



# Appendix B

## WCDMA Band II & IV & V



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

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



## CONTENT

|                                                 |           |
|-------------------------------------------------|-----------|
| <b>1. EFFECTIVE (ISOTROPIC) RADIATED POWER</b>  | <b>4</b>  |
| 1.1. TEST RESULT                                | 4         |
| <b>2. PEAK-TO-AVERAGE RATIO(CCDF)</b>           | <b>5</b>  |
| 2.1. TEST RESULT                                | 5         |
| 2.2. TEST PLOTS                                 | 5         |
| <b>3. MODULATION CHARACTERISTICS</b>            | <b>10</b> |
| 3.1. TEST BAND = WCDMA BAND II                  | 10        |
| 3.1.1. TEST MODE = UMTS/TM1                     | 10        |
| 3.1.1.1. TEST CHANNEL = MCH                     | 10        |
| 3.2. TEST BAND = WCDMA BAND IV                  | 11        |
| 3.2.1. TEST MODE = UMTS/TM1                     | 11        |
| 3.2.1.1. TEST CHANNEL = MCH                     | 11        |
| 3.3. TEST BAND = WCDMA BAND V                   | 12        |
| 3.3.1. TEST MODE = UMTS/TM1                     | 12        |
| 3.3.1.1. TEST CHANNEL = MCH                     | 12        |
| <b>4. 26DB BANDWIDTH AND OCCUPIED BANDWIDTH</b> | <b>13</b> |
| 4.1. TEST RESULT                                | 13        |
| 4.2. TEST PLOTS                                 | 13        |
| <b>5. BAND EDGE COMPLIANCE</b>                  | <b>18</b> |
| 5.1. TEST RESULT                                | 18        |
| 5.2. TEST PLOTS                                 | 18        |
| <b>6. SPURIOUS EMISSION AT ANTENNA TERMINAL</b> | <b>22</b> |
| 6.1. TEST PLOTS                                 | 22        |
| <b>7. FIELD STRENGTH OF SPURIOUS RADIATION</b>  | <b>32</b> |
| 7.1. TEST BAND = WCDMA BAND II                  | 32        |
| 7.1.1. TEST MODE = WCDMA/TM1                    | 32        |
| 7.1.1.1. TEST CHANNEL = LCH                     | 32        |
| 7.1.1.2. TEST CHANNEL = MCH                     | 32        |



|           |                                  |           |
|-----------|----------------------------------|-----------|
| 7.1.1.3.  | TEST CHANNEL = HCH .....         | 32        |
| 7.2.      | TEST BAND = WCDMA BAND IV .....  | 33        |
| 7.2.1.    | TEST MODE =WCDMA/TM1 .....       | 33        |
| 7.2.1.1.  | TEST CHANNEL = LCH .....         | 33        |
| 7.2.1.2.  | TEST CHANNEL = MCH .....         | 33        |
| 7.2.1.3.  | TEST CHANNEL = HCH .....         | 34        |
| 7.3.      | TEST BAND = WCDMA BAND V .....   | 34        |
| 7.3.1.    | TEST MODE =WCDMA/TM1 .....       | 35        |
| 7.3.1.1.  | TEST CHANNEL = LCH .....         | 35        |
| 7.3.1.2.  | TEST CHANNEL = MCH .....         | 35        |
| 7.3.1.3.  | TEST CHANNEL = HCH .....         | 35        |
| <b>8.</b> | <b>FREQUENCY STABILITY .....</b> | <b>38</b> |
| 8.1.      | FREQUENCY Vs VOLTAGE .....       | 38        |
| 8.2.      | FREQUENCY Vs TEMPERATURE .....   | 39        |



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

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



## 1. Effective (Isotropic) Radiated Power

### 1.1. Test Result

| Band    | Channel | Conducted Power (dBm) | EIRP (dBm) | Limit(dBm) | Verdict |
|---------|---------|-----------------------|------------|------------|---------|
| Band II | 9262    | 23.08                 | 20.88      | 33.00      | PASS    |
| Band II | 9400    | 23.14                 | 20.94      | 33.00      | PASS    |
| Band II | 9538    | 23.06                 | 20.86      | 33.00      | PASS    |
| Band IV | 1312    | 23.11                 | 20.81      | 30.00      | PASS    |
| Band IV | 1413    | 23.18                 | 20.88      | 30.00      | PASS    |
| Band IV | 1513    | 23.09                 | 20.79      | 30.00      | PASS    |

| Band   | Channel | Conducted Power (dBm) | ERP (dBm) | Limit(dBm) | Verdict |
|--------|---------|-----------------------|-----------|------------|---------|
| Band V | 4132    | 22.97                 | 15.92     | 38.45      | PASS    |
| Band V | 4182    | 23.05                 | 16.00     | 38.45      | PASS    |
| Band V | 4233    | 22.91                 | 15.86     | 38.45      | PASS    |

Remark:

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

$ERP [dBm] = \text{Conducted Power} [dBm] + \text{Gain} [dBd]$

$EIRP [dBm] = \text{Conducted Power} [dBm] + \text{Gain} [dBi]$

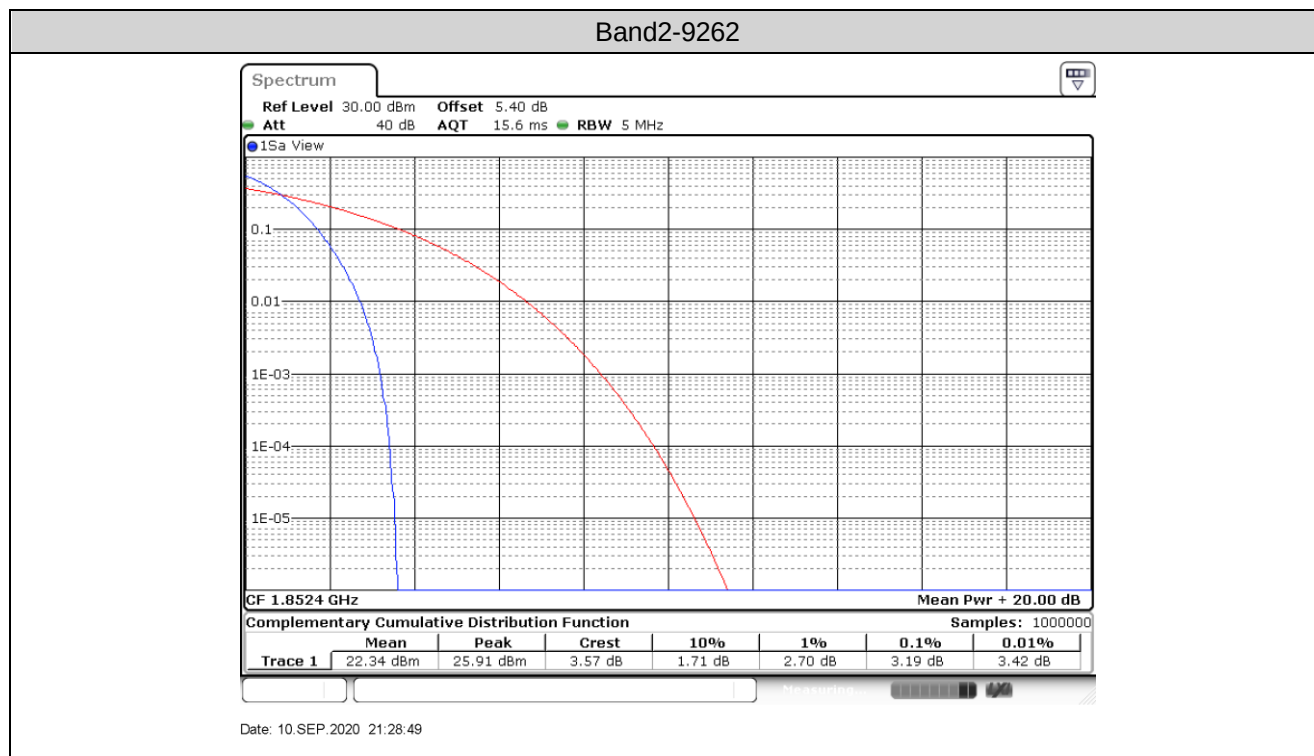


## 2. Peak-to-Average Ratio(CCDF)

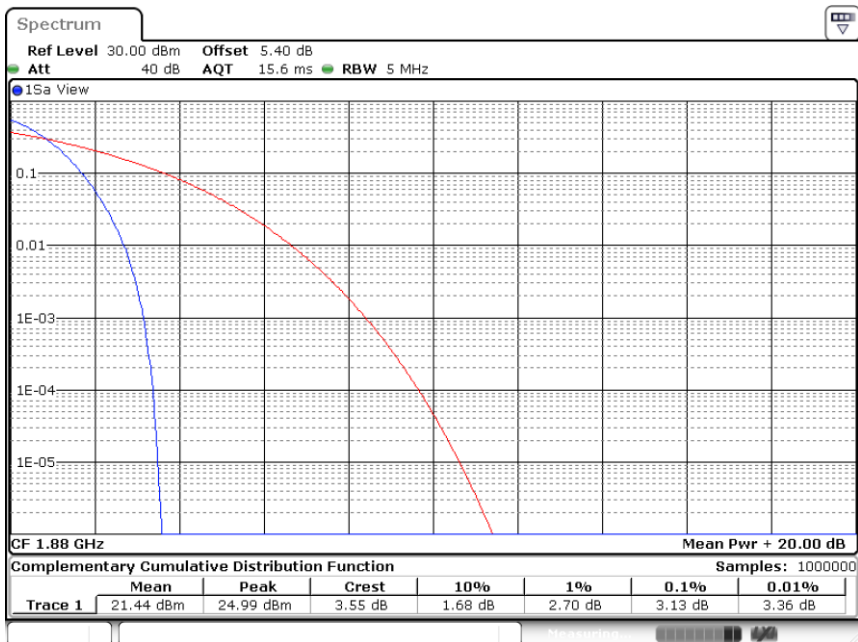
### 2.1. Test Result

| Band  | Channel | Peak-to-Average Ratio(dB) | Limit(dBm) | Verdict |
|-------|---------|---------------------------|------------|---------|
| Band2 | 9262    | 3.19                      | 13         | PASS    |
| Band2 | 9400    | 3.13                      | 13         | PASS    |
| Band2 | 9538    | 3.22                      | 13         | PASS    |
| Band4 | 1312    | 3.16                      | 13         | PASS    |
| Band4 | 1413    | 3.16                      | 13         | PASS    |
| Band4 | 1513    | 3.22                      | 13         | PASS    |
| Band5 | 4132    | 3.1                       | 13         | PASS    |
| Band5 | 4182    | 3.04                      | 13         | PASS    |
| Band5 | 4233    | 3.01                      | 13         | PASS    |

### 2.2. Test Plots

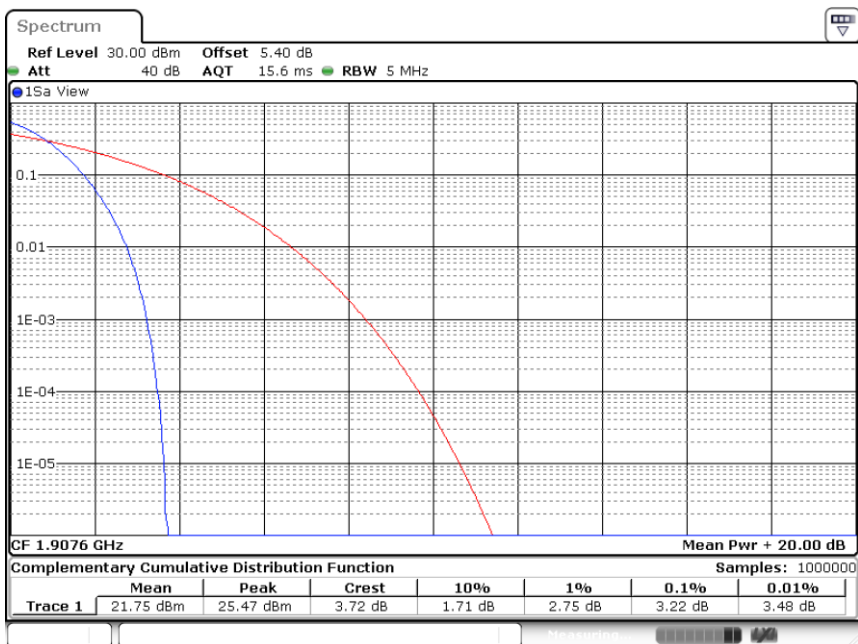


## Band2-9400



Date: 10.SEP.2020 21:29:02

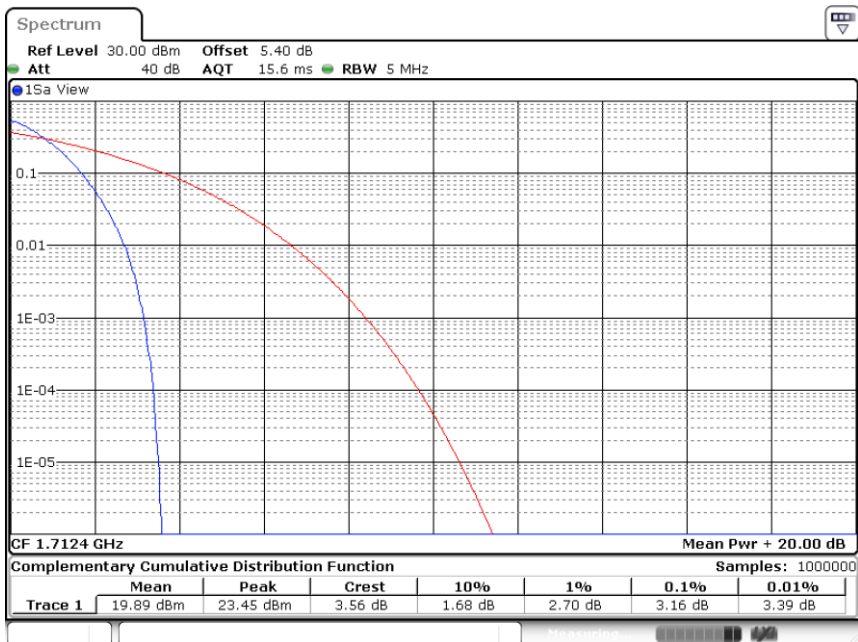
## Band2-9538



Date: 10.SEP.2020 21:29:16

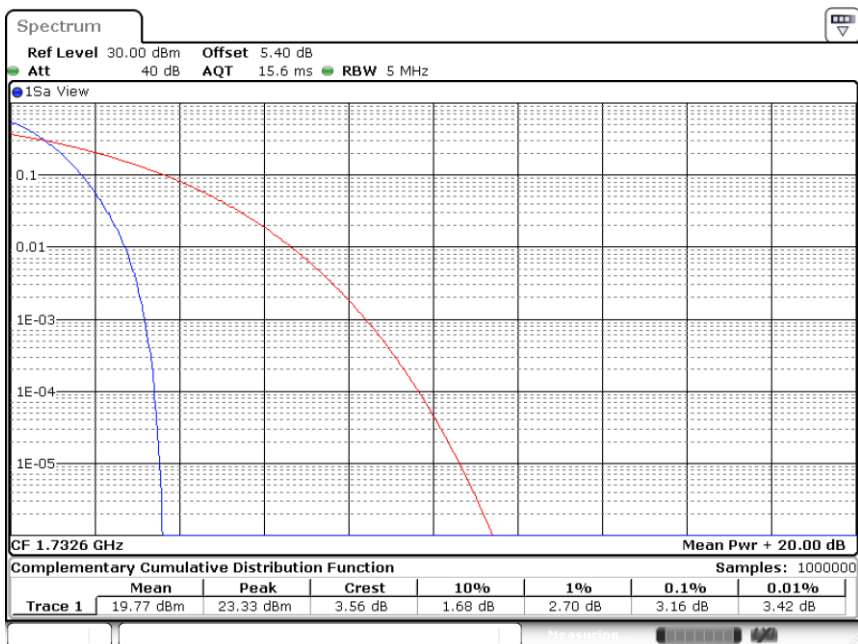


## Band4-1312



Date: 11.SEP.2020 09:17:42

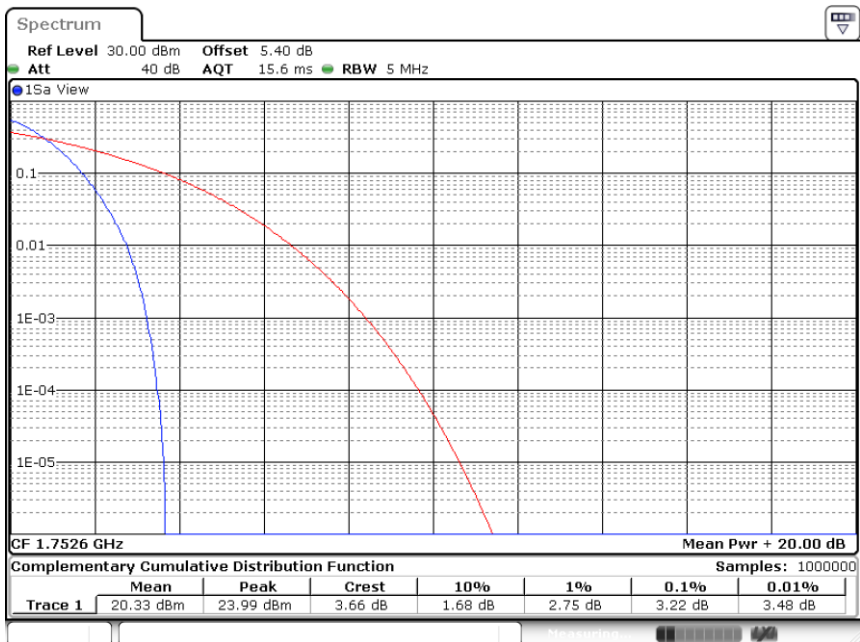
## Band4-1413



Date: 11.SEP.2020 09:17:55

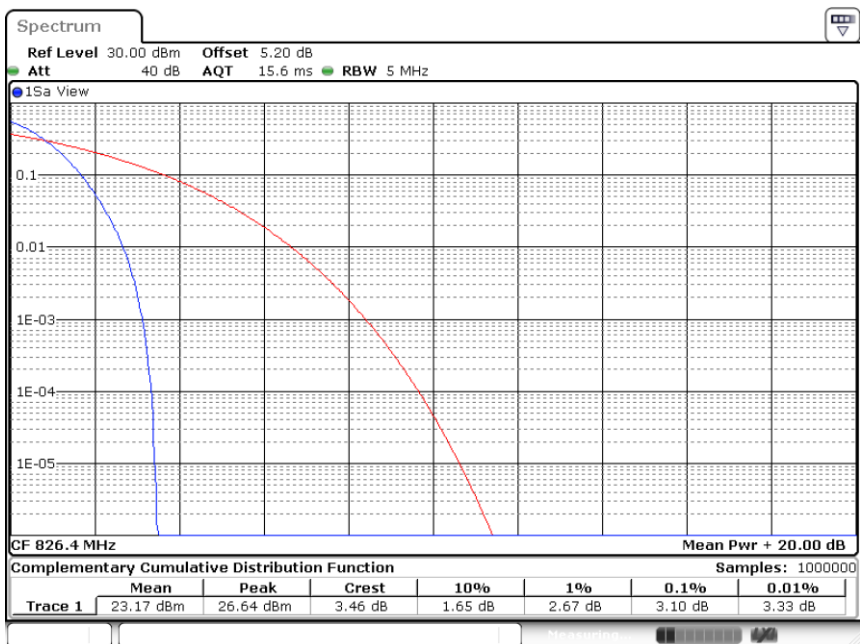


**Band4-1513**



Date: 11.SEP.2020 09:18:09

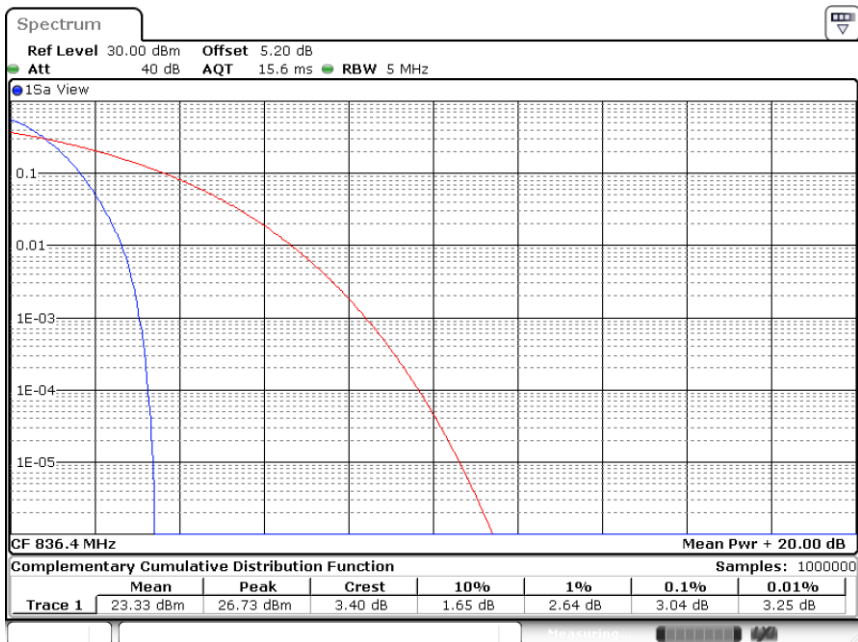
**Band5-4132**



Date: 11.SEP.2020 09:36:44

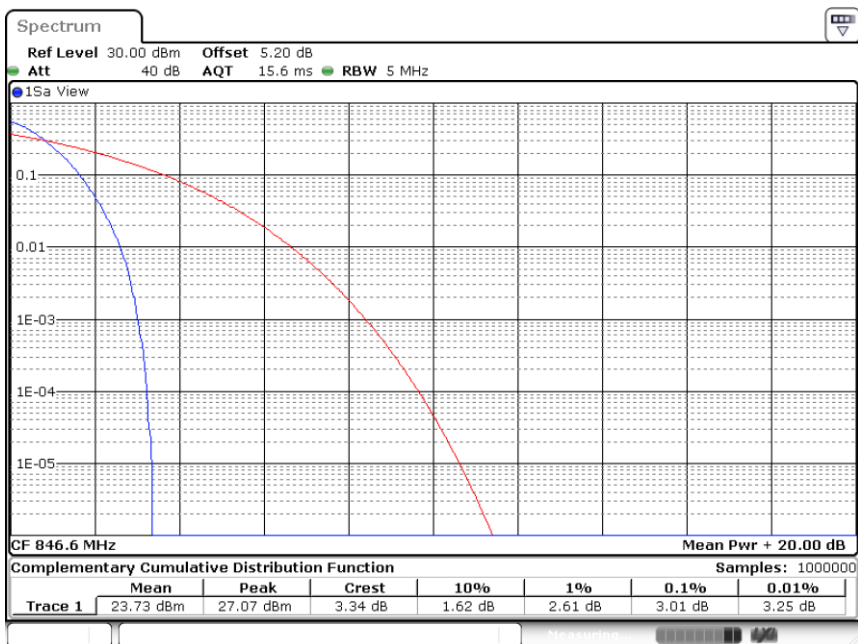


## Band5-4182



Date: 11.SEP.2020 09:36:57

## Band5-4233



Date: 11.SEP.2020 09:37:10

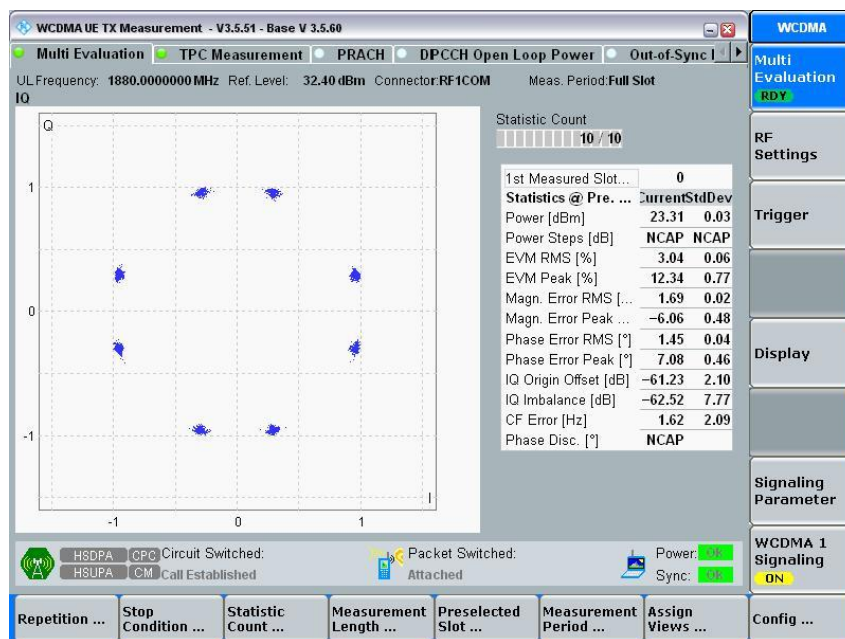


### 3. Modulation Characteristics

#### 3.1. Test Band = WCDMA Band II

##### 3.1.1. Test Mode = UMTS/TM1

##### 3.1.1.1. Test Channel = MCH

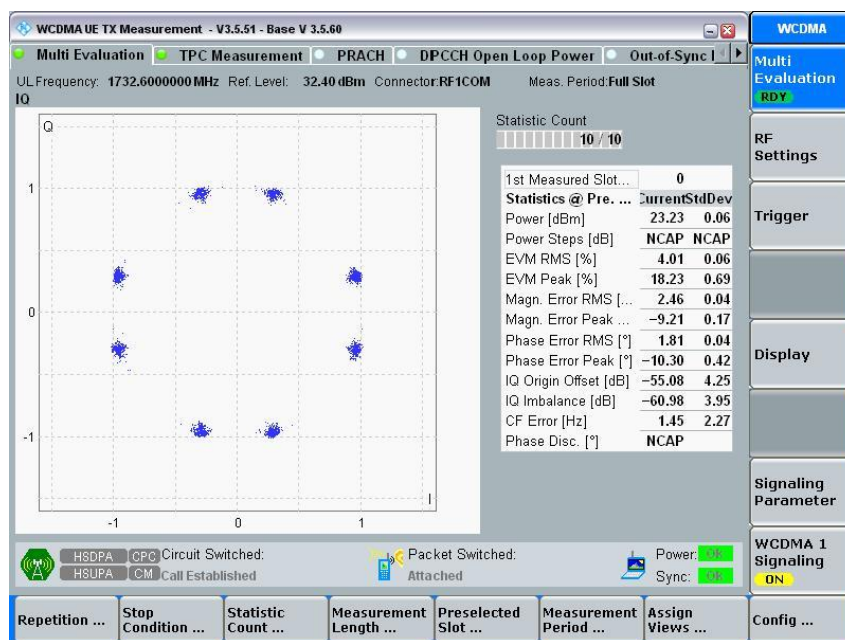


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

## 3.2. Test Band = WCDMA Band IV

### 3.2.1. Test Mode = UMTS/TM1

#### 3.2.1.1. Test Channel = MCH

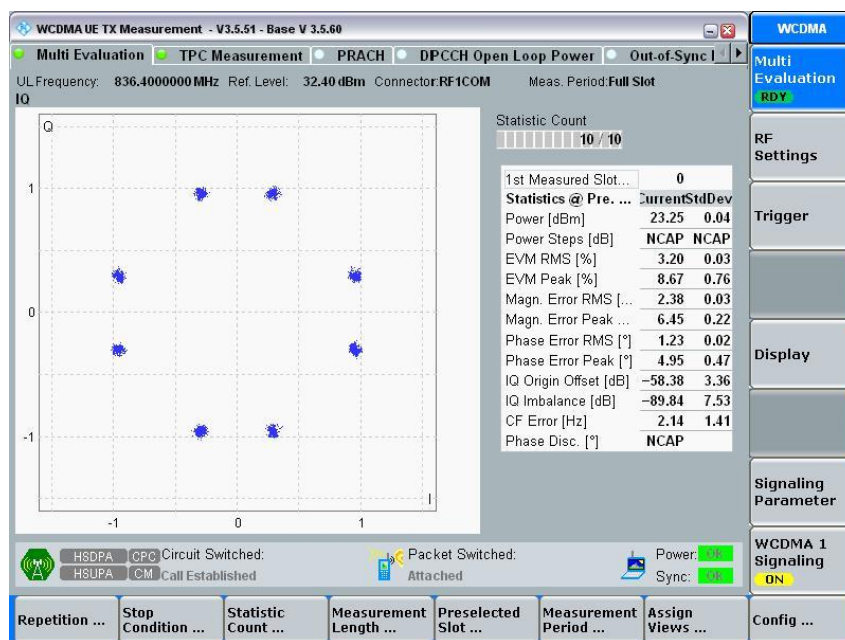


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

### 3.3. Test Band = WCDMA Band V

#### 3.3.1. Test Mode = UMTS/TM1

##### 3.3.1.1. Test Channel = MCH



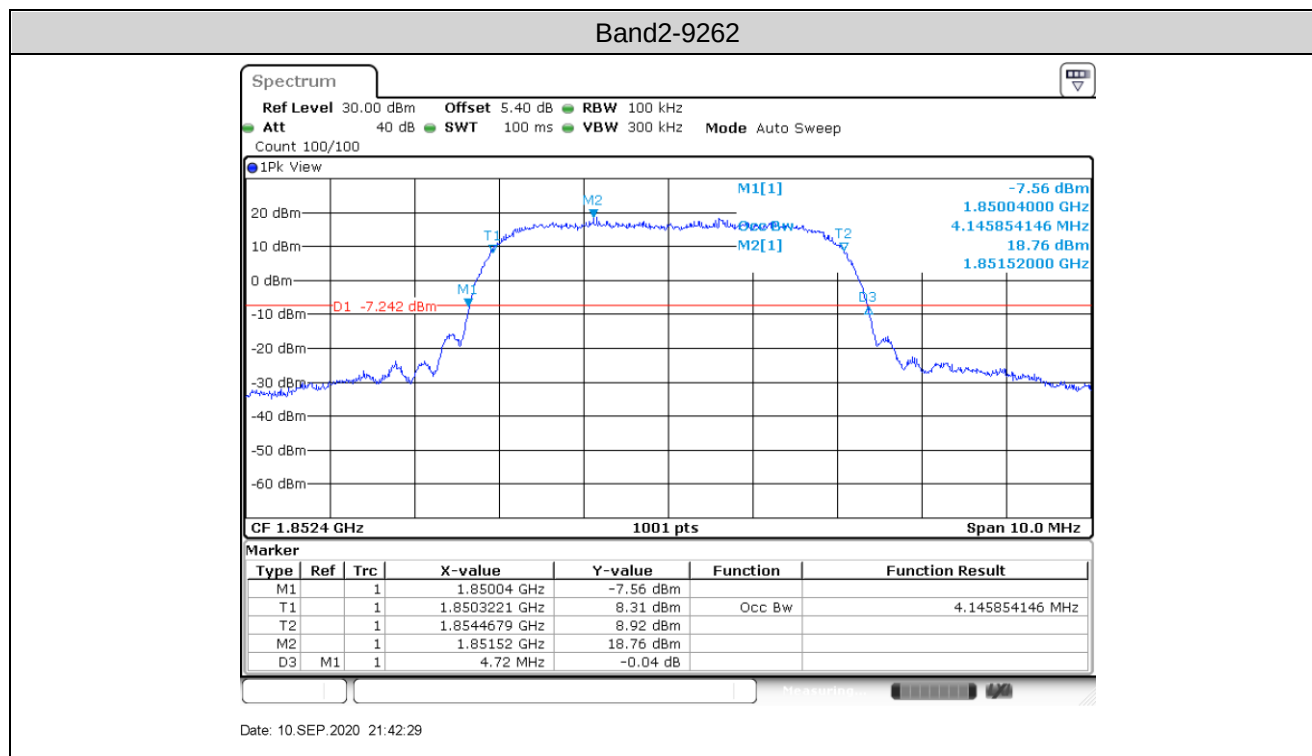


## 4. 26dB Bandwidth and Occupied Bandwidth

### 4.1. Test Result

| Band  | Channel | Occupied Bandwidth (kHz) | 26dB Bandwidth (kHz) | Limit(kHz) | Verdict |
|-------|---------|--------------------------|----------------------|------------|---------|
| Band2 | 9262    | 4.146                    | 4.720                | ---        | PASS    |
| Band2 | 9400    | 4.136                    | 4.740                | ---        | PASS    |
| Band2 | 9538    | 4.146                    | 4.720                | ---        | PASS    |
| Band4 | 1312    | 4.126                    | 4.710                | ---        | PASS    |
| Band4 | 1413    | 4.116                    | 4.710                | ---        | PASS    |
| Band4 | 1513    | 4.126                    | 4.720                | ---        | PASS    |
| Band5 | 4132    | 4.126                    | 4.720                | ---        | PASS    |
| Band5 | 4182    | 4.126                    | 4.720                | ---        | PASS    |
| Band5 | 4233    | 4.136                    | 4.730                | ---        | PASS    |

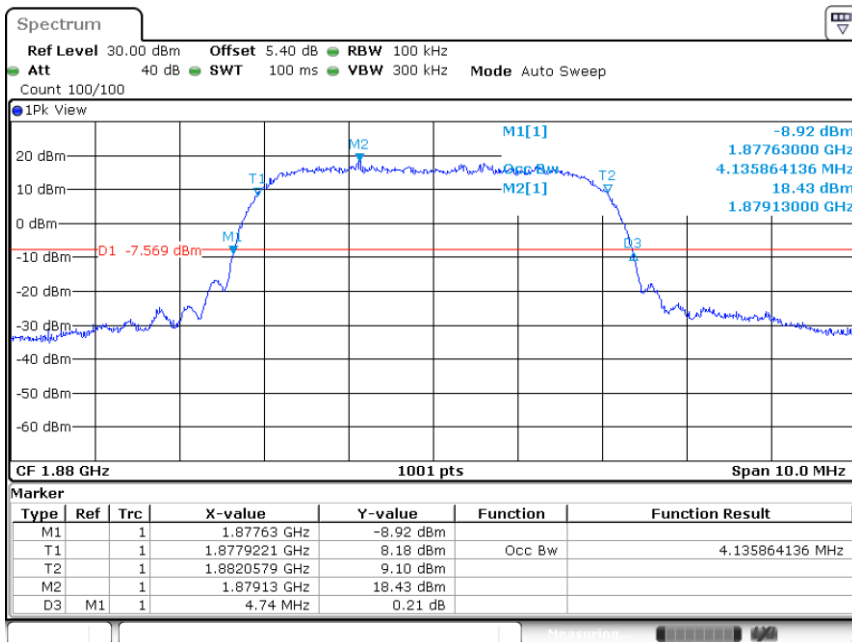
### 4.2. Test Plots



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

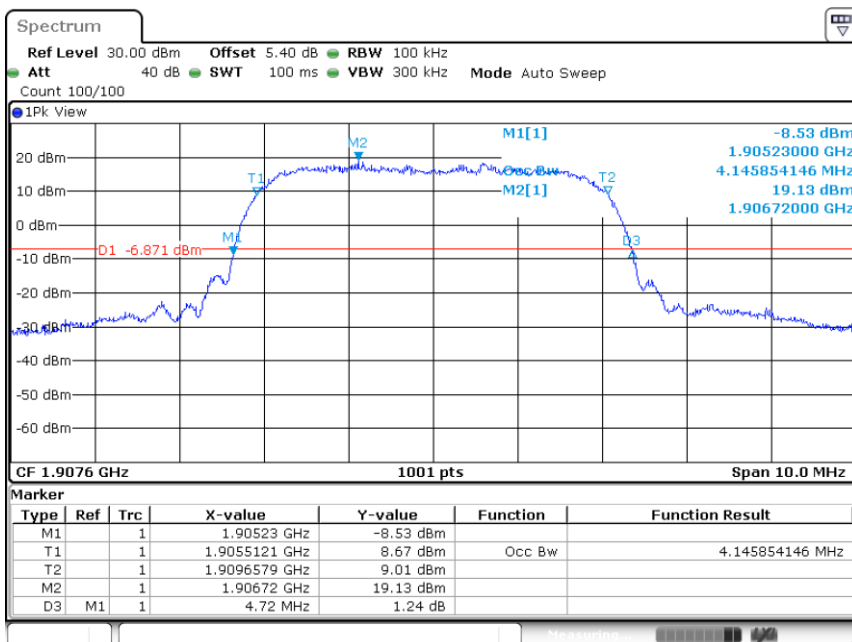
or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)  
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn  
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

## Band2-9400



Date: 10.SEP.2020 21:42:51

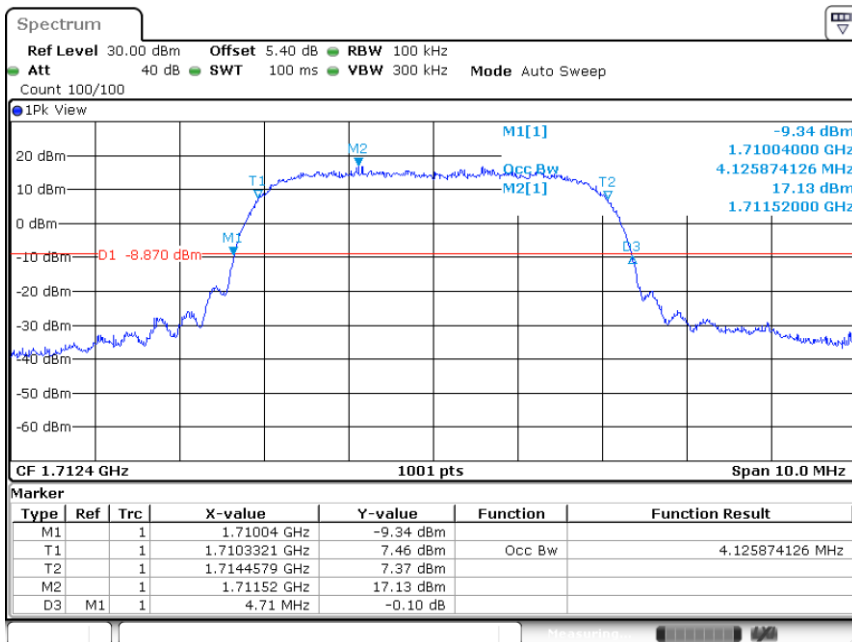
## Band2-9538



Date: 10.SEP.2020 21:43:13

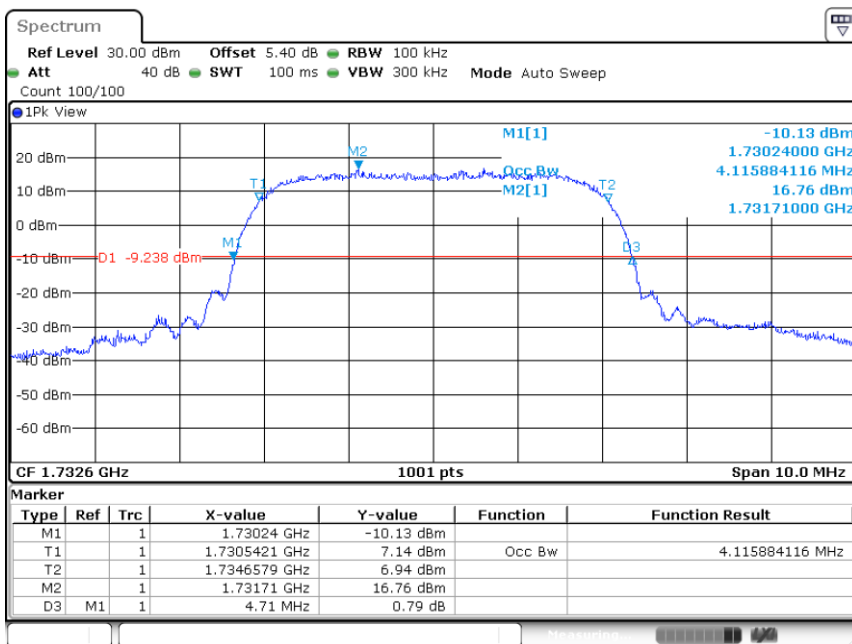


## Band4-1312



Date: 11.SEP.2020 09:31:26

## Band4-1413



Date: 11.SEP.2020 09:31:48



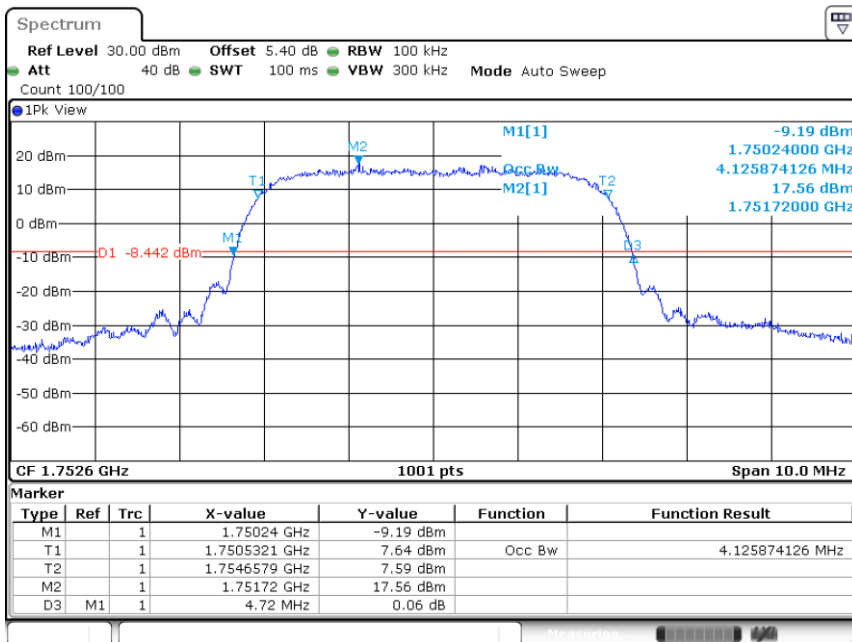
SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch (CCC Laboratory)

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

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

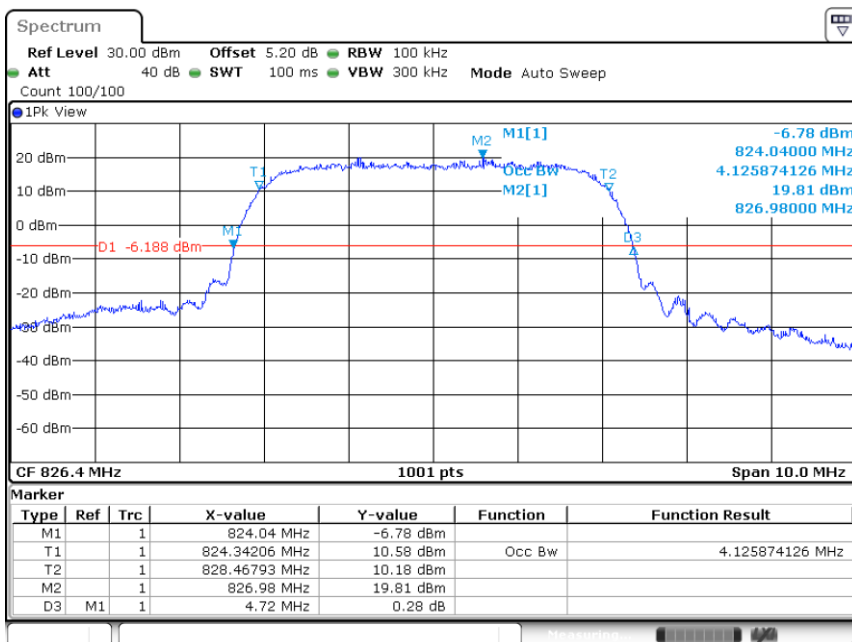
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn  
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

## Band4-1513



Date: 11.SEP.2020 09:32:10

## Band5-4132



Date: 11.SEP.2020 09:50:28



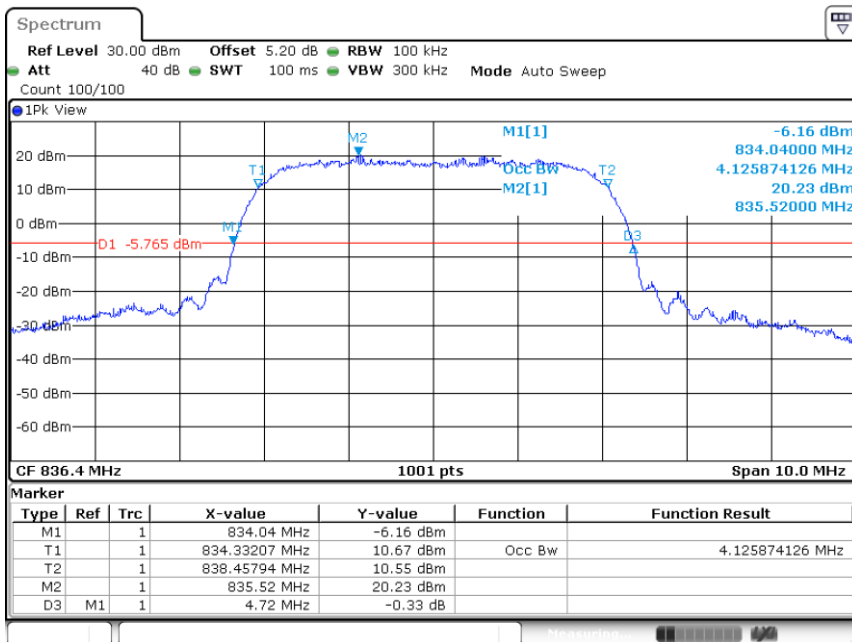
SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch (CCC Laboratory)

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

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

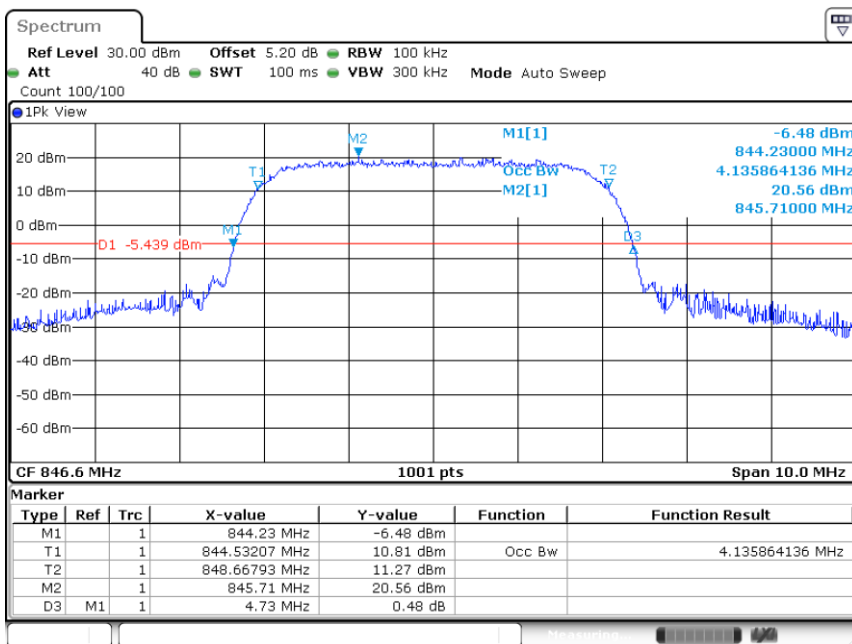
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn  
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

## Band5-4182



Date: 11.SEP.2020 09:50:50

## Band5-4233



Date: 11.SEP.2020 09:51:12



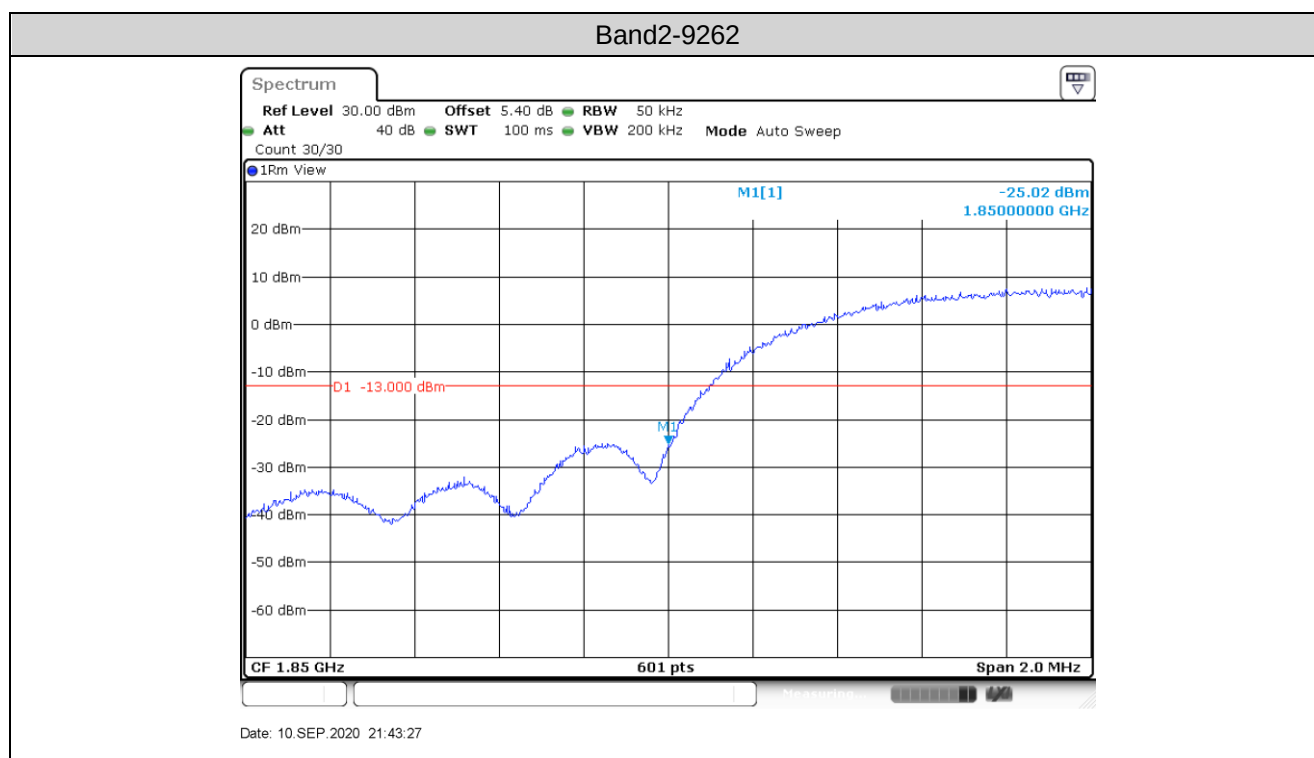


## 5. Band Edge Compliance

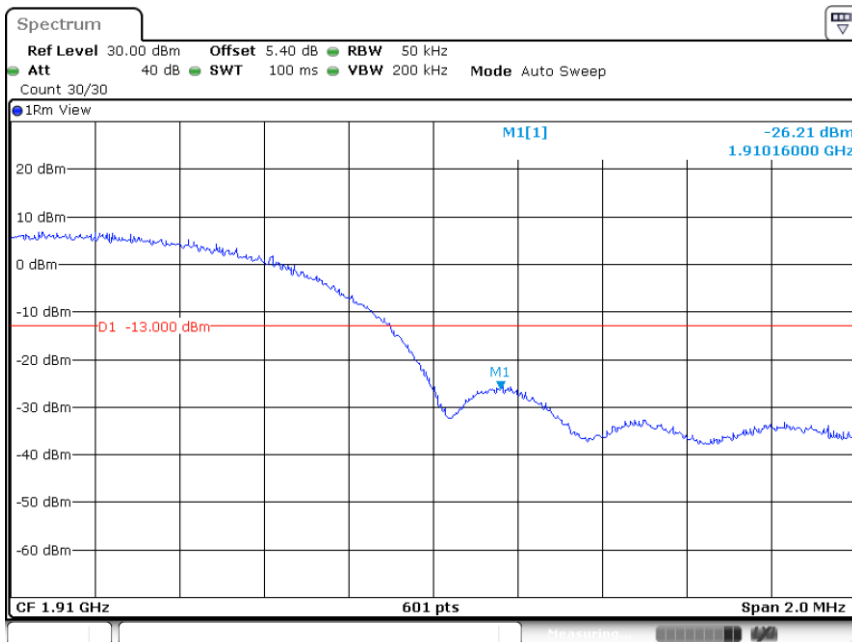
### 5.1. Test Result

| Band  | Channel | Frequency (MHz) | Result (dBm) | Limit(dBm) | Verdict |
|-------|---------|-----------------|--------------|------------|---------|
| Band2 | 9262    | 1850.00         | -25.02       | -13        | PASS    |
| Band2 | 9538    | 1910.16         | -25.25       | -13        | PASS    |
| Band4 | 1312    | 1710.00         | -27.75       | -13        | PASS    |
| Band4 | 1513    | 1755.18         | -26.76       | -13        | PASS    |
| Band5 | 4132    | 823.83          | -24.28       | -13        | PASS    |
| Band5 | 4233    | 849.00          | -23.10       | -13        | PASS    |

### 5.2. Test Plots

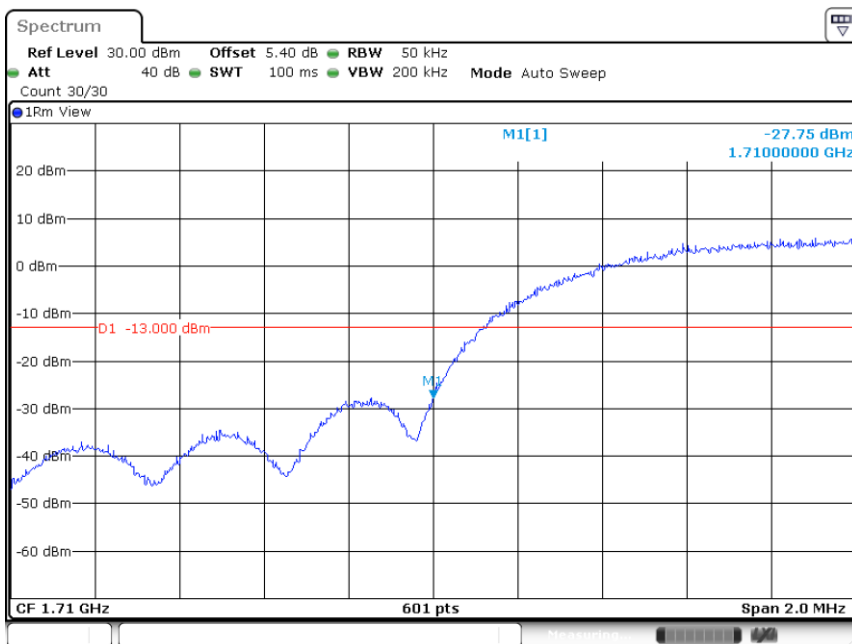


## Band2-9538



Date: 10.SEP.2020 21:43:41

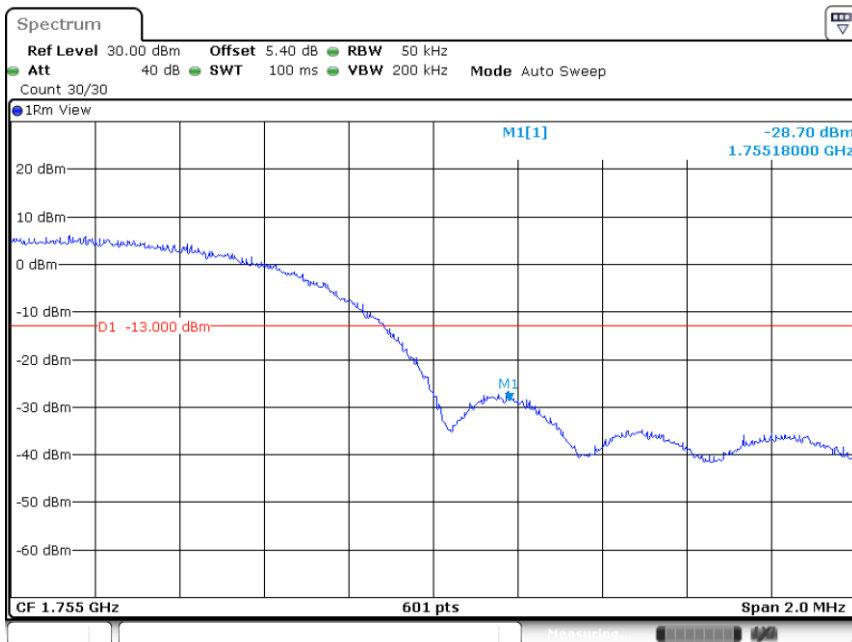
## Band4-1312



Date: 11.SEP.2020 09:32:25

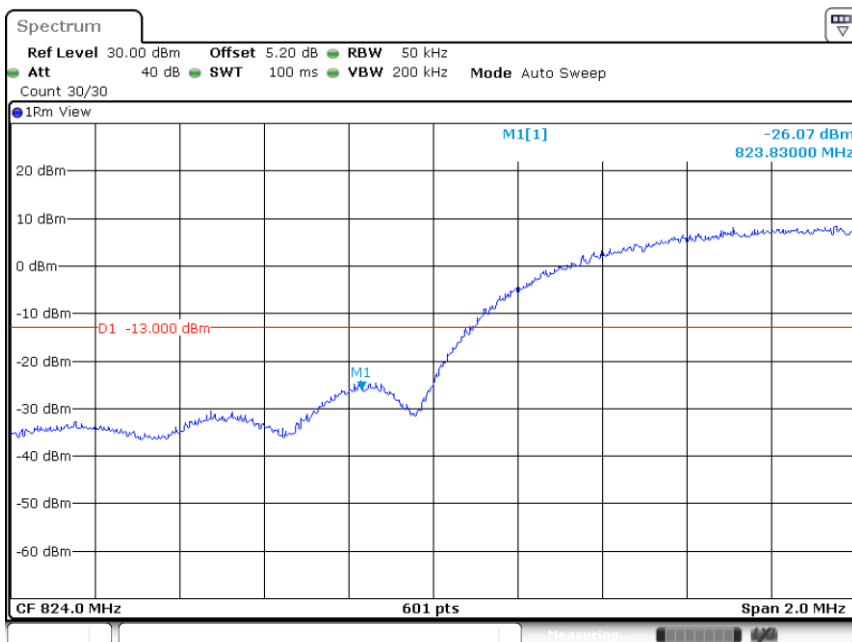


## Band4-1513



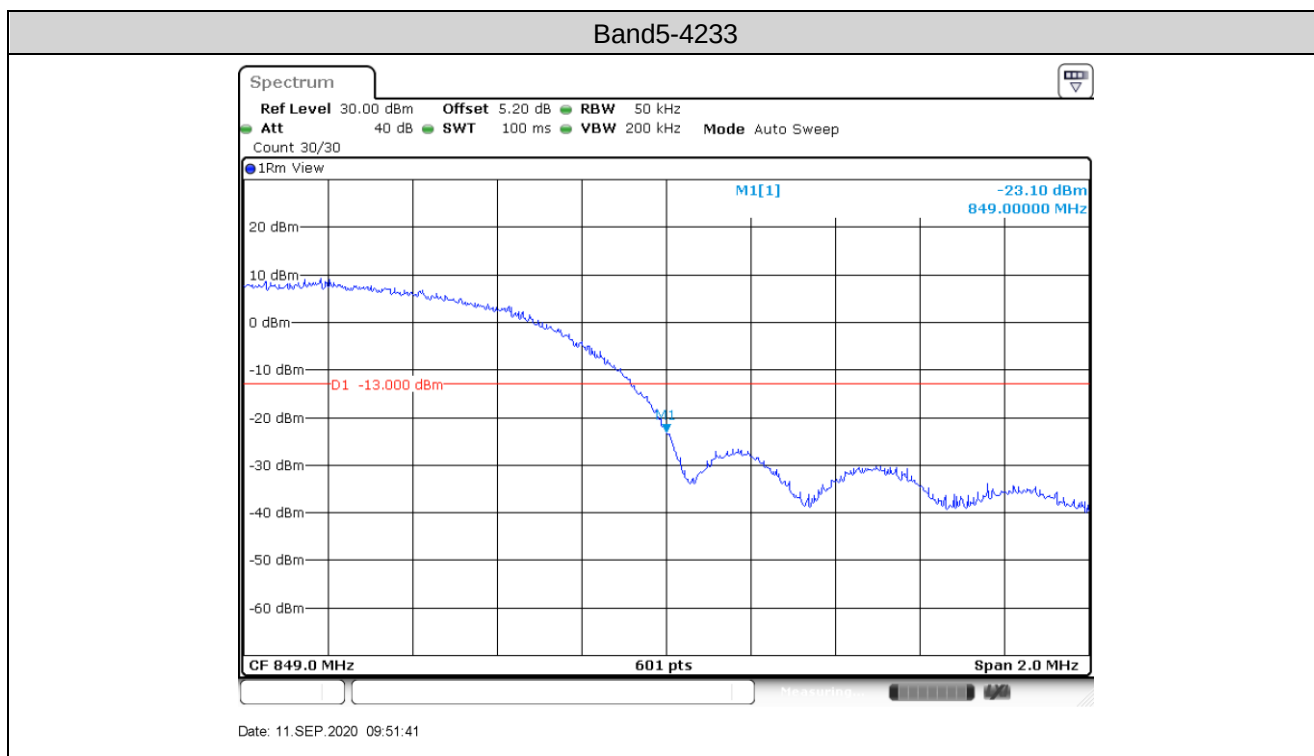
Date: 11.SEP.2020 09:32:39

## Band5-4132



Date: 11.SEP.2020 09:51:27





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

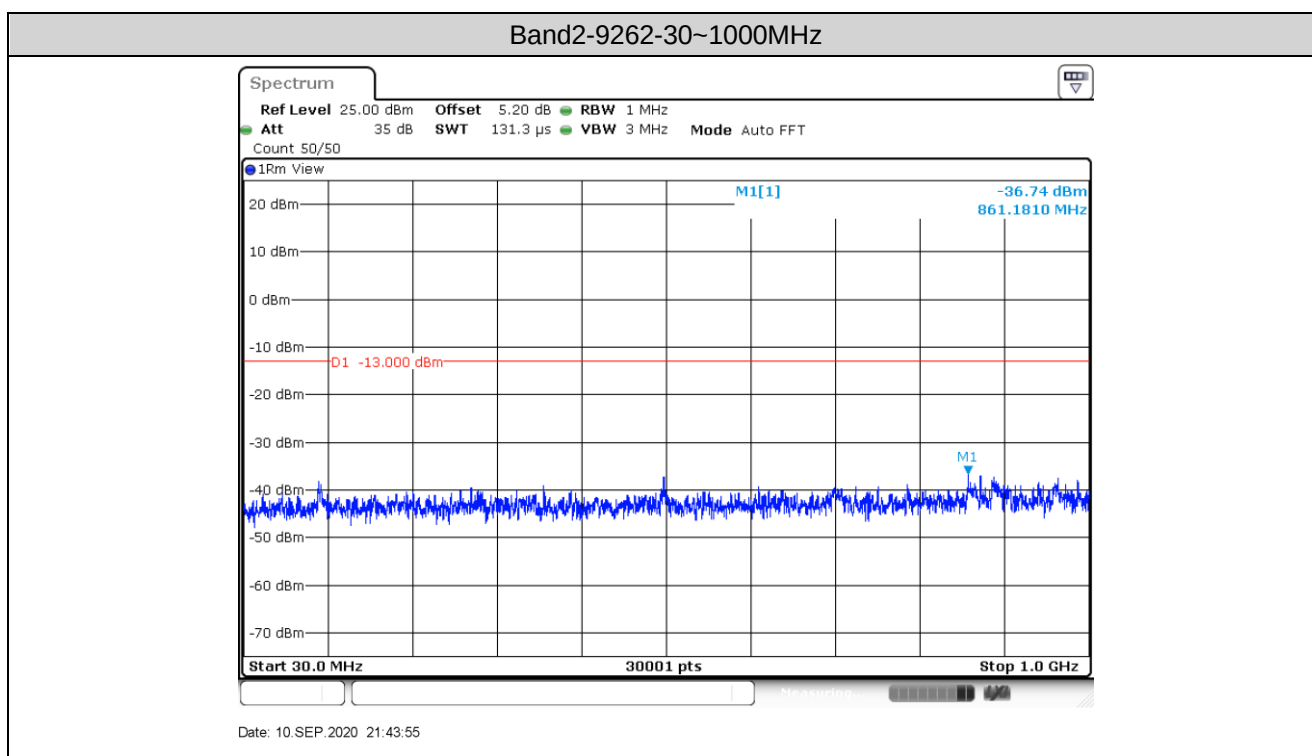
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)  
 No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053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

## 6. Spurious Emission at Antenna Terminal

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

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

## 6.1. Test Plots

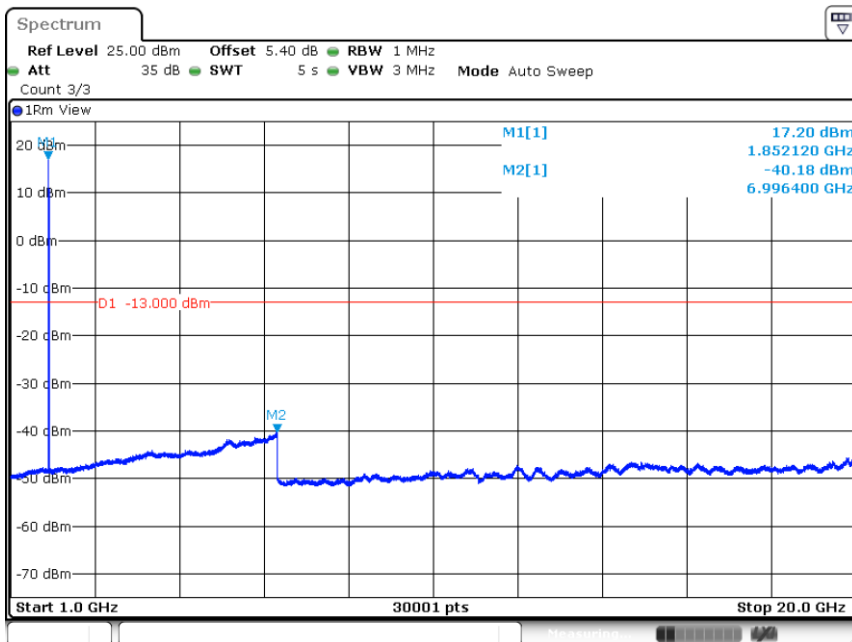


Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and all electronic format documents are subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a dispute. It is not to be relied upon as evidence in any legal proceedings. No part of this document may be reproduced or transmitted in any form or by any means, 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.

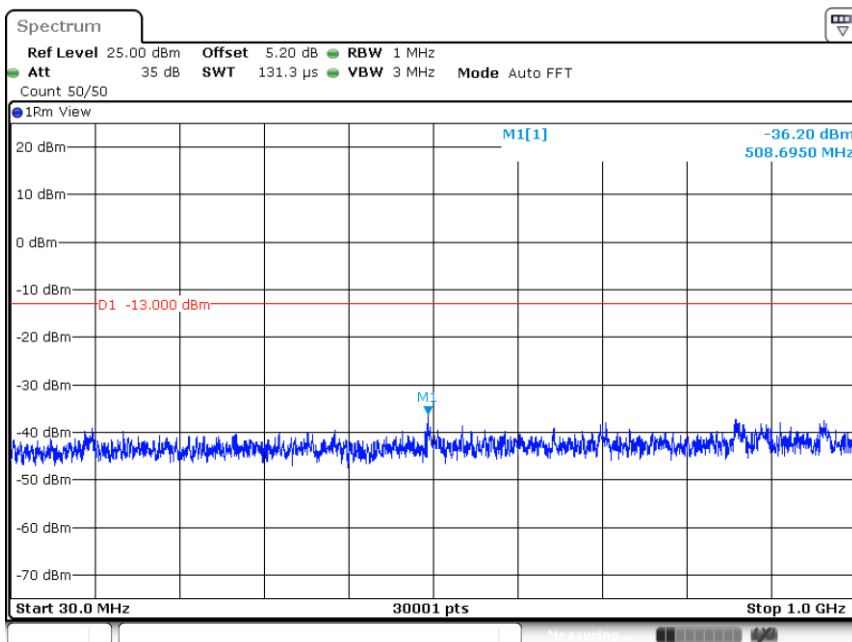
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn  
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

**Band2-9262-1000~20000MHz**



Date: 10.SEP.2020 21:44:18

**Band2-9400-30~1000MHz**



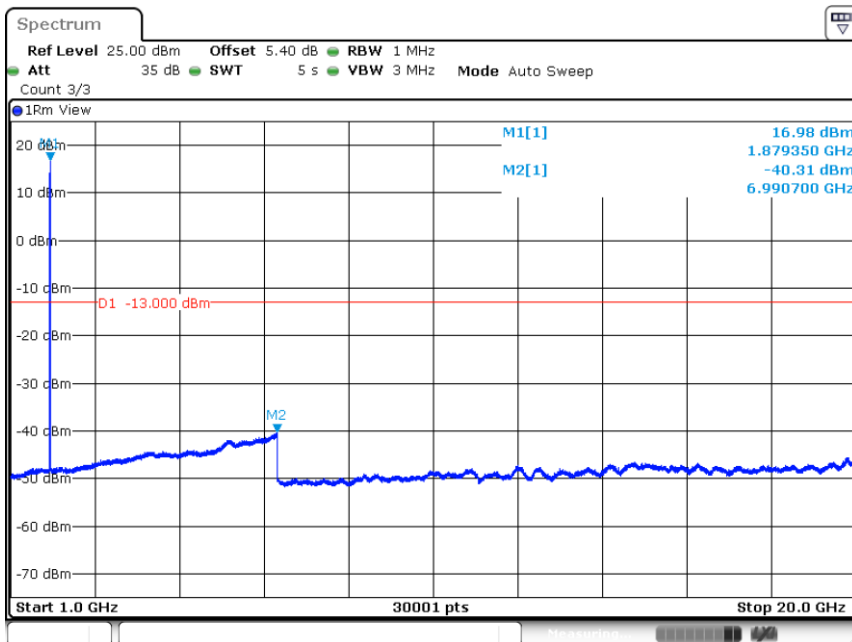
Date: 10.SEP.2020 21:44:31



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-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

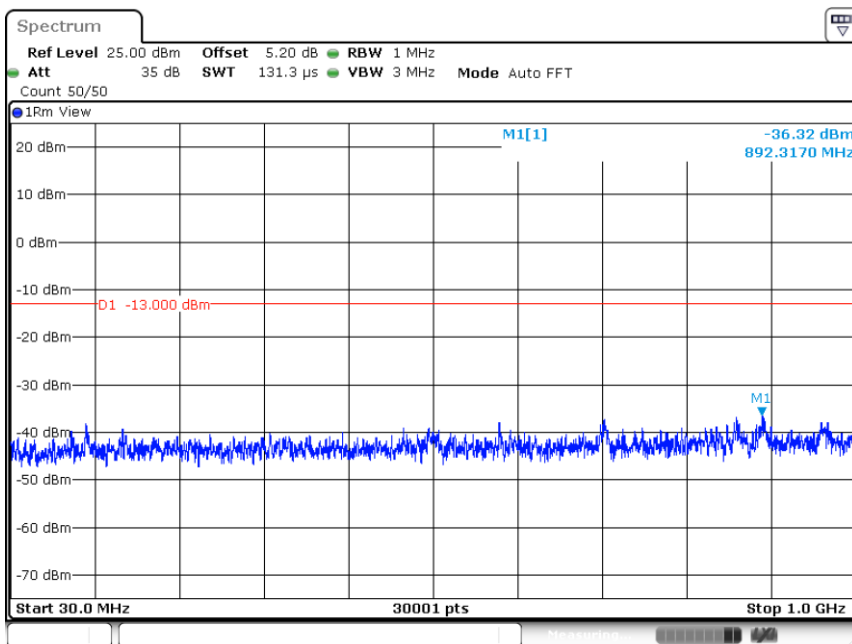
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)  
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053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

## Band2-9400-1000~20000MHz



Date: 10.SEP.2020 21:44:55

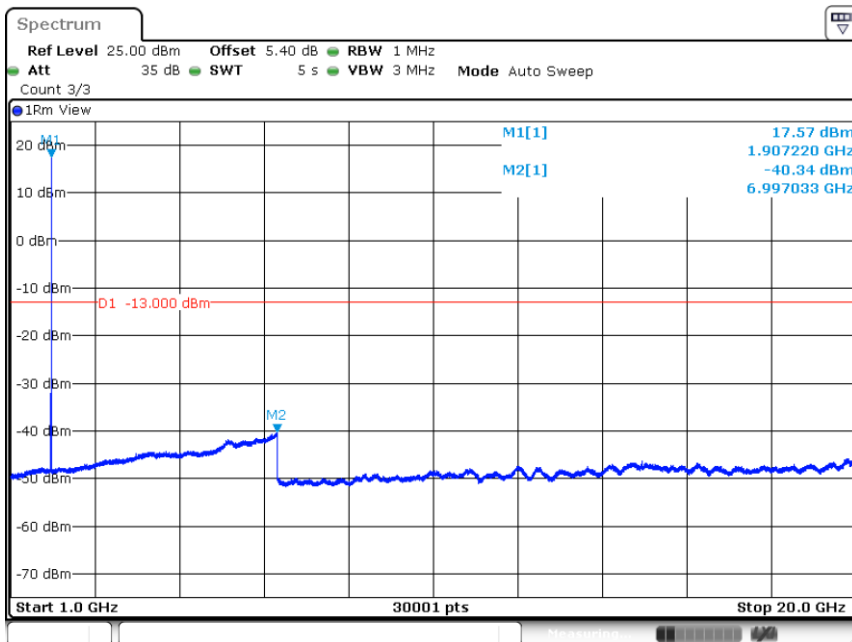
## Band2-9538-30~1000MHz



Date: 10.SEP.2020 21:45:08

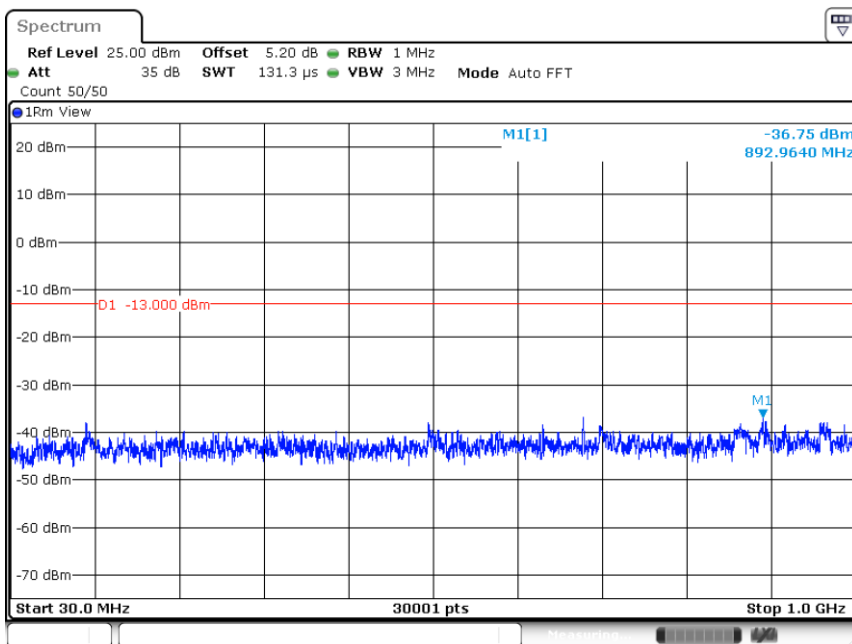


## Band2-9538-1000~20000MHz



Date: 10.SEP.2020 21:45:32

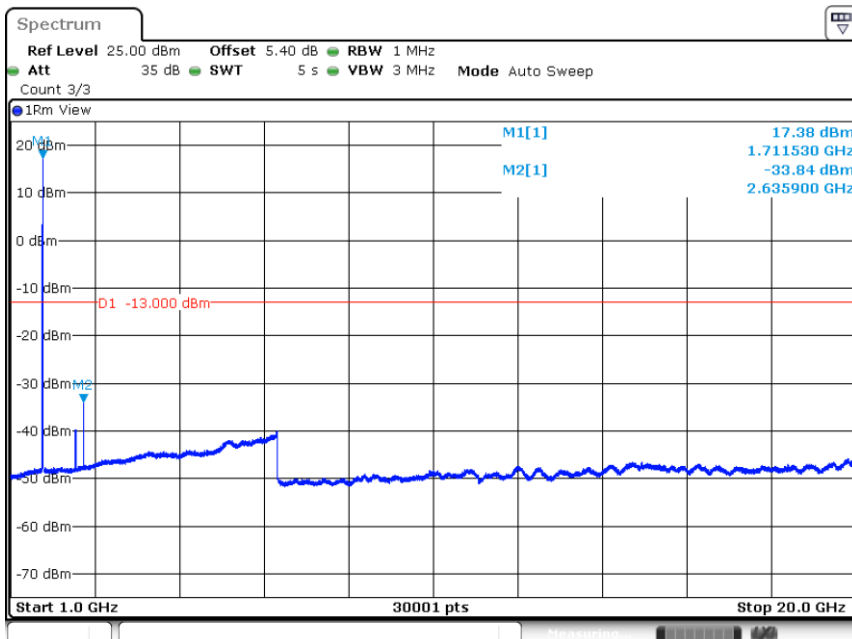
## Band4-1312-30~1000MHz



Date: 11.SEP.2020 09:32:52

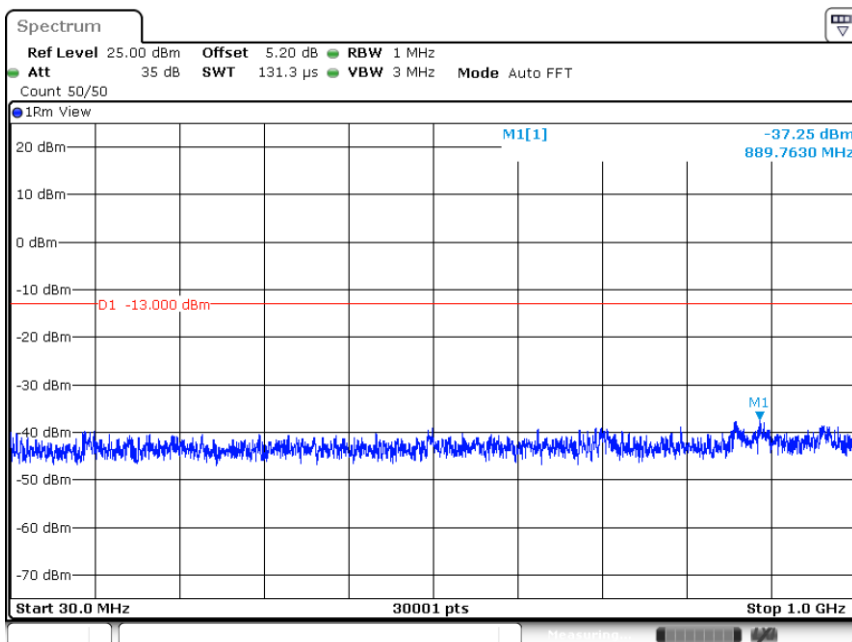


## Band4-1312-1000~20000MHz



Date: 11.SEP.2020 09:33:16

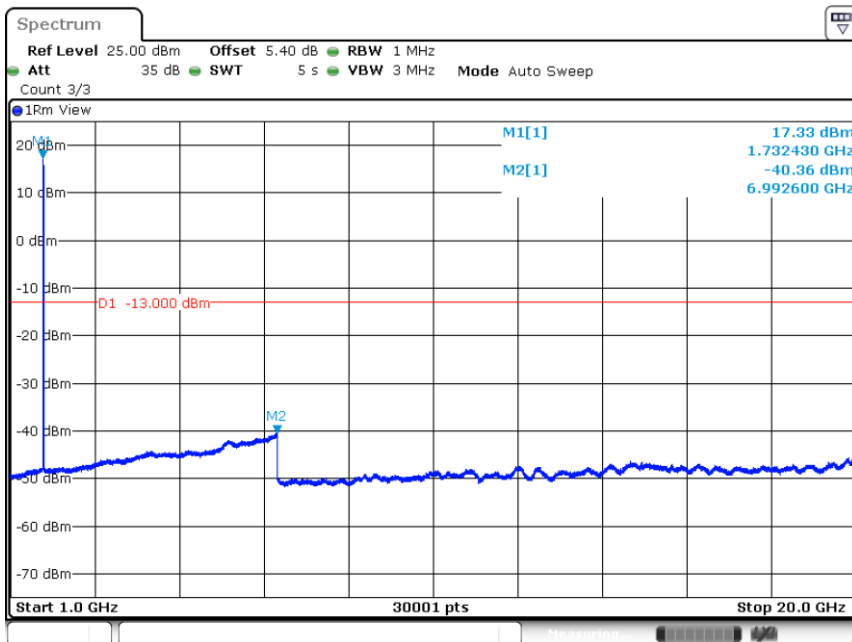
## Band4-1413-30~1000MHz



Date: 11.SEP.2020 09:33:29

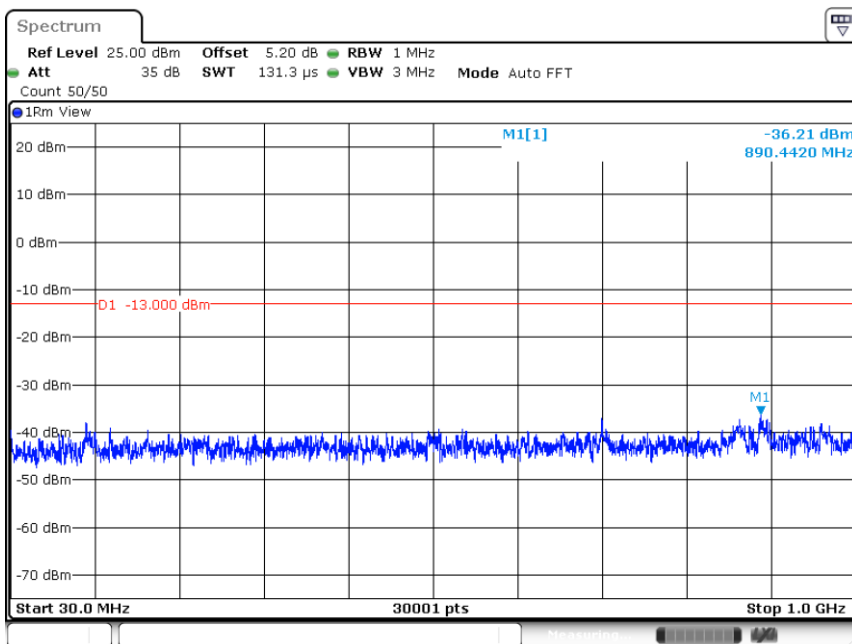


**Band4-1413-1000~20000MHz**



Date: 11.SEP.2020 09:33:52

**Band4-1513-30~1000MHz**



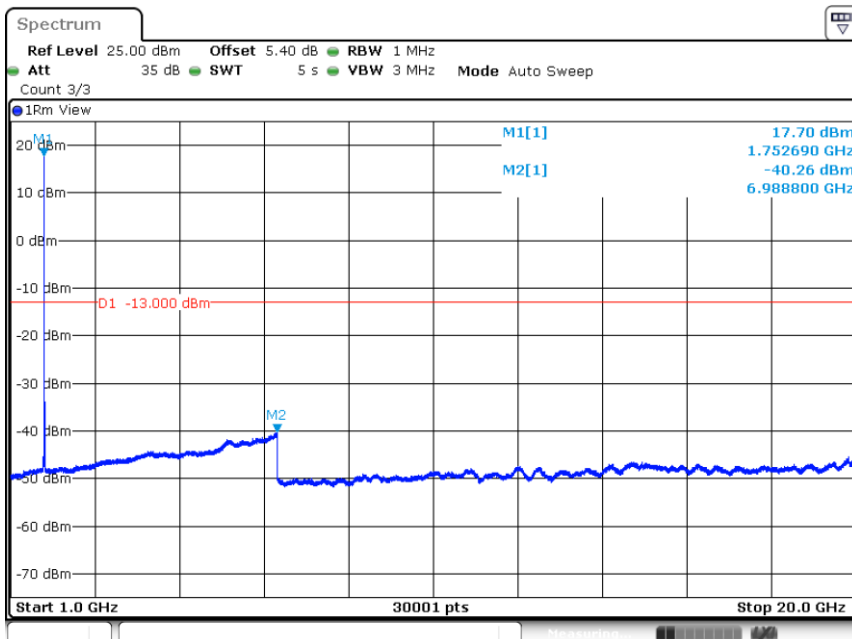
Date: 11.SEP.2020 09:34:05



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

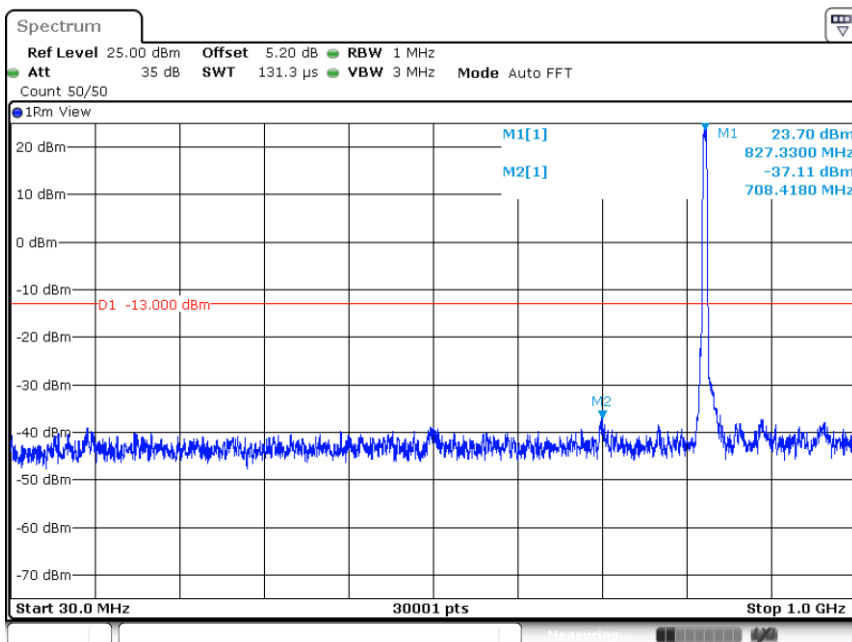
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)  
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053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

**Band4-1513-1000~20000MHz**



Date: 11.SEP.2020 09:34:29

**Band5-4132-30~1000MHz**



Date: 11.SEP.2020 09:51:55



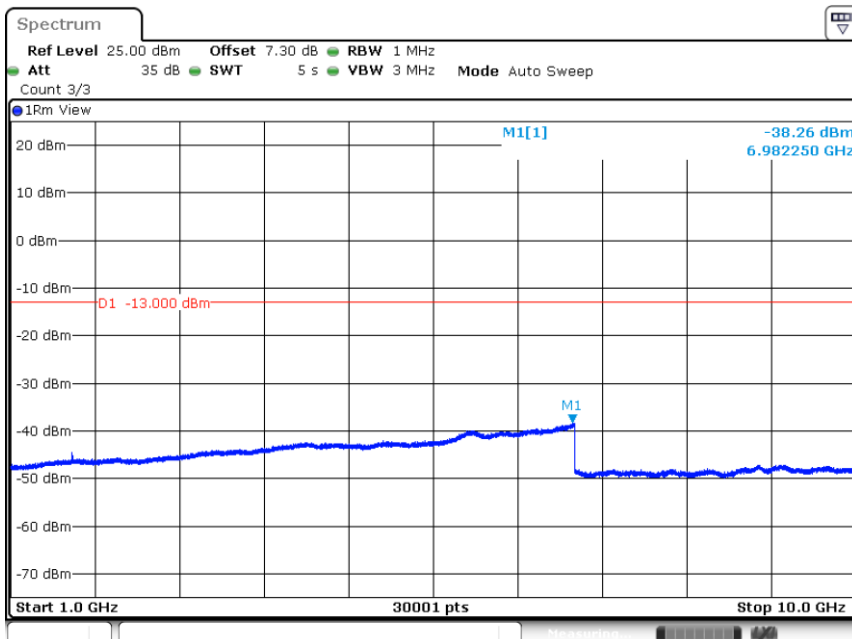
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic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

SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch (2019) China CCC Laboratory

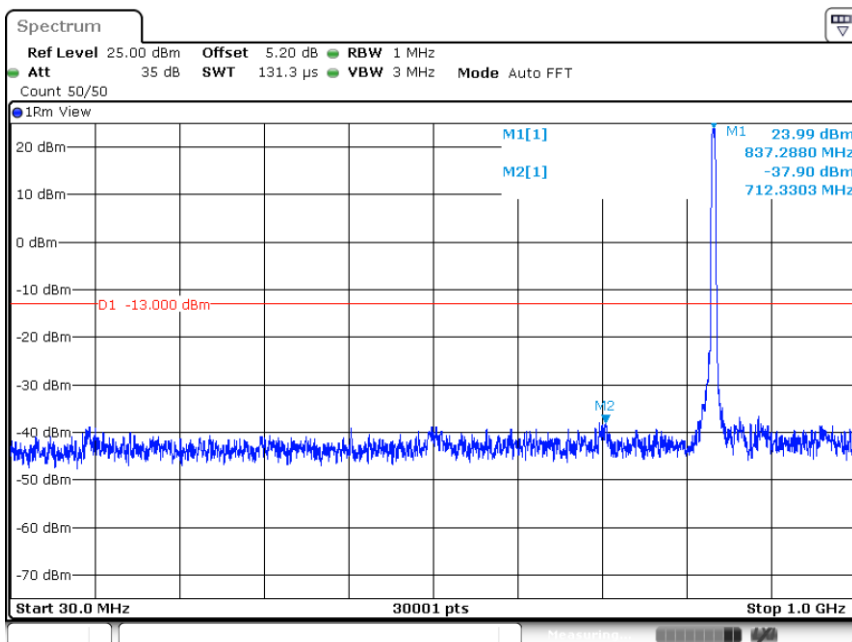
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn  
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

## Band5-4132-1000~10000MHz



Date: 11.SEP.2020 09:52:18

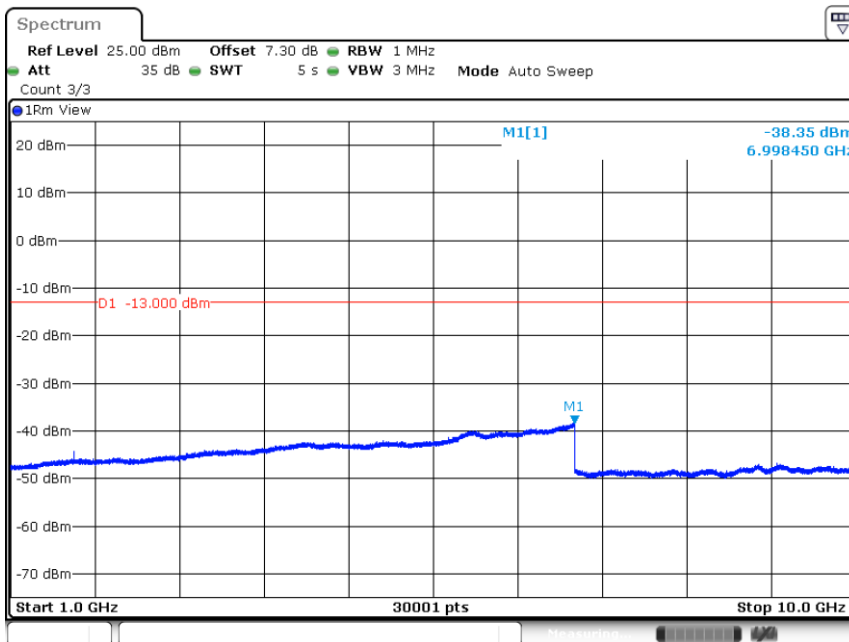
## Band5-4182-30~1000MHz



Date: 11.SEP.2020 09:52:32

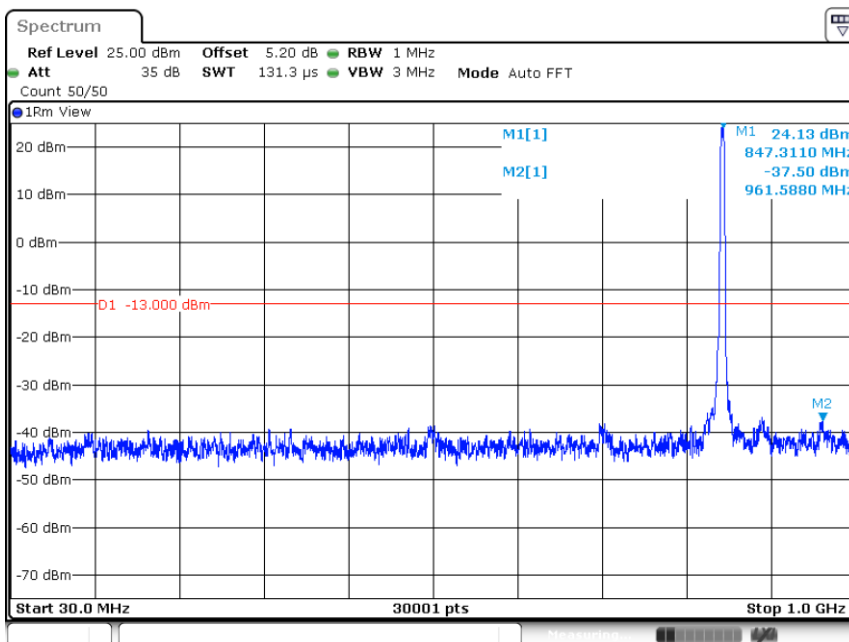


**Band5-4182-1000~10000MHz**



Date: 11.SEP.2020 09:52:55

**Band5-4233-30~1000MHz**

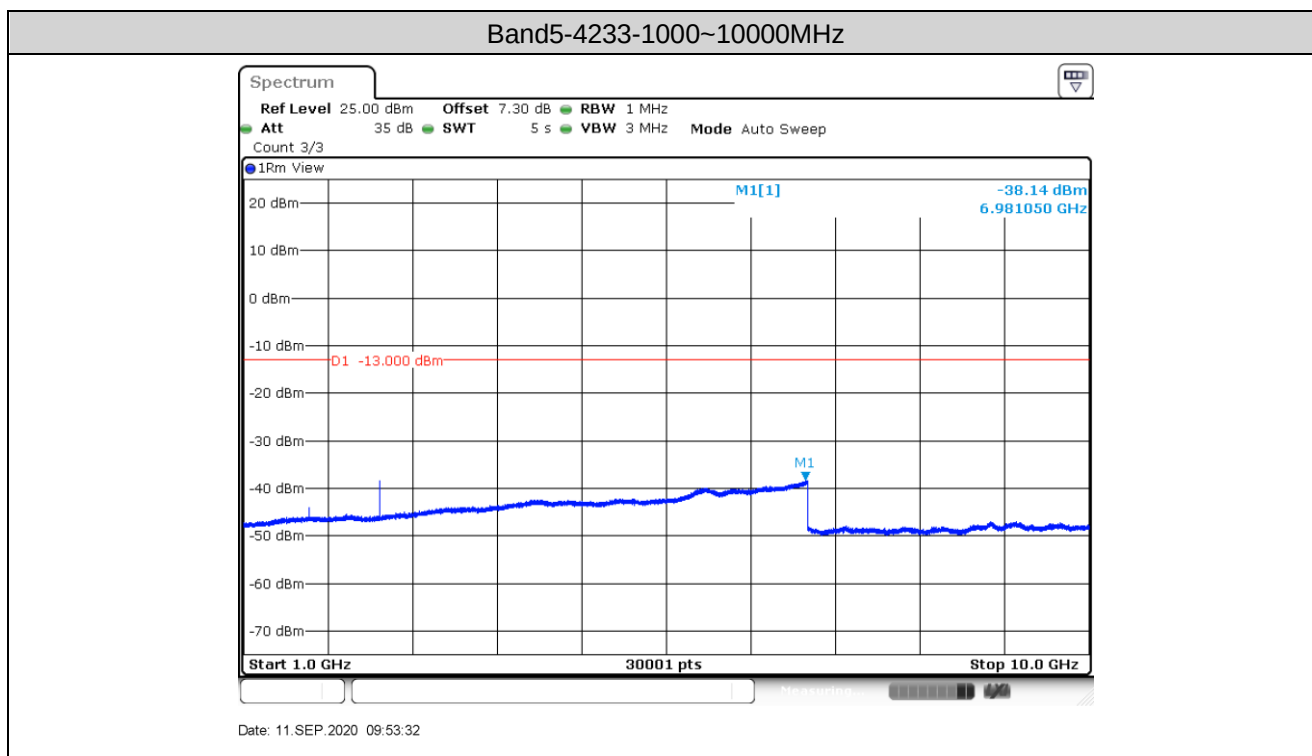


Date: 11.SEP.2020 09:53:09



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

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



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

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



## 7. Field Strength of Spurious Radiation

### 7.1. Test Band = WCDMA Band II

#### 7.1.1. Test Mode = WCDMA/TM1

##### 7.1.1.1. Test Channel = LCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 58.1799         | -71.10      | -13.00           | 58.10       | 222         | 35        | Vertical     |
| 109.5440        | -64.86      | -13.00           | 51.86       | 284         | 257       | Vertical     |
| 734.6917        | -62.88      | -13.00           | 49.88       | 274         | 193       | Vertical     |
| 3748.5250       | -61.52      | -13.00           | 48.52       | 259         | 352       | Vertical     |
| 7359.1453       | -55.60      | -13.00           | 42.60       | 256         | 35        | Vertical     |
| 17997.9999      | -40.37      | -13.00           | 27.37       | 281         | 352       | Vertical     |
| 43.2412         | -64.04      | -13.00           | 51.04       | 178         | 130       | Horizontal   |
| 80.1030         | -74.88      | -13.00           | 61.88       | 169         | 130       | Horizontal   |
| 229.1025        | -68.61      | -13.00           | 55.61       | 184         | 289       | Horizontal   |
| 4519.5507       | -61.55      | -13.00           | 48.55       | 175         | 352       | Horizontal   |
| 7434.1478       | -56.44      | -13.00           | 43.44       | 169         | 130       | Horizontal   |
| 16391.4464      | -43.26      | -13.00           | 30.26       | 199         | 289       | Horizontal   |

##### 7.1.1.2. Test Channel = MCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 49.8860         | -72.65      | -13.00           | 59.65       | 241         | 130       | Vertical     |
| 103.7722        | -65.49      | -13.00           | 52.49       | 259         | 193       | Vertical     |
| 372.5726        | -67.05      | -13.00           | 54.05       | 271         | 162       | Vertical     |
| 3576.0192       | -62.04      | -13.00           | 49.04       | 256         | 193       | Vertical     |
| 7967.1656       | -55.81      | -13.00           | 42.81       | 288         | 320       | Vertical     |
| 17997.4999      | -40.29      | -13.00           | 27.29       | 247         | 35        | Vertical     |
| 44.4052         | -63.62      | -13.00           | 50.62       | 187         | 98        | 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](mailto:CN.Doccheck@sgs.com)

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

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



|            |        |        |       |     |     |            |
|------------|--------|--------|-------|-----|-----|------------|
| 99.1160    | -75.63 | -13.00 | 62.63 | 169 | 290 | Horizontal |
| 242.1011   | -68.69 | -13.00 | 55.69 | 175 | 130 | Horizontal |
| 5556.0852  | -61.55 | -13.00 | 48.55 | 184 | 290 | Horizontal |
| 7462.6488  | -56.04 | -13.00 | 43.04 | 162 | 354 | Horizontal |
| 16398.4466 | -43.31 | -13.00 | 30.31 | 198 | 256 | Horizontal |

### 7.1.1.3. Test Channel = HCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 48.4309         | -72.86      | -13.00           | 59.86       | 222         | 193       | Vertical     |
| 116.6738        | -64.83      | -13.00           | 51.83       | 247         | 352       | Vertical     |
| 393.1377        | -68.27      | -13.00           | 55.27       | 259         | 288       | Vertical     |
| 3714.5238       | -62.20      | -13.00           | 49.20       | 262         | 35        | Vertical     |
| 7460.1487       | -55.73      | -13.00           | 42.73       | 258         | 225       | Vertical     |
| 17996.4999      | -39.93      | -13.00           | 26.93       | 262         | 4         | Vertical     |
| 39.4095         | -63.93      | -13.00           | 50.93       | 198         | 259       | Horizontal   |
| 111.3386        | -75.48      | -13.00           | 62.48       | 174         | 259       | Horizontal   |
| 240.6945        | -67.86      | -13.00           | 54.86       | 165         | 66        | Horizontal   |
| 3841.5281       | -61.09      | -13.00           | 48.09       | 185         | 196       | Horizontal   |
| 7482.6494       | -56.28      | -13.00           | 43.28       | 162         | 326       | Horizontal   |
| 16394.9465      | -44.01      | -13.00           | 31.01       | 198         | 165       | Horizontal   |

## 7.2. Test Band = WCDMA Band IV

### 7.2.1. Test Mode = WCDMA/TM1

#### 7.2.1.1. Test Channel = LCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 47.0729         | -71.07      | -13.00           | 58.07       | 241         | 320       | Vertical     |
| 112.2601        | -62.50      | -13.00           | 49.50       | 259         | 162       | Vertical     |
| 610.4285        | -61.50      | -13.00           | 48.50       | 262         | 130       | Vertical     |
| 3702.0234       | -60.43      | -13.00           | 47.43       | 278         | 130       | 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](mailto:CN.Doccheck@sgs.com)

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

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



|            |        |        |       |     |     |            |
|------------|--------|--------|-------|-----|-----|------------|
| 7453.1484  | -53.33 | -13.00 | 40.33 | 265 | 288 | Vertical   |
| 17986.4996 | -33.89 | -13.00 | 20.89 | 248 | 320 | Vertical   |
| 44.8417    | -62.25 | -13.00 | 49.25 | 147 | 67  | Horizontal |
| 101.8321   | -73.20 | -13.00 | 60.20 | 198 | 232 | Horizontal |
| 242.8286   | -64.99 | -13.00 | 51.99 | 175 | 359 | Horizontal |
| 3542.0181  | -59.54 | -13.00 | 46.54 | 162 | 200 | Horizontal |
| 7465.1488  | -53.56 | -13.00 | 40.56 | 184 | 359 | Horizontal |
| 16404.9468 | -35.09 | -13.00 | 22.09 | 175 | 169 | Horizontal |

### 7.2.1.2. Test Channel = MCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 50.2740         | -70.83      | -13.00           | 57.83       | 222         | 320       | Vertical     |
| 107.3614        | -63.29      | -13.00           | 50.29       | 257         | 352       | Vertical     |
| 287.4024        | -66.27      | -13.00           | 53.27       | 265         | 257       | Vertical     |
| 3571.5191       | -60.48      | -13.00           | 47.48       | 248         | 320       | Vertical     |
| 7412.1471       | -53.34      | -13.00           | 40.34       | 291         | 67        | Vertical     |
| 17998.5000      | -34.22      | -13.00           | 21.22       | 258         | 320       | Vertical     |
| 41.8346         | -62.58      | -13.00           | 49.58       | 187         | 236       | Horizontal   |
| 98.8249         | -73.38      | -13.00           | 60.38       | 139         | 268       | Horizontal   |
| 227.5019        | -65.82      | -13.00           | 52.82       | 187         | 74        | Horizontal   |
| 3631.0210       | -59.47      | -13.00           | 46.47       | 195         | 236       | Horizontal   |
| 7475.6492       | -53.74      | -13.00           | 40.74       | 175         | 300       | Horizontal   |
| 16398.9466      | -35.26      | -13.00           | 22.26       | 169         | 359       | Horizontal   |

### 7.2.1.3. Test Channel = HCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 48.5279         | -71.01      | -13.00           | 58.01       | 222         | 224       | Vertical     |
| 109.8350        | -62.58      | -13.00           | 49.58       | 257         | 287       | Vertical     |
| 395.4173        | -65.84      | -13.00           | 52.84       | 286         | 129       | Vertical     |
| 3521.5174       | -60.54      | -13.00           | 47.54       | 284         | 4         | 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](mailto:CN.Doccheck@sgs.com)

SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch / 深圳分公司 / SGS Laboratory

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



|            |        |        |       |     |     |            |
|------------|--------|--------|-------|-----|-----|------------|
| 7450.1483  | -53.37 | -13.00 | 40.37 | 259 | 160 | Vertical   |
| 17997.4999 | -34.23 | -13.00 | 21.23 | 275 | 255 | Vertical   |
| 44.0172    | -62.32 | -13.00 | 49.32 | 187 | 352 | Horizontal |
| 99.0190    | -73.15 | -13.00 | 60.15 | 196 | 98  | Horizontal |
| 242.3436   | -65.59 | -13.00 | 52.59 | 184 | 67  | Horizontal |
| 3599.5200  | -59.49 | -13.00 | 46.49 | 175 | 130 | Horizontal |
| 7497.1499  | -53.41 | -13.00 | 40.41 | 169 | 225 | Horizontal |
| 16403.4468 | -35.45 | -13.00 | 22.45 | 199 | 256 | Horizontal |

### 7.3. Test Band = WCDMA Band V

#### 7.3.1. Test Mode = WCDMA/TM1

##### 7.3.1.1. Test Channel = LCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 50.5165         | -72.13      | -13.00           | 59.13       | 284         | 67        | Vertical     |
| 112.6481        | -65.24      | -13.00           | 52.24       | 259         | 256       | Vertical     |
| 354.7722        | -69.30      | -13.00           | 56.30       | 265         | 288       | Vertical     |
| 1651.7303       | -60.27      | -13.00           | 47.27       | 287         | 232       | Vertical     |
| 2465.8932       | -46.19      | -13.00           | 33.19       | 214         | 149       | Vertical     |
| 7360.2120       | -56.03      | -13.00           | 43.03       | 259         | 98        | Vertical     |
| 44.4052         | -64.57      | -13.00           | 51.57       | 178         | 131       | Horizontal   |
| 554.4567        | -63.81      | -13.00           | 50.81       | 169         | 68        | Horizontal   |
| 1654.1308       | -56.36      | -13.00           | 43.36       | 174         | 55        | Horizontal   |
| 2700.7401       | -50.99      | -13.00           | 37.99       | 185         | 96        | Horizontal   |
| 5640.0213       | -61.05      | -13.00           | 48.05       | 167         | 321       | Horizontal   |
| 9338.9446       | -52.89      | -13.00           | 39.89       | 199         | 195       | Horizontal   |

##### 7.3.1.2. Test Channel = MCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 115.8978        | -65.50      | -13.00           | 52.50       | 254         | 322       | 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](mailto:CN.Doccheck@sgs.com)

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



|           |        |        |       |     |     |            |
|-----------|--------|--------|-------|-----|-----|------------|
| 488.9784  | -66.22 | -13.00 | 53.22 | 259 | 195 | Vertical   |
| 1670.5341 | -60.33 | -13.00 | 47.33 | 257 | 232 | Vertical   |
| 2465.4931 | -47.02 | -13.00 | 34.02 | 265 | 187 | Vertical   |
| 7417.3806 | -56.01 | -13.00 | 43.01 | 284 | 163 | Vertical   |
| 9897.3299 | -52.69 | -13.00 | 39.69 | 256 | 68  | Vertical   |
| 45.0843   | -63.98 | -13.00 | 50.98 | 187 | 4   | Horizontal |
| 236.1838  | -67.86 | -13.00 | 54.86 | 169 | 351 | Horizontal |
| 1670.9342 | -58.29 | -13.00 | 45.29 | 175 | 154 | Horizontal |
| 2465.4931 | -46.38 | -13.00 | 33.38 | 184 | 356 | Horizontal |
| 7444.9148 | -55.98 | -13.00 | 42.98 | 162 | 256 | Horizontal |
| 9324.7108 | -52.57 | -13.00 | 39.57 | 187 | 351 | Horizontal |

### 7.3.1.3. Test Channel = HCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 50.3225         | -72.42      | -13.00           | 59.42       | 187         | 348       | Vertical     |
| 115.8978        | -65.60      | -13.00           | 52.60       | 169         | 223       | Vertical     |
| 461.9141        | -67.07      | -13.00           | 54.07       | 174         | 317       | Vertical     |
| 1942.9886       | -58.12      | -13.00           | 45.12       | 185         | 0         | Vertical     |
| 2688.7377       | -52.20      | -13.00           | 39.20       | 162         | 83        | Vertical     |
| 8021.7341       | -55.52      | -13.00           | 42.52       | 187         | 35        | Vertical     |
| 39.0215         | -64.61      | -13.00           | 51.61       | 147         | 164       | Horizontal   |
| 103.2872        | -75.27      | -13.00           | 62.27       | 165         | 266       | Horizontal   |
| 239.1910        | -67.70      | -13.00           | 54.70       | 184         | 66        | Horizontal   |
| 1691.3383       | -58.91      | -13.00           | 45.91       | 195         | 60        | Horizontal   |
| 2700.7401       | -50.93      | -13.00           | 37.93       | 178         | 162       | Horizontal   |
| 9314.9105       | -52.53      | -13.00           | 39.53       | 162         | 132       | 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-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

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

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



## Test on the worst case:

### 7.4. Test Band = WCDMA Band V

#### 7.4.1. Test Mode = WCDMA/TM1

##### 7.4.1.1. Test Channel = LCH

| Frequency (MHz) | Level (dBm) | Limit Line (dBm) | Margin (dB) | Height [cm] | Angle [°] | Polarization |
|-----------------|-------------|------------------|-------------|-------------|-----------|--------------|
| 32.1826         | -72.61      | -13.00           | 59.61       | 258         | 95        | Vertical     |
| 113.2302        | -65.00      | -13.00           | 52.00       | 296         | 0         | Vertical     |
| 347.8849        | -68.39      | -13.00           | 55.39       | 158         | 227       | Vertical     |
| 1616.1232       | -61.20      | -13.00           | 48.20       | 184         | 208       | Vertical     |
| 2846.3693       | -52.02      | -13.00           | 39.02       | 258         | 137       | Vertical     |
| 9322.1441       | -52.12      | -13.00           | 39.12       | 262         | 227       | Vertical     |
| 41.4466         | -63.65      | -13.00           | 50.65       | 188         | 69        | Horizontal   |
| 85.7778         | -73.28      | -13.00           | 60.28       | 196         | 261       | Horizontal   |
| 236.3778        | -68.34      | -13.00           | 55.34       | 231         | 229       | Horizontal   |
| 1567.7135       | -61.77      | -13.00           | 48.77       | 251         | 326       | Horizontal   |
| 2693.5387       | -50.75      | -13.00           | 37.75       | 184         | 134       | Horizontal   |
| 7477.3492       | -55.88      | -13.00           | 42.88       | 174         | 325       | Horizontal   |

#### Remark:

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





## 8. Frequency Stability

### 8.1. Frequency Vs Voltage

| Voltage |         |               |                  |                |                 |             |         |
|---------|---------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band    | Channel | Voltage (Vdc) | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band2   | 9262    | VL            | NT               | 1.54           | 0.000831        | ±2.5        | PASS    |
| Band2   | 9262    | VN            | NT               | 0.97           | 0.000524        | ±2.5        | PASS    |
| Band2   | 9262    | VH            | NT               | 1.54           | 0.000831        | ±2.5        | PASS    |
| Band2   | 9400    | VL            | NT               | -2.25          | -0.001197       | ±2.5        | PASS    |
| Band2   | 9400    | VN            | NT               | -2.34          | -0.001245       | ±2.5        | PASS    |
| Band2   | 9400    | VH            | NT               | -2.60          | -0.001383       | ±2.5        | PASS    |
| Band2   | 9538    | VL            | NT               | -8.28          | -0.004341       | ±2.5        | PASS    |
| Band2   | 9538    | VN            | NT               | -8.07          | -0.004230       | ±2.5        | PASS    |
| Band2   | 9538    | VH            | NT               | -8.00          | -0.004194       | ±2.5        | PASS    |
| Band4   | 1312    | VL            | NT               | 16.77          | 0.009793        | ±2.5        | PASS    |
| Band4   | 1312    | VN            | NT               | 16.79          | 0.009805        | ±2.5        | PASS    |
| Band4   | 1312    | VH            | NT               | 17.02          | 0.009939        | ±2.5        | PASS    |
| Band4   | 1413    | VL            | NT               | -1.97          | -0.001137       | ±2.5        | PASS    |
| Band4   | 1413    | VN            | NT               | -1.93          | -0.001114       | ±2.5        | PASS    |
| Band4   | 1413    | VH            | NT               | -2.02          | -0.001166       | ±2.5        | PASS    |
| Band4   | 1513    | VL            | NT               | -16.21         | -0.009249       | ±2.5        | PASS    |
| Band4   | 1513    | VN            | NT               | -16.14         | -0.009209       | ±2.5        | PASS    |
| Band4   | 1513    | VH            | NT               | -16.26         | -0.009278       | ±2.5        | PASS    |
| Band5   | 4132    | VL            | NT               | 0.87           | 0.001053        | ±2.5        | PASS    |
| Band5   | 4132    | VN            | NT               | 0.71           | 0.000859        | ±2.5        | PASS    |
| Band5   | 4132    | VH            | NT               | 0.65           | 0.000787        | ±2.5        | PASS    |
| Band5   | 4182    | VL            | NT               | -0.09          | -0.000108       | ±2.5        | PASS    |
| Band5   | 4182    | VN            | NT               | -0.16          | -0.000191       | ±2.5        | PASS    |
| Band5   | 4182    | VH            | NT               | -0.31          | -0.000371       | ±2.5        | PASS    |
| Band5   | 4233    | VL            | NT               | -2.66          | -0.003142       | ±2.5        | PASS    |
| Band5   | 4233    | VN            | NT               | -2.43          | -0.002870       | ±2.5        | PASS    |
| Band5   | 4233    | VH            | NT               | -2.54          | -0.003000       | ±2.5        | PASS    |



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

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



## 8.2. Frequency Vs Temperature

| Temperature |         |               |                  |                |                 |             |         |
|-------------|---------|---------------|------------------|----------------|-----------------|-------------|---------|
| Band        | Channel | Voltage (Vdc) | Temperature (°C) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict |
| Band2       | 9262    | NV            | -30              | 1.86           | 0.001004        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | -20              | 1.94           | 0.001047        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | -10              | 2.12           | 0.001144        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | 0                | 2.13           | 0.001150        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | 10               | 2.18           | 0.001177        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | 20               | 2.27           | 0.001225        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | 30               | 2.49           | 0.001344        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | 40               | 2.60           | 0.001404        | ±2.5        | PASS    |
| Band2       | 9262    | NV            | 50               | 2.50           | 0.001350        | ±2.5        | PASS    |
| Band2       | 9400    | NV            | -30              | -2.55          | -0.001356       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | -20              | -2.67          | -0.001420       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | -10              | -2.44          | -0.001298       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | 0                | -2.68          | -0.001426       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | 10               | -2.53          | -0.001346       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | 20               | -2.96          | -0.001574       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | 30               | -2.73          | -0.001452       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | 40               | -2.73          | -0.001452       | ±2.5        | PASS    |
| Band2       | 9400    | NV            | 50               | -2.65          | -0.001410       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | -30              | -8.08          | -0.004236       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | -20              | -8.08          | -0.004236       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | -10              | -7.77          | -0.004073       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | 0                | -7.54          | -0.003953       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | 10               | -7.82          | -0.004099       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | 20               | -7.78          | -0.004078       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | 30               | -7.86          | -0.004120       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | 40               | -8.00          | -0.004194       | ±2.5        | PASS    |
| Band2       | 9538    | NV            | 50               | -7.86          | -0.004120       | ±2.5        | PASS    |
| Band4       | 1312    | NV            | -30              | 17.19          | 0.010039        | ±2.5        | PASS    |
| Band4       | 1312    | NV            | -20              | 17.24          | 0.010068        | ±2.5        | PASS    |
| Band4       | 1312    | NV            | -10              | 17.26          | 0.010079        | ±2.5        | PASS    |
| Band4       | 1312    | NV            | 0                | 17.32          | 0.010114        | ±2.5        | PASS    |
| Band4       | 1312    | NV            | 10               | 17.19          | 0.010039        | ±2.5        | PASS    |
| Band4       | 1312    | NV            | 20               | 17.26          | 0.010079        | ±2.5        | PASS    |



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

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

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

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



|       |      |    |     |        |           |      |      |
|-------|------|----|-----|--------|-----------|------|------|
| Band4 | 1312 | NV | 30  | 17.38  | 0.010149  | ±2.5 | PASS |
| Band4 | 1312 | NV | 40  | 16.97  | 0.009910  | ±2.5 | PASS |
| Band4 | 1312 | NV | 50  | 17.16  | 0.010021  | ±2.5 | PASS |
| Band4 | 1413 | NV | -30 | -1.87  | -0.001079 | ±2.5 | PASS |
| Band4 | 1413 | NV | -20 | -1.92  | -0.001108 | ±2.5 | PASS |
| Band4 | 1413 | NV | -10 | -1.81  | -0.001045 | ±2.5 | PASS |
| Band4 | 1413 | NV | 0   | -2.06  | -0.001189 | ±2.5 | PASS |
| Band4 | 1413 | NV | 10  | -1.57  | -0.000906 | ±2.5 | PASS |
| Band4 | 1413 | NV | 20  | -1.85  | -0.001068 | ±2.5 | PASS |
| Band4 | 1413 | NV | 30  | -1.97  | -0.001137 | ±2.5 | PASS |
| Band4 | 1413 | NV | 40  | -2.04  | -0.001177 | ±2.5 | PASS |
| Band4 | 1413 | NV | 50  | -1.78  | -0.001027 | ±2.5 | PASS |
| Band4 | 1513 | NV | -30 | -16.24 | -0.009266 | ±2.5 | PASS |
| Band4 | 1513 | NV | -20 | -16.31 | -0.009306 | ±2.5 | PASS |
| Band4 | 1513 | NV | -10 | -16.42 | -0.009369 | ±2.5 | PASS |
| Band4 | 1513 | NV | 0   | -16.54 | -0.009437 | ±2.5 | PASS |
| Band4 | 1513 | NV | 10  | -16.40 | -0.009358 | ±2.5 | PASS |
| Band4 | 1513 | NV | 20  | -16.39 | -0.009352 | ±2.5 | PASS |
| Band4 | 1513 | NV | 30  | -16.29 | -0.009295 | ±2.5 | PASS |
| Band4 | 1513 | NV | 40  | -16.28 | -0.009289 | ±2.5 | PASS |
| Band4 | 1513 | NV | 50  | -16.27 | -0.009283 | ±2.5 | PASS |
| Band5 | 4132 | NV | -30 | 0.94   | 0.001137  | ±2.5 | PASS |
| Band5 | 4132 | NV | -20 | 0.88   | 0.001065  | ±2.5 | PASS |
| Band5 | 4132 | NV | -10 | 0.93   | 0.001125  | ±2.5 | PASS |
| Band5 | 4132 | NV | 0   | 1.05   | 0.001271  | ±2.5 | PASS |
| Band5 | 4132 | NV | 10  | 1.02   | 0.001234  | ±2.5 | PASS |
| Band5 | 4132 | NV | 20  | 1.04   | 0.001258  | ±2.5 | PASS |
| Band5 | 4132 | NV | 30  | 0.98   | 0.001186  | ±2.5 | PASS |
| Band5 | 4132 | NV | 40  | 1.11   | 0.001343  | ±2.5 | PASS |
| Band5 | 4132 | NV | 50  | 1.10   | 0.001331  | ±2.5 | PASS |
| Band5 | 4182 | NV | -30 | -0.24  | -0.000287 | ±2.5 | PASS |
| Band5 | 4182 | NV | -20 | -0.19  | -0.000227 | ±2.5 | PASS |
| Band5 | 4182 | NV | -10 | -0.21  | -0.000251 | ±2.5 | PASS |
| Band5 | 4182 | NV | 0   | -0.24  | -0.000287 | ±2.5 | PASS |
| Band5 | 4182 | NV | 10  | -0.10  | -0.000120 | ±2.5 | PASS |
| Band5 | 4182 | NV | 20  | -0.36  | -0.000430 | ±2.5 | PASS |
| Band5 | 4182 | NV | 30  | -0.29  | -0.000347 | ±2.5 | PASS |



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

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

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

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



|       |      |    |     |       |           |      |      |
|-------|------|----|-----|-------|-----------|------|------|
| Band5 | 4182 | NV | 40  | -0.31 | -0.000371 | ±2.5 | PASS |
| Band5 | 4182 | NV | 50  | -0.18 | -0.000215 | ±2.5 | PASS |
| Band5 | 4233 | NV | -30 | -2.50 | -0.002953 | ±2.5 | PASS |
| Band5 | 4233 | NV | -20 | -2.57 | -0.003036 | ±2.5 | PASS |
| Band5 | 4233 | NV | -10 | -2.54 | -0.003000 | ±2.5 | PASS |
| Band5 | 4233 | NV | 0   | -2.52 | -0.002977 | ±2.5 | PASS |
| Band5 | 4233 | NV | 10  | -2.57 | -0.003036 | ±2.5 | PASS |
| Band5 | 4233 | NV | 20  | -2.75 | -0.003248 | ±2.5 | PASS |
| Band5 | 4233 | NV | 30  | -2.52 | -0.002977 | ±2.5 | PASS |
| Band5 | 4233 | NV | 40  | -2.63 | -0.003107 | ±2.5 | PASS |
| Band5 | 4233 | NV | 50  | -2.47 | -0.002918 | ±2.5 | PASS |

The End

