

## **ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**

OF

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C AND INDUSTRY CANADA RSS 247 REQUIREMENT

|                         | •••   |
|-------------------------|---|
| FCC Applicant:          | Honeywell International Inc.  |
| IC Applicant:           | 9680 Old Bailes Road, Fort Mill, SC 29707, USA Honeywell International Inc. |
|                         | 9680 Old Bailes Road, Fort Mill, SC 29707, USA                              |
| Product Name:           | Vehicle Mount Computer  |
| Brand Name:             | Honeywell   |
| Model No.:              | VM1A-L0N  |
| Model Difference:       | N/A   |
| FCC ID:                 | HD5-VM1AL0N   |
| IC:                     | 1693B-VM1AL0N   |
| Report Number:          | ER/2018/90025   |
| FCC Rule Part:          | §15.247, Cat: DTS   |
| IC Rule Part:           | RSS-247 issue 2 Feb 2017  |
| Issue Date:             | Nov. 08, 2018   |
| Date of Test:           | Sep. 12, 2018 ~ Oct. 02, 2018   |
| Date of EUT Received:   | Sep. 04, 2018   |
| We hereby certify that: |   |

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits. The test results of this report relate only to the tested sample identified in this report.

Tested By:

Approved By:

Louis Chen / Sr. Engineer

CHUN-CHIEH CHEN / Asst. Supervisor



Testing Laboratory 0513

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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.



# **Revision History**

| Report Number | Revision | Description                       | Effected<br>Page      | Issue Date    | Revised By |
|---------------|----------|-----------------------------------|-----------------------|---------------|------------|
| ER/2018/90025 | Rev.00   | Initial creation of docu-<br>ment | All                   | Oct. 05, 2018 | Elle Chang |
| ER/2018/90025 | Rev. 01  | Section 1.1, 11 &14 & 15          | 5, 57~176,<br>183~186 | Nov. 08, 2018 | Allen Tsai |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format document is subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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 document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134, WuKungRoad, NewTaipeiIndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號



# **Table of Contents**

| 1  | GENERAL INFORMATION                                   | 4     |
|----|---|-------|
| 2  | SYSTEM TEST CONFIGURATION                             | 7     |
| 3  | SUMMARY OF TEST RESULTS                               | 9     |
| 4  | DESCRIPTION OF TEST MODES                             | 9     |
| 5  | MEASUREMENT UNCERTAINTY                               | 11    |
| 6  | CONDUCTED EMISSION TEST                               | 12    |
| 7  | DUTY CYCLE OF TEST SIGNAL                             | 16    |
| 8  | PEAK OUTPUT POWER MEASUREMENT                         | 18    |
| 9  | 6dB & 99% BANDWIDTH MEASUREMENT                       | 29    |
| 10 | CONDUCTED BAND EDGE AND SPURIOUS EMISSION MEASUREMENT | 43    |
| 11 | RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT   | 52    |
| 12 | PEAK POWER SPECTRAL DENSITY                           | . 177 |
| 13 | ANTENNA REQUIREMENT                                   | . 182 |
|    |   |       |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測试之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 form 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 ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



#### **GENERAL INFORMATION** 1

### **1.1 Product description**

General:

| Product Name:          | Vehicle Mo              | Vehicle Mount Computer   |  |  |
|------------------------|-------------------------|--|--|--|
| Brand Name:            | Honeywell               | Honeywell  |  |  |
| Model No.:             | VM1A-L0N                | 1  |  |  |
| Model Difference:      | N/A                     |  |  |  |
| Product HW/SW version: | VM1AL0N / 85.00.00-0322 |  |  |  |
| Radio HW/SW version:   | V1.0 / V5.1             | 1.1.28U  |  |  |
|                        | 10.8Vdc fro<br>Adapter. | om Rechargeable Li-ion Battery or 15Vdc from AC/DC               |  |  |
| Power Supply:          | Battery:                | Model No.: 163176-0001 Rev C / OVT310L1R00 C,<br>Supplier: TOTEX |  |  |
|                        | Adapter:                | Model No.: GT-46600-6015-T3,<br>Supplier: GlobTek, Inc.          |  |  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測试之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 form 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 ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



#### WLAN 2.4GHz:

| Wi-Fi   | Frequency<br>Range | Channels   | Rated Power<br>in dBm (Peak) | Rated Power<br>in dBm (EIRP) | Type of<br>Emission | Modulation<br>Technology |
|---|--------------------|--|------------------------------|------------------------------|---------------------|--------------------------|
| 802.11b   |                    |  | 25.84                        | 29.04                        | 13M8G1D             | DSSS,                    |
| 802.11g   | 2412-2462          | 11   | 27.68                        | 24.28                        | 16M9D1D             |                          |
| 802.11n<br>HT20   |                    |  | 27.67                        | 25.20                        | 18M1D1D             | OFDM                     |
| 802.11n<br>HT40   | 2422-2452          | 9  | 25.60                        | 22.35                        | 36M9D1D             |                          |
| Modulation type: CCK, DQPSK, DBPSK<br>64QAM, 16QAM, QPS |                    |  |                              |                              |                     |                          |
| Transitio   | n Rate:            | 802.11 b: 1/2/5.5/11 Mbps<br>802.11 g: 6/9/12/18/24/36/48/54 Mbps<br>802.11 n_20MHz: 6.5 – 144.4Mbps<br>802.11 n_40MHz: 13.5 – 300.0Mbps |                              |                              |                     |                          |

#### **Antenna Designation**

| Antenna<br>Type     | Supplier | Antenna<br>Model No. | Freq.<br>(MHz) | Transmitter<br>Chain | Peak Antenna<br>Gain (dBi) | MIMO An-<br>tenna Gain<br>(dBi) | Worst An-<br>tenna<br>Gain |
|---------------------|----------|----------------------|----------------|----------------------|----------------------------|---------------------------------|----------------------------|
| External<br>Di pala | LARSEN   | R380500314           | 2.4GHz         | Ch 0 & Ch 1          | 1.6                        | 4.61                            |                            |
| Di-pole<br>antenna  | LAIRD    | WTS 2450             | 2.4GHz         | Ch 0 & Ch 1          | 2.1                        | 5.11                            | V                          |
| Internal            | N/A      | N/A                  | 2.4GHz         | Ch0                  | 1.1                        | 4.00                            |                            |
| Printed<br>Antenna  | N/A      | N/A                  | 2.4GHz         | Ch1                  | 2.7                        | 4.98                            |                            |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測试之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 form 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 ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



### 1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247

FCC KDB 558074 D01 DTS Meas. Guidance v05

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

RSS-247 issue 2 Feb. 2017

RSS-Gen. issue 5 Apr. 2018

ANSI C63.10:2013

Note: All test items have been performed and record as per the above standards.

#### 1.3 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803

(TAF code 0513)

FCC Registration and Designation number are: 509634 / TW0001

Canada Registration Number: 4620A-4

### **1.4 Special Accessories**

There are no special accessories used while test was conducted.

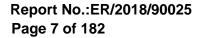
### **1.5 Equipment Modifications**

There was no modification incorporated into the EUT.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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 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 90 days only





### 2 SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### 2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

### 2.3 Test Procedure

### 2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz,. The CISPR Quasi-Peak and Average detector mode is employed according to §15.207 & RSS-Gen §8.8. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

### 2.3.2 Radiated Emissions

The EUT is a placed on as turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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 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.



### 2.4 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level. **Note:** 

The spectrum analyzer offset is derived from RF cable loss and attenuator factor. Following shows an offset computation example with cable loss and attenuator.

## 2.5 Configuration of Tested System

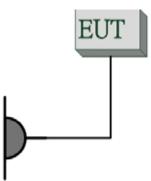
Fig. 2-1 Radiated Emission Configuration

EUT

Fig.2-3 Conducted Emission (Antenna Port) Configuration



Fig. 2-2 Conducted Emission (AC Power Line) Configuration



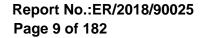
| Table | 2-1 | Equipment | Used in | Tested | System         |
|-------|-----|-----------|---------|--------|----------------|
| IUNIC | ~ . | Equipment |         | 100100 | <b>Oystenn</b> |

| ltem | Equipment             | Mfr/Brand | Model/Type<br>No. | Series No. | Data Cable | Power Cord |
|------|-----------------------|-----------|-------------------|------------|------------|------------|
| 1    | WLAN Test<br>Software | N/A       | N/A               | N/A        | N/A        | N/A        |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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.





### **3 SUMMARY OF TEST RESULTS**

| FCC Rules             | IC Rules   | Description Of Test                          | Result    |
|-----------------------|--|--|-----------|
| §15.207(a)            | RSS-Gen §8.8   | AC Power Line Conducted<br>Emission          | Compliant |
| §15.247(b) (3)        | RSS-247 §5.4(4)  | Peak Output Power                            | Compliant |
| §15.247(a)(2)         | RSS-247 §5.1 (1)<br>RSS-Gen §6.7                               | 6dB & 99% Emission Bandwidth                 | Compliant |
| §15.247(d)            | RSS-247 §5.5<br>RSS-Gen §8.10                                  | Conducted Band Edge<br>and Spurious Emission | Compliant |
| §15.247(d)            | RSS-247 §5.5<br>RSS-Gen §8.9<br>RSS-Gen §8.10<br>RSS-Gen §6.13 | Radiated Band Edge<br>and Spurious Emission  | Compliant |
| §15.247(e)            | RSS-247 §5.2(2)  | Power Spectral Density                       | Compliant |
| §15.203<br>§15.247(b) | RSS- Gen §6.8  | Antenna Requirement                          | Compliant |

### 4 DESCRIPTION OF TEST MODES

### 4.1 Operated in 2400 ~ 2483.5MHz Band

11 channels are provided for 802.11b, 802.11g and 802.11n\_HT20

| CHANNEL | FREQUENCY | CHANNEL | FREQUENCY |
|---------|-----------|---------|-----------|
| 1       | 2412 MHz  | 7       | 2442 MHz  |
| 2       | 2417 MHz  | 8       | 2447 MHz  |
| 3       | 2422 MHz  | 9       | 2452 MHz  |
| 4       | 2427 MHz  | 10      | 2457 MHz  |
| 5       | 2432 MHz  | 11      | 2462 MHz  |
| 6       | 2437 MHz  |         |           |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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.



### 4.2 The Worst Test Modes and Channel Details

- 1. The EUT has been tested under operating condition.
- 2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
- 3. Investigation has been done on all the possible configurations for searching the worst case.

### **RADIATED EMISSION TEST:**

| RADIATED EMISSION TEST (BELOW 1 GHz) |                      |                   |            |                     |                 |  |
|--------------------------------------|----------------------|-------------------|------------|---------------------|-----------------|--|
| MODE                                 | AVAILABLE<br>CHANNEL | TESTED<br>CHANNEL | MODULATION | DATA RATE<br>(Mbps) | ANTENNA<br>PORT |  |
| 802.11g                              | 1 to 11              | 1,6,11            | OFDM       | 6                   | 2TX             |  |

| RADIATED EMISSION TEST (ABOVE 1 GHz) |                      |                   |            |                     |                 |  |  |
|--------------------------------------|----------------------|-------------------|------------|---------------------|-----------------|--|--|
| MODE                                 | AVAILABLE<br>CHANNEL | TESTED<br>CHANNEL | MODULATION | DATA RATE<br>(Mbps) | ANTENNA<br>PORT |  |  |
| 802.11b                              | 1 to 11              | 1, 6, 11          | DSSS       | 1                   | 2TX             |  |  |
| 802.11g                              | 1 to 11              | 1, 6, 11          | OFDM       | 6                   | 2TX             |  |  |
| 802.11n (HT20)                       | 1 to 11              | 1, 6, 11          | OFDM       | MCS 8               | MIMO            |  |  |
| 802.11n (HT40)                       | 3 to 9               | 3, 6, 9           | OFDM       | MCS 8               | MIMO            |  |  |

#### Note:

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11b/g/n WLAN Transmitter for channel Low, Mid and High, the worst case E2 position was reported.

### ANTENNA PORT CONDUCTED MEASUREMENT:

| CONDUCTED TEST |                      |                    |      |                     |                 |  |  |  |  |
|----------------|----------------------|--------------------|------|---------------------|-----------------|--|--|--|--|
| MODE           | AVAILABLE<br>CHANNEL | CHANNEL MODULATION |      | DATA RATE<br>(Mbps) | ANTENNA<br>PORT |  |  |  |  |
| 802.11b        | 1 to 11              | 1, 6, 11           | DSSS | 11                  | 2TX             |  |  |  |  |
| 802.11g        | 1 to 11              | 1, 6, 11           | OFDM | 54                  | 2TX             |  |  |  |  |
| 802.11n (HT20) | 1 to 11              | 1, 6, 11           | OFDM | MCS 8               | MIMO            |  |  |  |  |
| 802.11n (HT40) | 3 to 9               | 3, 6, 9            | OFDM | MCS 8               | MIMO            |  |  |  |  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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.



#### **MEASUREMENT UNCERTAINTY** 5

| Test Items                                  | Uncertainty                 |  |  |
|---|-----------------------------|--|--|
| AC Power Line Conducted Emission            | +/- 2.586 dB                |  |  |
| Peak Output Power                           | +/- 0.84 dB                 |  |  |
| 6dB Bandwidth                               | +/- 51.33 Hz                |  |  |
| 100 KHz Bandwidth Of<br>Frequency Band Edge | +/- 0.84 dB                 |  |  |
| Peak Power Density                          | +/- 1.3 dB                  |  |  |
| Temperature                                 | +/- 0.65 °C                 |  |  |
| Humidity                                    | +/- 4.6 %                   |  |  |
| DC / AC Power Source                        | DC= +/- 0.13%, AC= +/- 0.2% |  |  |

Radiated Spurious Emission:

|                           | 9kHz-30MHz: +/-2.87dB      |  |  |  |  |
|---------------------------|----------------------------|--|--|--|--|
|                           | 30MHz - 180MHz: +/- 3.37dB |  |  |  |  |
| Measurement uncertainty   | 180MHz -417MHz: +/- 3.19dB |  |  |  |  |
| (Polarization : Vertical) | 0.417GHz-1GHz: +/- 3.19dB  |  |  |  |  |
|                           | 1GHz - 18GHz: +/- 4.04dB   |  |  |  |  |
|                           | 18GHz - 40GHz: +/- 4.04dB  |  |  |  |  |

|                             | 9kHz-30MHz: +/-2.87dB      |
|-----------------------------|----------------------------|
|                             | 30MHz - 167MHz: +/- 4.22dB |
| Measurement uncertainty     | 167MHz -500MHz: +/- 3.44dB |
| (Polarization : Horizontal) | 0.5GHz-1GHz: +/- 3.39dB    |
|                             | 1GHz - 18GHz: +/- 4.08dB   |
|                             | 18GHz - 40GHz: +/- 4.08dB  |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

除非方方就明,此報告結本性可測码之标而頁頁,「同時比稀治性外留知灯、今本版本大学本公司食皿サゴ、个当時均板表。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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 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



### **6 CONDUCTED EMISSION TEST**

#### 6.1 Standard Applicable

Frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

| Frequency range  | Limits<br>dB(uV)  |          |  |  |  |  |  |  |
|--|---|----------|--|--|--|--|--|--|
| MHz  | Quasi-peak  | Average  |  |  |  |  |  |  |
| 0.15 to 0.50   | 66 to 56  | 56 to 46 |  |  |  |  |  |  |
| 0.50 to 5  | 56  | 46       |  |  |  |  |  |  |
| 5 to 30  | 60  | 50       |  |  |  |  |  |  |
| Note   |   |          |  |  |  |  |  |  |
| 1. The lower limit shall apply at the transition frequencies |   |          |  |  |  |  |  |  |
| 2. The limit decreases linearly wit                          | 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 |          |  |  |  |  |  |  |

MHz.

#### 6.2 Measurement Equipment Used

| Conducted Emission Test Site |                 |           |          |            |            |  |  |  |  |
|------------------------------|-----------------|-----------|----------|------------|------------|--|--|--|--|
| EQUIPMENT                    | MFR             | MODEL     | SERIAL   | LAST       | CAL DUE.   |  |  |  |  |
| TYPE                         |                 | NUMBER    | NUMBER   | CAL.       |            |  |  |  |  |
| EMI Test Receiver            | R&S             | ESCI7     | 100335   | 02/02/2018 | 02/01/2019 |  |  |  |  |
| LISN                         | SCHWARZ<br>BECK | NSLK 8127 | 8127-649 | 05/18/2018 | 05/17/2019 |  |  |  |  |

### 6.3 EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI 63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
- 3. The LISN was connected with 120Vac/60Hz power source.

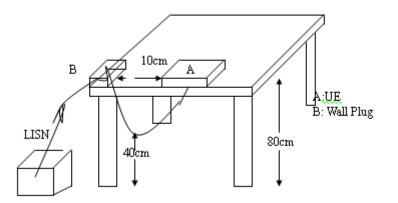
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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. SGS Taiwan Ltd. No.134, WuKungRoad, NewTaipeilndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



### 6.4 Test SET-UP (Block Diagram of Configuration)



#### **6.5 Measurement Procedure**

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all phases of power being supplied by given UE are completed

### 6.6 Measurement Result

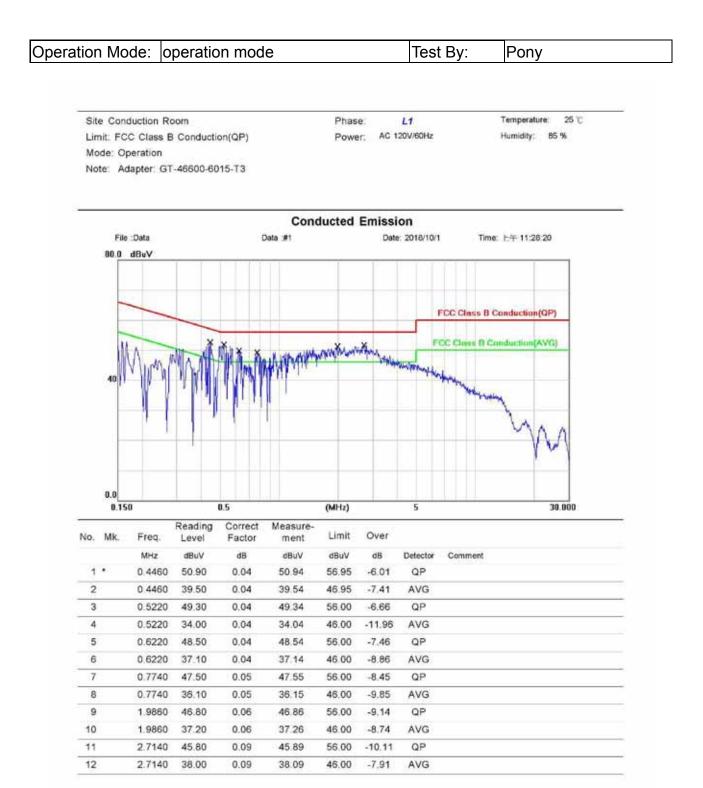
Note: Refer to next page for measurement data and plots. Note2: The \* reveals the worst-case results that closet to the limit

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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.





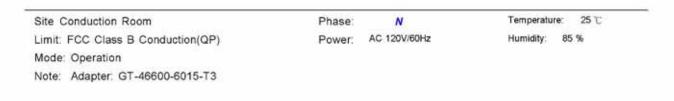
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

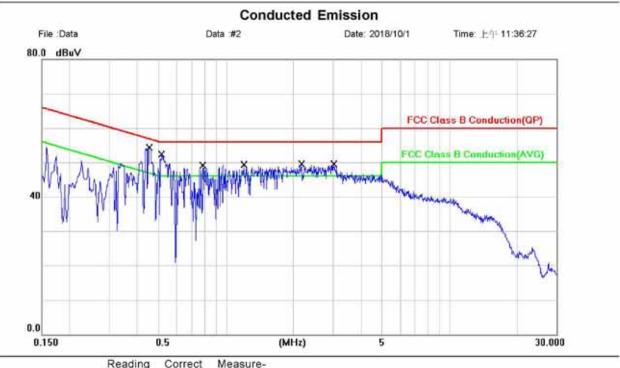
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號







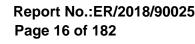
| No. | Mk. | Freq.  | Level | Factor | ment  | Limit | Over   |          |         |
|-----|-----|--------|-------|--------|-------|-------|--------|----------|---------|
|     |     | MHz    | dBuV  | dB     | dBuV  | dBuV  | dB     | Detector | Comment |
| 1   |     | 0.4540 | 53.20 | 0.04   | 53.24 | 56.80 | -3.56  | QP       |         |
| 2   | •   | 0.4540 | 44.50 | 0.04   | 44.54 | 46.80 | -2.26  | AVG      |         |
| 3   |     | 0.5180 | 50.10 | 0.04   | 50.14 | 56.00 | -5.86  | QP       |         |
| 4   |     | 0.5180 | 42.60 | 0.04   | 42.64 | 46.00 | -3.36  | AVG      |         |
| 5   |     | 0.7900 | 44.00 | 0.05   | 44.05 | 56.00 | -11.95 | QP       |         |
| 6   |     | 0.7900 | 31,50 | 0.05   | 31.55 | 46.00 | -14.45 | AVG      |         |
| 7   |     | 1.1980 | 43.50 | 0.05   | 43.55 | 56.00 | -12,45 | QP       |         |
| 8   |     | 1.1980 | 36.00 | 0.05   | 36.05 | 46.00 | -9.95  | AVG      |         |
| 9   |     | 2.1700 | 43.10 | 0.08   | 43.18 | 56.00 | -12.82 | QP       |         |
| 10  |     | 2.1700 | 37.60 | 0.08   | 37.68 | 46.00 | -8.32  | AVG      |         |
| 11  |     | 3.0260 | 42.70 | 0.11   | 42.81 | 56.00 | -13,19 | QP       |         |
| 12  |     | 3.0260 | 36.80 | 0.11   | 36.91 | 46.00 | -9.09  | AVG      |         |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

ボチカオ 就切り 近れ ぎち 木 ぼ オ 利 払く体 節 貝 見 ・ ロッチレ (本の主 広 中 ロ シル ~ チ 水 石 予 水 空 本 公 り 音 迎 マ コ ・ イ う い か 人 み \* This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號





### 7 DUTY CYCLE OF TEST SIGNAL

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

### Formula:

Duty Cycle = Ton / (Ton+Toff)

### **Measurement Procedure:**

- 1. Set span = Zero
- 2. RBW = 8MHz
- 3. VBW = 8MHz,
- 4. Detector = Peak

### **Duty Cycle:**

|            | Duty Cycle<br>(%) | Duty Factor<br>(dB) | 1/T<br>(kHz) | VBW setting<br>(kHz) |
|------------|-------------------|---------------------|--------------|----------------------|
| 802.11b    | 99.36             | 0.03                | 0.08         | 1.00                 |
| 802.11g    | 95.21             | 0.21                | 0.48         | 1.00                 |
| 802.11n_20 | 90.73             | 0.42                | 1.02         | 2.00                 |
| 802.11n_40 | 84.28             | 0.74                | 2.02         | 3.00                 |

b = 99.36%, g = 95.21%,  $n_ht_20 = 90.73\%$   $n_ht_40 = 84.28\%$ 

Duty Cycle Factor: 10 \* log(1/0.9936) = 0.03 Duty Cycle Factor: 10 \* log(1/0.9521) = 0.21 Duty Cycle Factor: 10 \* log(1/0.9073) = 0.42 Duty Cycle Factor: 10 \* log(1/0.8428) = 0.74

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

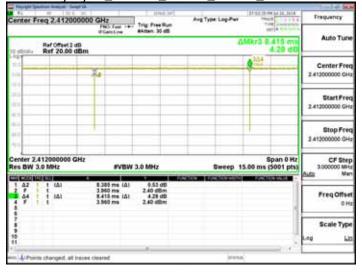
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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.



### 7.1 DUTY CYCLE TEST SIGNAL Measurement Result

Duty Cycle\_802.11b\_20MHz\_Chain0\_2412MHz



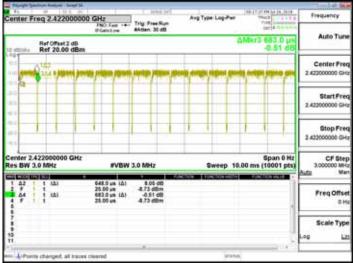
#### Duty Cycle\_802.11g\_20MHz\_Chain0\_2412MHz

| Frequency                     | 17-12-12-14 to Ja. 2014<br>14-02<br>7-02<br>027 4 12 12 12     | e Log-Pur | Avg      | Run            | Trig Free                    | Hz<br>NO Fast +++<br>GainLog                   | 000000     | 2.4120                       | req 2        | er F  | ent     |
|-------------------------------|--|-----------|----------|----------------|------------------------------|--|------------|------------------------------|--------------|-------|---------|
| Auto Tun                      | Ref Offwet 2 dB AMkr3 1,428 ma<br>dimire Ref 20.00 dBm 4.51 dB |           |          |                |                              |  |            |                              | 110          |       |         |
| Center Free<br>2.413000000 GH | and a spectrum   | -         | -        | -              | -                            | -  |            |                              | -            | 4     |         |
| Start Free<br>2.412000000 GH  |  |           |          |                |                              |  |            |                              |              | -     |         |
| Stop Free<br>2.412000000 GH   | 1  |           |          |                | 1                            |  |            | 1                            |              |       |         |
| CF Step<br>3.000000 MH        | Span 0 Hz<br>00 ms (10001 pts)                                 | weep 10.  | -        |                | 3.0 MHz                      | #VBW   | GHz        |                              | 4120<br>.0 M | BW :  | es      |
| Freq Offse<br>0 H             |  |           | ** 15-11 | dB<br>Im<br>dB | 2.41<br>-0.50 di<br>-0.50 di | 192 ms (Δ)<br>3.00 μs<br>425 ms (Δ)<br>3.00 μs |            | ( <u>A</u> )<br>( <u>A</u> ) | 1            | 12    | 1       |
| Scale Type                    |  |           |          |                |                              |  |            |                              |              |       | 67 8901 |
|                               |  | (atoma)   |          |                | _                            | red :  | f haire ch | ngéit, a                     | s che        | Print | 4       |

#### Duty Cycle\_802.11n\_20MHz\_Chain0\_2412MHz



#### Duty Cycle\_802.11n\_40MHz\_Chain0\_2422MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



## 8 PEAK OUTPUT POWER MEASUREMENT

### 8.1 Standard Applicable

For systems using digital modulation in the 2400-2483.5 MHz bands, the limit for peak output power is 1Watt.

Per RSS-247 §5.4(4)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. Except as provided in Section 5.4(5), the e.i.r.p. shall not exceed 4 W.

If the transmitting antenna of directional gain greater than 6dBi are used the peak output power form the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6dBi.

In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of Antenna exceeds 6dBi.

As per FCC KDB 662911 D01

a) Basic methodology with NANT transmit antennas, each with the same directional gain GANT dBi, being driven by NANT transmitter outputs of equal power. Directional gain is to be computed as follows:

If any transmit signals are correlated with each other,

(i) Directional gain = GANT + 10 log(NANT) dBi

| Frequency (MHz) | Effective Legacy<br>Gain (dBi) | Conducted Power<br>Limit (dBm) |
|-----------------|--------------------------------|--------------------------------|
| 2412~2462       | 5.11                           | 30                             |

The antenna gain is not grater than 6 dBi. Therefore, reduction of power is not required.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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.

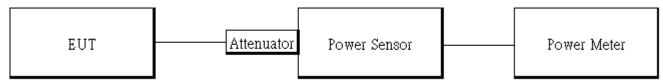


### 8.2 Measurement Equipment Used

| Conducted Emission Test Site |               |                 |                  |              |            |  |  |  |  |  |
|------------------------------|---------------|-----------------|------------------|--------------|------------|--|--|--|--|--|
| EQUIPMENT<br>TYPE            | MFR           | MODEL<br>NUMBER | SERIAL<br>NUMBER | LAST<br>CAL. | CAL DUE.   |  |  |  |  |  |
| EXA Spectrum An-<br>alyzer   | Agilent       | N9010A          | MY50420195       | 05/03/2018   | 05/02/2019 |  |  |  |  |  |
| Attenuator                   | Mini-Circuit  | BW-S10W2+       | 2                | 01/02/2018   | 01/01/2019 |  |  |  |  |  |
| DC Block                     | Mini-Circuits | BLK-18-S+       | 1                | 01/02/2018   | 01/01/2019 |  |  |  |  |  |
| Coaxial Cables               | N/A           | WK CE Cable     | N/A              | 01/02/2018   | 01/01/2019 |  |  |  |  |  |
| Power Meter                  | Anritsu       | ML2496A         | 1804001          | 02/01/2018   | 01/31/2019 |  |  |  |  |  |
| Power Sensor                 | Anritsu       | MA2411B         | 1726104          | 02/01/2018   | 01/31/2019 |  |  |  |  |  |
| Power Sensor                 | Anritsu       | MA2411B         | 1726107          | 02/01/2018   | 01/31/2019 |  |  |  |  |  |

### 8.3 Test Set-up

Power Meter:



### **8.4 Measurement Procedure**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.

#### **Power Meter:**

It is used as the auxiliary test equipment to conduct the output power measurement.

4. Record the max. Reading as observed from Spectrum or Power Meter.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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 reponsibility 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. SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



#### 8.5 Measurement Result

#### Antenna Chain 0

| 802.1 | 1b Ch0         |              |   |          |       |        |        |
|-------|----------------|--------------|---|----------|-------|--------|--------|
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   | Limit    |       | RESULT |        |
| 1     | 2412           | 1            | 22.90   | 1 Watt = | 30.00 | dBm    | PASS   |
| 6     | 2437           | 1            | 22.71   | 1 Watt = | 30.00 | dBm    | PASS   |
| 11    | 2462           | 1            | 21.86   | 1 Watt = | 30.00 | dBm    | PASS   |
| 802.1 | 1b Ch0         |              |   |          |       |        |        |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) |          | Limit |        | RESULT |
| 1     | 2412           | 1            | 20.30   | 1 Watt = | 30.00 | dBm    | PASS   |
| 6     | 2437           | 1            | 20.24   | 1 Watt = | 30.00 | dBm    | PASS   |
| 11    | 2462           | 1            | 19.20   | 1 Watt = | 30.00 | dBm    | PASS   |
| 802.1 | 1g Ch0         |              |   |          |       |        |        |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   |          | Limit |        | RESULT |
| 1     | 2412           | 6            | 23.04   | 1 Watt = | 30.00 | dBm    | PASS   |
| 6     | 2437           | 6            | 24.83   | 1 Watt = | 30.00 | dBm    | PASS   |
| 11    | 2462           | 6            | 22.94   | 1 Watt = | 30.00 | dBm    | PASS   |
| 802.1 | 1g Ch0         |              |   |          |       |        |        |
| сн    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) | Limit    |       |        | RESULT |
| 1     | 2412           | 6            | 13.87   | 1 Watt = | 30.00 | dBm    | PASS   |
| 6     | 2437           | 6            | 15.63   | 1 Watt = | 30.00 | dBm    | PASS   |
| 11    | 2462           | 6            | 13.63   | 1 Watt = | 30.00 | dBm    | PASS   |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對测試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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 form exercising all their rights and obligations under the transaction document is unlawful and offenders may be prosecuted to the fullest extent of the law.

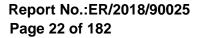


| 802.1 | 1n_HT20        | M Ch0        |   |             |        |      |      |  |  |  |
|-------|----------------|--------------|---|-------------|--------|------|------|--|--|--|
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   |             | RESULT |      |      |  |  |  |
| 1     | 2412           | MCS0         | 24.33   | 1 Watt =    | dBm    | PASS |      |  |  |  |
| 6     | 2437           | MCS0         | 24.81   | 1 Watt =    | 30.00  | dBm  | PASS |  |  |  |
| 11    | 2462           | MCS0         | 22.75   | 1 Watt =    | 30.00  | dBm  | PASS |  |  |  |
| 802.1 | 1n_HT20        | M Ch0        |   |             |        |      |      |  |  |  |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) | Limit RESUL |        |      |      |  |  |  |
| 1     | 2412           | MCS0         | 12.18   | 1 Watt =    | 30.00  | dBm  | PASS |  |  |  |
| 6     | 2437           | MCS0         | 16.61   | 1 Watt =    | 30.00  | dBm  | PASS |  |  |  |
| 11    |                |              |   |             |        |      |      |  |  |  |

| 802.1 | 1n_HT40        | M Ch0        |   |          |        |     |        |
|-------|----------------|--------------|---|----------|--------|-----|--------|
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   |          | Limit  |     | RESULT |
| 3     | 2422           | MCS0         | 20.53   | 1 Watt = | 30.00  | dBm | PASS   |
| 6     | 2437           | MCS0         | 20.83   | 1 Watt = | 30.00  | dBm | PASS   |
| 9     | 2452           | MCS0         | 22.98   | 1 Watt = | 30.00  | dBm | PASS   |
| 802.1 | 1n_HT40        | M Ch0        |   |          |        |     |        |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) |          | RESULT |     |        |
| 3     | 2422           | MCS0         | 11.25   | 1 Watt = | 30.00  | dBm | PASS   |
| 6     | 2437           | MCS0         | 12.22   | 1 Watt = | 30.00  | dBm | PASS   |
| 9     | 2452           | MCS0         | 14.06   | 1 Watt = | 30.00  | dBm | PASS   |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。





#### **Antenna Chain 1**

| 802.1 | 1b Ch1         |              |   |                    |        |     |        |
|-------|----------------|--------------|---|--------------------|--------|-----|--------|
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   |                    | Limit  |     | RESULT |
| 1     | 2412           | 1            | 22.96   | 1 Watt =           | 30.00  | dBm | PASS   |
| 6     | 2437           | 1            | 22.94   | 1 Watt =           | 30.00  | dBm | PASS   |
| 11    | 2462           | 1            | 22.25   | 1 Watt = 30.00 dBm |        |     | PASS   |
| 802.1 | 1b Ch1         |              |   | -                  |        |     |        |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) | Limit              |        |     | RESULT |
| 1     | 2412           | 1            | 20.47   | 1 Watt =           | 30.00  | dBm | PASS   |
| 6     | 2437           | 1            | 20.34   | 1 Watt =           | 30.00  | dBm | PASS   |
| 11    | 2462           | 1            | 19.62   | 1 Watt =           | 30.00  | dBm | PASS   |
| 802.1 | 1g Ch1         |              |   |                    |        |     |        |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   |                    | Limit  |     | RESULT |
| 1     | 2412           | 6            | 23.09   | 1 Watt =           | 30.00  | dBm | PASS   |
| 6     | 2437           | 6            | 24.98   | 1 Watt =           | 30.00  | dBm | PASS   |
| 11    | 2462           | 6            | 23.14   | 1 Watt =           | 30.00  | dBm | PASS   |
| 802.1 | 1g Ch1         |              |   |                    |        |     |        |
| сн    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) |                    | RESULT |     |        |
| 1     | 2412           | 6            | 13.97   | 1 Watt =           | 30.00  | dBm | PASS   |
| 6     | 2437           | 6            | 15.80   | 1 Watt =           | 30.00  | dBm | PASS   |
| 11    | 2462           | 6            | 13.79   | 1 Watt =           | 30.00  | dBm | PASS   |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



| 802.1 | 1n_HT20        | M Ch1        |   |          |        |     |      |
|-------|----------------|--------------|---|----------|--------|-----|------|
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   |          | RESULT |     |      |
| 1     | 2412           | MCS0         | 21.32   | 1 Watt = | 30.00  | dBm | PASS |
| 6     | 2437           | MCS0         | 25.01   | 1 Watt = | 30.00  | dBm | PASS |
| 11    | 2462           | MCS0         | 22.89   | 1 Watt = | 30.00  | dBm | PASS |
| 802.1 | 1n_HT20        | M Ch1        |   |          |        |     |      |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) |          | RESULT |     |      |
| 1     | 2412           | MCS0         | 12.21   | 1 Watt = | 30.00  | dBm | PASS |
| 6     | 2437           | MCS0         | 16.91   | 1 Watt = | 30.00  | dBm | PASS |
| 11    | 2462           | MCS0         | 13.93   | 1 Watt = | 30.00  | dBm | PASS |

| 802.1 | 1n_HT40        | M Ch1        |   |          |        |     |        |  |  |
|-------|----------------|--------------|---|----------|--------|-----|--------|--|--|
| СН    | Freq.<br>(MHz) | Data<br>Rate | Peak Output<br>Power<br>(dBm)                                   |          | Limit  |     | RESULT |  |  |
| 3     | 2422           | MCS0         | 20.07   | 1 Watt = | 30.00  | dBm | PASS   |  |  |
| 6     | 2437           | MCS0         | 20.43   | 1 Watt = | 30.00  | dBm | PASS   |  |  |
| 9     | 2452           | MCS0         | 22.66   | 1 Watt = | 30.00  | dBm | PASS   |  |  |
| 802.1 | 1n_HT40        | M Ch1        |   |          |        |     |        |  |  |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) |          | RESULT |     |        |  |  |
| 3     | 2422           | MCS0         | 11.20   | 1 Watt = | 30.00  | dBm | PASS   |  |  |
| 6     | 2437           | MCS0         | 12.45   | 1 Watt = | 30.00  | dBm | PASS   |  |  |
| 9     |                |              |   |          |        |     |        |  |  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



#### MIMO

| 802.1 | 1b_2TX         |              |            |                                 |  |  |          |        |        |        |
|-------|----------------|--------------|------------|---------------------------------|--|--|----------|--------|--------|--------|
| СН    | Freq.<br>(MHz) | Data<br>Rate | Pov<br>(de | Sutput<br>wer<br>Rm)            | Total Peak<br>Output Power                             | Total Peak<br>Output Power                             |          | Limit  |        | RESULT |
|       | 、 ,            |              | CH 0       | CH 1                            | (dBm)  | (mW)   |          |        |        |        |
| 1     | 2412           | 1            | 22.66      | 22.98                           | 25.83  | 383.11   | 1 Watt = | 30.00  | dBm    | PASS   |
| 6     | 2437           | 1            | 22.82      | 22.84                           | 25.84  | 383.73   | 1 Watt = | 30.00  | dBm    | PASS   |
| 11    | 2462           | 1            | 21.72      | 22.11                           | 24.93  | 311.15   | 1 Watt = | 30.00  | dBm    | PASS   |
| 802.1 | 1b_2TX         |              |            |                                 |  |  |          |        |        |        |
| СН    | сні чі         | Data<br>Rate | ( I= )     |                                 | Max. Avg. Output<br>include tune up<br>tolerance Power | Max. Avg. Output<br>include tune up<br>tolerance Power |          | RESULT |        |        |
|       |                |              | CH 0       | CH 1                            | (dBm)  | (mW)   |          |        |        |        |
| 1     | 2412           | 1            | 20.20      | 20.37                           | 23.32  | 214.98   | 1 Watt = | 30.00  | dBm    | PASS   |
| 6     | 2437           | 1            | 20.36      | 20.22                           | 23.33  | 215.22   | 1 Watt = | 30.00  | dBm    | PASS   |
| 11    | 2462           | 1            | 19.24      | 19.39                           | 22.35  | 171.94   | 1 Watt = | 30.00  | dBm    | PASS   |
|       |                |              |            | -                               |  |  |          |        |        |        |
| 802.1 | 1g_2TX         |              |            |                                 |  |  |          |        |        |        |
| СН    | Freq.          | Data<br>Pate | Po         | <del>Output</del><br>wer<br>3m) | Total Peak<br>Output Power                             | Total Peak<br>Output Power                             | Limit    |        | RESULT |        |

| СН    | Freq.<br>(MHz) | Data<br>Rate | Power<br>(dBm) |                      | (dBm)  |  | ate (dBm) Output Power |       | Total Peak<br>Output Power |       | Limit |  | RESULT |
|-------|----------------|--------------|----------------|----------------------|--|--|------------------------|-------|----------------------------|-------|-------|--|--------|
|       | 、 ,            |              | CH 0           | CH 1                 | (dBm)  | (mW)   |                        |       |                            |       |       |  |        |
| 1     | 2412           | 6            | 22.79          | 22.87                | 25.84  | 383.75   | 1 Watt =               | 30.00 | dBm                        | PASS  |       |  |        |
| 6     | 2437           | 6            | 24.64          | 24.69                | 27.68  | 585.51   | 1 Watt =               | 30.00 | dBm                        | PASS  |       |  |        |
| 11    | 2462           | 6            | 22.76          | 22.83                | 25.81  | 380.67   | 1 Watt =               | 30.00 | dBm                        | PASS  |       |  |        |
| 802.1 | 1g_2TX         |              |                |                      |  |  |                        |       |                            |       |       |  |        |
| СН    | Freq.<br>(MHz) | Data<br>Rate | Po             | Dutput<br>wer<br>Bm) | Max. Avg. Output<br>include tune up<br>tolerance Power | Max. Avg. Output<br>include tune up<br>tolerance Power | Limit                  |       | RESULT                     |       |       |  |        |
|       |                |              | CH 0           | CH 1                 | (dBm)  | (mW)   |                        |       |                            |       |       |  |        |
| 1     | 0.1.1.0        |              | 10 / 4         | 10 50                | 14.04  | 48.29  | 1 Watt =               | 30.00 | dBm                        | PASS  |       |  |        |
| 1     | 2412           | 6            | 13.64          | 13.59                | 16.84  | 40.29  | i vvali –              | 30.00 | ubiii                      | 17100 |       |  |        |
| 6     | 2412<br>2437   | 6            | 13.64<br>15.23 | 13.59<br>15.46       | 18.57  | 40.29<br>71.94   | 1 Watt =               | 30.00 | dBm                        | PASS  |       |  |        |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u></u>. 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 form 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 ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. <u>SCS Taiwan Ltd</u> <u>No 134 witkungRoad NewTaineind(ustrialPark WukuDistrict NewTaineiCity Taiwan24803/新士, 市 五股區新士, 產業関區五工路, 134 號</u>



|                       | 1n_HT20                                   |  |   |   |  |  |                      |                |            |                        |
|-----------------------|---|--|---|---|--|--|----------------------|----------------|------------|------------------------|
| СН                    | Freq.<br>(MHz)                            | Data<br>Rate                           | (dE   | wer<br>sm)  | Total Peak<br>Output Power   | Total Peak<br>Output Power   |                      | Limit          |            | RESULT                 |
|                       | (11112)                                   |  | CH 0  | CH 1  | (dBm)  | (mW)   |                      |                |            |                        |
| 1                     | 2412                                      | MCS8                                   | 24.56   | 20.59   | 26.02  | 400.31   | 1 Watt =             | 30.00          | dBm        | PASS                   |
| 6                     | 2437                                      | MCS8                                   | 24.63   | 24.69   | 27.67  | 584.84   | 1 Watt =             | 30.00          | dBm        | PASS                   |
| 11                    | 2462                                      | MCS8                                   | 22.76   | 22.12   | 25.46  | 351.73   | 1 Watt = 30.00 dBm   |                |            | PASS                   |
| 802.1                 | 1n_HT20                                   | M MIMC                                 | )   |   |  |  |                      |                |            |                        |
| СН                    | Freq.<br>(MHz)                            | Data<br>Rate                           | Avg. Output<br>Power<br>(dBm)<br>CH 0 CH 1              |   | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm)                            | Max. Avg. Output<br>include tune up<br>tolerance Power<br>(mW)                               |                      | Limit          |            | RESULT                 |
| 1                     | 0.410                                     | 11000                                  |   |   |  | . ,  | 1 14/-11             | 20.00          |            | DAGG                   |
| 1                     | 2412                                      | MCS8                                   | 11.57   | 11.42   | 14.93  | 31.11  | 1 Watt =             | 30.00          | dBm        | PASS                   |
| 6                     | 2437                                      | MCS8                                   | 15.89   | 16.22   | 19.49  | 88.94  | 1 Watt =             | 30.00          | dBm        | PASS                   |
| 11                    | 2462                                      | MCS8                                   | 13.19   | 13.28   | 16.67  | 46.43  | 1 Watt =             | 30.00          | dBm        | PASS                   |
| 802.1                 | 1n_HT40                                   | M MIMC                                 | )   |   |  |  |                      |                |            |                        |
| СН                    | Freq.<br>(MHz)                            | Data<br>Rate                           | Peak Output<br>Power<br>(dBm)                           |   | Total Peak<br>Output Power   | Total Peak<br>Output Power   |                      | Limit          |            | RESULT                 |
|                       |   |  | CH 0  | CH 1  | (dBm)  | (mW)   |                      |                |            |                        |
| 3                     | 2422                                      | MCS8                                   | CH 0<br>20.23   | CH 1<br>19.77   | (dBm)<br>23.02   | (mW)<br>200.28   | 1 Watt =             | 30.00          | dBm        | PASS                   |
| 3<br>6                | 2422<br>2437                              | MCS8<br>MCS8                           |   |   | • •  |  | 1 Watt =<br>1 Watt = | 30.00<br>30.00 | dBm<br>dBm | PASS<br>PASS           |
|                       |   |  | 20.23   | 19.77   | 23.02  | 200.28   |                      |                |            |                        |
| 6<br>9                | 2437                                      | MCS8<br>MCS8                           | 20.23<br>20.61<br>22.54                                 | 19.77<br>20.03  | 23.02<br>23.34   | 200.28<br>215.77   | 1 Watt =             | 30.00          | dBm        | PASS                   |
| 6<br>9                | 2437<br>2452                              | MCS8<br>MCS8                           | 20.23<br>20.61<br>22.54<br>Avg. (<br>Por                | 19.77<br>20.03  | 23.02<br>23.34   | 200.28<br>215.77   | 1 Watt =<br>1 Watt = | 30.00          | dBm        | PASS                   |
| 6<br>9<br>802.1       | 2437<br>2452<br>1n_HT40<br>Freq.          | MCS8<br>MCS8<br>M MIMC<br>Data         | 20.23<br>20.61<br>22.54<br>Avg. (<br>Pov<br>(dE         | 19.77<br>20.03<br>22.63<br>Dutput<br>wer<br>Bm)         | 23.02<br>23.34<br>25.60<br>Max. Avg. Output<br>include tune up<br>tolerance Power          | 200.28<br>215.77<br>362.70<br>Max. Avg. Output<br>include tune up<br>tolerance Power         | 1 Watt =<br>1 Watt = | 30.00<br>30.00 | dBm        | PASS<br>PASS           |
| 6<br>9<br>802.1<br>CH | 2437<br>2452<br>1n_HT40<br>Freq.<br>(MHz) | MCS8<br>MCS8<br>M MIMC<br>Data<br>Rate | 20.23<br>20.61<br>22.54<br>Avg. C<br>Pov<br>(dE<br>CH 0 | 19.77<br>20.03<br>22.63<br>Dutput<br>wer<br>Bm)<br>CH 1 | 23.02<br>23.34<br>25.60<br>Max. Avg. Output<br>include tune up<br>tolerance Power<br>(dBm) | 200.28<br>215.77<br>362.70<br>Max. Avg. Output<br>include tune up<br>tolerance Power<br>(mW) | 1 Watt =<br>1 Watt = | 30.00<br>30.00 | dBm<br>dBm | PASS<br>PASS<br>RESULT |

\* Note: The duty cycle factor is compensated to obtain the maximum value of measurement in average.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



#### EIRP Antenna <u>Chain 0</u>

| 802.1 | 1b Ch0               |              |                                  |                          |                |            |             |            |        |
|-------|----------------------|--------------|----------------------------------|--------------------------|----------------|------------|-------------|------------|--------|
| СН    | Freq.<br>(MHz)       | Data<br>Rate | Avg.<br>Output<br>Power<br>(dBm) | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm)  |            | Limit       |            | RESULT |
| 1     | 2412                 | 1            | 20.30                            | 2.70                     | 23.00          | 4W= 36 dBm |             |            | PASS   |
| 6     | 2437                 | 1            | 20.24                            | 2.70                     | 22.94          | 4W=        | 36          | dBm        | PASS   |
| 11    | 2462                 | 1            | 19.20                            | 2.70                     | 21.90          | 4W=        | 36          | dBm        | PASS   |
| 802.1 | 1g Ch0               |              |                                  |                          |                |            |             |            |        |
| СН    | Freq.<br>(MHz)       | Data<br>Rate | Avg.<br>Output<br>Power<br>(dBm) | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm)  | Limit      |             |            | RESULT |
| 1     | 2412                 | 6            | 13.87                            | 2.70                     | 16.57          | 4W=        | 36          | dBm        | PASS   |
| 6     | 2437                 | 6            | 15.63                            | 2.70                     | 18.33          | 4W=        | 36          | dBm        | PASS   |
| 11    | 2462                 | 6            | 13.63                            | 2.70                     | 16.33          | 4W=        | 36          | dBm        | PASS   |
| 802.1 | 1n_HT201             | VI Ch0       |                                  |                          |                |            |             |            |        |
| СН    | Freq.                | Data         | Avg.<br>Output                   | Antenna<br>Gain          | EIRP           | Limit      |             |            | RESULT |
|       | (MHz)                | Rate         | Power<br>(dBm)                   | (dBi)                    | (dBm)          |            | Limit       |            | RESOLI |
| 1     | <b>(MHz)</b><br>2412 | Rate<br>MCS0 |                                  |                          | (dBm)<br>14.88 | 4W=        | 21mit<br>36 | dBm        | PASS   |
|       | . ,                  |              | (dBm)                            | (dBi)                    |                | 4W=<br>4W= |             | dBm<br>dBm |        |
| 1     | 2412                 | MCS0         | (dBm)<br>12.18                   | (dBi)<br>2.70            | 14.88          |            | 36          |            | PASS   |

| 802.1 | 802.11n_HT40M Ch0 |              |                                  |                          |               |            |       |      |        |  |  |  |
|-------|-------------------|--------------|----------------------------------|--------------------------|---------------|------------|-------|------|--------|--|--|--|
| СН    | Freq.<br>(MHz)    | Data<br>Rate | Avg.<br>Output<br>Power<br>(dBm) | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) |            | Limit |      | RESULT |  |  |  |
| 3     | 2422              | MCS0         | 11.25                            | 2.70                     | 13.95         | 4W=        | 36    | dBm  | PASS   |  |  |  |
| 6     | 2437              | MCS0         | 12.22                            | 2.70                     | 14.92         | 4W= 36 dBm |       | PASS |        |  |  |  |
| 9     | 2452              | MCS0         | 14.06                            | 2.70                     | 16.76         | 4W=        | 36    | dBm  | PASS   |  |  |  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



#### Antenna Chain 1

| 802.1       | 1b Ch1         |              |                                  |                          |               |            |        |  |  |  |  |
|-------------|----------------|--------------|----------------------------------|--------------------------|---------------|------------|--------|--|--|--|--|
| СН          | Freq.<br>(MHz) | Data<br>Rate | Avg.<br>Output<br>Power<br>(dBm) | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) | Limit      | RESULT |  |  |  |  |
| 1           | 2412           | 1            | 20.47                            | 2.70                     | 23.17         | 4W= 36 dBm | PASS   |  |  |  |  |
| 6           | 2437           | 1            | 20.34                            | 2.70                     | 23.04         | 4W= 36 dBm | PASS   |  |  |  |  |
| 11          | 2462           | 1            | 19.62                            | 2.70                     | 22.32         | 4W= 36 dBm | PASS   |  |  |  |  |
| 802.11g Ch1 |                |              |                                  |                          |               |            |        |  |  |  |  |
| СН          | Freq.<br>(MHz) | Data<br>Rate | Avg.<br>Output<br>Power<br>(dBm) | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) | Limit      | RESULT |  |  |  |  |
| 1           | 2412           | 6            | 13.97                            | 2.70                     | 16.67         | 4W= 36 dBm | PASS   |  |  |  |  |
| 6           | 2437           | 6            | 15.80                            | 2.70                     | 18.50         | 4W= 36 dBm | PASS   |  |  |  |  |
| 11          | 2462           | 6            | 13.79                            | 2.70                     | 16.49         | 4W= 36 dBm | PASS   |  |  |  |  |
| 802.1       | 1n_HT201       | M Ch1        |                                  |                          |               |            |        |  |  |  |  |
| СН          | Freq.<br>(MHz) | Data<br>Rate | Avg.<br>Output<br>Power<br>(dBm) | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) | Limit      | RESULT |  |  |  |  |
| 1           | 2412           | MCS0         | 12.21                            | 2.70                     | 14.91         | 4W= 36 dBm | PASS   |  |  |  |  |
| 6           | 2437           | MCS0         | 16.91                            | 2.70                     | 19.61         | 4W= 36 dBm | PASS   |  |  |  |  |
| 11          | 2462           | MCS0         | 13.93                            | 2.70                     | 16.63         | 4W= 36 dBm | PASS   |  |  |  |  |
| 002.1       | 1n UT40        |              |                                  |                          |               |            |        |  |  |  |  |
| 0UZ. I      | 1n_HT40        |              | Avg.                             |                          |               |            |        |  |  |  |  |
| СН          | Freq.<br>(MHz) | Data<br>Rate | Output<br>Power<br>(dBm)         | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) | Limit      | RESULT |  |  |  |  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

MCS0

MCS0

MCS0

11.20

12.45

14.17

2.70

2.70

2.70

13.90

15.15

16.87

4W=

4W=

4W=

36

36

36

dBm

dBm

dBm

PASS PASS

PASS

3

6

9

2422

2437

2452



#### MIMO

| 802.1              | lb_2TX         |              |        |                      |                         |                               |                          |               |       |       |        |        |
|--------------------|----------------|--------------|--------|----------------------|-------------------------|-------------------------------|--------------------------|---------------|-------|-------|--------|--------|
| СН                 | Freq.<br>(MHz) | Data<br>Rate | Po     | Dutput<br>wer<br>3m) | Avg.<br>Output<br>Power | Total Peak<br>Output<br>Power | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) |       | Limit |        | RESULT |
|                    |                |              | CH 0   | CH 1                 | (dBm)                   | (mW)                          | (ubly                    |               |       |       |        |        |
| 1                  | 2412           | 1            | 20.20  | 20.37                | 23.32                   | 214.98                        | 5.11                     | 28.43         | 4W=   | 36    | dBm    | PASS   |
| 6                  | 2437           | 1            | 20.36  | 20.22                | 23.33                   | 215.22                        | 5.11                     | 28.44         | 4W=   | 36    | dBm    | PASS   |
| 11                 | 2462           | 1            | 19.24  | 19.39                | 22.35                   | 171.94                        | 5.11                     | 27.46         | 4W=   | 36    | dBm    | PASS   |
| 802.1              | 1g_2TX         |              |        |                      |                         |                               |                          |               |       |       |        |        |
| СН                 | Freq.<br>(MHz) | Data<br>Rate | Po     | Dutput<br>wer<br>3m) | Avg.<br>Output<br>Power | Total Peak<br>Output<br>Power | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) | Limit |       | RESULT |        |
|                    |                |              | CH 0   | CH 1                 | (dBm)                   | (mW)                          | (ubly                    |               |       |       |        |        |
| 1                  | 2412           | 6            | 13.64  | 13.59                | 16.84                   | 48.29                         | 5.11                     | 21.95         | 4W=   | 36    | dBm    | PASS   |
| 6                  | 2437           | 6            | 15.23  | 15.46                | 18.57                   | 71.94                         | 5.11                     | 23.68         | 4W=   | 36    | dBm    | PASS   |
| 11                 | 2462           | 6            | 13.34  | 13.42                | 16.60                   | 45.75                         | 5.11                     | 21.71         | 4W=   | 36    | dBm    | PASS   |
| 802.1 <sup>-</sup> | 1n_HT20N       | M MIMO       |        |                      |                         |                               |                          |               |       |       |        |        |
| СН                 | Freq.<br>(MHz) | Data<br>Rate | Po     | Dutput<br>wer<br>3m) | Avg.<br>Output<br>Power | Total Peak<br>Output<br>Power | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) |       | Limit |        | RESULT |
|                    |                |              | CH 0   | CH 1                 | (dBm)                   | (mW)                          |                          |               |       |       |        |        |
| 1                  | 2412           | MCS8         | 11.57  | 11.42                | 14.93                   | 31.11                         | 5.11                     | 20.04         | 4W=   | 36    | dBm    | PASS   |
| 6                  | 2437           | MCS8         | 15.89  | 16.22                | 19.49                   | 88.94                         | 5.11                     | 24.60         | 4W=   | 36    | dBm    | PASS   |
| 11                 | 2462           | MCS8         | 13.19  | 13.28                | 16.67                   | 46.43                         | 5.11                     | 21.78         | 4W=   | 36    | dBm    | PASS   |
| 802.1              | 1n_HT40N       |              |        |                      |                         |                               |                          |               |       |       |        |        |
| 502. I             |                |              | Ava. ( | Dutput               | Ava.                    | Total Peak                    |                          |               |       |       |        |        |

| СН | Freq.<br>(MHz) | Data<br>Rate | Pov<br>(dE | Output<br>wer<br>Bm) | Avg.<br>Output<br>Power<br>(dBm) | Total Peak<br>Output<br>Power<br>(mW) | Antenna<br>Gain<br>(dBi) | EIRP<br>(dBm) |     | Limit |     | RESULT |
|----|----------------|--------------|------------|----------------------|----------------------------------|---------------------------------------|--------------------------|---------------|-----|-------|-----|--------|
|    |                |              | CH 0       | CH 1                 | (ubiii)                          | (11100)                               |                          |               |     |       |     |        |
| 3  | 2422           | MCS8         | 10.17      | 10.11                | 13.89                            | 24.51                                 | 5.11                     | 19.00         | 4W= | 36    | dBm | PASS   |
| 6  | 2437           | MCS8         | 11.08      | 11.29                | 14.94                            | 31.18                                 | 5.11                     | 20.05         | 4W= | 36    | dBm | PASS   |
| 9  | 2452           | MCS8         | 12.84      | 12.93                | 16.64                            | 46.11                                 | 5.11                     | 21.75         | 4W= | 36    | dBm | PASS   |

\* Note: EIRP = Average Power + Gain

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



### 9 6DB & 99% BANDWIDTH MEASUREMENT

#### 9.1 Standard Applicable

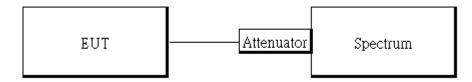
The minimum 6 dB bandwidth shall be at least 500 kHz.

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs

#### 9.2 Measurement Equipment Used

|                            | Conducted Emission Test Site |                 |                  |              |            |  |  |
|----------------------------|------------------------------|-----------------|------------------|--------------|------------|--|--|
| EQUIPMENT<br>TYPE          | MFR                          | MODEL<br>NUMBER | SERIAL<br>NUMBER | LAST<br>CAL. | CAL DUE.   |  |  |
| EXA Spectrum An-<br>alyzer | Agilent                      | N9010A          | MY50420195       | 05/03/2018   | 05/02/2019 |  |  |
| Attenuator                 | Mini-Circuit                 | BW-S10W2+       | 2                | 01/02/2018   | 01/01/2019 |  |  |
| DC Block                   | Mini-Circuits                | BLK-18-S+       | 1                | 01/02/2018   | 01/01/2019 |  |  |
| Coaxial Cables             | N/A                          | WK CE Cable     | N/A              | 01/02/2018   | 01/01/2019 |  |  |
| Power Meter                | Anritsu                      | ML2496A         | 1804001          | 02/01/2018   | 01/31/2019 |  |  |
| Power Sensor               | Anritsu                      | MA2411B         | 1726104          | 02/01/2018   | 01/31/2019 |  |  |
| Power Sensor               | Anritsu                      | MA2411B         | 1726107          | 02/01/2018   | 01/31/2019 |  |  |

### 9.3 Test Set-up



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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.



#### 9.4 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. For 6dB Bandwidth:

Set the spectrum analyzer as RBW = 100 kHz, VBW = 3\*RBW, Span = 30M/50MHz, Detector=peak, Sweep=auto.

- 5. Mark the peak frequency and –6dB (upper and lower) frequency.
- 6. For 99% Bandwidth:

Set the spectrum analyzer as RBW=1%, VBW = 3\*RBW, Span = 30M/50MHz, Detector=Sample, Sweep=auto.

- 7. Turn on the 99% bandwidth function, max reading.
- 8. Repeat above procedures until all frequency of interest measured was complete.

### 9.5 Measurement Result

### 6dB Bandwidth Antenna Chain 0

| 802.11b Ch0 |         |       |        |  |
|-------------|---------|-------|--------|--|
| Freq.       | 6dB BW  | Limit | Result |  |
| (MHz)       | (kHz)   | (kHz) | Result |  |
| 2412        | 8081.00 | > 500 | PASS   |  |
| 2437        | 7594.00 | > 500 | PASS   |  |
| 2462        | 7116.00 | > 500 | PASS   |  |

| Freq. | 6dB BW   | Limit | Result |
|-------|----------|-------|--------|
| (MHz) | (kHz)    | (kHz) | Result |
| 2412  | 16390.00 | > 500 | PASS   |
| 2437  | 16140.00 | > 500 | PASS   |
| 2462  | 16130.00 | > 500 | PASS   |

#### 802.11\_n\_HT20 Ch0

| Freq.<br>(MHz) | 6dB BW<br>(kHz) | Limit<br>(kHz) | Result |
|----------------|-----------------|----------------|--------|
| 2412           | 17610.00        | > 500          | PASS   |
| 2437           | 17190.00        | > 500          | PASS   |
| 2462           | 16980.00        | > 500          | PASS   |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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.

#### Report No.:ER/2018/90025 Page 31 of 182



#### 802.11\_n\_HT40 Ch0

| Freq. | 6dB BW   | Limit | Result |
|-------|----------|-------|--------|
| (MHz) | (kHz)    | (kHz) | Result |
| 2422  | 35940.00 | > 500 | PASS   |
| 2437  | 35730.00 | > 500 | PASS   |
| 2452  | 36360.00 | > 500 | PASS   |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format document is subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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 document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



#### Antenna Chain 1

#### 802.11b Ch1

| Freq. | 6dB BW  | Limit | Result |
|-------|---------|-------|--------|
| (MHz) | (kHz)   | (kHz) | Result |
| 2412  | 8068.00 | > 500 | PASS   |
| 2437  | 8057.00 | > 500 | PASS   |
| 2462  | 8079.00 | > 500 | PASS   |

#### 802.11a Ch1

| <u></u> | -        |       |        |
|---------|----------|-------|--------|
| Freq.   | 6dB BW   | Limit | Result |
| (MHz)   | (kHz)    | (kHz) | Result |
| 2412    | 16400.00 | > 500 | PASS   |
| 2437    | 16390.00 | > 500 | PASS   |
| 2462    | 16400.00 | > 500 | PASS   |

#### 802.11\_n\_HT20 Ch1

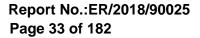
| Freq.<br>(MHz) | 6dB BW<br>(kHz) | Limit<br>(kHz) | Result |
|----------------|-----------------|----------------|--------|
| 2412           | 17630.00        | > 500          | PASS   |
| 2437           | 17600.00        | > 500          | PASS   |
| 2462           | 17600.00        | > 500          | PASS   |

#### 802.11\_n\_HT40 Ch1

| Freq. | 6dB BW   | Limit | Result |
|-------|----------|-------|--------|
| (MHz) | (kHz)    | (kHz) | Resuit |
| 2422  | 36290.00 | > 500 | PASS   |
| 2437  | 36380.00 | > 500 | PASS   |
| 2452  | 36380.00 | > 500 | PASS   |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對测試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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 form exercising all their rights and obligations under the transaction document is unlawful and offenders may be prosecuted to the fullest extent of the law.





### 99% Bandwidth Antenna Chain 0

| 802.11b Ch0 |        |  |  |  |
|-------------|--------|--|--|--|
| Freq.       | 99% BW |  |  |  |
| (MHz)       | (MHz)  |  |  |  |
| 2412        | 13.653 |  |  |  |
| 2437        | 13.759 |  |  |  |
| 2462        | 13.000 |  |  |  |

| 802.11g Ch0 |        |  |  |  |  |
|-------------|--------|--|--|--|--|
| Freq.       | 99% BW |  |  |  |  |
| (MHz)       | (MHz)  |  |  |  |  |
| 2412        | 16.872 |  |  |  |  |
| 2437        | 16.806 |  |  |  |  |
| 2462        | 16.852 |  |  |  |  |

| 802.11n_HT20M Ch0 |        |  |  |  |  |
|-------------------|--------|--|--|--|--|
| Freq.             | 99% BW |  |  |  |  |
| (MHz)             | (MHz)  |  |  |  |  |
| 2412              | 18.132 |  |  |  |  |
| 2437              | 17.983 |  |  |  |  |
| 2462              | 18.099 |  |  |  |  |

| 802.11n_HT40M Ch0 |        |  |  |  |  |
|-------------------|--------|--|--|--|--|
| Freq. 99% BW      |        |  |  |  |  |
| (MHz)             | (MHz)  |  |  |  |  |
| 2422              | 36.497 |  |  |  |  |
| 2437              | 36.437 |  |  |  |  |
| 2452              | 36.872 |  |  |  |  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

#### Report No.:ER/2018/90025 Page 34 of 182



#### Antenna Chain 1

| 802.11b Ch1 |        |  |  |  |  |
|-------------|--------|--|--|--|--|
| Freq.       | 99% BW |  |  |  |  |
| (MHz)       | (MHz)  |  |  |  |  |
| 2412        | 13.253 |  |  |  |  |
| 2437        | 13.397 |  |  |  |  |
| 2462        | 13.107 |  |  |  |  |

| 802.11g Ch1 |        |  |  |  |  |
|-------------|--------|--|--|--|--|
| Freq.       | 99% BW |  |  |  |  |
| (MHz)       | (MHz)  |  |  |  |  |
| 2412        | 16.617 |  |  |  |  |
| 2437        | 16.730 |  |  |  |  |
| 2462        | 16.602 |  |  |  |  |

| 802.11n_HT20M Ch1      |        |  |  |  |  |
|------------------------|--------|--|--|--|--|
| Freq.                  | 99% BW |  |  |  |  |
| (MHz)                  | (MHz)  |  |  |  |  |
| 2412                   | 17.795 |  |  |  |  |
| 2437                   | 17.947 |  |  |  |  |
| 2462                   | 17.778 |  |  |  |  |
| 802.11n_H <sup>-</sup> |        |  |  |  |  |
|                        |        |  |  |  |  |
| Freq.                  | 99% BW |  |  |  |  |
| (MHz)                  | (MHz)  |  |  |  |  |
| 2422                   | 36.291 |  |  |  |  |
|                        |        |  |  |  |  |
| 2437                   | 36.365 |  |  |  |  |

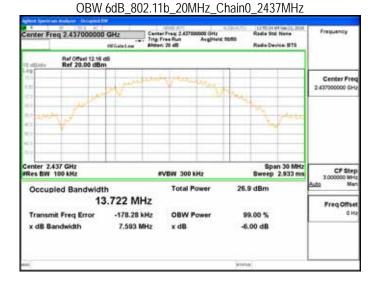
\*Refer to next page for plots

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

(新年方方) 就例 「近報考验未僅有利気(人体的資質」)「同時式体的運貨体制的)で、参照考末型本公司 音道 中了 「不可能力技衰。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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 ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

#### OBW 6dB\_802.11b\_20MHz\_Chain0\_2412MHz

| Center Fre                           | rq 2.4120000                     | 00 01 N               | lentari Frang 2.8120<br>rigi Frans Rum<br>Attan: 20 dili | AvgPiele Soto | Radio Stat No<br>Radio Device | ete Frequency                      |
|--------------------------------------|----------------------------------|-----------------------|--|---------------|-------------------------------|------------------------------------|
| Ref 0fteet 12.16 dS<br>Ref 20.00 dBm |                                  |                       |  |               |                               |                                    |
|                                      |                                  | w.M. and              | ***  | any no        | ~                             | Center Fre<br>2.41200000 GH        |
| Center 2.4                           |                                  |                       | #VBW 300   | kHz           | Span 3<br>Sweep 2.            | 30 MHz C# Ste<br>933 ms 3.00000 Mi |
| Occup                                | Occupied Bandwidth<br>13.658 MHz |                       | Total F  | lower 3       | 27.5 dBm                      | Auto Me                            |
|                                      | it Freq Error<br>ndwidth         | 91.913 kH<br>8.081 MH | 1.00000  | ower          | 99,00 %<br>-6.00 dB           | 0                                  |
|                                      |                                  |                       |  |               | intra .                       |                                    |



#### OBW 6dB\_802.11b\_20MHz\_Chain0\_2462MHz



#### OBW 6dB\_802.11b\_20MHz\_Chain1\_2412MHz

| Center Freq               | 2.412000000                          | GHz<br>r#Gaister               | Center Freg 2.4120<br>Trig Free Run<br>#Atten: 20 dB |          | Rada                | Stat Name<br>Device: 813                     | Frequency                     |
|---------------------------|--------------------------------------|--------------------------------|--|----------|---------------------|--|-------------------------------|
| 12 stEasty                | Ref 0ffset 12.16 d<br>Ref 20.00 dBm  |                                |  |          |                     |  |                               |
|                           | Not a series                         | Wat                            |  | and the  | and the second      | </th <th>Center Freq<br/>2.41200000 GHz</th> | Center Freq<br>2.41200000 GHz |
| Center 2.412<br>Res BW 10 |                                      |                                | IVBW 300   | KHZ      |                     | ipan 30 MHz<br>Ip 2.933 ms                   | CF Step<br>3.00000 MHz        |
| Occupied                  | upled Bandwidth Total Power 27.5 dBm |                                | Ê.   | Auto Men |                     |  |                               |
| Transmit I<br>x dB Band   | Freq Error                           | 285 MH<br>97.029 ki<br>8.068 M | Hz OBW   | Power    | 99.00 %<br>-6.00 dB | C 1  | Freq Offset<br>0 Hz           |
| -                         |                                      |                                |  |          | (alsona)            |  |                               |

#### OBW 6dB\_802.11b\_20MHz\_Chain1\_2437MHz



#### OBW 6dB\_802.11b\_20MHz\_Chain1\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

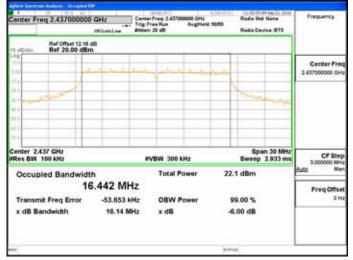
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

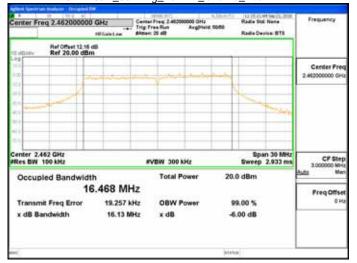
#### OBW 6dB\_802.11g\_20MHz\_Chain0\_2412MHz

| Center Freq 2.412000000 GHz |   |                                     | Center Freg 2.41200000 GH2<br>Trig Free Run AvgPleid: 5088<br>#Atten: 20 48 |     |                     | Radio Stat. None<br>Radio Device: 873 |           | Frequency                     |
|-----------------------------|---|-------------------------------------|---|-----|---------------------|---------------------------------------|-----------|-------------------------------|
| 12 Million                  |   |                                     |   |     |                     |                                       |           |                               |
| 1000<br>1000                | -   |                                     | -   |     | -                   | -                                     |           | Center Freq<br>2.412000000 GH |
| 10 0<br>10 0                | -   |                                     |   |     | N                   | -                                     | -         |                               |
| 42                          |   |                                     |   |     |                     |                                       |           |                               |
| Center 2.4                  | 112 GHz                                   |                                     | _   |     |                     | Spi                                   | in 30 MHz |                               |
| Res BW                      | es BW 100 kHz #VBW 300 kHz Sweep 2.933 ms |                                     |   |     | 2.933 ms            | C# Step<br>3.000000 MH                |           |                               |
| Occup                       | led Bandwidt<br>16                        | h<br>5.488 MHz                      |   |     | 20.5                |                                       |           | Auto Men                      |
|                             | ilt Freq Error<br>Indwidth                | Freq Error -11,517 kHz OBW Power 99 |   | 99, | 99.00 %<br>-6.00 dB |                                       | 0H        |                               |
| and Restored                | sell Completed                            |                                     |   |     | antes a             |                                       |           |                               |



#### OBW 6dB\_802.11g\_20MHz\_Chain0\_2437MHz

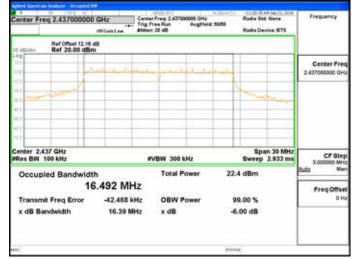
#### OBW 6dB\_802.11g\_20MHz\_Chain0\_2462MHz



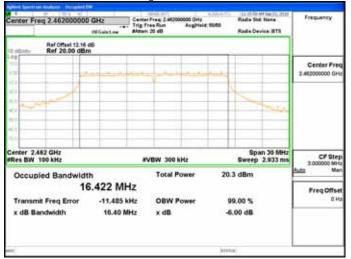
#### OBW 6dB\_802.11g\_20MHz\_Chain1\_2412MHz

| Senter Fre | enter Freq 2.412000000 GHz<br>rFGalater |           |  | Center Freg 2.41200000 GH2<br>Trig Free Run ArgPleid: 5088<br>#Atten: 20 48 |          |        | of Sector 2010<br>of Note<br>evice 873 | Frequency                      |
|------------|---|-----------|--|---|----------|--------|--|--------------------------------|
| the states | Ref 0ffset 12.16 d<br>Ref 20.00 dBn     |           |  |   |          |        |  |                                |
| 100        | -                                       | -         | -  | بيسجيه  | -        |        |  | Center Freq<br>2.412000000 GHz |
| - mar      | hand                                    |           |  |   |          | -      | -                                      |                                |
|            |   |           |  |   |          |        |  |                                |
| center 2.4 | 12 GHz                                  |           |  |   |          | Sp     | an 30 MHz                              |                                |
| Res BW 1   | 100 kHz                                 |           | IVBW :                                   | 300 kHz   |          | Sweep  | 2.933 ms                               | CF Step<br>3.000000 MHz        |
| Occupi     | ed Bandwidt                             |           | 1. | al Power  | 20.      | 5 dBm  |  | Auto Men                       |
|            | 16                                      | 6.436 MH  | z  |   |          |        |  | Freq Offset                    |
|            | t Freq Error                            | 11.219 kł |  | W Power   |          | 9.00 % |  | 0 Hz                           |
| x d8 Ba    | ndwidth                                 | 16.40 M   | łz xd                                    | 0   | -6       | 8b 00. |  |                                |
|            |   |           |  |   | ini a fa |        |  | 2                              |

#### OBW 6dB\_802.11g\_20MHz\_Chain1\_2437MHz



#### OBW 6dB\_802.11g\_20MHz\_Chain1\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

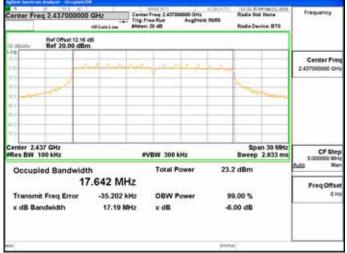
台灣檢驗科技股份有限公司

f (886-2) 2298-0488

www.tw.sgs.com

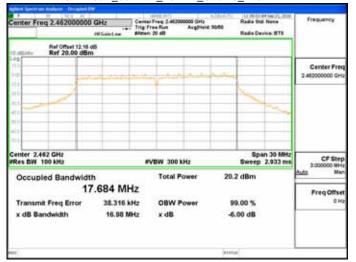
### OBW 6dB\_802.11n\_20MHz\_Chain0\_2412MHz

| Center Fre                           | q 2.412000000            |               | freg 2.41200<br>is Run<br>20 dB | AvgPteid | 5050                | Radio Davise 813 |       | Frequency             |                                |
|--------------------------------------|--------------------------|---------------|---------------------------------|----------|---------------------|------------------|-------|-----------------------|--------------------------------|
| Ref Offset 12.16 dB<br>Ref 20.00 dBm |                          |               |                                 |          |                     |                  |       |                       |                                |
| 10.00<br>10.00                       | -                        |               |                                 |          |                     | ~                |       |                       | Center Freq<br>2.412000000 GHu |
| 10 0<br>10 0<br>10 0<br>40 0         |                          |               |                                 |          |                     |                  | -     | min                   |                                |
| 10 0<br>ed 0<br>10 10                |                          |               |                                 |          |                     |                  |       |                       |                                |
| Center 2.4                           |                          |               | ev.                             | BW 300 K | Hz                  |                  |       | an 30 MHz<br>2.933 ms | C# Step<br>3.000000 MHs        |
| Occupi                               | ed Bandwidt              | h<br>7.692 MH | 1.                              | Total P  | ower                | 18.              | 7 dBm |                       | Auto Men                       |
|                                      | Transmit Freq Error 14.6 |               | 2011 - Carta Statutor           |          | 99.00 %<br>-6.00 dB |                  |       | Freq Offset<br>0 Ho   |                                |
|                                      |                          |               |                                 |          |                     | at a factor      |       |                       |                                |



# OBW 6dB\_802.11n\_20MHz\_Chain0\_2437MHz

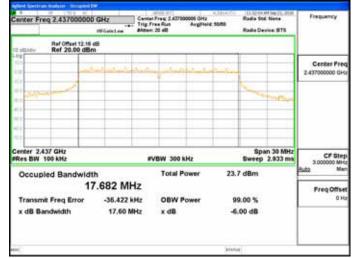
#### OBW 6dB\_802.11n\_20MHz\_Chain0\_2462MHz



#### OBW 6dB\_802.11n\_20MHz\_Chain1\_2412MHz

| Center Freq 2.412000000                     | GHz<br>r#Galation   | Center Free 2.4<br>Trig Free Run<br>Bitten: 20 dB | 12000000 GH2<br>Avg/tei | 6.004/01<br>4.5058 | Radio Stat None Frequence<br>Radio Device 813 |                       | Frequency                      |
|---|---------------------|---|-------------------------|--------------------|---|-----------------------|--------------------------------|
| Ref Offset 12.16 o<br>Ref 20.00 dBn         |                     |   |                         |                    |   |                       |                                |
| دهور<br>۱۹۵۹<br>۱۹۵۹                        | -                   | and and a start of the                            | A state                 |                    |   |                       | Center Freq<br>2.412000000 GHu |
| 00<br>60<br>60<br>60                        |                     |   |                         |                    | 1   | ~                     |                                |
|   |                     |   |                         |                    |   |                       |                                |
| Center 2.412 GHz<br>Res BW 100 kHz          |                     | IVBW 3  | DO KHZ                  |                    |   | an 30 MHz<br>2.933 ms | C# Step<br>3.000000 MH         |
| Occupied Bandwidt                           |                     |   | I Power                 | 18.                | 9 dBm   |                       | Auto Mer                       |
| 17<br>Transmit Freq Error<br>x dB Bandwidth | 11.205 k<br>17.63 M | Hz OBV  | V Power<br>L            |                    | 9.00 %<br>.00 dB                              |                       | Freq Offset<br>0 Ho            |
|   |                     |   |                         | inter-             |   |                       |                                |

#### OBW 6dB\_802.11n\_20MHz\_Chain1\_2437MHz



#### OBW 6dB\_802.11n\_20MHz\_Chain1\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

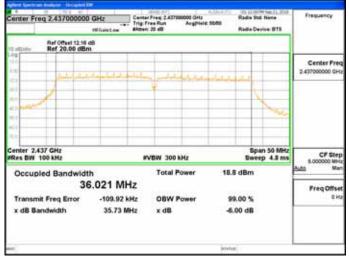
台灣檢驗科技股份有限公司

f (886-2) 2298-0488

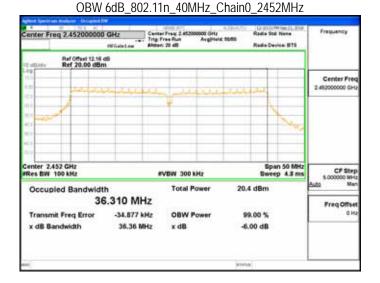
www.tw.sgs.com

### OBW 6dB\_802.11n\_40MHz\_Chain0\_2422MHz

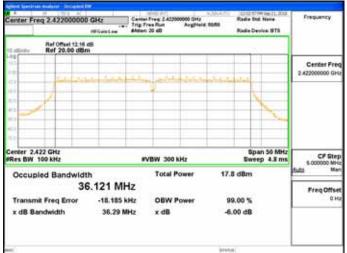




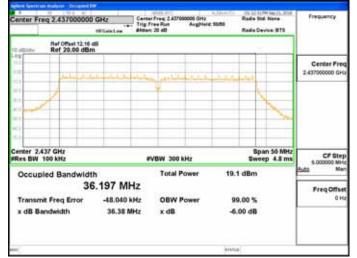
OBW 6dB 802.11n 40MHz Chain0 2437MHz



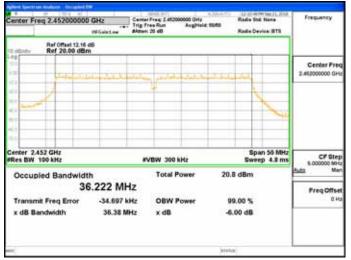
#### OBW 6dB\_802.11n\_40MHz\_Chain1\_2422MHz



#### OBW 6dB 802.11n 40MHz Chain1 2437MHz



#### OBW 6dB\_802.11n\_40MHz\_Chain1\_2452MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

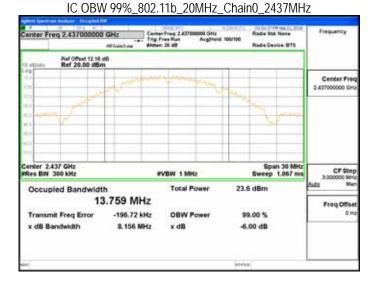
台灣檢驗科技股份有限公司

f (886-2) 2298-0488

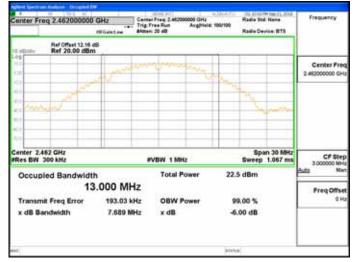
www.tw.sas.com

#### IC OBW 99%\_802.11b\_20MHz\_Chain0\_2412MHz

| Center Freq                          | r Freq 2.412000000 GHz |     |                      |     | reg 2.41200<br>Run<br>5 dit |      | 00/100      | Radio De      | Frequency             |                               |
|--------------------------------------|------------------------|-----|----------------------|-----|-----------------------------|------|-------------|---------------|-----------------------|-------------------------------|
| Ref 0ftvel 12.16 dB<br>Ref 20.00 dBm |                        |     |                      |     |                             |      |             |               |                       |                               |
|                                      | 30                     |     |                      |     | /*****                      |      | New York    | 2             | June                  | Center Freq<br>2.41200000 GHa |
| Center 2.412<br>Res BW 30            |                        |     |                      | eve | W 1 MH                      | 2    |             |               | in 30 MHz<br>1.067 ms | CF Step<br>3.00000 MHz        |
| Occupied                             | d Bandv                |     | 53 MH                | ,   | Total P                     | ower | 24.1        | dBm           |                       | Auto Men                      |
| Transmit I<br>x dB Band              | 10 H THE R.            | r 1 | 04.03 kH<br>8.118 MH | łz  | OBW P<br>x dB               | ower | 120         | 00 %<br>00 dB |                       | Freq Offset<br>0 Ho           |
| ent.                                 |                        |     |                      |     |                             |      | ja internet |               |                       |                               |



#### IC OBW 99%\_802.11b\_20MHz\_Chain0\_2462MHz



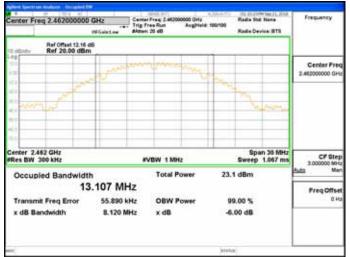
#### IC OBW 99%\_802.11b\_20MHz\_Chain1\_2412MHz

| Center Freq 2.41200000                | Trip Trip                             | nai Frag 2.812000000 GH2<br>Fraa Run Avgitteld<br>an 20 dB | 100/100 | Radio De         | Frequency |                                     |
|---------------------------------------|---------------------------------------|--|---------|------------------|-----------|-------------------------------------|
| Ref Offset 12.16<br>Ref 20.00 dBs     |                                       |  |         |                  |           |                                     |
| на<br>на<br>ка                        | an marine                             | al manage  | -       |                  |           | Center Freq<br>2.412000000 GHz      |
|                                       |                                       |  |         | 2                | June      |                                     |
| Center 2,412 GHz                      |                                       |  |         | Spi              | in 30 MHz |                                     |
| Res BW 300 kHz                        |                                       | #VBW 1 MHz   |         |                  | 1.067 mis | CF Step<br>3.000000 MHz<br>Auto Man |
| Occupied Bandwidt                     |                                       | Total Power  | 24.     | 0 dBm            |           | 5400 Million                        |
| Transmit Freq Error<br>x dB Bandwidth | 81.160 kHz<br>81.160 kHz<br>8.102 MHz | OBW Power<br>x dB  |         | 9.00 %<br>.00 dB |           | Freq Offset<br>0 Hz                 |
| -                                     |                                       |  | istan.  |                  |           |                                     |

#### IC OBW 99%\_802.11b\_20MHz\_Chain1\_2437MHz



#### IC OBW 99%\_802.11b\_20MHz\_Chain1\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

www.tw.sgs.com

Member of SGS Group



#### IC OBW 99%\_802.11g\_20MHz\_Chain0\_2412MHz

| Center Freq 2.4120000                 | enter Freq 2.412000000 GHz |   |               | AvgPloid | 106/100 |         | Radio Stal None Freque<br>Radio Device: 813 |                                |
|---------------------------------------|----------------------------|---|---------------|----------|---------|---------|---|--------------------------------|
| Ref Offset 12<br>Ref 20.00 d          |                            |   |               |          |         |         |   |                                |
| 100<br>100<br>600                     | _                          |   |               |          | -       |         |   | Center Freq<br>2.412000000 GHa |
|                                       |                            |   |               |          |         |         |   |                                |
| Center 2,412 GHz                      |                            | - | DW 1 MH       |          |         |         | in 30 MHz<br>1.067 ms                       | C# Step                        |
| Occupied Bandwi                       |                            |   | Total P       | -        | 20.     | 2 dBm   |   | 3.000000 MHz<br>Auto Men       |
| Transmit Freq Error<br>x dB Bandwidth | 선생님님은 전해서 많은 것 이상이 많을 것이다. |   | OBW P<br>x dB | ower     |         | 99.00 % |   | Freq Offset<br>0 Hz            |
|                                       |                            |   |               |          | istan.  |         |   |                                |



#### IC OBW 99%\_802.11g\_20MHz\_Chain0\_2437MHz

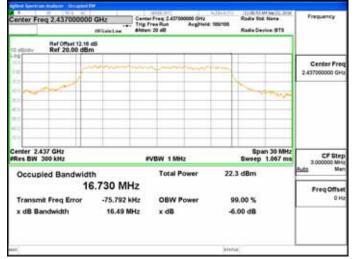
#### IC OBW 99%\_802.11g\_20MHz\_Chain0\_2462MHz

| inter Freq 2.462000000 GHz          |                   |     | Free 2.462000<br>Yes Run<br>: 20 48 |     | 100/100             | Radio De | Frequency |                               |
|-------------------------------------|-------------------|-----|-------------------------------------|-----|---------------------|----------|-----------|-------------------------------|
| Ref Offset<br>Ref 20.0              |                   |     |                                     |     |                     |          |           |                               |
| 10<br>00                            |                   |     |                                     |     | -                   |          |           | Center Freq<br>2.46200000 GHz |
|                                     |                   |     |                                     |     |                     | 1        | Sec.      |                               |
| 10                                  |                   |     |                                     |     |                     |          |           |                               |
|                                     |                   |     | -                                   |     |                     |          |           |                               |
| enter 2.462 GHz<br>Res BW 300 kHz   |                   |     | VBW 1 MHz                           | 8   |                     |          | 1.067 ms  | C# Step<br>3.000000 MHz       |
| Occupied Band                       | width<br>16.852 N | 1Hz | Total Po                            | wor | 19.                 | 6 dBm    |           | Auto Men<br>Freq Offset       |
| Transmit Freq Err<br>x dB Bandwidth | or -)<br>16.40    | MHz |                                     |     | 99.00 %<br>-6.00 dB |          |           | 0 Hz                          |
|                                     |                   |     |                                     |     |                     |          |           |                               |

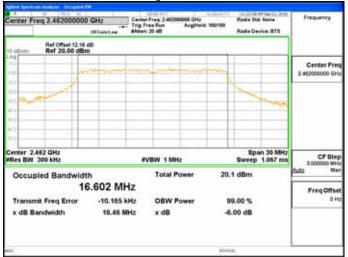
#### IC OBW 99%\_802.11g\_20MHz\_Chain1\_2412MHz

| Center Fred | 2.412000000   | GHz       | Center Freq 2.4120<br>Trig: Free Run<br>Almen: 20 dB | aaaaa aha<br>Avgittele toortoo | Radio Sta<br>Radio De | Frequency |                                |  |  |
|-------------|---------------|-----------|--|--------------------------------|-----------------------|-----------|--------------------------------|--|--|
| the states  | Ref 20.00 dBm |           |  |                                |                       |           |                                |  |  |
| 100<br>100  | 1             |           |  |                                |                       |           | Center Freq<br>2.412000000 GHz |  |  |
| ne          | -             |           |  |                                | -                     | -         |                                |  |  |
|             |               |           |  |                                |                       |           |                                |  |  |
| enter 2.41  | 2 GHz         |           | _  |                                | Spi                   | in 30 MHz |                                |  |  |
| Res BW 3    |               |           | IVBW 1 MP  | tz                             |                       | 1.067 ms  | C# Step<br>2.000000 MHz        |  |  |
| Occupie     | ed Bandwidt   |           | Total P  | ower 20                        | .3 dBm                |           | Auto Men                       |  |  |
|             | 16            | 5.617 MH  | z  |                                |                       |           | Freq Offset                    |  |  |
|             | Freq Error    | 33.265 kH |  |                                | 99.00 %               |           | ů Ha                           |  |  |
| x dB Ban    | idwidth       | 16.43 MH  | z xdB  | <u>_</u>                       | 5.00 dB               |           |                                |  |  |
|             |               |           |  | later                          |                       |           |                                |  |  |

#### IC OBW 99%\_802.11g\_20MHz\_Chain1\_2437MHz



#### IC OBW 99%\_802.11g\_20MHz\_Chain1\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions htm</u> and, for electronic format documents is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. | No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488



#### IC OBW 99%\_802.11n\_20MHz\_Chain0\_2412MHz

| Center Fred                          | enter Freq 2.412000000 GHz                  |                      |         | Frag 2.41200<br>Ha Run<br>20 dB | Avgitteld | 100/100 | Radio Stat None Frequent<br>Radio Device 813 |                       | Frequency                      |
|--------------------------------------|---|----------------------|---------|---------------------------------|-----------|---------|--|-----------------------|--------------------------------|
| Ref 0flwei 12.16 dB<br>Ref 20.00 dBm |   |                      |         |                                 |           |         |  |                       |                                |
| 16.00                                | -   |                      | -       |                                 |           | -       |  |                       | Center Freq<br>2.412000000 GHz |
| 10 0<br>10 0                         | -   | _                    |         |                                 |           |         |  |                       |                                |
| 4 5<br>10 0                          |   |                      |         |                                 |           |         |  |                       |                                |
| Center 2.41                          |   |                      |         | BW 1 MH                         |           |         |  | in 30 MHz<br>1.067 ms | C# Step                        |
|                                      | ed Bandwid                                  |                      |         | Total P                         | -         | 18.     | 0 dBm  | 1.007 min             | 3.000000 MHs<br>Auto Men       |
| Transmit                             | 1<br>Freq Error                             | 8.132 MH<br>91.766 k | 376 - L | OBW P                           | COMPE     |         | 9.00 %                                       |                       | Freq Offset                    |
| x dB Ban                             | STOP 100 100 100 100 100 100 100 100 100 10 | 17,86 M              |         | x dB                            | C. I. C.  |         | .00 dB                                       |                       |                                |
|                                      |   |                      |         |                                 |           | at at   | -  |                       |                                |



#### IC OBW 99%\_802.11n\_20MHz\_Chain0\_2437MHz

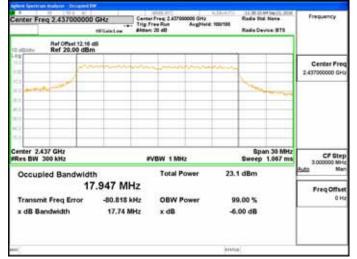
#### IC OBW 99%\_802.11n\_20MHz\_Chain0\_2462MHz

| Senter Fre | inter Freq 2.462000000 GHz   |  |     | Free 2.462000<br>ee Run<br>20.48 |     | 100/100         | Radio Sol None Freque<br>Radio Device 813 |                      | Frequency                      |
|------------|--|--|-----|----------------------------------|-----|-----------------|---|----------------------|--------------------------------|
| the states | Ref 20.00 dBm  |  |     |                                  |     |                 |   |                      |                                |
| 10.0       | 1  |  | -   |                                  |     |                 | -   |                      | Center Freq<br>2.452000000 GHu |
|            |  |  |     |                                  |     |                 |   | 1                    |                                |
| enter 2.4  |  |  |     |                                  |     |                 |   |                      |                                |
| Res BW     |  |  | ev. | BW 1 MHz                         | 1   |                 |   | n 30 MHz<br>1.067 ms | CF Step<br>3.000000 MHz        |
| Occup      | Occupied Bandwidth<br>18.099 N<br>Transmit Freq Error 141.69<br>x dB Bandwidth 17.82 |  | lz  | Total Po                         | wer | 19.5            | 5 dBm                                     |                      | Auto Men                       |
|            |  |  |     |                                  |     | 9.00 %<br>00 dB |   | 014                  |                                |
|            |  |  |     |                                  |     | jate to         | •   |                      |                                |

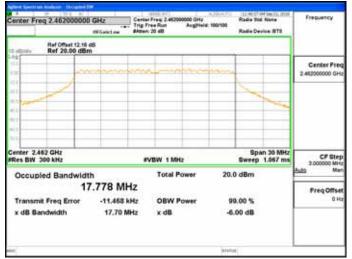
#### IC OBW 99%\_802.11n\_20MHz\_Chain1\_2412MHz

| Center Freq 2  |                    | GHz<br>r#Galacter                | Centel Free<br>Trig Free Ro<br>#Atten: 20 di | 2.412000    |     | 100/100 | Radio Device 873 |                      | Frequency                      |
|--|--------------------|----------------------------------|--|-------------|-----|---------|------------------|----------------------|--------------------------------|
| the states of th | Rady Ref 20.00 dBm |                                  |  |             |     |         |                  |                      |                                |
| 49<br>16 0<br>16 0   | -                  |                                  | -  |             | -   | -       |                  |                      | Center Fred<br>2.412000000 GHz |
| 00<br>00<br>00<br>00   |                    |                                  |  |             |     |         |                  | -                    |                                |
|  |                    |                                  |  |             |     |         |                  |                      |                                |
| Res BW 300 k   |                    |                                  | #VBW   | 1 MHz       |     |         |                  | n 30 MHz<br>1.067 ms | C# Step<br>3.000000 MHG        |
| Occupied I   |                    |                                  | 1.1.1  | otal Po     | wer | 18.     | 2 dBm            |                      | Auto Mer                       |
| Transmit Fre<br>x dB Bandw   | ng Error           | .795 MH<br>23.151 ki<br>17.72 Mi | iz O   | BW Po<br>dB | wer |         | 9.00 %<br>.00 dB |                      | Freq Offset<br>0 Ho            |
| 4  |                    |                                  |  |             |     | intern. |                  |                      |                                |

#### IC OBW 99%\_802.11n\_20MHz\_Chain1\_2437MHz



#### IC OBW 99%\_802.11n\_20MHz\_Chain1\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions htm</u> and, for electronic format documents is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. | No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

www.tw.sgs.com Member of SGS Group



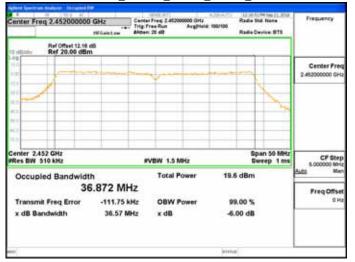
#### IC OBW 99%\_802.11n\_40MHz\_Chain0\_2422MHz

| Center Freq 2.4220000                 | nFGainter            | Cental Fre<br>Trig Free F<br>Blazen: 20 ( | e 2.422000<br>Run |     | 100/100 | Radia            | Radio Stat None Frequen   |                                |
|---------------------------------------|----------------------|---|-------------------|-----|---------|------------------|---------------------------|--------------------------------|
| Ref Offset 12.1<br>Ref 20.00 dl       |                      |   |                   |     |         |                  |                           |                                |
| YIO KON                               |                      |   |                   |     |         | -                |                           | Center Freq<br>2.422000000 GHu |
| -                                     |                      |   |                   |     |         |                  | X                         |                                |
| 412                                   |                      |   |                   |     |         |                  | ~                         |                                |
| Center 2.422 GHz                      |                      |   |                   |     |         |                  |                           |                                |
| Res BW 510 kHz                        |                      | IVEV                                      | N 1.5 M           | 4z  |         |                  | ipan 50 MHz<br>Sweep 1 ms | C# Step<br>5.000000 MHz        |
| Occupied Bandwid                      |                      |   | Total Po          | wer | 16.     | 9 dBn            | r.                        | Auto Men                       |
| 2012/01/2012 01:00:00:00              | 36.497 MH            | 354 - M                                   |                   |     |         |                  |                           | Freq Offset                    |
| Transmit Freq Error<br>x dB Bandwidth | -34.061 k<br>36.35 M |   | OBW Po<br>k dB    | wer |         | 9.00 %<br>.00 dB | 10 U                      | 0 Hu                           |
|                                       |                      |   |                   |     | inter-  |                  |                           |                                |



#### IC OBW 99%\_802.11n\_40MHz\_Chain0\_2437MHz

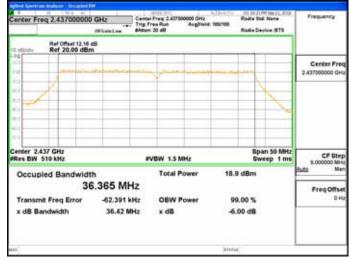
#### IC OBW 99%\_802.11n\_40MHz\_Chain0\_2452MHz



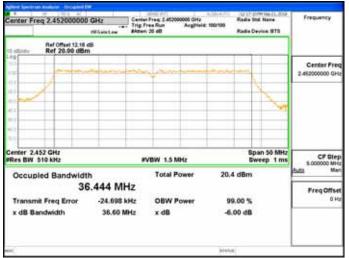
#### IC OBW 99%\_802.11n\_40MHz\_Chain1\_2422MHz

| Center Free          | g 2.422000000 | GHz<br>references | Center | Freq 2.422000000 GH<br>ee Run Avg/0<br>20 dB | 100/100 | Radio Std. None<br>Radio Device: 813 | Frequency                      |
|----------------------|---------------|-------------------|--------|--|---------|--------------------------------------|--------------------------------|
| the states           | Ref 20.00 dBr |                   |        |  |         |                                      |                                |
| 49<br>16 0<br>16 0   |               |                   |        |  |         | -                                    | Center Freq<br>2.422000000 GHz |
| 1                    |               |                   |        |  |         | X                                    |                                |
|                      |               |                   |        |  |         |                                      |                                |
| enter 2.42           | 2 CHr         |                   |        |  |         | Span 50 MH                           |                                |
| Res BW 5             |               |                   |        | /BW 1.5 MHz                                  |         | Sweep 1 m                            | S.000000 MHg                   |
| Occupie              | ed Bandwidt   |                   | ane.   | Total Power                                  | 17.     | 5 dBm                                | Auto Men                       |
|                      | 30            | 5.291 MI          | Ηz     |  |         |                                      | FreqOffset                     |
| Transmit<br>x dB Bar | Freq Error    | -17.405 M         |        | OBW Power<br>x dB                            |         | 9.00 %<br>.00 dB                     | 0 Hz                           |
| X 06 6 M             | idwidth       | 36.35 N           | 112    | x de   |         | .00 08                               |                                |
|                      |               |                   |        |  | inter-  |                                      |                                |

#### IC OBW 99%\_802.11n\_40MHz\_Chain1\_2437MHz



#### IC OBW 99%\_802.11n\_40MHz\_Chain1\_2452MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions htm</u> and, for electronic format documents is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

www.tw.sgs.com



# 10 CONDUCTED BAND EDGE AND SPURIOUS EMISSION MEASUREMENT

# 10.1 Standard Applicable

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

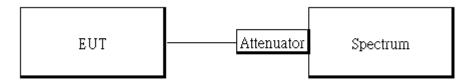
In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a) & RSS-Gen §8.10, must also comply with the radiated emission limits specified in §15.209(a) & RSS-Gen §8.9.

If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

| Conducted Emission Test Site |               |                  |                  |              |            |  |  |  |
|------------------------------|---------------|------------------|------------------|--------------|------------|--|--|--|
| EQUIPMENT<br>TYPE            | MFR           | MODEL<br>NUMBER  | SERIAL<br>NUMBER | LAST<br>CAL. | CAL DUE.   |  |  |  |
| EXA Spectrum<br>Analyzer     | Agilent       | N9010A           | MY5042019<br>5   | 05/03/2018   | 05/02/2019 |  |  |  |
| Attenuator                   | Mini-Circuit  | BW-S10W2+        | 2                | 01/02/2018   | 01/01/2019 |  |  |  |
| DC Block                     | Mini-Circuits | BLK-18-S+        | 1                | 01/02/2018   | 01/01/2019 |  |  |  |
| Coaxial Cables               | N/A           | WK CE Ca-<br>ble | N/A              | 01/02/2018   | 01/01/2019 |  |  |  |
| Power Meter                  | Anritsu       | ML2496A          | 1804001          | 02/01/2018   | 01/31/2019 |  |  |  |
| Power Sensor                 | Anritsu       | MA2411B          | 1726104          | 02/01/2018   | 01/31/2019 |  |  |  |
| Power Sensor                 | Anritsu       | MA2411B          | 1726107          | 02/01/2018   | 01/31/2019 |  |  |  |

# 10.2 Measurement Equipment Used

# 10.3 Test SET-UP



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



# **10.4 Measurement Procedure**

# **Conducted Band Edge Limt**

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance & ANSI C63.10.
- 3. Set the span to 1.5 times the DTS channel bandwidth.
- 4. Set the RBW = 100kHz & VBW = 300 kHz.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8.Allow trace to fully stabilize.

9.Use the peak marker function to determine the maximum amplitude level.

# **Conducted Band Edge:**

- 1. To connect Antenna Port of EUT to Spectrum.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance & ANSI C63.10.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set start to edge frequency, and stop frequency of spectrum analyzer so as to encompass the spectrum to be examined.
- 5. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Detector = Peak, Sweep = auto
- 6. Mark the highest reading of the emission as the reference level measurement.
- 7. Set DL as the limit = reading on marker 1 20dBm
- 8. Marker on frequency, 2.3999GHz and 2.4836GHz, and examine shall 100 kHz immediately outside the authorized (2400~2483.5) be attenuated by 20dB at least relative to the maximum emission of power.
- 9. Repeat above procedures until all default test channel (low, middle, and high) was complete.

### **Conducted Spurious Emission:**

- 1. To connect Antenna Port of EUT to Spectrum
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance & ANSI C63.10.
- 3. Set RBW = 100 kHz & VBW= 300 kHz, Detector =Peak, Sweep = Auto.
- 4. Allow trace to fully stabilize.
- 5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
- 6. Repeat above procedures until all default test channel measured were complete.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



#### 10.5 **Measurement Result**

| Reference Level of Limit 802.11b mode |       |                          | Reference Level of Limit 802.11g mode |       |                          |
|---------------------------------------|-------|--------------------------|---------------------------------------|-------|--------------------------|
| Freq.                                 | PSD   | Reference Level of Limit | Freq.                                 | PSD   | Reference Level of Limit |
| (MHz)                                 | (dBm) | (dBm)                    | (MHz)                                 | (dBm) | (dBm)                    |
| 2412                                  | 15.56 | -4.44                    | 2412                                  | 5.20  | -14.80                   |
| 2437                                  | 15.11 | -4.89                    | 2437                                  | 7.38  | -12.62                   |
| 2462                                  | 14.12 | -5.88                    | 2462                                  | 5.75  | -14.25                   |

| Reference | ce Level | of Limit 802.11n20 mode  | Referenc | e Level o | of Limit 802.11n40 MODE  |
|-----------|----------|--------------------------|----------|-----------|--------------------------|
| Freq.     | PSD      | Reference Level of Limit | Freq.    | PSD       | Reference Level of Limit |
| (MHz)     | (dBm)    | (dBm)                    | (MHz)    | (dBm)     | (dBm)                    |
| 2412      | 3.50     | -16.50                   | 2422     | -0.09     | -20.09                   |
| 2437      | 8.53     | -11.47                   | 2437     | 1.51      | -18.49                   |
| 2462      | 5.99     | -14.01                   | 2452     | 3.65      | -16.35                   |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測试之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 form 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 ap-pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134號

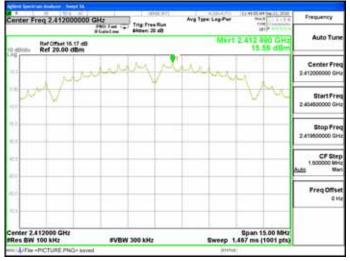
Ma

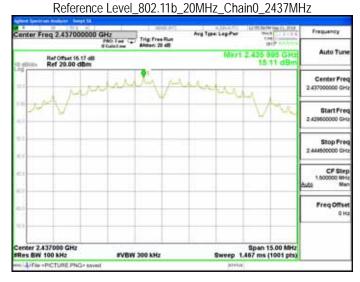
άH

Freq Offse



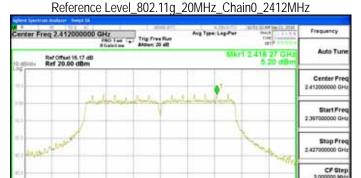
#### Reference Level\_802.11b\_20MHz\_Chain0\_2412MHz







### Reference Level\_802.11b\_20MHz\_Chain0\_2462MHz



enter 2.41206 GHz Bpan 30.00 MHz Res BW 100 kHz SWeep 2.933 ms (1001 pts) Indefine +PCTURE PNG+ saved Internet

#### Reference Level\_802.11g\_20MHz\_Chain0\_2437MHz



#### Reference Level\_802.11g\_20MHz\_Chain0\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

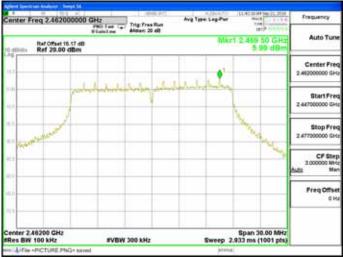


#### Reference Level\_802.11n\_20MHz\_Chain0\_2412MHz

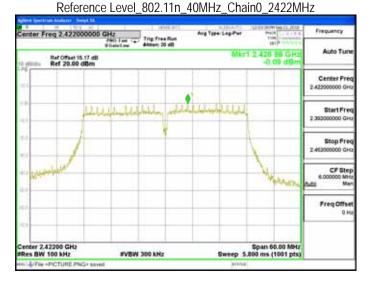


### Reference Level\_802.11n\_20MHz\_Chain0\_2437MHz





#### Reference Level\_802.11n\_20MHz\_Chain0\_2462MHz



### Reference Level\_802.11n\_40MHz\_Chain0\_2437MHz



#### Reference Level\_802.11n\_40MHz\_Chain0\_2452MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

t (886-2) 2299-3279

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

f (886-2) 2298-0488

www.tw.sgs.com

### Band Edge\_802.11b\_20MHz\_Chain0\_2412MHz

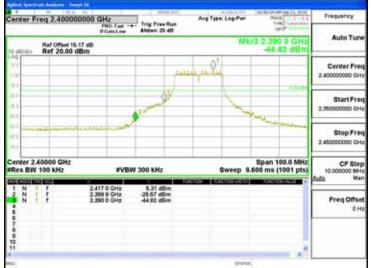
SG



### Band Edge\_802.11b\_20MHz\_Chain0\_2462MHz



### Band Edge\_802.11g\_20MHz\_Chain0\_2412MHz



Band Edge\_802.11g\_20MHz\_Chain0\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.

SGS Taiwan Ltd. | No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

| 台灣檢驗科技股份有限公司 | t (886-2) 2299-3279 | f (886-2) 2298-0488 | www.tw.sgs.com |  |
|--------------|---------------------|---------------------|----------------|--|
|              |                     |                     |                |  |

### Band Edge\_802.11n\_20MHz\_Chain0\_2412MHz

SG



# Band Edge\_802.11n\_20MHz\_Chain0\_2462MHz



# Band Edge\_802.11n\_40MHz\_Chain0\_2422MHz



Band Edge\_802.11n\_40MHz\_Chain0\_2452MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

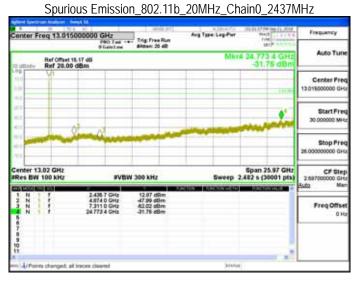
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號



### Spurious Emission\_802.11b\_20MHz\_Chain0\_2412MHz





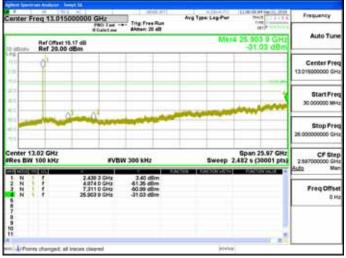
### Spurious Emission\_802.11b\_20MHz\_Chain0\_2462MHz



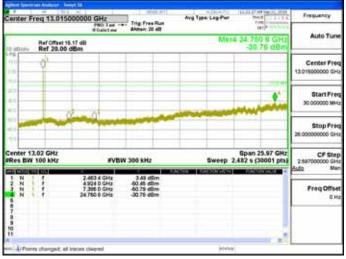
### Spurious Emission\_802.11g\_20MHz\_Chain0\_2412MHz



Spurious Emission\_802.11g\_20MHz\_Chain0\_2437MHz



### Spurious Emission\_802.11g\_20MHz\_Chain0\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.

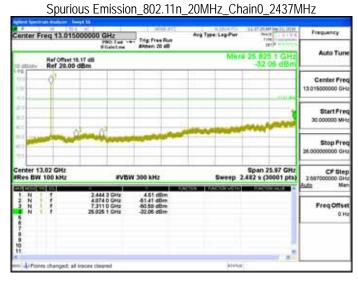
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

**台灣檢驗科技股份有限公司** t (886-2) 2299-3279 f (886-2) 2298-0488 www.tw.sgs.com

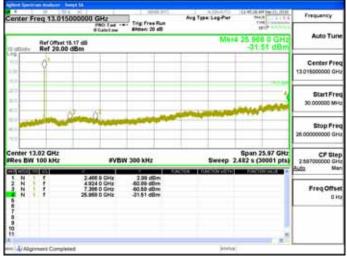


### Spurious Emission\_802.11n\_20MHz\_Chain0\_2412MHz





### Spurious Emission\_802.11n\_20MHz\_Chain0\_2462MHz



### Spurious Emission\_802.11n\_40MHz\_Chain0\_2422MHz



Spurious Emission\_802.11n\_40MHz\_Chain0\_2437MHz



### Spurious Emission\_802.11n\_40MHz\_Chain0\_2452MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488



# 11 RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT

# 11.1 Standard Applicable

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands must also comply with the RSS-Gen §8.10 Table 7.

And according to 15.33(a)(1) & RSS-Gen §6.13(a) for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

According to RSS-Gen §8.9 Table 5 & 6 Except where otherwise indicated in the applicable RSS, radiated emissions shall comply with the field strength limits shown in table 5 and table 6. Additionally, the level of any transmitter unwanted emission shall not exceed the level of the transmitter's fundamental emission

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

### Note:

1. The lower limit shall apply at the transition frequencies.

2. Emission level ( $dB\mu V/m$ ) = 20 log Emission level ( $dB\mu V/m$ )

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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 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.



# **11.2 Measurement Equipment Used:**

|                           | 966 Chamber          |                 |                  |              |            |  |  |  |  |
|---------------------------|----------------------|-----------------|------------------|--------------|------------|--|--|--|--|
| EQUIPMENT<br>TYPE         | MFR                  | MODEL<br>NUMBER | SERIAL<br>NUMBER | LAST<br>CAL. | CAL DUE.   |  |  |  |  |
| Bi-log Antenna            | SCHWAZBECK           | VULB9168        | 378              | 12/29/2017   | 12/28/2018 |  |  |  |  |
| Horn Antenna              | Schwarzbeck          | BBHA9120D       | 1441             | 08/16/2018   | 08/15/2019 |  |  |  |  |
| Horn Antenna              | Schwarzbeck          | BBHA9170        | 184              | 12/12/2017   | 12/11/2018 |  |  |  |  |
| Loop Antenna              | ETS.LINDGREN         | 6502            | 148045           | 09/25/2018   | 09/24/2019 |  |  |  |  |
| 3m Site NSA               | SGS                  | 966 chamber     | N/A              | 01/02/2018   | 01/01/2019 |  |  |  |  |
| Spectrum Analyz-<br>er    | Agilent              | E4446A          | MY51100003       | 05/15/2018   | 05/14/2019 |  |  |  |  |
| EMI Test Receiver         | R&S                  | ESCI7           | 100335           | 02/02/2018   | 02/01/2019 |  |  |  |  |
| Pre-Amplifier             | HP                   | 8449B           | 3008A00578       | 01/02/2018   | 01/01/2019 |  |  |  |  |
| Pre-Amplifier             | HP                   | 8447D           | 2944A07676       | 01/02/2018   | 01/01/2019 |  |  |  |  |
| Pre-Amplifier             | EMC Instru-<br>ments | EMC184045B      | 980135           | 10/27/2017   | 10/26/2018 |  |  |  |  |
| Attenuator                | Mini-Circuit         | BW-S10W2+       | 2                | 01/02/2018   | 01/01/2019 |  |  |  |  |
| Filter 2400-2483.5<br>MHz | EWT                  | EWT-14-0166     | M1               | 01/02/2018   | 01/01/2019 |  |  |  |  |
| Low Loss Cable            | Huber Suhner         | 966_RX          | 9                | 01/02/2018   | 01/01/2019 |  |  |  |  |

NOTE: N.C.R refers to Not Calibrated Required.

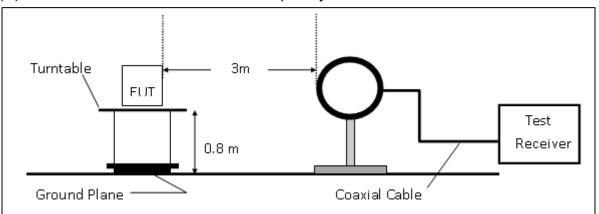
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

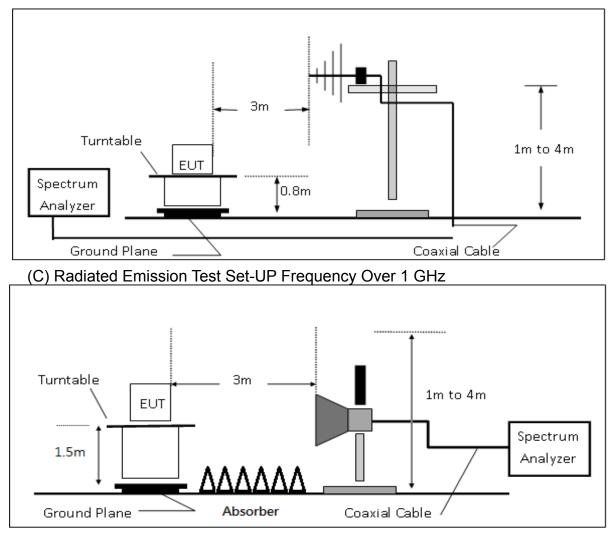


# 11.3 Test SET-UP

(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



# (B) Radiated Emission Test Set-Up, Frequency form 30MHz to 1000MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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 document is unlawful and offenders may be prosecuted to the fullest extent of the law.



# **11.4 Measurement Procedure**

- 1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance & ANSI C63.10.
- 2. The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plane.
- 3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 5. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.
- 6. Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
- 7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
- 8. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
- 9. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- 10. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 11. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. On spectrum, change spectrum mode in linear display mode, and reduce VBW = 10Hz if average reading is measured.
- 12. Repeat above procedures until all default test channel measured were complete.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



# 11.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

# FS = RA + AF + CL - AG

| Where | 5                      | CL = Cable Attenuation Factor (Cable Loss) |
|-------|------------------------|--|
|       | RA = Reading Amplitude | AG = Amplifier Gain                        |
|       | AF = Antenna Factor    |  |
|       |                        |  |

Actual FS(dB $\mu$ V/m) = SPA. Reading level(dB $\mu$ V) + Factor(dB)

Factor(dB) = Antenna Factor(dB $\mu$ V/m) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)

# 11.6 Test Results of Radiated Spurious Emissions form 9 kHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) was not reported.

### 11.7 Measurement Result

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

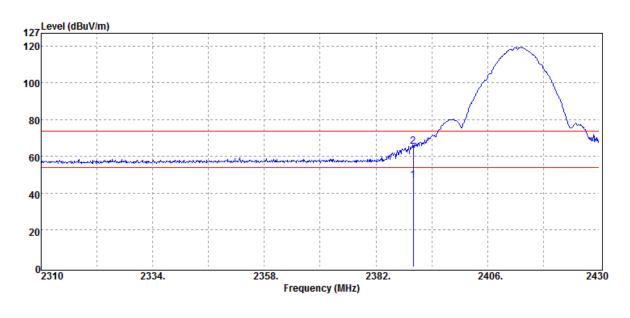
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



### **Radiated Band Edge Measurement Result**

### External Antenna (Type: Dipole antenna, Model no: WTS2405)

| Operation Band        | :802.11b         | Test Date                 | :2018-09-17       |
|-----------------------|------------------|---------------------------|-------------------|
| Fundamental Frequency | :2412 MHz        | Temp./Humi.               | :21 deg C / 62 RH |
| Operation Mode        | :Bandedge CH LOW | Engineer                  | :Wei              |
| EUT Pol.              | :E2 Plane        | Measurement Antenna Pol.  |                   |
|                       |                  | measurement Antenna i Oi. | .VERTICAL         |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    | _      |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 46.98         | 0.20   | 47.18  | 54.00  | -6.82  |
| 2390.00 | Peak     | 65.47         | 0.20   | 65.67  | 74.00  | -8.33  |
|         |          |               |        |        |        |        |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

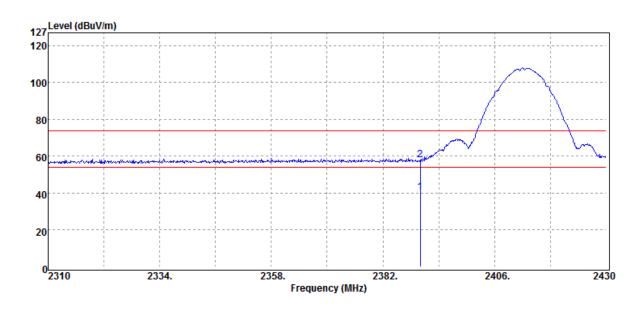
Report No.:ER/2018/90025 Page 58 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11b :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2Temp./Humi.:2Engineer:VMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 40.04         | 0.20   | 40.24  | 54.00  | -13.76 |
| 2390.00 | Peak     | 57.76         | 0.20   | 57.96  | 74.00  | -16.04 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 59 of 182

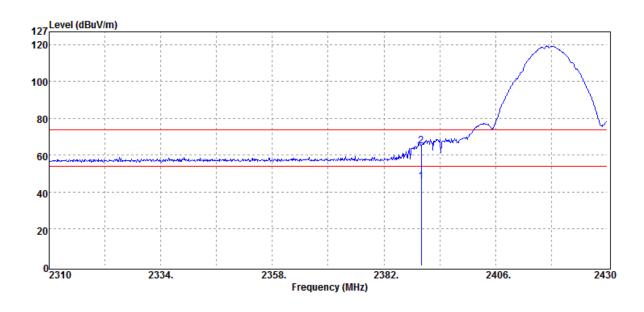


**Operation Band** Fundamental Frequency **Operation Mode** EUT Pol.

:802.11b :2417 MHz :Bandedge CH LOW :E2 Plane

Test Date Temp./Humi. Engineer :Wei Measurement Antenna Pol.

:2018-09-17 :21 deg\_C / 62 RH :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 45.46         | 0.20   | 45.66  | 54.00  | -8.34  |
| 2390.00 | Peak     | 64.65         | 0.20   | 64.85  | 74.00  | -9.15  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

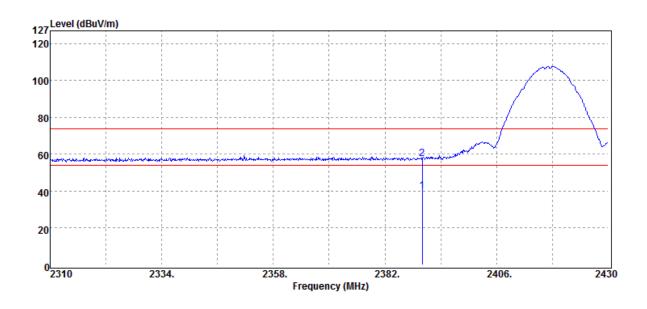
Report No.:ER/2018/90025 Page 60 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11b :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:2018Temp./Humi.:21 deEngineer:WeiMeasurement Antenna Pol.:HOR

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 39.60         | 0.20   | 39.80  | 54.00  | -14.20 |
| 2390.00 | Peak     | 57.36         | 0.20   | 57.56  | 74.00  | -16.44 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

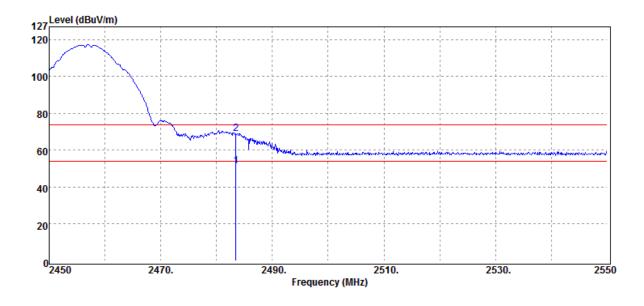
Report No.:ER/2018/90025 Page 61 of 182



Operation Band :: Fundamental Frequency :: Operation Mode :: EUT Pol. :

:802.11b :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 50.68         | 0.53   | 51.21  | 54.00  | -2.79  |
| 2483.50 | Peak     | 68.54         | 0.53   | 69.07  | 74.00  | -4.93  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

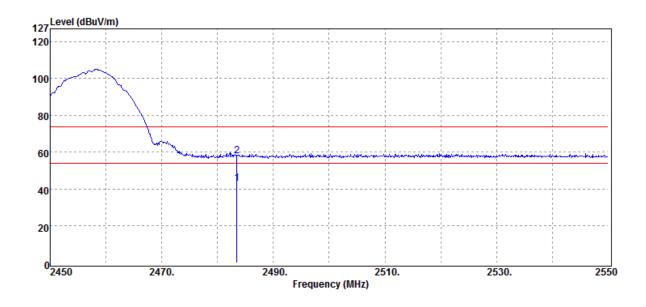
Report No.:ER/2018/90025 Page 62 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:EEUT Pol.:E

:802.11b :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:2Engineer:WMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 42.71         | 0.53   | 43.24  | 54.00  | -10.76 |
| 2483.50 | Peak     | 57.68         | 0.53   | 58.21  | 74.00  | -15.79 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

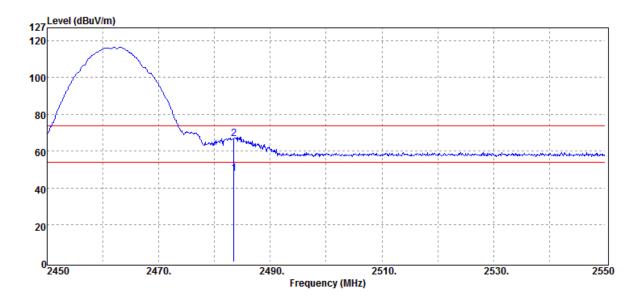
Report No.:ER/2018/90025 Page 63 of 182



Operation Band :: Fundamental Frequency :: Operation Mode :: EUT Pol. ::

:802.11b :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERTIO

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 47.44         | 0.53   | 47.97  | 54.00  | -6.03  |
| 2483.50 | Peak     | 66.41         | 0.53   | 66.94  | 74.00  | -7.06  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

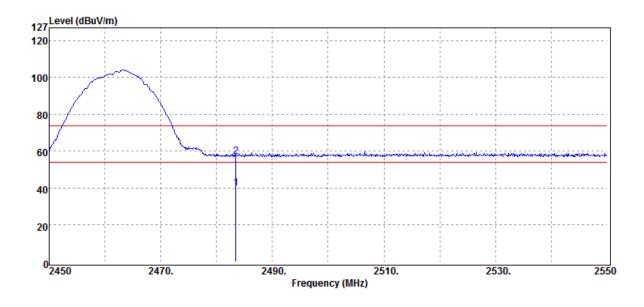
Report No.:ER/2018/90025 Page 64 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:1EUT Pol.:1

:802.11b :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:2Engineer:WMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 39.47         | 0.53   | 40.00  | 54.00  | -14.00 |
| 2483.50 | Peak     | 56.74         | 0.53   | 57.27  | 74.00  | -16.73 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

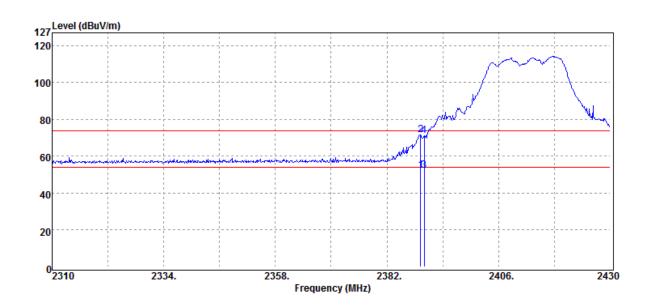
Report No.:ER/2018/90025 Page 65 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-Temp./Humi.:21 deEngineer:WeiMeasurement Antenna Pol.:VERT

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2389.20 | Average  | 51.90         | 0.20   | 52.10  | 54.00  | -1.90  |
| 2389.20 | Peak     | 71.50         | 0.20   | 71.70  | 74.00  | -2.30  |
| 2390.00 | Average  | 52.01         | 0.20   | 52.21  | 54.00  | -1.79  |
| 2390.00 | Peak     | 70.89         | 0.20   | 71.09  | 74.00  | -2.91  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

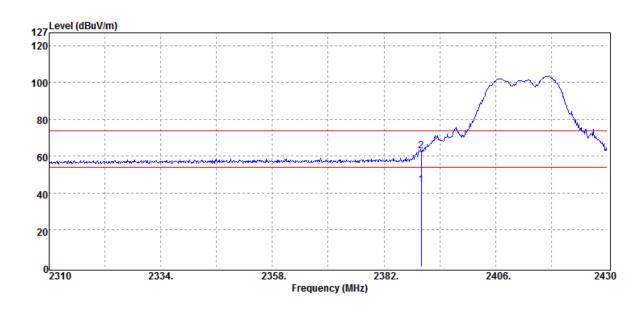
Report No.:ER/2018/90025 Page 66 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2Temp./Humi.:2Engineer:VMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 44.17         | 0.20   | 44.37  | 54.00  | -9.63  |
| 2390.00 | Peak     | 62.72         | 0.20   | 62.92  | 74.00  | -11.08 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

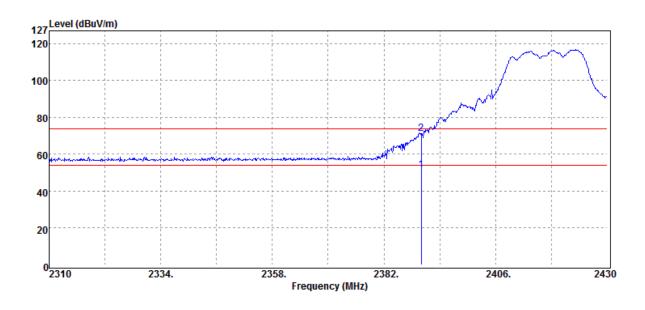
Report No.:ER/2018/90025 Page 67 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-0Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERTION

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 51.38         | 0.20   | 51.58  | 54.00  | -2.42  |
| 2390.00 | Peak     | 70.88         | 0.20   | 71.08  | 74.00  | -2.92  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

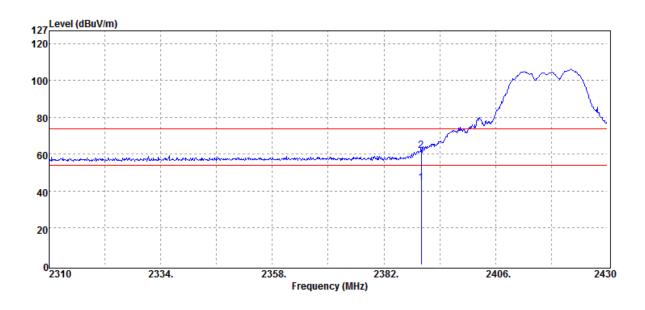
Report No.:ER/2018/90025 Page 68 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:201Temp./Humi.:21 cEngineer:WeiMeasurement Antenna Pol.:HOI

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 44.07         | 0.20   | 44.27  | 54.00  | -9.73  |
| 2390.00 | Peak     | 61.65         | 0.20   | 61.85  | 74.00  | -12.15 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

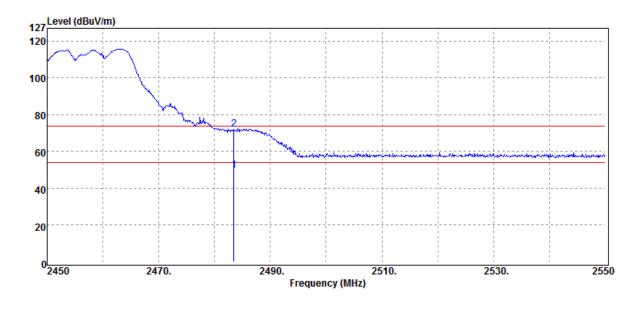
Report No.:ER/2018/90025 Page 69 of 182



Operation Band:80Fundamental Frequency:24Operation Mode:BaEUT Pol.:E2

:802.11g :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 48.97         | 0.53   | 49.50  | 54.00  | -4.50  |
| 2483.50 | Peak     | 71.60         | 0.53   | 72.13  | 74.00  | -1.87  |
|         |          |               |        |        |        |        |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

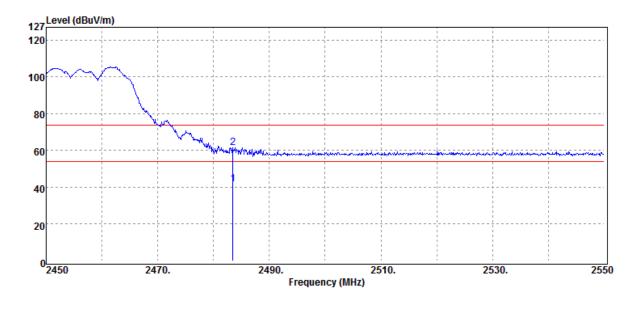
Report No.:ER/2018/90025 Page 70 of 182



Operation Band:80Fundamental Frequency:24Operation Mode:BaEUT Pol.:E2

:802.11g :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2Temp./Humi.:2Engineer:1Measurement Antenna Pol.:1

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 41.15         | 0.53   | 41.68  | 54.00  | -12.32 |
| 2483.50 | Peak     | 60.79         | 0.53   | 61.32  | 74.00  | -12.68 |
|         |          |               |        |        |        |        |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

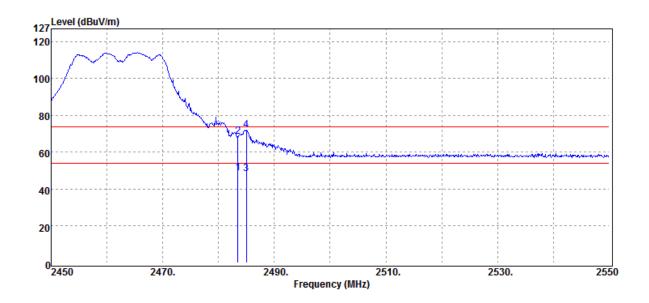
Report No.:ER/2018/90025 Page 71 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11g :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2483.50 | Average          | 48.39                     | 0.53   | 48.92        | 54.00        | -5.08  |
| 2483.50 | Peak             | 67.96                     | 0.53   | 68.49        | 74.00        | -5.51  |
| 2485.00 | Average          | 47.98                     | 0.53   | 48.51        | 54.00        | -5.49  |
| 2485.00 | Peak             | 71.56                     | 0.53   | 72.09        | 74.00        | -1.91  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

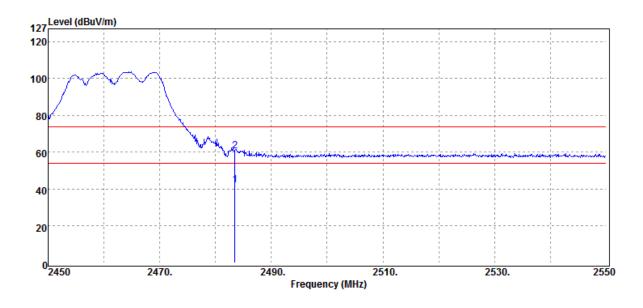
Report No.:ER/2018/90025 Page 72 of 182



Operation Band :8 Fundamental Frequency :2 Operation Mode :E EUT Pol. :E

:802.11g :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:2Engineer:WMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 41.47         | 0.53   | 42.00  | 54.00  | -12.00 |
| 2483.50 | Peak     | 60.23         | 0.53   | 60.76  | 74.00  | -13.24 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

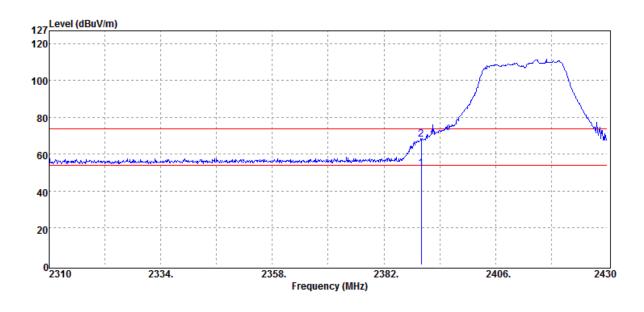
Report No.:ER/2018/90025 Page 73 of 182



Operation Band :: Fundamental Frequency :: Operation Mode :: EUT Pol. :

:802.11n20 :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 52.09         | 0.20   | 52.29  | 54.00  | -1.71  |
| 2390.00 | Peak     | 67.88         | 0.20   | 68.08  | 74.00  | -5.92  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

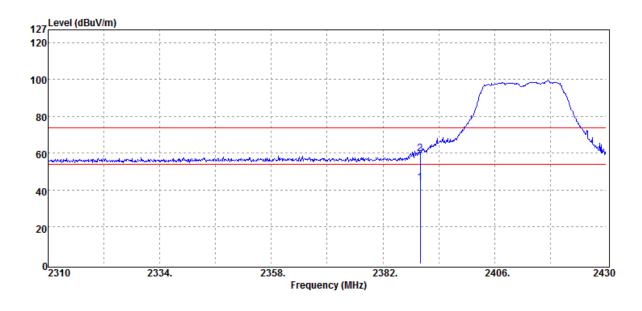
Report No.:ER/2018/90025 Page 74 of 182



Operation Band :8 Fundamental Frequency :2 Operation Mode :E EUT Pol. :6

:802.11n20 :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:20Temp./Humi.:21Engineer:WeMeasurement Antenna Pol.:HC

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 43.93         | 0.20   | 44.13  | 54.00  | -9.87  |
| 2390.00 | Peak     | 59.46         | 0.20   | 59.66  | 74.00  | -14.34 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

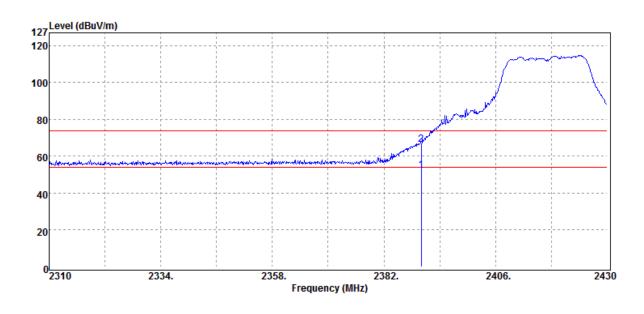
Report No.:ER/2018/90025 Page 75 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11n20 :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-Temp./Humi.:21 deEngineer:WeiMeasurement Antenna Pol.:VERT

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 51.94         | 0.20   | 52.14  | 54.00  | -1.86  |
| 2390.00 | Peak     | 66.38         | 0.20   | 66.58  | 74.00  | -7.42  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

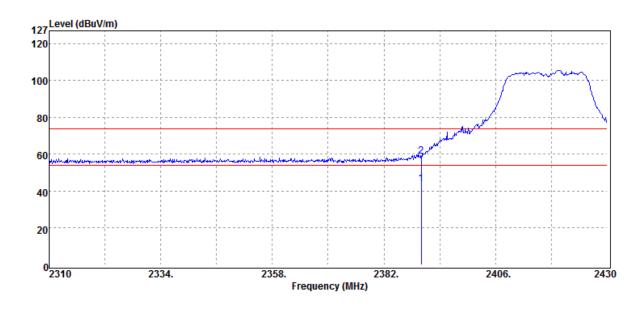
Report No.:ER/2018/90025 Page 76 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11n20 :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:201Temp./Humi.:21 cEngineer:WeiMeasurement Antenna Pol.:HOI

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 43.58         | 0.20   | 43.78  | 54.00  | -10.22 |
| 2390.00 | Peak     | 58.79         | 0.20   | 58.99  | 74.00  | -15.01 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

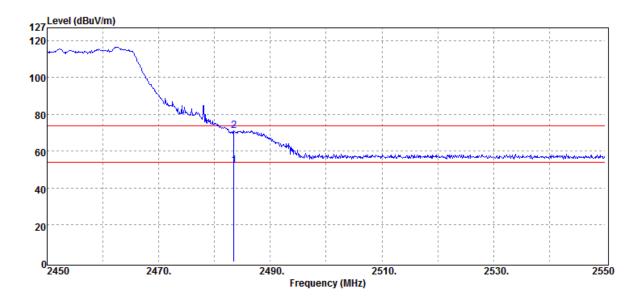
Report No.:ER/2018/90025 Page 77 of 182



Operation Band:80Fundamental Frequency:24Operation Mode:BaseEUT Pol.:East

:802.11n20 :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-0Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERT

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 51.80         | 0.53   | 52.33  | 54.00  | -1.67  |
| 2483.50 | Peak     | 70.63         | 0.53   | 71.16  | 74.00  | -2.84  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

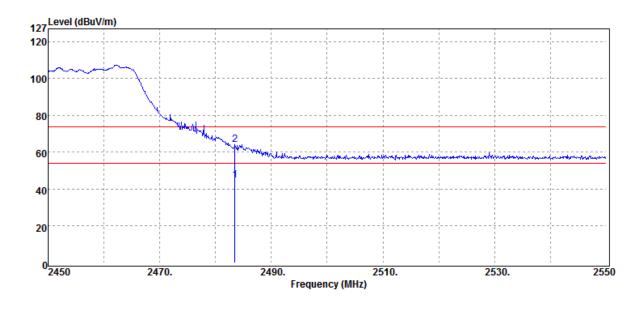
Report No.:ER/2018/90025 Page 78 of 182



Operation Band:aFundamental Frequency:aOperation Mode:aEUT Pol.:a

:802.11n20 :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2Temp./Humi.:2Engineer:VMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 44.32         | 0.53   | 44.85  | 54.00  | -9.15  |
| 2483.50 | Peak     | 63.50         | 0.53   | 64.03  | 74.00  | -9.97  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

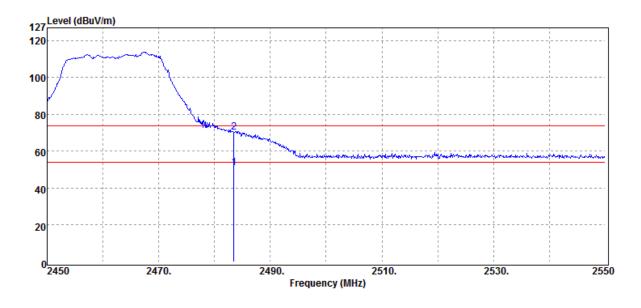
Report No.:ER/2018/90025 Page 79 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:EEUT Pol.:E

:802.11n20 :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-0Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERTIO

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 50.47         | 0.53   | 51.00  | 54.00  | -3.00  |
| 2483.50 | Peak     | 69.60         | 0.53   | 70.13  | 74.00  | -3.87  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

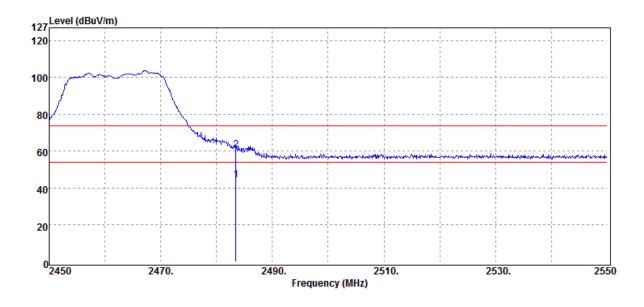
Report No.:ER/2018/90025 Page 80 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11n20 :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:22Engineer:WMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 43.78         | 0.53   | 44.31  | 54.00  | -9.69  |
| 2483.50 | Peak     | 60.32         | 0.53   | 60.85  | 74.00  | -13.15 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

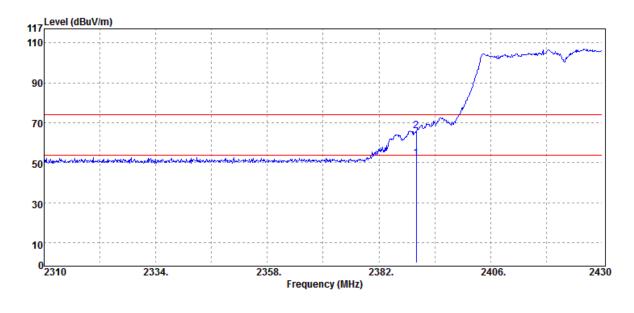
Report No.:ER/2018/90025 Page 81 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2422 MHz :Bandedge CH LOW :E2 Plane Test Date:20'Temp./Humi.:21Engineer:WeMeasurement Antenna Pol.:VE

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 52.20         | 0.20   | 52.40  | 54.00  | -1.60  |
| 2390.00 | Peak     | 65.63         | 0.20   | 65.83  | 74.00  | -8.17  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

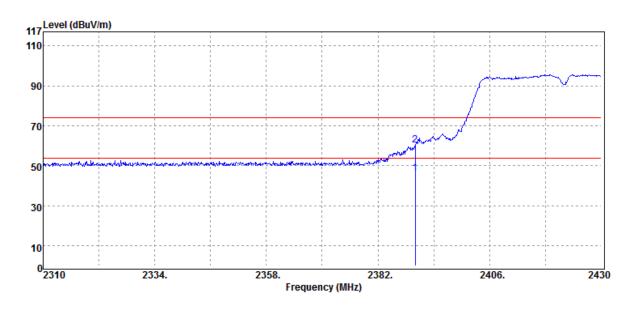
Report No.:ER/2018/90025 Page 82 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2422 MHz :Bandedge CH LOW :E2 Plane Test Date:Temp./Humi.:Engineer:Measurement Antenna Pol.:

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 46.15         | 0.20   | 46.35  | 54.00  | -7.65  |
| 2390.00 | Peak     | 60.18         | 0.20   | 60.38  | 74.00  | -13.62 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

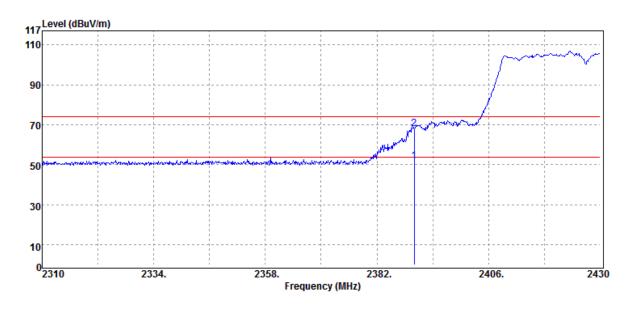
Report No.:ER/2018/90025 Page 83 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2427 MHz :Bandedge CH LOW :E2 Plane Test Date:2018Temp./Humi.:21 dEngineer:WeiMeasurement Antenna Pol.:VER

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 51.76         | 0.20   | 51.96  | 54.00  | -2.04  |
| 2390.00 | Peak     | 67.89         | 0.20   | 68.09  | 74.00  | -5.91  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

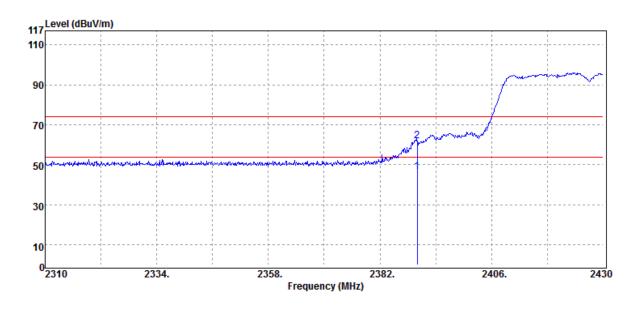
Report No.:ER/2018/90025 Page 84 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2427 MHz :Bandedge CH LOW :E2 Plane Test Date:2Temp./Humi.:2Engineer:VMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 46.17         | 0.20   | 46.37  | 54.00  | -7.63  |
| 2390.00 | Peak     | 61.61         | 0.20   | 61.81  | 74.00  | -12.19 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

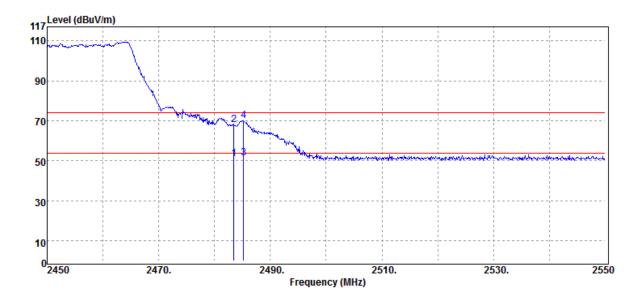
Report No.:ER/2018/90025 Page 85 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2447 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-Temp./Humi.:21 deEngineer:WeiMeasurement Antenna Pol.:VERT

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2483.50 | Average          | 50.57                     | 0.53   | 51.10        | 54.00        | -2.90  |
| 2483.50 | Peak             | 67.47                     | 0.53   | 68.00        | 74.00        | -6.00  |
| 2485.20 | Average          | 50.97                     | 0.53   | 51.50        | 54.00        | -2.50  |
| 2485.20 | Peak             | 69.59                     | 0.53   | 70.12        | 74.00        | -3.88  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

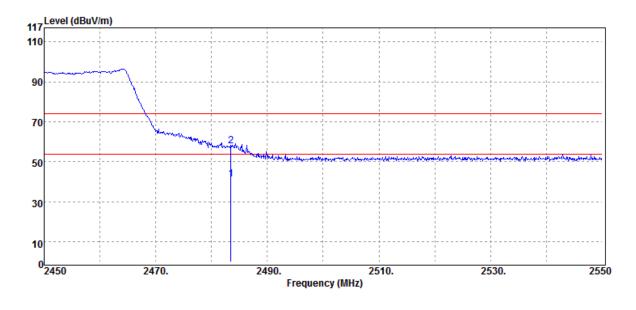
Report No.:ER/2018/90025 Page 86 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2447 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:27Engineer:WMeasurement Antenna Pol.:H

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Spectrum      | Factor                         | Actual                                 | Limit  | Margin  |
|---------------|--------------------------------|--|--|---|
| Reading Level |                                | FS                                     | @3m  | _   |
| dBµV          | dB                             | dBµV/m                                 | dBµV/m   | dB  |
| 40.81         | 0.53                           | 41.34                                  | 54.00  | -12.66  |
| 57.27         | 0.53                           | 57.80                                  | 74.00  | -16.20  |
|               | Reading Level<br>dBµV<br>40.81 | Reading Level<br>dBµV dB<br>40.81 0.53 | Reading Level FS   dBµV dB dBµV/m   40.81 0.53 41.34 | Reading Level FS @3m   dBµV dB dBµV/m dBµV/m   40.81 0.53 41.34 54.00 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

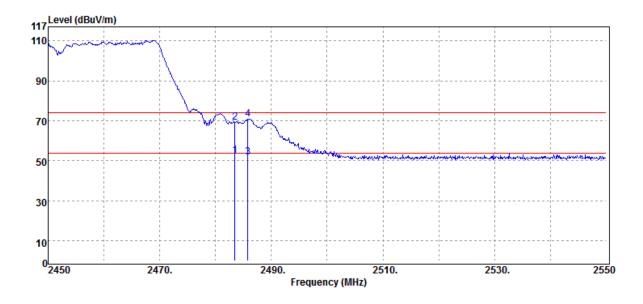
Report No.:ER/2018/90025 Page 87 of 182



Operation Band::Fundamental Frequency::Operation Mode::EUT Pol.::

:802.11n40 :2452 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-17 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2483.50 | Average          | 52.24                     | 0.53   | 52.77        | 54.00        | -1.23  |
| 2483.50 | Peak             | 68.66                     | 0.53   | 69.19        | 74.00        | -4.81  |
| 2485.80 | Average          | 51.21                     | 0.54   | 51.75        | 54.00        | -2.25  |
| 2485.80 | Peak             | 70.45                     | 0.54   | 70.99        | 74.00        | -3.01  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

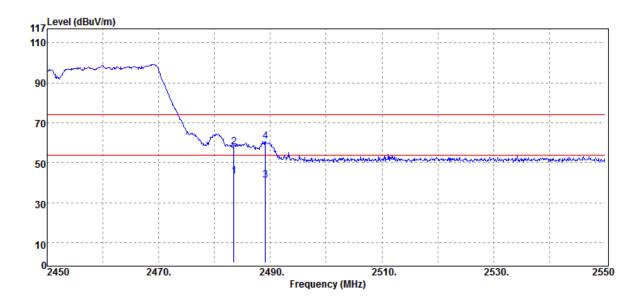
Report No.:ER/2018/90025 Page 88 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2452 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-17 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2483.50 | Average          | 42.94                     | 0.53   | 43.47        | 54.00        | -10.53 |
| 2483.50 | Peak             | 57.53                     | 0.53   | 58.06        | 74.00        | -15.94 |
| 2489.10 | Average          | 40.83                     | 0.54   | 41.37        | 54.00        | -12.63 |
| 2489.10 | Peak             | 60.32                     | 0.54   | 60.86        | 74.00        | -13.14 |

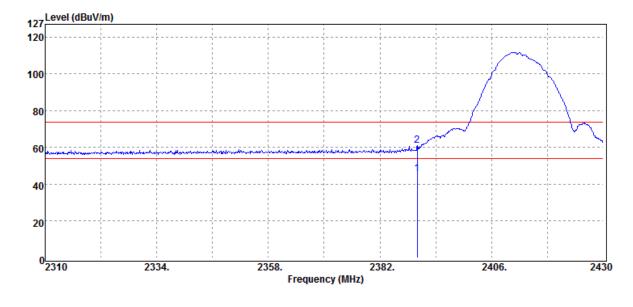
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



## Internal Antenna (Type: Printed antenna, Model no: N/A)

Operation Band Fundamental Frequency Operation Mode EUT Pol. :802.11b :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-09-25Temp./Humi.:21 deg\_C / 62 RHEngineer:WeiMeasurement Antenna Pol.:VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 45.29         | 0.20   | 45.49  | 54.00  | -8.51  |
| 2390.00 | Peak     | 61.08         | 0.20   | 61.28  | 74.00  | -12.72 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

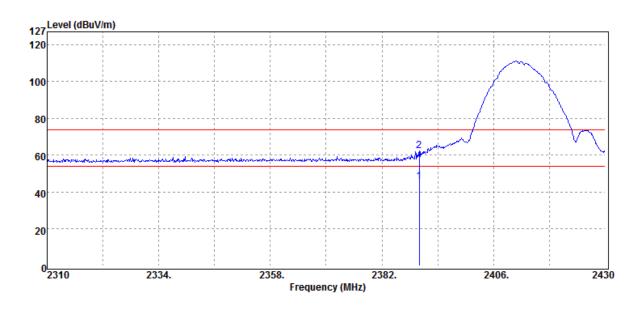
Report No.:ER/2018/90025 Page 90 of 182



Operation Band:aFundamental Frequency:aOperation Mode:aEUT Pol.:a

:802.11b :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2Temp./Humi.:2Engineer:VMeasurement Antenna Pol.:H

:2018-09-25 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 45.29         | 0.20   | 45.49  | 54.00  | -8.51  |
| 2390.00 | Peak     | 62.00         | 0.20   | 62.20  | 74.00  | -11.80 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

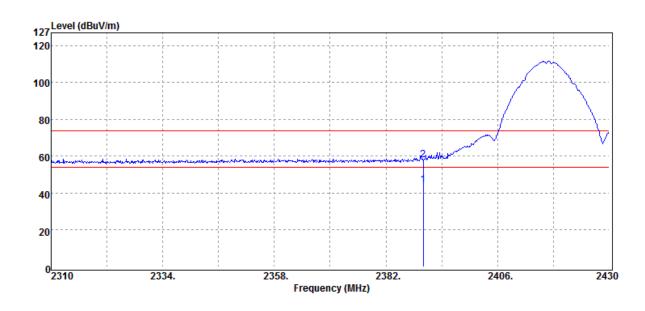
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 91 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11b :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-09-25Temp./Humi.:21 deg\_C / 62 RHEngineer:WeiMeasurement Antenna Pol.:VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 44.07         | 0.20   | 44.27  | 54.00  | -9.73  |
| 2390.00 | Peak     | 57.82         | 0.20   | 58.02  | 74.00  | -15.98 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

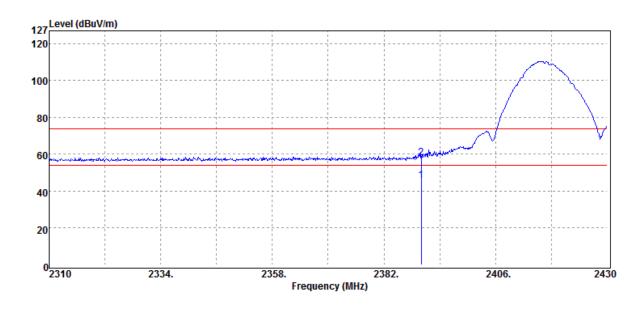
Report No.:ER/2018/90025 Page 92 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11b :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:201Temp./Humi.:21Engineer:WeMeasurement Antenna Pol.:HO

:2018-09-25 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 45.46         | 0.20   | 45.66  | 54.00  | -8.34  |
| 2390.00 | Peak     | 57.69         | 0.20   | 57.89  | 74.00  | -16.11 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

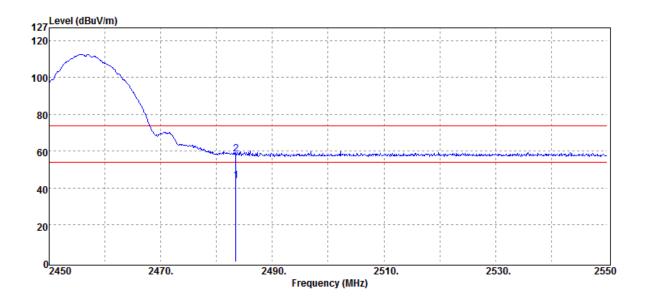
Report No.:ER/2018/90025 Page 93 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:EEUT Pol.:E

:802.11b :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-0Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERTIO

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 43.35         | 0.53   | 43.88  | 54.00  | -10.12 |
| 2483.50 | Peak     | 57.91         | 0.53   | 58.44  | 74.00  | -15.56 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

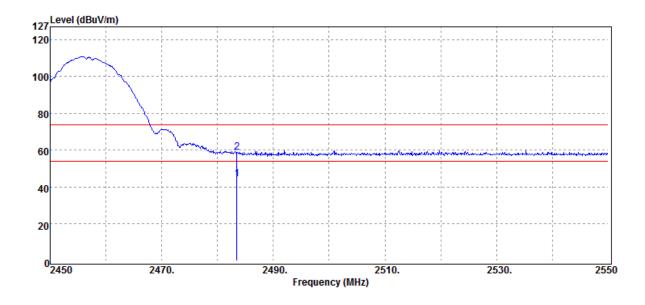
Report No.:ER/2018/90025 Page 94 of 182



Operation Band :8 Fundamental Frequency :2 Operation Mode :E EUT Pol. :E

:802.11b :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2Temp./Humi.:2Engineer:VMeasurement Antenna Pol.:H

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 43.95         | 0.53   | 44.48  | 54.00  | -9.52  |
| 2483.50 | Peak     | 58.19         | 0.53   | 58.72  | 74.00  | -15.28 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

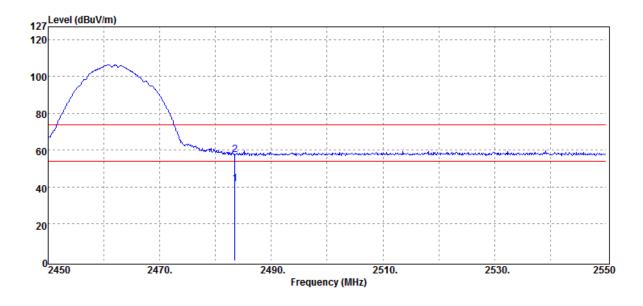
Report No.:ER/2018/90025 Page 95 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11b :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-0Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERTIN

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 41.31         | 0.53   | 41.84  | 54.00  | -12.16 |
| 2483.50 | Peak     | 56.97         | 0.53   | 57.50  | 74.00  | -16.50 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

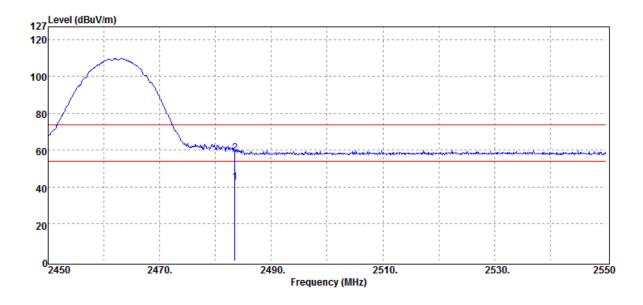
Report No.:ER/2018/90025 Page 96 of 182



Operation Band :: Fundamental Frequency :: Operation Mode :: EUT Pol. ::

:802.11b :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:2Temp./Humi.:2Engineer:VMeasurement Antenna Pol.:H

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 42.06         | 0.53   | 42.59  | 54.00  | -11.41 |
| 2483.50 | Peak     | 57.99         | 0.53   | 58.52  | 74.00  | -15.48 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

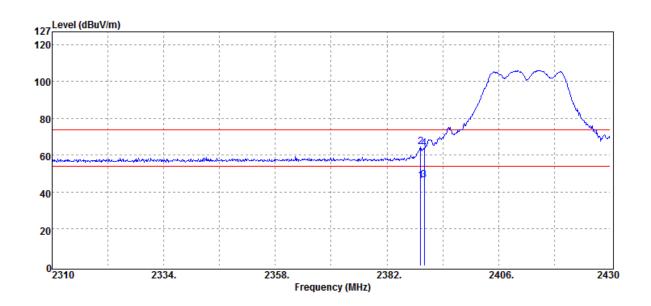
Report No.:ER/2018/90025 Page 97 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2389.20 | Average          | 45.83                     | 0.20   | 46.03        | 54.00        | -7.97  |
| 2389.20 | Peak             | 64.55                     | 0.20   | 64.75        | 74.00        | -9.25  |
| 2390.00 | Average          | 46.27                     | 0.20   | 46.47        | 54.00        | -7.53  |
| 2390.00 | Peak             | 63.49                     | 0.20   | 63.69        | 74.00        | -10.31 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

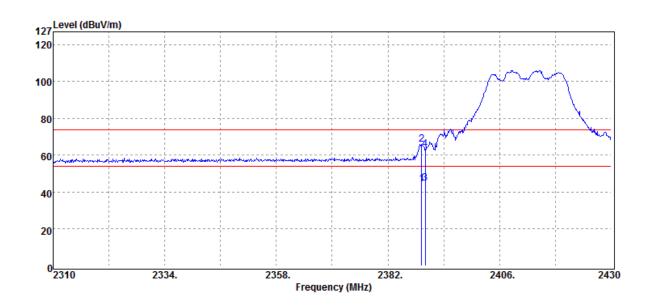
Report No.:ER/2018/90025 Page 98 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2412 MHz :Bandedge CH LOW :E2 Plane Test Date::Temp./Humi.::Engineer:'Measurement Antenna Pol.:'

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2389.20 | Average          | 44.37                     | 0.20   | 44.57        | 54.00        | -9.43  |
| 2389.20 | Peak             | 65.80                     | 0.20   | 66.00        | 74.00        | -8.00  |
| 2390.00 | Average          | 44.53                     | 0.20   | 44.73        | 54.00        | -9.27  |
| 2390.00 | Peak             | 63.25                     | 0.20   | 63.45        | 74.00        | -10.55 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

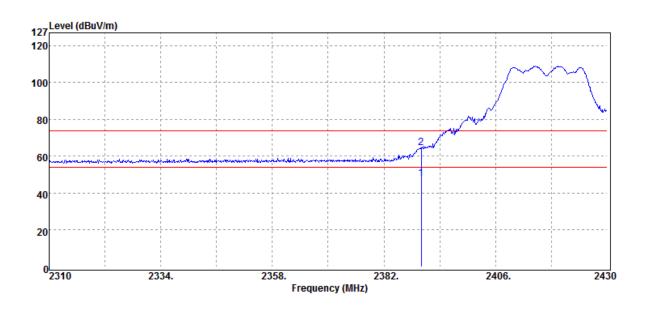
Report No.:ER/2018/90025 Page 99 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-09-Temp./Humi.:21 deg\_0Engineer:WeiMeasurement Antenna Pol.:VERTICA

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 47.75         | 0.20   | 47.95  | 54.00  | -6.05  |
| 2390.00 | Peak     | 64.42         | 0.20   | 64.62  | 74.00  | -9.38  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

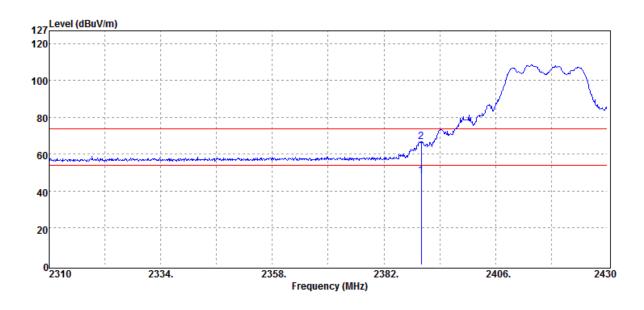
Report No.:ER/2018/90025 Page 100 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 47.96         | 0.20   | 48.16  | 54.00  | -5.84  |
| 2390.00 | Peak     | 66.69         | 0.20   | 66.89  | 74.00  | -7.11  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

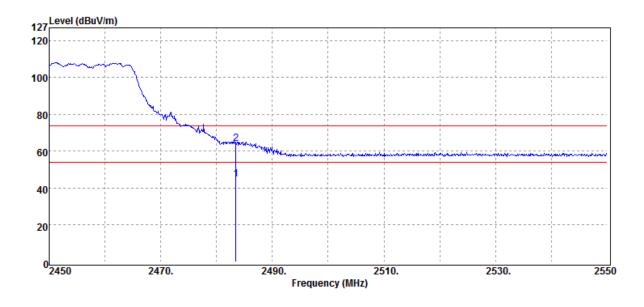
Report No.:ER/2018/90025 Page 101 of 182



Operation Band :8 Fundamental Frequency :2 Operation Mode :E EUT Pol. :E

:802.11g :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERTIO

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 44.48         | 0.53   | 45.01  | 54.00  | -8.99  |
| 2483.50 | Peak     | 63.75         | 0.53   | 64.28  | 74.00  | -9.72  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

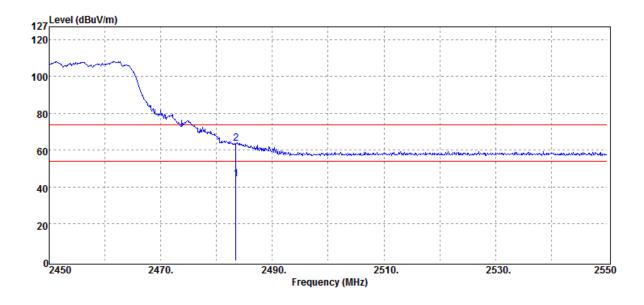
Report No.:ER/2018/90025 Page 102 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:1EUT Pol.:1

:802.11g :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:22Engineer:WMeasurement Antenna Pol.:H

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 43.91         | 0.53   | 44.44  | 54.00  | -9.56  |
| 2483.50 | Peak     | 63.07         | 0.53   | 63.60  | 74.00  | -10.40 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

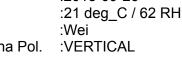
Report No.:ER/2018/90025 Page 103 of 182

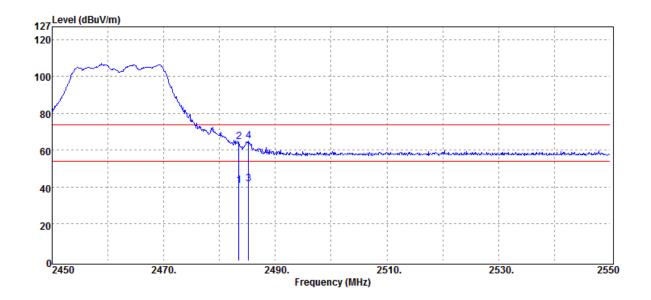


**Operation Band Fundamental Frequency Operation Mode** EUT Pol.

:802.11g :2462 MHz :Bandedge CH HIGH :E2 Plane

Test Date :2018-09-26 Temp./Humi. Engineer :Wei Measurement Antenna Pol.





| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2483.50 | Average          | 40.56                     | 0.53   | 41.09        | 54.00        | -12.91 |
| 2483.50 | Peak             | 64.23                     | 0.53   | 64.76        | 74.00        | -9.24  |
| 2485.20 | Average          | 41.34                     | 0.53   | 41.87        | 54.00        | -12.13 |
| 2485.20 | Peak             | 64.33                     | 0.53   | 64.86        | 74.00        | -9.14  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

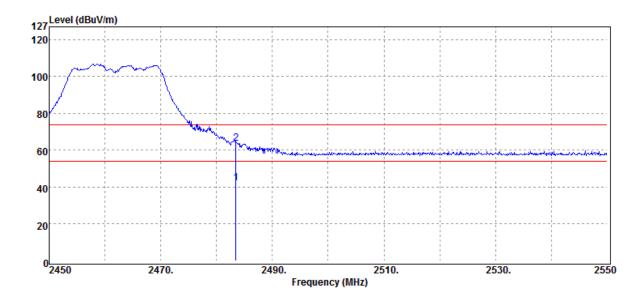
Report No.:ER/2018/90025 Page 104 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11g :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:27Engineer:WMeasurement Antenna Pol.:H

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 41.64         | 0.53   | 42.17  | 54.00  | -11.83 |
| 2483.50 | Peak     | 63.10         | 0.53   | 63.63  | 74.00  | -10.37 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

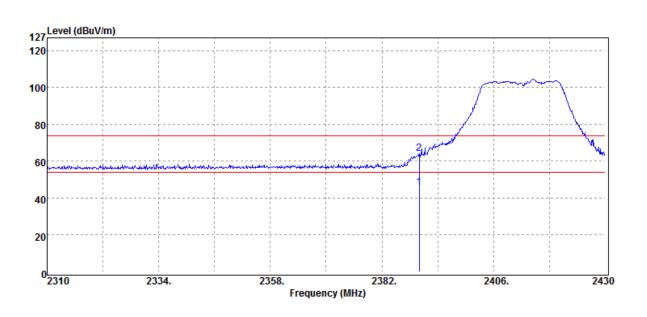
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 105 of 182



Operation Band:aFundamental Frequency:aOperation Mode:aEUT Pol.:a

:802.11n20 :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-09-26Temp./Humi.:21 deg\_C / 62 RHEngineer:WeiMeasurement Antenna Pol.:VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 45.51         | 0.20   | 45.71  | 54.00  | -8.29  |
| 2390.00 | Peak     | 64.12         | 0.20   | 64.32  | 74.00  | -9.68  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

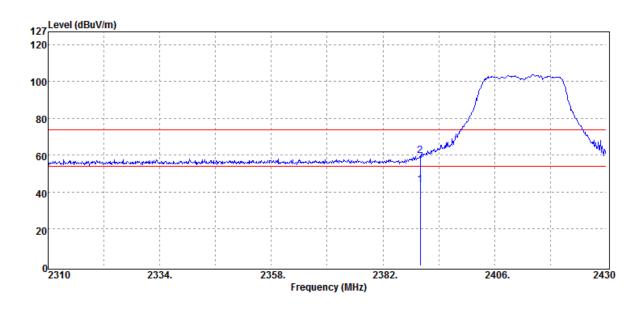
Report No.:ER/2018/90025 Page 106 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:EEUT Pol.:E

:802.11n20 :2412 MHz :Bandedge CH LOW :E2 Plane Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 43.65         | 0.20   | 43.85  | 54.00  | -10.15 |
| 2390.00 | Peak     | 59.60         | 0.20   | 59.80  | 74.00  | -14.20 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

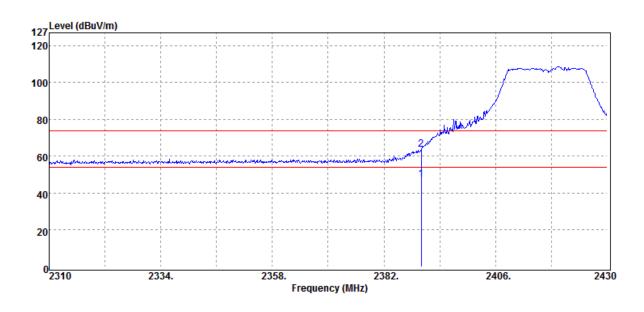
Report No.:ER/2018/90025 Page 107 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n20 :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 47.14         | 0.20   | 47.34  | 54.00  | -6.66  |
| 2390.00 | Peak     | 63.64         | 0.20   | 63.84  | 74.00  | -10.16 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

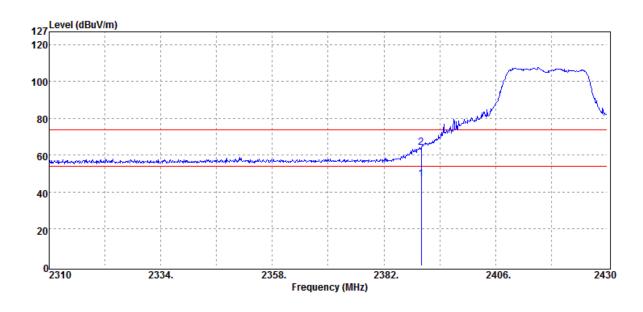
Report No.:ER/2018/90025 Page 108 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n20 :2417 MHz :Bandedge CH LOW :E2 Plane Test Date:20Temp./Humi.:27Engineer:WMeasurement Antenna Pol.:H

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 46.84         | 0.20   | 47.04  | 54.00  | -6.96  |
| 2390.00 | Peak     | 64.11         | 0.20   | 64.31  | 74.00  | -9.69  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

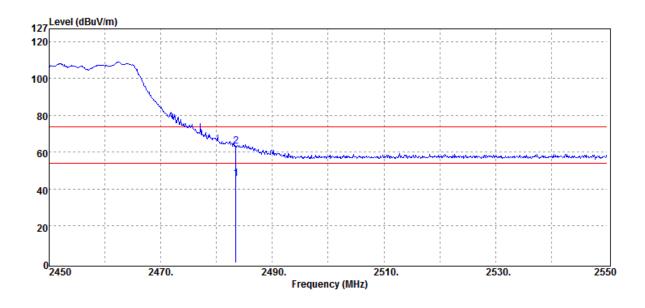
Report No.:ER/2018/90025 Page 109 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:EEUT Pol.:E

:802.11n20 :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 45.18         | 0.53   | 45.71  | 54.00  | -8.29  |
| 2483.50 | Peak     | 62.56         | 0.53   | 63.09  | 74.00  | -10.91 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

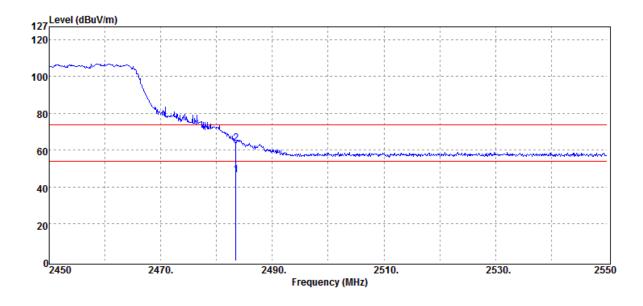
Report No.:ER/2018/90025 Page 110 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:8EUT Pol.:8

:802.11n20 :2457 MHz :Bandedge CH HIGH :E2 Plane Test Date:2Temp./Humi.:2Engineer:WMeasurement Antenna Pol.:H

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 46.16         | 0.53   | 46.69  | 54.00  | -7.31  |
| 2483.50 | Peak     | 63.30         | 0.53   | 63.83  | 74.00  | -10.17 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

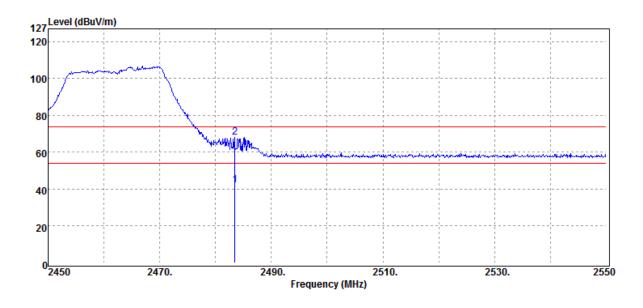
Report No.:ER/2018/90025 Page 111 of 182



Operation Band:aFundamental Frequency:aOperation Mode:aEUT Pol.:a

:802.11n20 :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 degEngineer:WeiMeasurement Antenna Pol.:VERTIO

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 41.79         | 0.53   | 42.32  | 54.00  | -11.68 |
| 2483.50 | Peak     | 67.42         | 0.53   | 67.95  | 74.00  | -6.05  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

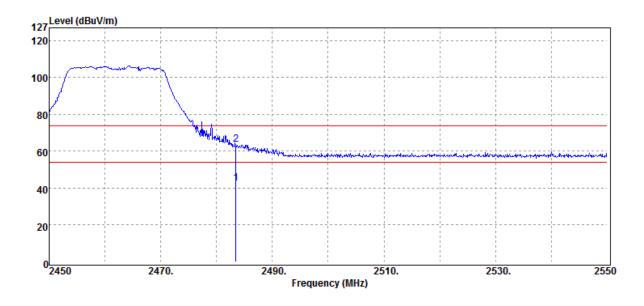
Report No.:ER/2018/90025 Page 112 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11n20 :2462 MHz :Bandedge CH HIGH :E2 Plane Test Date:2Temp./Humi.:2Engineer:WMeasurement Antenna Pol.:H

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 41.98         | 0.53   | 42.51  | 54.00  | -11.49 |
| 2483.50 | Peak     | 63.27         | 0.53   | 63.80  | 74.00  | -10.20 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

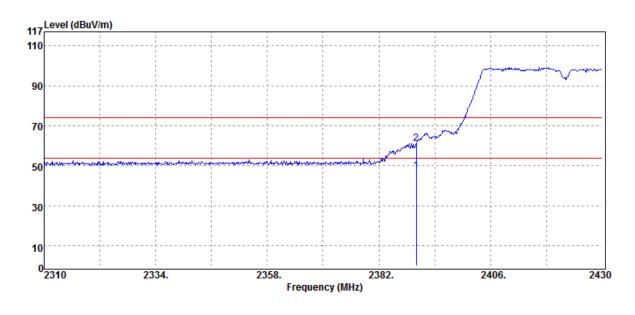
Report No.:ER/2018/90025 Page 113 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11n40 :2422 MHz :Bandedge CH LOW :E2 Plane Test Date:2018Temp./Humi.:21 dEngineer:WeiMeasurement Antenna Pol.:VER

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 47.00         | 0.20   | 47.20  | 54.00  | -6.80  |
| 2390.00 | Peak     | 60.94         | 0.20   | 61.14  | 74.00  | -12.86 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

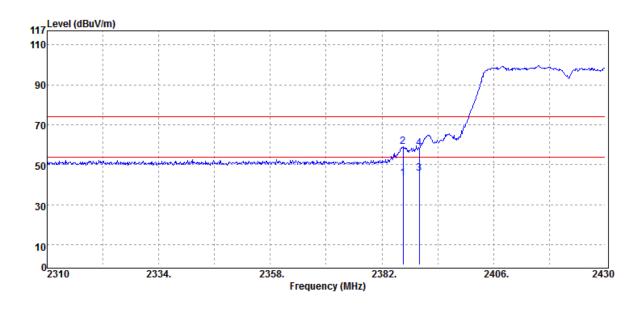
Report No.:ER/2018/90025 Page 114 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2422 MHz :Bandedge CH LOW :E2 Plane Test Date Temp./Humi. Engineer Measurement Antenna Pol.

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2386.56 | Average  | 43.01         | 0.19   | 43.20  | 54.00  | -10.80 |
| 2386.56 | Peak     | 58.84         | 0.19   | 59.03  | 74.00  | -14.97 |
| 2390.00 | Average  | 45.55         | 0.20   | 45.75  | 54.00  | -8.25  |
| 2390.00 | Peak     | 58.13         | 0.20   | 58.33  | 74.00  | -15.67 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

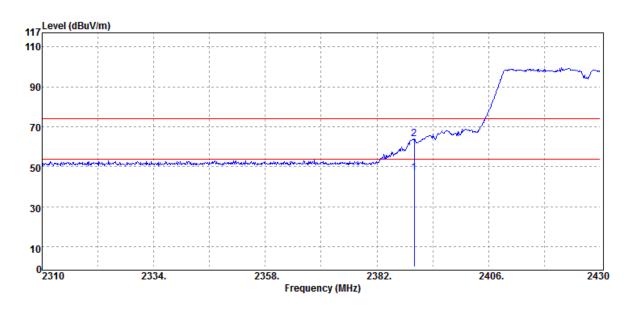
Report No.:ER/2018/90025 Page 115 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2427 MHz :Bandedge CH LOW :E2 Plane Test Date:2018Temp./Humi.:21 deEngineer:WeiMeasurement Antenna Pol.:VERT

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 46.83         | 0.20   | 47.03  | 54.00  | -6.97  |
| 2390.00 | Peak     | 63.90         | 0.20   | 64.10  | 74.00  | -9.90  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

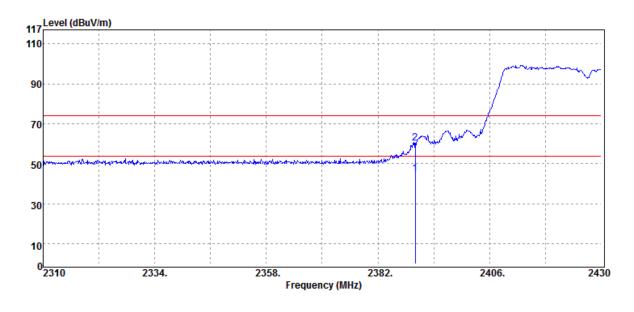
Report No.:ER/2018/90025 Page 116 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2427 MHz :Bandedge CH LOW :E2 Plane Test Date:2Temp./Humi.:2Engineer:1Measurement Antenna Pol.:1

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2390.00 | Average  | 44.82         | 0.20   | 45.02  | 54.00  | -8.98  |
| 2390.00 | Peak     | 60.07         | 0.20   | 60.27  | 74.00  | -13.73 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

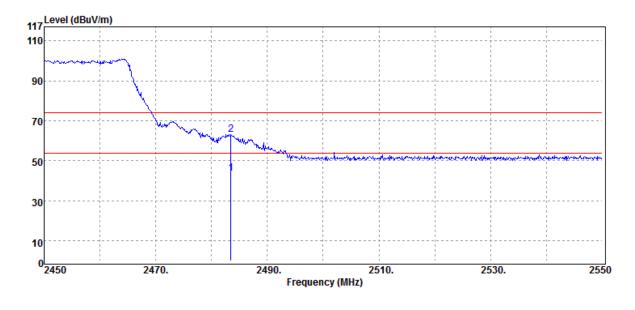
Report No.:ER/2018/90025 Page 117 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2447 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018Temp./Humi.:21 dEngineer:WeiMeasurement Antenna Pol.:VER

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 43.38         | 0.53   | 43.91  | 54.00  | -10.09 |
| 2483.50 | Peak     | 62.42         | 0.53   | 62.95  | 74.00  | -11.05 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

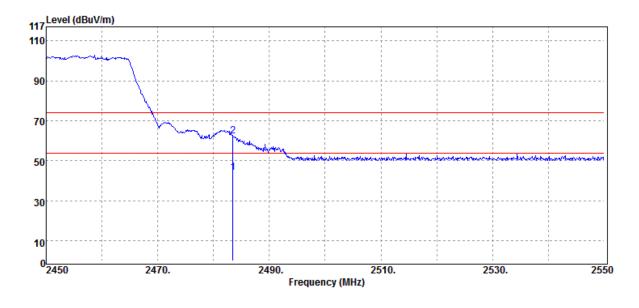
Report No.:ER/2018/90025 Page 118 of 182



Operation Band Fundamental Frequency Operation Mode EUT Pol.

:802.11n40 :2447 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 43.48         | 0.53   | 44.01  | 54.00  | -9.99  |
| 2483.50 | Peak     | 61.81         | 0.53   | 62.34  | 74.00  | -11.66 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

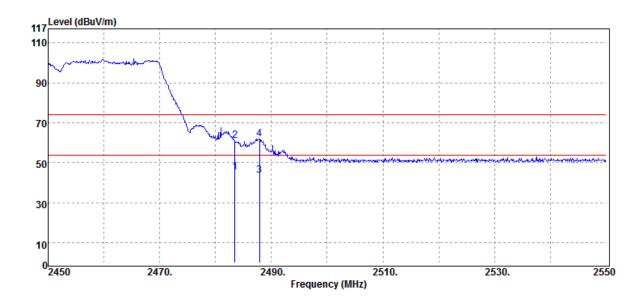
Report No.:ER/2018/90025 Page 119 of 182



Operation Band:8Fundamental Frequency:2Operation Mode:8EUT Pol.:8

:802.11n40 :2452 MHz :Bandedge CH HIGH :E2 Plane Test Date:2018-09Temp./Humi.:21 deg\_Engineer:WeiMeasurement Antenna Pol.:VERTIC

:2018-09-26 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 2483.50 | Average  | 44.76         | 0.53   | 45.29  | 54.00  | -8.71  |
| 2483.50 | Peak     | 60.78         | 0.53   | 61.31  | 74.00  | -12.69 |
| 2487.90 | Average  | 43.11         | 0.54   | 43.65  | 54.00  | -10.35 |
| 2487.90 | Peak     | 61.58         | 0.54   | 62.12  | 74.00  | -11.88 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

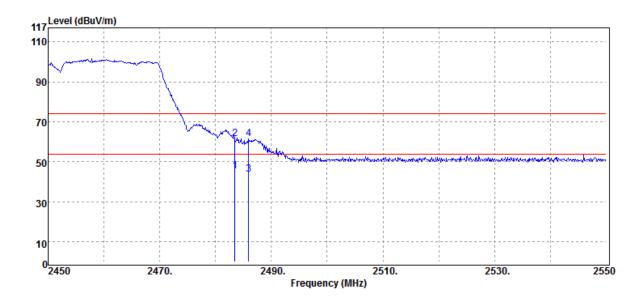
Report No.:ER/2018/90025 Page 120 of 182



Operation Band : Fundamental Frequency : Operation Mode : EUT Pol. :

:802.11n40 :2452 MHz :Bandedge CH HIGH :E2 Plane Test Date:20Temp./Humi.:27Engineer:WMeasurement Antenna Pol.:H0

:2018-09-26 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|---------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz     | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 2483.50 | Average          | 44.70                     | 0.53   | 45.23        | 54.00        | -8.77  |
| 2483.50 | Peak             | 60.90                     | 0.53   | 61.43        | 74.00        | -12.57 |
| 2485.90 | Average          | 43.20                     | 0.54   | 43.74        | 54.00        | -10.26 |
| 2485.90 | Peak             | 61.03                     | 0.54   | 61.57        | 74.00        | -12.43 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

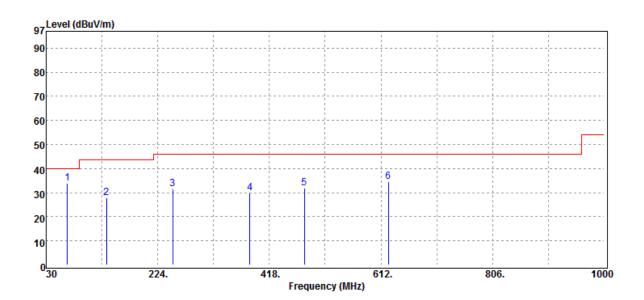


# Below 1GHz Worst-Case Data:

#### **Radiated Spurious Emission Measurement Result**

### External Antenna (Type: Dipole antenna, Model no: WTS2405)

| Operation Band        | :802.11g   | Test Date                | :2018-09-27       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |



| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 66.86  | Peak             | 43.17                     | -9.42  | 33.75        | 40.00        | -6.25  |
| 134.76 | Peak             | 36.32                     | -8.55  | 27.77        | 43.50        | -15.73 |
| 250.19 | Peak             | 39.09                     | -7.40  | 31.69        | 46.00        | -14.31 |
| 384.05 | Peak             | 33.63                     | -3.79  | 29.84        | 46.00        | -16.16 |
| 479.11 | Peak             | 34.12                     | -2.10  | 32.02        | 46.00        | -13.98 |
| 624.61 | Peak             | 33.80                     | 0.71   | 34.51        | 46.00        | -11.49 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

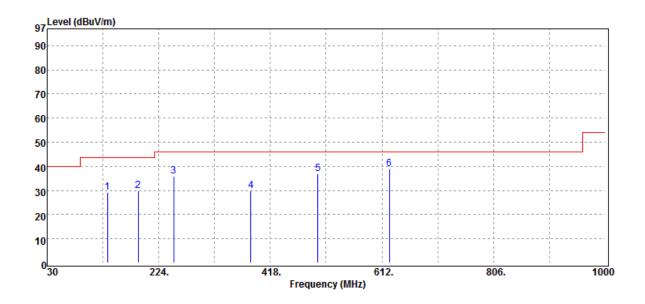
Report No.:ER/2018/90025 Page 122 of 182



Operation Band:802.11gFundamental Frequency:2437 MHzOperation Mode:Tx CH MIDEUT Pol.:E2 Plane

Test Date:2018Temp./Humi.:21 deEngineer:WeiMeasurement Antenna Pol.:HOR

:2018-09-27 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 134.76 | Peak             | 37.71                     | -8.55  | 29.16        | 43.50        | -14.34 |
| 188.11 | Peak             | 38.81                     | -8.84  | 29.97        | 43.50        | -13.53 |
| 250.19 | Peak             | 43.37                     | -7.40  | 35.97        | 46.00        | -10.03 |
| 384.05 | Peak             | 33.68                     | -3.79  | 29.89        | 46.00        | -16.11 |
| 500.45 | Peak             | 39.44                     | -2.36  | 37.08        | 46.00        | -8.92  |
| 624.61 | Peak             | 38.39                     | 0.71   | 39.10        | 46.00        | -6.90  |

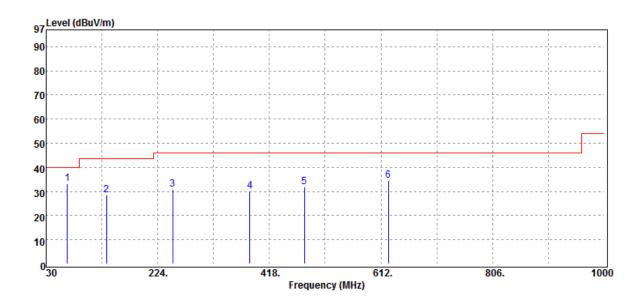
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 123 of 182



:802.11n40 **Operation Band** Test Date :2018-09-27 **Fundamental Frequency** :21 deg\_C / 62 RH :2437 MHz Temp./Humi. **Operation Mode** :Tx CH MID Engineer :Wei EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 66.86  | Peak             | 42.74                     | -9.42  | 33.32        | 40.00        | -6.68  |
| 134.76 | Peak             | 37.05                     | -8.55  | 28.50        | 43.50        | -15.00 |
| 250.19 | Peak             | 38.20                     | -7.40  | 30.80        | 46.00        | -15.20 |
| 384.05 | Peak             | 34.03                     | -3.79  | 30.24        | 46.00        | -15.76 |
| 479.11 | Peak             | 33.94                     | -2.10  | 31.84        | 46.00        | -14.16 |
| 624.61 | Peak             | 33.74                     | 0.71   | 34.45        | 46.00        | -11.55 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

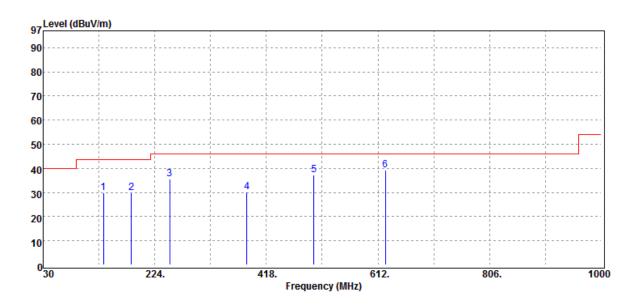
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 124 of 182



Operation Band:802.11n40Test DateFundamental Frequency:2437 MHzTemp./Humi.Operation Mode:Tx CH MIDEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.

:2018-09-27 :21 deg\_C / 62 RH :Wei :HORIZONTAL

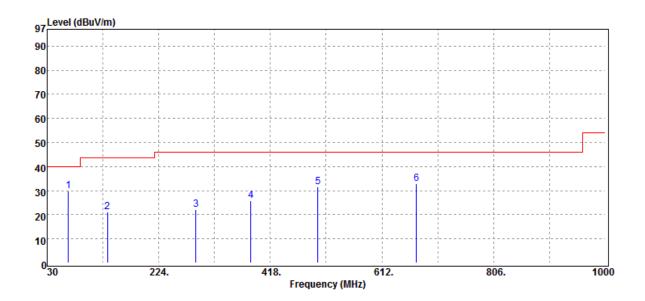


| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 134.76 | Peak             | 38.40                     | -8.55  | 29.85        | 43.50        | -13.65 |
| 183.26 | Peak             | 38.20                     | -8.47  | 29.73        | 43.50        | -13.77 |
| 250.19 | Peak             | 43.08                     | -7.40  | 35.68        | 46.00        | -10.32 |
| 384.05 | Peak             | 34.12                     | -3.79  | 30.33        | 46.00        | -15.67 |
| 500.45 | Peak             | 39.49                     | -2.36  | 37.13        | 46.00        | -8.87  |
| 624.61 | Peak             | 38.51                     | 0.71   | 39.22        | 46.00        | -6.78  |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

## Internal Antenna (Type: Printed antenna, Model no: N/A)



| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 66.86  | Peak             | 39.45                     | -9.42  | 30.03        | 40.00        | -9.97  |
| 134.76 | Peak             | 29.55                     | -8.55  | 21.00        | 43.50        | -22.50 |
| 288.99 | Peak             | 27.86                     | -5.86  | 22.00        | 46.00        | -24.00 |
| 384.05 | Peak             | 29.65                     | -3.79  | 25.86        | 46.00        | -20.14 |
| 500.45 | Peak             | 33.94                     | -2.36  | 31.58        | 46.00        | -14.42 |
| 672.14 | Peak             | 31.96                     | 0.99   | 32.95        | 46.00        | -13.05 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

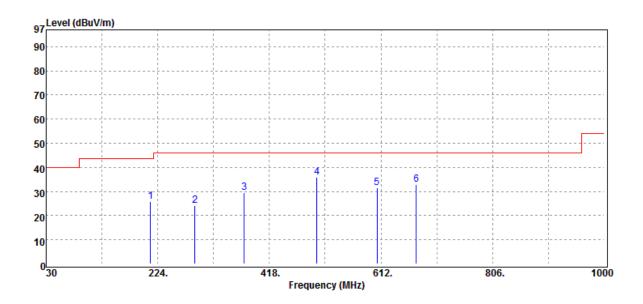
Report No.:ER/2018/90025 Page 126 of 182



Operation Band:802.11gFundamental Frequency:2437 MHzOperation Mode:Tx CH MIDEUT Pol.:E2 Plane

Test Date:20'Temp./Humi.:21Engineer:WeMeasurement Antenna Pol.:HC

:2018-09-28 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 211.39 | Peak             | 34.97                     | -9.23  | 25.74        | 43.50        | -17.76 |
| 288.99 | Peak             | 29.88                     | -5.86  | 24.02        | 46.00        | -21.98 |
| 374.35 | Peak             | 33.60                     | -3.96  | 29.64        | 46.00        | -16.36 |
| 500.45 | Peak             | 38.44                     | -2.36  | 36.08        | 46.00        | -9.92  |
| 605.21 | Peak             | 32.38                     | -0.66  | 31.72        | 46.00        | -14.28 |
| 673.11 | Peak             | 31.74                     | 1.11   | 32.85        | 46.00        | -13.15 |

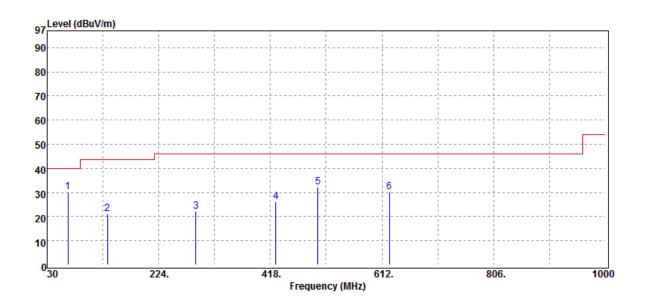
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 127 of 182



:802.11n40 **Operation Band** Test Date :2018-09-28 **Fundamental Frequency** :21 deg\_C / 62 RH :2437 MHz Temp./Humi. **Operation Mode** :Tx CH MID Engineer :Wei EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 65.89  | Peak             | 39.25                     | -9.20  | 30.05        | 40.00        | -9.95  |
| 134.76 | Peak             | 29.76                     | -8.55  | 21.21        | 43.50        | -22.29 |
| 288.99 | Peak             | 28.06                     | -5.86  | 22.20        | 46.00        | -23.80 |
| 427.70 | Peak             | 28.98                     | -2.88  | 26.10        | 46.00        | -19.90 |
| 500.45 | Peak             | 34.45                     | -2.36  | 32.09        | 46.00        | -13.91 |
| 624.61 | Peak             | 29.41                     | 0.71   | 30.12        | 46.00        | -15.88 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

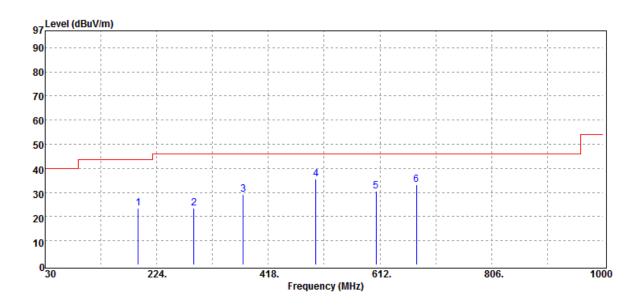
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 128 of 182



Operation Band:802.11n40Test DateFundamental Frequency:2437 MHzTemp./Humi.Operation Mode:Tx CH MIDEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.

:2018-09-28 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.  | Detector<br>Mode | Spectrum<br>Reading Level | Factor | Actual<br>FS | Limit<br>@3m | Margin |
|--------|------------------|---------------------------|--------|--------------|--------------|--------|
| MHz    | PK/QP/AV         | dBµV                      | dB     | dBµV/m       | dBµV/m       | dB     |
| 191.99 | Peak             | 32.59                     | -9.03  | 23.56        | 43.50        | -19.94 |
| 288.99 | Peak             | 29.28                     | -5.86  | 23.42        | 46.00        | -22.58 |
| 374.35 | Peak             | 33.25                     | -3.96  | 29.29        | 46.00        | -16.71 |
| 500.45 | Peak             | 38.04                     | -2.36  | 35.68        | 46.00        | -10.32 |
| 605.21 | Peak             | 31.26                     | -0.66  | 30.60        | 46.00        | -15.40 |
| 675.05 | Peak             | 31.85                     | 1.37   | 33.22        | 46.00        | -12.78 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

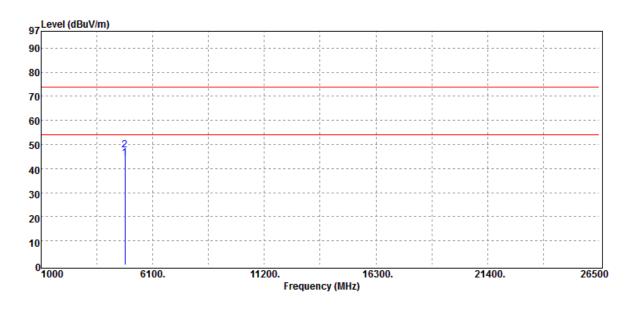


# Above 1GHz Data:

## **Radiated Spurious Emission Measurement Result**

## External Antenna (Type: Dipole antenna, Model no: WTS2405)

| Operation Band        | :802.11b   | Test Date                | :2018-09-18       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2412 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH LOW | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 38.55         | 5.61   | 44.16  | 54.00  | -9.84  |
| 4824.00 | Peak     | 42.11         | 5.61   | 47.72  | 74.00  | -26.28 |

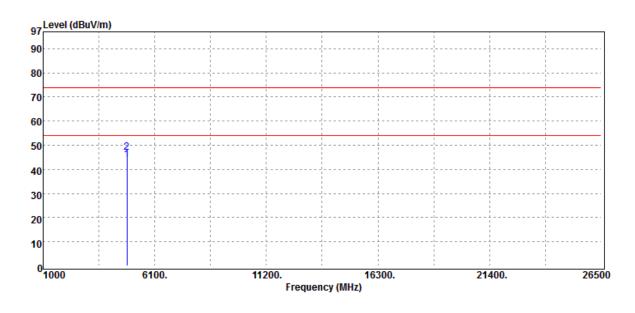
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 130 of 182



**Operation Band** :802.11b Test Date :2018-09-18 **Fundamental Frequency** :21 deg\_C / 62 RH :2412 MHz Temp./Humi. **Operation Mode** :Tx CH LOW Engineer :Wei EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 38.25         | 5.61   | 43.86  | 54.00  | -10.14 |
| 4824.00 | Peak     | 41.23         | 5.61   | 46.84  | 74.00  | -27.16 |

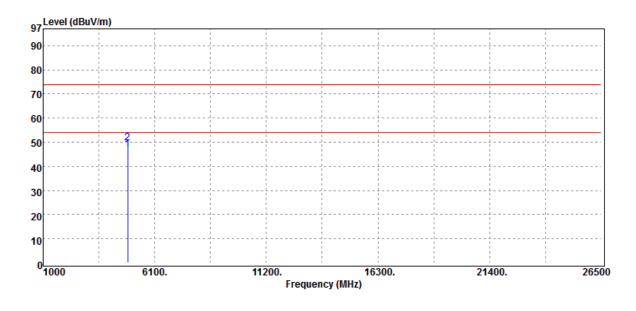
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 131 of 182



| Operation Band        | :802.11b   | Test Date                | :2018-09-18       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |
|                       |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 41.18         | 5.85   | 47.03  | 54.00  | -6.97  |
| 4874.00 | Peak     | 43.75         | 5.85   | 49.60  | 74.00  | -24.40 |

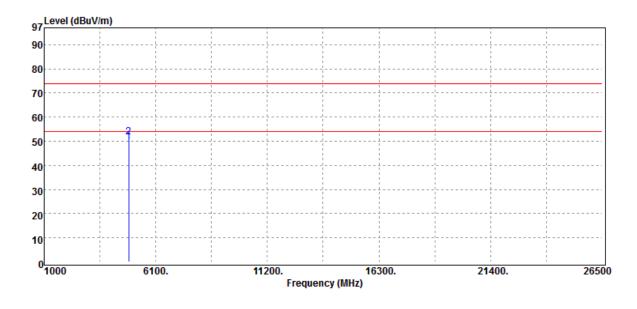
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 132 of 182



| Operation Band        | :802.11b   | Test Date                | :2018-09-18       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :HORIZONTAL       |
|                       |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 43.85         | 5.85   | 49.70  | 54.00  | -4.30  |
| 4874.00 | Peak     | 45.97         | 5.85   | 51.82  | 74.00  | -22.18 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

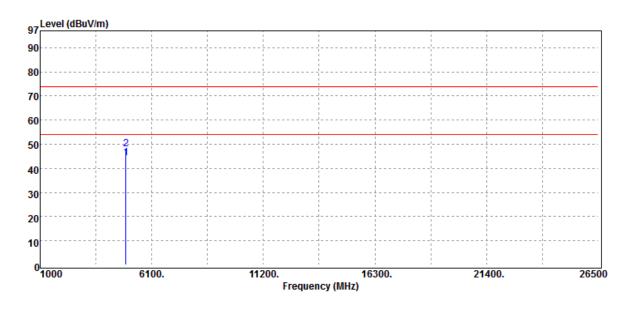
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 133 of 182



| Operation Band        | :802.11b    | Test Date                |
|-----------------------|-------------|--------------------------|
| Fundamental Frequency | :2462 MHz   | Temp./Humi.              |
| Operation Mode        | :Tx CH HIGH | Engineer                 |
| EUT Pol.              | :E2 Plane   | Measurement Antenna Pol. |
|                       |             |                          |

:2018-09-18 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 38.37         | 5.82   | 44.19  | 54.00  | -9.81  |
| 4924.00 | Peak     | 42.22         | 5.82   | 48.04  | 74.00  | -25.96 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

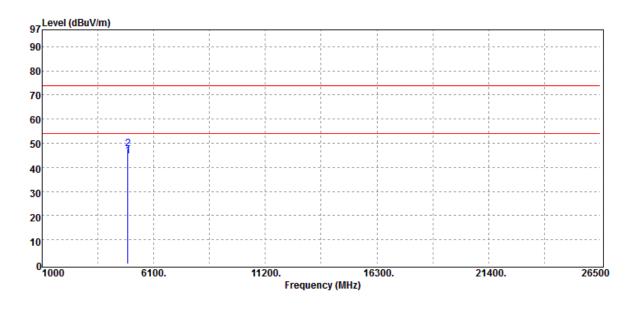
Report No.:ER/2018/90025 Page 134 of 182



Operation Band:802.11bFundamental Frequency:2462 MHzOperation Mode:Tx CH HIGHEUT Pol.:E2 Plane

Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-18 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 38.97         | 5.82   | 44.79  | 54.00  | -9.21  |
| 4924.00 | Peak     | 41.87         | 5.82   | 47.69  | 74.00  | -26.31 |

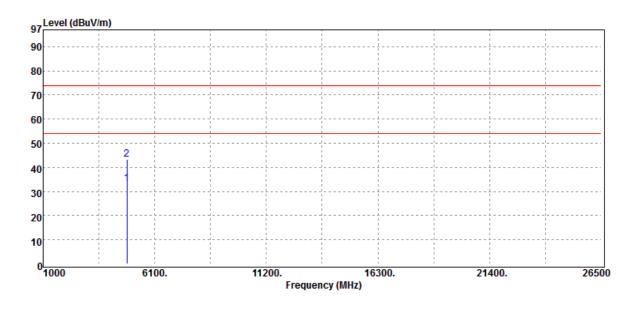
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 135 of 182

RH





| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 27.64         | 5.61   | 33.25  | 54.00  | -20.75 |
| 4824.00 | Peak     | 37.73         | 5.61   | 43.34  | 74.00  | -30.66 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

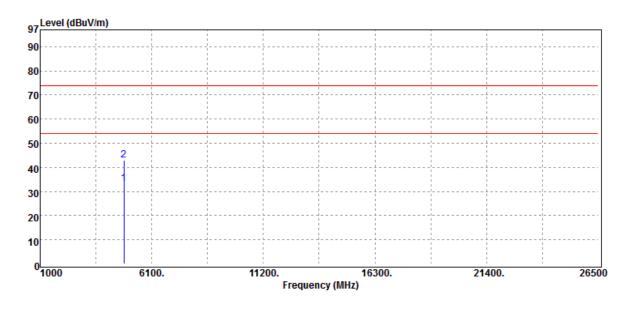
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 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.

Report No.:ER/2018/90025 Page 136 of 182



Operation Band:802.11gTest DateFundamental Frequency:2412 MHzTemp./Humi.Operation Mode:Tx CH LOWEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.

:2018-09-18 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 27.70         | 5.61   | 33.31  | 54.00  | -20.69 |
| 4824.00 | Peak     | 37.39         | 5.61   | 43.00  | 74.00  | -31.00 |

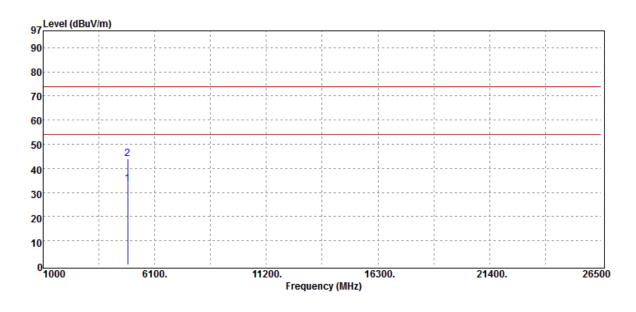
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 137 of 182



**Operation Band** :802.11g Test Date :2018-09-18 **Fundamental Frequency** :2437 MHz Temp./Humi. :21 deg\_C / 62 RH **Operation Mode** :Tx CH MID Engineer :Wei EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 27.62         | 5.85   | 33.47  | 54.00  | -20.53 |
| 4874.00 | Peak     | 37.96         | 5.85   | 43.81  | 74.00  | -30.19 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

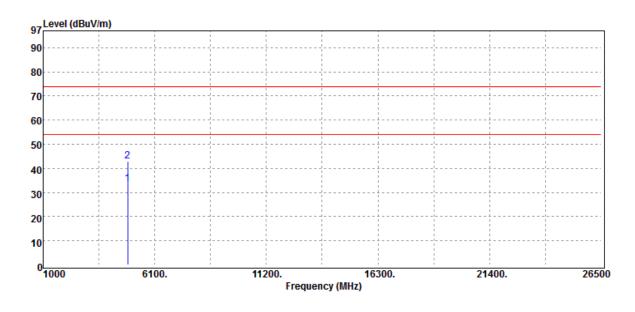
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

Report No.:ER/2018/90025 Page 138 of 182



**Operation Band** :802.11g Test Date :2018-09-18 **Fundamental Frequency** :2437 MHz Temp./Humi. :21 deg\_C / 62 RH **Operation Mode** :Tx CH MID Engineer :Wei EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 27.72         | 5.85   | 33.57  | 54.00  | -20.43 |
| 4874.00 | Peak     | 37.26         | 5.85   | 43.11  | 74.00  | -30.89 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

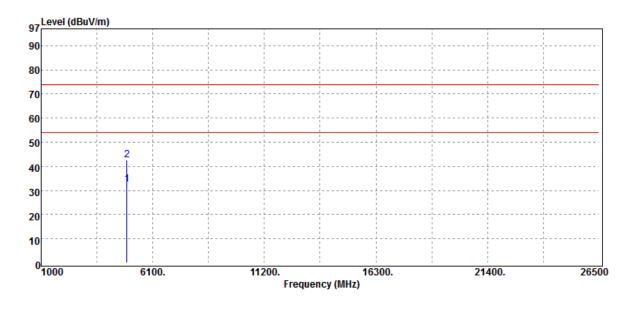
Report No.:ER/2018/90025 Page 139 of 182



**Operation Band** :802.11g **Fundamental Frequency** :2462 MHz :Tx CH HIGH **Operation Mode** EUT Pol. :E2 Plane

Test Date Temp./Humi. Engineer :Wei Measurement Antenna Pol. :VERTICAL

:2018-09-18 :21 deg\_C / 62 RH



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 26.74         | 5.82   | 32.56  | 54.00  | -21.44 |
| 4924.00 | Peak     | 36.81         | 5.82   | 42.63  | 74.00  | -31.37 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

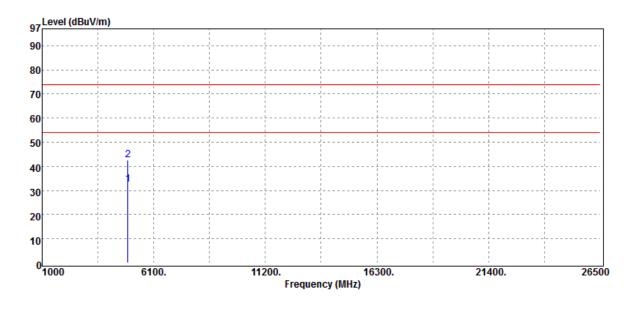
Report No.:ER/2018/90025 Page 140 of 182



Operation Band:802.11gFundamental Frequency:2462 MHzOperation Mode:Tx CH HIGHEUT Pol.:E2 Plane

Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-18 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 26.69         | 5.82   | 32.51  | 54.00  | -21.49 |
| 4924.00 | Peak     | 36.74         | 5.82   | 42.56  | 74.00  | -31.44 |

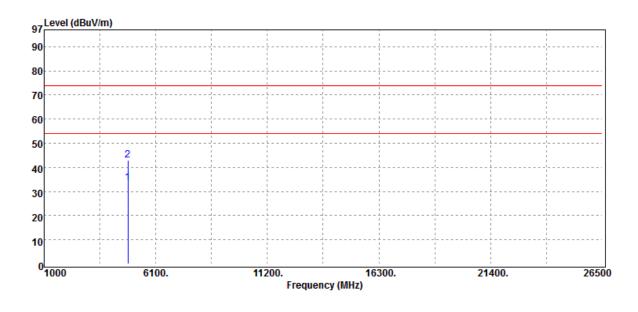
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 141 of 182



| Operation Band        | :802.11n20 | Test Date                | :2018-09-18       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2412 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH LOW | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |
|                       |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 27.85         | 5.61   | 33.46  | 54.00  | -20.54 |
| 4824.00 | Peak     | 37.29         | 5.61   | 42.90  | 74.00  | -31.10 |

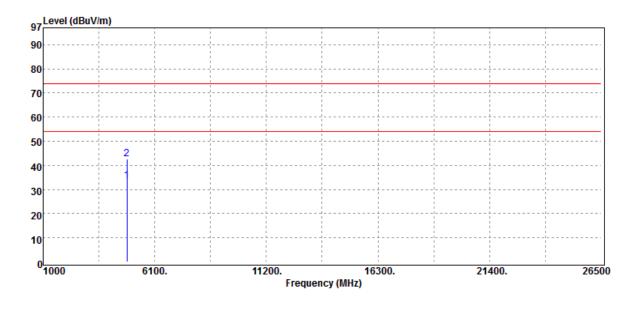
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 142 of 182



| Operation Mode :Tx CH LOW Engineer :Wei<br>EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL | Operation Band<br>Fundamental Frequency<br>Operation Mode<br>EUT Pol. | :802.11n20<br>:2412 MHz<br>:Tx CH LOW<br>:E2 Plane | Test Date<br>Temp./Humi.<br>Engineer<br>Measurement Antenna Pol. | :2018-09-18<br>:21 deg_C / 62 RH<br>:Wei<br>:HORIZONTAL |
|--|---|--|--|---|
|--|---|--|--|---|



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 27.80         | 5.61   | 33.41  | 54.00  | -20.59 |
| 4824.00 | Peak     | 37.06         | 5.61   | 42.67  | 74.00  | -31.33 |

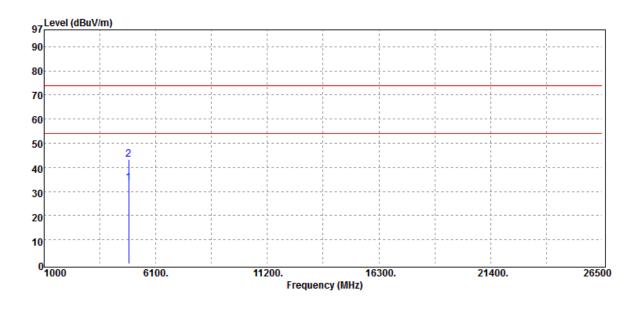
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 143 of 182



| Operation Band        | :802.11n20 | Test Date                | :2018-09-18       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |
|                       |            |                          |                   |



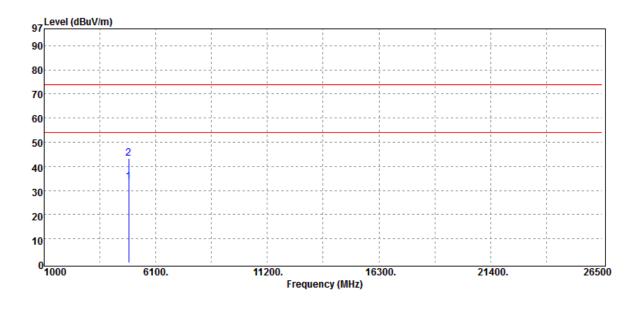
| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 27.72         | 5.85   | 33.57  | 54.00  | -20.43 |
| 4874.00 | Peak     | 37.31         | 5.85   | 43.16  | 74.00  | -30.84 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 144 of 182





| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 27.82         | 5.85   | 33.67  | 54.00  | -20.33 |
| 4874.00 | Peak     | 37.43         | 5.85   | 43.28  | 74.00  | -30.72 |

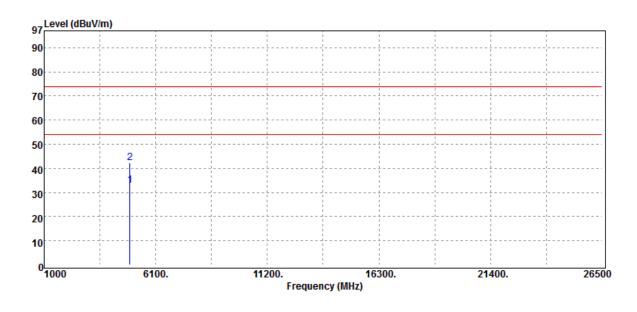
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 145 of 182



:802.11n20 **Operation Band** Test Date :2018-09-18 Fundamental Frequency :2462 MHz Temp./Humi. :21 deg\_C / 62 RH **Operation Mode** :Tx CH HIGH :Wei Engineer EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 26.93         | 5.82   | 32.75  | 54.00  | -21.25 |
| 4924.00 | Peak     | 36.59         | 5.82   | 42.41  | 74.00  | -31.59 |

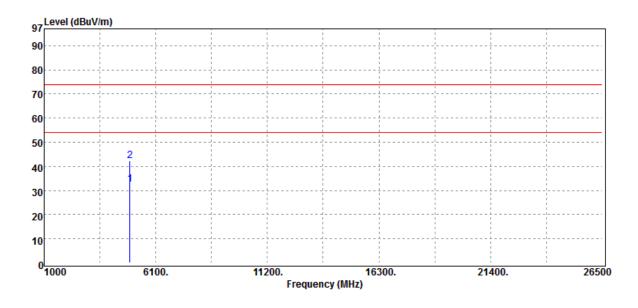
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 146 of 182



| Operation Band        | :802.11n20  | Test Date                | :2018-09-18       |
|-----------------------|-------------|--------------------------|-------------------|
| Fundamental Frequency | :2462 MHz   | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH HIGH | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane   | Measurement Antenna Pol. | :HORIZONTAL       |
| EUT Pol.              | :E2 Plane   | Measurement Antenna Pol. | :HORIZONTAL       |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 26.75         | 5.82   | 32.57  | 54.00  | -21.43 |
| 4924.00 | Peak     | 36.43         | 5.82   | 42.25  | 74.00  | -31.75 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

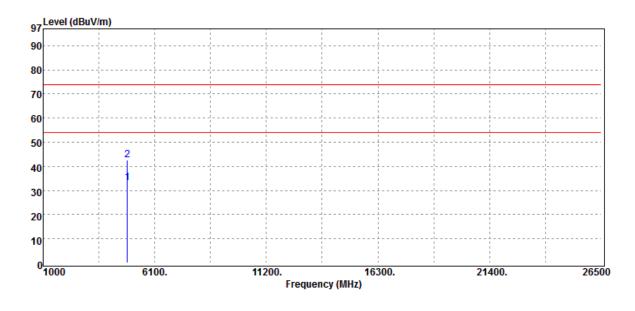
GS Taiwan I td

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明 小規告結果僅對測试之樣品負責,可時此樣品僅保留的人。本報告未經本公司者面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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 is enproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-reporting of this document is unplayed by the prosecuted to the fuller evant of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

Report No.:ER/2018/90025 Page 147 of 182



| Operation Band        | :802.11n40 | Test Date                | :2018-09-18       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2422 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH LOW | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |
|                       |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4844.00 | Average  | 27.71         | 5.60   | 33.31  | 54.00  | -20.69 |
| 4844.00 | Peak     | 37.18         | 5.60   | 42.78  | 74.00  | -31.22 |

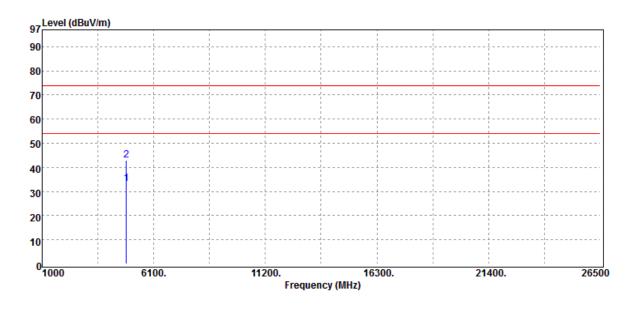
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 148 of 182



:802.11n40 **Operation Band** Test Date :2018-09-18 Fundamental Frequency :2422 MHz :21 deg\_C / 62 RH Temp./Humi. **Operation Mode** :Tx CH LOW Engineer :Wei EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4844.00 | Average  | 27.65         | 5.60   | 33.25  | 54.00  | -20.75 |
| 4844.00 | Peak     | 37.43         | 5.60   | 43.03  | 74.00  | -30.97 |

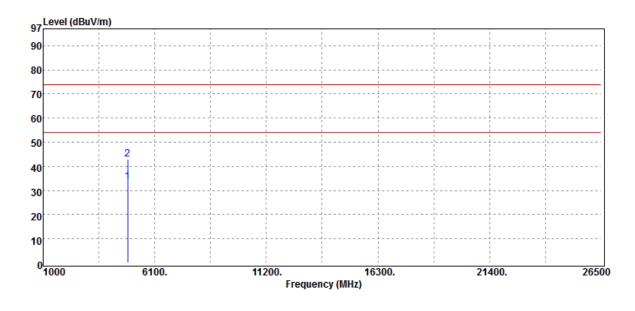
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 149 of 182



| :802.11n40<br>:2437 MHz<br>:Tx CH MID<br>:E2 Plane | Test Date<br>Temp./Humi.<br>Engineer<br>Measurement Antenna Pol. | :2018-09-18<br>:21 deg_C / 62 RH<br>:Wei<br>:VERTICAL |
|--|--|---|
|  |  |   |
|  | :2437 MHz<br>:Tx CH MID  | :2437 MHz Temp./Humi.<br>:Tx CH MID Engineer          |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 27.81         | 5.85   | 33.66  | 54.00  | -20.34 |
| 4874.00 | Peak     | 37.23         | 5.85   | 43.08  | 74.00  | -30.92 |

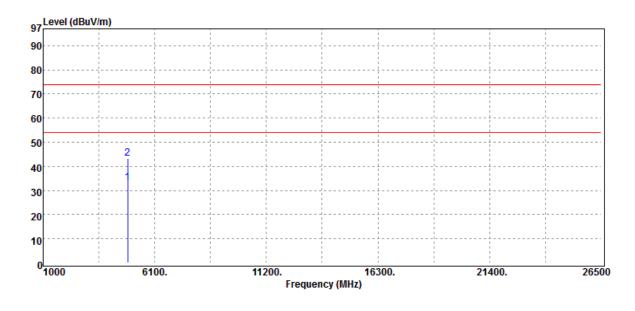
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 150 of 182



| Operation Band<br>Fundamental Frequency<br>Operation Mode | :802.11n40<br>:2437 MHz<br>:Tx CH MID<br>:52 Plana | Test Date<br>Temp./Humi.<br>Engineer<br>Maggurgmont Antonno Dol | :2018-09-18<br>:21 deg_C / 62 RH<br>:Wei |
|---|--|---|--|
| EUT Pol.  | :E2 Plane  | Measurement Antenna Pol.  | :HORIZONTAL                              |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 27.21         | 5.85   | 33.06  | 54.00  | -20.94 |
| 4874.00 | Peak     | 37.58         | 5.85   | 43.43  | 74.00  | -30.57 |

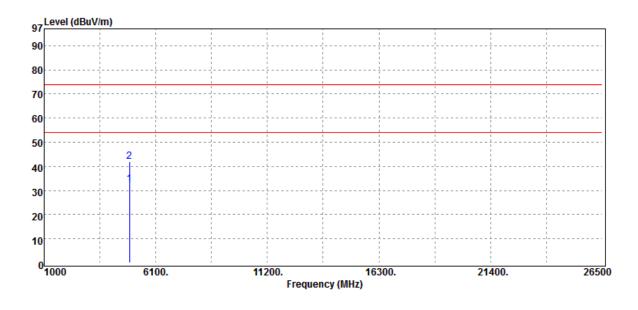
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明 小規告結果僅對測试之樣品負責,可時此樣品僅保留的人。本報告未經本公司者面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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 is enproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-reporting of this document is unplayed by the prosecuted to the fuller evant of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Report No.:ER/2018/90025 Page 151 of 182



| :802.11n40<br>:2452 MHz<br>:Tx CH HIGH<br>:E2 Plane | Test Date<br>Temp./Humi.<br>Engineer<br>Measurement Antenna Pol. | :2018-09-18<br>:21 deg_C / 62 RH<br>:Wei<br>:VERTICAL |
|---|--|---|
|   |  |   |
|   | :2452 MHz<br>:Tx CH HIGH   | :2452 MHz Temp./Humi.<br>:Tx CH HIGH Engineer         |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4904.00 | Average  | 26.59         | 5.85   | 32.44  | 54.00  | -21.56 |
| 4904.00 | Peak     | 36.17         | 5.85   | 42.02  | 74.00  | -31.98 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

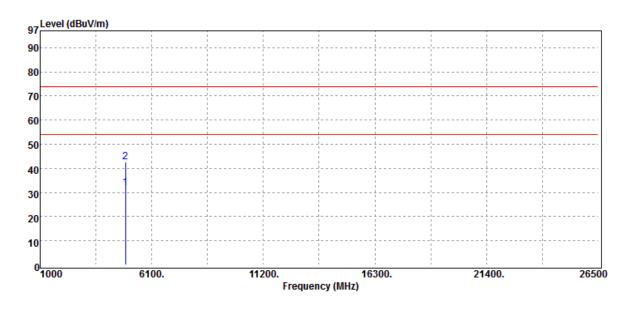
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 152 of 182



Operation Band:802.11n40Test DateFundamental Frequency:2452 MHzTemp./Humi.Operation Mode:Tx CH HIGHEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.

:2018-09-18 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4904.00 | Average  | 26.18         | 5.85   | 32.03  | 54.00  | -21.97 |
| 4904.00 | Peak     | 36.82         | 5.85   | 42.67  | 74.00  | -31.33 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

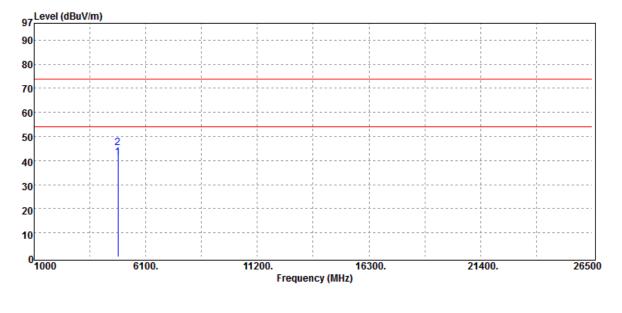


Antenna Pol.

### Internal Antenna (Type: Printed antenna, Model no: N/A)

| Fundamental Frequency:2412 MHzOperation Mode:Tx CH LOWEUT Pol.:E2 Plane | Temp./Humi.<br>Engineer<br>Measurement / |
|---|--|
|---|--|

:2018-09-28 :21 deg\_C / 62 RH :Wei :VERTICAL



|   | Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |   |
|---|---------|----------|---------------|--------|--------|--------|--------|---|
|   |         | Mode     | Reading Level |        | FS     | @3m    | _      |   |
| _ | MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     | _ |
|   | 4824.00 | Average  | 35.57         | 5.61   | 41.18  | 54.00  | -12.82 | - |
|   | 4824.00 | Peak     | 39.66         | 5.61   | 45.27  | 74.00  | -28.73 |   |
|   |         |          |               |        |        |        |        |   |

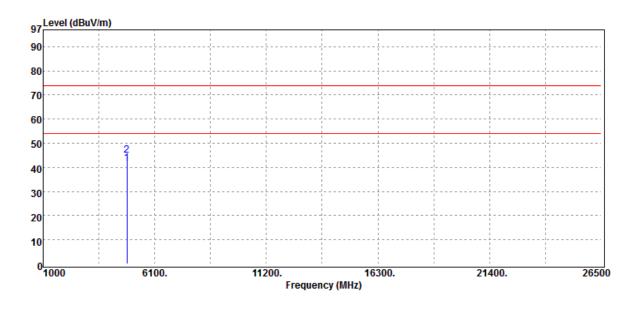
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 154 of 182



| Operation Band        | :802.11b   | Test Date                | :2018-09-28       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2412 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH LOW | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :HORIZONTAL       |
|                       |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 35.94         | 5.61   | 41.55  | 54.00  | -12.45 |
| 4824.00 | Peak     | 39.30         | 5.61   | 44.91  | 74.00  | -29.09 |

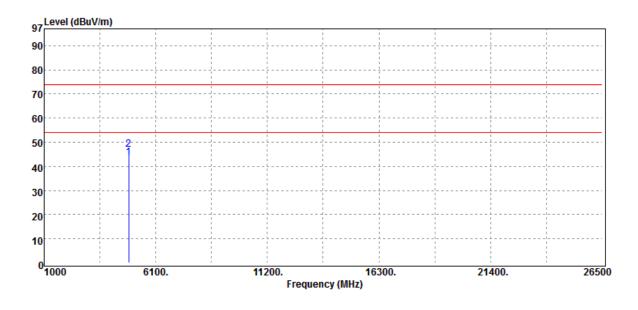
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 155 of 182



| Operation Band        | :802.11b   | Test Date                | :2018-09-28       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |
|                       |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 37.86         | 5.85   | 43.71  | 54.00  | -10.29 |
| 4874.00 | Peak     | 41.30         | 5.85   | 47.15  | 74.00  | -26.85 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

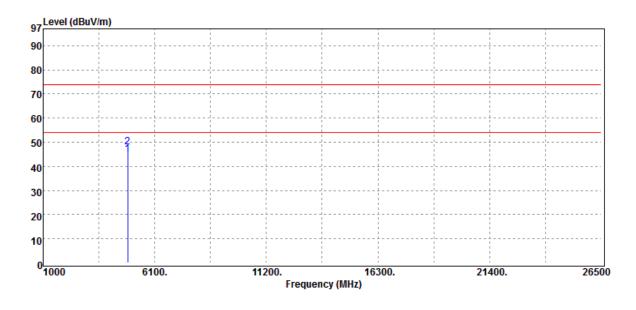
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 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.

Report No.:ER/2018/90025 Page 156 of 182



| Operation Mode:Tx CH MIDEngineer:WeiEUT Pol.:E2 PlaneMeasurement Antenna Pol.:HORIZONTAL |  | _ | 0 | - |
|--|--|---|---|---|
|--|--|---|---|---|



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 39.14         | 5.85   | 44.99  | 54.00  | -9.01  |
| 4874.00 | Peak     | 42.30         | 5.85   | 48.15  | 74.00  | -25.85 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

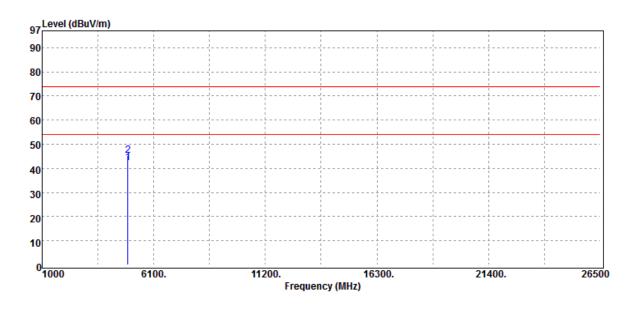
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 157 of 182



Operation Band:802.11bTest DateFundamental Frequency:2462 MHzTemp./Humi.Operation Mode:Tx CH HIGHEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.

:2018-09-28 :21 deg\_C / 62 RH :Wei :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 36.36         | 5.82   | 42.18  | 54.00  | -11.82 |
| 4924.00 | Peak     | 39.59         | 5.82   | 45.41  | 74.00  | -28.59 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

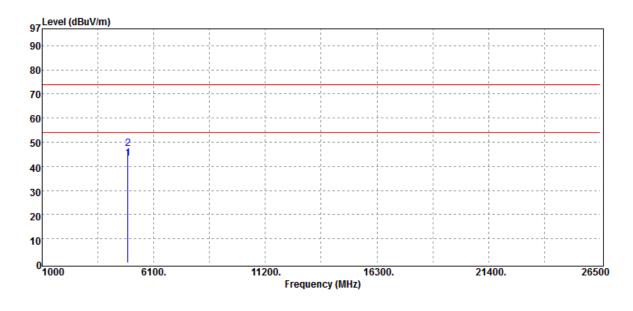
Report No.:ER/2018/90025 Page 158 of 182



Operation Band:802.11bFundamental Frequency:2462 MHzOperation Mode:Tx CH HIGHEUT Pol.:E2 Plane

Test Date:20Temp./Humi.:27Engineer:WMeasurement Antenna Pol.:H

:2018-09-28 :21 deg\_C / 62 RH :Wei :HORIZONTAL



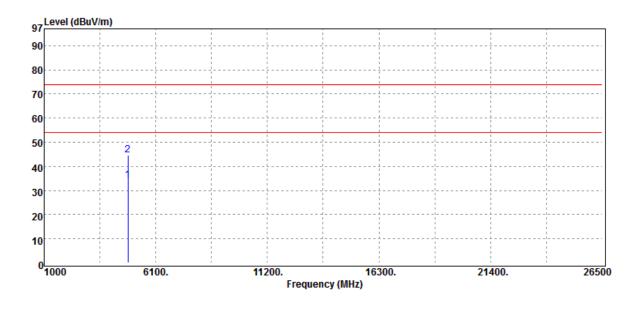
| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 37.35         | 5.82   | 43.17  | 54.00  | -10.83 |
| 4924.00 | Peak     | 41.43         | 5.82   | 47.25  | 74.00  | -26.75 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 159 of 182





| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 28.74         | 5.61   | 34.35  | 54.00  | -19.65 |
| 4824.00 | Peak     | 38.97         | 5.61   | 44.58  | 74.00  | -29.42 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明 小規告結果僅對測试之樣品負責,可時此樣品僅保留的人。本報告未經本公司者面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms\_e-document.htm</u>. 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 is enproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or ap-reporting of this document is unplayed by the prosecuted to the fuller evant of the law. pearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

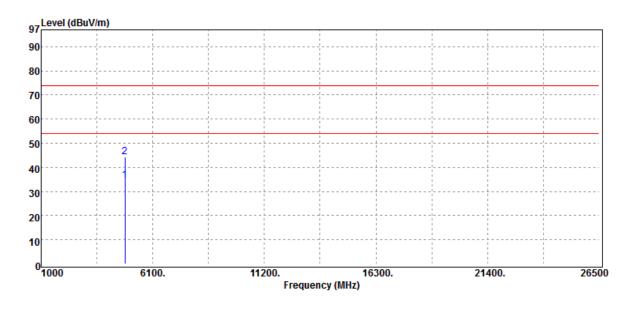
Report No.:ER/2018/90025 Page 160 of 182



Operation Band:802.11gTestFundamental Frequency:2412 MHzTertOperation Mode:Tx CH LOWEngEUT Pol.:E2 PlaneMe

Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-28 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 28.92         | 5.61   | 34.53  | 54.00  | -19.47 |
| 4824.00 | Peak     | 38.58         | 5.61   | 44.19  | 74.00  | -29.81 |

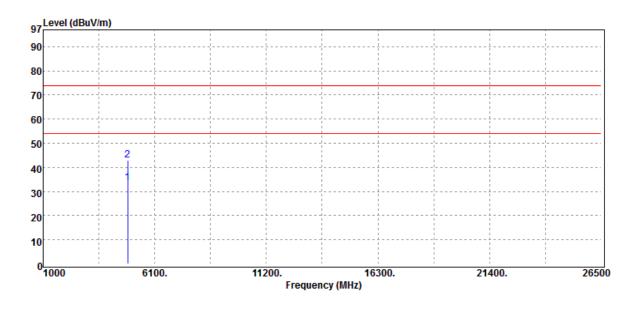
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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 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.

Report No.:ER/2018/90025 Page 161 of 182





| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 27.77         | 5.85   | 33.62  | 54.00  | -20.38 |
| 4874.00 | Peak     | 37.28         | 5.85   | 43.13  | 74.00  | -30.87 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

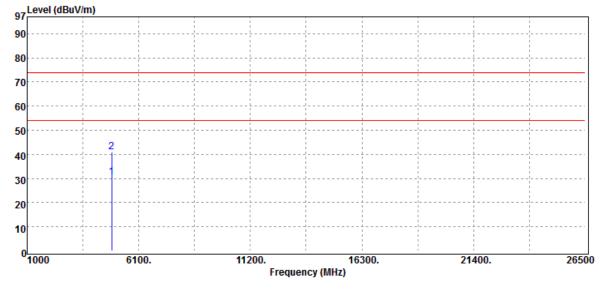
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 162 of 182



**Operation Band** :802.11g Test Date :2018-09-28 Fundamental Frequency :2437 MHz Temp./Humi. **Operation Mode** :Tx CH MID Engineer EUT Pol. :E2 Plane Measurement Antenna Pol.

:21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 24.82         | 5.85   | 30.67  | 54.00  | -23.33 |
| 4874.00 | Peak     | 34.98         | 5.85   | 40.83  | 74.00  | -33.17 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

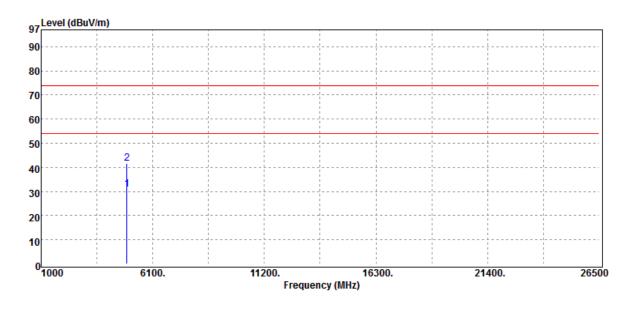
Report No.:ER/2018/90025 Page 163 of 182



**Operation Band** :802.11g Fundamental Frequency :2462 MHz :Tx CH HIGH **Operation Mode** EUT Pol. :E2 Plane

Test Date :2018-09-28 Temp./Humi. Engineer :Wei Measurement Antenna Pol. :VERTICAL

:21 deg\_C / 62 RH



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 25.22         | 5.82   | 31.04  | 54.00  | -22.96 |
| 4924.00 | Peak     | 35.63         | 5.82   | 41.45  | 74.00  | -32.55 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

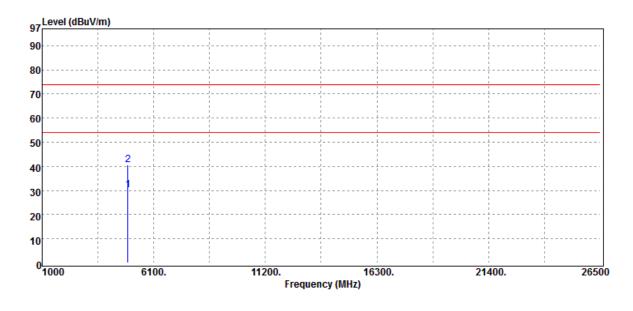
Report No.:ER/2018/90025 Page 164 of 182



Operation Band:802.11gFundamental Frequency:2462 MHzOperation Mode:Tx CH HIGHEUT Pol.:E2 Plane

Test Date:20Temp./Humi.:21Engineer:WMeasurement Antenna Pol.:H0

:2018-09-28 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 24.49         | 5.82   | 30.31  | 54.00  | -23.69 |
| 4924.00 | Peak     | 34.83         | 5.82   | 40.65  | 74.00  | -33.35 |

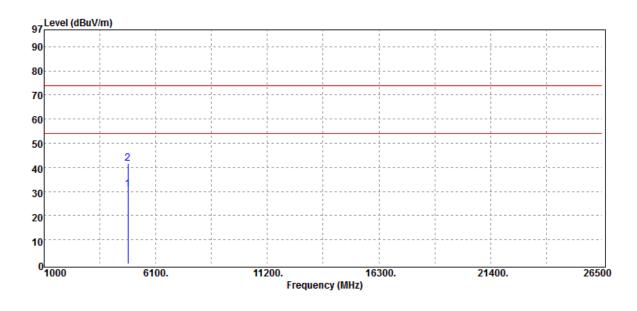
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 165 of 182



| Operation Band<br>Fundamental Frequency<br>Operation Mode<br>EUT Pol. | :802.11n20<br>:2412 MHz<br>:Tx CH LOW<br>:E2 Plane | Test Date<br>Temp./Humi.<br>Engineer<br>Measurement Antenna Pol. | :2018-09-28<br>:21 deg_C / 62 RH<br>:Wei<br>:VERTICAL |
|---|--|--|---|
| EOTTOI:   |  | Measurement Antenna i oi.  | VERTICAL  |
| Operation Mode  | :Tx CH LOW   | Engineer   | :Wei  |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 25.22         | 5.61   | 30.83  | 54.00  | -23.17 |
| 4824.00 | Peak     | 35.92         | 5.61   | 41.53  | 74.00  | -32.47 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

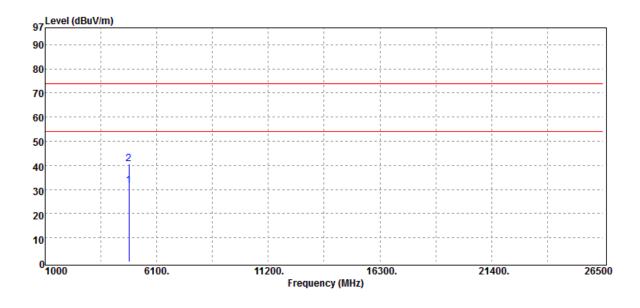
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms and conditions.htm</u> and, for electronic format document is subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms e-document.htm</u>. 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.

Report No.:ER/2018/90025 Page 166 of 182



| EUT POI. EZ Plane Measurement Antenna POI. HORIZONTAL | Operation Band        | :802.11n20 | Test Date                | :2018-09-28       |
|---|-----------------------|------------|--------------------------|-------------------|
|   | Fundamental Frequency | :2412 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
|   | Operation Mode        | :Tx CH LOW | Engineer                 | :Wei              |
|   | EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :HORIZONTAL       |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4824.00 | Average  | 25.86         | 5.61   | 31.47  | 54.00  | -22.53 |
| 4824.00 | Peak     | 34.98         | 5.61   | 40.59  | 74.00  | -33.41 |

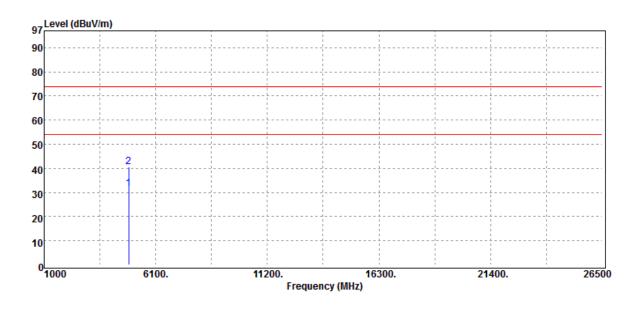
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 167 of 182



| Operation Band        | :802.11n20 | Test Date                | :2018-09-28       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 25.82         | 5.85   | 31.67  | 54.00  | -22.33 |
| 4874.00 | Peak     | 34.70         | 5.85   | 40.55  | 74.00  | -33.45 |

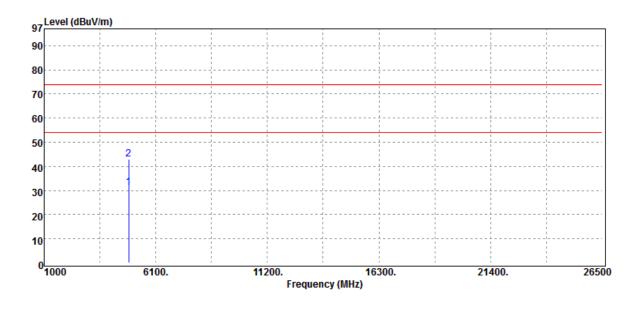
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 168 of 182



| Operation Band        | :802.11n20 | Test Date                | :2018-09-28       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :HORIZONTAL       |
|                       |            |                          |                   |



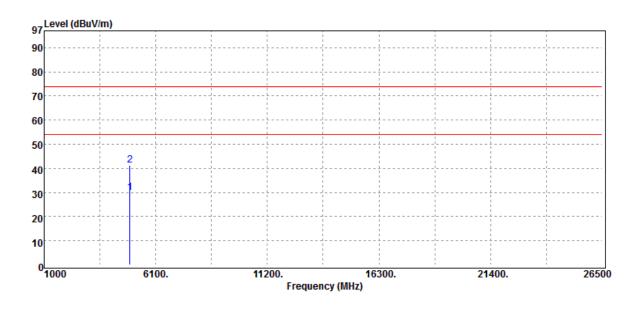
| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 25.52         | 5.85   | 31.37  | 54.00  | -22.63 |
| 4874.00 | Peak     | 36.95         | 5.85   | 42.80  | 74.00  | -31.20 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 169 of 182





| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 24.03         | 5.82   | 29.85  | 54.00  | -24.15 |
| 4924.00 | Peak     | 35.43         | 5.82   | 41.25  | 74.00  | -32.75 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

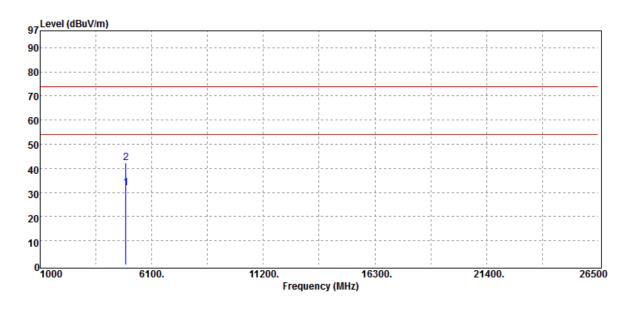
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 170 of 182



Operation Band:802.11n20Test DateFundamental Frequency:2462 MHzTemp./Humi.Operation Mode:Tx CH HIGHEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.

:2018-09-28 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4924.00 | Average  | 26.20         | 5.82   | 32.02  | 54.00  | -21.98 |
| 4924.00 | Peak     | 36.42         | 5.82   | 42.24  | 74.00  | -31.76 |

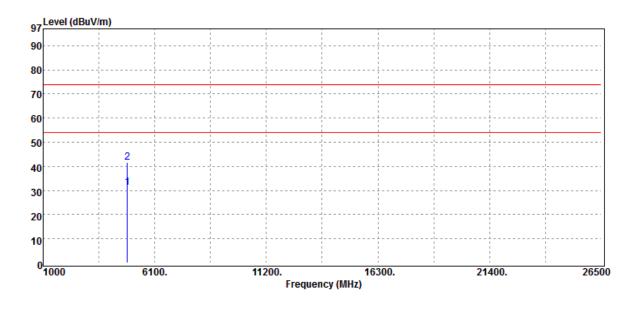
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 171 of 182



| EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL | Fundamental Frequency :2422<br>Operation Mode :Tx C | MHz Ten<br>H LOW Eng | np./Humi. | :2018-09-28<br>:21 deg_C / 62 RH<br>:Wei<br>:VERTICAL |
|---|---|----------------------|-----------|---|
|---|---|----------------------|-----------|---|



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4844.00 | Average  | 25.50         | 5.60   | 31.10  | 54.00  | -22.90 |
| 4844.00 | Peak     | 35.99         | 5.60   | 41.59  | 74.00  | -32.41 |

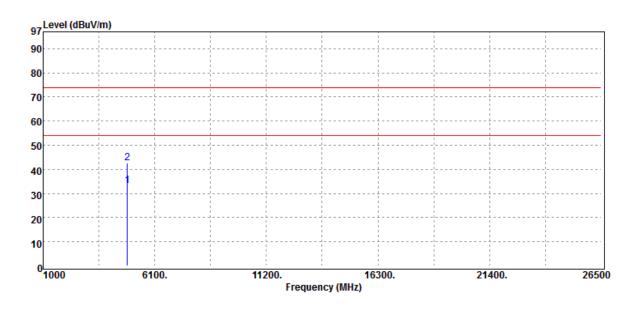
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 172 of 182



:802.11n40 **Operation Band** Test Date :2018-09-28 Fundamental Frequency :2422 MHz :21 deg\_C / 62 RH Temp./Humi. **Operation Mode** :Wei :Tx CH LOW Engineer EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4844.00 | Average  | 27.50         | 5.60   | 33.10  | 54.00  | -20.90 |
| 4844.00 | Peak     | 37.02         | 5.60   | 42.62  | 74.00  | -31.38 |

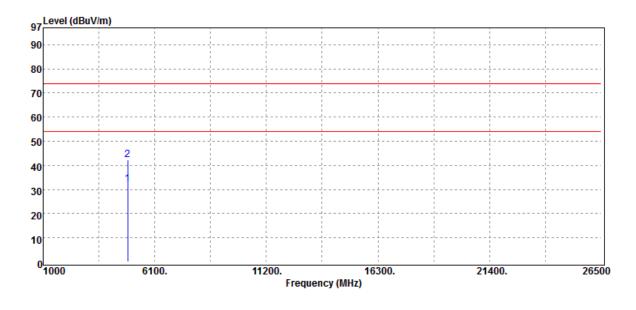
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 173 of 182



| Operation Band        | :802.11n40 | Test Date                | :2018-09-28       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :VERTICAL         |
| 2011 0                |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 26.21         | 5.85   | 32.06  | 54.00  | -21.94 |
| 4874.00 | Peak     | 36.46         | 5.85   | 42.31  | 74.00  | -31.69 |

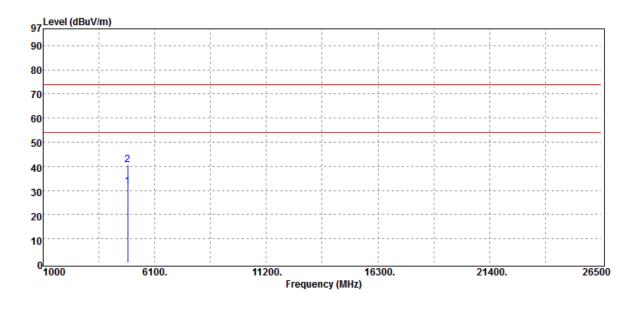
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 174 of 182



| Operation Band        | :802.11n40 | Test Date                | :2018-09-28       |
|-----------------------|------------|--------------------------|-------------------|
| Fundamental Frequency | :2437 MHz  | Temp./Humi.              | :21 deg_C / 62 RH |
| Operation Mode        | :Tx CH MID | Engineer                 | :Wei              |
| EUT Pol.              | :E2 Plane  | Measurement Antenna Pol. | :HORIZONTAL       |
|                       |            |                          |                   |



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4874.00 | Average  | 25.72         | 5.85   | 31.57  | 54.00  | -22.43 |
| 4874.00 | Peak     | 34.89         | 5.85   | 40.74  | 74.00  | -33.26 |

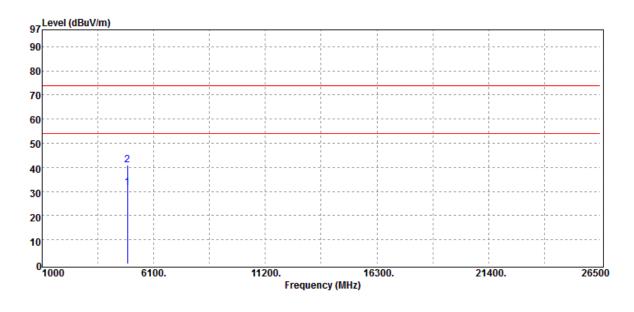
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 175 of 182



:802.11n40 **Operation Band** Test Date :2018-09-28 Fundamental Frequency :2452 MHz Temp./Humi. :21 deg\_C / 62 RH **Operation Mode** :Tx CH HIGH :Wei Engineer EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4904.00 | Average  | 25.79         | 5.85   | 31.64  | 54.00  | -22.36 |
| 4904.00 | Peak     | 35.26         | 5.85   | 41.11  | 74.00  | -32.89 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

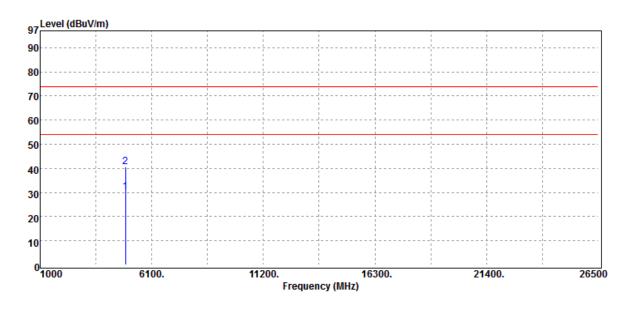
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

Report No.:ER/2018/90025 Page 176 of 182



Operation Band:802.11n40Test DateFundamental Frequency:2452 MHzTemp./Humi.Operation Mode:Tx CH HIGHEngineerEUT Pol.:E2 PlaneMeasurement Antenna Pol.

:2018-09-28 :21 deg\_C / 62 RH :Wei :HORIZONTAL



| Freq.   | Detector | Spectrum      | Factor | Actual | Limit  | Margin |
|---------|----------|---------------|--------|--------|--------|--------|
|         | Mode     | Reading Level |        | FS     | @3m    |        |
| MHz     | PK/QP/AV | dBµV          | dB     | dBµV/m | dBµV/m | dB     |
| 4904.00 | Average  | 24.26         | 5.85   | 30.11  | 54.00  | -23.89 |
| 4904.00 | Peak     | 34.60         | 5.85   | 40.45  | 74.00  | -33.55 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



# 12 PEAK POWER SPECTRAL DENSITY

### 12.1 Standard Applicable

### Per Part 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

### Per RSS-247 section 5.4 d

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

#### **Conducted Emission Test Site** EQUIPMENT MFR MODEL SFRIAL LAST CAL DUE. TYPE NUMBER NUMBER CAL. EXA Spectrum MY5042019 05/03/2018 05/02/2019 N9010A Agilent Analyzer 5 Mini-Circuit BW-S10W2+ 2 01/02/2018 01/01/2019 Attenuator 01/02/2018 01/01/2019 DC Block Mini-Circuits BLK-18-S+ 1 WK CE Ca-01/02/2018 01/01/2019 Coaxial Cables N/A N/A ble **Power Meter** Anritsu ML2496A 1804001 02/01/2018 01/31/2019 Power Sensor Anritsu MA2411B 1726104 02/01/2018 01/31/2019 02/01/2018 01/31/2019 Power Sensor Anritsu MA2411B 1726107

## 12.2 Measurement Equipment Used

# 12.3 Test Set-up



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



# 12.4 Measurement Procedure

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance & ANSI C63.10.
- 3. Set the span to 1.5 times the DTS channel bandwidth.
- 4. Set the RBW = 3 kHz. & the VBW = 10 kHz
- For defining Restricted Band Edge Limit: Set the RBW = 100kHz & VBW = 300 kHz.
- 6. Detector = peak.
- 7. Sweep time = auto couple.
- 8. Trace mode = max hold.
- 9. Allow trace to fully stabilize.
- 10. Use the peak marker function to determine the maximum amplitude level.

# As per FCC KDB 662911 D01

Unequal antenna gains, with equal transmit powers. For antenna gains given by G1, G2, ..., GN dBi.

(i) If transmit signals are correlated, then Directional gain

=  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N_{ANT}] dBi$ 

[Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.].

The antenna gain is not grater than 6 dBi. Therefore, reduction of power is not required.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。



### **12.5 Measurement Result**

|       | POWER DENSITY 802.11b |        |       |       |        |  |  |
|-------|-----------------------|--------|-------|-------|--------|--|--|
| Freq. | PPSD                  | Offect | PPSD  | Limit | Docult |  |  |
| (MHz) | (dBm)                 | Offset | (dBm) | (dBm) | Result |  |  |
| 2412  | -2.32                 | 15.17  | -2.32 | 8.00  | PASS   |  |  |
| 2437  | -2.80                 | 15.17  | -2.80 | 8.00  | PASS   |  |  |
| 2462  | -3.08                 | 15.17  | -3.08 | 8.00  | PASS   |  |  |

|       | POWER DENSITY 802.11g |        |        |       |        |  |  |
|-------|-----------------------|--------|--------|-------|--------|--|--|
| Freq. | PPSD                  | Offset | PPSD   | Limit | Result |  |  |
| (MHz) | (dBm)                 | Unset  | (dBm)  | (dBm) | Result |  |  |
| 2412  | -11.52                | 15.17  | -11.31 | 8.00  | PASS   |  |  |
| 2437  | -9.39                 | 15.17  | -9.18  | 8.00  | PASS   |  |  |
| 2462  | -11.34                | 15.17  | -11.13 | 8.00  | PASS   |  |  |

|       | POWER DENSITY 802.11n HT20 |        |        |       |        |  |  |  |
|-------|----------------------------|--------|--------|-------|--------|--|--|--|
| Freq. | PPSD                       | Offset | PPSD   | Limit | Result |  |  |  |
| (MHz) | (dBm)                      |        | (dBm)  | (dBm) |        |  |  |  |
| 2412  | -13.08                     | 15.17  | -12.66 | 8.00  | PASS   |  |  |  |
| 2437  | -7.48                      | 15.17  | -7.06  | 8.00  | PASS   |  |  |  |
| 2462  | -10.43                     | 15.17  | -10.01 | 8.00  | PASS   |  |  |  |

|       | POWER DENSITY 802.11n HT40 |        |        |       |        |  |  |
|-------|----------------------------|--------|--------|-------|--------|--|--|
| Freq. | PPSD                       | Offset | PPSD   | Limit | Result |  |  |
| (MHz) | (dBm)                      | Unset  | (dBm)  | (dBm) |        |  |  |
| 2422  | -16.32                     | 15.17  | -15.58 | 8.00  | PASS   |  |  |
| 2437  | -14.33                     | 15.17  | -13.59 | 8.00  | PASS   |  |  |
| 2452  | -13.81                     | 15.17  | -13.07 | 8.00  | PASS   |  |  |

offset 14.01 dB for MIMO mode

\*Refer to next page for plots

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for elec-tronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.



#### Power Density\_802.11b\_20MHz\_Chain0\_2412MHz

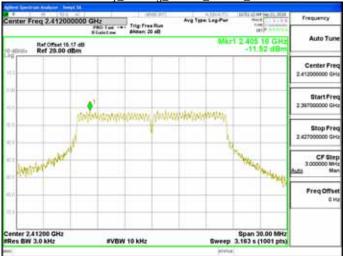




#### Power Density\_802.11b\_20MHz\_Chain0\_2462MHz



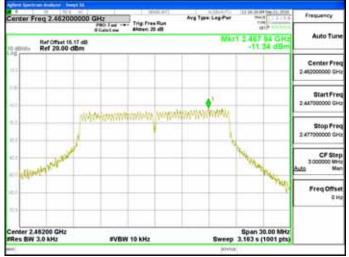
Power Density\_802.11g\_20MHz\_Chain0\_2412MHz



Power Density\_802.11g\_20MHz\_Chain0\_2437MHz



#### Power Density\_802.11g\_20MHz\_Chain0\_2462MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.

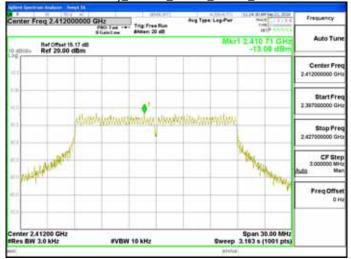
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

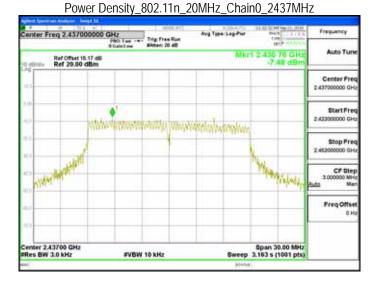
台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

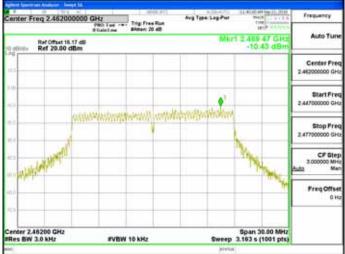


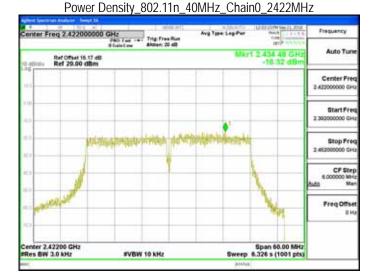
### Power Density\_802.11n\_20MHz\_Chain0\_2412MHz



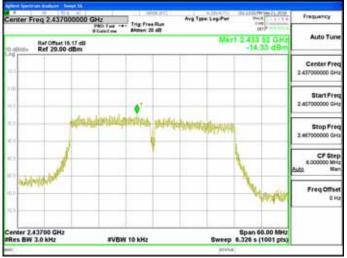


### Power Density\_802.11n\_20MHz\_Chain0\_2462MHz





### Power Density\_802.11n\_40MHz\_Chain0\_2437MHz



### Power Density\_802.11n\_40MHz\_Chain0\_2452MHz



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. めままたは限,此報告は異体観測はク格見合素、同時止後見体力的のエット和先生がエーノコキエルゴ・エゴがのため。

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sgs.com/terms\_and\_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sgs.com/terms\_e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488



# **13 ANTENNA REQUIREMENT**

### 13.1 Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

If the transmitting antenna is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

### 13.2 Antenna Connected Construction

The antenna is designed with unique RF connector and no consideration of replacement. Please see EUT photo for details.

~ End of Report ~

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms and conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>www.sqs.com/terms e-document.htm</u>. 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.

SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號