

## ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

### INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

**Product Name:** Laser Wireless Presenter

**Brand Name:** INFINITER

**Model No.:** LR-22R ; LR-22GR ; LR-22R Navi ; LR-22GR Navi

**Model Difference:** Marking purpose for different customer  
LR-22R, LR-22R Navi for LED Color: Red  
LR-22GR, LR-22GR Navi LED Color: Green

**FCC ID:** S751240LR22

**Report No.:** ER/2011/90038

**Issue Date:** Oct. 19, 2011

**FCC Rule Part:** §15.249

**Prepared for:** Quarton inc.  
9F, 185, Sec. 1, Ta-Tung Rd., His-Chih, New Taipei  
City, Taiwan, R.O.C.

**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
No. 134, Wu Kung Rd., Wuku Industrial Zone,  
Taipei County, Taiwan.



**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.sgs.com/terms\\_and\\_conditions.htm](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## VERIFICATION OF COMPLIANCE

**Applicant:** Quarton inc.  
9F, 185, Sec. 1, Ta-Tung Rd., His-Chih, New Taipei City, Taiwan,  
R.O.C.

**Product Description:** Laser Wireless Presenter

**Brand Name:** INFINITER

**Model No.:** LR-22R ; LR-22GR ; LR-22R Navi ; LR-22GR Navi

**FCC ID:** S751240LR22

**Model Difference:** Marking purpose for different customer  
LR-22R, LR-22R Navi for LED Color: Red  
LR-22GR, LR-22GR Navi LED Color: Green

**File Number:** ER/2011/90038

**Date of test:** Sep. 29, 2011 ~ Oct. 03, 2011

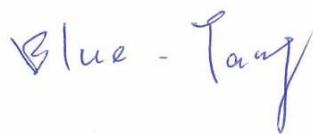
**Date of EUT Received:** Sep. 29, 2011

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd., Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) 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 15.249.

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

**Test By:**

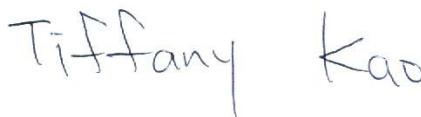


**Date:**

Oct. 19, 2011

*Blue Yang / Engineer*

**Prepared By:**

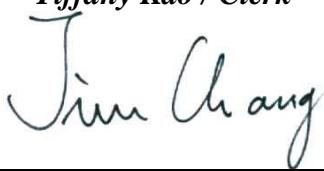


**Date:**

Oct. 19, 2011

*Tiffany Kao / Clerk*

**Approved By:**



**Date:**

Oct. 19, 2011

*Jim Chang / Supervisor*

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## Version

Version No.	Date	Description
00	Oct. 19, 2011	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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## Table of Contents

<b>1. GENERAL INFORMATION .....</b>	<b>5</b>
1.1 PRODUCT DESCRIPTION .....	5
1.2 RELATED SUBMITTAL(S) / GRANT (S).....	6
1.3 TEST METHODOLOGY .....	6
1.4 TEST FACILITY .....	6
1.5 SPECIAL ACCESSORIES.....	6
1.6 EQUIPMENT MODIFICATIONS .....	6
<b>2. SYSTEM TEST CONFIGURATION .....</b>	<b>7</b>
2.1 EUT CONFIGURATION .....	7
2.2 EUT EXERCISE.....	7
2.3 TEST PROCEDURE .....	7
2.4 LIMITATION.....	8
2.5 CONFIGURATION OF TESTED SYSTEM.....	10
<b>3. SUMMARY OF TEST RESULTS.....</b>	<b>11</b>
<b>4. DESCRIPTION OF TEST MODES.....</b>	<b>11</b>
<b>5. CONDUCTED EMISSIONS TEST.....</b>	<b>12</b>
5.1 MEASUREMENT PROCEDURE: .....	12
5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION).....	12
5.3 MEASUREMENT EQUIPMENT USED:.....	12
5.4 MEASUREMENT RESULT: .....	12
<b>6. RADIATED EMISSION TEST .....</b>	<b>13</b>
6.1 MEASUREMENT PROCEDURE .....	13
6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION).....	13
6.3 MEASUREMENT EQUIPMENT USED:.....	14
6.4 FIELD STRENGTH CALCULATION.....	14
6.5 MEASUREMENT RESULT .....	15
<b>7. 20 DB BAND WIDTH MEASUREMENT .....</b>	<b>21</b>
7.1 MEASUREMENT PROCEDURE .....	21
7.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION).....	21
7.3 MEASUREMENT EQUIPMENT USED:.....	21
7.4 MEASUREMENT RESULTS: .....	21

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wukoo Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## 1. GENERAL INFORMATION

### 1.1 Product Description

Product Name:	Laser Wireless Presenter
Brand Name:	INFINITER
Model No.:	LR-22R ; LR-22GR ; LR-22R Navi ; LR-22GR Navi
Model Difference:	Marking purpose for different customer LR-22R, LR-22R Navi for LED Color: Red LR-22GR, LR-22GR Navi LED Color: Green
Hardware Version	V1.1
Software Version	V1.1
Operation Frequency:	2403~2474MHz
Channel number:	16 channels
Signal frequency:	2.415GHz→2.435GHz→2.474 GHz→2.410GHz→2.444GHz→ 2.460GHz→2.406GHz→2.421GHz→2.471GHz→2.403GHz→ 2.430GHz→2.450GHz→2.468GHz→2.405GHz→2.433GHz→ 2.457GHz→(cycle from beginning)
Modulation Type:	FHSS
Data Cable:	Model No.: N/A, Supplier: N/A
Power Supply	DC 3.7V from lithium/Polymer Batteries
Antenna Designation:	Printed Antenna

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

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

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## 1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: S751240LR22 filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

## 1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). 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 Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number is: 990257 and 236194, 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

Not available for this EUT intended for grant.

## 1.6 Equipment Modifications

Not available for this EUT intended for grant.

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## 2. System Test Configuration

### 2.1 EUT Configuration

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

### 2.2 EUT Exercise

The Transmitter was operated in the engineering operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

### 2.3 Test Procedure

#### 2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

#### 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 according to the requirements in Section 8 and 13 of ANSI C63.4-2003.

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## 2.4 Limitation

### (1) Conducted Emission

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

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 – 0.5	66 - 56	56 - 46
0.5 – 5	56	46
5 - 30	60	50

### (2) Radiated Emission 15.249(a)

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following.

Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)
902 - 928	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
2400 – 2483.5	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
5725 – 5875	50 mV/m (94dBuV/m)	500 uV/m (54dBuV/m)	3
24.0 – 24.25 GHz	250 mV/m (107.95dBuV/m)	2500 uV/m (67.95dBuV/m)	3

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

### (3) Radiated Emission 15.249 (d)

Emission Radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in Section 15.209 as below, whichever is the lesser attenuation.

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

### (4) Radiated Emission 15.249(e)

For frequencies above 1000MHz, the above field strength limits are based on average limits. The peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation.

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. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of § 15.205
4. Emission spurious frequency which appearing within the Restricted Bands specified in provision of § 15.205, then the general radiated emission limits in § 15.209 apply.

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

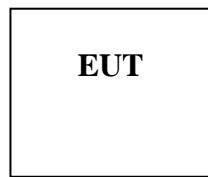
f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## 2.5 Configuration of Tested System

**Fig. 2-1 Configuration**



**Table 2-2 Equipment Used in Tested System**

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	N/A					

**Note:** All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

**Grounding:** Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

### 3. Summary of Test Results

FCC Rules	Description Of Test	Result
§15.207	Conducted Emission	N/A
§15.249(a)(e)	Radiated Emission	Compliant
§15.249(d)	20dB band width Measurement	Compliant

### 4. Description of test modes

The EUT has been tested under operating condition.

The EUT is staying in continuous transmitting mode.

Channel low (2403MHz)、mid (2435MHz) and high (2474MHz) with highest data rate are chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode). The worst-case of E2 position were reported.

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## 5. Conducted Emissions Test

### 5.1 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.

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

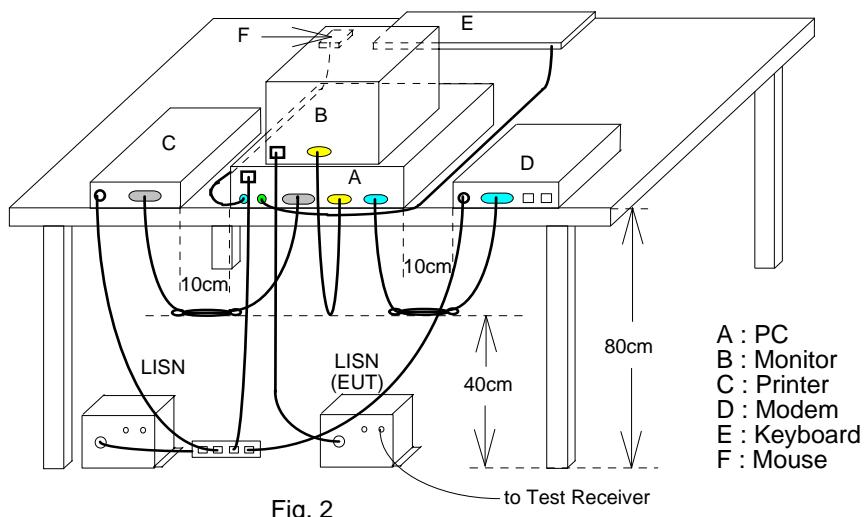


Fig. 2

### 5.3 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCS30	828985/004	09/23/2010	09/22/2012
LISN	Rolf-Heine	NNB-2/16Z	99012	03/31/2011	03/30/2012
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	03/31/2011	03/30/2012
Coaxial Cables	N/A	WK CE Cable	N/A	11/28/2010	11/27/2011

### 5.4 Measurement Result:

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](http://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](http://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, Wu Kung Road, Wukoo Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

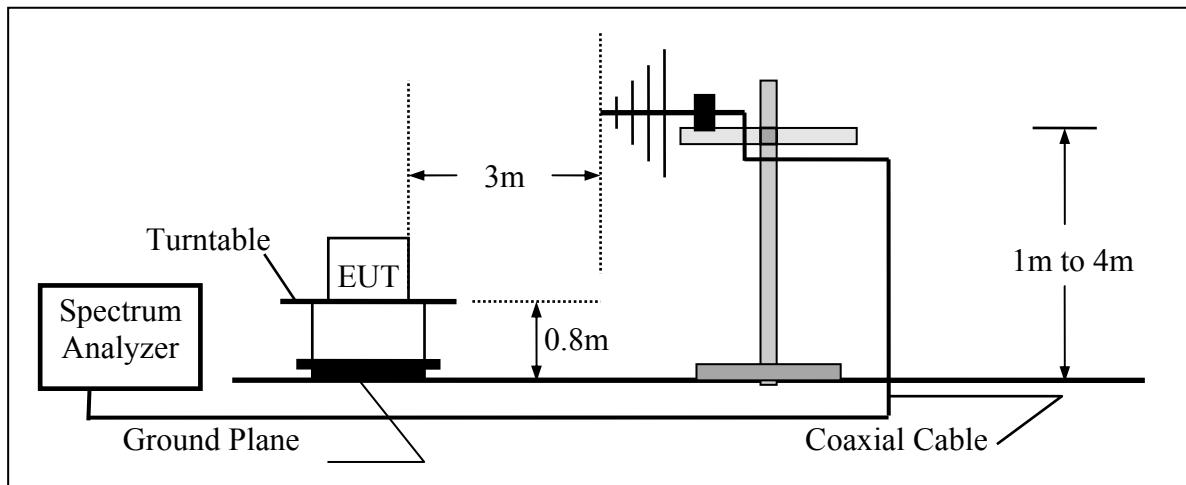
## 6. Radiated Emission Test

### 6.1 Measurement Procedure

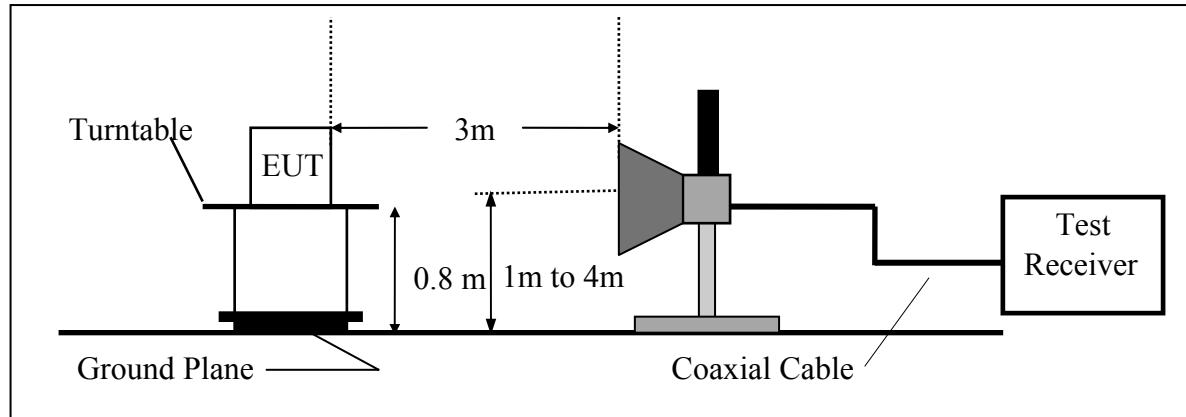
1. The EUT was placed on a turntable that is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

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

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 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 [www.sgs.com/terms\\_and\\_conditions.htm](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

### 6.3 Measurement Equipment Used:

<b>966 Chamber</b>					
<b>EQUIPMENT TYPE</b>	<b>MFR</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>LAST CAL.</b>	<b>CAL DUE.</b>
Spectrum Analyzer	R&S	FSP 40	100034	03/30/2011	03/29/2012
Bilog Antenna	SCHWAZBECK	VULB9160	3136	11/19/2010	11/18/2011
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	01/22/2010	01/21/2012
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2010	11/27/2011
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2011	01/04/2012
Radio Communication Analyzer	R & S	CMU200	111787	10/31/2010	10/30/202
DC Block	Agilent	BLK-18	155452	01/05/2011	01/04/2012
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	SUCOFLEX 104PEA-10M	10m	01/05/2011	01/04/2012
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2011	01/04/2012
3m Site	SGS	966 chamber	N/A	09/06/2011	09/05/2012

### 6.4 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:

$$\mathbf{FS = RA + AF + CL - AG}$$

Where	<b>FS</b> = Field Strength	<b>CL</b> = Cable Attenuation Factor (Cable Loss)
	<b>RA</b> = Reading Amplitude	<b>AG</b> = Amplifier Gain
	<b>AF</b> = Antenna 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 [www.sgs.com/terms\\_and\\_conditions.htm](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

## 6.5 Measurement Result

### Radiated Spurious Emission Measurement Result

Operation Band	: N/A	Test Date	: 2011-10-03
Fundamental Frequency	: N/A	Temp./Humi.	: 24/60
Operation Mode	: TX CH LOW	Engineer	: Blue
EUT Pol.	: E2 PLAN	Measurement Antenna Pol.	: VERTICAL

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

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

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---” : denotes Noise Floor.

Freq. MHz	Note F/H/E/S	Detector Mode	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V	Limit @3m dB $\mu$ V/m	Safe Margin dB
						Factor dB	Actual FS dB $\mu$ V/m
143.49	S	Peak	32.68	-12.17	20.51	43.50	-22.99
318.09	S	Peak	30.67	-11.38	19.29	46.00	-26.71
442.25	S	Peak	31.73	-9.42	22.31	46.00	-23.69
533.43	S	Peak	32.67	-8.22	24.45	46.00	-21.55
730.34	S	Peak	32.50	-4.44	28.06	46.00	-17.94
947.62	S	Peak	32.88	-1.29	31.59	46.00	-14.41
2403	F	Average	31.45	5.20	36.65	94.00	-57.35
2403	F	Peak	77.03	5.20	82.23	94.00	-11.77
4806	H	Peak	43.69	9.72	53.41	74.00	-20.59
7209	H		---				
9612	H		---				
12015	H		---				
14418	H		---				
16821	H		---				
19224	H		---				
21627	H		---				
24030	H		---				

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wukoo Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

Operation Band	: N/A	Test Date	: 2011-10-03
Fundamental Frequency	: N/A	Temp./Humi.	: 24/60
Operation Mode	: TX CH LOW	Engineer	: Blue
EUT Pol.	: E2 PLAN	Measurement Antenna Pol.	: HORIZONTAL

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

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

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---” : denotes Noise Floor.

<b>Freq.</b>	<b>Note</b>	<b>Detector</b>	<b>Spectrum</b>		<b>Factor</b>	<b>Actual</b>	<b>Limit</b>	<b>Safe</b>
			<b>Mode</b>	<b>Reading Level</b>			<b>FS</b>	<b>@3m</b>
<b>MHz</b>	<b>F/H/E/S</b>	<b>PK/QP/AV</b>	<b>dB<math>\mu</math>V</b>	<b>dB</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB</b>	
46.49	S	Peak	31.74	-14.09	17.65	40.00	-22.35	
158.04	S	Peak	31.56	-11.77	19.79	43.50	-23.71	
338.46	S	Peak	31.31	-11.09	20.22	46.00	-25.78	
459.71	S	Peak	33.11	-9.26	23.85	46.00	-22.15	
573.20	S	Peak	32.80	-7.46	25.34	46.00	-20.66	
777.87	S	Peak	33.32	-3.87	29.45	46.00	-16.55	
2403	F	Average	31.45	5.87	37.32	94.00	-56.68	
2403	F	Peak	76.20	5.87	82.07	94.00	-11.93	
4806	H	Peak	44.22	9.75	53.97	74.00	-20.03	
7209	H		---					
9612	H		---					
12015	H		---					
14418	H		---					
16821	H		---					
19224	H		---					
21627	H		---					
24030	H		---					

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

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

Member of SGS Group

Operation Band	: N/A	Test Date	: 2011-10-03
Fundamental Frequency	: N/A	Temp./Humi.	: 24/60
Operation Mode	: TX CH MID	Engineer	: Blue
EUT Pol.	: E2 PLAN	Measurement Antenna Pol.	: VERTICAL

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

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

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---” : denotes Noise Floor.

<b>Freq.</b>	<b>Note</b>	<b>Detector</b>	<b>Spectrum</b>		<b>Factor</b>	<b>Actual</b>	<b>Limit</b>	<b>Safe</b>
			<b>Mode</b>	<b>Reading Level</b>				
<b>MHz</b>	<b>F/H/E/S</b>	<b>PK/QP/AV</b>	<b>dB<math>\mu</math>V</b>	<b>dB</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB</b>	
143.49	S	Peak	32.93	-12.17	20.76	43.50	-22.74	
471.35	S	Peak	32.70	-9.10	23.60	46.00	-22.40	
607.15	S	Peak	33.81	-6.65	27.16	46.00	-18.84	
703.18	S	Peak	32.53	-5.04	27.49	46.00	-18.51	
866.14	S	Peak	32.64	-2.61	30.03	46.00	-15.97	
968.96	S	Peak	32.96	-1.17	31.79	54.00	-22.21	
2435	F	Average	31.26	5.42	36.68	94.00	-57.32	
2435	F	Peak	78.13	5.42	83.55	94.00	-10.45	
4870	H	Peak	43.45	10.21	53.66	74.00	-20.34	
7305	H		---					
9740	H		---					
12175	H		---					
14610	H		---					
17045	H		---					
19480	H		---					
21915	H		---					
24350	H		---					

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

Operation Band	: N/A	Test Date	: 2011-10-03
Fundamental Frequency	: N/A	Temp./Humi.	: 24/60
Operation Mode	: TX CH MID	Engineer	: Blue
EUT Pol.	: E2 PLAN	Measurement Antenna Pol.	: HORIZONTAL

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

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

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.  
 “E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

<b>Freq.</b>	<b>Note</b>	<b>Detector</b>	<b>Spectrum</b>		<b>Factor</b>	<b>Actual</b>	<b>Limit</b>	<b>Safe</b>
			<b>Mode</b>	<b>Reading Level</b>			<b>FS</b>	<b>@3m</b>
<b>MHz</b>	<b>F/H/E/S</b>	<b>PK/QP/AV</b>	<b>dB<math>\mu</math>V</b>	<b>dB</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB</b>	
55.22	S	Peak	32.47	-14.17	18.30	40.00	-21.70	
157.07	S	Peak	31.27	-11.63	19.64	43.50	-23.86	
286.08	S	Peak	32.11	-12.09	20.02	46.00	-25.98	
428.67	S	Peak	32.80	-9.69	23.11	46.00	-22.89	
603.27	S	Peak	33.57	-6.73	26.84	46.00	-19.16	
896.21	S	Peak	37.40	-2.17	35.23	46.00	-10.77	
2435	F	Average	31.31	6.23	37.54	94.00	-56.46	
2435	F	Peak	77.62	6.23	83.85	94.00	-10.15	
4870	H	Peak	43.81	10.17	53.98	74.00	-20.02	
7305	H		---					
9740	H		---					
12175	H		---					
14610	H		---					
17045	H		---					
19480	H		---					
21915	H		---					
24350	H		---					

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

Operation Band	: N/A	Test Date	: 2011-10-03
Fundamental Frequency	: N/A	Temp./Humi.	: 24/60
Operation Mode	: TX CH HIGH	Engineer	: Blue
EUT Pol.	: E2 PLAN	Measurement Antenna Pol.	: VERTICAL

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

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

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

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

"--" : denotes Noise Floor.

<b>Freq.</b>	<b>Note</b>	<b>Detector</b>	<b>Spectrum</b>		<b>Factor</b>	<b>Actual</b>	<b>Limit</b>	<b>Safe</b>
			<b>Mode</b>	<b>Reading Level</b>				
<b>MHz</b>	<b>F/H/E/S</b>	<b>PK/QP/AV</b>	<b>dB<math>\mu</math>V</b>	<b>dB</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB<math>\mu</math>V/m</b>	<b>dB</b>	
143.49	S	Peak	33.07	-12.17	20.90	43.50	-22.60	
341.37	S	Peak	31.38	-11.04	20.34	46.00	-25.66	
455.83	S	Peak	32.21	-9.28	22.93	46.00	-23.07	
652.74	S	Peak	32.13	-5.82	26.31	46.00	-19.69	
773.02	S	Peak	33.33	-3.93	29.40	46.00	-16.60	
882.63	S	Peak	33.63	-2.37	31.26	46.00	-14.74	
2474	F	Average	34.16	5.73	39.89	94.00	-54.11	
2474	F	Peak	79.18	5.73	84.91	94.00	-9.09	
4948	H	Peak	45.19	10.30	55.49	74.00	-18.51	
7422	H		---					
9896	H		---					
12370	H		---					
14844	H		---					
17318	H		---					
19792	H		---					
22266	H		---					
24740	H		---					

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

Operation Band	: N/A	Test Date	: 2011-10-03
Fundamental Frequency	: N/A	Temp./Humi.	: 24/60
Operation Mode	: TX CH HIGH	Engineer	: Blue
EUT Pol.	: E2 PLAN	Measurement Antenna Pol.	: HORIZONTAL

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

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

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---” : denotes Noise Floor.

Freq. MHz	Note F/H/E/S	Detector Mode	Spectrum Reading Level	Factor dB	Actual FS dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Safe Margin dB
						dB $\mu$ V/m	dB
151.25	S	Peak	31.89	-11.74	20.15	43.50	-23.35
245.34	S	Peak	31.50	-13.32	18.18	46.00	-27.82
348.16	S	Peak	31.91	-10.94	20.97	46.00	-25.03
480.08	S	Peak	33.08	-9.03	24.05	46.00	-21.95
626.55	S	Peak	32.84	-6.16	26.68	46.00	-19.32
812.79	S	Peak	33.27	-3.33	29.94	46.00	-16.06
2474	F	Average	33.74	6.71	40.45	94.00	-53.55
2474	F	Peak	75.42	6.71	82.13	94.00	-11.87
4948	H	Peak	45.16	10.16	55.32	74.00	-18.68
7422	H		---				
9896	H		---				
12370	H		---				
14844	H		---				
17318	H		---				
19792	H		---				
22266	H		---				
24740	H		---				

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

## 7. 20 dB Band Width Measurement

### 7.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set ETU normal operating mode.
3. Set SPA Center Frequency = fundamental frequency, RBW = 100kHz, VBW = 300kHz, Span =1MHz.
4. Set SPA Max hold. Mark peak, -20dB.

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

Same as 4.2 Radiated Emission Measurement.

### 7.3 Measurement Equipment Used:

Same as 4.2 Radiated Emission Measurement.

### 7.4 Measurement Results:

2403 Channel = 1.277MHz

2435 Channel = 1.261MHz

2474 Channel = 1.271MHz

Refer to attached data chart.

Unless otherwise stated 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。

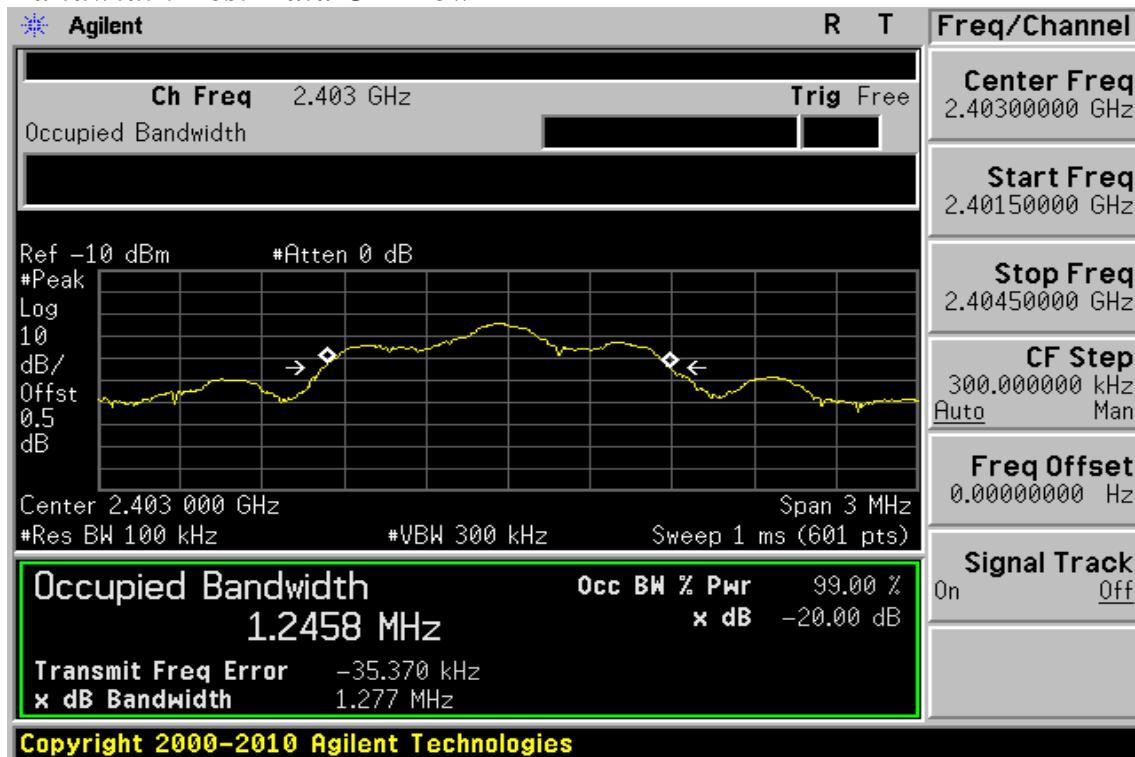
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

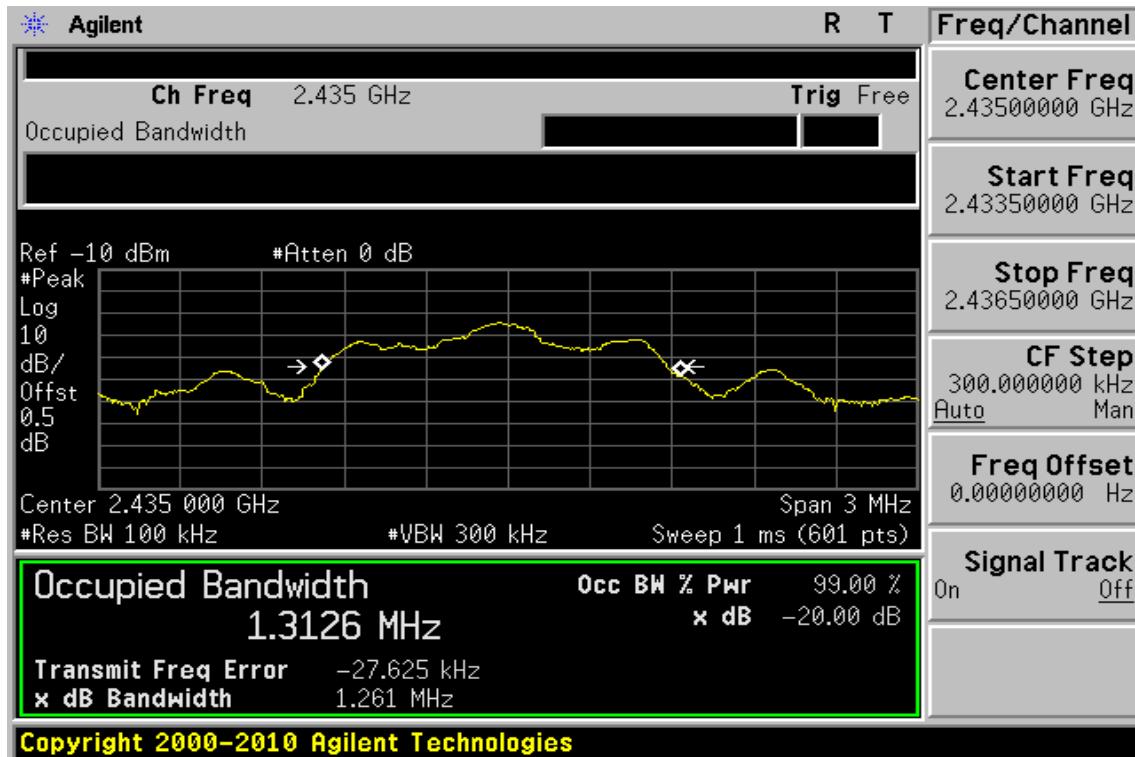
台灣檢驗科技股份有限公司 t (886-2) 2299-3279 f (886-2) 2298-0488 [www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

### 20dB Bandwidth Test Data CH-Low



### 20dB Bandwidth Test Data CH-Mid



Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wukoo Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

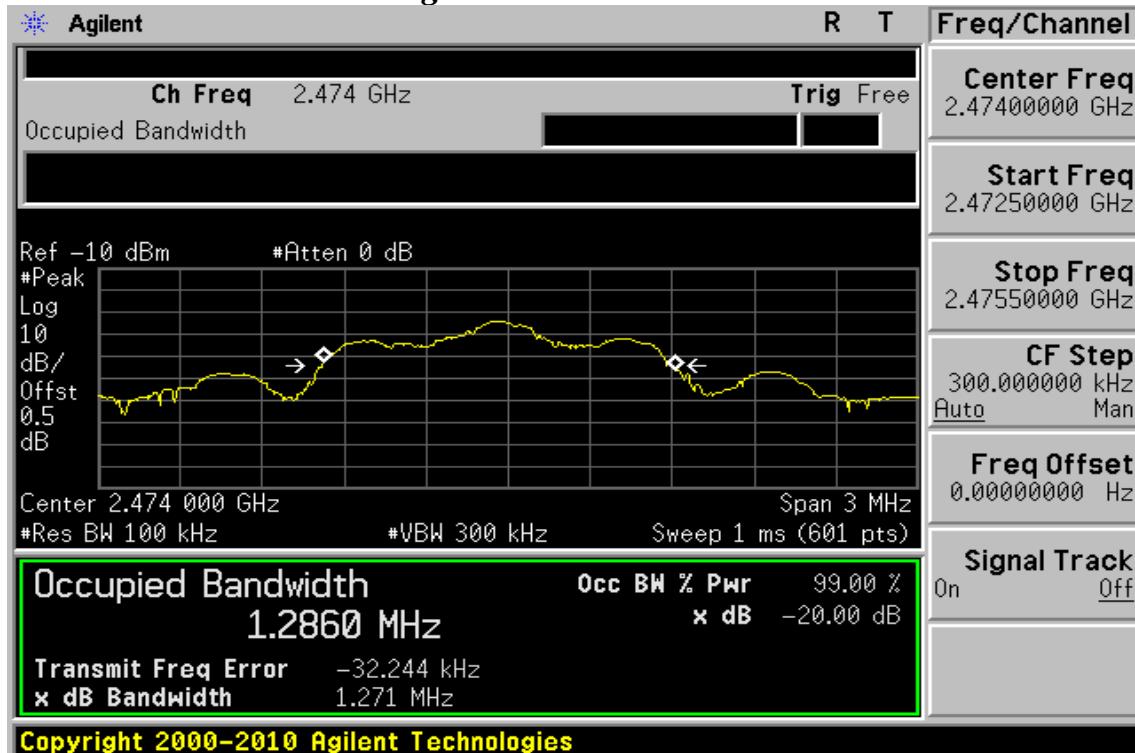
台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group

**20dB Bandwidth Test Data CH-High**

Unless otherwise stated 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](http://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](http://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, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五工路134號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

[www.tw.sgs.com](http://www.tw.sgs.com)

Member of SGS Group