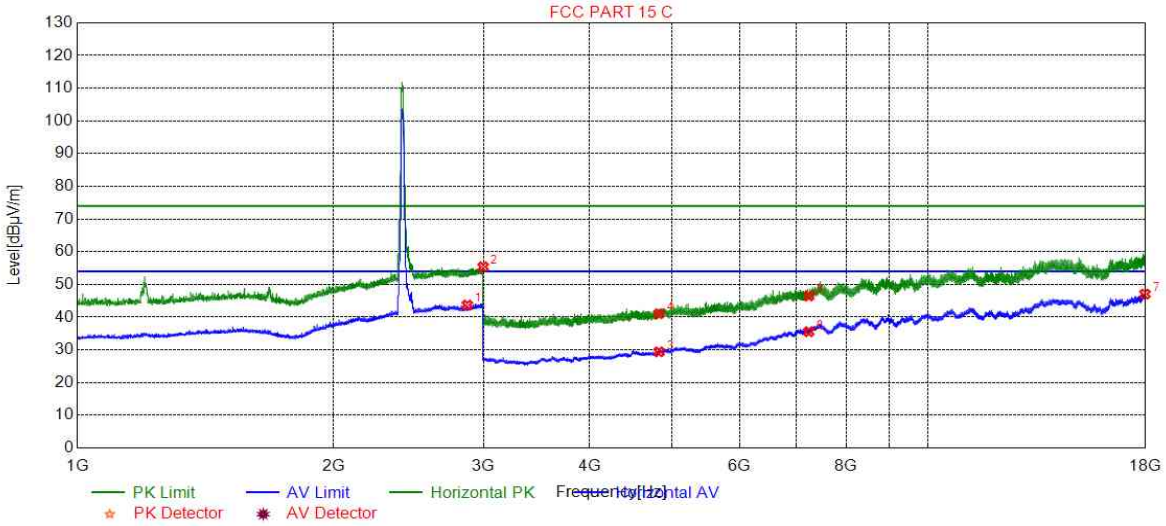



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2975.49 | 44.02 | 9.56 | 54.00 | 9.98 | 150 | 360 | Vertical |
| 2 | 2978.49 | 55.70 | 9.55 | 74.00 | 18.30 | 150 | 142 | Vertical |
| 3 | 4924.00 | 30.35 | -17.72 | 54.00 | 23.65 | 150 | 66 | Vertical |
| 4 | 4924.00 | 40.37 | -17.72 | 74.00 | 33.63 | 150 | 194 | Vertical |
| 5 | 7386.00 | 46.90 | -9.55 | 74.00 | 27.10 | 150 | 326 | Vertical |
| 6 | 7386.00 | 36.79 | -9.55 | 54.00 | 17.21 | 150 | 35 | Vertical |
| 7 | 17519.8 | 46.41 | 1.00 | 54.00 | 7.59 | 150 | 146 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.7 802.11G_Lowest Channel_ Horizontal

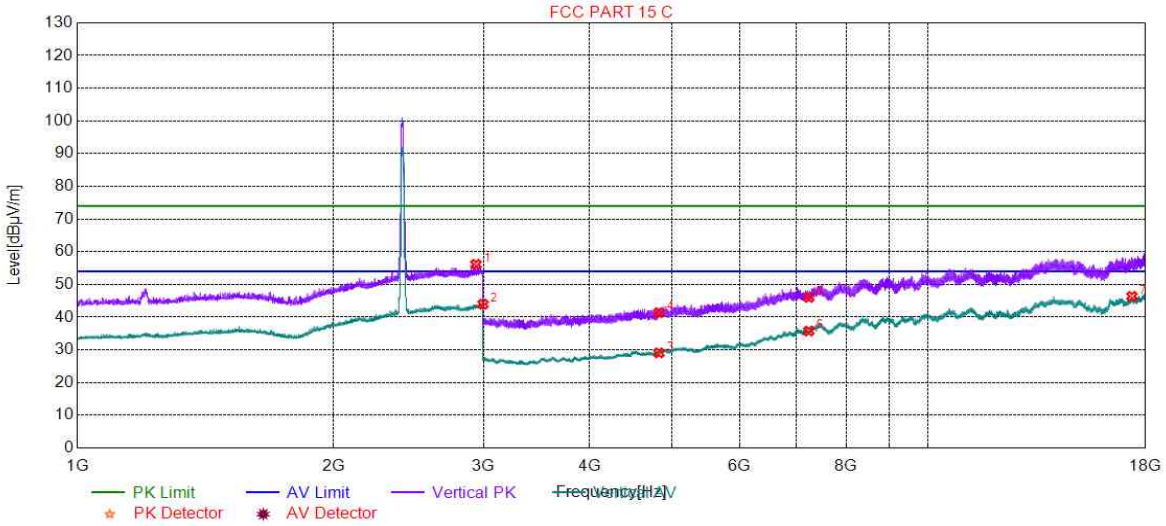



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2871.46 | 43.70 | 9.20 | 54.00 | 10.30 | 150 | 95 | Horizontal |
| 2 | 2997.99 | 55.39 | 9.46 | 74.00 | 18.61 | 150 | 221 | Horizontal |
| 3 | 4824.00 | 29.41 | -18.21 | 54.00 | 24.59 | 150 | 28 | Horizontal |
| 4 | 4824.00 | 41.05 | -18.21 | 74.00 | 32.95 | 150 | 279 | Horizontal |
| 5 | 7236.00 | 46.50 | -9.99 | 74.00 | 27.50 | 150 | 31 | Horizontal |
| 6 | 7236.00 | 35.57 | -9.99 | 54.00 | 18.43 | 150 | 31 | Horizontal |
| 7 | 17966.4 | 47.06 | 0.71 | 54.00 | 6.94 | 150 | 140 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.8 802.11G_Lowest Channel_ Vertical

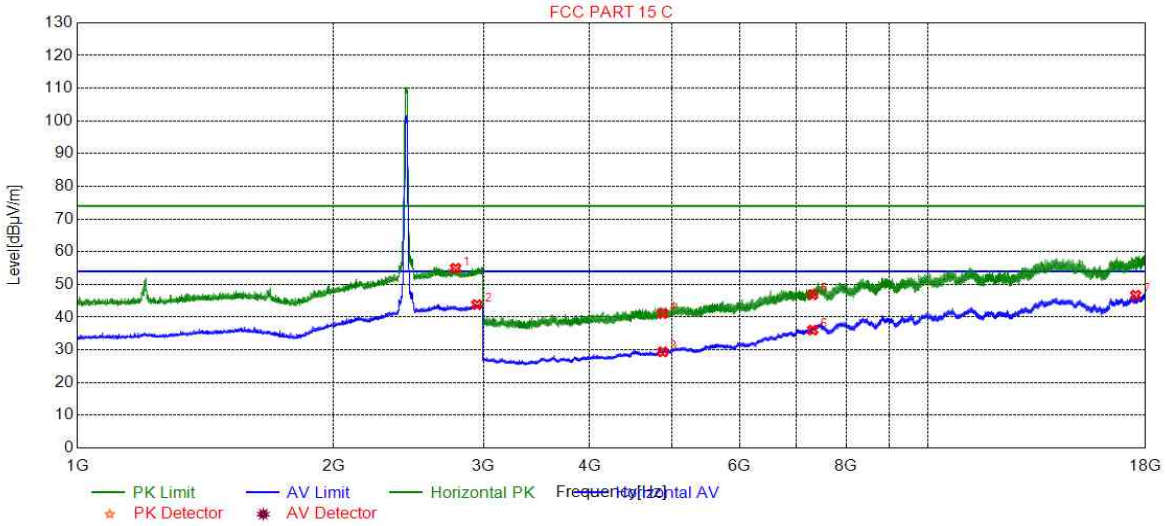



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2939.98 | 56.18 | 9.57 | 74.00 | 17.82 | 150 | 232 | Vertical |
| 2 | 2996.99 | 43.97 | 9.46 | 54.00 | 10.03 | 150 | 126 | Vertical |
| 3 | 4824.00 | 29.09 | -18.21 | 54.00 | 24.91 | 150 | 302 | Vertical |
| 4 | 4824.00 | 41.38 | -18.21 | 74.00 | 32.62 | 150 | 302 | Vertical |
| 5 | 7236.00 | 46.03 | -9.99 | 74.00 | 27.97 | 150 | 297 | Vertical |
| 6 | 7236.00 | 35.78 | -9.99 | 54.00 | 18.22 | 150 | 82 | Vertical |
| 7 | 17346.5 | 46.37 | 0.02 | 54.00 | 7.63 | 150 | 351 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.9 802.11G_ Middle Channel_ Horizontal

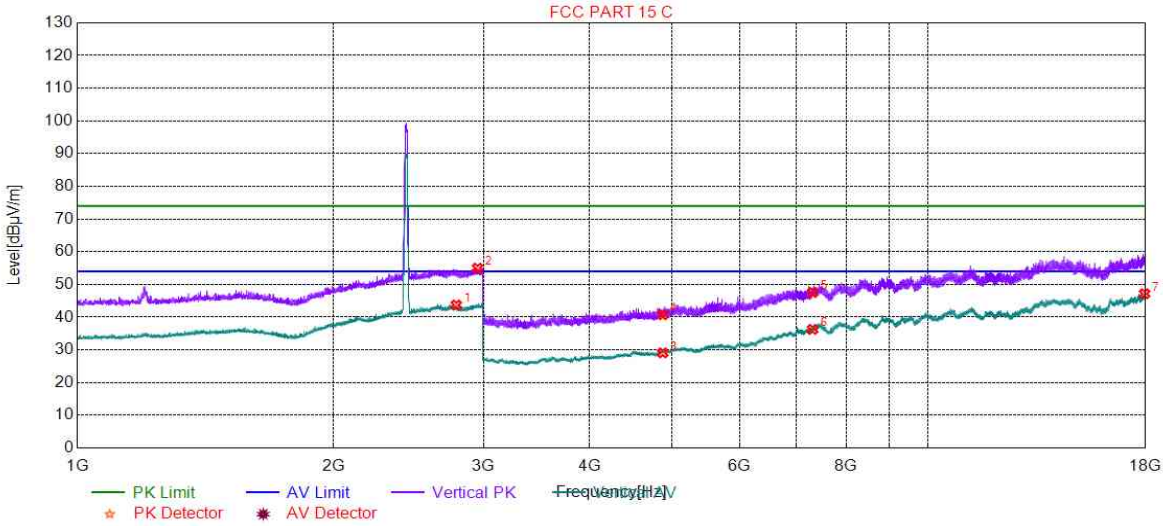



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2782.44 | 54.97 | 9.03 | 74.00 | 19.03 | 150 | 284 | Horizontal |
| 2 | 2947.98 | 43.84 | 9.66 | 54.00 | 10.16 | 150 | 52 | Horizontal |
| 3 | 4874.00 | 29.39 | -17.99 | 54.00 | 24.61 | 150 | 264 | Horizontal |
| 4 | 4874.00 | 41.11 | -17.99 | 74.00 | 32.89 | 150 | 74 | Horizontal |
| 5 | 7311.00 | 46.89 | -9.74 | 74.00 | 27.11 | 150 | 99 | Horizontal |
| 6 | 7311.00 | 36.05 | -9.74 | 54.00 | 17.95 | 150 | 259 | Horizontal |
| 7 | 17522.5 | 46.74 | 1.01 | 54.00 | 7.26 | 150 | 357 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.10 802.11G_ Middle Channel_ Vertical

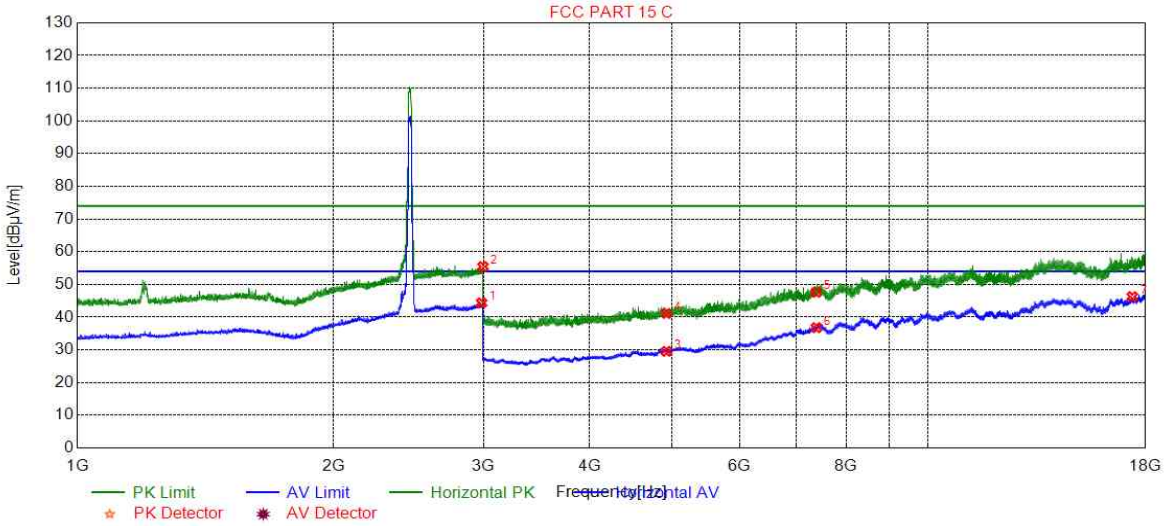



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2787.44 | 43.73 | 9.01 | 54.00 | 10.27 | 150 | 163 | Vertical |
| 2 | 2952.48 | 55.01 | 9.67 | 74.00 | 18.99 | 150 | 306 | Vertical |
| 3 | 4874.00 | 29.10 | -17.99 | 54.00 | 24.90 | 150 | 179 | Vertical |
| 4 | 4874.00 | 40.75 | -17.99 | 74.00 | 33.25 | 150 | 215 | Vertical |
| 5 | 7311.00 | 47.57 | -9.74 | 74.00 | 26.43 | 150 | 90 | Vertical |
| 6 | 7311.00 | 36.29 | -9.74 | 54.00 | 17.71 | 150 | 142 | Vertical |
| 7 | 17948.8 | 47.16 | 0.70 | 54.00 | 6.84 | 150 | 360 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.11 802.11G_ Highest Channel_ Horizontal

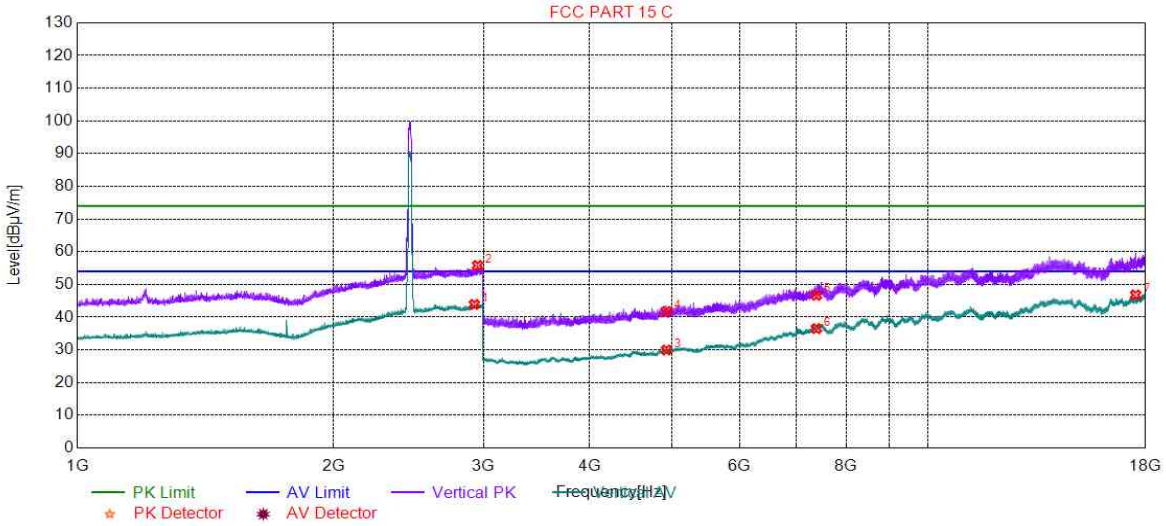



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2985.49 | 44.38 | 9.52 | 54.00 | 9.62 | 150 | 189 | Horizontal |
| 2 | 2996.49 | 55.46 | 9.47 | 74.00 | 18.54 | 150 | 171 | Horizontal |
| 3 | 4924.00 | 29.57 | -17.72 | 54.00 | 24.43 | 150 | 7 | Horizontal |
| 4 | 4924.00 | 41.14 | -17.72 | 74.00 | 32.86 | 150 | 309 | Horizontal |
| 5 | 7386.00 | 47.59 | -9.55 | 74.00 | 26.41 | 150 | 80 | Horizontal |
| 6 | 7386.00 | 36.80 | -9.55 | 54.00 | 17.20 | 150 | 235 | Horizontal |
| 7 | 17359.2 | 46.29 | 0.08 | 54.00 | 7.71 | 150 | 284 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.12 802.11G_ Highest Channel_ Vertical

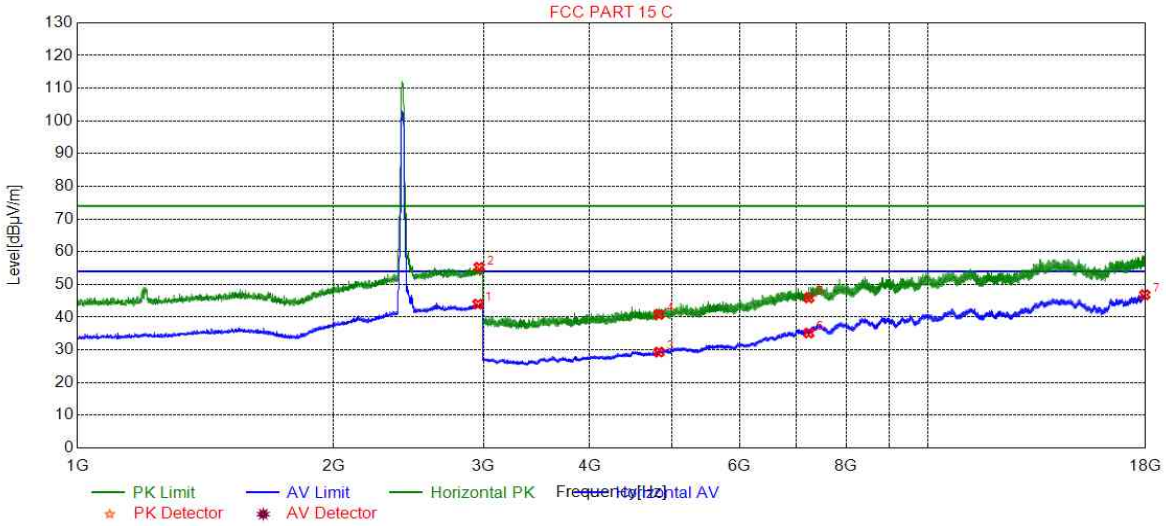



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2927.48 | 43.90 | 9.44 | 54.00 | 10.10 | 150 | 306 | Vertical |
| 2 | 2952.98 | 55.81 | 9.67 | 74.00 | 18.19 | 150 | 160 | Vertical |
| 3 | 4924.00 | 29.95 | -17.72 | 54.00 | 24.05 | 150 | 63 | Vertical |
| 4 | 4924.00 | 41.76 | -17.72 | 74.00 | 32.24 | 150 | 306 | Vertical |
| 5 | 7386.00 | 46.69 | -9.55 | 74.00 | 27.31 | 150 | 356 | Vertical |
| 6 | 7386.00 | 36.50 | -9.55 | 54.00 | 17.50 | 150 | 147 | Vertical |
| 7 | 17519.8 | 46.81 | 1.00 | 54.00 | 7.19 | 150 | 308 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.13 802.11N20_Lowest Channel_ Horizontal

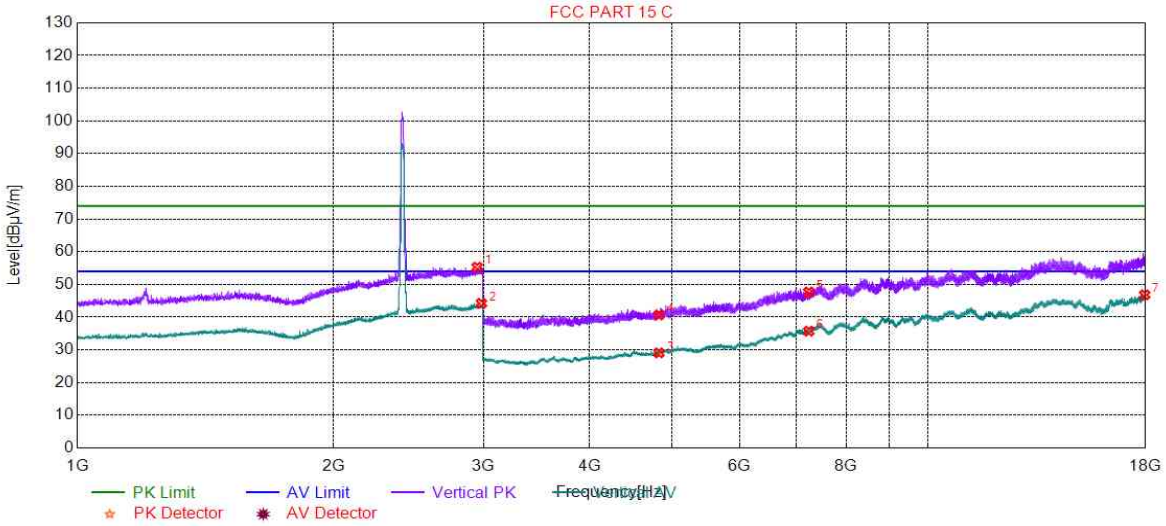



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2955.98 | 44.02 | 9.65 | 54.00 | 9.98 | 150 | 242 | Horizontal |
| 2 | 2965.99 | 55.28 | 9.61 | 74.00 | 18.72 | 150 | 18 | Horizontal |
| 3 | 4824.00 | 29.35 | -18.21 | 54.00 | 24.65 | 150 | 326 | Horizontal |
| 4 | 4824.00 | 40.82 | -18.21 | 74.00 | 33.18 | 150 | 68 | Horizontal |
| 5 | 7236.00 | 45.91 | -9.99 | 74.00 | 28.09 | 150 | 281 | Horizontal |
| 6 | 7236.00 | 35.17 | -9.99 | 54.00 | 18.83 | 150 | 179 | Horizontal |
| 7 | 17959.8 | 46.86 | 0.71 | 54.00 | 7.14 | 150 | 24 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.14 802.11N20_Lowest Channel_ Vertical

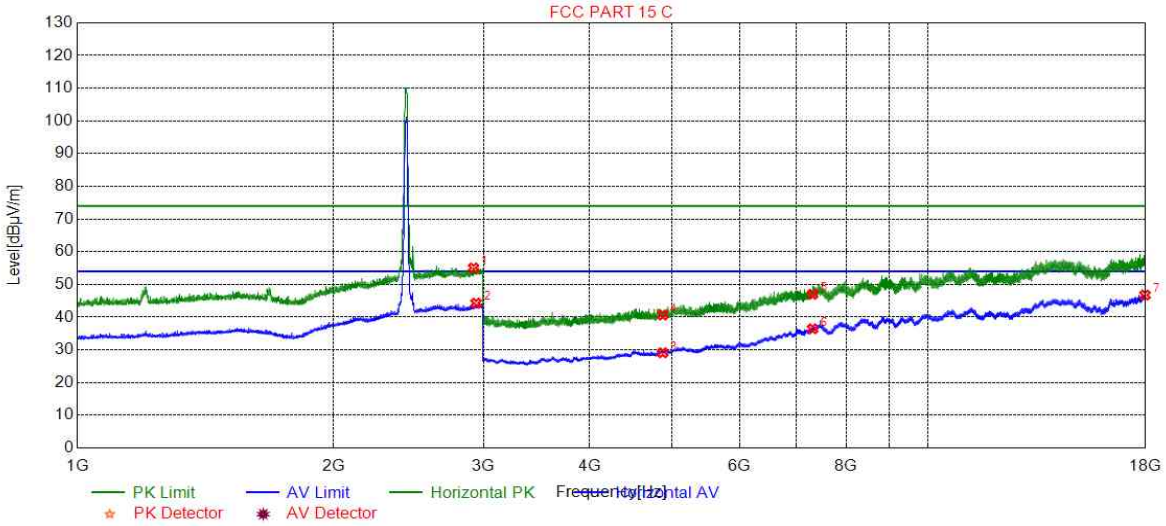



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2949.98 | 55.31 | 9.68 | 74.00 | 18.69 | 150 | 345 | Vertical |
| 2 | 2983.99 | 44.24 | 9.52 | 54.00 | 9.76 | 150 | 103 | Vertical |
| 3 | 4824.00 | 29.09 | -18.21 | 54.00 | 24.91 | 150 | 238 | Vertical |
| 4 | 4824.00 | 40.71 | -18.21 | 74.00 | 33.29 | 150 | 70 | Vertical |
| 5 | 7236.00 | 47.69 | -9.99 | 74.00 | 26.31 | 150 | 182 | Vertical |
| 6 | 7236.00 | 35.74 | -9.99 | 54.00 | 18.26 | 150 | 22 | Vertical |
| 7 | 17954.3 | 46.83 | 0.71 | 54.00 | 7.17 | 150 | 294 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.15 802.11N20_ Middle Channel_ Horizontal

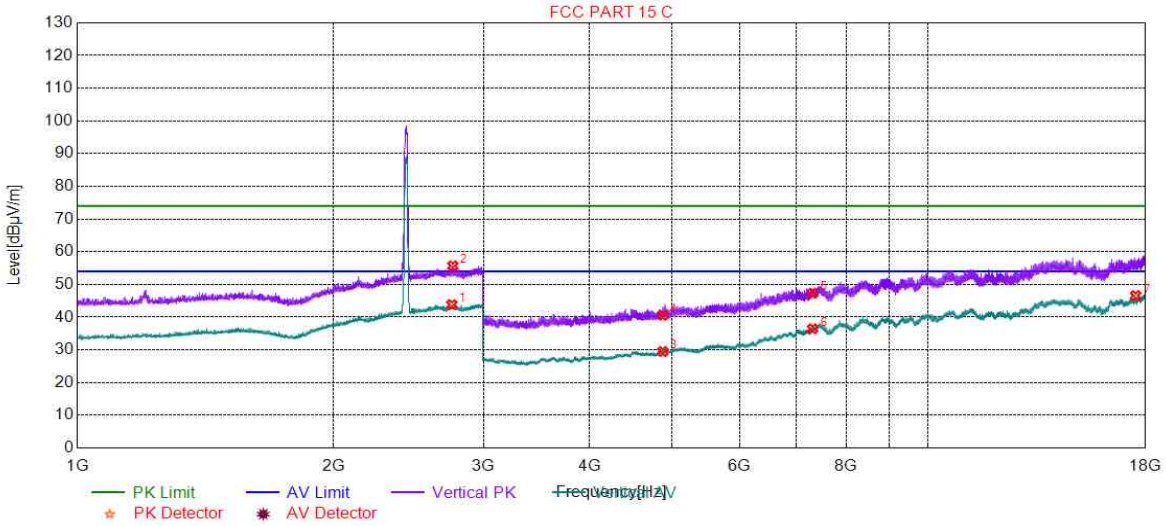



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2920.48 | 55.07 | 9.36 | 74.00 | 18.93 | 150 | 321 | Horizontal |
| 2 | 2941.48 | 44.30 | 9.59 | 54.00 | 9.70 | 150 | 248 | Horizontal |
| 3 | 4874.00 | 29.12 | -17.99 | 54.00 | 24.88 | 150 | 0 | Horizontal |
| 4 | 4874.00 | 40.66 | -17.99 | 74.00 | 33.34 | 150 | 282 | Horizontal |
| 5 | 7311.00 | 47.01 | -9.74 | 74.00 | 26.99 | 150 | 242 | Horizontal |
| 6 | 7311.00 | 36.45 | -9.74 | 54.00 | 17.55 | 150 | 73 | Horizontal |
| 7 | 17970.8 | 46.76 | 0.71 | 54.00 | 7.24 | 150 | 128 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.16 802.11N20_ Middle Channel_ Vertical

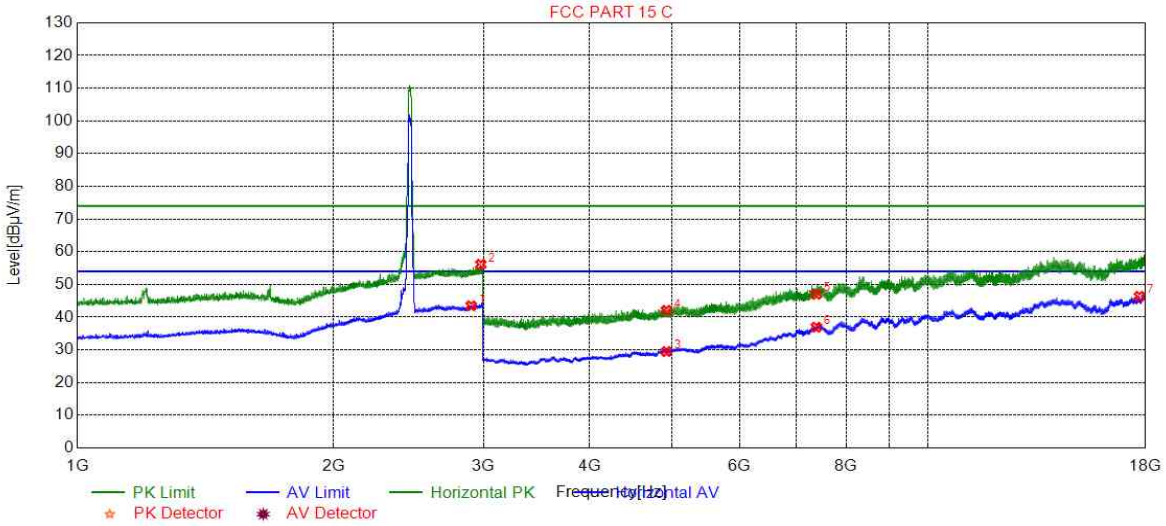



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2754.43 | 43.84 | 9.10 | 54.00 | 10.16 | 150 | 318 | Vertical |
| 2 | 2761.94 | 55.70 | 9.08 | 74.00 | 18.30 | 150 | 272 | Vertical |
| 3 | 4874.00 | 29.50 | -17.99 | 54.00 | 24.50 | 150 | 138 | Vertical |
| 4 | 4874.00 | 40.59 | -17.99 | 74.00 | 33.41 | 150 | 337 | Vertical |
| 5 | 7311.00 | 47.31 | -9.74 | 74.00 | 26.69 | 150 | 245 | Vertical |
| 6 | 7311.00 | 36.46 | -9.74 | 54.00 | 17.54 | 150 | 309 | Vertical |
| 7 | 17522.5 | 46.60 | 1.01 | 54.00 | 7.40 | 150 | 245 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.17 802.11N20_ Highest Channel_ Horizontal

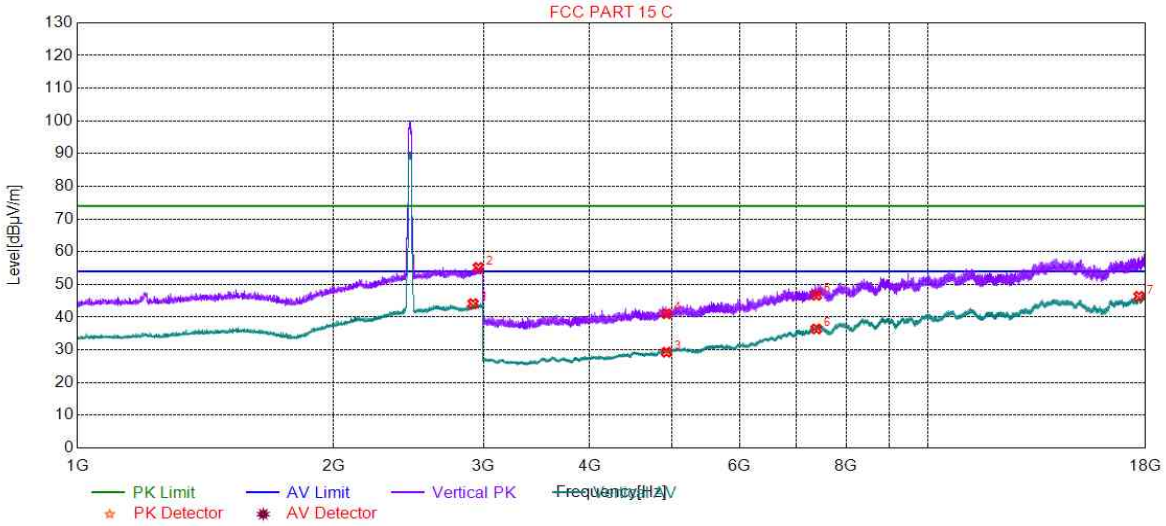



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2902.97 | 43.48 | 9.17 | 54.00 | 10.52 | 150 | 16 | Horizontal |
| 2 | 2979.49 | 56.15 | 9.54 | 74.00 | 17.85 | 150 | 322 | Horizontal |
| 3 | 4924.00 | 29.50 | -17.72 | 54.00 | 24.50 | 150 | 141 | Horizontal |
| 4 | 4924.00 | 42.11 | -17.72 | 74.00 | 31.89 | 150 | 214 | Horizontal |
| 5 | 7386.00 | 47.00 | -9.55 | 74.00 | 27.00 | 150 | 142 | Horizontal |
| 6 | 7386.00 | 36.96 | -9.55 | 54.00 | 17.04 | 150 | 82 | Horizontal |
| 7 | 17702.4 | 46.39 | 1.31 | 54.00 | 7.61 | 150 | 194 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.9.2.1.18 802.11N20_ Highest Channel_ Vertical




**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2917.47 | 44.14 | 9.33 | 54.00 | 9.86 | 150 | 224 | Vertical |
| 2 | 2959.48 | 55.22 | 9.64 | 74.00 | 18.78 | 150 | 335 | Vertical |
| 3 | 4924.00 | 29.31 | -17.72 | 54.00 | 24.69 | 150 | 297 | Vertical |
| 4 | 4924.00 | 41.05 | -17.72 | 74.00 | 32.95 | 150 | 73 | Vertical |
| 5 | 7386.00 | 46.69 | -9.55 | 74.00 | 27.31 | 150 | 334 | Vertical |
| 6 | 7386.00 | 36.40 | -9.55 | 54.00 | 17.60 | 150 | 99 | Vertical |
| 7 | 17685.3 | 46.37 | 1.35 | 54.00 | 7.63 | 150 | 273 | Vertical |

Remark:

1) 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

2) Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz and 18GHz to 25GHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3） As shown in this section, 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. So, only the peak measurements were shown in the report.

4）All Modes have been tested, but only the worst case data displayed in this report.

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

## 4.10 Restricted bands around fundamental frequency

| | | | |
|---|---|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.209 and 15.205 | | |
| Test Method: | ANSI C63.10: 2013 Section 11.12 | | |
| Test Site: | Measurement Distance: 3m or 10m (Semi-Anechoic Chamber) | | |
| Limit: | Frequency | Limit (dBuV/m @3m) | Remark |
| | 30MHz-88MHz | 40.0 | Quasi-peak Value |
| | 88MHz-216MHz | 43.5 | Quasi-peak Value |
| | 216MHz-960MHz | 46.0 | Quasi-peak Value |
| | 960MHz-1GHz | 54.0 | Quasi-peak Value |
| | Above 1GHz | 54.0 | Average Value |
| | | 74.0 | Peak Value |
| Test Setup: | | | |

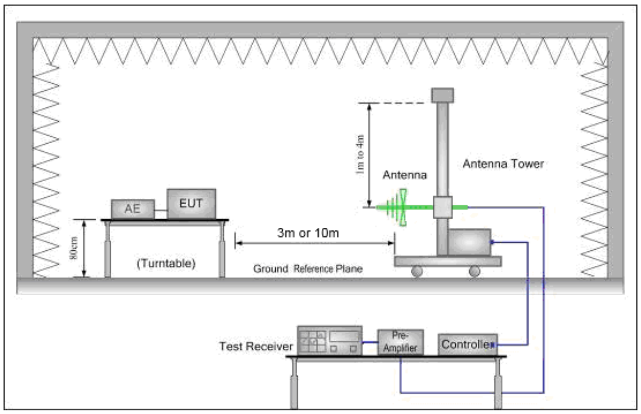



Figure 1. 30MHz to 1GHz

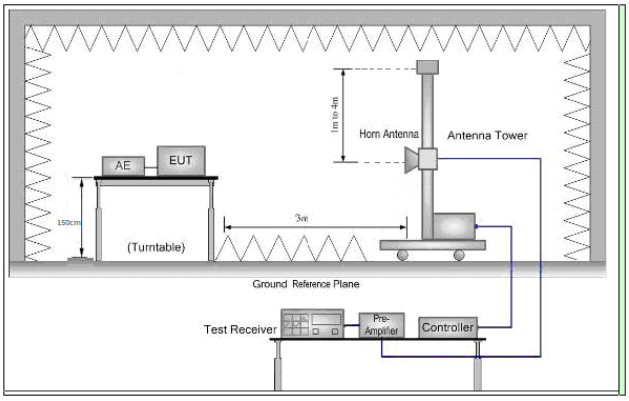



Figure 2. Above 1 GHz

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

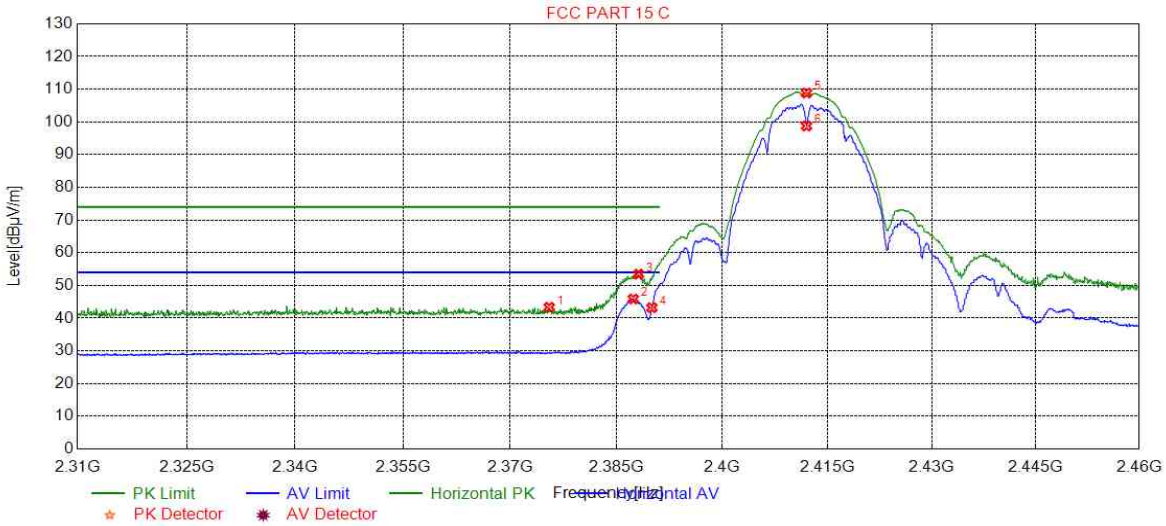
| | |
|---|---|
| Test Procedure: | a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>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.<br>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.<br>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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>g. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel<br>h. Test the EUT in the lowest channel , the Highest channel<br>i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case.<br>j. Repeat above procedures until all frequencies measured was complete. |
| Exploratory Test Mode: | Transmitting with all kind of modulations, data rates.<br>Charge + Transmitting mode. |
| Final Test Mode: | Pretest the EUT at Charge +Transmitting mode.<br>Through Pre-scan, find the<br>1Mbps of rate is the worst case of 802.11B;<br>6Mbps of rate is the worst case of 802.11G ;<br>6.5Mbps of rate is the worst case of 802.11N(HT20);<br>Only the worst case is recorded in the report. |
| Instruments Used: | Refer to section 5.10 for details |
| Test Results: | 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
SGS-CSTC Standards Technical Services Co.,Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

**Test plot as follows:**

### 4.10.1 ANT1

#### 4.10.1.1 802.11B_Lowest Channel_ Horizontal

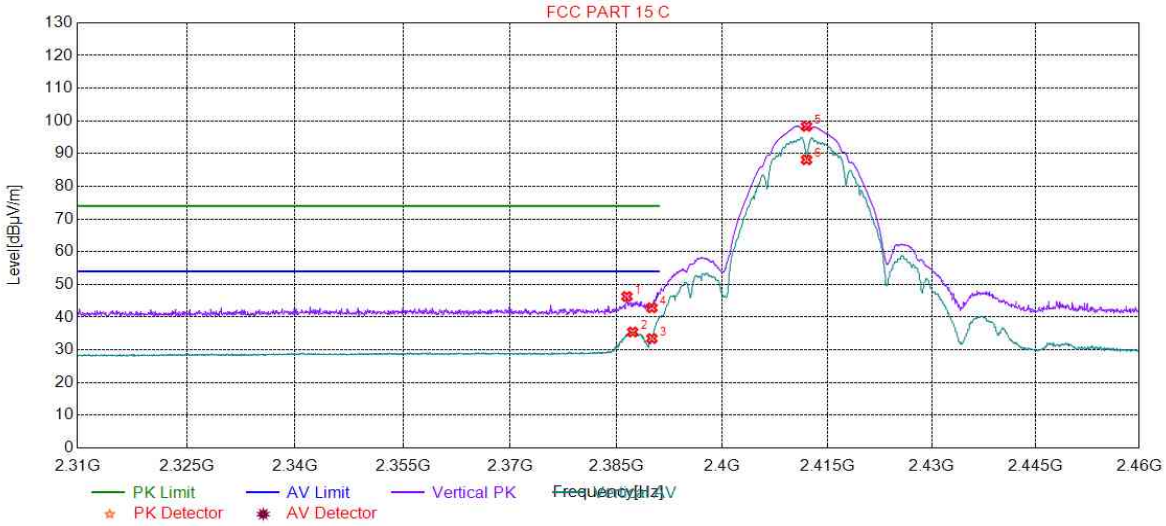



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2375.50 | 43.35 | 7.78 | 74.00 | 30.65 | 150 | 100 | Horizontal |
| 2 | 2387.36 | 45.88 | 7.77 | 54.00 | 8.12 | 150 | 304 | Horizontal |
| 3 | 2388.11 | 53.47 | 7.77 | 74.00 | 20.53 | 150 | 298 | Horizontal |
| 4 | 2390.00 | 43.22 | 7.77 | 54.00 | 10.78 | 150 | 304 | Horizontal |
| 5 | 2412.00 | 108.84 | 7.81 | 0.00 | -108.84 | 150 | 298 | Horizontal |
| 6 | 2412.00 | 98.76 | 7.81 | 0.00 | -98.76 | 150 | 304 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.2 802.11B_Lowest Channel_ Vertical

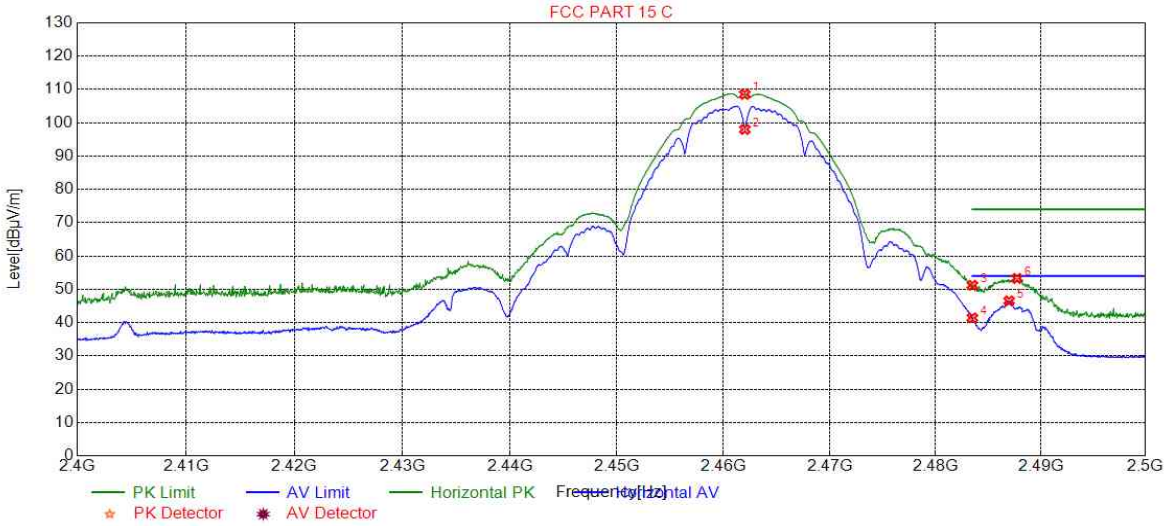



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2386.46 | 46.33 | 7.77 | 74.00 | 27.67 | 150 | 241 | Vertical |
| 2 | 2387.28 | 35.48 | 7.77 | 54.00 | 18.52 | 150 | 241 | Vertical |
| 3 | 2390.00 | 33.48 | 7.77 | 54.00 | 20.52 | 150 | 241 | Vertical |
| 4 | 2390.00 | 42.88 | 7.77 | 74.00 | 31.12 | 150 | 241 | Vertical |
| 5 | 2412.00 | 98.34 | 7.81 | 0.00 | -98.34 | 150 | 241 | Vertical |
| 6 | 2412.00 | 88.14 | 7.81 | 0.00 | -88.14 | 150 | 241 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.3 802.11B_ Highest Channel_ Horizontal

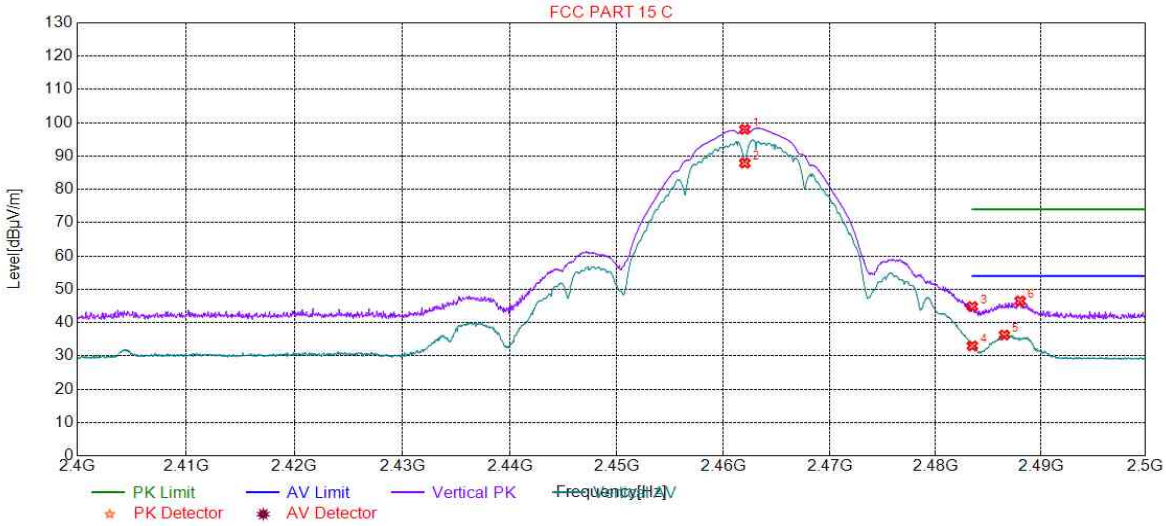



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2462.00 | 108.54 | 7.98 | 0.00 | -108.54 | 150 | 296 | Horizontal |
| 2 | 2462.00 | 98.00 | 7.98 | 0.00 | -98.00 | 150 | 336 | Horizontal |
| 3 | 2483.50 | 51.22 | 8.01 | 74.00 | 22.78 | 150 | 328 | Horizontal |
| 4 | 2483.50 | 41.43 | 8.01 | 54.00 | 12.57 | 150 | 296 | Horizontal |
| 5 | 2486.99 | 46.54 | 8.01 | 54.00 | 7.46 | 150 | 296 | Horizontal |
| 6 | 2487.74 | 53.30 | 8.02 | 74.00 | 20.70 | 150 | 296 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.4 802.11B_ Highest Channel_ Vertical

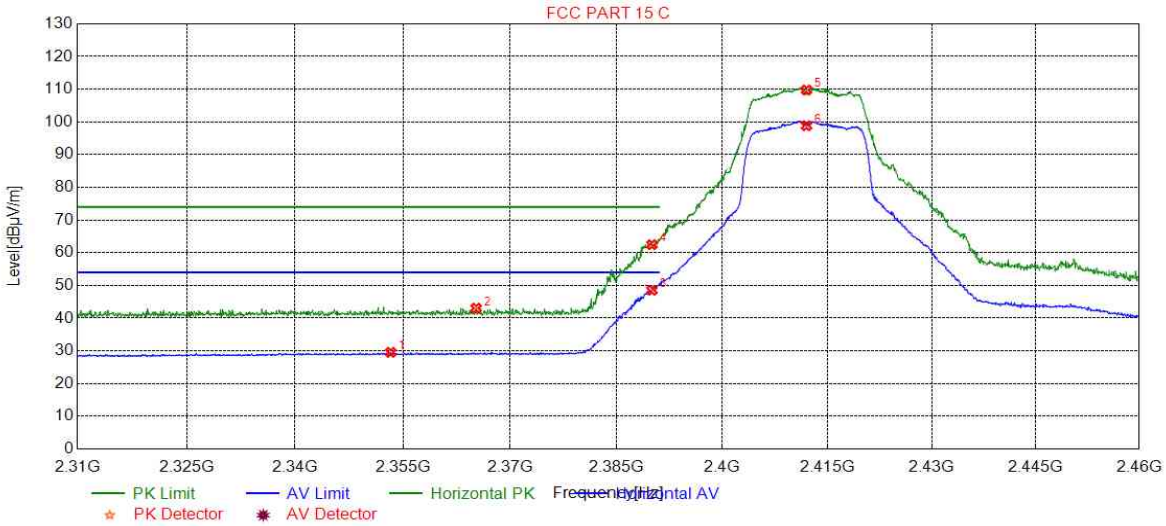



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2462.00 | 98.02 | 7.98 | 0.00 | -98.02 | 150 | 80 | Vertical |
| 2 | 2462.00 | 87.89 | 7.98 | 0.00 | -87.89 | 150 | 80 | Vertical |
| 3 | 2483.50 | 44.82 | 8.01 | 74.00 | 29.18 | 150 | 80 | Vertical |
| 4 | 2483.50 | 33.06 | 8.01 | 54.00 | 20.94 | 150 | 80 | Vertical |
| 5 | 2486.54 | 36.31 | 8.01 | 54.00 | 17.69 | 150 | 80 | Vertical |
| 6 | 2488.04 | 46.53 | 8.02 | 74.00 | 27.47 | 150 | 80 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.5 802.11G_Lowest Channel_ Horizontal

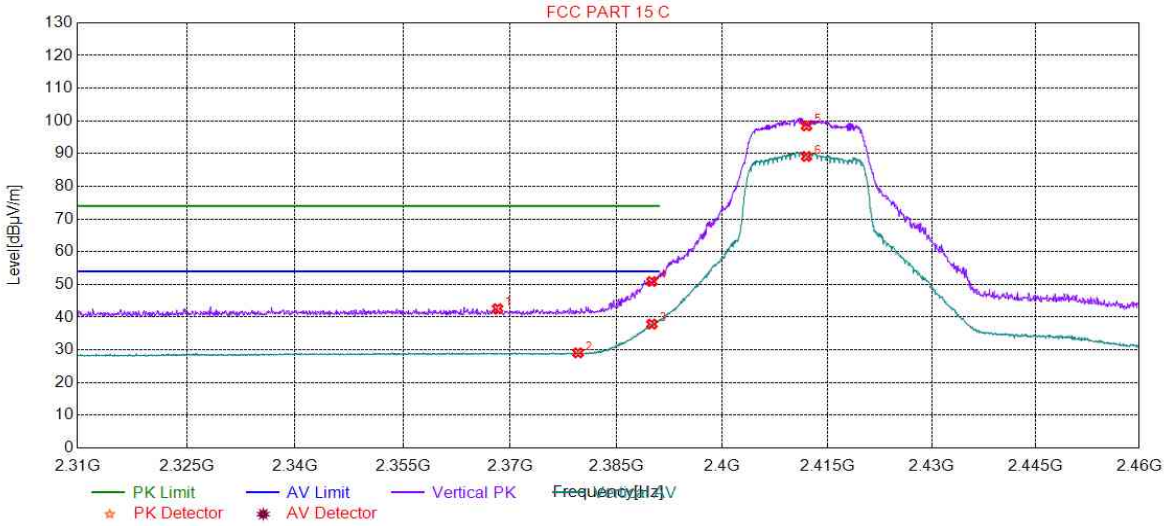



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2353.29 | 29.56 | 7.81 | 54.00 | 24.44 | 150 | 287 | Horizontal |
| 2 | 2365.22 | 43.07 | 7.79 | 74.00 | 30.93 | 150 | 203 | Horizontal |
| 3 | 2390.00 | 48.54 | 7.77 | 54.00 | 5.46 | 150 | 298 | Horizontal |
| 4 | 2390.00 | 62.48 | 7.77 | 74.00 | 11.52 | 150 | 298 | Horizontal |
| 5 | 2412.00 | 109.76 | 7.81 | 0.00 | -109.76 | 150 | 298 | Horizontal |
| 6 | 2412.00 | 98.86 | 7.81 | 0.00 | -98.86 | 150 | 298 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.6 802.11G_Lowest Channel_ Vertical

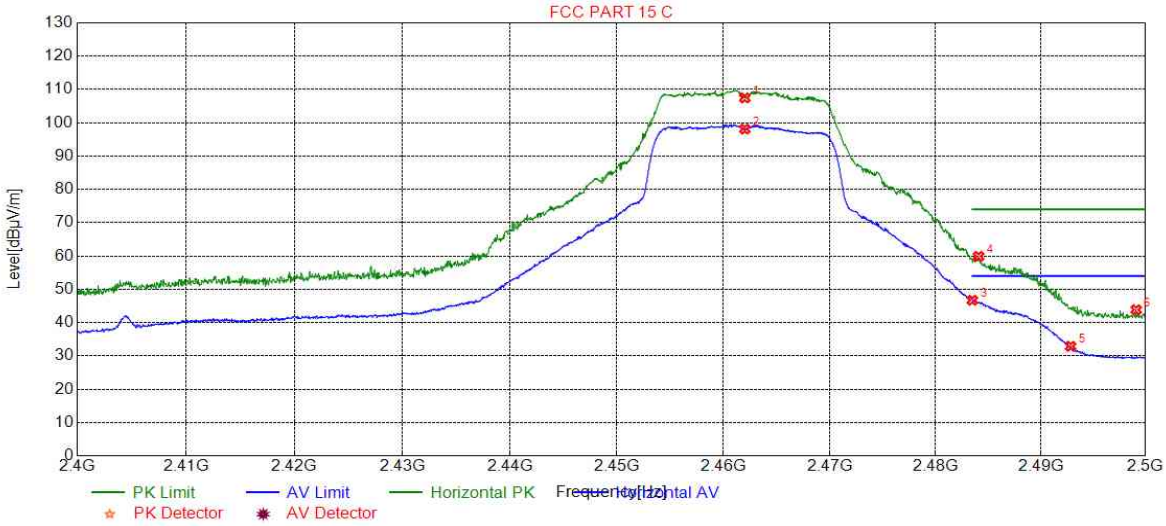



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2368.22 | 42.61 | 7.79 | 74.00 | 31.39 | 150 | 280 | Vertical |
| 2 | 2379.55 | 29.09 | 7.78 | 54.00 | 24.91 | 150 | 261 | Vertical |
| 3 | 2390.00 | 37.88 | 7.77 | 54.00 | 16.12 | 150 | 75 | Vertical |
| 4 | 2390.00 | 50.90 | 7.77 | 74.00 | 23.10 | 150 | 301 | Vertical |
| 5 | 2412.00 | 98.46 | 7.81 | 0.00 | -98.46 | 150 | 66 | Vertical |
| 6 | 2412.00 | 89.15 | 7.81 | 0.00 | -89.15 | 150 | 66 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.7 802.11G_ Highest Channel_ Horizontal

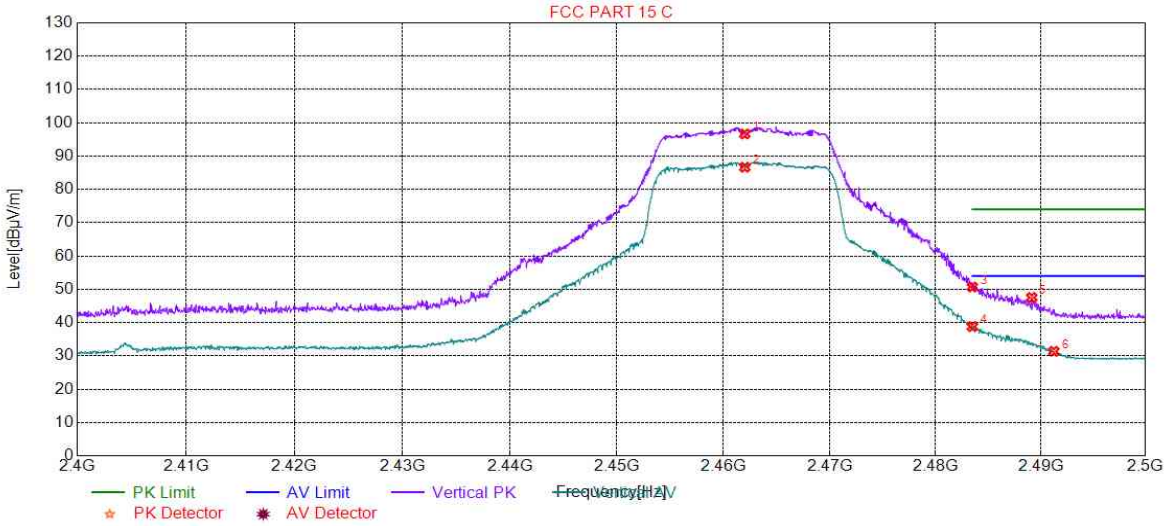



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2462.00 | 107.45 | 7.98 | 0.00 | -107.45 | 150 | 294 | Horizontal |
| 2 | 2462.00 | 98.10 | 7.98 | 0.00 | -98.10 | 150 | 294 | Horizontal |
| 3 | 2483.50 | 46.74 | 8.01 | 54.00 | 7.26 | 150 | 300 | Horizontal |
| 4 | 2484.09 | 59.90 | 8.01 | 74.00 | 14.10 | 150 | 294 | Horizontal |
| 5 | 2492.84 | 32.92 | 8.02 | 54.00 | 21.08 | 150 | 294 | Horizontal |
| 6 | 2499.09 | 43.88 | 8.03 | 74.00 | 30.12 | 150 | 289 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.8 802.11G_ Highest Channel_ Vertical

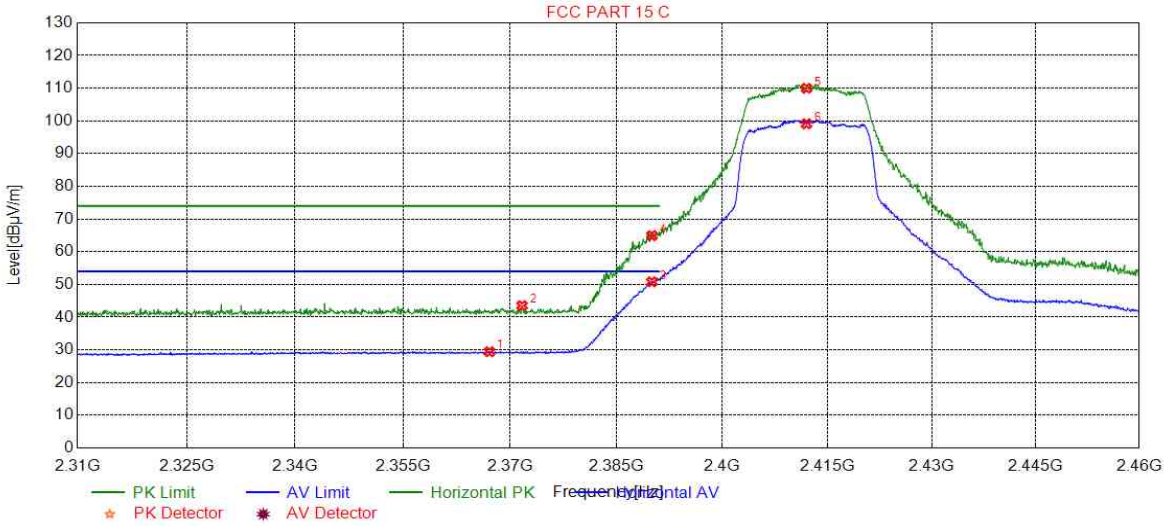



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBμV/m] | Factor [dB] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2462.00 | 96.63 | 7.98 | 0.00 | -96.63 | 150 | 205 | Vertical |
| 2 | 2462.00 | 86.65 | 7.98 | 0.00 | -86.65 | 150 | 205 | Vertical |
| 3 | 2483.50 | 50.72 | 8.01 | 74.00 | 23.28 | 150 | 85 | Vertical |
| 4 | 2483.50 | 38.80 | 8.01 | 54.00 | 15.20 | 150 | 78 | Vertical |
| 5 | 2489.14 | 47.56 | 8.02 | 74.00 | 26.44 | 150 | 85 | Vertical |
| 6 | 2491.24 | 31.40 | 8.02 | 54.00 | 22.60 | 150 | 78 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.9 802.11N20_ Lowest Channel_ Horizontal

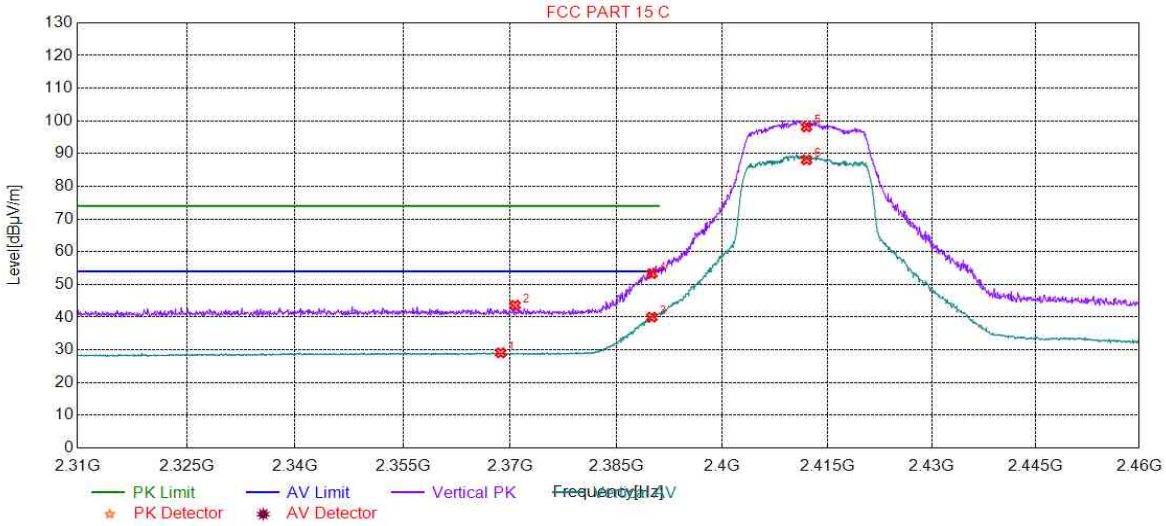



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2367.10 | 29.44 | 7.79 | 54.00 | 24.56 | 150 | 291 | Horizontal |
| 2 | 2371.68 | 43.54 | 7.79 | 74.00 | 30.46 | 150 | 18 | Horizontal |
| 3 | 2390.00 | 50.81 | 7.77 | 54.00 | 3.19 | 150 | 291 | Horizontal |
| 4 | 2390.00 | 64.95 | 7.77 | 74.00 | 9.05 | 150 | 291 | Horizontal |
| 5 | 2412.00 | 109.99 | 7.81 | 0.00 | -109.99 | 150 | 291 | Horizontal |
| 6 | 2412.00 | 99.14 | 7.81 | 0.00 | -99.14 | 150 | 291 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.10 802.11N20_Lowest Channel_ Vertical

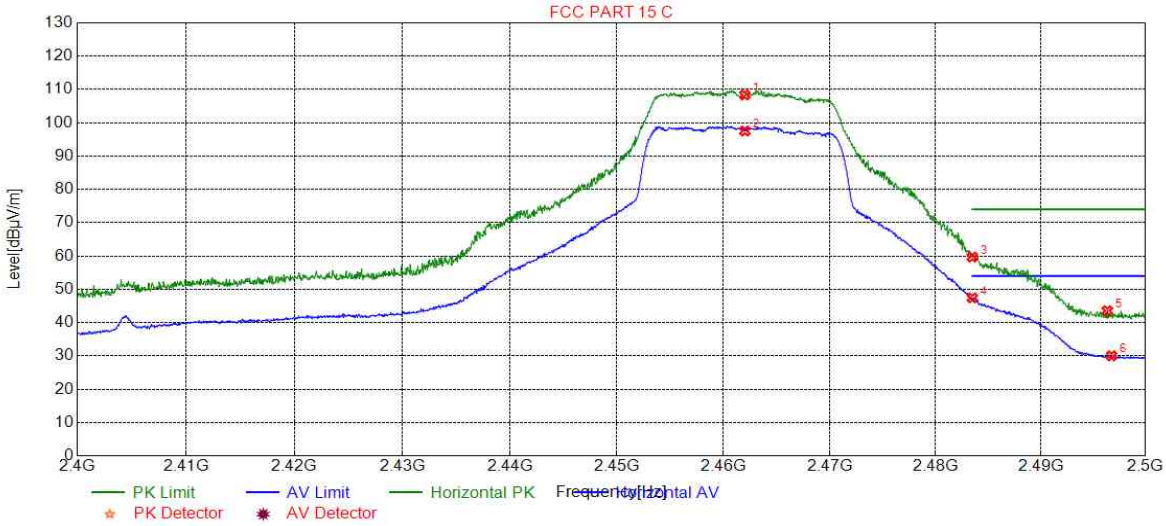



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2368.67 | 29.10 | 7.79 | 54.00 | 24.90 | 150 | 49 | Vertical |
| 2 | 2370.70 | 43.64 | 7.79 | 74.00 | 30.36 | 150 | 203 | Vertical |
| 3 | 2390.00 | 40.01 | 7.77 | 54.00 | 13.99 | 150 | 77 | Vertical |
| 4 | 2390.00 | 53.30 | 7.77 | 74.00 | 20.70 | 150 | 194 | Vertical |
| 5 | 2412.00 | 98.18 | 7.81 | 0.00 | -98.18 | 150 | 77 | Vertical |
| 6 | 2412.00 | 88.09 | 7.81 | 0.00 | -88.09 | 150 | 77 | Vertical |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.11 802.11N20_ Highest Channel_ Horizontal

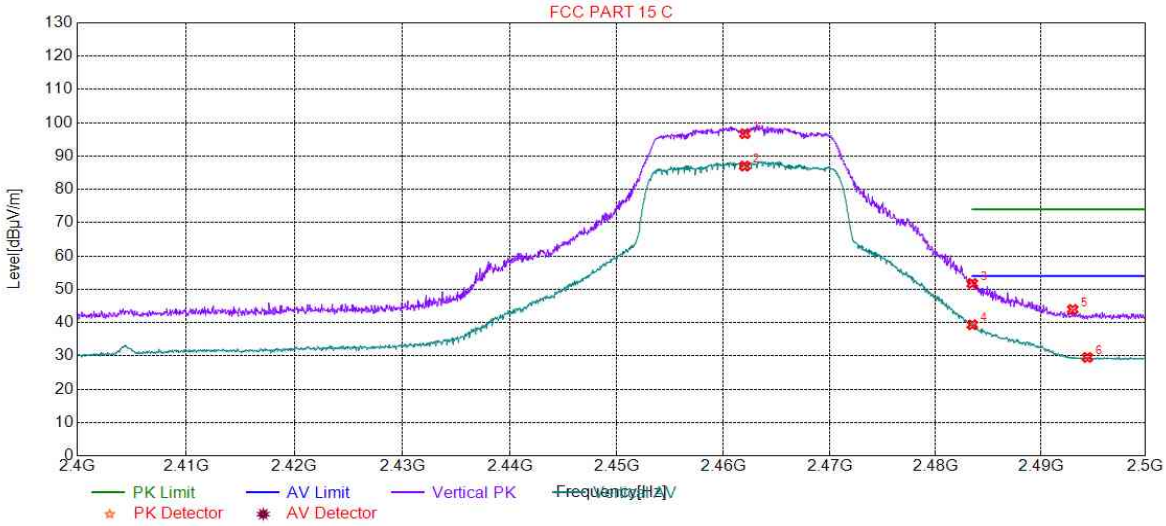



**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2462.00 | 108.35 | 7.98 | 0.00 | -108.35 | 150 | 294 | Horizontal |
| 2 | 2462.00 | 97.52 | 7.98 | 0.00 | -97.52 | 150 | 294 | Horizontal |
| 3 | 2483.50 | 59.71 | 8.01 | 74.00 | 14.29 | 150 | 294 | Horizontal |
| 4 | 2483.50 | 47.44 | 8.01 | 54.00 | 6.56 | 150 | 287 | Horizontal |
| 5 | 2496.34 | 43.60 | 8.03 | 74.00 | 30.40 | 150 | 257 | Horizontal |
| 6 | 2496.74 | 30.05 | 8.03 | 54.00 | 23.95 | 150 | 294 | Horizontal |

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

### 4.10.1.12 802.11N20_ Highest Channel_ Vertical




**Suspected List**

| Suspected List | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
| 1 | 2462.00 | 96.70 | 7.98 | 0.00 | -96.70 | 150 | 200 | Vertical |
| 2 | 2462.00 | 86.99 | 7.98 | 0.00 | -86.99 | 150 | 200 | Vertical |
| 3 | 2483.50 | 51.78 | 8.01 | 74.00 | 22.22 | 150 | 84 | Vertical |
| 4 | 2483.50 | 39.37 | 8.01 | 54.00 | 14.63 | 150 | 84 | Vertical |
| 5 | 2493.04 | 43.97 | 8.02 | 74.00 | 30.03 | 150 | 291 | Vertical |
| 6 | 2494.44 | 29.58 | 8.02 | 54.00 | 24.42 | 150 | 306 | Vertical |

*Remark:*
*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*

All Modes have been tested, but only the worst case data displayed in this report.

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86–755) 26012053 f (86–755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86–755) 26012053 f (86–755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

# 5 Measurement Uncertainty (95% confidence levels, k=2)

| No. | Item | Measurement Uncertainty |
|---|---|---|
| 1 | Total RF power, conducted | ±0.75dB |
| 2 | RF power density, conducted | ±2.84dB |
| 3 | Spurious emissions, conducted | ±0.75dB |
| 4 | Radiated Spurious emission test | ±4.5dB (30MHz-1GHz) |
| | | ±4.8dB (1GHz-25GHz) |
| 5 | Conduct emission test | ±3.12 dB (9KHz- 30MHz) |
| 6 | Temperature test | ±1°C |
| 7 | Humidity test | ±3% |
| 8 | DC and low frequency voltages | ±0.5% |

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

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

# 6 Equipment List

| Conducted Emission | | | | | |
|---|---|---|---|---|---|
| Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. date (yyyy-mm-dd) | Cal.Duedate (yyyy-mm-dd) |
| Shielding Room | ZhongYu Electron | GB-88 | SEM001-06 | 2020/5/10 | 2023/5/9 |
| LISN | Rohde & Schwarz | ENV216 | SEM007-01 | 2019/7/14 | 2021/7/14 |
| LISN | ETS-LINDGREN | Feb-16 | SEM007-02 | 2020/4/1 | 2021/3/31 |
| Measurement Software | AUDIX | e3 V5.4.1221d | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM024-01 | 2019/7/12 | 2020/7/11 |
| 2 Line ISN | Fischer Custom Communications Inc. | FCC-TLISN-T2-02 | EMC0122 | 2020/2/11 | 2021/2/10 |
| EMI Test Receiver | Rohde & Schwarz | ESCI | SEM004-02 | 2020/3/2 | 2021/3/1 |

| RF conducted test | | | | | |
|---|---|---|---|---|---|
| Test Equipment | Manufacturer | Model No. | Inventory No. | Cal. date (yyyy-mm-dd) | Cal.Duedate (yyyy-mm-dd) |
| DC Power Supply | Agilent Technologies Inc | 66311B | W009-09 | 2019/7/15 | 2020/7/15 |
| Signal Analyzer | Rohde & Schwarz | FSV | W025-05 | 2020/1/3 | 2021/1/2 |
| Coaxial Cable | SGS | N/A | SEM031-01 | 2019/7/12 | 2020/7/11 |
| Attenuator | Weinschel Associates | WA41 | SEM021-09 | N/A | N/A |
| Signal Generator | KEYSIGHT | N5173B | SEM006-05 | 2019/7/14 | 2021/7/14 |
| Temperature Chamber | GIANT FORCE | ICT-150-40-CP-AR | W027-03 | 2019/10/27 | 2020/10/27 |
| Power Meter | Rohde & Schwarz | NRVS | SEM014-02 | 2019/7/14 | 2021/7/14 |

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

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

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

| RE in Chamber | | | | | |
|---|---|---|---|---|---|
| **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. date (yyyy-mm-dd)** | **Cal.Due date (yyyy-mm-dd)** |
| 3m Semi-Anechoic Chamber | AUDIX | N/A | SEM001-02 | 2018/3/13 | 2021/3/12 |
| Measurement Software | AUDIX | e3V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM026-01 | 2019/7/12 | 2020/7/11 |
| EXA Signal Analyzer (10Hz-26.5GHz) | Agilent Technologies Inc | N9010A | SEM004-09 | 2020/3/12 | 2021/3/11 |
| BiConiLog Antenna (26-3000MHz) | ETS-Lindgren | 3142C | SEM003-01 | 2017/6/27 | 2020/6/26 |
| Horn Antenna (0.8-18GHz) | Rohde & Schwarz | HF907 | SEM003-07 | 2018/4/13 | 2021/4/12 |
| Pre-amplifier(0.1-1.3GHz) | HP | 8447D | SEM005-02 | 2019/7/14 | 2021/7/14 |
| Low Noise Amplifier(100MHz-18GHz) | Black Diamond Series | BDLNA-0118-352810 | SEM005-05 | 2019/9/3 | 2020/9/2 |
| Horn Antenna (15-40GHz) | Schwarzbeck | BBHA 9170 | SEM003-15 | 2017/10/17 | 2020/10/16 |
| Pre-amplifier(18-26GHz) | Rohde & Schwarz | CH14-H052 | SEM005-17 | 2020/3/2 | 2021/3/1 |
| Band filter | N/A | N/A | SEM023-01 | N/A | N/A |

| RE in Chamber | | | | | |
|---|---|---|---|---|---|
| **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. date (yyyy-mm-dd)** | **Cal.Due date (yyyy-mm-dd)** |
| 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEM001-01 | 2017/8/5 | 2020/8/4 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM025-01 | 2019/7/12 | 2020/7/11 |
| MXE EMI Receiver (20Hz-8.4GHz) | Agilent Technologies | N9038A | SEM004-05 | 2019/7/14 | 2021/7/14 |
| BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEM003-01 | 2017/6/27 | 2020/6/26 |
| Pre-amplifier (0.1-1.3GHz) | Agilent Technologies | 8447D | SEM005-01 | 2020/3/2 | 2021/3/1 |

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-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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)

| RE in Chamber | | | | | |
|---|---|---|---|---|---|
| **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. Date (yyyy-mm-dd)** | **Cal. Due date (yyyy-mm-dd)** |
| 10m Semi-Anechoic Chamber | SAEMC | FSAC1018 | SEM001-03 | 2018/3/31 | 2021/3/30 |
| EMI Test Receiver (9k-7GHz) | Rohde & Schwarz | ESR | SEM004-03 | 2020/3/2 | 2021/3/1 |
| Trilog-Broadband Antenna(25M-2GHz) | Schwarzbeck | VULB9168 | SEM003-18 | 2020/3/15 | 2022/3/14 |
| Pre-amplifier (9k-1GHz) | Sonoma | 310N | SEM005-03 | 2020/3/12 | 2021/3/11 |
| Loop Antenna (9kHz-30MHz) | ETS-Lindgren | 6502 | SEM003-08 | 2017/8/22 | 2020/8/21 |
| Measurement Software | AUDIX | e3 V8.2014-6-27 | N/A | N/A | N/A |
| Coaxial Cable | SGS | N/A | SEM029-01 | 2019/7/12 | 2020/7/11 |

# 7 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of Set-Up for ZR/2020/50009.

The End

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
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com
Member of the SGS Group (SGS SA)