

Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 1 of 32

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

Product Name: HiTi Photo Printer

Brand Name: HiTi

Model No.: P520L, P52XXX(X: A~Z; a~z; 0~9 or blank)

Model Difference: For marketing purpose

FCC ID: W5388D2035001

Report No.: ER/2014/70010

Issue Date: Sep. 10, 2014

§15.225 **FCC Rule Part:**

Hiti Digital Inc.

Prepared for: 9F., No.225, Sec. 3, Beixin Rd., Xindian Dist., New

Taipei City 231, Taiwan (R.O.C)

SGS Taiwan Ltd.

Electronics & Communication Laboratory

Prepared by: No.134, Wu Kung Road, New Taipei Industrial

Park, Wuku District, New Taipei City, Taiwan 24803





lesting Laborators 0513

Note: This report shall not be reproduced except in full, without the written approval of SGS Taiwan Ltd. This document may be altered or revised by SGS Taiwan Ltd. personnel only, and shall be noted in the revision section of the document.

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 2 of 32

VERIFICATION OF COMPLIANCE

Hiti Digital Inc. **Applicant:**

9F., No.225, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City 231,

Taiwan(R.O.C)

Product Name: HiTi Photo Printer

Brand Name: HiTi

P520L, P52XXX(X: A~Z; a~z; 0~9 or blank) **Model No.:**

Model Difference: For marketing purpose

FCC ID: W5388D2035001

File Number: ER/2014/70010

Date of test: Jul. 03, 2014 ~ Aug. 27, 2014

Date of EUT Received: Jul. 03, 2014

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4:2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.225.

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

| Test By: | Marcus Iseng | Date: | Sep. 10, 2014 | |
|------------------|---|-------|---------------|--|
| Prepared By: | Marcus Tseng/Engineer Utoletta Tang | Date: | Sep. 10, 2014 | |
| Approved By - | Violetta Tang / Clerk Jim Chang / Supervisor | Date: | Sep. 10, 2014 | |

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134, WuKungRoad, New TaipeiIndustrial Park, WukuDistrict, New TaipeiCity, Taiwan 24803/新北市五股區新北產業園區五工路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 3 of 32

Version

| Version No. | Date | Description |
|-------------|---------------|------------------------------|
| 00 | Sep. 10, 2014 | Initial creation of document |
| | | |
| | | |

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 www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of the contained the properties to the properties the transport of the properties and their finite and their f Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 4 of 32

Table of Contents

| 1 (| GENERAL INFORMATION | 6 |
|-----|--|----|
| 1.1 | PRODUCT DESCRIPTION | 6 |
| 1.2 | RELATED SUBMITTAL(S) / GRANT (S) | 7 |
| 1.3 | TEST METHODOLOGY | 7 |
| 1.4 | TEST FACILITY | 7 |
| 1.5 | SPECIAL ACCESSORIES | 7 |
| 1.6 | EQUIPMENT MODIFICATIONS | 7 |
| 2 S | SYSTEM TEST CONFIGURATION | 8 |
| 2.1 | EUT CONFIGURATION | 8 |
| 2.2 | EUT Exercise | 8 |
| 2.3 | TEST PROCEDURE | 8 |
| 2.4 | LIMITATION | 9 |
| 2.5 | CONFIGURATION OF TESTED SYSTEM | 11 |
| 3 S | SUMMARY OF TEST RESULTS | 12 |
| 4 I | DESCRIPTION OF TEST MODES | 12 |
| 5 N | MEASUREMENT UNCERTAINTY | 13 |
| 6 (| CONDUCTED EMISSIONS TEST | 14 |
| 6.1 | MEASUREMENT PROCEDURE: | 14 |
| 6.2 | TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) | 14 |
| 6.3 | MEASUREMENT EQUIPMENT USED: | 14 |
| 6.4 | MEASUREMENT RESULT: | 14 |
| 7 F | RADIATED EMISSION TEST | 17 |
| 7.1 | MEASUREMENT PROCEDURE | 17 |
| 7.2 | TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) | 17 |
| 7.3 | MEASUREMENT EQUIPMENT USED: | 18 |
| 7.4 | FIELD STRENGTH CALCULATION | 19 |
| 7.5 | FIELD STRENGTH OF FUNDAMENTAL EMISSION | 19 |
| 8 F | FREQUENCY TOLERANCE | 28 |
| 8.1 | MEASUREMENT PROCEDURE | |
| 8.2 | TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) | 28 |
| 8.3 | MEASUREMENT EQUIPMENT USED: | |
| 8 4 | MEASUREMENT RESULTS | 29 |

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,此報告结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 www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 5 of 32

| 9 99 | 9% &20 DB OCCUPIED BANDWIDTH MEASUREMENT | 30 |
|-------|--|----|
| 9.1 | STANDARD APPLICABLE: | 30 |
| 9.2 | LIMIT: | 30 |
| 9.3 | TEST SET-UP | 30 |
| 9.4 | MEASUREMENT PROCEDURE | 30 |
| 9.5 | MEASUREMENT EQUIPMENT USED: | 30 |
| 10 A | NTENNA REQUIREMENT | 32 |
| 10.1. | STANDARD APPLICABLE: | 32 |
| 10.2 | ANTENNA CONNECTED CONSTRUCTION: | 32 |

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 www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of the contained the properties to the properties the transport of the properties and their finite and their f Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 6 of 32

GENERAL INFORMATION

Product Description

General:

| , ciiciui. | |
|-------------------|--|
| Product Name: | HiTi Photo Printer |
| Brand Name: | HiTi |
| Model No.: | P520L, P52XXX(X: A~Z; a~z; 0~9 or blank) |
| Model Difference: | For marketing purpose |
| Hardware Version: | N/A |
| Software Version: | N/A |
| Power Supply: | 110Vac from building-in power supply |

NFC:

| Operating Frequency | 13.56MHz |
|---------------------|--------------------|
| Transmit Power | < 123dBuV/m at 3m. |
| Number of Channels | 1 |
| Antenna Type | Loop Antenna |
| Modulation Type | ASK |

This report complies with FCC regulatory radio rule with respect to RFID that operates on 13.56MHz.

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.

防非另有說明。此報告結果僅對測試之樣品負責,同時此樣品僅保留別夫。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No: ER/2014/70010 Issue Date: Sep. 10, 2014

Page: 7 of 32

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: <u>W5388D2035001</u> filing to comply with Section 15.225 of the FCC Part 15, Subpart C Rules. The composite system (digital device) is compliance with Subpart B is authorized under a DoC procedure.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:2009. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009. FCC Registration Number is: 990257, Canada Registration Number: 4620A-4.

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 & 10 meters) and FCC Registration Number: 94644.

1.5 Special Accessories

There is no special accessory used while test was conducted.

1.6 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. ぬまとも知明、此類な社会は関連なるという。とれたものも入りままれて、エロが必要し

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 www.sgs.com/terms and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (

f (886-2) 2298-0488 www.tw.sgs.com



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 8 of 32

System Test Configuration

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 as turn table which is 0.8 m above ground plane. According to the general criterion in Section 7.1 of ANSI C63.4:2009. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz, and the measurement procedure 7.3 in ANSI 63.4:2009 & 6.2.2 is followed to carry out the test. The CISPR Quasi-Peak and Average detector mode is employed according to §15.107

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. 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 hand-held 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 according to the requirements in Section 8 and 13 and of ANSI C63.4:2009, & Section 6.3, 6.4, 6.5.

While performing the measurement in the frequency range of 9 kHz to 30 MHz, loop antenna is being employed. It is positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1m above the ground. The position of antenna referencing to the feed point is adjusted in order to measure the polarity of horizontal, and vertical, respectively, according to section 8 of ANSI 63.4: 2009.

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 9 of 32

Limitation

(1) Conducted Emission

According to section 15.207(a) Conducted Emission Limits is as following.

| Frequency range | | Limits IB (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.

(2) Radiated Emission

- a. The field strength of any emission within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
- b. Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- c. Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- d. The field strength of any emissions appearing outside of the 13.110-14.010 MHz shall not exceed the general radiated emission limits in section 15.209 as below.

| Frequency (MHz) | Field strength µV/m | Distance (m) | Field strength at 3m dBµV/m |
|-----------------|------------------------|--------------|-----------------------------|
| 1.705-30 | 30 | 30 | 69.54 |
| 30-88 | 100 | 3 | 40 |
| 88-216 | 150 | 3 | 43.5 |
| 216-960 | 200 | 3 | 46 |
| Above 960 | 500 | 3 | 54 |
| | | | |

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134, WuKungRoad, New TaipeiIndustrial Park, WukuDistrict, New TaipeiCity, Taiwan 24803/新北市五股區新北產業園區五工路134號



Report No: ER/2014/70010 Issue Date: Sep. 10, 2014

Page: 10 of 32

Remark: 1. Emission level in dBuV/m=20 log (uV/m)

- 2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
- 3. Distance extrapolation factor = 40 log (required distance/ test distance) (dB);
- 4. The measurement was undertaken in closer distance at 3m, where extrapolation factor is offset to convert the limit of the measurement. Ex.20*log(30)+40*log(30/3) = 69.54dBuV/m
- 5. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205 and RSS-Gen 7.2.5 Table 3.
- 6. The general radiated emission limits in ξ 15.209 and RSS-Gen 7.2.5 Table 5 and Table 6 apply for the spurious emission generate from UE, except for the fundamental emission where the respective section specifies otherwise.

(3) Frequency Tolerance

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

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. 따라보고하면, 나라면서 말했다면 하는 사람들이 되었다면 되었다. 그런데 하는 사람들이 되었다면 되었다면 되었다면 되었다면 되었다.

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 www.sgs.com/terms and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



Report No: ER/2014/70010 Issue Date: Sep. 10, 2014

Page: 11 of 32

2.5 Configuration of Tested System

Fig. 2-1 Radiated Emission & Conducted (Antenna Port) Configuration



Fig. 2-2 AC Power Line Conducted Emission

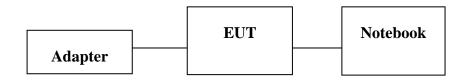


Table 2-1 Equipment Used in Tested System

| Item | Equipment | Mfr/Brand | Model/Type No. | Series No. | Data Cable | Power Cord |
|------|-----------|-----------|----------------|------------|------------|------------|
| 1. | Notebook | Lenovo | L420 | LR-7HXZA | 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 www.sgs.com/terms and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

f (886-2) 2298-0488

t (886-2) 2299-3279

www.tw.sgs.com



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 12 of 32

Summary of Test Results

| FCC Rules Description Of Test | | Result | |
|-----------------------------------|---------------------------|-----------|--|
| §15.207 | AC Power Line Conducted | Compliant | |
| 3 13.207 | Emission | Compliant | |
| §15.225 (a)-(d) Radiated Emission | | Compliant | |
| 015 200 | Radiated Emission Limits, | Compliant | |
| §15.209 | general requirement | | |
| §15.225 (e) Frequency Stability | | Compliant | |
| § 2.1049 | 99% & 20 dB OCCUPIED | G 1: | |
| §15.215 (c) | BANDWIDTH | Compliant | |
| §15.203 Antenna Requirement | | Compliant | |

Description of test modes

The EUT stay in continuous transmitting mode. The frequency 13.56MHz is the default channel to test, where it is the only manipulative channel as this application supports.

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

The data rate as the lowest supported is selected while tests are conducted.

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 13 of 32

MEASUREMENT UNCERTAINTY

| Test Items | Uncertainty |
|-----------------------------------|-------------------------|
| AC Power Line Conducted Emission | +/- 2.586 dB |
| Frequency Stability | +/- 123.36 Hz |
| 99% & 20 dB OCCUPIED BANDWIDTH | +/- 123.36 Hz |
| Temperature | +/- 0.8 °C |
| Humidity | +/- 4.7 % |
| DC / AC Power Source | DC= +/- 1%, AC=+/- 0.2% |

Radiated Spurious Emission:

| Measurement uncertainty | 30MHz - 180MHz: +/- 3.37dB |
|-----------------------------------|----------------------------|
| | 180MHz -417MHz: +/- 3.19dB |
| (Polarization : Vertical) | 0.417GHz-1GHz: +/- 3.19dB |

| | 30MHz - 167MHz: +/- 4.22dB |
|-------------------------------------|----------------------------|
| Measurement uncertainty | 167MHz -500MHz: +/- 3.44dB |
| (Polarization : Horizontal) | 0.5GHz-1GHz: +/- 3.39dB |

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

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

防非另有說明。此報告結果僅對測試之樣品負責,同時此樣品僅保留別夫。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

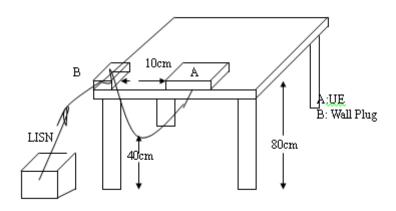
Page: 14 of 32

Conducted Emissions Test

Measurement Procedure:

- The EUT was placed on a table which is 0.8m above ground plane.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- Sweep frequency starting from 150 kHz to 30 MHz for phase L1.
- Repeating the measurement as lists above for phase neutral.

6.2 **Test SET-UP (Block Diagram of Configuration)**



6.3 Measurement Equipment Used:

| Conducted Emission Test Site | | | | | | | | | | |
|------------------------------|------------|-------------------------|--------|------------|------------|--|--|--|--|--|
| EQUIPMENT MFR | | MODEL | SERIAL | LAST | CAL DUE. | | | | | |
| TYPE | | NUMBER | NUMBER | CAL. | | | | | | |
| EMI Test Receiver | R&S | ESCI7 | 100760 | 05/26/2014 | 05/25/2015 | | | | | |
| LISN | Rolf-Heine | NNB-2/16Z | 99012 | 03/26/2014 | 03/25/2015 | | | | | |
| LISN | FCC | FCC-LISN-50/250-25-2-01 | 04034 | 03/19/2014 | 03/18/2015 | | | | | |
| Coaxial Cables | N/A | WK CE Cable | N/A | 11/26/2013 | 11/25/2014 | | | | | |

6.4 **Measurement Result:**

Please refer to next page for the 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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 15 of 32

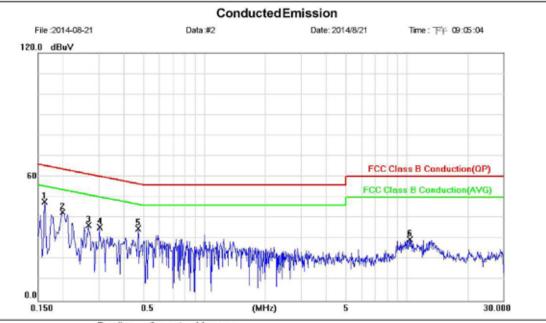
AC POWER LINE CONDUCTED EMISSION TEST DATA

| Operation Mode: | Operation Mode | | | Test Date: | Aug. 26, 2014 |
|-----------------|----------------|-----------|------|------------|---------------|
| Temperature: | 26 | Humidity: | 60 % | Test By: | Marcus |

Mode: Operation

Note:

Site ConductionRoom Temperature: Phase: L1 Power: AC 120V/60Hz Limit: FCC Class B Conduction(QP) Humidity: 60%



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | | |
|-----|-----|---------|------------------|-------------------|------------------|-------|--------|----------|---------|--|
| | | MHz | dBuV | dΒ | dBuV | dBuV | dΒ | Detector | Comment | |
| 1 | • | 0.1620 | 47.67 | 0.05 | 47.72 | 65.36 | -17.64 | peak | | |
| 2 | | 0.1980 | 42.67 | 0.06 | 42.73 | 63.69 | -20.96 | peak | | |
| 3 | | 0.2660 | 36.32 | 0.06 | 36.38 | 61.24 | -24.86 | peak | | |
| 4 | | 0.3020 | 35.54 | 0.07 | 35.61 | 60.19 | -24.58 | peak | | |
| 5 | | 0.4700 | 34.93 | 0.07 | 35.00 | 56.51 | -21.51 | peak | | |
| 6 | | 10.3740 | 29.63 | 0.34 | 29.97 | 60.00 | -30.03 | peak | | |

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.

防非另有說明。此報告結果僅對測試之樣品負責,同時此樣品僅保留別夫。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>www.sqs.com/terms_and_conditions.htm</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 16 of 32

30.000

Site ConductionRoom

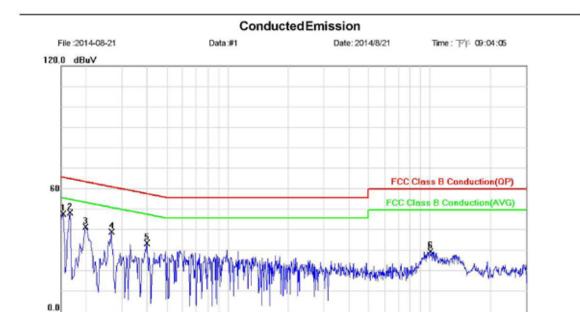
Limit: FCC Class B Conduction(QP)

Mode: Operation

0.150

Note:

26 10 Phase: Temperature: AC 120V/60Hz Humidity: Power:



| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
|-----|-----|---------|------------------|-------------------|------------------|-------|--------|----------|---------|
| | | MHz | dBuV | dΒ | dBuV | dBuV | dΒ | Detector | Comment |
| 1 | | 0.1540 | 48.21 | 0.05 | 48.26 | 65.78 | -17.52 | peak | |
| 2 | • | 0.1660 | 48.85 | 0.05 | 48.90 | 65.16 | -16.26 | peak | |
| 3 | | 0.1980 | 41.79 | 0.06 | 41.85 | 63.69 | -21.84 | peak | |
| 4 | | 0.2660 | 39.53 | 0.06 | 39.59 | 61.24 | -21.65 | peak | |
| 5 | | 0.3980 | 34.01 | 0.07 | 34.08 | 57.90 | -23.82 | peak | |
| 6 | | 10.0900 | 29.85 | 0.33 | 30.18 | 60.00 | -29.82 | peak | |

5

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 www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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.

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

f (886-2) 2298-0488

www.tw.sqs.com

Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 17 of 32

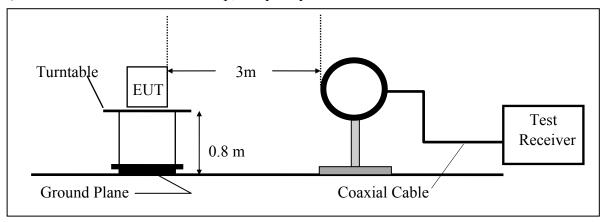
Radiated Emission Test

Measurement Procedure

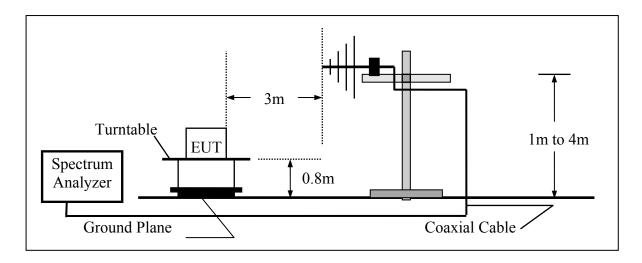
- The EUT was placed on a turn table which is 0.8m above ground plane.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

7.2 **Test SET-UP (Block Diagram of Configuration)**

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



Radiated Emission Test Set-Up, Frequency Below 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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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.

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

t (886-2) 2299-3279



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 18 of 32

Measurement Equipment Used:

| Weasurement Equipment Oseu. | | | | | | | | | | |
|-----------------------------|-----------------------|--------------------|------------|------------|------------|--|--|--|--|--|
| | g | 266 Chamber | | | | | | | | |
| EQUIPMENT | MFR | MODEL | SERIAL | LAST | CAL DUE. | | | | | |
| ТҮРЕ | | NUMBER | NUMBER | CAL. | | | | | | |
| EMI Test Receiver | R&S | ESCI7 | 100760 | 05/26/2014 | 05/25/2015 | | | | | |
| Spectrum Analyzer | Agilent | E4446A | MY51100003 | 05/19/2014 | 05/18/2015 | | | | | |
| EXA Spectrum Analyzer | Agilent | N9010A | MY50420195 | 01/20/2014 | 01/19/2015 | | | | | |
| Spectrum Analyzer | R&S | FSV-30 | 101398 | 10/22/2013 | 10/21/2014 | | | | | |
| Loop Antenna | ETS.LINDGREN | 6502 | 00148045 | 07/03/2014 | 07/02/2015 | | | | | |
| Bilog Antenna | SCHWAZBECK | VULB9168 | 378 | 01/02/2014 | 01/01/2015 | | | | | |
| Horn antenna | ETS.LINDGREN | 3117 | 123995 | 05/19/2014 | 05/18/2015 | | | | | |
| Horn Antenna | Schwarzbeck | BBHA9170 | 184 | 01/23/2014 | 01/22/2015 | | | | | |
| Pre-Amplifier | Agilent | 8447D | 2944A07676 | 01/03/2014 | 01/02/2015 | | | | | |
| Pre-Amplifier | Agilent | 8449B | 3008A00578 | 01/03/2014 | 01/02/2015 | | | | | |
| Pre-Amplifier | EMC Instruments Corp. | EMC184045 | 980135 | 01/24/2014 | 01/23/2015 | | | | | |
| Filter 2400-2483.5 MHz | EWT | EWT-14-0166 | M2 | 02/27/2014 | 02/26/2015 | | | | | |
| Attenuator | Mini-Circuit | BW-S10W2+ | 004 | 02/27/2014 | 02/26/2015 | | | | | |
| Turn Table | HD | DT420 | N/A | N.C.R | N.C.R | | | | | |
| Antenna Tower | HD | MA240-N | 240/657 | N.C.R | N.C.R | | | | | |
| Controller | HD | HD100 | N/A | N.C.R | N.C.R | | | | | |
| Low Loss Cable | Huber Suhner | 966_Rx | 9 | 01/03/2014 | 01/02/2015 | | | | | |
| 3m Site NSA | SGS | 966 chamber | N/A | 07/14/2014 | 07/13/2015 | | | | | |

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,此報告结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 www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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 irights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 19 of 32

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

Field Strength of Fundamental Emission

7.5.1 Limit

Field strength of fundamental emissions limit:

The field strength of fundamental emissions shall not exceed 15848 micorvolts/meter at 30 meters. The Limit is converted to 123.90dBuV/m by offsetting the distance extrapolation factor as measurement distance is taken place at 3 meters.

Distance extrapolation = 40 * log (30/3) = 40 dB

Limit is re-adjusted in terms of limit taken in 3m = 20 * log (15848 uV/m) + 40 = 124.00 dBuV/m

Note:

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

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

"F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency. Note:

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

The trace on RE(radiation emission) plot is as colored blue, and the detection manner we've employed is peak detector.

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 20 of 32

| Operation Band Fundamental Frequency Operation Mode EUT Pol. | | :NFC :13.56 MHz :MAIN :E2 Plane | | Test Date Temp./Humi. Engineer Measurement A | Antenna Pol. | :2014-08-25 :21 deg_C/58 RH :Tin :VERTICAL | | |
|---|---------|--|---|---|--------------|---|----------------|--|
| Freq. | Note | Detector | Spectrum | Factor | Actual | Limit | Safe | |
| | | Mode | Reading Level | | FS | @3m | Margin | |
| MHz | F/H/E/S | PK/QP/AV | $\mathrm{d} B \mu V$ | dB | dBμV/m | dBμV/m | dB | |
| 13.56 | F | Peak | 21.72 | 11.72 | 33.44 | 123.90 | -90.46 | |
| Operation Band Fundamental Frequency Operation Mode EUT Pol. | | :NFC :13.56 MHz :MAIN :E2 Plane | Test Date Temp./Humi. Engineer Measurement Antenna Pol. | | | :2014-08-25 :21 deg_C/58 RH :Tin :HORIZONTAL | | |
| Freq. | Note | Detector Mode | Spectrum Reading Level | Factor | Actual FS | Limit @3m | Safe Margin | |
| MHz | F/H/E/S | PK/QP/AV | dΒμV | dB | dBμV/m | dBμV/m | dB | |
| 13.56 | F | Peak | 20.61 | 11.72 | 32.33 | 123.90 | -91.57 | |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告结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 www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



Report No: ER/2014/70010 Issue Date: Sep. 10, 2014

Page: 21 of 32

7.5.2 Radiated Mask

- (a) 15.848 millivolts/m (84 dBµV/m) at 30 m, within the band 13.553-13.567 MHz.
- (b) 334 microvolts/m (50.5 dB μ V/m) at 30 m, within the bands 13.410-13.553 MHz and 13.567-13.710 MHz.
- (c) 106 microvolts/m (40.5 dB μ V/m) at 30 m, within the bands 13.110-13.410 MHz and 13.710-14.010 MHz.

Distance extrapolation = 40 * log (30/3) = 40 dB

Limit is re-adjusted in terms of limit taken in 3m for the following frequency segment of the interest:

- a) $20 * \log (15848 \text{uV/m}) + 40 \text{dB} = 124.00 \text{dBuV/m}$
- b) $20 * \log(334 \text{uV/m}) + 40 \text{dB} = 90.47 \text{dBuV/m}$
- c) $20*\log(106uV/m) + 40dB = 80.50dBuV/m$

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



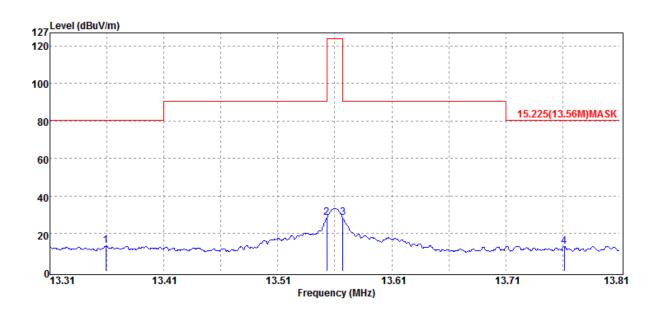
Report No: ER/2014/70010 Issue Date: Sep. 10, 2014

Page: 22 of 32

Operation Band :NFC Test Date :2014-08-25 Fundamental Frequency :13.56 MHz Temp./Humi. :21 deg C/58 RH

Operation Mode :MASK Engineer :Tin

EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL



| Freq. | Note | Detector | Spectrum | Factor | Actual | Limit | Safe |
|-------|---------|----------|---------------|--------|-------------|-------------|--------|
| | | Mode | Reading Level | | FS | @3m | Margin |
| MHz | F/H/E/S | PK/QP/AV | dΒμV | dB | $dB\mu V/m$ | $dB\mu V/m$ | dB |
| | | | | | | | |
| 13.36 | S | Peak | 1.67 | 11.74 | 13.41 | 80.50 | -67.09 |
| 13.55 | S | Peak | 16.77 | 11.72 | 28.49 | 90.47 | -61.98 |
| 13.57 | S | Peak | 16.83 | 11.72 | 28.55 | 90.47 | -61.92 |
| 13.76 | S | Peak | 1.50 | 11.70 | 13.20 | 80.50 | -67.30 |

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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.

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

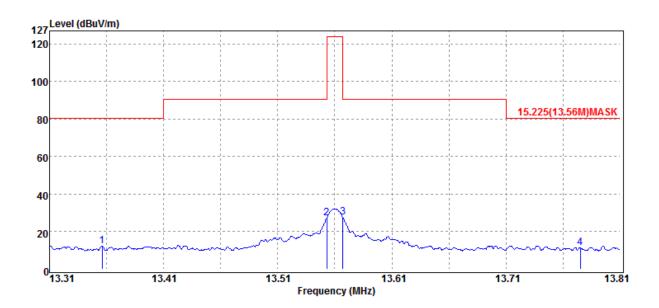
Page: 23 of 32

Operation Band :NFC Test Date :2014-08-25

Fundamental Frequency :13.56 MHz Temp./Humi. :21 deg C/58 RH

Operation Mode :MASK Engineer :Tin

EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL



| Freq. | Note | Detector | Spectrum | Factor | Actual | Limit | Safe | |
|-------|---------|----------|---------------|--------|--------|--------|--------|--|
| | | Mode | Reading Level | | FS | @3m | Margin | |
| MHz | F/H/E/S | PK/QP/AV | dΒμV | dB | dBμV/m | dBμV/m | dB | |
| | | | | | | | | |
| 13.36 | S | Peak | 0.52 | 11.74 | 12.26 | 80.50 | -68.24 | |
| 13.55 | S | Peak | 15.62 | 11.72 | 27.34 | 90.47 | -63.13 | |
| 13.57 | S | Peak | 16.02 | 11.72 | 27.74 | 90.47 | -62.73 | |
| 13.78 | S | Peak | -0.23 | 11.70 | 11.47 | 80.50 | -69.03 | |
| | | | | | | | | |

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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.

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



Report No: ER/2014/70010 Issue Date: Sep. 10, 2014

Page: 24 of 32

7.5.3 Radiated Emission –

Limit:

§15.225

(d) 30 microvolts/m (29.4 dB μ V/m) at 30 m, outside the band 13.110-14.010 MHz. Limit is converted by adding the distance extrapolation factor as the measurement distance was taken place at 3m.

§RSS-210 A2.6

- (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.
 - a) $20*\log(30uV/m) + 40dB = 69.40 dBuV/m$

Operation Band :NFC Test Date :2014-08-25 Fundamental Frequency :13.56 MHz Temp./Humi. :21 deg C/58 RH

Operation Mode :TX Engineer :Tin

EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

| Freq. | Note | Detector | Spectrum | Factor | Actual | Limit | Margin |
|-------|---------|----------|---------------|--------|--------|--------|--------|
| | | Mode | Reading Level | | FS | @3m | |
| MHz | F/H/E/S | PK/QP/AV | dΒμV | dB | dBμV/m | dBμV/m | dB |
| | | | | | | | |
| 10.74 | S | Peak | 14.37 | 11.95 | 26.32 | 69.54 | -43.22 |
| 15.84 | S | Peak | 11.46 | 11.57 | 23.03 | 69.54 | -46.51 |
| 17.90 | S | Peak | 14.94 | 11.45 | 26.39 | 69.54 | -43.15 |
| 25.78 | S | Peak | 11.49 | 9.83 | 21.32 | 69.54 | -48.22 |
| 26.16 | S | Peak | 15.35 | 9.75 | 25.10 | 69.54 | -44.44 |
| 26.54 | S | Peak | 16.43 | 9.67 | 26.10 | 69.54 | -43.44 |
| 27.12 | Н | Peak | 10.62 | 9.53 | 20.15 | 69.54 | -49.39 |

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 25 of 32

Operation Band :NFC **Test Date** :2014-08-25

Fundamental Frequency :13.56 MHz Temp./Humi. :21 deg C/58 RH

Operation Mode :TX Engineer :Tin

EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL

| Freq. | Note | Detector Mode | Spectrum Reading Level | Factor | Actual FS | Limit @3m | Margin |
|-------|---------|------------------|------------------------|--------|--------------|--------------|--------|
| MHz | F/H/E/S | PK/QP/AV | dΒμV | dB | dBμV/m | dBμV/m | dB |
| | | | | | | | |
| 10.74 | S | Peak | 9.63 | 11.95 | 21.58 | 69.54 | -47.96 |
| 17.90 | S | Peak | 8.64 | 11.45 | 20.09 | 69.54 | -49.45 |
| 20.80 | S | Peak | 0.46 | 11.11 | 11.57 | 69.54 | -57.97 |
| 22.68 | S | Peak | 1.08 | 10.59 | 11.67 | 69.54 | -57.87 |
| 25.78 | S | Peak | 5.55 | 9.83 | 15.38 | 69.54 | -54.16 |
| 26.54 | S | Peak | 8.69 | 9.67 | 18.36 | 69.54 | -51.18 |
| 27.12 | Н | Peak | 5.33 | 9.53 | 14.86 | 69.54 | -54.68 |

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134, WuKungRoad, New Taipeilndustrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 26 of 32

Operation Band :NFC Test Date :2014-08-25 Fundamental Frequency :13.56 MHz Temp./Humi. :21 deg C/58 RH Operation Mode Engineer :TX :Tin EUT Pol. :E2 Plane Measurement Antenna Pol. :VERTICAL

| Freq. | Note | Detector | Spectrum | Factor | Actual | Limit | Margin |
|--------|---------|----------|------------------|--------|--------|--------|--------|
| | | Mode | Reading Level | | FS | @3m | |
| MHz | F/H/E/S | PK/QP/AV | ${ m d} B \mu V$ | dB | dBμV/m | dBμV/m | dB |
| | | | | | | | |
| 40.68 | Н | | | | | | |
| 54.24 | Н | | | | | | |
| 67.80 | Н | | | | | | |
| 81.36 | Н | | | | | | |
| 94.92 | Н | | | | | | |
| 108.48 | Н | | | | | | |
| 122.04 | Н | | | | | | |
| 135.60 | Н | | | | | | |
| 421.88 | S | Peak | 51.01 | -8.79 | 42.22 | 46.00 | -3.78 |
| 474.26 | S | Peak | 50.95 | -7.67 | 43.28 | 46.00 | -2.72 |
| 551.86 | S | Peak | 50.02 | -7.05 | 42.97 | 46.00 | -3.03 |
| 647.89 | S | Peak | 46.34 | -4.80 | 41.54 | 46.00 | -4.46 |
| 696.39 | S | Peak | 44.80 | -3.86 | 40.94 | 46.00 | -5.06 |
| 792.42 | S | Peak | 42.48 | -2.34 | 40.14 | 46.00 | -5.86 |

Note: The spurious emission result 43.28dBuV/m is exceeding the maximum level of fundamental 33.44dBuV/m @ 3m. However, when we close the RF function of this EUT, that spurious emission result is still found. That means that spurious emission is from the digital portion of this 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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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

台灣檢驗科技股份有限公司 t (886-2) 2299-3279



419.94

474.26

528.58

647.89

696.39

743.92

S

S

S

S

S

S

Peak

Peak

Peak

Peak

Peak

Peak

FCC ID: W5388D2035001

Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 27 of 32

44.17

40.10

40.86

43.40

43.62

42.03

-8.77

-7.67

-7.35

-4.80

-3.86

-2.77

46.00

46.00

46.00

46.00

46.00

46.00

-1.83

-5.90

-5.14

-2.60

-2.38

-3.97

Operation Band :NFC **Test Date** :2014-08-25 Fundamental Frequency :13.56 MHz Temp./Humi. :21 deg C/58 RH Operation Mode Engineer :TX :Tin EUT Pol. :E2 Plane Measurement Antenna Pol. :HORIZONTAL Freq. Note Detector Spectrum Factor Actual Limit Margin Mode Reading Level FS @3mMHz PK/QP/AV $dB\mu V$ dB dBµV/m dBµV/m dB F/H/E/S 40.68 Η 54.24 Н 67.80 Η 81.36 Η 94.92 Η 108.48 Η 122.04 Н 135.60 Н

52.94

47.77

48.21

48.20

47.48

44.80

Note: The spurious emission result 44.17dBuV/m is exceeding the maximum level of fundamental 33.44dBuV/m @ 3m. However, when we close the RF function of this EUT, that spurious emission result is still found. That means that spurious emission is from the digital portion of this 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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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

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

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 28 of 32

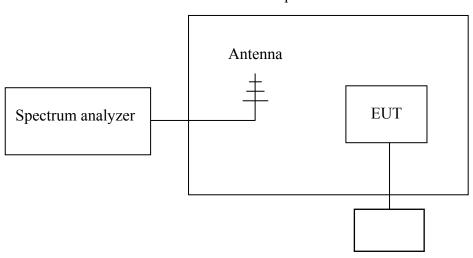
Frequency Tolerance

Measurement Procedure

- The EUT was placed on a turn table which is 0.8m above ground plane.
- Set EUT as normal operation
- 3. Set SPA Center Frequency = fundamental frequency, RBW, VBW= 10kHz, Span = 100kHz.
- 4. Set SPA Max hold. Mark peak.

8.2 **Test SET-UP (Block Diagram of Configuration)**

Temperature Chamber



Variable AC Power Supply

8.3 **Measurement Equipment Used:**

| Conducted Emission Test Site | | | | | | | |
|------------------------------|---------------|--------------------|------------|------------|------------|--|--|
| EQUIPMENT | MFR MODEL | | SERIAL | LAST | CAL DUE. | | |
| ТҮРЕ | | NUMBER | NUMBER | CAL. | | | |
| Power Meter | Anritsu | ML2495A | 1005007 | 01/13/2014 | 01/12/2015 | | |
| Power Sensor | Anritsu | MA2411B | 917032 | 01/13/2014 | 01/12/2015 | | |
| Spectrum Analyzer | Agilent | E4446A | MY51100003 | 05/19/2014 | 05/18/2015 | | |
| Spectrum Analyzer | Agilent | E4440A | MY45304525 | 03/08/2014 | 03/07/2015 | | |
| DC Block | Mini-Circuits | BLK-18-S+ | 1 | 02/27/2014 | 02/26/2015 | | |
| Low Loss Cable | HUBER+SUHNER | SUCOFLEX 104PEA | N/A | 01/03/2014 | 01/02/2015 | | |
| Attenuator | Mini-Circuit | BW-S10W2+ | 002 | 02/27/2014 | 02/26/2015 | | |
| Splitter | Agilent | 11636B | N/A | 02/27/2014 | 02/26/2015 | | |

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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 29 of 32

Measurement Results

A. Temperature Variation

| Power Supply | Environment | Frequency | Delta (Hz) | Limit (KHz) |
|--------------|-----------------|-----------|-------------|-------------|
| ac | Temperature () | (MHz) | Deria (112) | |
| 110 | -20 | 13.5598 | 400.00 | +/- 1.356 |
| 110 | -10 | 13.5596 | 600.00 | +/- 1.356 |
| 110 | 0 | 13.5595 | 700.00 | +/- 1.356 |
| 110 | 10 | 13.5599 | 300.00 | +/- 1.356 |
| 110 | 20 | 13.5602 | 0.00 | +/- 1.356 |
| 110 | 30 | 13.5605 | -300.00 | +/- 1.356 |
| 110 | 40 | 13.5604 | -200.00 | +/- 1.356 |
| 110 | 50 | 13.5609 | -700.00 | +/- 1.356 |

B. Supply Voltage Variation

| Power Supply | Environment | Frequency | Delta (Hz) | Limit (KHz) | |
|--------------|--------------------|-----------|-------------|--------------|--|
| ac | ac Temperature () | | Derta (112) | Limit (Kiiz) | |
| 121 | 20 | 13.5606 | -300.00 | +/- 1.356 | |
| 110 | 20 | 13.5603 | 0.00 | +/- 1.356 | |
| 99 | 20 | 13.5603 | 0.00 | +/- 1.356 | |

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,此報告结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 www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Taiwan Ltd. No.134, WuKungRoad, New Taipeilndustrial Park, Wuku District, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路134號



Report No: ER/2014/70010 Issue Date: Sep. 10, 2014

Page: 30 of 32

99% &20 dB OCCUPIED BANDWIDTH MEASUREMENT

9.1 Standard Applicable:

§2.1049 & §15.215 (c)

9.2 Limit:

None

9.3 **Test Set-up**

Refer to section 6.2 in this report

9.4 **Measurement Procedure**

99% bandwidth

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10KHz) was set to about 1% of span, VBW= 3 times RBW(10KHz), -26dBc display line was placed on the screen (or 99%), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

20dB bandwidth

- 1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak mode.
- 2. 20dB Bandwidth the resolution bandwidth of 1 kHz and the video bandwidth of 1 kHz were used.
- 3. Measured the spectrum width with power higher than 20dB below carrier.

Measurement Equipment Used: 9.5

Refer to section 6.3 in this report

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

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

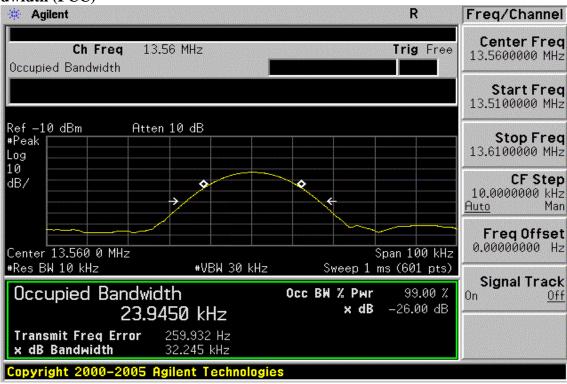
SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路134號

台灣檢驗科技股份有限公司 t (886-2) 2299-3279

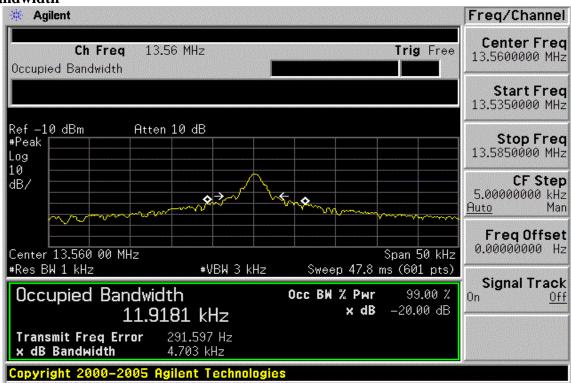
Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 31 of 32

99% Bandwidth (FCC)



-20dB Bandwidth



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 www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects 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.

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



Report No: ER/2014/70010 **Issue Date: Sep. 10, 2014**

Page: 32 of 32

ANTENNA REQUIREMENT

Standard Applicable:

According to §15.203, Antenna requirement.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

10.2. Antenna Connected Construction:

The antenna connector is designed with unique type RF connector and no consideration of replacement. Please see EUT photo and antenna spec. for details.

~ End of Report ~

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

除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sqs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law

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