

ELECTROMAGNETIC EMISSIONS **COMPLIANCE REPORT**



| Applicant: | Qualcomm Technologies, Inc. 5775 Morehouse Drive, San Diego, CA 92121-1714, United States |
|-----------------------|---|
| Manufacturer: | Qualcomm Technologies, Inc. 5775 Morehouse Drive, San Diego, CA 92121-1714, United States |
| Product Name: | Tri-Radio LGA Module for IoT applications |
| Brand Name: | Qualcomm |
| Model No.: | QCC744M-0 |
| Report Number: | TERF2411003344E2 |
| FCC ID | J9C-QCC744M0 |
| Date of EUT Received: | Nov. 06, 2024 |
| Date of Test: | Nov. 07, 2024~Nov. 29, 2024 |
| Issue Date: | Dec. 13, 2024 |
| | |

by the

Approved By

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2020 and the energy emitted by the sample EUT comply with FCC rule part §15.247.

The results of this report relate only to the sample identified in this report.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 sole and the document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction 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.

f (886-2) 2298-0488



| Revision History | | | | | | | | |
|---|----|----------------|---------------|----------|---|--|--|--|
| Report Number Revision Description Issue Date Revised I | | | | | | | | |
| TERF2411003344E2 | 00 | Original | Dec. 09, 2024 | Yami Kuo | | | | |
| TERF2411003344E2 | 01 | Revise address | Dec. 13, 2024 | Yami Kuo | * | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Note:

1 . The remark "*" indicates modification of the report upon requests from certification body.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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.



Contents

| 1 | GENERAL INFORMATION | 4 |
|----|--|----|
| 2 | SYSTEM TEST CONFIGURATION | 7 |
| 3 | SUMMARY OF TEST RESULTS | 11 |
| 4 | DESCRIPTION OF TEST MODES | 12 |
| 5 | MEASUREMENT UNCERTAINTY | 14 |
| 6 | MEASUREMENT EQUIPMENT USED | 15 |
| 7 | CONDUCTED EMISSION TEST | 17 |
| 8 | FREQUENCY SEPARATION | 21 |
| 9 | PEAK OUTPUT POWER MEASUREMENT | 24 |
| 10 | EMISSION BANDWIDTH MEASUREMENT | 26 |
| 11 | CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT | 32 |
| 12 | BANDEDGE AND SPURIOUS EMISSION MEASUREMENT | 37 |
| 13 | NUMBER OF HOPPING FREQUENCY | 63 |
| 14 | TIME OF OCCUPANCY (DWELL TIME) | 65 |
| 15 | ANTENNA REQUIREMENT | 70 |

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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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.



GENERAL INFORMATION 1

1.1 **Product Description**

| Product Name: | Tri-Radio LGA Module for IoT applications |
|---------------------------------|--|
| Brand Name: | Qualcomm |
| Model No.: | QCC744M-0 |
| HW SKU: | QCC744M-0U, QCC744M-0B, QCC748M-0U, QCC748M-0B |
| Hardware Version: | N/A |
| Firmware Version: | N/A |
| EUT Series No.: | 03B221949800GL |
| Power Supply: | 3.3Vdc |
| Test Software (Name/Version) | QConn RCT 1.8.9 |

1.2 **RF** Specification

| - | |
|-------------------|-------------------------|
| Radio Technology: | BT BR+EDR |
| Channel number: | 79 channels |
| Modulation type: | GFSK + π/4DQPSK + 8DPSK |
| Transmit Power: | 12.65 dBm |
| Frequency Range: | 2.402GHz – 2.480GHz |
| Dwell Time: | \leq 0.4s |

HW SKU Difference Table: 1.3

| HW SKU | Antenna Type | Impedance | Chip design |
|------------|---------------------------------|-------------|----------------------|
| QCC744M-0U | 3 types: PIFA, Monopole, Dipole | C21=1.86pF, | Does not support USB |
| | | C20=1.89pF | pinout |
| QCC744M-0B | 1 type: PCB | C21=1.52pF, | Does not support USB |
| | т туре. РСБ | C20=2.05pF | pinout |
| QCC748M-0U | 2 types: DIEA Menopole Dipole | C21=1.86pF, | Support LICP pipout |
| | 3 types: PIFA, Monopole, Dipole | C20=1.89pF | Support USB pinout |
| | | | Support LISP pipout |
| QCC748M-0B | 1 type: PCB | C20=2.05pF | Support USB pinout |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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.

f (886-2) 2298-0488

www.sgs.com.tw



1.4 Antenna Designation

| Antenna Type | Antenna Model No. | Freq. (MHz) | Peak Antenna Gain (dBi) |
|------------------|----------------------|----------------|----------------------------|
| PCB Antenna | RFIQM0744010NB001 | | 2.52 |
| PIFA Antenna | RFPCA441010EMABY01 | 2.4GHz | 3.19 |
| Dipole Antenna | RFPCA521010EMABY01 | 2.4002 | 3.37 |
| Monopole Antenna | RFPCA501010EMABY01 | | 3.12 |

Note:

- 1. Pre-scanned was done on the above antennas, measurements were demonstrated by using the antenna with the highest gain as the worst case scenarios.
- 2. Antenna information is provided by the applicant.

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,同時比樣品僅保留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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format document. Any holder of this document is subject to 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 the printed solution of the content or appearance of this docume

prosecuted to the fullest extent of the law. SGS Taiwan Ltd. No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號



Test Methodology of Applied Standards 1.5

FCC Part 15, Subpart C §15.247 FCC KDB 558074 D01 15.247 Meas. Guidance v05r02 ANSI C63.10:2020

Test Facility 1.6

| Laboratory | Test Site Address | Test Site Name | FCC Designa- tion number | IC CAB identifier |
|-----------------|---|----------------|-----------------------------|-------------------|
| | | SAC 1 | | |
| | | SAC 2 | | |
| | | SAC 3 | | |
| | No. 404 Markers Deed Now Tringi | Conduction 1 | | |
| | No.134, Wu Kung Road, New Taipei | Conducted 1 | T\0007 | |
| | Industrial Park, Wuku District, New | Conducted 2 | TW0027 | TW3702 |
| | Taipei City, Taiwan. | Conducted 3 | - - - - | |
| | | Conducted 4 | | |
| | | Conducted 5 | | |
| SGS Taiwan Ltd. | | Conducted 6 | | |
| Central RF Lab. | | Conduction C | | |
| (TAF code 3702) | | SAC C | TW0028 | |
| | | SAC D | | |
| | | SAC G | | |
| | No 2, Koji 1st Pd., Cujshan District | Conducted A | | |
| | No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333 | Conducted B | | |
| | Tabydan City, Taiwan 555 | Conducted C | | |
| | | Conducted D | - | |
| | | Conducted E | | |
| | | Conducted F | | |
| | | Conducted G | | |

Note: Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address.

1.7 **Special Accessories**

There is no special accessory used while test was conducted.

1.8 Equipment Modifications

There was no modification incorporated into the EUT.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 sole and the document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction 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.



SYSTEM TEST CONFIGURATION 2

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.

Test Procedure 2.3

2.3.1**Conducted Emissions**

The EUT is a placed on a 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. The two LISNs provide 50uH/50 ohm 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 **Conducted Test (RF)**

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

2.3.3 **Radiated Emissions**

The EUT is a placed on a 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.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.



2.4 Measurement Results Explanation Example

2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*6m*6m semi-ane choic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

2.4.2 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.

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.

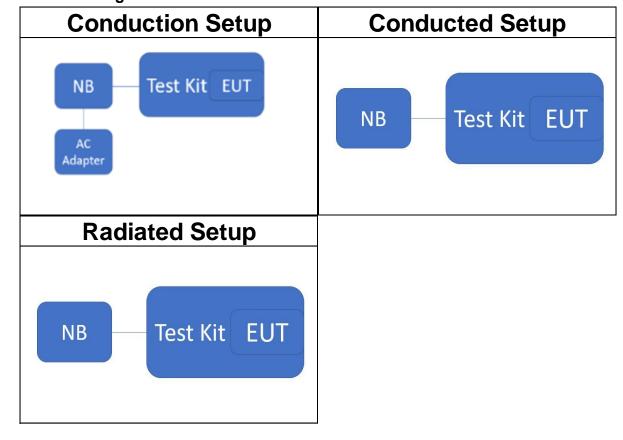
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 sole and the document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

t (886-2) 2299-3279 台灣檢驗科技股份有限公司



2.5 **Test Configuration**



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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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.



2.6 Control Unit(s)

| AC Power-Line Conducted Emission Test Site: Conduction C | | | | | | | |
|--|----------|---------------------|---------------------|---------------------------|--------------------------|--|--|
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. | CAL DUE. | | |
| Notebook | Lenovo | T470 | P0001293 | N/A | N/A | | |
| Adapter | Lenovo | ADLX65YLC3D | N/A | N/A | N/A | | |
| QCC74X Module Development Kit Board | Walsin | QCC744-DVK | N/A | N/A | N/A | | |
| USB Cable | Fong Hua | USB-C18 | 128342 | N/A | N/A | | |
| | C | onducted Emission T | est Site: Conducted | C | | | |
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. (mm/dd/yyyy) | CAL DUE. (mm/dd/yyyy) | | |
| Notebook | Lenovo | T14 | P0003332 | N/A | N/A | | |
| USB Cable | Mcdodo | CA-6390 | N/A | N/A | N/A | | |
| QCC74X Module Development Kit Board | Walsin | QCC744-DVK | N/A | N/A | N/A | | |
| | | Radiated Emissio | n Test Site: SAC D | | | | |
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. | CAL DUE. | | |
| Notebook | Lenovo | T470 | P0001293 | N/A | N/A | | |
| QCC74X Module Development Kit Board | Walsin | QCC744-DVK | N/A | N/A | N/A | | |
| USB Cable | Fong Hua | USB-C18 | 128342 | 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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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 | Description Of Test | Result |
|-----------------------|--|-----------|
| §15.207(a) | AC Power Line Conducted Emission | Compliant |
| §15.247(b)(1) | Peak Output Power | Compliant |
| §15.247(a)(1) | Emission Bandwidth | Compliant |
| §15.247(d) §15.209 | Conducted Band Edge and Spurious Emission | Compliant |
| §15.247(d) §15.209 | Radiated Spurious Emission | Compliant |
| §15.205 | Restricted Bands | Compliant |
| §15.247(a)(1) | Frequency Separation | Compliant |
| §15.247(a)(1)(iii) | Number of hopping frequency Time of Occupancy | Compliant |
| §15.203 | Antenna Requirement | Compliant |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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.

t (886-2) 2299-3279 台灣檢驗科技股份有限公司

www.sgs.com.tw



DESCRIPTION OF TEST MODES 4

4.1 Operated in 2400 ~ 2483.5MHz Band

| 2400~2483.5 MHz | | | | | | | |
|-----------------|----------------|----|----------------|----|----------------|----|----------------|
| СН | Freq. (MHz) | СН | Freq. (MHz) | СН | Freq. (MHz) | СН | Freq. (MHz) |
| 0 | 2402 | 20 | 2422 | 40 | 2442 | 60 | 2462 |
| 1 | 2403 | 21 | 2423 | 41 | 2443 | 61 | 2463 |
| 2 | 2404 | 22 | 2424 | 42 | 2444 | 62 | 2464 |
| 3 | 2405 | 23 | 2425 | 43 | 2445 | 63 | 2465 |
| 4 | 2406 | 24 | 2426 | 44 | 2446 | 64 | 2466 |
| 5 | 2407 | 25 | 2427 | 45 | 2447 | 65 | 2467 |
| 6 | 2408 | 26 | 2428 | 46 | 2448 | 66 | 2468 |
| 7 | 2409 | 27 | 2429 | 47 | 2449 | 67 | 2469 |
| 8 | 2410 | 28 | 2430 | 48 | 2450 | 68 | 2470 |
| 9 | 2411 | 29 | 2431 | 49 | 2451 | 69 | 2471 |
| 10 | 2412 | 30 | 2432 | 50 | 2452 | 70 | 2472 |
| 11 | 2413 | 31 | 2433 | 51 | 2453 | 71 | 2473 |
| 12 | 2414 | 32 | 2434 | 52 | 2454 | 72 | 2474 |
| 13 | 2415 | 33 | 2435 | 53 | 2455 | 73 | 2475 |
| 14 | 2416 | 34 | 2436 | 54 | 2456 | 74 | 2476 |
| 15 | 2417 | 35 | 2437 | 55 | 2457 | 75 | 2477 |
| 16 | 2418 | 36 | 2438 | 56 | 2458 | 76 | 2478 |
| 17 | 2419 | 37 | 2439 | 57 | 2459 | 77 | 2479 |
| 18 | 2420 | 38 | 2440 | 58 | 2460 | 78 | 2480 |
| 19 | 2421 | 39 | 2441 | 59 | 2461 | | |

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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.



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 The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.
- Investigation has been done on all the possible configurations for searching the worst case. 4

| | ANTN | INA PORT CONDUC | TED TEST | |
|---------------------|------------------------|----------------------|--|----------------|
| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION | PACKET TYPE |
| | Peak Output Pov | wer, 20dB Band Wid | th, Spurious Emissio | n |
| | 0 to 78 | 0,39,78 | GFSK | DH5 |
| Bluetooth | 0 to 78 | 0,39,78 | π/4-DQPSK | 2DH5 |
| | 0 to 78 | 0,39,78 | 8-DPSK | 3DH5 |
| | | Band Edge | | |
| Bluetooth | 0 to 78 | 0,78 | GFSK/8-DPSK | DH5/3DH5 |
| | | Frequency Separa | tion | |
| | | 0,1,2, | GFSK | DH5 |
| Bluetooth | 0 to 78 | 38,39,40, | π/4-DQPSK | 2DH5 |
| | | 76,77,78 | 8-DPSK | 3DH5 |
| | Number of Ho | opping Frequency, H | lopping Band edge | |
| Bluetooth | 0 to 78 | 0 to 78 | GFSK/8-DPSK | DH5/3DH5 |
| | Tir | ne of Occupancy(Dv | vell time) | |
| | | 39 | GFSK | DH1/DH3/DH5 |
| Bluetooth | 0 to 78 | | π/4-DQPSK | 2DH1/2DH3/2DH5 |
| | | | 8-DPSK | 3DH1/3DH3/3DH5 |
| MODE | AVAILABLE CHANNEL | TESTED CHANNEL | MODULATION | PACKET TYPE |
| | TRANS | AIT EMISSION TEST (I | BELOW 1 GHz) | |
| Bluetooth | 0 to 78 | 39 | 8-DPSK | 3DH5 |
| | TRANS | AIT EMISSION TEST (A | ABOVE 1 GHz) | |
| Bluetooth | 0 to 78 | 0,39,78 | GFSK/8-DPSK | DH5/3DH5 |
| NOTE: | | | | |
| position (E1, E2 mo | de) for channel Low, I | | stand-up position (H mod case position was repo a port | , |
| | | terrinator on antonn | ~ – ~ | |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 sole and the document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction 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. No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.



MEASUREMENT UNCERTAINTY 5

| Test Items | | ncertair | nty |
|----------------------------------|-----|----------|-----|
| AC Power Line Conducted Emission | | 1.54 | dB |
| Output Power measurement | +/- | 0.97 | dB |
| Emission Bandwidth | +/- | 1.38 | Hz |
| Conducted emission measurement | +/- | 0.77 | dB |
| Frequency Separation | +/- | 1.48 | Hz |
| Number of hopping frequency | +/- | 1.48 | Hz |
| Time of Occupancy | +/- | 1.48 | Hz |
| Temperature | +/- | 0.6 | °C |
| Humidity | +/- | 3 | % |
| DC / AC Power Source | +/- | 1 | % |

| Radiated Spurious Emission Measurement Uncertainty | | | | | |
|--|-----|------|----|-----------------|--|
| | +/- | 1.89 | dB | 9kHz~30MHz | |
| Polarization: Vertical | +/- | 4.15 | dB | 30MHz - 1000MHz | |
| Polarization: Vertical | +/- | 3.43 | dB | 1GHz - 18GHz | |
| | +/- | 3.86 | dB | 18GHz - 40GHz | |
| | +/- | 1.89 | dB | 9kHz~30MHz | |
| Polarization: Horizontal | +/- | 4.02 | dB | 30MHz - 1000MHz | |
| Polarization: Horizontal | +/- | 3.43 | dB | 1GHz - 18GHz | |
| | +/- | 3.86 | dB | 18GHz - 40GHz | |
| | +/- | 2 | dB | 33GHz-50GHz | |
| | +/- | 1.59 | dB | 50GHz-60GHz | |
| Radiated Spurious Emission | +/- | 1.7 | dB | 60GHz-90GHz | |
| | +/- | 1.64 | dB | 90GHz-140GHz | |
| | +/- | 3.83 | dB | 140GHz-220GHz | |

Note:

- 1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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 EQUIPMENT USED 6

Emission from AC power line 6.1

| AC Power-Line Conducted Emission Test Site: Conduction C | | | | | | |
|--|--------------------------------|---------------|-----------------------------|------------|------------|--|
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. | CAL DUE. | |
| Coaxial Cable | EC Lab | RF-HY-CAB-250 | RF-HY-CAB-250-01 | 03/27/2024 | 03/26/2025 | |
| EMI Test Receiver | R&S | ESCI | 101342 | 04/29/2024 | 04/28/2025 | |
| LISN | SCHWARZBECK Mess-Elektronik | NSLK8127 | 973 | 04/22/2024 | 04/21/2025 | |
| Pulse Limiter | EC Lab | VTSD 9561F-N | 485 | 03/27/2024 | 03/26/2025 | |
| TEMPERATURE | N/A | EC-RFHY-05 | N/A | 05/22/2024 | 05/21/2025 | |
| SMA Termination | RF Microwave WOKEN | WTER-18S2 | N/A | N/A | N/A | |
| Test Software | audix | е3 | E3 20923 SGS Ver.9 (C) | N.C.R | N.C.R | |

6.2 **Conducted Measurement**

| Conducted Emission Test Site: Conducted C | | | | | | |
|---|------------|------------------------|---------------|---------------------------|--------------------------|--|
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. (mm/dd/yyyy) | CAL DUE. (mm/dd/yyyy) | |
| Attenuator | Woken | WATT-218FS-10 | RF19 | 11/15/2023 | 11/14/2024 | |
| Attenuator | Woken | WATT-218FS-10 | RF19 | 11/14/2024 | 11/13/2025 | |
| DC Block | PASTERNACK | PE8210 | RF155 | 11/15/2023 | 11/14/2024 | |
| DC Block | PASTERNACK | PE8210 | RF155 | 11/14/2024 | 11/13/2025 | |
| Power Meter | Anritsu | ML2496A | 1804002 | 04/26/2024 | 04/25/2025 | |
| Power Sensor | Anritsu | MA2411B | 1726105 | 04/26/2024 | 04/25/2025 | |
| Power Sensor | Anritsu | MA2411B | 1726106 | 04/26/2024 | 04/25/2025 | |
| Spectrum Analyzer | KEYSIGHT | N9010B | MY59071570 | 06/25/2024 | 06/24/2025 | |
| Test Software | SGS Taiwan | Radio Test Software | Ver.21 | N.C.R | N.C.R | |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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.

f (886-2) 2298-0488



Radiated Measurement 6.3

| | Radiated Emission Test Site: SAC D | | | | | |
|--------------------------|------------------------------------|-----------------------|-----------------------------|------------|------------|--|
| EQUIPMENT TYPE | MFR | MODEL NUMBER | SERIAL NUMBER | LAST CAL. | CAL DUE. | |
| 3m Site NSA | SGS | 966 chamber D | N/A | 04/30/2024 | 04/29/2025 | |
| Active Loop Antenna | COM-POWER | AL-130R | 10160105 | 12/04/2023 | 12/03/2024 | |
| Attenuator | Woken | WATT-218FS-10 | RF17 | 11/14/2024 | 11/13/2025 | |
| Band Rejection Filter | Micro-Tronics | G008 | RF205 | 11/14/2024 | 11/13/2025 | |
| Broadband Antenna | SCHWARZBECK | VULB 9168 | 9168-617 | 12/14/2023 | 12/13/2024 | |
| Coaxial Cable | Huber+Suhner | EMC106-SM-SM- 7200 | 150703 | 11/14/2024 | 11/13/2025 | |
| Coaxial Cable | Huber+Suhner | RG 214/U | W21.01 | 11/14/2024 | 11/13/2025 | |
| Highpass Filter | R&S | F13 HPF 3GHz | RF175 | 11/14/2024 | 11/13/2025 | |
| Horn Antenna | Schwarzbeck | BBHA9120D | 1341 | 05/30/2024 | 05/29/2025 | |
| Horn Antenna | Schwarzbeck | BBHA9170 | 184 | 12/28/2023 | 12/27/2024 | |
| Lowpass Filter | Woken | EWT-56-0019 | RF173 | 11/14/2024 | 11/13/2025 | |
| Pre-Amplifier | EMC Instruments | EMC12630SE | 980273 | 11/14/2024 | 11/13/2025 | |
| Pre-Amplifier | EMC Instruments | EMC9135 | 980234 | 11/14/2024 | 11/13/2025 | |
| Spectrum Analyzer | KEYSIGHT | N9010A | MY57120200 | 04/03/2024 | 04/02/2025 | |
| SMA Termination | RF Microwave WOKEN | WTER-18S2 | N/A | N/A | N/A | |
| Test Software | audix | е3 | E3 20923 SGS Ver.9 (C) | N.C.R | N.C.R | |

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。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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.

www.sgs.com.tw



CONDUCTED EMISSION TEST 7

7.1 **Standard Applicable**

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

| Frequency range | Limits 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 | | | |

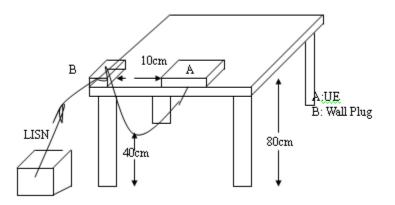
1. The lower limit shall apply at the transition frequencies

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

7.2 EUT Setup:

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2020.
- 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.

7.3 **Test Setup**



7.4 **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 frequency 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。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sqs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.: TERF2411003344E2 Page: 18 of 70



7.5 **Measurement Result**

Note: Refer to next page for measurement data and plots. Note2: The * reveals the worst-case results that closest 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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號



AC POWER LINE CONDUCTED EMISSION TEST DATA

| Report Number Test Mode Power Probe | :TERF2411003344 :EDR 3M :120V/60Hz :L1 | Test | Date :2 o./Humi. :2 | onduction C 024-11-18 1.5℃/62% ony Chen | |
|--|---|----------------------|------------------------|--|------------------|
| 80 Level (dBuV | n | | | |] |
| 70 | | | | | |
| 60 | | | | | |
| 50 | | | | | |
| 40 | 3 | | | | |
| 30 | Miland | | 5 | 6 | |
| 20 | MMMMAN MY | mon man | Mar Marine | human | |
| 10 | | | | | |
| 0.15 0.2 | 0.5 1 | 2 Frequency (MHz) | 5 | 10 20 30 | 1 |
| Freq. | Detector Spectro | | Actual FS | Limit | Margin |
| MHz F | Mode Reading PK/QP/AV dBμV | | F3 dBμV | dBμV | dB |
| 0.450 | | 7 40.05 | 54.00 | | 40.04 |
| 0.158 0.211 | Peak 41.27 Peak 28.97 | | 51.92 39.56 | 65.56 63.18 | -13.64 -23.63 |
| 0.502 | Peak 25.2 | | 35.88 | 56.00 | -23.03 |
| 1.848 | Peak 10.72 | | 21.48 | 56.00 | -34.52 |
| 7.646 | Peak 14.82 | | 25.78 | 60.00 | -34.22 |
| 11.317 | Peak 14.73 | 3 11.00 | 25.73 | 60.00 | -34.27 |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 t (886-2) 2299-3279

f (886-2) 2298-0488



| Report Number | :TERF2411003344 | E2 Test S | Site :Co | onduction C | |
|----------------|------------------|----------------------|-------------|--------------|--------|
| Test Mode | :EDR 3M | Test I | Date :20 | 24-11-18 | |
| Power | :120V/60Hz | Temp | ./Humi. :21 | .5℃/62% | |
| Probe | :N | Engir | | ony Chen | |
| | | | | | |
| 80 Level (dBuV | <u>n</u> | | | | 1 |
| 70 | | | | | |
| | | | | | |
| 60 | | | | | |
| 50 2 | | | | | |
| 40 | | | | | |
| | dan wal | | | | |
| 30 | WWWWWW | | Mamm | web-yby | |
| 20 | TY YAMA WWW YA | Marin Walnut | WWW | - Co | |
| 10 | | | | and a second | |
| o | | | | | |
| 0.15 0.2 | 0.5 1 | 2 Frequency (MHz) | 5 1 | 10 20 30 | |
| Freq. | Detector Spectru | | Actual | Limit | Margin |
| N 41 I.— | Mode Reading L | | FS | JDV | |
| MHz F | PK/QP/AV dBμV | dB | dBµV | dBµV | dB |
| 0.153 | Peak 39.20 | 10.66 | 49.86 | 65.82 | -15.96 |
| 0.183 | Peak 35.35 | | 46.00 | 64.33 | -18.33 |
| 0.502 | Peak 25.60 | | 36.20 | 56.00 | -19.80 |
| 0.697 | Peak 13.61 | 10.63 | 24.25 | 56.00 | -31.75 |
| 5.744 | Peak 15.92 | 2 10.94 | 26.86 | 60.00 | -33.14 |
| 14.138 | Peak 8.80 | 11.05 | 19.86 | 60.00 | -40.14 |

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。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號

f (886-2) 2298-0488

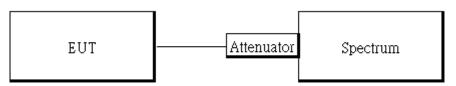


FREQUENCY SEPARATION

Standard Applicable 8.1

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Setup 8.2



8.3 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2020.
- 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 center frequency of spectrum analyzer = middle of hopping channel.
- 5. Set the RBW approximately 30% of the channel spacing, VBW \geq RBW.
- 6. Adjust Span to Wide enough to capture the peaks of two adjacent channels.
- 7. Sweep = auto.
- 8. Max hold. Mark 3 Peaks of hopping channel and record the 3 peaks frequency.

8.4 **Measurement Result**

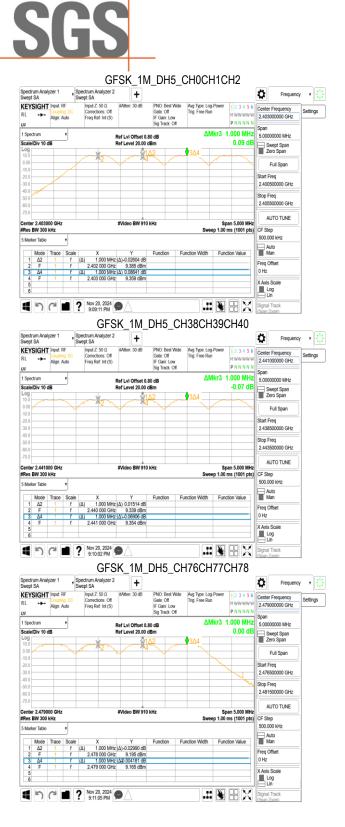
| Channel separation (MHz) | Limit | Result |
|-----------------------------|--|--------|
| 1 | ≧25 kHz or 2/3 times 20dB bandwidth | PASS |

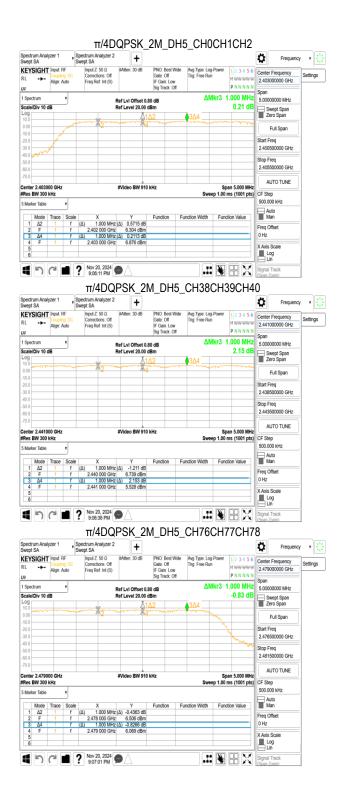
www.sqs.com.tw

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.: TERF2411003344E2 Page: 22 of 70





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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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

> No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

f (886-2) 2298-0488

www.sgs.com.tw

Member of SGS Group



Report No.: TERF2411003344E2 Page: 23 of 70

8DPSK 3M DH5 CH0CH1CH2

| KEYSIGHT Input: RF | Spectrum Analyzer 2 Swept SA | + | | | | Ö | Frequency | 3 |
|---|---|---|--|-----------------------------------|---|--|---|----------|
| RL ++ Coupling DC Align: Auto | | Atten: 30 dB | PNO: Best Wide Gate: Off IF Gain: Low Sin Track: Off | Avg Type: Log-F Trig: Free Run | Power 1 2 3 4 5 6 | Centerr | Frequency 00000 GHz | Settings |
| Na V | | | Sig Track: Off | | kr3 1.000 MHz | Span 5.00000 | 0000 MHz | |
| Scale/Div 10 dB | | f Lvi Offset 0.8 f Level 20.00 d | | | 1.45 dB | Sw | ept Span | |
| Log 10.0 | many | §1/ | 12 | ♦3∆4 | | Zen | o Span | |
| -10.0 | ~m_ | 4 | | | | FI | ull Span | |
| -20.0 | | | | | | Start Fre 2.40050 | eq D0000 GHz | |
| -40.0 | | | | | | Stop Fre | eq 00000 GHz | |
| -70.0 | | | | | | | TO TUNE | |
| Center 2.403000 GHz #Res BW 300 kHz | #\ | Video BW 910 | kHz | Swee | Span 5.000 MHz p 1.00 ms (1001 pts) | | | |
| 5 Marker Table 🔹 | | | | | | 500.000 | | |
| Mode Trace Scale | e X (Δ) 1.000 MHz (Δ | Y) -1.308 dB | Function F | Function Width | Function Value | Mar | n | |
| 2 F 1 f 3 Δ4 1 f | 2.402 000 GHz (Δ) 1.000 MHz (Δ | 7.282 dBm | | | | Freq Off 0 Hz | set | |
| 4 F 1 f 5 | 2.403 000 GHz | 5.974 dBm | | | | X Axis S | | |
| | Nov 90, 2024 — | | | | | Log Lin | | |
| ا ۲ ۲ | ? Nov 20, 2024 9:02:25 PM | $ \land $ | | | 🖲 🗄 🗙 | Signal Ti (Span Zo | | |
| | | K_3M_ | DH5_C | H38CH | 139CH40 | | | |
| swept SA | Spectrum Analyzer 2 Swept SA | + | | | | Ö | Frequency | • • |
| RL + Coupling: DC | Corrections: Off | Atten: 30 dB | PNO: Best Wide Gate: Off | Avg Type: Log-F Trig: Free Run | Power 1 2 3 4 5 6 | | requency 00000 GHz | Settings |
| Aign: Auto | Freq Ref: Int (S) | | IF Gain: Low Sig Track: Off | | PNNNN | Span | | |
| 1 Spectrum Scale/Div 10 dB | | f Lvi Offset 0.8 f Level 20.00 d | | ΔM | kr3 1.000 MHz -0.22 dB | 5.00000 | 0000 MHz | |
| Log | | §1/ | Δ <u>2</u> | ♦ 3∆4 | | | ept Span o Span | |
| 0.00 | | | | | | | ull Span | |
| -20.0 | | | | | | Start Fre | eq 00000 GHz | |
| -40.0 | | | | | | Stop Fre | Pq. | |
| -60.0 | | | | | | | 00000 GHz | |
| Center 2.441000 GHz | #\ | video BW 910 | kHz | | Span 5.000 MHz | | TO TUNE | |
| #Res BW 300 kHz 5 Marker Table v | | | | Sweep | p 1.00 ms (1001 pts) | CF Step 500.000 | | |
| Mode Trace Scale | e X | Y | Function F | Function Width | Function Value | Aut Mar | | |
| 1 Δ2 1 f 2 F 1 f | (Δ) 1.000 MHz (Δ 2.440 000 GHz | 6.947 dBm | | | | Freq Off | set | |
| 0 44 | (Δ) 1.000 MHz (Δ) |) -0.2175 dB 7.309 dBm | | | | 0 Hz | aala | |
| 3 <u>∆</u> 4 1 f 4 F 1 f | 2.441 000 GHz | | | | | X Axis S | | |
| | | | | | | Log | | |
| 4 F 1 f | Nov 20, 2024 | | | .: | | Signal Ti | rack | |
| 4 F 1 f | ? Nov 20, 2024 9:03:16 PM | | DH5 C | | | Lin | irack om) | |
| 4 F 1 f 5 6 | Nov 20, 2024 9:03:16 PM 8DPSI Spectrum Analyzer 2 | K_3M_ | DH5_C | | 177CH78 | Signal Ti (Span Zo | rack om) Frequency | |
| 4 F 1 f 5 6 | Nov 20, 2024 9:03:16 PM 8DPSI Spectrum Analyzer 2 Swept SA Imput Z: 50 Ω | | PNO: Best Wide | H76CH | 77CH78 | Signal Ti ISoan Zo | om) Frequency | |
| 4 F 1 F 5 6 Spectrum Analyzer 1 Swept SA KEYSIGHT Input: RF RL → Coupling DC Age: Auto | Nov 20, 2024 9:03:16 PM 8DPSI Spectrum Analyzer 2 Swept SA | K_3M_ + | PNO: Best Wide Gate: Off IF Gain: Low | H76CH | 177CH78 | Signal Ti (Soan Zo | om) | Settings |
| 4 F 1 f 5 6 | Nov 20, 2024 So3:16 PM Spectrum Analyzer 2 Swept SA Imput Z: 50 Q Corrections: off Freq Ref. Int (S) Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-F Trig: Free Run | Power 123456 MWWWWW PNNNN kr3 1.000 MHz | Lin Signal Ti ISoanZo Center F 2.47900 Span 5.00000 | om) Frequency | |
| 4 F 1 1 5 6 - - 6 - - - Spectrum Analyzer 1 - - - Spectrum Analyzer 1 - - - RE YSIGENT Input IF RE - - - Spectrum Analyzer 1 - - - - - 1 Spectrum 1 - | Nov 20, 2024 So3:16 PM Spectrum Analyzer 2 Swept SA Imput Z: 50 Q Corrections: off Freq Ref. Int (S) Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-F Trig: Free Run | 177CH78 | Center F 2.47900 Span 5.00000 Swa | Frequency Frequency 20000 GHz 20000 MHz ept Span | |
| 4 F 1 T 5 Control Analyzer 1 Servert SA Servert SA | Nov 20, 2024 So3:16 PM Spectrum Analyzer 2 Swept SA Imput Z: 50 Q Corrections: off Freq Ref. Int (S) Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-F Trig: Free Run | Power 123456 MWWWWW PNNNN kr3 1.000 MHz | Center F 2.47900 Span 5.00000 | Frequency Frequency 20000 GHz 20000 MHz ept Span | |
| 4 F 1 5 6 1 3pectrum Analyzer 1 • Nome 5A • Spectrum Analyzer 1 • Spectrum • • Specone • | Nov 20, 2024 So3:16 PM Spectrum Analyzer 2 Swept SA Imput Z: 50 Q Corrections: off Freq Ref. Int (S) Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-F Trig: Free Run | Power 123456 MWWWWW PNNNN kr3 1.000 MHz | Center F 2.47900 Span 5.00000 | Frequency Frequency 20000 GHz 20000 MHz ept Span o Span ull Span | |
| 4 F 1 5 6 - 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 5 7 1 6 7 1 6 7 1 7 5 5 6 7 1 7 5 5 <t< td=""><td>Nov 20, 2024 So3:16 PM Spectrum Analyzer 2 Swept SA Imput Z: 50 Q Corrections: off Freq Ref. Int (S) Ref</td><td>K_3M_ + Atten: 30 dB</td><td>PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off</td><td>Avg Type: Log-F Trig: Free Run</td><td>Power 123456 MWWWWW PNNNN kr3 1.000 MHz</td><td>Center F 2.47900 Span 5.000000 Span 5.000000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.000 Span 5.000 Span 5.0000 Span 5.0000 Span 5.000 Span 5.000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.000</td><td>Frequency requency 20000 GHz 2000 MHz ept Span o Span ull Span 29 2000 GHz</td><td></td></t<> | Nov 20, 2024 So3:16 PM Spectrum Analyzer 2 Swept SA Imput Z: 50 Q Corrections: off Freq Ref. Int (S) Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-F Trig: Free Run | Power 123456 MWWWWW PNNNN kr3 1.000 MHz | Center F 2.47900 Span 5.000000 Span 5.000000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.000 Span 5.000 Span 5.0000 Span 5.0000 Span 5.000 Span 5.000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.0000 Span 5.000 | Frequency requency 20000 GHz 2000 MHz ept Span o Span ull Span 29 2000 GHz | |
| 4 F 1 1 5 6 | Nov 20, 2024 So3:16 PM Spectrum Analyzer 2 Swept SA Imput Z: 50 Q Corrections: off Freq Ref. Int (S) Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-F Trig: Free Run | Ромет 12.34.56 м www.ww P N N N N kr3 1.000 MHz 0.17 dB | Center F 2.47900 Span 5.0000 Span 5.000 Span 5.000 Span 5.0 | Frequency requency 20000 GHz 2000 MHz ept Span o Span ull Span 29 2000 GHz | |
| 4 F 1 1 6 | Nov 20, 2024 9:03:16 PM Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Connections. off Freq Ref Link (S) Ref Ref Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gale: Off IF Gain: Low Sig Tack: Off 00 dB Ben A2 | Avg Type: Log-F Trig: Free Run | 77CH78 | Center F 2.47900 Span 5.00000 Fi Start Fre 2.47650 Stop Fre 2.48150 | Frequency Frequency 20000 GHz 2000 MHz pt Span o Span 29 20000 GHz 29 20000 GHz 29 | |
| 4 F 1 1 6 - - - - 3000000000000000000000000000000000000 | Nov 20, 2024 9:03:16 PM Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Connections. off Freq Ref Link (S) Ref Ref Ref | K_3M_ + Atten: 30 dB | PNO: Best Wide Gale: Off IF Gain: Low Sig Tack: Off 00 dB Ben A2 | CH76CH | Ромет 12.34.56 м www.ww P N N N N kr3 1.000 MHz 0.17 dB | Center F 2.47900 Span T 2.47900 Span 5.0000 Span 5.0000 Start Fre 2.47500 Stop Fre 2.47500 CF Step CF Step | Frequency requency 2000 GHz 2000 MHz ept Span Span UII Span UII Span VQ 20000 GHz TO TUNE | |
| 4 F 1 1 5 6 - - 4 F 1 1 5 6 - - 5 Spectrum Analyzer 1 - - 5 Spectrum - V - - 1 Spectrum - V - - - 1 Spectrum - V - - - - 100 - < | Nov 20, 2024 Solarite PM Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Connections. Off Freq Ref. Int (5) Ref. | K_3M_ + Atten: 30 dB | PNO: Best Wide Gale: Off IF Gain: Low Sig Tack: Off 00 dB Ben A2 | CH76CH | 77СН78 Мининининининининининининининининининин | Lin Lin Signal Ti Sono Zo Center F 2.47900 Span Sono Zo Span Sono Zo Span Start Fre Start Fre 2.47850 Stop Fre 2.47850 Cont Cf Stop Fre 2.48150 CC Stop Fre 2.48150 Auth Auth | Frequency requency 20000 GHz 2000 MHz ept Span 20000 GHz 20000 GHz 20000 GHz 200000 GHz 200000 GHz 20000 GHz 2000 GHZ | |
| 4 F 1 1 5 6 - - Spectrum Analyzer 1 • • • Spectrum • • • • • Spectrum • • • • • • Spectrum • • <td>Nov 20, 2024 Solarite PM Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Conscions off Freq Ref Int (5) Ref Ref</td> <td>K_3M_ + Atten: 30 dB f Lvi Offset 0.8 f Level 20.00 d f Level 20.00 d f Level 20.00 d f Level 20.00 d</td> <td>PNO Best Wide Gate: Of IF Gan: Low Sig Track: Off MA2 A2 KHz</td> <td>CH76CH</td> <td>77СН78 Мининининининининининининининининининин</td> <td>In In Signal T IS Center F 2.47900 Span 5.0000 System Fill Start Fire 2.47850 GCF Step Fire 2.48150 GCF Step Fire 500.000 Max Max</td> <td>Frequency Frequency 20000 GHz 2000 MHz ept Span o Span ull Span rq 20000 GHz rq 20000 GHz TO TUNE</td> <td></td> | Nov 20, 2024 Solarite PM Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Conscions off Freq Ref Int (5) Ref | K_3M_ + Atten: 30 dB f Lvi Offset 0.8 f Level 20.00 d f Level 20.00 d f Level 20.00 d f Level 20.00 d | PNO Best Wide Gate: Of IF Gan: Low Sig Track: Off MA2 A2 KHz | CH76CH | 77СН78 Мининининининининининининининининининин | In In Signal T IS Center F 2.47900 Span 5.0000 System Fill Start Fire 2.47850 GCF Step Fire 2.48150 GCF Step Fire 500.000 Max Max | Frequency Frequency 20000 GHz 2000 MHz ept Span o Span ull Span rq 20000 GHz rq 20000 GHz TO TUNE | |
| 4 F 1 1 5 6 - - Spectrum Analyzer 1 • • • Spectrum Analyzer 1 • • • Spectrum Analyzer 1 • • • Spectrum • • • • • Spectrum • • • • • • Spectrum • • </td <td>Nov 20, 2024 Solarite PM Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Connections. Off Freq Ref Int (S) Ref Ref</td> <td>K_3M_ + Atten: 30 dB fLvi Offset 0.8 fLvi Offs</td> <td>PNO Best Wide Gate: Of IF Gan: Low Sig Track: Off MA2 A2 KHz</td> <td>CH76CH</td> <td>77СН78 тими 12.34.56 мичичич риплин 0.17 dB 0.17 dB 0.17 dB</td> <td>Lin Lin Signal Ti Sono Zo Center F 2.47900 Span Sono Zo Span Sono Zo Span Start Fre Start Fre 2.47850 Stop Fre 2.47850 Cont Cf Stop Fre 2.48150 CC Stop Fre 2.48150 Auth Auth</td> <td>Frequency Frequency 20000 GHz 2000 MHz ept Span o Span ull Span rq 20000 GHz rq 20000 GHz TO TUNE</td> <td></td> | Nov 20, 2024 Solarite PM Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Analyzer 2 Spectrum Connections. Off Freq Ref Int (S) Ref Ref | K_3M_ + Atten: 30 dB fLvi Offset 0.8 fLvi Offs | PNO Best Wide Gate: Of IF Gan: Low Sig Track: Off MA2 A2 KHz | CH76CH | 77СН78 тими 12.34.56 мичичич риплин 0.17 dB 0.17 dB 0.17 dB | Lin Lin Signal Ti Sono Zo Center F 2.47900 Span Sono Zo Span Sono Zo Span Start Fre Start Fre 2.47850 Stop Fre 2.47850 Cont Cf Stop Fre 2.48150 CC Stop Fre 2.48150 Auth Auth | Frequency Frequency 20000 GHz 2000 MHz ept Span o Span ull Span rq 20000 GHz rq 20000 GHz TO TUNE | |
| 4 F 1 T 5 6 - - 5 6 - - 5 6 - - 5 6 - - - 5 6 - - - - 5 6 - | Nov 20, 2024 South of the second se | K_3M_ + Atten: 30 dB fLvi Offset 0.8 fLvi Offs | PNO Best Wide Gate: Of IF Gan: Low Sig Track: Off MA2 A2 KHz | CH76CH | 77СН78 тими 12.34.56 мичичич риплин 0.17 dB 0.17 dB 0.17 dB | In In Signal T IS Center F 2.47900 Span 5.00000 Span 5.00000 Start Fre 2.478500 Conter F 2.478500 Conter F 2.478500 Conter F 2.478500 Conter F 2.478500 AUU CF Step 500.0000 Audu Mar Freq Off Terreg Off | Frequency requency 30000 GHz | |

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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

f (886-2) 2298-0488

www.sgs.com.tw

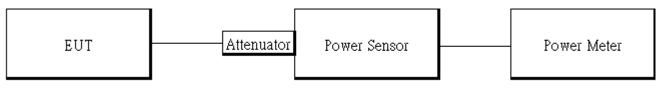


PEAK OUTPUT POWER MEASUREMENT

9.1 Standard Applicable

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels, The Limit: 1Watt. For all other frequency hopping systems in the 2400 – 2483.5MHz band: The Limit: 0.125 Watts. The power limit for 1Mbps is 1watt, and 2Mbps, 3Mbps and AFH mode are 0.125 watts.

9.2 **Test Setup**



9.3 Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10 Measurement Guidelines.
- 3. Duty cycle of test signal is < 98 %, duty factor shall be considered, test methodology follow 14.3.
- 4. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter or spectrum. (Max Hold, Detector = Peak, RBW >= 20dB bandwidth)
- 5. Record the max. reading.
- 6. Repeat above procedures until all default test channel is completed.

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 http://www.sqs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.: TERF2411003344E2 Page: 25 of 70

Peak & Average Power Measurement Result 9.4

| | Duty Cycle (%) = Ton / (Ton+Toff) | Duty Factor (dB) =10*log(1/Duty Cycle) |
|------|--------------------------------------|--|
| DH5 | 76.80 | 1.15 |
| 2DH5 | 76.80 | 1.15 |
| 3DH5 | 76.80 | 1.15 |

1M BR mode (Peak):

| СН | Freq. (MHz) | Power Setting | Peak Output Power (dBm) | Output Power (mW) | Limit (mW) |
|----|----------------|------------------|----------------------------------|-------------------------|---------------|
| 0 | 2402 | 10 | 9.37 | 8.650 | 1000 |
| 39 | 2441 | 10 | 9.68 | 9.290 | 1000 |
| 78 | 2480 | 10 | 9.36 | 8.630 | 1000 |

| 1M BR mode (Average): | | | | | |
|-----------------------|----------------|------------------|----------------------------------|-------------------------|---------------|
| СН | Freq. (MHz) | Power Setting | Avg. Output Power (dBm) | Output Power (mW) | Limit (mW) |
| 0 | 2402 | 10 | 9.34 | 8.583 | 1000 |
| 39 | 2441 | 10 | 9.65 | 9.218 | 1000 |
| 78 | 2480 | 10 | 9.32 | 8.544 | 1000 |

2M EDR mode (Peak):

| СН | Freq. (MHz) | Power Setting | Peak Output Power (dBm) | Output Power (mW) | Limit (mW) |
|----|----------------|------------------|----------------------------------|-------------------------|---------------|
| 0 | 2402 | 10 | 11.82 | 15.205 | 125 |
| 39 | 2441 | 10 | 12.12 | 16.293 | 125 |
| 78 | 2480 | 10 | 11.79 | 15.101 | 125 |

| 2M | EUD | mode | (Average | ۱. |
|-----|-----|--------|----------|----|
| 211 | | IIIUue | IAVEIAUE | |

| СН | Freq. (MHz) | Power Setting | Avg. Output Power (dBm) | Output Power (mW) | Limit (mW) |
|----|----------------|------------------|----------------------------------|-------------------------|---------------|
| 0 | 2402 | 10 | 9.45 | 8.803 | 125 |
| 39 | 2441 | 10 | 9.75 | 9.433 | 125 |
| 78 | 2480 | 10 | 9.44 | 8.783 | 125 |

3M EDR mode (Peak):

| СН | Freq. (MHz) | Power Setting | Peak Output Power (dBm) | Output Power (mW) | Limit (mW) |
|----|----------------|------------------|----------------------------------|-------------------------|---------------|
| 0 | 2402 | 10 | 12.36 | 17.219 | 125 |
| 39 | 2441 | 10 | 12.65 | 18.408 | 125 |
| 78 | 2480 | 10 | 12.33 | 17.100 | 125 |

3M EDR mode (Average):

| сн | Freq. (MHz) | Power Setting | Avg. Output Power (dBm) | Output Power (mW) | Limit (mW) |
|----|----------------|------------------|----------------------------------|-------------------------|---------------|
| 0 | 2402 | 10 | 9.50 | 8.905 | 125 |
| 39 | 2441 | 10 | 9.77 | 9.476 | 125 |
| 78 | 2480 | 10 | 9.46 | 8.823 | 125 |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

www.sgs.com.tw

Report No.: TERF2411003344E2 Page: 26 of 70

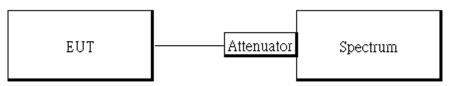


10 EMISSION BANDWIDTH MEASUREMENT

Standard Applicable 10.1

For frequency hopping systems operating in the 2400 MHz-2483.5 MHz no limit for 20dB bandwidth.

10.2 Test Setup



Measurement Procedure 10.3

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2020.
- 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 the spectrum analyzer as RBW= 1% to 5% of OBW, VBW = 3 X RBWSpan= 2 to 5 times of the OBW, Sweep=auto, Detector = Peak, and Max hold for 20dB Bandwidth test.
- 5. Mark the peak frequency and -20dB (upper and lower) frequency
- 6. Set the spectrum analyzer as

RBW= 1 % to 5% of 99% Bandwidth,

VBW \geq 3 X RBW,

Span= large enough to capture all products of the modulation process, Sweep=auto,

Detector = Peak, and Max hold for 99% Bandwidth test.

- 7. Mark the peak frequency and 99%dB (upper and lower) frequency
- 8. Repeat above procedures until all test default channel is completed

www.sqs.com.tw

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 sole and the document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document and the document taken the transaction document and the document taken the transaction transaction of the context of the document taken the transaction document and the transaction document and the document taken the transaction document and the transaction document taken the transaction document and transaction taken the transaction document and transaction taken the transaction document and the document taken the transaction document and the document taken the transaction taken ta prosecuted to the fullest extent of the law.



GFSK

| СН | 20 dB BW (MHz) | 2/3 BW (MHz) |
|----|-------------------|-----------------|
| 0 | 0.9323 | 0.62 |
| 39 | 0.932 | 0.62 |
| 78 | 0.9315 | 0.62 |
| | | |

π/4-DQPSK

| СН | 20 dB BW (MHz) | 2/3 BW (MHz) |
|----|-------------------|-----------------|
| 0 | 1.286 | 0.86 |
| 39 | 1.285 | 0.86 |
| 78 | 1.286 | 0.86 |

8-DPSK

CECK

| СН | 20 dB BW (MHz) | 2/3 BW (MHz) |
|----|-------------------|-----------------|
| 0 | 1.302 | 0.87 |
| 39 | 1.302 | 0.87 |
| 78 | 1.301 | 0.87 |

10.5 99% Bandwidth

| Gran | | | | |
|------|---------|--|--|--|
| СН | 99% BW | | | |
| СП | (MHz) | | | |
| 0 | 0.81842 | | | |
| 39 | 0.81952 | | | |
| 78 | 0.81817 | | | |

π/4-DQPSK

| сп | 99% BW |
|----|--------|
| СН | (MHz) |
| 0 | 1.1804 |
| 39 | 1.1819 |
| 78 | 1.1810 |

8-DPSK

| СН | 99% BW |
|----|--------|
| СП | (MHz) |
| 0 | 1.1829 |
| 39 | 1.1825 |
| 78 | 1.1828 |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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.

台灣檢驗科技股份有限公司

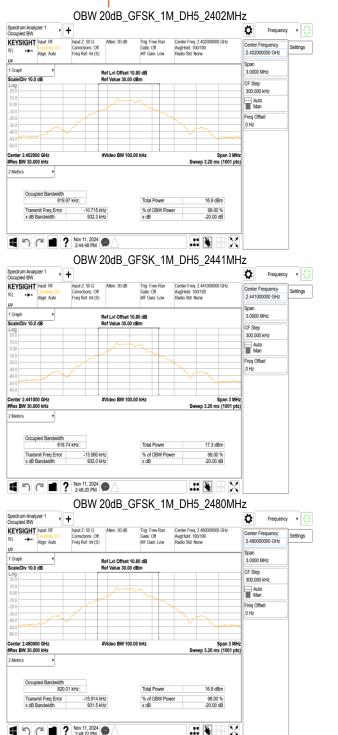
SGS Taiwan Ltd.

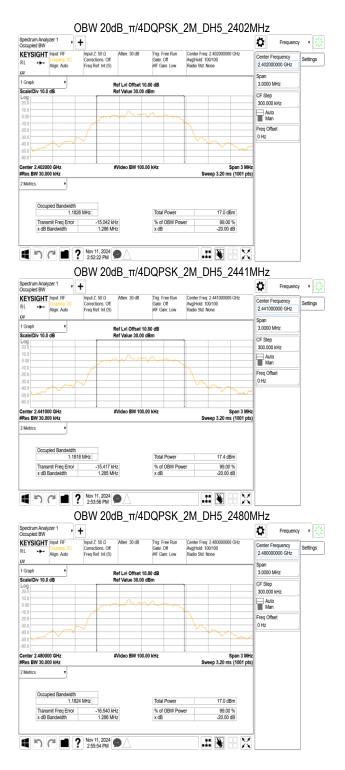
No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 f (886-2) 2298-0488

www.sgs.com.tw

Report No.: TERF2411003344E2 Page: 28 of 70







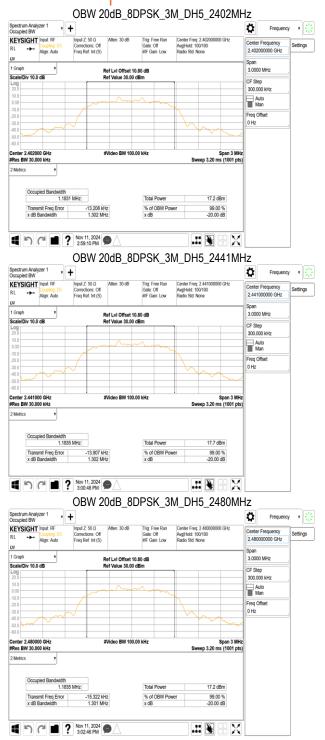
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

f (886-2) 2298-0488



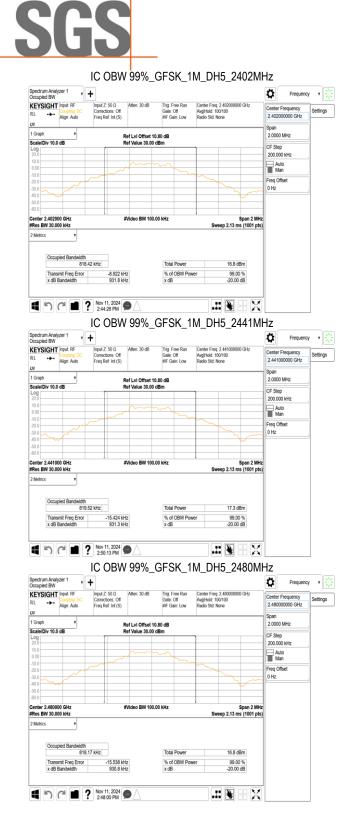


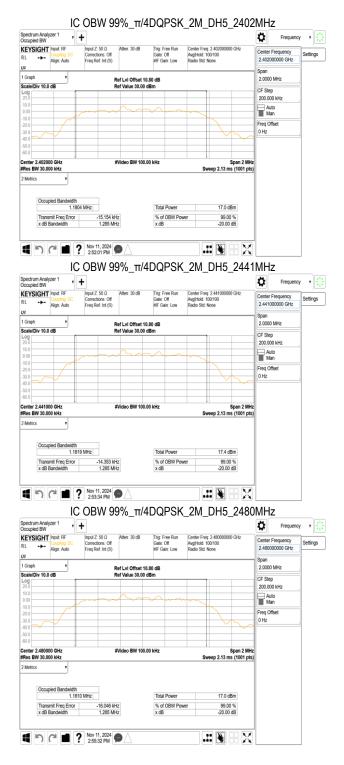
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

Report No.: TERF2411003344E2 Page: 30 of 70





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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

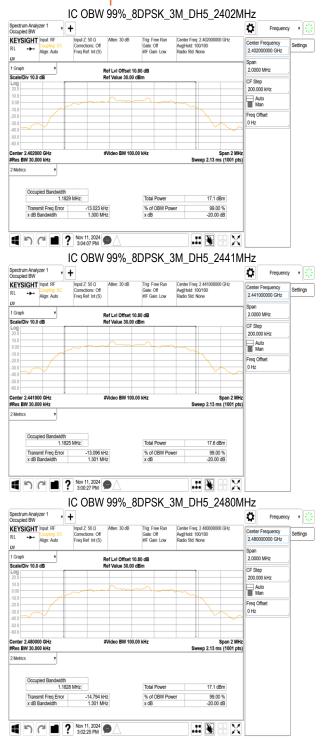
t (886-2) 2299-3279 台灣檢驗科技股份有限公司

f (886-2) 2298-0488

www.sqs.com.tw

Member of SGS Group





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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

```
www.sqs.com.tw
```

Member of SGS Group

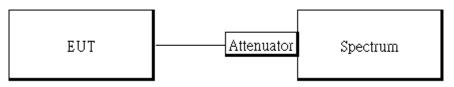


11 CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT

Standard Applicable 11.1

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), must also comply with the radiated emission limits specified in §15.209(a).

11.2 Test Setup



Measurement Procedure 11.3

11.3.1 **Conducted Band Edge:**

In any 100 kHz bandwidth outside the frequency band

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows ANSI C63.10:2020.
- Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Sweep = auto
- 5. Mark Peak, below 2.4GHz and above 2.4835GHz and record the max, level.
- 6. Repeat above procedures until all frequency measured were complete.

11.3.2 **Conducted Spurious Emission:**

- 1. To connect Antenna Port of EUT to Spectrum.
- 2. The testing follows ANSI C63.10:2020.
- 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.

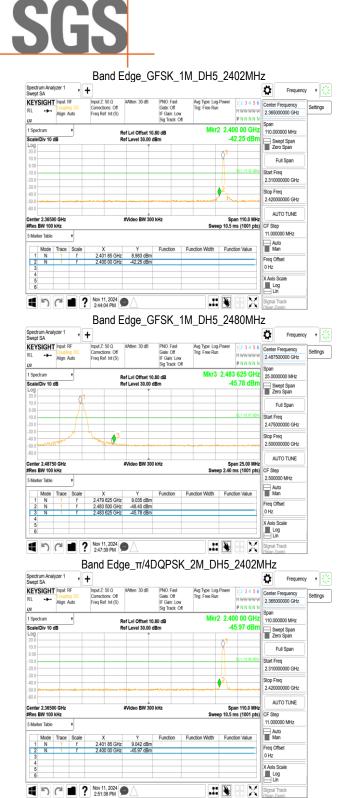
Measurement Result 11.4

See next page for test 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。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 sole and the document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction document does not exonerate parties to a transaction form exercising all their rights and obligations under the transaction 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.: TERF2411003344E2 Page: 33 of 70





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.

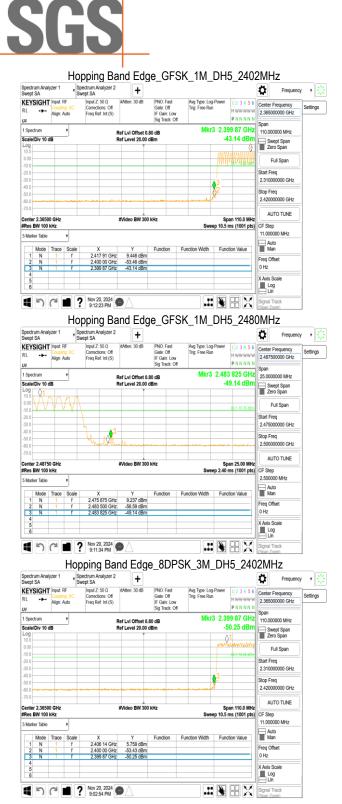
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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

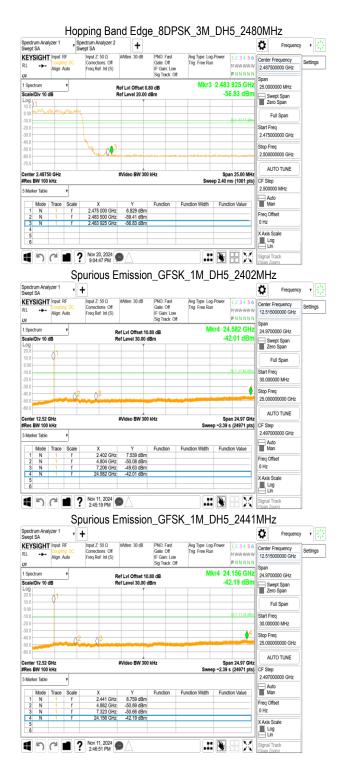
> No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd

f (886-2) 2298-0488

www.sqs.com.tw Member of SGS Group

Report No.: TERF2411003344E2 Page: 34 of 70





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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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

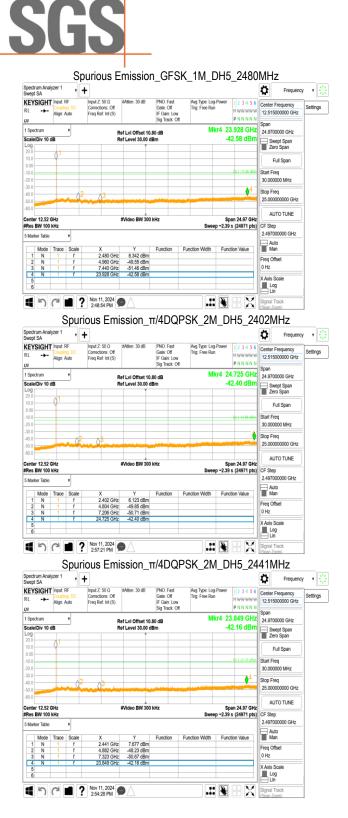
No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

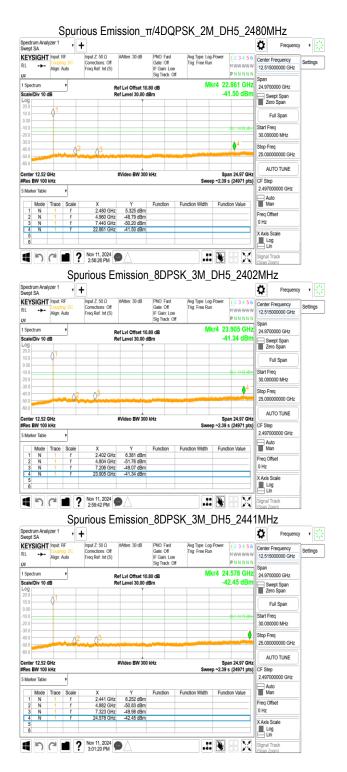
f (886-2) 2298-0488

www.sqs.com.tw

Member of SGS Group

Report No.: TERF2411003344E2 Page: 35 of 70





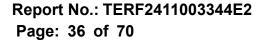
Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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

> No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

f (886-2) 2298-0488

www.sqs.com.tw





| ipecti iwept | um Anal SA | yzer 1 | · · | + | | | | | | Frequency | • |
|-------------------------|---------------------|---------------------------------|-------|--|--|--|---------------------------------|---------|--------------------------------|--------------------------------------|-------|
| KEY RL | SIGHT •≠• | Input: F Couplin Align: A | | Input Z: 50 Ω Corrections: Off Freq Ref: Int (S) | #Atten: 30 dB | PNO: Fast Gate: Off IF Gain: Low Sig Track: O | Avg Type: Log Trig: Free Run | | 123456 MWWWWW PNNNNN | Center Frequency 12.515000000 GHz | Setti |
| 1 Spe Scale | trum: Div 10 c | iB | • | | ef Lvi Offset 10. ef Level 30.00 di | | М | | 3.830 GHz 2.30 dBm | Span 24.9700000 GHz | |
| Log 20.0 | | | | | The second secon | | | | | Zero Span | |
| 10.0 | | (1 | | | | | | | | Full Span | 1 |
| -10.0 | | _ | | | | | | | DI 1-12-39 dBm | Start Freq | |
| -20.0 | | + | | | | | | | | 30.000000 MHz | |
| -30.0 -40.0 -50.0 | | - | Q2 | (³ | | | | | 4 | Stop Freq 25.00000000 GHz | |
| -60.0 | | - | | | | | | | | AUTO TUNE | 1 |
| | r 12.52 (BW 100 | | | | #Video BW 300 | kHz | 6 | | oan 24.97 GHz s (24971 pts) | | |
| | cer Table | KNZ | | | | | Swee | sh -572 | 5 (249/1 pts) | 2.497000000 GHz | |
| | | | | | | | | | | Auto | |
| 1 | Mode | Trace | Scale | X 2.480 GHz | Y 7.609 dBm | Function | Function Width | Fund | tion Value | Man | |
| 2 | N | 1 | f | 4.960 GHz | -48.12 dBm | | | | | Freq Offset | |
| 3 | N | 1 | f | 7.440 GHz | -50.40 dBm | | | - | | 0 Hz | |
| 4 | N | 1 | f | 23.830 GHz | -42.30 dBm | | | 1 | | X Axis Scale | |
| 5 6 | | | | | | | | | | Log | |
| 1 | 6 | | | Nov 11, 2024 | Δ. | | | | | Signal Track | 1 |
| - | -) | 1 | - : | 3:03:18 PM | | | | | | (Span Zoom) | |

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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號



12 BANDEDGE AND SPURIOUS EMISSION MEASUREMENT

12.1 Standard Applicable

12.1.1 Duty Cycle Correction Factor

According to 15. 35(c), the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value. The exact method of calculating the average field strength shall be submitted with any application for certification.

12.1.2 Spurious Emission

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 §15.209 limit as below. And according to §15.33(a) (1), 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.

| Frequency (MHz) | Field strength (microvolts/meter) | Distance (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.

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。

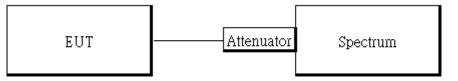
www.sqs.com.tw

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.



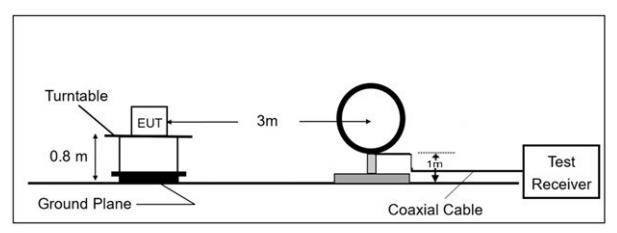
Test Setup 12.2

12.2.1 **Duty Cycle Correction Factor, Band edge, Emission**

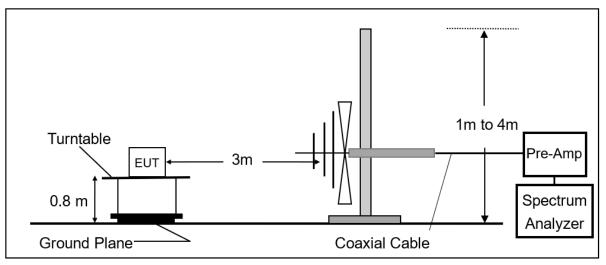


12.2.2 **Radiated Emission**

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



(B) Radiated Emission Test Set-Up, Frequency From 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.

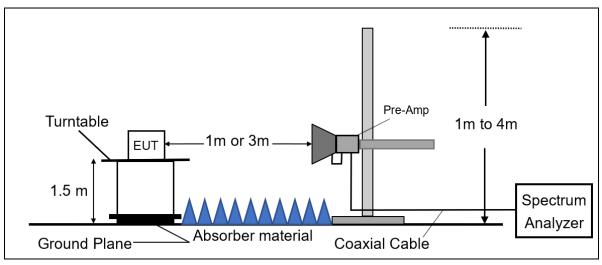
除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。 This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

www.sgs.com.tw



(C) Radiated Emission Test Set-Up, Frequency Above 1 GHz.



12.3 **Measurement Procedure**

12.3.1 **Duty Cycle Correction Factor**

- 1. Adjust and configure any EUT switches, controls, or input data streams to ensure that the EUT is transmitting or encoded to obtain the "worst-case" pulse ON time.
- 2. The testing follows ANSI C63.10:2020.
- 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 center frequency of spectrum analyzer = operating frequency.
- 5. Set the spectrum analyzer as RBW, VBW=1MHz, 3MHz, Span = 0Hz, Detector = Peak, Adjust Sweep=100ms.
- 6. Repeat above procedures until all frequency of the interest measured were complete.

12.3.2 Band edge and Spurious Emission

- 1. Set the spectrum analyzer as RBW=100 kHz and VBW=300 kHz for Peak Detector (PK) at frequency between 30MHz and 1 GHz.
- 2. Use receiver mode as RBW=120 kHz for Quasi-peak (QP) at frequency between 30MHz and 1 GHz.
- 3. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz, Detector = Peak for Maximum Emission Measurements at frequency above 1 GHz.
- 4. According to C63.10:2020 Section 7.5 Procedure for determining the average value of pulsed emissions with duty cycle correction factor 20 log (Ton/100ms)

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.



12.3.3 Radiated Spurious Emissions measurements

- 1. The testing follows the Measurement Procedure of ANSI C63.10:2020.
- 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. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 7. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 8. Repeat above procedures until all default test channel measured were complete.

12.4 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 FS = Field Strength RA = Reading Amplitude AF = Antenna Factor *CL* = *Cable Attenuation Factor (Cable Loss) AG* = *Amplifier Gain*

The limit of the emission level is expressed in dBuV/m, which converts 20*log(uV/m)

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB) Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Average value($dB\mu V/m$)=Peak Actual FS($dB\mu V/m$)+ Duty Cycle Correction Factor(dB) Duty Cycle Correction Factor(dB) = 20 log ($T_{on}/100 \text{ ms}$)

12.5 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.

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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.



12.6 **Measurement Result:**

12.6.1 **Duty Cycle Correction Factor**

Bluetooth 1M BR

Time ON of 100ms: 5.800 ms

Duty Cycle=5.8ms / 100ms= 0.058

Duty Cycle correction factor=20 LOG 0.058 = -24.73 dB

Bluetooth 3M EDR

Time ON of 100ms: 5.800 ms

Duty Cycle=5.8ms / 100ms= 0.058

Duty Cycle correction factor=20 LOG 0.058 = -24.73 dB

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 dear and the contracts are company's mining 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.



12.6.2 **Duty Cycle test plot**

BR

Keysight Spectrum Analyzer - Swept SA 10:31:56 AM Nov 20, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWW DET P N N N N N SENSE:INT ALIGN OFF Frequency Center Freg 2.402000000 GHz Trig: Free Run #Atten: 30 dB PNO: Fast IFGain:Low -Auto Tune ΔMkr3 2.900 ms 0.13 dB Ref 20.00 dBm 10 dB/div 10.0 **Center Freq** 2.402000000 GHz 0.00 10.0 14 **▲**3∆4 Ж2 -20.0 Start Freq -30.0 2.402000000 GHz .40 1 -50.0 وجواده وترجير والمطل أيجر والمراجا والاله ليتله VAR IN THE وراستهتم بالشاهدم لتقاطله Stop Freq -60.0 2.402000000 GHz 70. Center 2.402000000 GHz Span 0 Hz CF Step Sweep 100.0 ms (1001 pts) 1.000000 MHz Man Res BW 1.0 MHz #VBW 3.0 MHz Auto MKR MODE TRC SCL -0.07 dB -18.36 dBm 0.13 dB t (Δ) t t (Δ) 2.900 ms (Δ) 12.90 ms 2.900 ms (Δ) 1 Δ2 2 E Freq Offset Δ4 2.900 ms 0.13 dB -27.05 dBm 4 F t 0 Hz Scale Type 10 Lin _og

STATUS

EDR

| | ght Sp | ectru | m Ai | nalyzer - : | Swept | SA | | | | | | | | | | | | | | | | | | | | | | | | | ð 🗾 |
|---|-----------|--------|-----------|-------------|---------|---------------------|---------|--------------|----------------|-------------|-----|-------|----------------------------------|----------|------------|----------|-------|--------|------------|--------|----------|---------------|---|----------|---|-----------------------|------------------|-----|-------|-------|-------------------------|
| Cente | ər F | rec | RF 2 2 | | | | | | | | _ |] | SE | ENSE: | | | A | vg T | | | N OFF | | 10:3 | TRA | CE | 2 3 4 00 2 3 4 | 56 | | Fre | equer | тсу |
| 10 dB/ | div | | ?ef | 20.00 |) dE | | | |): Fa in:Lo | ow | - | | tten: | | | | | | | | | ΔΝ | /kr | 。 3 2 | ет ғ 9 | 00 n 25 c | ns | | | Auto | o Tun |
| Log - 10.0 - -10.0 - | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | e r Fre 00 GH |
| -20.0 - -30.0 - -40.0 - | | | | | | | |) | ×2 | <u>}</u> וב | 12 | | | | >> | 4 | 3∆ | 4 | | | | | | | | | | 2 | 2.402 | | nt Fre 00 GH |
| -50.0 , , , , , , , , , , , , , , , , , , | left.n.t. | ملاديه | ليهم | nrrth∿n¶ +k | ultural | ትን ^ር ት የ | , Marka | ~~~ | | finaul | hra | www.h | penderre | 190 | /~. | | und | ارمدور | hy 746,044 | nthanu | Ութարում | h le r | uhain din din din din din din din din din d | ******* | ine provide the second s | ψ ile ≃∧η/ | 4./ 1-4 - | 2 | 2.402 | | р Fre 00 GH |
| AL Cente Res E | SW . | 1.0 | Mŀ | | GH | | | | # | VB | w | 3.0 | MHz | z | | | CTION | | | | ер | | | ns i | (10 | an 0 01 p ///UE | | Aut | | | F Stej 00 MH Ma |
| 1 Δ 2 F 3 Δ 4 F 5 6 | 2 | 1 | t t | (Δ) (Δ) | | × | 3 2 | 1.60 .900 | 0 ms | s (/ | | -21 | -0.07 .91 d -0.25 .78 d | Bm dB | | FUNC | | | FUN | | NWIDT | | F | UNCT | | ALUE | | | F | req | Offse 0 H |
| 8 9 10 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | Lo | | Scale | e Typ |
| MSG | | | | | | | | | | - | | | | | | | | | | | STAT | US | | | |) | | | | | |

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 f (886-2) 2298-0488

Report No.: TERF2411003344E2 Page: 43 of 70



12.6.3 CBE

BT_1M_BR

| Channel | Frequency (MHz) | Raw Value(dBm) Chain 0 | Duty factor (dB) | Antenna Peak Gain (dBi) Chain 0 | EIRP (dBm) | Emission Level (dBuV/m) | Margin (dB) | Lir (dBu | nit V/m) |
|---------|--------------------|---------------------------|------------------------|---------------------------------------|---------------|-------------------------------|----------------|-------------|-------------|
| 0 | 2402 | -47.290 | - | 3.37 | -43.92 | 51.28 | -22.72 | 74 | PK |
| U | 2402 | - | -24.73 | 3.37 | -68.65 | 26.55 | -27.45 | 54 | AV |
| 78 | 2480 | -30.700 | - | 3.37 | -27.33 | 67.87 | -6.13 | 74 | PK |
| 10 | 2400 | - | -24.73 | 3.37 | -52.06 | 43.14 | -10.86 | 54 | AV |

Average Duty Factor=-24.73(dB) Average Level=Peak Level+Duty Factor BT 3M EDR

| Channel | Frequency (MHz) | Raw Value(dBm) Chain 0 | Duty factor (dB) | Antenna Peak Gain (dBi) Chain 0 | EIRP (dBm) | Emission Level (dBuV/m) | Margin (dB) | | nit V/m) |
|---------|--------------------|---------------------------|------------------------|---------------------------------------|---------------|-------------------------------|----------------|----|-------------|
| 0 | 2402 | -47.410 | - | 3.37 | -44.04 | 51.16 | -22.84 | 74 | PK |
| U | 2402 | - | -24.73 | 3.37 | -68.77 | 26.43 | -27.57 | 54 | AV |
| 78 | 2480 | -36.080 | - | 3.37 | -32.71 | 62.49 | -11.51 | 74 | PK |
| 10 | 2400 | - | -24.73 | 3.37 | -57.44 | 37.76 | -16.24 | 54 | AV |

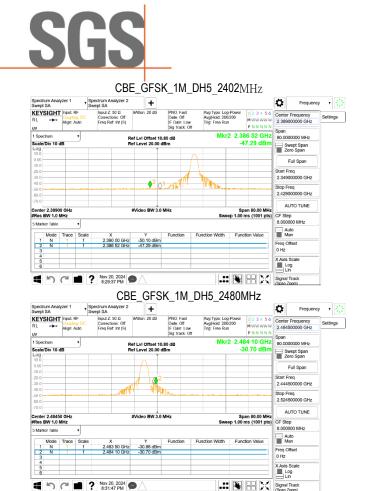
Average Duty Factor=-24.73(dB)

Average Level=Peak Level+Duty Factor

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.: TERF2411003344E2 Page: 44 of 70





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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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.

No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.



12.6.4 Conducted Emission

BT 3DH5

| Channel | Frequency (MHz) | Raw Value(dBm) | Correction Factor(dB) | EIRP (dBm) | Emission Level (dBuV/m) | Margin (dB) | | mit IV/m) |
|---------|--------------------|----------------|--------------------------|---------------|-------------------------------|----------------|------|--------------|
| | | Chain 0 | Chain 0 | | | | | |
| | | -82.040 | 8.07 | -73.97 | 21.23 | -18.77 | 40 | PK |
| | | -78.800 | 8.07 | -70.73 | 24.47 | -19.03 | 43.5 | PK |
| 39 | 2441 | -86.220 | 8.07 | -78.15 | 17.05 | -28.95 | 46 | PK |
| 39 | 2441 | -65.950 | 8.07 | -57.88 | 37.32 | -8.68 | 46 | PK |
| | | -86.800 | 8.07 | -78.73 | 16.47 | -29.53 | 46 | PK |
| | | -83.670 | 8.07 | -75.60 | 19.60 | -34.40 | 54 | PK |

Note:

Correction Factor=maximum ground reflection factor+Antenna Gain BT DH5

| כחע_ום | | | | | | | | | |
|---------|-----------|----------------|----------------|----------------------------|--------|-------------------|--------|------|-------|
| Channel | Frequency | Raw Value(dBm) | Duty factor | Antenna Peak Gain (dBi) | EIRP | Emission Level | Margin | | mit |
| | (MHz) | Chain 0 | (dB) | Chain 0 | (dBm) | (dBuV/m) | (dB) | (arr | ıV/m) |
| 0 | 2402 | -43.070 | - | 3.37 | -39.70 | 55.50 | -18.50 | 74 | PK |
| U | 2402 | - | -24.73 | 3.37 | -64.43 | 30.77 | -23.23 | 54 | A٧ |
| 39 | 2441 | -41.780 | - | 3.37 | -38.41 | 56.79 | -17.21 | 74 | PK |
| 39 | 2441 | - | -24.73 | 3.37 | -63.14 | 32.06 | -21.94 | 54 | A۱ |
| 78 | 2480 | -42.670 | - | 3.37 | -39.30 | 55.90 | -18.10 | 74 | Pł |
| 10 | 2400 | - | -24.73 | 3.37 | -64.03 | 31.17 | -22.83 | 54 | A١ |
| BT_3DH5 | | | | | • | • | | • | |
| | Frequency | Raw Value(dBm) | Duty | Antenna Peak | EIRP | Emission | Margin | 1.5 | |
| Channel | Frequency | | factor | Gain (dBi) | | Level | Margin | | mit |
| | (MHz) | Chain 0 | (dB) | Chain 0 | (dBm) | (dBuV/m) | (dB) | (авс | ıV/m) |
| 0 | 2402 | -41.950 | - | 3.37 | -38.58 | 56.62 | -17.38 | 74 | PK |
| U | 2402 | - | -24.73 | 3.37 | -63.31 | 31.89 | -22.11 | 54 | A۱ |
| 39 | 2441 | -42.860 | - | 3.37 | -39.49 | 55.71 | -18.29 | 74 | Pł |
| 29 | 2441 | - | -24.73 | 3.37 | -64.22 | 30.98 | -23.02 | 54 | A١ |
| 78 | 2480 | -42.160 | - | 3.37 | -38.79 | 56.41 | -17.59 | 74 | Pł |
| 10 | 2480 | | 04 70 | 2.27 | 62.52 | 24.69 | 22.22 | 54 | ۵۱ |

-24.73

3.37

-63.52

31.68

-22.32

54

AV

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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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.



Peak (30MHz~1GHz)

| Swept SA | | .5 Spectrum Analyzer Swept SA | Swept SA | | Swept SA | · · | Frequence | y • |
|--------------------------|-----------------------------|--|--------------------|--|--|--|------------------------------------|----------|
| EYSIGH | Coupling: DC Align: Auto | Input Z: 50 Q Corrections: Off Freq Ref: Int (S) | #Allen: 10 dB | PNO: Fast Gate: Off IF Gain: Low Sig Track: Off | #Avg Type: Po Avg[Hold: 5/5 Trig: Free Run | wer (RMS 1 2 3 4 5 6 M WWWWW P N N N N N | Center Frequency 515.000000 MHz | Settings |
| Spectrum | • | | Ref Lvi Offset 0.1 | 30 dB | Mkr | 6 991.755 MHz | Span 970.000000 MHz | |
| cale/Div 10 | dB | | Ref Level 0.80 di | Bm | | -83.67 dBm | Swept Span | |
| og Trac | e 1 Pass | | T | | | | Zero Span | |
| 9.2 | 5 I F 855 | | | | | | Full Span | |
| 9.2 | | | | | | | Start Freq | |
| 9.2 | | | | | | | 30.000000 MHz | |
| i0.2 i0.2 i0.2 | \ <mark>2</mark> | A3 | | | 0 | A5 🖗 | Stop Freq 1.00000000 GHz | |
| ie 2 | | d de Martin de la contra de la | #Video BW 300 | | | Stop 1.0000 GHz | AUTO TUNE | |
| Res BW 100 | | | #41060 844 300 | KHZ | Sweep - | ~93.5 ms (10001 pts) | CF Step | |
| Marker Table | | | | | | | 97.000000 MHz | |
| Walker Table | | | | | | | Auto | |
| | Trace Scal | | Y | Function | Function Width | Function Value | Man Man | |
| Mode | 1 f | 39.991 MHz | -82.04 dBm | | | | Freq Offset | |
| 1 N | | 159.974 MHz | -78.80 dBm | | | | 0 Hz | |
| 1 N 2 N | 1 1 | | -86.22 dBm | | | | Unz | |
| 1 N 2 N 3 N | 1 f | 266.680 MHz | | | | | | |
| 1 N 2 N 3 N 4 N | 1 f 1 f | 813.760 MHz | -65.95 dBm | | | | X Axis Scale | |
| 1 N 2 N 3 N | | | -86.80 dBm | | | | X Axis Scale Log | |

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 http://www.sgs.com.tw/Terms-and-Conditions and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. 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 not 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.

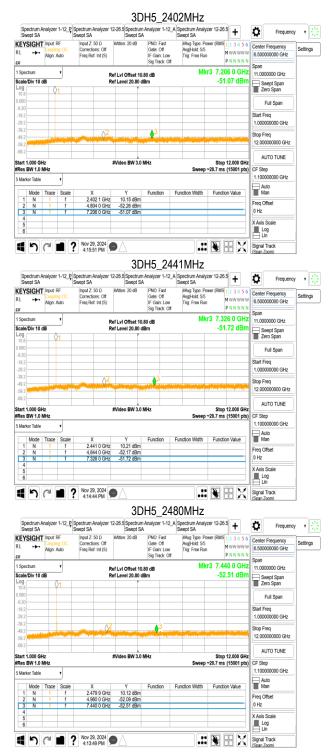
SGS Taiwan Ltd. No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號

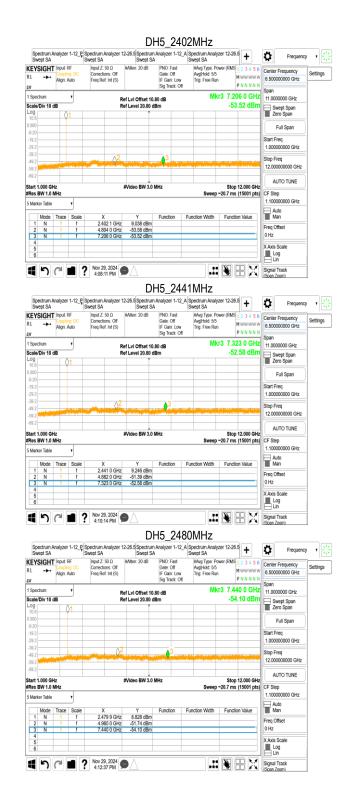
www.sgs.com.tw

Report No.: TERF2411003344E2 Page: 47 of 70



Peak (1~12GHz)





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>http://www.sgs.com.tw/Terms-and-Conditions</u> and for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sqs.com.tw/Terms-and-Conditions. 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

> No.134,Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

f (886-2) 2298-0488